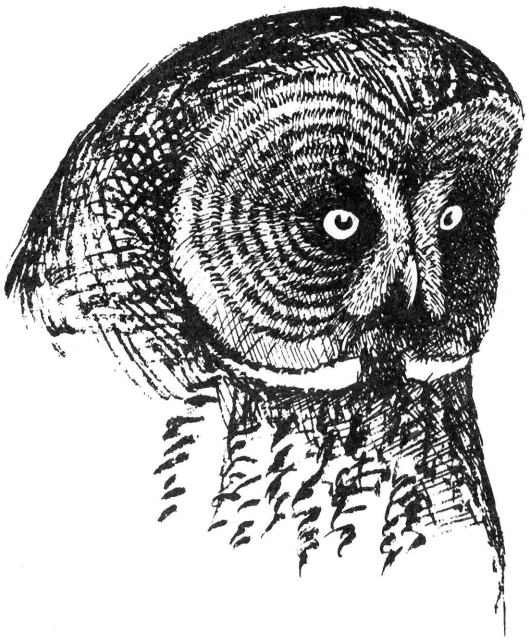
ONTARIO BIRDS



Journal of the Ontario Field Ornithologists
Volume 14 Number 3 December 1996

Ontario Field Ornithologists

Ontario Field Ornithologists is an organization dedicated to the study of birdlife in Ontario. It was formed 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*), hosts field trips throughout Ontario and holds an Annual General Meeting in the autumn.
Current President: Jean Iron, 9 Lichen Place, Don Mills, Ontario M3A 1X3 (416) 445-9297 (e-mail: jeaniron@globedirect.com).

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 inquiries to: **Ontario Field Ornithologists, Box 62014, Burlington Mall Postal Outlet, Burlington, Ontario L7R 4K2.** (e-mail: ofo@interlog.com).

Ontario Birds

Editors: Bill Crins, Ron Pittaway, Ron Tozer
Editorial Assistance: Jean Iron
Art Consultant: Chris Kerrigan
Design/Production: Centennial Printers (Peterborough) Ltd.

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.

If possible, material submitted for publication should be double-spaced and typewritten. All submissions are subject to review and editing. Please submit items for publication to the Editors at the address noted above.

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ISSN 0822-3890

Letters to the Editors

Great Blue Heron eats chipmunk

In May 1995, at our house on Little Gull Lake, south of Minden, we were overrun by chipmunks. There must have been 50 racing around! By the beginning of June, we were being visited by a Great Blue Heron on a regular basis. He appeared to be quite bold, coming within 25 feet (8 m) of us before flying off to a safer distance of maybe 50 feet (16 m). We soon discovered he was hunting the chipmunks.

We watched him closely one day and saw him grab a chipmunk in his beak (he did not spear it), and then walk down to the lake. The chipmunk played dead. The heron dipped his catch into the water three times before the chipmunk stopped wriggling, and then swallowed it. He repeated the performance six times in about an hour, before flying off. The heron stayed throughout June and cleaned us out of chipmunks. We noticed an absence of the usual frogs around this time.

We have a pair of Great Blue Herons around the lake every year and one often lands on our dock, but never before have we seen it take a chipmunk.

Mrs. P.M. Fieldus
Minden, Ontario

Editors' Note:

While Great Blue Herons (*Ardea herodias*) preying on small mammals has been described previously (e.g., Bent 1926, Palmer 1962), this interesting behaviour is apparently infrequently observed or reported. Some individual herons may actually specialize in terrestrial feeding activity. In his study of radio-tagged Great Blue Herons in Minnesota, Peifer (1979) reported two herons that appeared to forage exclusively in upland areas for several weeks. The two were observed to capture 36 Thirteen-lined Ground Squirrels (*Spermophilus tridecemlineatus*), five Eastern Chipmunks (*Tamias striatus*), five Prairie Pocket Gophers (*Geomys bursarius*), one juvenile Eastern Fox Squirrel (*Sciurus niger*), and one juvenile Eastern Cottontail (*Sylvilagus floridanus*) during that time! Forty-five of the 48 mammals captured were carried to water, dipped and swallowed head-first, as noted by Mrs. Fieldus.

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Peifer, R.W. 1979. Great Blue Herons foraging for small mammals. Wilson Bulletin 91: 630-631.

Gray Jay captures mouse

Last March, my family and I were out on a Great Gray and Hawk Owl banding trip near Red Lake, when we spotted a flapping of wings on the snow. We first thought it might be a Hawk Owl, but were very surprised to see a Gray Jay jumping on a small mammal (mouse/vole), trying to get a grip on it with its toes, and periodically hitting it hard with its beak. Finally, the small mammal went still and the Gray Jay carried it off to the bush, closely followed by another bird of the same species. The ordeal

lasted maybe 30 seconds from when we first noticed the flapping feathers to when the mammal was carried off. Are Whiskey Jacks hunters of "wild game"?

Doug Gilmore
Red Lake, Ontario

Dan Strickland comments:

The observation of a Gray Jay (*Perisoreus canadensis*) attacking, killing and carrying off a mouse or vole is very interesting. I have never seen this happen myself although I once saw a mouse pop out of a hole in the snow and the two Gray Jays I was with at the time were instantly "locked on" to it. On that occasion, the mouse went back down into the snow before the jays could do anything about it. There is one report in the literature of a Gray Jay or Jays successfully attacking two different deer mice (Gill 1974). Henri Ouellet (1970) also published a paper on Gray Jay food habits in which he discussed predation (mostly on eggs, nestlings and recently fledged small birds, however, rather than small mammals).

Although there are very few direct observations of Gray Jays preying on mice, there is good reason to think it is a common occurrence. Of 67 non-nestling Gray Jay stomachs I know of whose contents were analyzed, 31 percent contained fur or bones of small mammals, and, of the 18 stomachs taken in the period from December to February, 14 contained small mammal remains -- suggesting that they could be very important to Gray Jays in the winter (Strickland and Ouellet 1993). This does not prove that the eaten mice were killed by the jays, of course, but given the observations like Doug Gilmore's, it is probably a good bet.

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Articles

Northern Forest Owl Survey: Red Lake

by
Doug Gilmore and Christy MacDonald

Introduction

One group of birds that has not been well surveyed or monitored in the past has been the owls. This is especially true in boreal forest habitats, where access adds to the difficulty. At the present time, given the interest and concern regarding the conservation and sustainability of natural resources, efforts are being made by resource managers, in cooperation with conservation-oriented groups and companies, to determine population levels of owls and other organisms. Such surveys and monitoring programs can be used to determine presence or absence, population abundance, and distribution of selected species (Palmer 1987).

Owls pose special problems for monitoring programs. Accessibility, willingness of the species to respond to the survey methods being employed, environmental conditions, and time of year, are some examples of variables that may affect the survey results. Species that are rare, uncommon or whose habits are such that specialized survey techniques must be implemented, may create a more difficult situation to assess. The latter description is one that characterizes the Great Gray Owl (*Strix nebulosa*), a species of conservation interest in the boreal forest. It has been described as having a secretive nature (Bull and Henjum 1990), as the title of one publication, "Phantom of the Northern Forest" (Nero 1980), would imply. Although the Great Gray Owl's hunting habits are usually crepuscular, it also hunts nocturnally and is sometimes seen in broad daylight (Bull and Duncan 1993).

The Great Gray Owl was until recently designated as vulnerable in Canada (COSEWIC) and is presently designated as rare in Ontario (Ontario Ministry of Natural Resources). With these designations and the owl's unknown status in northwestern Ontario, a nocturnal audio survey was conducted in 1993 with the primary objective of determining presence/absence along specified routes. Another objective of the survey was to define a time frame during which optimal responses from Great Gray Owls would be achieved. Where possible, survey data were subsequently used to identify and protect Great Gray Owl habitat in managed areas on the Pakwash and Patricia Forest Units in the Red Lake area of northwestern Ontario. The success of the initial 1993 survey resulted in an expansion of the survey in 1994 and 1995.

Periodic sightings of Great Gray Owls, at all times of the year, occur in the Red Lake area. Until 1993, nests of this species had not been officially documented in the Red Lake area. However, a nest with young is known to

have occurred in the mid-1980s near Overnight Lake (Brett Hopkins, pers. comm.).

Study Area and Methodology

The study area is located approximately 40 km southwest of the town of Red Lake. The area is situated just south of the 51st parallel in the Hudson Bay drainage basin. Thin soils over bedrock, intermixed with scattered clay and silt deposits, have resulted in vegetation types dominated by boreal forest, bogs and fens. The predominant cover species are Black Spruce (*Picea mariana*) and Jack Pine (*Pinus banksiana*). Hardwoods, White Birch (*Betula papyrifera*)/Trembling Aspen (*Populus tremuloides*), are frequently found on deeper well drained soils within the coniferous forests. The landscape is generally flat to weakly broken (OMNR 1981).

The survey technique used has been described in Czerwinski (1995) and Duncan and Duncan (1991). It involves driving a specified route and stopping at measured intervals (0.8 km) along that route to play a pre-recorded call of a Boreal Owl (*Aegolius funereus*) and a Great Gray Owl. All owls seen or heard are documented. The direction from which any owls respond was recorded using a compass.

The rationale for employing the calls in the order described is to induce as many owls to respond as possible. Playing the call of a physically smaller owl first may reduce apprehension from other owls in the area, allowing a better response (Smith 1987).

Routes chosen were: a) adjacent to areas that were allocated for timber cutting in the upcoming year, or b) through areas that were perceived to be high potential Great Gray Owl habitat. These high potential areas were thought to exist in close proximity to wetlands containing Tamarack (*Larix laricina*), as in southeastern Manitoba where Great Gray Owls show a preference for Tamarack bogs (Servos 1986). The timing of the survey restricts route options, as roads without snow cover during the late winter/early spring period (March/April) are scarce.

Weather conditions for the surveys were selected on the basis of wind speed (low), temperature (warmer than -10°C) and cloud cover (clear skies). Smith (1987) notes that the single most important weather variable negatively affecting response to song playback is wind. This was readily apparent, and as a result, the majority of surveys were completed on nights where wind speed was between 0 and 8 mph. Surveys continued until the interference from Wood Frogs (*Rana sylvatica*) and Spring Peepers (*Hyla crucifer*) was so great that it drowned out all other sounds. Surveys were generally discontinued in the first week of May.

In the days following the nocturnal audio surveys, ground searches for active nests were performed at sites where a response from a Great Gray Owl had been heard. The search method involved combing an area where a response had been heard using the compass bearing recorded during the survey (OMNR 1993).

Results

Ten routes (260 stations) were surveyed in 1993, 32 routes (676 stations) in 1994, and 27 routes (543 stations) in 1995. Great Gray Owl weekly mean response per station surveyed (all years) is depicted in Figure 1. This figure

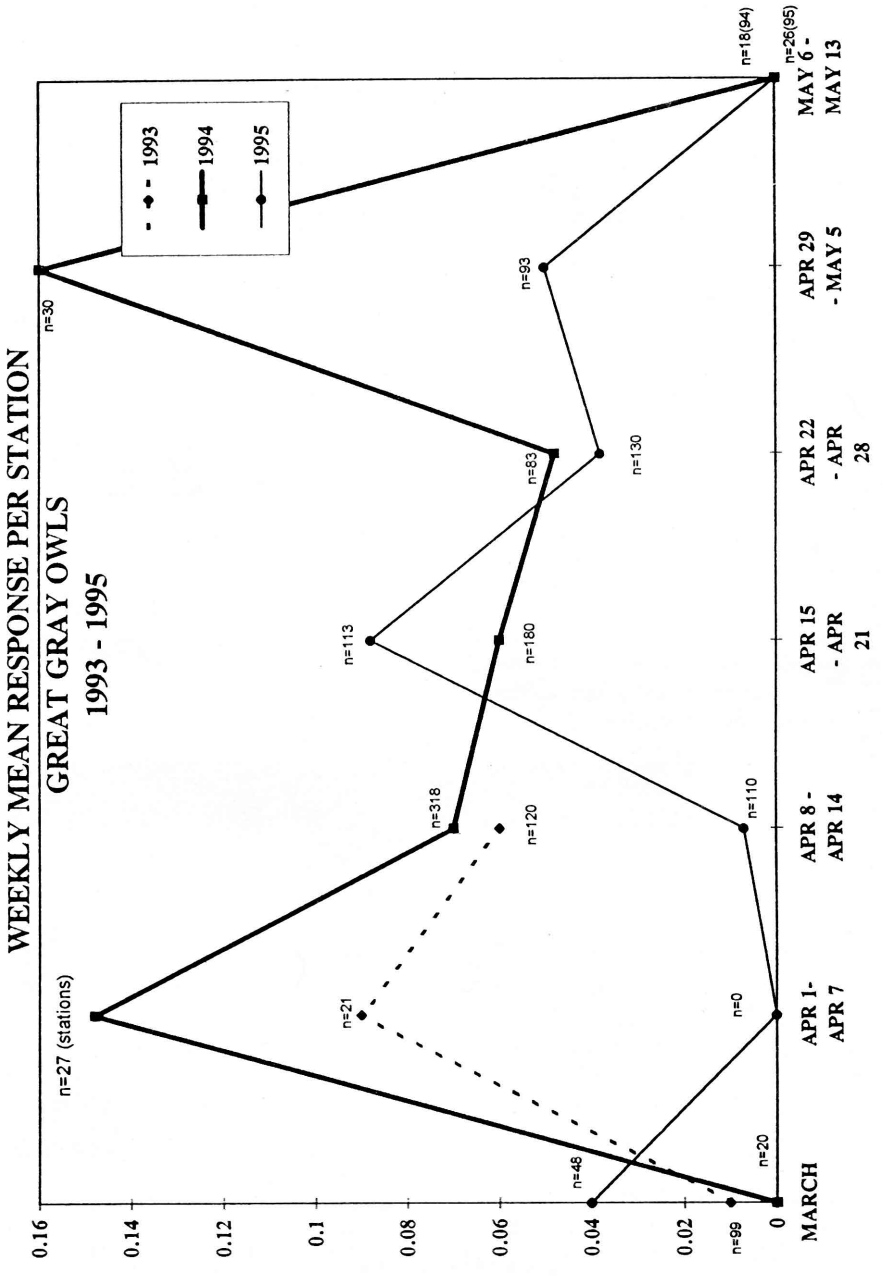
WEEKLY MEAN RESPONSE PER STATION
GREAT GRAY OWLS
1993 - 1995
n=27 (stations)
1993
1994
1995
RESPONSE PER STATION
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
MARCH
APR 1- APR 7
APR 8 - APR 14
APR 15 - APR 21
APR 22 - APR 28
APR 29 - MAY 5
MAY 6 - MAY 13
n=99
n=48
n=20
n=21
n=0
n=318
n=120
n=110
n=113
n=180
n=83
n=130
n=93
n=30
n=18(94)
n=26(95)

Figure 1

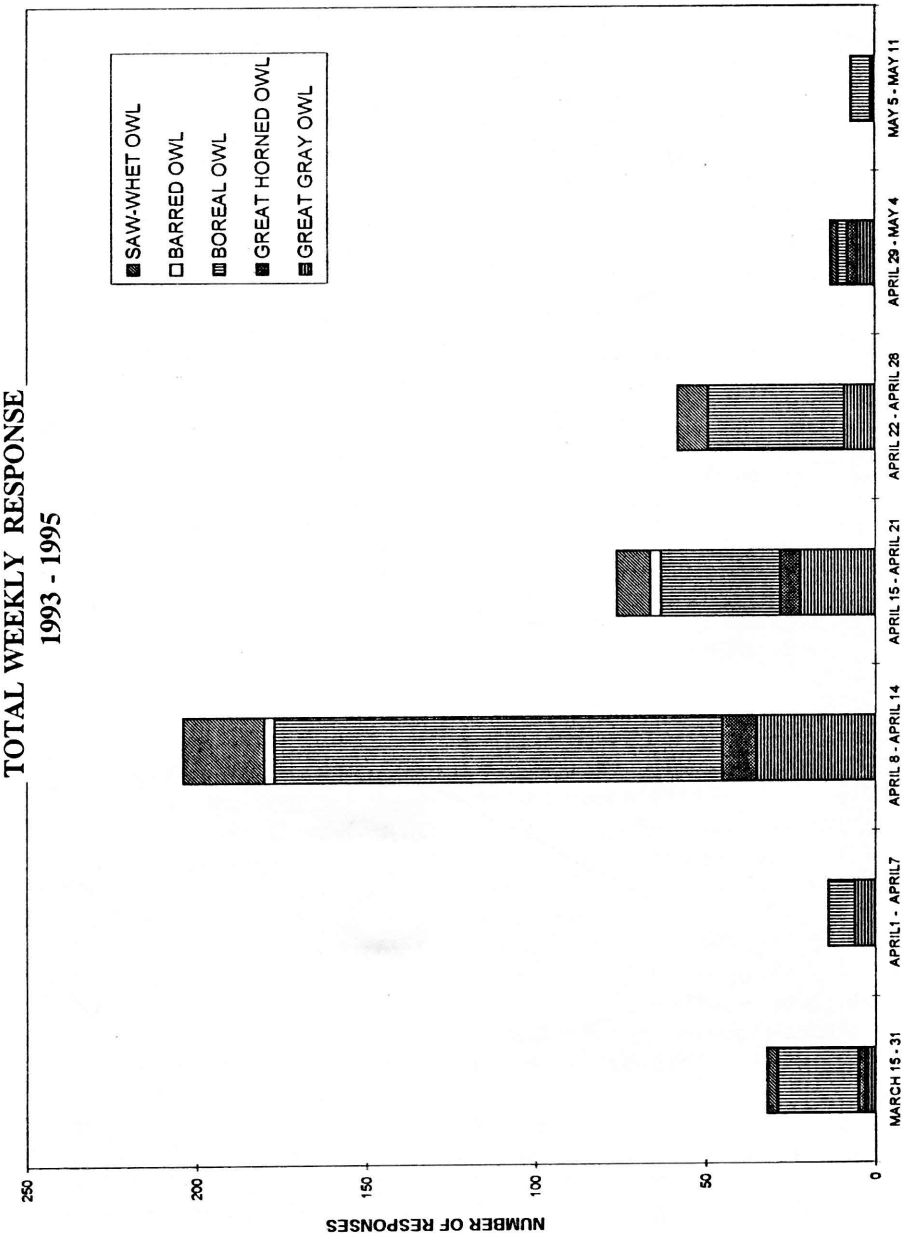
TOTAL WEEKLY RESPONSE
1993 - 1995
SAW-WHET OWL
BARRED OWL
BOREAL OWL
GREAT HORNED OWL
GREAT GRAY OWL
NUMBER OF RESPONSES
250
200
150
100
50
0
MARCH 15 - 31
APRIL1 - APRIL7
APRIL 8 - APRIL 14
APRIL 15 - APRIL 21
APRIL 22 - APRIL 28
APRIL 29 - MAY 4
MAY 5 - MAY 11

Figure 2

exhibits a varying rate of response over the survey period. Five species of owl (Great Gray Owl, Boreal Owl, Northern Saw-whet Owl (*Aegolius acadicus*), Great Horned Owl (*Bubo virginianus*), Barred Owl (*Strix varia*)) responded a total of 414 times over the three survey years. Figure 2 shows the total weekly response for all owls in all years. The figure shows a declining rate of response over the survey period.

In 1993, a solitary Northern Hawk Owl (*Surnia ulula*) was observed feeding young at a nest cavity in Balsam Poplar (*Populus balsamifera*) within the study area. An unidentified owl, displaying hunting habits of an *Asio* owl, either Short-eared (*Asio flammeus*) or Long-eared (*Asio otus*), was viewed just prior to the start of a survey route in 1995.

Of special interest were the other wildlife species heard during the surveys. Timber Wolves (*Canis lupus*) appeared to howl in response to the recordings. The extensive drumming of Ruffed Grouse (*Bonasa umbellus*) was heard late into the night and geese were often heard on their trek northwards. In late April, the arrival of Common Snipe (*Gallinago gallinago*) in the study area caused some confusion with less experienced surveyors, as its call is quite similar to that of the Boreal Owl. On a number of occasions, Boreal and other larger unidentified owls silently dropped in for a close inspection of their investigators, causing them to quickly drop their heads when a shadowy figure appeared at very close range!

Responses that proved to be from nesting pairs of Great Gray Owls occurred before 14 April (31 March, 5 April, 13 April) in 1993, and 21 April (12 April, 20 April) in 1994. Although some of these nests were discovered later in April (25-29), the compass bearings of the responding Great Gray Owls, recorded at the time of the survey, were comparable to the search direction to the nest taken from the same survey station.

Discussion

At this time we have not isolated an "optimal survey window" as our results show that Great Gray Owls respond with a high degree of variability throughout the survey period (Figure 1). This variance could be a result of survey effort, weather conditions, abundance and/or an individual's response pattern. Although the response rate from all owls shows a weak decreasing pattern towards the end of the survey period (Figure 2), the same variables may affect response.

The mean date of clutch initiation for Great Gray Owls in southeastern Manitoba is 5 April (Bull and Duncan 1993). After this date, Great Gray Owls may not defend their territory as strongly (J. Duncan, pers. comm.). This may result in fewer responses to an audio call-back survey. Most responses, later proven to have originated from nesting pairs, occurred earlier in the survey period. Responses heard later in the survey period may have been produced by: non-breeding birds, males defending their territory (perhaps a distance from the nest), or courting birds that had not yet paired.

It was assumed that the mean clutch initiation date in Red Lake would approximate that of southeastern Manitoba. Efforts will continue to define the mean clutch initiation date for our study area. Once determined, this date

YEAR	NEST HABITAT DESCRIPTION	NEST TREE	NEST DESCRIPTION	NEST HT (metres)	REPRODUCTIVE SUCCESS
1993 * RL01	Black spruce/jack pine and poplar mixed wood (100yrs)	Dead poplar	stick nest in main crotch of tree	20	2 Fledglings **adult female & two fledglings banded**
1993** RL02	Jack pine/poplar/black spruce mixed wood ('91 blowdown)	Dead poplar	depression in top of broken off snag (tree snapped in half)	5.6	2 Fledglings 1 chick found dead at bottom of nest **two fledglings banded**
1993 RLO3	Black spruce/jack pine mix	Dead poplar	depression at top of broken off snag (top half of tree snapped off)	10+	2 Fledglings **adult female & two fledglings banded**
1993 RL04	Mixed wood ('91 blowdown)	Live jack pine	stick nest in main crotch of tree	18+	Nest failed 1 egg found at the base of the nest tree **adult female banded**
1993 RL05	Mixed wood ('91 blowdown)	Dead poplar	depression at top of broken off snag	6	unknown
1994 RLO6	Jack pine/black spruce mix	Dead jack pine	witches broom at top of tree	7.6	2 fledglings **banded adult male**
1994 * RL07	Mixed wood	Dead jack pine	witches broom at top of tree	8.6	unknown (at least 2 fledglings) **banded 2 fledglings**

* RL01 nest tree fell over in 1994. Pair relocated to RL07.
** RL02 vacant in 1994. Re-occupied in 1995.

Table 1: Great Gray Owl nests discovered in the Red Lake District 1993-1994.

YEAR	NEST LOCATION AND HABITAT	NEST TREE	NEST DESCRIPTION	NEST HT (metres)	REPRODUCTIVE SUCCESS
1964	**Cochrane** Mature Aspen	unknown	unknown	unknown	2 Fledglings
1976	**Thunder Bay** Poplar/white birch/jack pine	Live poplar	stick nest in crotch of tree	20 - 25	unknown 1 young observed in the nest
1977	**Kenora** Aspen stand	Live poplar	stick nest in main crotch of tree	20	unknown 1 young observed in the nest
1980	**Moosonee** Tamarack/black spruce fen	Live tamarack	man-made stick nest placed at the top of the tree	5	uknown 3 eggs in the clutch

Table 2: Accounts of historical nest records for Great Gray Owls in Ontario.
From: the Ontario Nest Records Scheme, Royal Ontario Museum.

may assist us to focus our efforts in order to increase the probability of receiving responses from nesting pairs and therefore document additional nests. In Red Lake, we are somewhat later than southern Manitoba in heralding the arrival of spring. Most roads in this area are not available to survey due to snow cover before 10 April. Assuming that the clutch initiation date (southeastern Manitoba) of 5 April is accurate for our area, when we receive a response from a paired female, there may be a good chance it will be sitting on a nest.

Nest Searches

The observations recorded during the 1993 nocturnal survey resulted in the discovery of four Great Gray Owl nests (Table 1). In all, five nests were discovered in 1993. In 1994, two new nests were found. A nest first documented in 1993 was re-occupied in 1995. All nests have been documented with the Ontario Nest Records Scheme (O.N.R.S.) at the Royal Ontario Museum, Toronto.

Three of the seven nests observed were located in the depression of a poplar snag. A severe windstorm in July 1991 resulted in the blowdown of 165,000 ha of forest (including a large part of the study area), flattening trees and snapping them off at mid-height. The result of this storm has made available additional nest sites from which Great Gray Owls can choose.

Historical Nest Records

Prior to the location of seven active Great Gray Owl nests in the Red Lake area, only four nests were on record for Ontario (Table 2). Family groups of Great Gray Owls were reported in three blocks during the Ontario Breeding Bird Atlas Project (Prevett 1987), but no nests were found. Following the atlas, one adult and three fledgling Great Gray Owls were observed in Algonquin Provincial Park in 1989 (Forbes et al. 1992), but a nest was not located.

Conclusions

This survey garnered a great deal of response from five owl species, and once standardized, may well be an effective tool for monitoring long-term trends of specific owl species. For our purposes, this survey has proven to be effective in locating Great Gray Owl nests. We hope survey efforts will continue in order to achieve a better understanding of suitable Great Gray Owl nesting habitat.

Acknowledgements

The authors would like to acknowledge the support of Mark Sobchuk, Area Supervisor of the Pakwash Area, OMNR. His openness to new ideas allowed this work to take place. A large thank you goes to the staff of the Pakwash Area, R. Drew, L. Macmartin, B. Hopkins and J. Huybers, numerous OMNR staff and the many volunteers of the Red Lake Field Naturalists Club, Red Lake and District High School, and other interested individuals, who spent long, sometimes cold nights with their night senses tuned for evidence of owls. We cannot exclude Jim and Patsy Duncan, who were and continue to be an immense help with questions, equipment, opinions and their never ending support. Thanks also goes to longtime owl researcher Dr. R. Nero, who answered our initial inquiry and directed our enthusiasm to the Duncans. Additional funding and support has

come from World Wildlife Fund, James L. Baillie Memorial Fund and the Community Wildlife Involvement Program (CWIP). Finally, thank you to Mark Sobchuck, Ron Tozer, Ron Pittaway and Bill Crins for their review and suggestions for this article.

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Yellow-throated and Solitary Vireos in Ontario: 2. Arrival of Females

by
Ross D. James

Arrival of a female

There are several changes in the behaviour of a male vireo when a female arrives on a territory, so that it is very apparent what has happened. Even when you cannot actually see this, you can hear it clearly. I have not actually witnessed the moment of appearance of a female in front of a male. But, I have been present nearby a couple of times with each species to hear the events when a female arrived, and within a minute or two was able to see what was transpiring. On several other occasions, I have returned to territories where males had been unmated fewer than 24 hours previously (and probably only an hour or two previously), and newly formed pairs were not yet building a nest. A few other times with each species, nest building had already started, although the males had been unmated 24 hours previously.

In these two species, the male's first reaction to a female definitely is one of courtship and not aggression. I once saw a silent Solitary Vireo (*V. solitarius*) appear suddenly before an unmated singing male. The singing bird immediately began a courtship display. Then, when the silent bird apparently did not make the appropriate response, it was chased, weakly at first and then more strongly out of the area. Only then did the newcomer sing to reveal its sex as male.

A territorial male might be expected to chase any other similar looking vireo from his territory as often happens in other species of songbirds where the sexes are similar looking. But, in some way as yet unknown, the female Yellow-throated (*V. flavifrons*) and Solitary Vireos are able to indicate their sex. The males almost instantly change behaviour from that of singing territorial birds to courting birds. Each stops his persistent singing and begins to give the same sort of display he gives immediately prior to copulation, although not as prolonged or complete from what little I have been able to hear and see. He flies back and forth between displays, excitedly calling with contact calls, trills and soft *cheee* calls in front of the newly arrived female.

After the initial contact and courtship displays by the male, the focus of displays shifts very quickly to the male's chosen nest sites (James 1978). The male flies to one of his chosen nest sites and begins to sing quickly. If the female does not come soon, he flies back toward her singing and calling, and then immediately returns to a nest site. He will sing and give more trills and *cheees*, until the female comes close to him. As soon as she arrives, he begins to give a nest building display. This is a ritualized display in which he does not have any nest material in his beak, but goes through motions that now only vaguely resemble nest building (James 1978). Instead of, or prior to, his nest building display, sometimes he may again give a precopulatory display.

As he displays, the female will supplant him at the nest site (she flies in

and lands right where he was). He hops to one side only 20 to 30 cm away and continues to give his nest building display, rapidly and vigorously. At this time, of course, there is no nest below him, but he is obviously doing the same thing he was doing over the nest site.

The female will hop back and forth a few times and examine the site. She may manipulate some material if there is any there. After a brief examination that may be only 5 to 10 seconds, she leaves. The male hops back to the nest and continues the nest building display. But, as the female moves away, he stops displaying. If he has a second site, whether there is any nest material there or not, he immediately flies there and the sequence is repeated. Male Yellow-throated Vireos will fly to a third and fourth site if available, and Solitary Vireo males may fly back and forth between two sites, or may fly to a third site (that I was previously unaware of). But, for five or ten minutes, males excitedly fly back and forth, giving courtship or nest building displays as appropriate, each time the female approaches.

Following this initial flurry of activity, the pair forages about together exchanging contact notes. After a short while, the male will again return to one of his chosen sites and the same events will take place. He may also start to examine crotches wherever he happens to be as they forage together. The female may also supplant him at such times, and he begins to display as if at a chosen site, but his display is not likely to be as pronounced or prolonged.

If a male had no apparent prechosen sites, however, he might display at almost any site he had found that could have been an appropriate crotch. I have even seen displays at what appeared to me to be rather inappropriate places, the display probably being more important than the site during the early contact period at least.

Right from the start then, the males use courtship behaviour rather than an aggressive response. I have very rarely observed males chasing a female on the first day together. When seen, it is more likely an outlet for aggressive energy than an attempt to chase off another bird, as is a type of chasing that may be seen later. Since the males use courtship at the beginning of the relationship, it is also likely that the females use a courtship display or a courtship-like response to identify their sex, so that they will not be chased.

When just pairing, the females are very sensitive to any disturbance. If I have been close enough to observe the behaviour, she has likely seen me and that has been enough to cause her to go and look elsewhere for a mate. In every instance, except for one Solitary Vireo pair, where I found one or more nest starts of the male, the final nest was at a place where I did not find a preselected nest start. I do not know whether this was because I did not find the sites before, whether they abandoned all nest starts I had found because of my presence when they were pairing up, or if the males' nest starts only serve for display purposes anyway.

In a couple of instances where I observed no nest building before the female arrived, the pair had chosen a site and was building a nest within 24 hours. This suggests that even if a male does not begin building before a female's arrival, probably he has one or more sites chosen already.

Where nest sites have been preselected, the males of both species will be seen carrying nest material, usually within an hour of the females' arrival. They take material to a nest site and again begin to call and display when the female comes near the site. Although I have not observed females carrying nest material at this very early stage, presumably she can influence the selection of the site, by either coming and showing an interest there, or by refusing to come back to it, in which case the male will soon abandon it. But again, I am uncertain just how the final nest site is decided, as my presence near a selected site causes it to be abandoned.

Other behaviour changes

With both species, once a pair has been formed, the male and female stay very close together throughout the day. At this early stage, it is probably important to successful pair formation, as the birds become familiar with each other. Right from the time a female arrives, the male is seen "fluffing" (James, in prep.). He raises all his body feathers somewhat, as if he were cold (see Figure 1). After each flight, when feathers are sleeked, he can be observed fluffing his feathers again. This makes him look somewhat larger than the female that does not do this at this time. On the day of pairing, all the time he is with the female, he will maintain this fluff (except when involved in another display). The fluffing rather quickly wanes and vanishes within the first couple of days of early nest building. When seen after the first day, it tends to last for short periods only. While the function of fluffing is unclear, it probably serves to enhance the male's apparent size, and hence his attractiveness to a female.

Much more obvious is a sudden change in singing. When unmated, males sing continually at a fairly rapid rate. Suddenly, they literally almost cease to sing, except as it is associated with specific displays at a nest site. The total amount of song heard once mated is perhaps only 20 percent of what it was when he was unmated (James 1984). Contact calls become the predominant means of communication within the pair, and territorial defense is usually minimal anyway.

Difficulties

The reader should appreciate the challenges in gathering the preceeding observations. In a wooded environment, with the birds tending to remain high in trees and on the move, it can be difficult to see them most of the time. Nest sites of Yellow-throated Vireos are typically also high in the trees and readily obscured by leaves. Even when fully formed, nests may be difficult to find. Then, one has to find unmated birds and follow them daily hoping to be present when a mate shows up. But, you have to remain far enough away and unobtrusive so that the birds do not abandon their territories or newly arriving consorts. This makes it difficult to observe subtle behaviours. It can take several years of patient observing before being fortunate enough to get one chance not only to be present on the right day at the right time, but also to be in a position to see what is happening, and hopefully without having to move about making your presence obvious, probably destroying any chance you have to get follow up observations. Hearing it happen is considerably easier, and more frequent once you figure out what is going on, but doesn't provide as many details.

Figure 1: Drawn from a slide of a Solitary Vireo, in the company of a female shortly after pairing, this shows a *fluffing* display in which all body feathers are just slightly erect, making the bird appear somewhat larger, but not aggressive.

Discussion

Among most species where males and females have similar plumage, it would not be surprising that a territorial male might at first treat an arriving female as a potential rival. Only by having a different behaviour can she communicate her intentions. In some species, such as thrushes of the genera *Catharus* and *Hylocichla*, it may take as long as a week for a female to overcome male aggression (Dilger 1956). Even among vireos, initial chasing of females seems to be normal to some extent, and has been described as violent for several species (Barlow 1962, Lawrence 1953, Howes-Jones 1985, Barlow and Rice 1977).

The initial courtship responses of male Yellow-throated and Solitary Vireos, and essentially immediate recognition of a female by some means, appears to be characteristic of only these two species among the vireos. However, more detailed studies of other vireos may reveal allied behaviour in additional species. But, it allows these two species to begin nest building within a few minutes or at most a few hours of the formation of a pair.

The behaviour of birds during initial contact is very important in getting a mate of the right species and in coordinating activities in order to avoid wasting time and energy in unproductive nesting attempts. The use of courtship

displays right at the start would seem to be a way of ensuring mating with an appropriate partner. The precopulatory displays of these two species are somewhat different and certainly display vividly different plumage colours (James, in prep.).

As important as courtship displays at the time of pairing, however, are the ritualized nest building displays. These displays are unknown among any other vireo species (James 1978). Although further studies of other species are needed to verify that they are unique to the Yellow-throated and Solitary Vireos, the nest building display is also given later during nest building and is given rather conspicuously. There seems to have been considerable opportunity to have seen it, if it was present in other species.

It cannot be said that males with preselected nest sites are more successful at getting mates than those without. Even if I could not detect a prechosen site, the male may have had one or more, and my presence near nest sites at the time of pair formation would undoubtedly have influenced the ability of a male to attract a female.

Since most males of both species appear to preselect sites, I would think they are important at least in pair formation. And, given that males often spend considerable time searching for and examining crotches prior to the females' arrival, and that nest building is often under way within 24 hours of the female's arrival, I suspect they are also important as potential nest sites. My inadvertent interference has probably prevented their more widespread use as final nest sites.

Although most male Yellow-throated and Solitary Vireos preselect nest sites, the female may still influence the final site selected. They could presumably indicate their willingness to accept a preselected site as easily as indicating a later site that the male begins to build. Graber (1961) also felt that female Black-capped Vireos (*V. atricapillus*) chose the final site, although males may preselect. Among Bell's Vireos (*V. bellii*), where the males do most if not all of the initial nest building, Barlow (1962) also felt that the female chose the site. Quite likely the females have an influence on the final choice of site in all species.

Apparently, it is normal among many species of songbirds to have a marked reduction in the amount of primary song once a pair has been formed (Catchpole and Slater 1995). Its function in attracting a potential mate is no longer needed. A similar reduction is probably to be expected among most vireos, except those such as the Red-eyed Vireo (*V. olivaceus*), where the males take no part in nest building. However, the fluffing display used by both Yellow-throated and Solitary Vireos is another behaviour that is not known in any other vireo. It is another display that helps to indicate the close relationship of these two vireos.

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Trumpeter Swans in the Kenora District of Ontario

by

Lillian J. Anderson, Harry G. Lumsden and W. Bruce Ranta

Introduction

Efforts to restore Trumpeter Swans to their former range in the mid-west and Great Lakes Region started in 1962 at the Lacreek National Wildlife Refuge in South Dakota. In 1966, Hennepin Parks in Minnesota started their program followed by the state of Missouri and Ontario in 1982. The Departments of Natural Resources in Michigan and Wisconsin began their projects in 1987, Iowa in 1994, and Ohio in 1996.

Pioneering swans from the Lacreek NWR have colonized the Porcupine Forest in Saskatchewan, and Minnesota birds have started to breed in the Kenora area of northwestern Ontario.

Released Trumpeters are usually colour marked so movements can be traced. Minnesota uses orange wing tags with three black digits. Wisconsin uses yellow neck collars. Michigan birds are marked with green wing tags and Ontario stocks carry yellow wing tags. There has been substantial wild reproduction from released birds over the years and many offspring carry no markers. Marked Minnesota and Michigan swans have been recorded in southern Ontario and unmarked Trumpeters have also been recorded by reliable observers.

Trumpeter Swans in the Kenora area of Ontario

David Schneider, a local baitfisherman, found swans nesting in the English River system in four consecutive years. In 1993, he brought these sightings with confirming photographs to the attention of Bruce Ranta and Lil Anderson of the Ontario Ministry of Natural Resources

staff in Kenora. He had seen a single pair of swans with cygnets each year from 1989 to 1992. During this period they had used two different lakes.

In 1993, Lil Anderson and Bruce Ranta visited the small lake where the swans were seen nesting in 1992. The nest site was found, scattered with eggshell debris, but there was no sign of the swans. The nest, located in a small lake influenced by the English River system, had its edges flooded during abnormally high water levels the previous fall. It seemed in good repair and it was not clear whether the nest had been used in 1993, or if it had just survived the flood waters well the year before.

Although the area was flown by helicopter extensively that year, there was no sign of the swans. There was, however, a report in June of a pair of swans with 4 mallard-sized cygnets on a creek 30 km west of Kenora. Bruce Ranta and Mike Dawe were able to photograph one adult but were unable to locate the other birds. They saw a silver coloured leg band on the left leg of the bird but were unable to read the identifying numbers.

In 1994, while on compliance monitoring, Lil Anderson and Joan Sauve found a pair of Trumpeters with 7 cygnets swimming near, and preening on, a well defined nest easily visible from a logging road. This location was some 3.5 km northwest of the 1992 nest site.

It was observed that one adult had an orange patagial tag. Later that year, Lil Anderson was able to determine the number on the tag to be #125. This proved to be a female, hatched in 1988 in the Brookfield Zoo in Chicago. It had been released at Field Lake in Minnesota in 1990 (S. Kittleson, pers. comm.). This indicated that these were indeed a different pair from those nesting in 1989, or at least the female was different.

When these birds were videotaped in October 1994 by the owner of Regional Logging, Doug Anderson, it was apparent she had lost her wing tag. This marked female, according to Steve Kittleson (Minnesota DNR) had been recorded on her wintering grounds at a reservoir on the Ottertail River southeast of Fargo, Minn. In 1991, she was accompanied by four cygnets, in 1992 by five, and in 1993, when she had not been recorded on her breeding area in Ontario, by six. By the fall of 1994, she had lost her wing tag and it is not known if her 7 cygnets survived after they were last seen in October.

In the fall of 1994, shortly after videotaping the swans and cygnets preening on a small beaver pond connected to the nesting lake, Doug Anderson continued up the road to a nearby cutover near the lake where the 1992 nest was found. He reported that he went to investigate a loud trumpeting sound on the little lake and saw 4 or 5 adults and many cygnets, most of which were in the tall grass along the shore. The strong winds of the day made an accurate count impossible, but the loud trumpeting sounds could be heard at a distance despite the winds.

On the same lake that Lil Anderson had reported the 1994 nest and brood of 7 cygnets, Doug Anderson reported in June of 1995 that the swans were back and had 5 cygnets.

The 1995 Aerial Survey

To determine the breeding status, distribution and habitats occupied by Trumpeters north of Kenora and to

complete the continent-wide inventory of Trumpeter Swans which is carried out every five years, Harry Lumsden, Bruce Ranta and Lil Anderson planned and completed a survey in the Kenora area in July of 1995.

Due to constraints on funds, an aerial survey could not be carried out using Ontario Ministry of Natural Resources Kenora District funds. The Endangered Species Recovery Fund cosponsored by the Canadian Wildlife Service of Environment Canada and World Wild-life Fund (Canada) provided a grant of $800 toward the hire of an aircraft for an aerial survey. The remainder of the cost ($865.58) was paid by Scott Paper Ltd. through the Wye Marsh Wildlife Centre.

A 320 km^2 study area was selected on an area with relatively deep soils for the region and containing most of the water bodies on which Trumpeter Swans had been reported in previous years. Flight lines were spaced 1 km apart and flown at 120 m in a Bell "A" star 350 B2 Helicopter at 150 kph on 19 July 1995. The machine was rented from MNR and crewed by Ted Hill (pilot), with Lil Anderson, Bruce Ranta and Harry Lumsden as observers.

A brood of five cygnets was found and photographed, believed to be the brood Doug Anderson had seen in June. The nest from which they had hatched was located on an abandoned beaver house situated on the shore of a small island. The cygnets were well grown and no wing tags were visible on the adult pair.

Six kilometres from the western boundary of the search area, a pair of Trumpeters was seen by Doug Anderson in October. He knew these to be a different pair from those with the five cygnets, as the original pair and brood had been seen feeding on grass in a cutover east of the nesting lake.

There were, therefore, at least 9 Trumpeter Swans in the summer of 1995 in the English River drainage north of Kenora.

Habitat

i) soils

The breeding distribution of herbivorous waterfowl such as swans and geese seems to be governed by the availability of calcium (Lumsden 1984). The area in the Kenora District occupied by Trumpeters lies in the bed of glacial Lake Agassiz, a granitic area with lakes in which Ryder (1964) found high calcium carbonate levels.

In the English River drainage system, the nesting Trumpeter Swans are using an area with a relatively deep overburden within which the boundaries of the study area are located.

Soil samples were collected on the north shore of the known 1995 nesting lake. This area had been mapped as a shallow ground moraine over granite bedrock which is terraced, sloping and dry (Neilson 1979).

Table 1 summarizes the analysis of these soil samples carried out by the Department of Land Resource Science, University of Guelph. Although the soils are acidic, sandy and gravelly with a very low agricultural capability (Ministry of Natural Resources 1981), the calcium levels are comparable to those found in agricultural soils in Southern Ontario.

ii) nest sites

a) 1989 nest site

The 1989 nest site was never visited on the ground, but was identified during an

aerial survey. It appeared to be situated on an old beaver house surrounded by water in a small pond directly connected to the English River system. It had retained its shape and integrity as late as 1995.

The waters were quite dark and tannic with floating vegetation visible from the air.

b) 1992 nest site

The 1992 nest site was composed of a large mound of silt and rotting vegetation piled up, likely on an old beaver house. This mound was separated from land by a silty mud flat that had been underwater during major flooding that took place on the English River system the previous fall.

The wide creek that connects this small lake with the English River system has dense areas of emergent, submergent and floating vegetation.

The lake itself has small bands of emergent vegetation and grasses, with small areas of submergent vegetation seen along the shore.

c) 1994 and 1995 nest site

The nest site used in 1994 and 1995 was on the northwest side of a small island which is separated from land by a narrow channel. It too is a large mound of mud, rotting vegetation and sticks on top of an old beaver house set out slightly from shore.

This is the largest of the three lakes where swans are known to have nested. The first two were approximately 20 and 40 ha respectively, compared to over 200 ha for the latter. They are all relatively shallow and have muddy, silty shores and lake bottoms.

The lake has not been surveyed and depths are unknown but presumed to be relatively shallow. A weed bed is visible from the air in the northwest bay in which the swans were feeding when discovered. Average depth is likely less than 3 meters. Efforts to gain more information on this lake have been curtailed in order not to disturb the nesting birds. The channel between the shore and the island is shallow with an extensive mat of submergent, aquatic

TABLE 1: Nest location soil data.

Collection Site	pH	P mg/L	N mg/L	Mg mg/L	Ca mg/L
1	5.4	8	92	191	1961
2	5.4	8	175	457	2137
3	6.5	4	217	1310	4033
4	5.0	5	93	245	750
5	5.5	3	120	710	2369

vegetation. The shorelines have dense sedge growth.

iii) forests

The forests around the 1989 nest site had been harvested in the 1950s and regenerated in a mixed coniferous/ deciduous forest dominated by Black Spruce and Balsam Fir. These soils are classed as relatively deep and productive (Forest Resource Inventory Site Class 1).

The forest around the 1992 nest site was in the process of being harvested at the time of nest discovery. Much of the original timber consisted of dense, mature to overmature deciduous/conifer mixed woods with Trembling Aspen dominant. Areas recently harvested have been planted with conifer and some natural regeneration has likely started. Herbs and forbs have established themselves throughout the cutover.

The forest around the 1994-1995 nest site is currently being harvested. The original stands were Black Spruce dominant with Balsam Fir and Trembling Aspen. Ridges separating these stands were shallow soiled Jack Pine dominant with Black and White Spruce. The eastern and northeastern sides of the lake tended to be more Aspen dominated with Balsam Fir and Black Spruce and bedrock ridges of pine. Some recently harvested areas are planted with spruce and many are establishing a natural ground cover of herbs, grasses and forbs.

Predators

A variety of predators which have been recorded preying on Trumpeter Swans, their cygnets or eggs, occur in the area. We have no evidence, however, that the Snapping Turtles (*Chelydra serpentina*), Bald Eagles (*Haliaeetus leucocephalus*), Common Ravens (*Corvus corvax*), Great Horned Owls (*Bubo virginianus*), Timber Wolves (*Canis lupus*), Black Bears (*Ursus americanus*), Lynx (*Lynx canadensis*), Red Foxes (*Vulpes fulva*), Mink (*Mustela vison*) and Otters (*Lutra canadensis*), which all occur in the Kenora area, have preyed upon swans.

There is an Osprey's (*Pandion haliaetus*) nest near one Trumpeter nest-site. This predator has not been recorded as a predator of swans.

Disturbances to habitat

Most of the timber around the 1992 nest site has been harvested using clearcut logging, with the exception of a reserve of undisturbed vegetation of 30 to 120 m left to protect fish habitat and water quality.

The 1995 nesting lake has a secondary timber resource road within 10 m of the shoreline and in full view of the nest. Depending on the snow cover and frost conditions, this road is often not maintained in April and May due to deep clays and silts which make travel difficult. This may change as access to proposed harvest blocks to the north is required.

Approximately 50% of the surrounding stands, particularly to the north and west of this lake, were to be harvested in the 1995-1996 harvesting season. Once again, with the exception of where the road runs beside the lake, a 30 to 120 m reserve of undisturbed vegetation, with the width depending upon the steepness of the shoreline slope, will be left to protect water quality and fish habitat.

Continued timber harvesting in itself may not be a concern to the nesting birds, particularly when the operations take place during the winter months. Disruption may occur, however, when resource access roads are eventually opened for recreational use. Boat traffic, deposition of lead shot and accidental harassment of birds are potential concerns. The forest management practice of applying herbicides to harvested areas may affect the amount or suitability of forage available for the growing cygnets.

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Nashville X Tennessee Warbler Hybrids

by

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Introduction

A wood warbler specimen identified as a hybrid between the Nashville Warbler (*Vermivora ruficapilla*) and the Tennessee Warbler (*V. peregrina*) has been mentioned by Bledsoe (1988, cited by Morse 1989), Williams (1996), and Dick and James (1996), in each instance based on information I supplied. The detailed analysis of this specimen has not been published, however.

Dr. Ross James of the Royal Ontario Museum called my attention to a second specimen tentatively identified as a similar hybrid, and was kind enough to send it to me for analysis. It seems appropriate to discuss both specimens in a single paper, and the Ontario provenience of the second specimen makes this journal an appropriate publication outlet.

Materials and Methods

The first specimen, Carnegie Museum of Natural History (CM) no. 152341, a male in first basic plumage, was netted during routine bird-banding activity at the museum's Powdermill Nature Reserve near Rector, Westmoreland County, Pennsylvania (the site of the extinct village of Crisp, which is still shown on some road maps) on 26 August 1979. It was recognized as unusual and probably a hybrid Nashville X Tennessee by bander Robert C. Leberman, who summoned me to Powdermill to examine it. We collected the bird under state and federal permits, and I prepared the specimen at the Reserve. I noted testes slightly smaller than 1x1 mm, and a cranium completely clear (i.e., not pneumatized). It weighed 8.7 g and had little fat.

The new specimen is Royal Ontario Museum (ROM) 159630, a female, also in first basic plumage. It was netted, also during bird-banding operations, at Porphyry Island, near Thunder Cape Bird Observatory in Sleeping Giant (formerly Sibley) Provincial Park, Thunder Bay District, by David Shepherd, then Manager of the Observatory, on 25 August 1994. The specimen and its data were transmitted to the ROM by David Brewer, who suggested the Nashville X Tennessee parentage. The label indicates that the bird weighed 8.1 g with light fat, and had an unpneumatized cranium ("SNCO" = "skull not completely ossified").

I made comparisons of both specimens with series of Nashville and Tennessee warblers at CM, initially using only specimens on the labels of which the preparator had indicated graphically or in words the extent of cranial pneumatization, if any. Although this series sufficed for colour comparisons, it was desirable to have additional specimens to enlarge the sample for analysis of measurements. I therefore selected specimens prepared by W. E. Clyde Todd and George M. Sutton and marked "im." on the label; both of these collectors were known to me to have utilized incomplete cranial pneumatization as an ageing character for young birds.

Before combining the measurements of the two samples (those with and those without cranial data on labels), I analyzed them separately. The differences between the means of the two samples I considered to be trivial, and influenced by the small size of the individual samples. Thus the mean wing length for 6 male Nashville Warblers with cranial data was 59.2 mm, and for 3 without such data 58.2 mm. For the combined series of 9 the mean was 58.8. For the Tennessee Warbler samples the match was even closer; for 8 males with cranial data the mean was 65.1 mm, and for 6 without cranial data it was 65.0 mm; for the combined series of 14 the mean was also 65.0.

The colours of these warblers are subtle, so I used vernacular colour names rather than those of one of the available colour guides. As there is sexual dichromatism in both species, comparisons with each other and with the hybrids were made sex-for-sex.

Measurements were taken to the nearest 0.5 mm of the flattened wing, the tail, and the bill from the anterior point of the nostril to the tip of the upper mandible. As measuring progressed, patterns became evident such that a few specimens could be considered as almost certainly missexed; measurement discrepancies were concordant with

colour characters. Such specimens were not included, however, in the size analyses. Tennessee Warblers are distinctly longer-winged than Nashvilles, but tail and bill measurements are virtually identical.

Results

Graves (1990, 1993) has advocated a procedure of determining a pool of possible parent species for putative hybrids, followed by a process of character-based elimination. Fortunately, this determination for the Pennsylvania and Ontario hybrids is simplicity itself. The straight, sharply pointed bills of the hybrids are found among North American wood warblers only in the genera *Vermivora* and *Parula*; neither of the hybrids displays any trace of the distinctive colour and pattern of Northern Parula (*P. americana*). The only species of *Vermivora* breeding in eastern North America are the sympatric Nashville, Tennessee, and Orange-crowned Warblers (*V. ruficapilla*, *peregrina*, and *celata*), and the Blue-winged/Golden-winged Warbler complex (*V. pinus* and *chrysoptera*), to which the presumably extinct Bachman's Warbler (*V. bachmani*) appears to have been related. Again, the hybrids show no indication of the distinctive colour and pattern characters of this latter group. The Tennessee, Orange-crowned and Nashville Warblers (plus the south-western relatives of the latter) form a closely related group of species for which a new generic name will have to be found, as the genus *Vermivora* (type species *V. pinus*) as presently constituted appears to be polyphyletic (N. Klein, pers. comm.). According to the protein electrophoretic studies of Barrowclough and Corbin (1978), within the north-eastern trio under discussion, the Tennessee Warbler is slightly differentiated from the Nashville/Orange-crowned pair. The latter two, it will be noted, are characterized by an orange- or reddish-brown crown patch in males, although this is also an uncommon variant in adult male Tennessee Warblers (Dick and James 1996). Only 1 of 25 reliably sexed males of *V. c. celata* in basic plumage (both first and definitive) in the CM collection lacks at least a trace of a crown patch, and it is present in 9 of 25 females as well. Neither hybrid shows any trace of a crown patch, strongly suggestive that one of the parents was a species lacking the patch (i.e., Tennessee Warbler in first basic plumage), more persuasive for the male hybrid.

Several points argue against the Orange-crowned Warbler as one of the parents. The underparts of both sexes of *V. c. celata* in basic plumage are characterized by blurry olive-green streaks on a greenish yellow background. Neither hybrid shows any sign of ventral streaking. Orange-crowned Warblers lack any white area in the lower abdomen; such an area is present in both the Tennessee and Nashville Warblers (smaller in the latter). Both hybrids have white in that area, more in the female than in the male.

In Nashville Warblers in first basic plumage, there is an area of a richer concentration of yellow, almost orange, in the mid-breast; it is more obvious in females only because of the brightness of the surrounding area in males. There is a slight suggestion of this in some female Tennessee Warblers, but it is of a much greener yellow and is wholly

lacking in males. There is no trace of such a concentration of pigment in Orange-crowned Warblers. It is present, although subdued, in both hybrids.

For reasons outlined above, I believe that the Orange-crowned Warbler can be discounted as a possible parent of either of the two hybrids.

Comparisons between the two putative parent species and the two hybrid specimens follow. All references to the Nashville and Tennessee Warblers refer to birds in first basic plumage.

Underparts

Male Tennessees are duller (less yellow) below than females, the reverse of the situation in Nashvilles, in which the general yellow of males averages somewhat more intense than in females. In male Nashvilles, the yellow extends to the chin, whereas in females, the chin and upper throat are more buffy. The flanks are slightly brownish in females, and there is always some white on the lower abdomen. In males, the yellow extends to the flanks and there is a much smaller whitish area in the lower abdomen adjacent to the bright yellow undertail coverts. Tennessees have a much larger area of white posterior to the breast, variable in extent but greater in males. In extreme male specimens (such as CM 150579, Pittsburgh, PA, 9 September 1975), the upper breast is barely stained with greenish yellow, with the rest of the underparts (except flanks) being white. The breast and flanks of females are bright greenish yellow, duller and grayer in males.

In the male hybrid, the distribution of pigment on the underparts is similar to that of male Nashville Warblers, in that white is confined to a small area of the posteriormost abdomen; the colour, however, is more like that of the pigmented area of the male Tennessee, i.e., a more greenish yellow than that of the Nashville. As mentioned earlier, there is an area of pigment concentration on the breast that approaches the orange-yellow colour of this area in Nashvilles. The throat is paler and appears grayer than the posterior underparts, reminiscent of female Nashvilles. The short throat feathers are actually tipped with pale yellow, but the overall grayer appearance of the throat is caused by the dark gray feather bases showing through. The undertail coverts of male Tennessees are nearly pure white, lightly washed with greenish yellow; those of male Nashvilles are rich yellow. Those of the male hybrid are fully pigmented, but with a greenish yellow similar to the breast colour of bright male Tennessees.

The female hybrid has about the same amount of white on the underparts as female Tennessees, but it is faintly washed with greenish yellow. The pigment of the breast is neither as greenish as in Tennessees nor as rich yellow as in Nashvilles; it is more like the Tennessee, but duller. The chin, throat, and upper breast are continuous in colour, as in the Tennessee, rather than differentiated as in female Nashvilles. As mentioned earlier, it has the typical Nashville brighter spot in the middle of the breast. Its flanks are midway between the greenish of the female Tennessee and the browner colour of the female Nashville. The undertail coverts are like those of the Tennessee, white with a wash of greenish yellow.

Upperparts

The upperparts of male and female Tennessee Warblers, extending to the crown, are virtually identical in colour, an essentially uniform green, with occasional individuals slightly grayer. The rump is barely perceptibly brighter green in most individuals of both sexes. The upperparts of Nashville Warblers are not uniform. The midback is green (never brown as portrayed in Plate 2 of Curson *et al.* 1994), but darker and duller than in Tennessees, and slightly brighter in males than in females. This contrasts with the crown and nape, which are grayish brown, averaging grayer in males (which, in addition, have a reddish-brown crown patch). The rump is distinctly brighter green than the midback; this colour resembles the back colour of Tennessee Warblers and is brighter and more contrasting in males than in females.

In the male hybrid, the midback is nearer the colour of the Tennessee than the Nashville, but the crown is just preceptibly darker than the midback. The contrast between midback and rump is slightly greater than in Tennessees, but less than in Nashvilles. In the female, the crown and midback are essentially the same as in the male, but the rump is slightly paler, making the contrast with the midback more abrupt.

Face

In Tennessee Warblers, there is a distinct pale greenish yellow superciliary line (whiter in males), bordered below by blackish lores and a short dark postocular line. The sides of the face are of about the same greenish colour as the breast. There is no eyering. In the Nashville, the conspicuous buffy-white eyering is a well-known field mark for this species, contrasting with the gray of the sides of the face (browner in females). The lores are pale, only slightly darker than the eyering, and there is no dark postocular line. In some specimens there are a few pale feathers, mostly concealed, at the upper posterior corner of the eyering.

In the male hybrid, the sides of the face are nearest the Nashville in colour, but slightly greener. The eyering is exactly like that of the Nashville, but in addition there is a caudad extension of about 5 mm from the upper edge of the eyering, just where the Tennessee has the posterior portion of its superciliary line. The lores are not differentiated from the general face colour, resembling the Nashville in this. The face of the female hybrid is similar, but the caudad extension at the top of the eyering is shorter (about 4 mm).

Wings

In both sexes of the Tennessee Warbler, the greater secondary coverts are tipped with greenish yellow or whitish, forming a usually inconspicuous wingbar; it is fairly obvious in some and virtually absent in others. In a very few the median coverts are also tipped, such that there are two quite distinct wingbars (cf. CM 150579, Pittsburgh, PA, 9 September 1975, and CM 166706, Youngstown, OH, 25 September 1982, both male TV tower kills). A similar range of variation is found in Nashville Warblers, except that the spots on the greater coverts, if present, are white and spots are rarely if ever found on the median coverts. In the male hybrid, there are minute yellowish tips on the greater coverts that would quickly disappear with wear. The yellowish tips are more conspicuous in the female.

Measurements in millimetres

Nashville Warbler:

Males (9)	Females (13)
wing 57.5 - 60.5 (58.8) sd 0.968	53.5 - 59.5 (56.9) sd 1.635
tail 40.5 - 46.5 (43.2) sd 2.151	37.0 - 44.5 (41.0) sd 1.952
(n=8) bill 7.5 - 10.0 (8.6) sd 0.678	7.5 - 8.5 (8.1) sd 0.300

Tennessee Warbler:

Males (14)	Females (22)
wing 62.5 - 67.0 (65.0) sd 0.865	59.0 - 64.5 (61.6) sd 1.449
tail 42.0 - 45.0 (43.3) sd 0.935	39.5 - 43.5 (41.4) sd 1.158
(n=13) bill 8.0 - 9.5 (8.6) sd 0.463	7.5 - 9.5 (8.6) sd 0.549

Hybrids:

Male: wing 61.0, tail 43.0, bill 8.0
Female: wing 59.0, tail 39.0, bill 8.5

The marginal wing coverts, underwing coverts, and axillars are nearly pure white in most Tennessee Warblers (washed with greenish yellow in some). In the Nashville Warbler, these feathers are bright yellow. In both hybrid birds, these feathers are pale yellow, whiter in the female.

The wing of the male hybrid is intermediate - shorter than the shortest Tennessee, longer than the longest Nashville. The mean tail length for males of the two paternal species differs by only 0.1 mm, and the tail of the hybrid is thus 0.3 mm shorter than the mean for Tennessees and 0.2 shorter than the mean for Nashvilles. The means for male bill length are identical for the two species; the male hybrid is 0.6 mm shorter than this mean of 8.6; equal to the smallest Tennessee and 0.5 mm longer than the smallest Nashville.

The wing of the female is also essentially intermediate; equal in size to the shortest Tennessee (59) and within 0.5 mm of the longest Nashville (59.5). Its tail is 0.5 mm shorter than any Tennessee measured, and 2 mm longer than the shortest Nashville, but still 2 mm less than the mean for Nashvilles. Its bill is near the mean for Tennessees and the same size as the largest Nashville.

Discussion

In a series of papers on avian hybrids, Graves (1996 and papers cited therein) has performed rather elaborate statistical treatments of measurement data ("bivariate plots of factor scores from a principal components analysis"). These are undoubtedly useful when the parentage is controversial (as in Graves 1988), but in other instances, they simply confirm what was already obvious from plumage characters as well as raw measurement data. I believe the case for the parentage postulated for the two specimens reported herein is strong enough not to warrant devoting the time and space for the additional analytical procedures.

These specimens apparently constitute the first intrageneric hybrids within *Vermivora* as that genus is presently constituted, other than those between the Blue-winged and Golden-winged Warblers. There are no other hybrids known in which the Tennessee Warbler is one of the parents; the Nashville Warbler is one of the putative parents in the first known "*Vermivora*" X *Dendroica* hybrid (Parkes, in prep.).

Acknowledgements

I am indebted to Ross James for calling my attention to the Ontario specimen and arranging for me to borrow it and to study it for publication. He read the first draft of this paper, and had several useful suggestions for its improvement.

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Notes

Unusual Nesting of the Swainson's Thrush

by

Ron Tozer, Dan Strickland and Doug Tozer

On 4 June 1994, while conducting an early morning Forest Bird Monitoring Project (FBMP) survey, near Canisbay Lake (Canisbay Township, Nipissing District) in Algonquin Provincial Park, Strickland discovered an unattended, active nest at Station B. The nest contained a single egg of the Swainson's Thrush (*Catharus ustulatus*), showing the distinctive pale blue background blotched with brown (Godfrey 1986). An adult Swainson's Thrush was observed sitting on the nest on 17 June, and the nest contained one egg and three young on 18 June.

Figure 1: Swainson's Thrush nest in deciduous forest. Photo by *Doug Tozer.*

Figure 2: Swainson's Thrush nest on bracket fungus. Photo by *Doug Tozer*.

Strickland has heard singing Swainson's Thrushes regularly in the mature hardwood forest of the "Canisbay Hardwoods" FBMP site during annual surveys since 1989. Although to be expected in this habitat, the Wood Thrush (*Hylocichla mustelina*) has been notably absent.

Description

The nest was located in pure deciduous forest consisting primarily of Sugar Maple (*Acer saccharum*), with some Yellow Birch (*Betula alleghaniensis*) and American Beech (*Fagus grandifolia*), typical of the Great Lakes - St. Lawrence Forest (Rowe 1972). Sugar Maple saplings were numerous under the large trees (Figure 1). There were no coniferous trees visible from the nest site. An area of moist seepage was located near the nest tree.

The nest was placed on top of a small bracket fungus (*Polyporaceae*) growing on the trunk of a large Sugar Maple (50 cm in diameter), at a height of two metres (Figure 2). The nest itself was of typical construction for Swainson's Thrush, being a "bulky, well-made cup" formed of grasses and other plant stalks, with "lengths of vegetation trailing . . . below the main structure" (Peck and James 1987). The nest dimensions were: outside diameter, 14 cm; inside diameter, 7.5 cm; outside depth, 10 cm; and inside depth, 4 cm. These measurements fall within those reported for Swainson's Thrush nests

in the Ontario Nest Records Scheme (Peck and James 1987).

Discussion

Swainson's Thrush has been reported to nest typically in habitat with a coniferous element (Harrison 1975, Sadler 1987), rather than deciduous forest. Of 65 Swainson's Thrush nests reported in Ontario, 59 (91 percent were in mixed or coniferous woods, with only 6 nests in deciduous forest (Peck and James 1987). However, in extreme northwestern Ontario, Swainson's Thrush was most "abundant in deciduous scrub" (McLaren and McLaren 1981), and Godfrey (1986) characterized its typical habitat as "deciduous tall shrubs".

Bent (1949) noted that Swainson's Thrush nests were "almost always in small trees where the forest growth was more or less dense", and Peck and James (1987) described typical nests as being in small diameter conifers in "dense woods and thickets" in "wet areas such as bogs and swamps". Swainson's Thrush typically occupies coniferous forest fringes around lakes in Algonquin Park. These conditions are markedly different than those of the Canisbay nest.

Only 36 (30 percent) of 121 Ontario Swainson's Thrush nests were placed in deciduous trees and shrubs, with 70 percent in coniferous trees (Peck and James 1987). In addition, Peck and James (1987) did not report Sugar Maple as a nest tree used by this species in Ontario.

Swainson's Thrushes commonly build their nests in crotches, or on two or more horizontal branches near the trunk (Bent 1949, Harrison 1975, Peck and James 1987). In the literature we examined, only one nest, described as being in "an open cavity in the side of a standing tree", appeared even somewhat similar in placement to the Canisbay Swainson's Thrush nest (Peck and James 1987).

This Swainson's Thrush nesting was very unusual for its forest type location, the size and species of the nest tree, and the nest placement. Details have been provided to the Ontario Nest Records Scheme.

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Ron Tozer, Spring Lake Road, R.R. 1, Dwight, Ontario P0A 1H0

Dan Strickland, Oxtongue Lake, R.R. 1, Dwight, Ontario P0A 1H0

Doug Tozer, Spring Lake Road, R.R. 1, Dwight, Ontario P0A 1H0

An Ivory Gull in Renfrew County

by
Bruce M. Di Labio

On 11 November 1995, at 1430h, Manson Fleguel of Pembroke noticed a white object floating on Lake Doré, Renfrew County, approximately 100 m offshore. At first, he thought it was simply a plastic bottle but upon closer examination with his binoculars, he realized it was a white gull with black smudge markings on its face. Consulting his National Geographic Guide, he identified the bird as a first winter plumaged Ivory Gull (*Pagophila eburnea*). Knowing it was a rarity, he contacted two local birders, Chris Michener of nearby Golden Lake and Ken Hooles from the Pembroke area. The Ivory Gull then disappeared and was not seen again until 1630h when it appeared at a distance working its way along the shoreline. With its close proximity to the observers, an excellent view of the bird was attained.

The following morning, the bird was first observed at dawn by Bill Lindley of London, Ontario. By 0810h, I arrived at a cottage on the northwest corner of the lake and, with a small group of birders, observed the gull resting on the water approximately 50 m offshore. Knowing that Ivory Gulls are somewhat tame, and having previously fed them in Salisbury Beach, Massachusetts and Montreal, Quebec, I brought a can of cat food in hopes of attracting the bird closer to the observers. It took only minutes for the bird to detect the bait, at which point it landed on target (Figure 1) and began to consume the cat food. The Ivory Gull was quite content despite our close proximity; however, it was wary of the Ring-billed Gulls (*Larus delawarensis*) and the Common Raven (*Corvus corax*) that were circling, and guarded its meal closely. After the gull finished eating the cat food, I gutted a dead Greater Scaup (*Aythya marila*) which I had picked up at Presqu'ile Provincial Park the previous day. The duck was placed on the shoreline and within 15 minutes, the gull began to enjoy a meal of entrails, and continued to feed on the carcass for the remainder of the day.

On 13 November, the gull could still be found feeding on the duck and patrolling the shoreline along the northwest corner of Lake Doré. By late afternoon, with 20 cm of fresh snow, weather conditions were beginning to deteriorate, and the gull was difficult to locate on 14 and 15 November. Although it remained in the area, it could only be observed at a distance as overnight temperatures dropped below zero, and the shoreline of Lake Doré began to freeze, thus forcing the bird to move farther out into the lake. The Ivory Gull was last observed on 19 November.

In Canada, the Ivory Gull breeds in the high Arctic (Godfrey 1986) and winters along the pack ice north of Newfoundland. It is a winter vagrant to Ontario, Quebec and northeastern United States. Most observations of the Ivory Gull in Ontario occur in December or January. The Lake Doré Ivory Gull is the earliest accepted record for Ontario, and the first accepted record for eastern Ontario (Wormington and

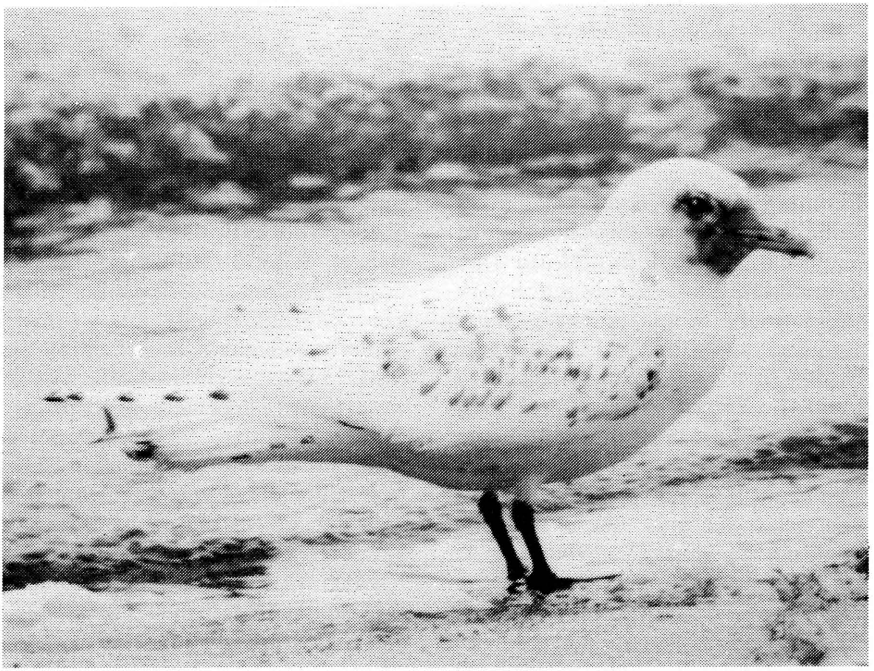

Figure 1: Ivory Gull on Lake Doré, Renfrew County, 12 November 1995. Photo by *Bruce Di Labio.*

Curry 1990). It is suspected that this gull originated from the Hudson/James Bay region, since prior to its discovery a major cold front accompanied by unsettled weather conditions passed through eastern Ontario between 9 and 11 November.

Acknowledgements

I would like to thank Manson Fleguel for quickly alerting local birders to his discovery, Liz Stevenson for her reviews of earlier drafts and my wife Laurie for typing and editing this note.

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Remembering Norm Chesterfield

by

Jim Wilson

In the 1950s, after viewing a Pileated Woodpecker at close range while building a cottage near Dorset, Ontario, I eventually started investigating Point Pelee National Park to seek out some of its birds. There, I met Norm who informed me that a visitor in the Park suggested he should purchase Roger Tory Peterson's "A Field Guide to the Birds" to assist him with his bird identification. He liked the book immediately and recommended I should buy the same. I learned from him that although he had graduated as a pharmacist, he was now a full-time mink rancher in nearby Wheatley. At his mink ranch, I found his knowledge of drugs and antibiotics kept his hundreds of mink in good health, and his proximity to the Wheatley fisheries provided a relatively inexpensive food supply for the animals during their rapid growth period. He applied the same acuity to his bird identifications. His pioneering in bird-chasing was done without many of the field guides we so easily purchase and rely on today.

Shortly after our meeting, I assisted him on his Breeding Bird Census route near Kingsville. We were happy to have a Bald Eagle nest in our area, one of several that could be seen on a Sunday afternoon's drive along Highway 3 between Amherstburg and Wheatley. Today, I regret not taking a picture of an ancient nest (20 feet tall) in an old elm before it collapsed in the late 1950s. We had exciting and interesting birds on that census; the one I particularly remember was the Upland Sandpiper call of repeated, descending whistles.

Although Norm would spend three weeks birding southern Mexico in the fall of 1970, in March of that year he suggested we take a Canadian Audubon Society Tour to British Honduras (now Belize). What a thrill to do my first tropical birding, and especially with a knowledgeable friend! Now, we throw a copy of Peterson's "Field Guide to the Birds of Mexico" in the backpack and we're away! Then, the book to identify the birds of British Honduras was "The Birds of Mexico" by Emmet Blake which contained an interesting text with a few black and white drawings. However, we had to do an awful lot of reading in the field to identify some of the birds. We flew by jet to Belize City, and then by small plane to bird the southern part of the country, and even motored to the pine forest next to Guatemala. I was surprised recently to read that our trip of eleven days cost only six hundred and seventy Canadian dollars per participant!

Before the B.H. trip was over, in our euphoric state we thought it only "sensible" to go home via Panama City and the Santa Marta Mountains of Colombia, spending a few days of birdwatching in each location! Apart from the gorgeous, tropical birds, I find unforgettable the view we had when stepping out of our bus on the hillside of Cerro Azul; an estimated 750 Swainson's Hawks soared at eye level, and farther down in the valley below us, an endless ribbon of Eastern Kingbirds moved northward in their spring migration. After that sighting, every year when April 1st rolls around, I

recall that Kingbird movement in Panama.

The following year I decided I was ready for the Galapagos. Norm, now a "world-birder", said that, even though the trip might be interesting, there were more places with larger bird lists that he preferred to visit. Since I wanted to see the Darwin's Finches and the huge land tortoises, I went to the unforgettable Galapagos by myself, twenty-five years ago.

In March 1972, the next year, Lou Marsh of Toronto, Norm and I birded Venezuela. Since then I have led trips in that country with the book "Birds of Venezuela" (with a coloured plate for each species) tucked confidently under my arm. In contrast, in 1972, our field guide was Rodolphe Meyer de Schauensee's "A Guide to the Birds of South America" (1970). Although I hear it is a collector's item today, it was a great task to ferret out the birds to be seen in Venezuela from the nearly 3,000 South American species described in this single volume. Despite the problems, we tallied more than 350 bird species with exotic names like: White-tipped Quetzal, Blue-winged Mountain-tanager and Handsome Fruiteater. Today, my most vivid memory is that of a brilliant, male Bay-breasted Warbler high in a treetop on the Caribbean slope of Henri Pittier Park!

Another successful trip to Cape Henrietta Maria, where James Bay meets Hudson Bay, gave us the three Ontario birds we sought: Willow Ptarmigan, Smith's Longspur and Pacific Loon. In the stuffy, gasoline fume-laden cockpit of the Austin Airways plane, I remember taking pictures of half sick birders chomping on some of Norm's carrots. Standard travelling fare in his second piece of luggage was granola on one side, and raw carrots on the other! World listers, take heed!

Norm was always generous with his acquired birding information. He liked Peter Alden and John Gooders' "Finding Birds Around the World", using it on many of his trips.

I should have spent more time chasing new birds into Norm's backyard, as he stated he would pay twenty-five dollars for each new species so received! As fortune would have it, a few days before he passed away, we chatted for over an hour recalling many of our happy times together along with the fact that he now had almost two hundred on his backyard list (including his best visitor, I think, the western Rufous Hummingbird).

I won't forget the many times I stayed in that same backyard during Pelee bird migration, within range of the nocturnal vocalizations of his mink. In order that I might get an early start, Norm, in the black of morning, tapped on the camper's metal side to inform me that "oatmeal is ready"! Knowing Norm Chesterfield has been a joyful experience in my lifetime.

Jim Wilson, Box 385, Dorset, Ontario P0A 1E0

Editors' Note:

Norm Chesterfield died on 10 November 1996 at age 83. He observed 6,617 of the world's over 9,000 bird species while travelling to more than 130 countries. He was Canada's top bird lister, with 519 species recorded in this country.

Recognizable Forms

Black-crested and White-crested Double-crested Cormorants

by
Ron Pittaway and Peter Burke

Introduction

Double-crested Cormorants (*Phalacrocorax auritus*) are large loon or goose-like birds. They often fly in lines or V-formations like geese, but are silent. Double-crested Cormorants dive for fish like loons, but unlike loons they perch upright on trees, posts or rocks, often holding their wings spread half open like a vulture or Anhinga (*Anhinga anhinga*), "sometimes waving them gently" (Godfrey 1986). The reason for wing spreading is uncertain.

Double-crested Cormorants are now more abundant on the Great Lakes than at any time in recorded history, having recovered from the DDT era that ended in the 1970s (Weseloh and Collier 1995). They also now occur regularly on many inland lakes where until recently there were few records. The opportunities to observe this fascinating bird in Ontario have never been better. Cormorants are hated by most commercial and sport fishermen. They are calling for control programs despite numerous studies proving that cormorants do little economic harm to game fish. As well, a Lake Ontario study found that the amount of forage fish eaten by cormorants was not a threat to the food supply of game fish (Weseloh and Collier 1995, Weseloh 1996, Mackey 1996).

The Double-crested Cormorant has two recognizable forms: a black-crested form and a white-crested form (Figure 1). These two forms are illustrated on pages 45 and 47 of the *National Geographic Guide* (Scott 1987), the only field guide to do so. In this account, we discuss the taxonomy, identification, plumages and molts, and the occurrence of the two recognizable forms of the Double-crested Cormorant in Ontario.

Taxonomy

The American Ornithologists' Union Check-list (1957) lists four subspecies (races) of the Double-crested Cormorant: (1) nominate *P.a. auritus* breeds from Alberta to Newfoundland (including Ontario) south to the next subspecies; (2) *P.a. floridanus* breeds from North Carolina and Texas south to Florida and Cuba; (3) *P.a. albociliatus* breeds from the coast of British Columbia and interior of Oregon south to Arizona and Mexico; and (4) *P.a. cincinatus* breeds in Alaska. A recently described small fifth subspecies, *P.a. heuretus*, is resident only on San Salvador Island in the Bahamas (Johnsgard 1993).

Palmer (1962) describes the geographical variation in the proportion of black and white plumes in the crests. Southeastern birds are the darkest with the crest plumes always dark. Eastern birds occasionally have white or partly white plumes, especially in the mid-continent populations. West coast birds have mainly white plumes. Alaskan birds often have all-white plumes. In

Figure 1: Black-crested and white-crested forms of the Double-crested Cormorant in spring. Autumn juvenile at centre. Drawing by *Peter Burke*.

Canadian populations, Godfrey (1986) says the crests are black in the eastern race and largely white in the western races.

The black-crested form occurs in three subspecies: *auritus, floridanus* and *heuretus*. The white-crested form occurs in the two western subspecies: *albociliatus* and *cincinatus*; it also may occur infrequently in nominate *auritus* as reported below under the white-crested form.

Plumages, Molts and Ages

The sexes are similar in all ages. Plumage and molt terminology used here follows Humphrey and Parkes (1959), Palmer (1962), and Pittaway (1995). Double-crested Cormorants have two annual molts. The first prebasic (postjuvenile) molt and prealternate (prebreeding) molts are partial, replacing the head, neck and part of the body feathering. The second and subsequent prebasic (postbreeding) molts are complete; all feathers are shed and replaced.

The sequence of plumages is: *juvenal, first basic, first alternate, second basic, second alternate, definitive basic, definitive alternate.* Once definitive plumages are acquired between two and three years of age, they are repeated for the life of the bird. There is much individual variation in predefinitive plumages and aging is not always possible.

Juvenal (juvenile) plumage is fully acquired at the age of two months, usually by late summer and is worn until late winter or spring. Juveniles are sooty-brown, paler buff on the throat, foreneck and breast, becoming much darker on the belly. Juveniles have distinctly scaly upperparts. The scaly appearance of the back is caused by the decidedly grayish-brown feather centres of the scapulars and wing coverts contrasting with the blackish feather margins.

First Basic and *First Alternate* (first winter and first summer) plumages probably are acquired by two overlapping partial molts. Almost year-old birds returning to Ontario in spring are in (or molting into) first basic plumage. They acquire first alternate plumage into the summer. Year old birds in first basic/first alternate plumages are like juveniles, but show a mixture of blacker and glossier feathering. There is great individual variation in year old birds.

Second Basic (second winter) plumage is acquired by a complete molt in the fall and is retained until late winter. Compared to juveniles, second basic birds are darker and more adult-like, but with some paler brown on the foreneck. The new flight feathers are black versus brown in juveniles.

Second Alternate (second summer) plumage is acquired by a partial molt in late winter and retained until the fall. Most second alternate birds are like definitive alternate, but they do not have crests. Some breed in second alternate plumage.

Definitive Basic (adult winter) plumage is acquired after the breeding season by a complete prebasic molt and worn until late winter. Third basic is the earliest definitive basic plumage. Coloration is similar to definitive alternate, but duller and less glossy.

Definitive Alternate (adult breeding) plumage is acquired by a partial prealternate molt of the head, crests, neck and some body feathers in February and March and, except for the crests, is retained until late summer. Third alternate is the earliest definitive

alternate plumage. Definitive alternate birds are mainly black in colour; the head, neck and underparts show green reflections and the upper back and wing coverts show bronze reflections at close range. Also, definitive alternate birds show a few scattered, filament-like, white feathers on the head and neck projecting beyond the black feathers (Roberts 1955).

Crests: The upcurled nuptial crest plumes (tufts), along each side of the crown behind the eyes, are found on both males and females only in high definitive alternate plumage from March to May (Figure 1). The crest plumes are narrow and filamentous (threadlike), usually 40 to 60 per side in the male (fewer in the female) with as many as 88 recorded, and are mostly under 5 cm (2 inches) long, with the longest recorded at 7.8 cm (3 inches) (Palmer 1962). Crests are shed early in the nesting season (during incubation) with a few plumes retained into June (Bent 1922). There is no information in the literature on the function of the crests, but as suggested by Bent (1922), they must play a role in courtship and pair formation.

Much of the above information is from Palmer (1962). See also Bent (1922), Roberts (1955) and Oberholser (1974) for more information on plumages and molts.

Black-crested Form

The black-crested form is common in Ontario. Spring adults in high breeding plumage have black crests from March to May. See Figure 1. The crests are often inconspicuous on the black-crested form because they are the same colour as the head, but are noticeable if you look for them. At the nesting colony in Hamilton Harbour, Rob Dobos (pers. comm.) reports that the crests are quite visible on cormorants in April and May when they are courting, nest building and copulating.

Birds with black nuptial crests are illustrated on Plate 6 in Godfrey (1986), and on the plate opposite page 185 in Palmer (1962). Also compare black-crested and white-crested forms on pages 45 and 47 of the *National Geographic Guide* (Scott 1987).

Caution: In flight, Double-crested Cormorants wearing aluminum bands have been misidentified as Great Cormorants (*Phalacrocorax carbo*) because the light reflecting off a band on a flying bird can give the appearance of a white flank patch!

White-crested Form

The white-crested form is very rare in Ontario. Because the crests are white and contrast with the black head, they are much easier to see than the crests on a black-crested form. See Figure 1. There is a beautiful photograph of a white-crested form of the subspecies *albociliatus* in Johnsgard (1993).

We know of two sightings of the white-crested form in Ontario. First, Alvaro Jaramillo (e-mail) remembers seeing a white-crested form among a flock of flying black-crested Double-crested Cormorants in May about 10 years ago at Stoney Point on Lake St. Clair, Essex County. Second, Matt Holder (*in litt.*) saw a white-crested Double-crested Cormorant on 14 May 1993 on Lake Superior at the Thunder Cape Bird Observatory. Matt describes his sighting: "Whilst lake watching from the bird observatory, I noticed a Double-crested Cormorant with white crests instead of the usual dark crests displayed by the typical form seen in Ontario. At a distance of about 200 yards with a

Kowa TSN 2, the crests could clearly be seen flattened against the sides of the head contrasting with the all-black plumage. Everything else on the bird was typical of the dark-crested Double-crested Cormorant." Interestingly, Chip Weseloh (pers. comm.) of the Canadian Wildlife Service has seen many thousands of Double-crested Cormorants, but he has not seen the white-crested form in Ontario.

Nominate *auritus* is the subspecies found in Ontario (James 1991). Without a specimen (and maybe with one), it is impossible to determine if the white-crested form seen in Ontario is one of the western subspecies or an extreme variant of *auritus*. A few white plumes occur occasionally in the crests of *auritus* (Bent 1922, Palmer 1962). Alternatively, Dennis Paulson (e-mail) of the State of Washington says, "with the population explosion of western, as well as eastern cormorants, and their widespread distribution on the big interior reservoirs, I certainly wouldn't be surprised if representatives of one of the white-crested races showed up in your area."

Summary

Two forms of the Double-crested Cormorant occur in Ontario: a black-crested form and a white-crested form. The black-crested form is common and the white-crested form is very rare in the province. The curly crests (tufts) are present only on adults in high adult breeding (definitive alternate) plumage from March to May.

Acknowledgements

We thank Bill Crins, Rob Dobos, Jon Dunn, Earl Godfrey, Michel Gosselin, Matt Holder, Jean Iron, Ross James, Alvaro Jaramillo, Dennis Paulson, Don Sutherland, Ron Tozer, Mike Turner and Chip Weseloh for much valuable advice and information.

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Photo Quiz

by
Bob Curry

It's clear from the pointed, finely proportioned bill that our small to moderate-sized bird is not a sparrow. It could be a warbler, but the entire bird seems rather long and slender with a rather too long tail; and also the wings are long, extending rather farther down the tail than in the Parulinae. The habitat, apparently a man-made breakwater or berm of boulders, seems wrong for most warblers although a few which are similar to this bird such as Palm could be in such a situation. A clue is to closely examine the feet. The hind toe and claw, especially on the right foot in the photo bird, can be seen to be extremely long. Only the pipits among our birds combine the fine bill, slender

proportions and long hindclaw. Of course, in life, the family could easily be established by the bird's habit of pumping its tail and walking. Without such cues, we are compelled to a closer examination.

Two species of pipits are on the Ontario checklist and a third has occurred in Canada and is not a complete impossibility in our province so, being the careful birders that we are, we must carefully eliminate two species. Once again we are handicapped, as vocalizations can be diagnostic distinguishers.

All the pipits have varying amounts of streaking above and below, and varying amounts of white in the tail feathers. Certainly this bird has white on the outer web of the leftmost rectrix but, unless the bird flies (in this case the bird will outwait us!), we cannot determine whether this is the extent of white or whether it extends to one or two full feathers on each side of the tail. Moreover, species identification is better determined by other features.

Could it be a Sprague's Pipit belying its normal furtive behaviour of skulking in the grass? Sprague's is an overall light sandy bird with an especially light-toned back. Admittedly the photo bird is lit from the left and the back is in shadow, but it nevertheless seems a uniformly dark shade but with several broad dark streaks. Sprague's has the crown and nape heavily and boldly streaked, but on the aforementioned light sandy ground colour. The brown-centred back feathers are edged in light buff, reminiscent of the appearance of two other grassland birds, Baird's and Buff-breasted Sandpipers, and quite unlike American Pipit. Sprague's has a rather plain face with less well defined auricular patch and eyestripe and no blackish malar mark, contrary in all these respects to this bird. The plainer, lighter appearance is reinforced by an absence of flank streaking which this bird possesses. Finally, Sprague's Pipit has light yellowish-pink legs and feet. Don't rush to the phone just yet.

The Red-throated Pipit is annual in small numbers on the west coast of North America and it has been recorded in British Columbia. It breeds across Eurasia and into Alaska and should be kept in mind during the autumn here. In first basic plumage, probably the most likely to occur as a distant vagrant, there is no reddish or rust in the throat but the entire breast ground colour is a rich buff, boldly streaked with black. The upperparts are black streaked, more finely on the crown and rump. The back has alternate broad buffy and black streaks. Our bird is plain-crowned and, streaks notwithstanding, too uniformly dark on the back, and the breast streaks, while quite distinct, are just not bold or black enough. Finally, Red-throated Pipit has light pinkish legs.

So why didn't I cut to the chase and say the other two species have light legs and American Pipit has dark legs? Because, first basic birds often have pale legs. I can't personally recall seeing light legs on an American Pipit, probably because the vast majority are seen and identified in flight, but it is a reason for examining them more closely in future. It would appear that the photo bird is in winter plumage as the tertials are broadly edged in off-white and there is a black patch at the side of the neck.

Until quite recently, ornithologists considered the circumpolar Water Pipit (*Anthus spinoletta*) to be one species, consisting of several distinct allopatric

(geographically separate) subspecies. Now, however, three species are recognized. Both the Rock Pipit (*A. petrosus*) and the Water Pipit (*A. spinoletta*) are western Eurasian short-distance migrants, and as such are unlikely to reach Ontario. The so-called American Pipit (*A. rubescens*) has two subspecies, one of which (*japonicus*) breeds right across Siberia. Thus, the appellation Buff-bellied Pipit now used in some guides and birding circles may eventually be officially accepted for this bird.

Two good references for pipit identification are:

King, B. 1981. The field identification of North American pipits. American Birds 35: 778-788.

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Editors' Note:
This **American Pipit** was photographed at Bronte, Ontario in January 1983 by Bill Crins.

PUBLICATION NOTICES

Checklist of Birds of the Regional Municipality of Waterloo. 1996. Compiled by *Linda Burr, Rob Dobos* and *Steven Furino*. Kitchener-Waterloo Field Naturalists. Available from George Cassidy, Treasurer, K-W Field Naturalists, 15 Mulberry Lane, Waterloo, Ontario N2L 5L4 at 50 cents each plus postage.

The checklist is printed on card stock and features breeding information, original artwork by David P. Hunsberger, a detailed map of the Region, and five columns for checking. Since its printing in May 1996, two new species have been added, bringing the current total for the Region to 285 species. All sightings of rare or unusual species have been verified and documented.

The production of the checklist was made easier with the use of the club's new computer database. This sophisticated software was developed by Steven Furino and his students at the University of Waterloo, and now contains about 16,000 of the club's bird records going back to the early 1900s. Plans are also to incorporate data from sources such as the Breeding Bird Atlas and the Ontario Nest Records Scheme. Thousands of records can be selected and sorted by species, observer, dates, locations and other parameters, quickly. It is also easy to produce reports and charts. The software has a broad range of uses, including plant, butterfly and amphibian records.

If you are interested in the software (which requires a MacIntosh computer), a manual and completely functional demo are available, free on the web at: http://usjc.uwaterloo.ca/Faculty-Staff/scfurino, or for $10 (to cover copying and postage) from Steven Furino, University of St. Jerome's College, University of Waterloo, Department of Mathematics, Waterloo, Ontario N2L 3G3.

Wild Wings: The Hidden World of Birds. 1996. By *Michael Runtz*. Boston Mills Press, Erin, Ontario. Hardcover, 128 pages, $39.95.

This latest book by naturalist and photographer Michael Runtz is "an introduction to the principles behind the myriad remarkable appearances and behaviours found in North American birds". The informative text presents an overview (based on current research) of such topics as feathers and flight mechanisms, socialization, predation, migration, mating and other aspects of avian behaviour. These subjects are beautifully illustrated through the book's many spectacular colour photographs by Runtz and Jim Flynn.