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Ontario Field Ornithologists

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Ontario Field Ornithologists is an organization dedicated to the study of birdlife in Ontario. It formed in 1982 to unify the ever-growing numbers of field ornithologists (birders/birdwatchers) across the province, and to provide a forum for the exchange of ideas and information among its members. The Ontario Field Ornithologists officially oversees the activities of the Ontario Bird Records Committee (OBRC), publishes a newsletter (*OFO News*) and a journal (*Ontario Birds*), operates a bird sightings listserve (ONTBIRDS, coordinated by Mark Cranford), hosts field trips throughout Ontario, and holds an Annual General Meeting in the autumn.

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Ontario Birds

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

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by *Christine Kerrigan*

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First Nest Record of White-winged Crossbill in the Greater Toronto Area

Glenn Coady

Introduction

The White-winged Crossbill (*Loxia leucoptera*) occurs throughout the boreal forests of both North America and Eurasia. The nominate subspecies (*L. l. leucoptera*) occurs across boreal coniferous forests from western Alaska to eastern Newfoundland and northern New England and south to the central Rocky Mountains of Idaho and Wyoming (Benkman 1992) and has been documented breeding farther south in suitable habitat in Utah (Smith 1978), Colorado (Groth 1992) and New Mexico (Pasquier and Perkins 1981). Another subspecies (*L. l. bifasciata*) breeds across the coniferous forests of the Palearctic from northern Scandinavia to Siberia (Cramp and Perrins 1994). A third subspecies (*L. l. megaplaga*) occurs as an isolated population in the pine forests of the mountains of Hispaniola (Kepler et al. 1974, AOU 1998).

All three subspecies of the White-winged Crossbill are known to be nomadic (Svärdson 1957; Newton 1970; Bond 1985; Benkman 1987a, 1987b; Larsen and Tombre 1989), with movements which are defined by the need to find developing cone crops of tree species to which their specialized bills are adapted for high efficiency of seed extraction. Throughout Ontario, these would include white spruce (*Picea glauca*), black spruce (*Picea mariana*), tamarack (*Larix laricina*), balsam fir (*Abies balsamea*), eastern hemlock (*Tsuga canadensis*) and to a lesser extent red spruce (*Picea rubens*) and introduced Norway spruce (*Picea abies*). This species is known to periodically irrupt in large numbers south of its core range in the boreal forest, an amplification of its usual nomadic movements in search of ever-shifting cone crops, induced most often by widespread simultaneous failure of production of several of its preferred seed cones over a large geographic section of its range (Taber 1968, Sealy et al. 1980, Kane 1982, Benkman 1987a).

In Ontario, the breeding range of the White-winged Crossbill extends primarily from the Hudson Bay coast south to the southern edge of the Canadian Shield (Peck and James 1987, Smith and Lumsden 1987). The breeding status of White-winged Crossbill in Ontario is still poorly understood in

large part due to the access limitations inherent in coverage by observers in its core range, its nomadic tendencies, its ability to nest in virtually any month, and the relative difficulty in locating numbers of its nests for study. The map of breeding evidence obtained during the Ontario Breeding Bird Atlas (1981–1985) probably best represents its breeding status in Ontario, but note that only six percent of squares with records reported confirmed breeding.

In years of large irruptions south of the Shield, birds that can find areas with large emerging cone crops (more often than not of spruce) will periodically breed opportunistically well south of their core range in areas where increased observer coverage and lack of closed coniferous forests favour greater likelihood of nest discovery than in its core range. Recent examples in Ontario are nests found in Oxford County and Haldimand-Norfolk Regional Municipality in the years since the first Ontario Breeding Bird Atlas.

In February 2001, a nest of White-winged Crossbill was discovered in Caledon Township of Peel Regional Municipality. This nest record represents the first confirmed breeding evidence for White-winged Crossbill for the Greater Toronto Area (GTA – comprising Halton R.M., Peel R.M., Toronto, York R.M. and Durham R.M.). It becomes the 191st confirmed breeding species for the area (Coady and Smith 2000). The purpose of this paper is to document this White-winged Crossbill nest, detail aspects of breeding biology noted during these observations, and summarize the previous nest records reported for Ontario.

Observations

In January 2001, reports of White-winged Crossbill in Peel R.M. began to emerge, with six reported by the South Peel Naturalists at Claireville Conservation Area on 7 January (Mark Cranford *fide* ONTBIRDS listserve) and two singing males reported by David Milsom at Palgrave Conservation Area on 28 January (Worthington 2001a). On 10 February, at least six singing males were found by Alfred Raab in an area of Palgrave Conservation Area east of Duffy's Lane and south of Finnerty Sideroad. Males were observed singing from the tops of black spruces and performing flight songs in pursuit of females in an area with a heavy crop of black spruce cones (Alfred Raab, pers. comm.). On 17 February, six birds (3 males, 3 females) were observed again at the north end of Duffy's Lane by Milsom and Bill and Becky Peckham (*fide* ONTBIRDS) and independently by Glenn Coady and Leslie Johnston. The males were singing and performing flight songs and Milsom observed a female carrying lichen near the beaver pond northwest of the parking area off Duffy's Lane, about 350 m south of

Finnerty Sideroad. On 18 February, seven White-winged Crossbills were observed in the same area by Coady, Johnston and Roy Smith. Males were observed singing from the tops of black spruce and performing flight songs in aerial pursuit of females. Coady and Johnston also observed a single female briefly singing (Worthington 2001b).

Convinced that nesting was likely, Coady assembled a team of searchers to return to the area of Duffy's Lane in Palgrave C.A. on 25 February in an attempt to locate a nest. A group consisting of Coady, Mark Peck, Leslie Johnston, Wayne King and Andrew Keaveney arrived shortly after dawn to a continuous drizzle of freezing rain for the first four hours after sunrise (during which no crossbills were observed). It was not until late in the morning, with the rain subsiding, that the first male White-winged Crossbills began to sing from perches on top of black spruces. A maximum of 12 White-winged Crossbills were observed, with lone males singing from perches, males performing flight songs and pairs foraging together. Shortly after 1230h, Peck found a pair of White-winged Crossbills which did not appear to be foraging, but were slowly moving around the tops of adjacent trees together in the area of the Duffy's Lane beaver pond. Holdsworth and Graham (1990) and Benkman (1992) noted that during nest construction the male provides escort to the female, often perching in nearby trees as the female builds the nest.

After Peck alerted the rest of the search party to the presence of this pair of birds, they were both observed to remain quite still and silent at the tops of adjacent trees for several minutes, appearing very cautious. Next, the female flew a few metres away into a nearby black spruce about six metres tall and disappeared into a dense portion about a metre down from the top. The male remained on his original perch the entire time and the female remained concealed for a couple of minutes. The female then emerged from behind a spruce bough with a large amount of nest lining material in her bill and was observed lining her nearly completed nest by five very delighted searchers (nest location: 17T 591359 4867129 North American Datum 1983; 43° 57' 05.9" N, 79° 51' 41.1" W).

On 4 March, Coady returned to inspect the nest and found the female incubating. Employing a mirror, an examination of the nest revealed that it contained two eggs and a spruce cone! Although incubating females are predominantly courtship-fed by regurgitation by the male (Newton 1972, Benkman 1992), the presence of this cone in the nest might tempt one to suspect that the female occasionally may procure readily available cones immediately adjacent to the nest supplementary to these feedings. After singing very late into the afternoon, the male of this pair was

observed going to roost in a nearby cedar visible from the nest.

On 10 March, Coady, Jim Richards, George Peck and Mark Peck kept the nest under observation from an adjacent tower. The female was observed incubating three eggs. Nest dimensions were taken by Richards, but despite a paucity of such data, egg measurements were not obtained in an effort to minimize nest disturbance, so that incubation (entirely by the female) was more or less continuous. The eggs were ovate and the ground colour was very close to white with a very faint bluish cast and a dull gloss. They were streaked and spotted with fine markings of chocolate brown and lavender, most prominently at the larger end. The male was observed feeding the female by regurgitation on several occasions during incubation, at intervals ranging from 45 to 120 minutes between such feedings. Before coming in to feed the incubating female, the male would invariably fly to a nearby perch several metres from the nest and call several times in a manner very similar to that described by Tufts (1906). The female would then call back to the male in an imitation of these calls, nearly identical in structure, as described by Mundinger (1979), followed shortly thereafter by a visit by the male for a regurgitated courtship feeding. Both the male and female White-winged Crossbills and the nest and eggs were documented with photographs by Jim Richards, Mark Peck and George Peck and with videotape by Glenn Coady (see Figures 1 and 2). Besides the nesting pair under observation, a second pair was observed foraging on black spruce cones (both from trees and from fallen cones), gathering grit, and drinking from melt water pools not very far from this nesting pair. White-winged Crossbills have been shown to breed successfully in the wild with sole requirements being abundant conifer seeds, grit and water (Benkman 1990). Only when the male of this second pair would sing near the nesting pair's territory would aggressive song flights be elicited from the male of the nesting pair.

The nest was positioned in a well concealed location in a crotch formed between the trunk and two small lateral branches on the south-east aspect of a six metre tall black spruce (diameter at breast height of 11.1 cm) at a height of 5.04 m in a fairly open section of second growth in a beaver pond. Benkman (1992) noted that in winter, nests are most likely situated between the south and east sides of trees. At this nest it was quite evident that this position optimized the amount of time the nest was exposed to direct sunlight. The nest was a bulky circular cup with a fairly shallow bowl, composed mostly of loosely woven twigs of black spruce. It was lined with a mixture of lichen, dead grasses, plant down (cotton-grass, bulrush, cattail), bark strips, white and red pine needles, large grey feathers (possibly Ruffed Grouse *Bonasa umbellus*) and White-winged

Figure 1: Female White-winged Crossbill being fed by the male at the nest, Palgrave Conservation Area, Peel R.M., 18 March 2001. Photo by *Jim Richards*.

Figure 2: Nest and three eggs of the first White-winged Crossbill nest for the Greater Toronto Area, Palgrave Conservation Area, Peel R.M., 10 March 2001. Photo by *Jim Richards*.

Crossbill feathers. Nest dimensions were: outer diameter – 10.4 cm; inner diameter – 6.5 cm; outer height – 7.1 cm; inner height – 1.75 cm.

On the morning of 18 March, Coady, Richards and George Peck observed the female still incubating three eggs. Further photographic and videotape documentation was acquired. Late in the afternoon, Coady believed he observed a crack forming in one of the eggs.

On the afternoon of 24 March, Coady noted the female was nearly continuously brooding at least one hatched young, which was not yet feathered and whose eyes were still not yet open. This would indicate hatching of this individual likely occurred on or about 19 March. Assuming the eggs were laid at one day intervals, this would suggest an incubation period of 14–16 days, depending on whether incubation commenced with the laying of the first or third egg.

On 25 March, Coady, Richards and George and Mark Peck found both the male and female feeding two young (see Figure 3). A single non-hatched egg remained in the nest. Parental feeding of the two young was performed by both the male and female at intervals ranging from 15 to 45 minutes. Both

Figure 3: Male White-winged Crossbill feeding young at the nest, Palgrave Conservation Area, Peel R.M., 25 March 2001. Photo by *George K. Peck*.

young were fed a regurgitated meal of seed kernels in a dark, viscous bolus. Most bizarre was that occasionally both adults attempted to feed fairly large feathers to the largest hatchling! Fecal sacs, offered after each feeding was completed, were consumed at the nest without exception by both the male and female parents. This suggests that this species is likely very difficult to confirm as a breeder without finding a nest, since most birds also often carry feedings very well disguised in their crops.

On the morning of 31 March, the same four observers found the larger of the two nestlings very recently decapitated, with its body and severed head both found on the lip of the nest. The smaller young was still alive, and in the nest, and appeared to have suffered no injury. It was still being fed by both adults, though now more frequently by the male. The egg which had not hatched by 25 March was no longer present in the nest. The nature of this depredation would seem to most likely implicate the Red Squirrel (*Tamiasciurus hudsonicus*), a known predator of the White-winged Crossbill (Benkman 1992), which were quite abundant in this section of Palgrave Conservation Area.

On the morning of 1 April, Richards and Coady found the nest empty. Interestingly, the male and female were still observed coming to the nest together several times. Each time the female (with the male as an escort) was seen to remove parts of the nest lining and fly off quite some distance in a northeasterly direction. Benkman (1992) stated that there was no evidence of reuse of nests or nest materials by White-winged Crossbills. Coady obtained videotaped documentation of this behaviour. An immediate attempt at re-nesting would thus appear to have been likely. No attempt was made to locate and confirm such re-nesting, however. On a subsequent visit on 14 April, Glenn Coady, Leslie Johnston and Mary Schuster located what was possibly this same pair of birds in an area of black spruce in a marsh area approximately 700 m to the northeast from the original nest.

The modest irruption of White-winged Crossbills into the Greater Toronto Area early in 2001 was not limited to Peel R.M., with birds being found in several areas across the Oak Ridges Moraine where large enough tracts of suitable coniferous forest occur. As many as four male White-winged Crossbills were found singing in the Hall Tract of the York Regional Forest, York R.M. by Ron Fleming between 10 March and 14 April (*fide* ONTBIRDS) and on 3 March, 17 birds (including two obvious pairs and two additional singing males) were found in the Osler Tract, Durham R.M. by Jim Richards (pers. comm.). It is a good possibility that other GTA nests of White-winged Crossbill went undiscovered in 2001.

Reported Nest Records of White-winged Crossbill in Ontario

The following ten records account for the twelve nests reported in Ontario, sorted by County, District or Regional Municipality (Source: Ontario Nest Records Scheme):

Oxford

1989 A female was found building a nest 5 m up in a Norway spruce on 7 April at the east end of Wildwood Lake (43° 15' N, 81° 06' W) by James M. Holdsworth and Don S. Graham. It was seen incubating this nest on 16 April, and a pair was observed near, but not at, the nest on 22 April. The nest was subsequently abandoned and on 6 May it was collected by Graham (Holdsworth and Graham 1990).

Haldimand-Norfolk R.M.

1993 A pair was found at the Old Cut Field Station of the Long Point Bird Observatory (42° 35' N, 80° 24' W) on 27 March by Chris Risley, and the female was observed by Lisa Enright constructing a nest at 7.76 m up in a 15.22 m high white spruce between 29 March and 2 April. The female began incubation on 3 April, and the male was seen feeding the female at the nest 4–18 April. In the afternoon of 18 April, the nest was determined to be abandoned and subsequently the nest and three eggs were collected on 24 April. The nest and eggs/embryos were deposited in the Royal Ontario Museum (ROM # 509834).

Peel R.M.

2001 A nest was found under construction at 5.04 m up in a 6 m tall black spruce in Palgrave Conservation Area in Caledon Township (43° 57' 05.9" N, 79° 51' 41.1" W) on 25 February by Mark Peck, Glenn Coady, Leslie Johnston, Wayne King and Andrew Keaveney. This nest contained two eggs on 4 March, three eggs on 10 and 18 March, and two young and one egg on 25 March. One of these young was depredated, likely by Red Squirrels, on each of 31 March and 1 April. The female subsequently re-collected the entire lining from this nest. The empty nest was collected by Coady on 1 April and deposited in the Royal Ontario Museum (ROM # 500553)

Victoria

1926 A nest with eggs was found on 19 August near Head Lake (44° 44' N, 78° 55' W) in a small cedar, according to D.A. MacLulich (Baillie and Harrington 1937).

Nipissing

1983 A female was discovered building a nearly completed nest 7 m up in a 17 m tall black spruce near the junction of Sand Lake Road and Achray Road (45° 54' N, 77° 44' W) in Algonquin Provincial Park by Craig M. Benkman on 30 January. The nest was observed being lined 1–2 February, but was apparently deserted on 25 March.

On 20 February, a second nest was discovered under construction by a female at 10 m up in a 14 m tall white spruce about 720 m west of the nest found on 30 January. Benkman estimated 10 – 15 nesting pairs of White-winged Crossbills (five of which he saw carrying nest materials) along a 1 km section of this road. The birds all deserted when a warm spell in late March caused the white spruce cones to drop their seeds en masse (Smith and Lumsden 1987; notes from an unpublished manuscript by Craig W. Benkman).

2000 A female was observed carrying nesting material to a probable nest site 2.5 km along the Cameron Lake Road from its junction with the Opeongo Road (45° 38' N, 78° 19' W) in Algonquin Provincial Park on 30 December by Derek Connelly and Frank Pinilla.

Haliburton

2000 A male and female were seen by Peter Burke and Colin Jones on 30 December gathering plant fibres from a dead white pine, which the male took up to a probable nest in a tall white spruce, 9 km south of Whitefish Lake on the Martin Lake logging road (45° 29' N, 78° 31' W) in Algonquin Provincial Park, near Rod and Gun Lake.

Sudbury R.M.

1992 Three nests (one 3 m up in a balsam fir, one 2.5 m up in a jack pine and one 10.7 m up in a black spruce), each with adults feeding young, were found by C.J. Whitelaw on 22 August in Lumsden Township where the Ontario Hydro transmission line crosses the Vermilion River near Valley East (46° 40' N, 81° 06' W).

Algoma

1927 A nest with three young close to fledging was found 12.5 m up in a 14.6 m tall spruce near Lake Manitowik along the upper Michipicoten River (48° 10' N, 84° 20' W) on 20 August by Milton B. Trautman. The nest and all three young were collected and deposited in the Ohio State Museum at Columbus (Fargo and Trautman 1930).

Benkman (1988a, 1988b, 1989, 1990, 1992) has provided ample evidence of the link between food dispersion, seed extraction and foraging efficiency, and the timing and success of breeding in White-winged Crossbills. He identified three discrete nesting periods defined by temporal and spatial availability of preferred seed cones: 1) Early July – November, starting with the maturation of summer cones of tamarack and white spruce; 2) January – February, requiring a large white spruce crop, with desertion often occurring if unusually warm or dry weather causes cones to lose their seeds early; and 3) March – June, starting with the opening of the cones of black spruce, the period when double broods are most likely due to the longer period of reliability of the black spruce cone crop.

Clearly, our Ontario nest records fall into all of these discrete periods of nesting, as we might expect. As a more widespread understanding of the temporal and spatial patterns of availability of the preferred seed cones that trigger nesting is developed among observers, we can undoubtedly look forward to an accelerated rate of additions to the list of nest records and other confirmed breeding records for White-winged Crossbill in Ontario.

Summary

In late February 2001, the first nest of White-winged Crossbill for the Greater Toronto Area (GTA) was discovered in Palgrave Conservation Area in Peel R.M. It represents the twelfth nest record of this species

reported for Ontario and the 191st confirmed breeding species found within the GTA.

Acknowledgements

I would like to thank the following people, who were instrumental in the production of this paper: David Milsom and Alfred Raab, who quickly reported their initial observations of White-winged Crossbills at Palgrave C.A.; Mark Peck, Leslie Johnston, Wayne King and Andrew Keaveney, who braved pre-dawn freezing rain to assist in a successful systematic nest search for White-winged Crossbills – thanks in large part to the nearly unparalleled nest-finding abilities of Mark; Jim Richards, who drove many hours over multiple visits to provide a tower for unobtrusive nest observations and provided photographic documentation of the Palgrave C.A. nest; George K. Peck, who provided both photographic documentation of the nest and access to the Ontario Nest Records Scheme; Roy Smith, who provided an unpublished manuscript by Craig W. Benkman on his findings of both Red Crossbills (*Loxia curvirostra*) and White-winged Crossbills in Ontario in 1983; Glenn Murphy of the Royal Ontario Museum's Centre for Biodiversity and Conservation Biology, who prepared the White-winged Crossbill nest collected.

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PUBLICATION NOTICE

The Sibley Guide to Bird Life & Behavior. 2001. Edited by *Chris Elphick, John B. Dunning, Jr., and David Allen Sibley.* Alfred A. Knopf, Inc., New York. Hardcover, 608 pages. $65.95. (ISBN 0-679-45122-6)

The aim of this book is "to provide an introduction to the great variety and complexity of bird life – a book by and for birders that will help readers interpret and understand the things they see in the field". It combines more than 795 full-colour illustrations by David Sibley with authoritative text by 48 expert birders and biologists to show "how birds live and what they do".

Part I: The World of Birds (105 pages) provides a concise overview of current knowledge concerning bird biology, with chapters covering: Flight, Form and Function; Origins, Evolution and Classification; Behavior; Habitats and Distributions; and Populations and Conservation. Examples of topics covered are DNA–DNA hybridization, biological and phylogenetic species concepts, orientation and navigation during migration, brood parasitism, and habitat fragmentation.

Part II: Bird Families of North America (442 pages) presents a chapter for each of the families of birds (e.g., loons) that occur in North America, featuring sections on taxonomy, foraging and breeding biology, conservation status, and accidental species (where appropriate). In each chapter, there is also a Worldwide Family Features box that provides a brief summary of the family's characteristics worldwide (e.g., size, number of species, diet, lifestyle, and longevity).

This book presents a wealth of information about the lives of birds in an easily understood and very readable format, and would be a welcome and often-used reference in any Ontario birder's library. *Ron Tozer*

OFO Annual General Meeting
Kingston
28 and 29 September 2002

Plan to attend another great weekend of fall birding, this time in the Kingston area. There will be field trips to several birding hotspots, including Prince Edward Point and Amherst Island. The Saturday evening banquet will feature a special presentation by Paul Mackenzie about the birds of the Kingston region. Watch for further details in the coming months. Mark your calendar now!

Variation in First Year Ring-billed Gull

Kevin A. McLaughlin

The ubiquitous Ring-billed Gull (*Larus delawarensis*) offers larid fans splendid opportunities for plumage study in Ontario. Yet, perhaps due to its abundance, familiarity and invariability in adult plumages, it is ignored. Contrary to most of the standard birding literature, however, Ring-billed Gull is highly variable in first and second year plumages.

The purpose of this article is to illustrate and discuss just some of the myriad variations in first basic birds, using photographs of individuals still in their first calendar year. A secondary purpose is to focus on a particular aspect of molt, essentially overlooked in the literature. Of all the standard guides examined, only Jonsson (1992) mentions the random replacement of juvenile secondary coverts with adult-like grey feathers, although he does not illustrate it.

Figure 1 shows a particularly advanced November bird that has molted many juvenile greater, median and lesser coverts, along with three tertials, replacing them with adult-like grey feathers. Only a few bleached outer median and lesser coverts, as well as a few brown tertials remain from juvenal plumage. Otherwise, visible characters are typical first basic with a well streaked head and nape, black-tipped pink-based bill, grey scapulars and blackish primaries. Figure 2 is of a late November Florida bird. It is similar to the bird in Figure 1, but has retained more faded juvenile greater coverts.

The molt strategy employed by the birds in Figures 1 and 2 may be described best as an "extension" of the first prebasic molt, in which brown juvenal back and scapular feathers are replaced by grey adult-like feathers. This advanced first basic plumage appears to represent a minority of the first calendar year population, probably less than 10 percent. Observations by Jean Iron (pers.comm.) in 2001 show that up to 80 percent of first basic birds have replaced some juvenal coverts and tertials by October.

It appears that this molt is not confined to this species in North American medium-sized gulls. Observation of Laughing Gulls (*Larus atricilla*) in Florida in November 2000 revealed extensive replacement of juvenal coverts and tertials with adult-like grey feathers in many first calendar year birds (Jean Iron, Ron Pittaway, pers. comm.). See Figure 3. Overall variability in appearance is greater in Ring-billed Gull, however, due to more variegated plumage barring,

Figure 1. Basic I Ring-billed Gull, Van Wagners Beach, Hamilton, 4 November 2000. Photo by *Barry Cherriere.*

Figure 2. Basic I Ring-billed Gull, Fort DeSoto, Florida, 24 November 2000. Photo by *Jean Iron.*

Figure 3. Basic I Laughing Gull, Fort DeSoto, Florida, 24 November 2000. Photo by *Jean Iron*.

Figure 4. Basic I Ring-billed Gull, Port Stanley, 27 October 2000. Photo by *Barry Cherriere*.

Figure 5. Basic I Ring-billed Gull, Burlington, November 2000. Photo by *Barry Cherriere.*

Figure 6. Basic I Ring-billed Gull, Van Wagners Beach, Hamilton, 15 November 1998. Photo by *Barry Cherriere.*

head streaking and tail band, along with greater variance in bill structure and colour, and body size.

Figure 4 shows a more normal or perhaps "average" first basic bird. Juvenal tertials are brown with pale tips, although one grey inner is growing in. The greater coverts are faded grey with brown on a few inners. Some median and lesser coverts still exhibit the characteristic diamond-shaped brown centres. Also evident are the grey scapulars, with subterminal chevrons which have faded from brown to dark grey. Underpart barring is moderate on this bird.

Another plumage extreme is depicted in Figure 5. Striking in this photo are the exceptionally dark brown coverts with very little pale fringing. The greater coverts are very dark, even on the outers, which tend to be pale grey on most birds. This bird resembles a bird present at Van Wagners Beach, Hamilton, in November–December 1999. Not only were the upperwing coverts dark on that bird, but so too were the underwings, thus causing the flying bird to have a unique appearance.

Figure 6 is that of a "runt" type bird. The bill is quite short, with close to 50 percent black distally. The head and nape are heavily streaked and there are many dark chevrons present on the breast and flanks. The median and lesser coverts are very worn and faded to whitish. The greater coverts are darker brown than on most birds. As on the bird in Figure 5, there is no evidence of juvenal covert or tertial replacement with adult-like feathering.

All of this serves to remind observers that field guide depictions showing only one plumage type in first basic Ring-billed Gull are misleading. Indeed, this species is a mid-sized gull with plumage variations in first year matching some of its larger congeners. It can be fairly said that no two first year Ring-billed Gulls look exactly alike.

Acknowledgements

I thank Barry Cherriere and Jean Iron; without their photographs, this article would not have been possible. Thank you also to Ron Pittaway for comments on a first draft.

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A Concentration of Black-backed Woodpeckers in Thunder Bay District

Nicholas G. Escott

On 30 April 1998, a forest fire was reported southeast of Lake Nipigon, Thunder Bay District. This fire, which was named Fire 21, proved to be difficult to control, and burned for almost four months. It spread northwestward, jumped Highway 527 (the Armstrong Highway), and, before it was finally extinguished on 22 August, consumed 26,400 hectares of boreal forest (Figure 1). This area is rolling Canadian shield country, with upland mixed forests of jack pine (*Pinus banksiana*), white spruce (*Picea glauca*), balsam fir (*Abies balsamea*), trembling aspen (*Populus tremuloides*), and white birch (*Betula papyrifera*); lower-lying areas support stands of black spruce (*Picea mariana*) and tamarack (*Larix laricina*). Over most of the burn area, including the hills, the coniferous species predominate. Much of the forest is second growth due to logging operations carried out here over the past century. Stands are of various ages, and there are a few recent clear cuts.

Travelling up Highway 527 from Thunder Bay towards Armstrong, one first encounters the burned area 139 km north of the Trans-Canada Highway, and then drives through it for the next 28 km. Blackened dead trees line both sides of the highway (Figure 2). There are scattered small green skip patches with, around their edges, dead and dying conifers with rust-coloured needles, killed by the heat but not flame-burned.

On a visit to this area on 16 January 1999, I noticed evidence of much woodpecker activity: pale patches on the blackened tree trunks where bark had been chipped off, and tell-tale piles of bark chips on the snow below. Black-backed Woodpeckers (*Picoides arcticus*) were present every time I stopped to look and listen.

To get an idea of how many woodpeckers there were in the burn, and which species were present, Stan Phippen and I revisited the site on 31 January 1999. Starting at 0900h at the southern edge of the burn, we walked north along the highway counting woodpeckers. By the time darkness fell at 1800h, we had covered a 21 km stretch of the highway, and 75 percent of the burn.

Whenever we detected a woodpecker, we tried to identify it with binoculars. With a bit of patience we could usually see the bird from the road. If we could not spot it, we walked into the forest to find it; this was not too difficult since the snow depth was only about 60–70 cm. Most woodpeckers were detected by hearing them tapping on the tree

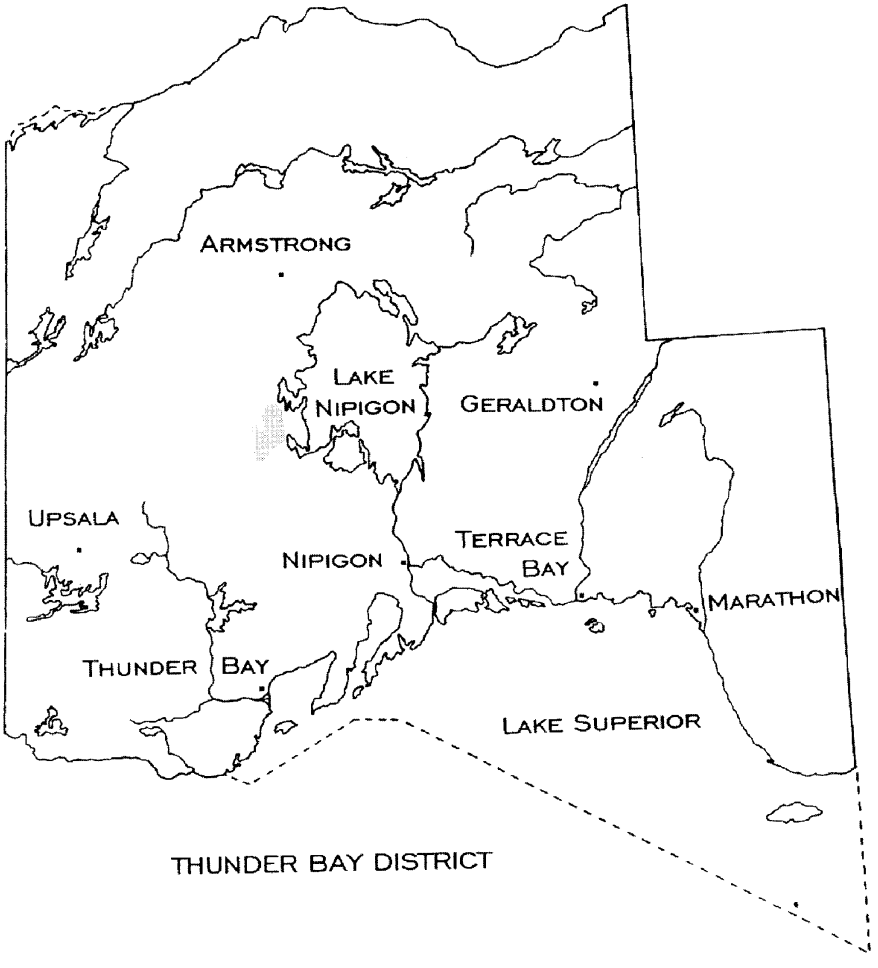

Figure 1: Location of Fire 21 is indicated by the grey area west of Lake Nipigon.

trunks as they fed; we could hear them tapping up to about 50 m off the road. Some birds were found when we heard their call notes, or were seen flying over. In addition, we counted 12 Black-backed Woodpeckers at greater distances which were drumming.

We counted a total of 191 woodpeckers (Table 1), of which 161, or 84 percent, were Black-backed Woodpeckers (Figure 3). We were able to determine the sex of most of them by getting a look at the top of the head; they were split about 50/50 males/females. Sometimes up to four or more were visible simultaneously, but they were generally evenly dis-

persed along the entire route.

We wondered whether the Black-backed Woodpeckers might be more concentrated along the highway than away from it. To check this out, Al Harris and I returned to the area two weeks later on 14 February, and walked two transects perpendicular to the road. We counted 31 woodpeckers along a distance of 2 km, all Black-backed Woodpeckers, giving a density even higher than along the highway.

We then attempted to estimate how many Black-backed Woodpeckers were present in the entire burn, making a few assumptions based on what we had seen so far. We assumed that the forest type was homogeneous throughout the burn, and that the Black-backed Woodpeckers were evenly distributed throughout the burn area. We assumed that our linear counts detected all woodpeckers to 50 m on either side, for a total width of 100 m. We probably missed a few, which were made up for by the dozen or so that were drumming beyond 50 m. Assuming a minimum density of 0.77 woodpeckers/hectare (based on the highway total of 161 in an area measuring 21 km x 100 m), we calculated that the total wintering population of Black-backed Woodpeckers in Fire 21 was at least 20,328.

The woodpeckers were feeding primarily on dead jack pine and balsam fir trees. They would tap the trunk until they detected something in the wood, then they would drill a rectangular hole into the wood (Figure 4), and extract something.

What were they eating? I cut down a dead young balsam fir that a female Black-backed Woodpecker had been feeding on, and, splitting a short section of it open, found several white larvae measuring up to 1.7 cm in length (Figure 5). The larvae were at the ends of tortuous burrows extending up to several centimetres into the sapwood, the tunnels behind them packed with excelsior-like wood shavings (Figure 6). The entrance holes to the tunnels on the surface of the tree trunk were elliptical in shape, vertically oriented, and entered the wood at an oblique angle (Figure 7).

Species	January 1999	January 2000
Black-backed Woodpecker	161	15
Three-toed Woodpecker	2	2
Downy Woodpecker	10	4
Hairy Woodpecker	18	6
Pileated Woodpecker	0	2

Table 1: Comparison of woodpecker counts in Fire 21 in the first and second winters following the burn.

Figure 2: The predominantly coniferous forest in the burned area, 14 February 1999. Photo by *N.G. Escott.*

Figure 3: Male Black-backed Woodpecker in Fire 21 burn, 14 February 1999. Photo by *N.G. Escott.*

I kept the rest of the tree, a log measuring 4.4 m in length and 7 to 12 cm in diameter, at home in my screened front porch. Weather conditions in the porch were similar to the outdoors, except for the lack of wind and precipitation. Between 11 and 27 June 1999, at least two dozen White-spotted Sawyer Beetles (*Monochamus scutellatus*) (Figures 8 and 9) emerged from the tree. The exit holes were different from the larval entrance holes, being perfectly round, and perpendicular to the surface of the log. After all insects had emerged, I counted a total of 33 exit holes. No other insect species emerged from this log.

The White-spotted Sawyer Beetle is found from Newfoundland south to North Carolina, west to Minnesota, and northwestward to Alaska in the boreal forest biome (Wilson 1962). The adults are on the wing in the summer and are attracted to dying coniferous trees. They are particularly attracted to forest fire burns, but also lay eggs on trees that are dying for other reasons, such as those in flooded beaver ponds or recently cut log piles. The larvae burrow through the bark and eat out shallow flat galleries on the surface of the wood before burrowing into the trunk in the fall. They hibernate in the trunk, and depending on the latitude, may pupate the next spring, or continue feeding in the wood the next summer, in which case they would overwinter a second time in the tree, pupate the following spring, and emerge as an adult the next summer. This insect is reported to have a 2-year life cycle from northern Minnesota northward (Wilson 1962), and may even take an additional year to mature in Alaska (Murphy and Lehnhausen 1998).

I wondered how many larvae remained in the burnt trees for a second winter. If there were still a significant number, the Black-backed Woodpeckers should stay through the summer and the succeeding winter. To check on this, Stan and I repeated our Highway 527 survey a year later, on 30 January 2000. This time we found only 15 Black-backed Woodpeckers, i.e., less than 10 percent of the previous year's total, and they were in the islands of live and dying trees; the tracts of blackened dead trees were deserted. Nesting pairs of Black-backed Woodpeckers were present in the summer of 1999 in Fire 21, but in low numbers, far fewer than the number of birds that had wintered there. On 18 April, I saw only nine Black-backed Woodpeckers, including three pairs, and on a visit in early August, I was able to find only three pairs. I kept the balsam fir log that I had cut down for an additional year, and no further sawyer beetles emerged. All these observations tended to support a one-year life cycle for *Monochamus scutellatus* in the Fire 21 burn.

Black-backed Woodpeckers are known to concentrate in recent burns (Dixon and Saab 2000), and large numbers have been counted on other occasions. For example, Rudolf Koes and Russ Tkachuk

Figure 4: Rectangular drill holes made by Black-backed Woodpeckers, Fire 21, 14 February 1999. Photo by *N.G. Escott.*

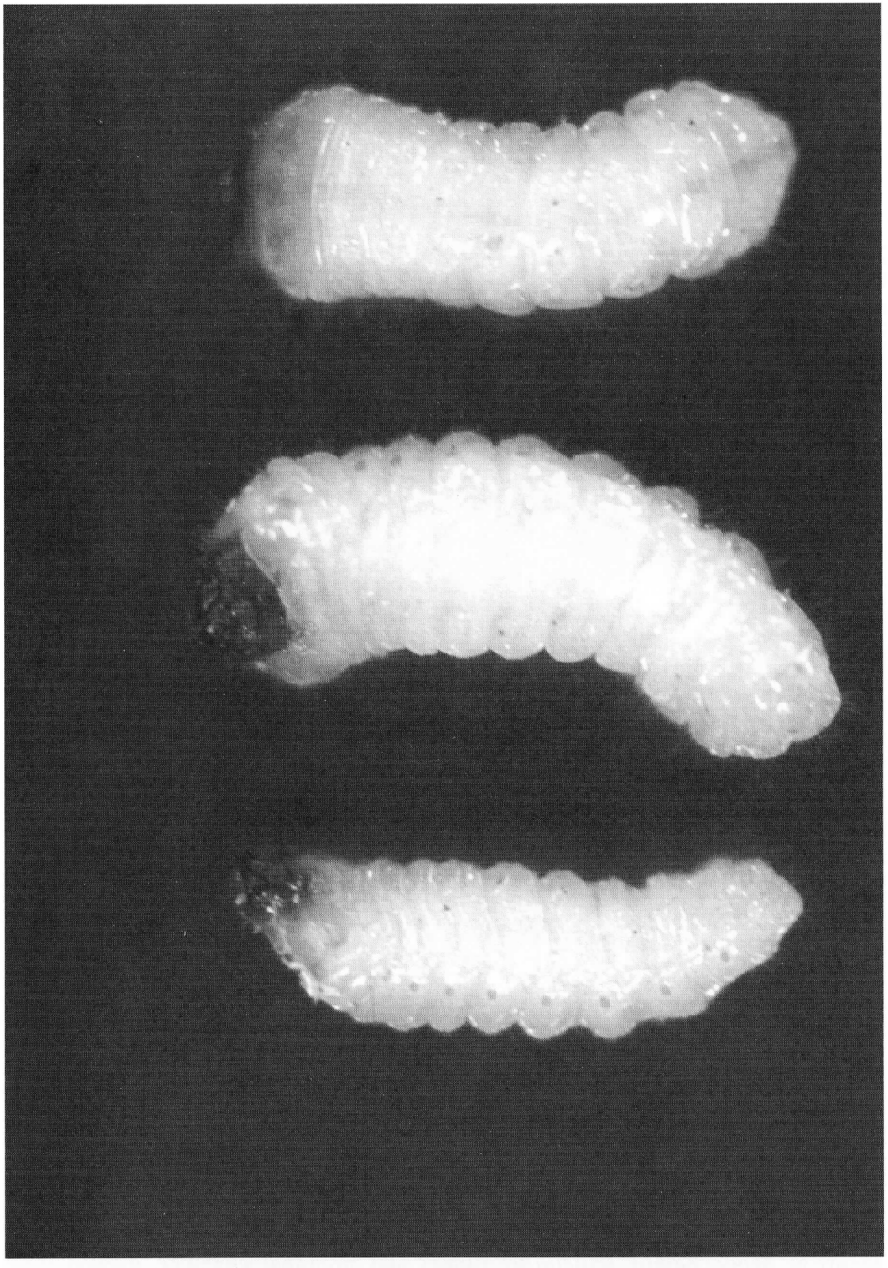

Figure 5: ***Monochamus scutellatus*** **larvae extracted from burned balsam fir in Fire 21, February 1999. Photo by** ***N.G. Escott.***

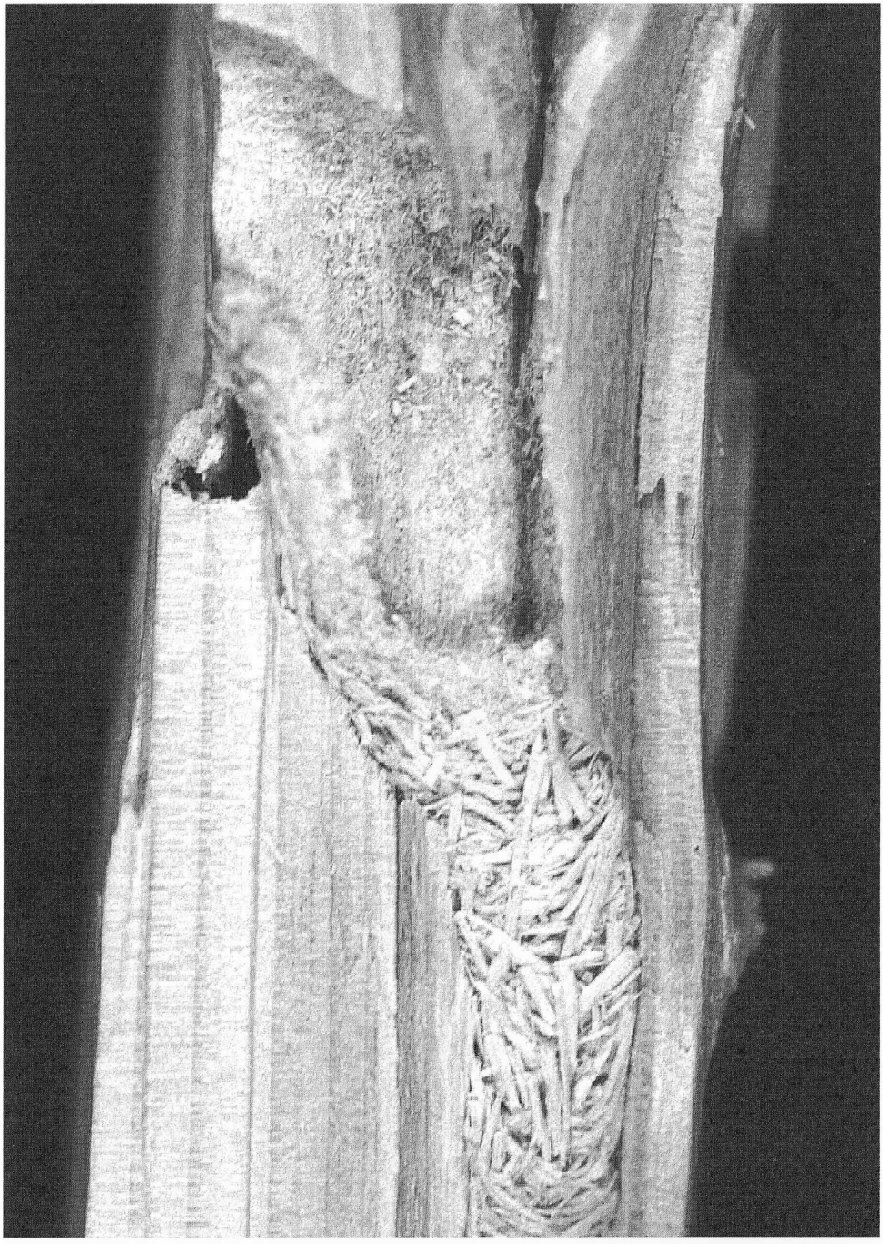

Figure 6: ***Monochamus scutellatus*** **tunnel and prepupal chamber, packed with wood shavings behind it. The prepupa was hibernating in the curved chamber at the top of the photograph. Photo by** ***N.G. Escott.***

Figure 7: Galleries and entrance holes of *Monochamus scutellatus.* The galleries are shallow excavations under the bark made by the young larvae before they bore into the trunk. Photo by *N.G. Escott.*

Figure 8: Adult female *Monochamus scutellatus.* Photo by *N.G. Escott.*

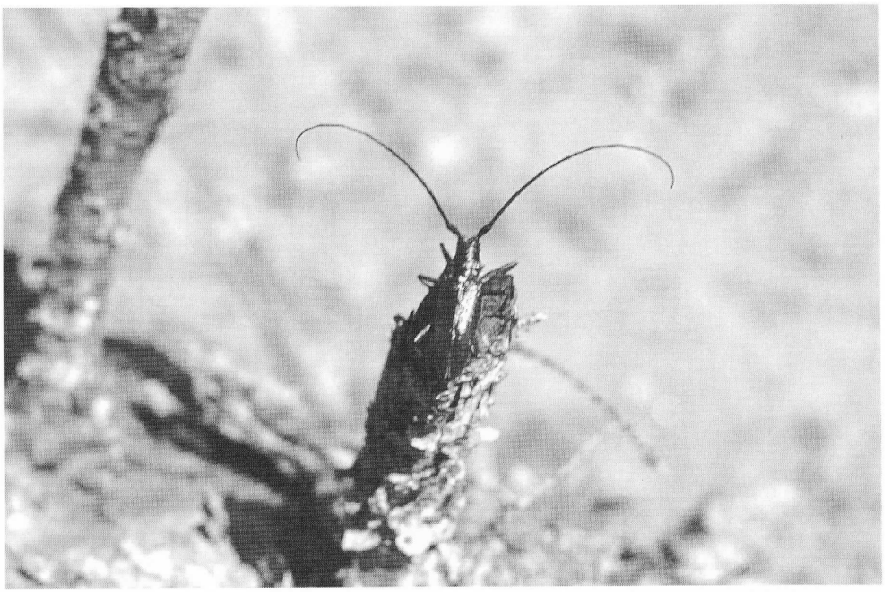

Figure 9: Adult male *Monochamus scutellatus*. Photo by *N.G. Escott.*

counted 77 in January 1988 in a 1987 forest fire site in Sandilands Provincial Forest, near St. Labre Manitoba (Koes, pers. comm.). The forest in that area was primarily jack pine. In the winter of 1999–2000, we checked a fresh burn from the 1999 season near Black Sturgeon Lake, Thunder Bay District. Black-backed Woodpeckers were present, but in lower numbers than we had found in Fire 21. The forest type here was more extensively deciduous, and Black-backed Woodpeckers were only found in the coniferous areas.

The Black-backed Woodpecker is known to feed primarily on wood boring beetles, mostly cerambycids (sawyer beetles) and buprestids (metallic wood-boring beetles) (Bent 1939). The White-spotted Sawyer Beetle appears to be the main winter food for Black-backed Woodpeckers in the Thunder Bay area. It was also reported to have been the primary food for this species in a 1983 fire near Fairbanks Alaska (Murphy and Lehnhausen 1998), and in a 1988 burn in Quyon Quebec (Villard and Beninger 1993). This insect is well known to the forestry industry, the adults often being found on freshly cut logs, laying their eggs. If the logs are not processed quickly, the larvae destroy their commercial value. While this insect has a two or three-year life cycle in the more northerly parts of its range, it may be only one year at the latitude of Thunder Bay. Alternatively, the time it takes for the insect to mature may depend on the length and severity of the winter. The winter of 1998–99 was a rel-

atively mild one. In a colder winter, two years may be the norm in the Thunder Bay area.

The observations noted above underscore the importance of recently burned coniferous woodlands to the winter survival of Black-backed Woodpeckers, and should be taken into account by forestry and wildlife managers who are involved in fire suppression activities and post-fire salvage logging operations in northern Ontario.

Acknowledgements

I wish to thank Stan Phippen and Al Harris for helping to count the woodpeckers, Brian Moore for helping to identify the larvae, Margaret Carney for her enthusiasm in uncovering the story, and Debbie Escott for tolerating long-horned beetles flying around her front porch.

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Notes

George K. Peck: Distinguished Ornithologist

Jim Richards

Usually, the publication of a major work in ornithology signals the culmination of years of work and much research. However, when *Breeding Birds of Ontario: Nidiology and Distribution. Volume 1: Nonpasserines* was released by the Royal Ontario Museum in 1983, followed by *Volume 2: Passerines* in 1987, it was just the beginning. These very pertinent publications, authored by George Peck and his close friend Ross D. James, have been continuously updated in *Ontario Birds* (in seven installments from 1993 to 1999).

The Ontario Nest Records Scheme (Royal Ontario Museum) was 10 years old (with 1800 cards) when George assumed leadership as its volunteer coordinator in 1966. Since that time, through his hard work, dedication and networking, he has built the scheme to over 115,000 cards and the most complete record in existence of the breeding biology of Ontario birds. He has authored 29 annual reports during this time, keeping participants informed as to the status of the work, which is co-sponsored by the Canadian Wildlife Service.

The works noted above form only a part of the 98 titles in his published bibliography. He has contributed much to the scientific knowledge of Ontario birds through papers published in *The Wilson Bulletin*, *Canadian Field-Naturalist*, *Ontario Birds*, and *Ontario Field Biologist*. As well, he authored eight species accounts in *Atlas of the Breeding Birds of Ontario* (1987), and co-authored (with Jim Richards) a chapter in *Ornithology in Ontario* (1994).

His attention to detail, evident in his meticulous field journals, is legendary; a trait self-imposed but enhanced through association with others like James. L. Baillie, Rev. Charles Long, Terry Shortt and Ross James. An active member of numerous organizations (some since 1939), national, international and local, he was appointed as Research Associate at the Royal Ontario Museum in 1976. He received a Conservation Achievement Award from the Federation of Ontario Naturalists in 1988, and was nominated a Fellow of the American Ornithologists' Union in 2000.

Having earned respect and recognition through his research and writing activities, George is even better known as a wildlife photographer with a penchant for birds. His acclaimed images (about 2,500 to date) have been published in 71 books and numerous magazines and journals. In addition, his photo-

Figure 1: Presentation of the OFO Distinguished Ornithologist Award at the Annual General Meeting in Leamington on 29 September 2001. Left to right: Jim Richards, Jean Iron, Chris Escott, and George Peck. Photo by *Sam Barone*.

graphic art graces the pages of many textbooks and various series by Grolier, Readers Digest and Natures Children, numerous postcards, calendars, newsletters, bulletins and brochures. George is a major contributor to the CWS Wildspace website, with over 1,400 of his images being used, and to the Royal Ontario Museum's Biodiversity website.

George has enjoyed participating in several photo exhibitions open to the public in Burlington, Hamilton, Ottawa, Craigleith, Collingwood, Thornbury, Kitchener, Owen Sound and Toronto. He was one of three artists (along with son Mark Peck and friend Jim Richards) who had their works displayed by the Royal Ontario Museum for several months to commemorate the opening of the new bird gallery in 1989–90. While his photography is driven by his passion for birds and other wildlife, he admits to being influenced by the works of masters such as Vic Crich (an early field companion), Eliot Porter, Eric Hosking and John Shaw.

In addition to amassing an army of dedicated volunteers for the ONRS, writing, speaking, researching, and creating magnificent photographic images, perhaps one of his most valuable contributions has been the ability to infect and inspire others with the same passion he has enjoyed, through personal contact. George is truly a Distinguished Ornithologist. I am proud to have nominated him for this award and equally proud to include him as a friend.

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A Northern Shoveler–Mallard Pair

George Fairfield

Hybridism between duck species is common. Kortright (1942) named the Northern Shoveler (*Anas clypeata*) as one of the many species that occasionally interbreeds with the Mallard (*Anas platyrhynchos*). The following observations illustrate how a male Northern Shoveler can dominate a male Mallard in protecting his association with a female Mallard.

On 23 May 1987, I was standing on the concrete abutment that borders the western side of the filtration plant at Toronto Island and overlooks a small bay off Toronto Harbour. The deck of the abutment is about 1.5 m above the water. On the far side of the bay, I saw a male Northern Shoveler swimming with a female Mallard. The female Mallard swam over to me, no doubt to solicit food. The Northern Shoveler followed her over. I threw some bits of sandwich into the water and the Mallard female ate them.

A male Mallard appeared and swam toward the other two ducks. The Northern Shoveler placed himself between the male and female Mallards. The Northern Shoveler then attacked the male Mallard, bobbing his head vigorously. The male Mallard flew off with the Northern Shoveler in close pursuit. The Northern Shoveler's bill was open as he chased the Mallard. The male Mallard circled and landed close to the female. The Northern Shoveler landed on the male Mallard and chased him across the water, bobbing his head. There was a second aerial chase similar to the first one. The male Mallard again landed close to the female. The Northern Shoveler landed beside him and chased him until he escaped by flying up and landing beside me on the deck. The Northern Shoveler then returned to the female Mallard, and the male Mallard returned to the water, a short distance away. When I left, the Northern Shoveler was again between the male and female Mallards.

During this episode, the female seemed to pay no attention to the conflict and swam quietly around near me, apparently hoping for more handouts. The observations described above covered a span of about 20 minutes. I observed the action from within 30 m, except when the aerial chases were underway.

The following day, 24 May, at 1045h, I returned to the same place with my camera and obtained the photos that accompany this note. When I arrived, the male Northern Shoveler was resting with the female Mallard on the shore on the far (west) side of the bay. The female Mallard entered the water and swam over to me, with the Northern Shoveler about 20 m behind her. I threw some bread into the water.

Figure 1: Male Northern Shoveler placing itself between the male and female Mallards, 24 May 1987. Photo by *George Fairfield.*

Figure 2: Male Northern Shoveler chasing male Mallard, 24 May 1987. Photo by *George Fairfield.*

Two male Mallards then appeared and swam over. Immediately, the contest started between the Northern Shoveler and one of the male Mallards. The second Mallard left and was not seen again.

The female Mallard seemed only interested in the bread and was much more aggressive than the males at getting it. If a piece landed close to one of the males, she would rush over and he would let her take it. The Northern Shoveler kept himself between the female and male Mallards (Figure 1). When the male Mallard came close to the female, the Northern Shoveler swam toward him, bobbing his head and uttering low "clucks". Occasionally, this became a chase across the water, with the Northern Shoveler right behind the Mallard with his beak open (Figure 2). I saw no aerial flights this day. When I left at 1130h after obtaining my photographs, the contest was still going on.

Throughout my observations I did not see any courtship display by the female Mallard but she seemed to accept the close association with the male Northern Shoveler.

I returned to the same spot a year later, on 28 May 1988, and found a male Northern Shoveler, which I presumed to be the same bird, keeping a male Mallard away from a female Mallard in the same manner described above.

Discussion

Both Northern Shovelers and Mallards form courtship trios. Kortright (1942) stated that "polyandry is very prevalent with this species (the Northern Shoveler) and the amiability with which this unusual matrimonial arrangement is accepted by both husbands is astounding. ... Polyandry is also practised to some extent by the Mallards, but the males ... object strongly." The present Northern Shoveler male did not accept a second "husband" with amiability, perhaps because he was not another Northern Shoveler.

Martz (1964) described similar behaviour to that observed by the writer, involving a male Northern Shoveler and a pair of Blue-winged Teal (*Anas discors*): "The Shoveler continuously head pumped. He rushed repeatedly with bill open at the Blue-winged Teal who persistently tried to reach the female." Dzubin (1959) observed a male Northern Pintail (*Anas acuta*) keeping a male Mallard apart from a female Mallard in a similar manner. Nellis (1970) recorded two instances of male Green-winged Teal (*Anas crecca*)–Mallard pair associations. In one, the teal attacked the male Mallard when he attempted to copulate with the female. In the other, no aggressive behaviour was seen.

The Northern Shoveler is an uncommon breeding bird in Ontario and no evidence of breeding was reported for Toronto in *Atlas of the Breeding Birds of Ontario* (Sandilands 1987). It is unlikely that this male Northern Shoveler could find a mate of its own species.

The writer saw no evidence of interbreeding between the Northern Shoveler and the Mallard. However, where such interbreeding does occur, the above observations demonstrate that a male Northern Shoveler, in spite of its smaller size, does not necessarily need to sneak in and surreptitiously inseminate the Mallard. In the present case, the male Northern Shoveler was quite capable of dominating the larger male Mallard and forming a pair with the female.

Acknowledgements

Many thanks to James Bendell, who provided helpful comments on an earlier draft.

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Letters

Molt of Heermann's Gull and Other Gulls

I found the recent article by Iron and Pittaway (2001) on the molts and plumages of Ontario's Heermann's Gull (*Larus heermanni*) to be a thorough and well-written account. It benefited from being able to follow a known individual bird over time, and provided a wealth of detail on the timing of molt in different feather tracts. Having had a long-term interest in gulls and molt, I would like to offer the following comments on the above paper, based on my and Chris Corben's (*not* Corbin, as quoted by Iron and Pittaway 2001) study of molt in the Western Gull (*Larus occidentalis*), and upon review and study of molt in other North American and European gulls (Howell et al. 1999, Howell and Corben 2000, Howell 2001, Howell *in press*).

Howell and Corben (2000) showed that over a Western Gull's first winter there is but a single molt (*sensu* Humphrey and Parkes 1959), *not two*. That is, *conventional first prebasic and first prealternate molts involve only a single molt* which, in the Western Gull, appears phenotypically more similar to a prealternate molt! This also appears to be true of Heermann's Gull and other medium-sized to large gulls in Europe and North America (Howell et al. 1999, Howell 2001) and in South America (Howell, unpubl. data). This possibility was noted for large gulls fully one hundred years ago by Dwight (1901): "It is extremely difficult to obtain enough specimens to show the limits of these two molts [= putative first prebasic and first prealternate], which may possibly represent but one." However, the mindset of two plumages – first-winter and first-summer – was too difficult to overcome, and still pervades most recent gull literature.

Based on a sample of hundreds of birds over several years, the conventional "first prebasic" molt of Heermann's Gull is highly variable in extent. In some birds it includes no upperwing coverts while in other individuals it includes many upperwing coverts and some to possibly all tertials. If you look carefully you will note similar variability in Ring-billed (*L. delawarensis*) and California (*L. californicus*) gulls, among other species. This "first prebasic" molt, as in other medium-sized to large gulls, can overlap (to individually variable degrees) with the complete second prebasic molt in a bird's second calendar year. However, I have seen no unequivocal evidence of three molts in this period – as would be needed for the existence of first basic, first alternate, and second basic plumages.

In addition, feather color and (or) pattern does not necessarily correspond to feather generation: i.e., hormones that determine pigmentation may change within the course of a single molt, such that early-molted "first basic" feathers are brown while later-molted "first basic" feathers are grey (Howell and Corben 2000, Howell 2001).

Thus, while following an individual over time provides an invaluable snapshot, any description of molts that does not start with a known, unequivocal plumage (e.g., juvenal) can be difficult to interpret. I suggest that the conventional "first prebasic" molt of Heermann's Gull includes the so-called "first prealternate" molt invoked by Iron and Pittaway (2001). I see no evidence that any feathers were replaced enough times to involve three molts. Note, here, that "first prebasic" molts can often be suspended, or interrupted, in mid winter, with the same molt continuing in late winter or spring. The subscapulars are among the last feathers to be replaced in the "first prebasic" molt (and are not always replaced in larger gulls), and the so-called "Alternate 1" subscapulars in Figure 2 are simply growing in late in the "first prebasic" molt. Figure 1 shows some brown (apparently worn juvenal) feathers still on the head and, especially, nape. This is typical of other gulls, and a continuation of the "first prebasic" molt could produce whitish head feathers later in the hormonal cycle.

Also, a second wave of median covert replacement is common in fall (in all ages from second calendar-year onward) in other species of medium-sized and large gulls (Howell and Corben 2000, Howell 2001), and appears to be the start of the second prealternate molt – a possibility acknowledged by Iron and Pittaway (2001) but considered secondary to the idea of a supplemental plumage. (A presupplemental molt occurs only if there is a third generation of feathers in a plumage cycle, i.e., in addition to basic and alternate.)

The essentially continuous molting of medium-sized and large gulls in their first two years of life makes it difficult, and perhaps inad-

visable, to attempt applying "false precision" to their appearance with reference to basic and alternate plumages. Thus, the Ontario bird in September appears to have been in second basic plumage with some second alternate median coverts and tertials – a conceptual difficulty for field terminology. Is it in basic or alternate plumage?

In conclusion, Iron and Pittaway's (2001) description was a model example of detail, and I thank them for taking the time to document the Ontario Heermann's Gull's plumage succession so diligently. I hope my comments stimulate thought about details and difficulties involved in gull molt, and lead observers to approach the subject with a different perspective.

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Jean Iron and Ron Pittaway comment:

We read Steve Howell's letter with interest and welcome his opinions on molt in gulls. Many of the points raised by Mr. Howell reflect his and our different interpretations of the molt cycle, so we address only his main point. Howell believes that Heermann's Gull does not have a first prealternate molt as reported in our study. Instead, he suggests that the first prealternate molt is part of the first prebasic molt. However, the whiter head of the first alternate plumage, well documented in our paper and photographs, fits perfectly into the homologous series of later plumages, which are white-headed in alternate plumage and dusky-headed in basic plumage. Our published study on the molts and plumages of Heermann's Gull is clearly presented and can be tested against future studies.

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Photo Quiz

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Figure 1

A dark, relatively slender-winged bird appears almost overhead and against a light sky (Figure 1). The primaries are quite pointed and there is a light patch on the underwing. Briefly, thoughts of a large falcon, Peregrine or Gyr, cross our mind. However, the wings are just too narrow and tapered to a point. The large falcons have a very broad "arm", the area between the wing base and the bend or "wrist". Moreover, the distinct light patches contrasting with the remainder of the wing do not fit these falcons. From what we can see of the bill, it is at least partially pale with a darker tip, which also does not fit. It is not a raptor.

The shape is that of a Larid. Could it be a gull? We know that most gulls in less than adult plumage are dark to varying degrees. Our commonest large gull, Herring, can be quite dark blackish brown in juvenal and first basic plumage. Herring Gulls would, however, have some contrasting light on the face and head. At this age they might have some light at the base of the bill but not likely as much as on this bird. Most importantly, Herring Gulls show a light patch formed by the lighter inner primaries which contrasts with the outer primaries. The opposite is the case with our overhead bird. Young Heermann's Gulls are very dark but they do not have a lighter patch on the wing.

The group of Larids which are generally overall darkly plumaged at least at some ages and forms are the Stercorarids or Jaegers and

Figure 2

Skuas. They occur in a dizzying array of plumage morphs, compounded by molts over the four years to reach full adult plumage. Five species have occurred in Canada. The Great Skua (*Catharacta skua*) is a winter visitor to Newfoundland waters and occasionally farther south (Godfrey 1986). The validity of the bird reported from Niagara Falls on 15 December 1915 (Beardslee and Mitchell 1965) will likely never be determined, as the specimen has been lost. South Polar Skua (*Catharacta maccormicki*), a Southern Hemisphere species, is a scarce visitor off both Canadian coasts (Godfrey 1986). The two large skuas we can eliminate from consideration on several counts. They are very stocky, with very broad "arms", and have very extensive white at the base of the underwing primaries and do not have any central tail extensions.

Shape, size and proportions are notoriously difficult to determine with precision in the Stercorarids and more difficult in still photographs such as we have here. Nevertheless, along with other evidence, it is useful to understand some basic differences among the species. With apologies to non-fans of football, some comparisons may be drawn as follows. Imagine the defense on the playing field. The Great and South Polar Skuas are the lumbering but quick defensive tackles. Pomarine Jaegers are the defensive ends, not quite as big and muscular and less bulky, but still imposing. The linebackers, rangy and strong and capable of bursts of speed and strength, are the Parasitic Jaegers. Long-tailed Jaegers are the defensive backs, of relatively slim proportions and smaller than Parasitics. Size and proportions can be relied upon too much and result in identification errors, but they can be a first clue to identity.

So our jaegers (astute readers will already have noticed that the photos are of two different birds, but more on this later) are members of the three species which occur with regularity on the lower Great Lakes, but in considerably different numbers. Identification

would be relatively easy if our birds were adults, but they are not. They have the generally dark plumage and essentially all dark heads of juvenile jaegers. A further complicating factor is that all three jaegers come in colour morphs ranging from light through intermediate to dark. It is not always possible to put any single bird into one of these three, as the gradation is somewhat clinal. For example, the bird approaching in Figure 1 appears to be a dark morph, but with some barring on the belly and marginal (leading edge of the wing) and underwing coverts. The bird overhead in Figure 2 is even blacker and less patterned in these same areas.

It is only a slight exaggeration to say that, under most field conditions, no single feature can be seen well enough to prove diagnostic for any one of the jaegers. So let's try to build a case for the identification of these birds. We will use a combination of proportions, bill, underparts pattern and tail shape. To return to shape, size and proportions, Pomarine has the broadest arm, but in the overhead bird where this feature can be examined it is not dramatically broad, although too "muscular" for Long-tailed. Parasitic tends to be chestier and Pomarine has a fuller belly, like the Figure 1 bird. Maybe we have Pomarines.

Bill shape, size and colour patterns are very useful. Pomarine has the most bicolored bill, with the basal two-thirds pale bluish flesh. Parasitic shows less contrast between a dark bill tip and paler base, partly because the shades are less intense and partly because the entire bill is less stocky than in Pomarine. Long-tailed has about 40–60 percent dark distal half, mainly because this proportion of the bill is the nail. Although, alas, as is so often the case in the field, we cannot get an unequivocal look at the bills, they appear to be extensively pale. So they look more like Pomarines.

We can see the underparts of both birds rather well. On these very dark birds, the comparison of overall underwing shade to that of the flanks will not serve to distinguish Pomarine from Parasitic. The undertail coverts in Pomarine and Long-tailed are usually distinctively black and white barred. We cannot see this feature in Figure 1, and our Figure 2 bird is so dark and the photo perhaps underexposed so it is not visible here either. Juvenile jaegers of all three species have white bases to the primaries as seen from below. The extent of white – the wing flash – has been used in the past to distinguish the jaegers. It is said to be largest in Pomarine, less in Parasitic and smallest in Long-tailed, but it is not a reliable criterion on its own. Moreover, much has been made of the double white wing crescent on Pomarine Jaeger. This is created by the white bases and dark distal halves of the underwing primary coverts. This

feature can be seen in Figure 1. Note the white primary bases and the white primary covert bases separated by the dark primary covert tips. Two further points are instructive. First, note that it hardly shows in the darker, overhead bird. Second, one in 20 Parasitics can have pale bases to the primary coverts. So this category of evidence is quite suggestive of Pomarine Jaeger but is not 100 percent convincing. Nonetheless, taken together with the other features we've already examined, the case is building for Pomarines.

The length and shape of the central tail feathers even on juvenile jaegers can be very important. We cannot see these in the Figure 1 bird – a rather normal situation! However, the coal black bird overhead shows a noticeable extension of the two central rectrices. These are at the long extreme for juvenile Pomarine Jaeger, but they are blunt or rounded at the tip rather than pointed as they are in Parasitic. Long-tailed central tail feathers are as long as this or longer and with blunt or rounded tips.

To conclude, we have two juvenile **Pomarine Jaegers**. We have arrived at the identification using a combination of bulk and proportions, bill pattern, underwing patterns, and tail feathering. Other features such as manner of flight, behaviour, upperpart colours, head patterning and the exact coloration of primary feather tips cannot be used in this case. These Pomarine Jaegers were photographed on the Bay of Fundy by Peter Burke, 23 September 2000.

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