

First Documented Nests of Hoary Redpoll in Ontario

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Left: Figure 1. Habitat where Hoary Redpoll nests were located, West Pen Island vicinity, Kenora District, 5 July 2004. All three nests were in low *krummoltz* form White Spruce, 300 cm or less in height, along narrow beach ridges parallel to the Hudson Bay coastline.

Photo: Donald A. Sutherland

Above: Figure 2. Female Hoary Redpoll from nest 2, captured at nest, West Pen Island, Kenora District, 5 July 2004. The bird was incubating four eggs and showed a prominent brood patch. Note the blocky, flat-headed appearance combined with the short bill and extensive nasal tufts. The sides are fairly heavily marked with wispy streaks, not broad markings. *Photo: Colin D. Jones*

The Hoary Redpoll (*Acanthis hornemanni*) has a Holarctic breeding distribution and is one of only a small number of birds capable of surviving year-round in the Arctic (Knox and Lowther 2000). In the Palearctic, its breeding range extends from northern Scandinavia eastwards to eastern Siberia (AOU 1998) and in the Nearctic from western Alaska across Arctic Canada to Greenland (Godfrey 1986). In Canada, the subspecies *exilipes* nests in the northern Yukon, mainly on the north slope (Sinclair *et al.* 2003), in northern and central-eastern Mackenzie, on southern Victoria Island, in the Keewatin district of Nunavut, on Southampton Island, in northern Manitoba (Churchill; Jehl and Smith 1970) and in northern Quebec (Ungava Bay;

Lanoué and Seutin 1996). The larger, paler subspecies *hornemanni* breeds farther north on the Nunavut islands of Ellesmere, Axel Heiberg (Parmelee and MacDonald 1960), Devon, Bylot and Baffin (Godfrey 1986).

The taxonomy of redpolls remains incompletely known and subject to debate. Proposals vary from one species known as Common Redpoll (*A. flammea*) with large phenotypic variability (Salomonsen 1951, Troy 1985, Marthinsen *et al.* 2008) to as many as four species (*A. flammea*, *A. exilipes*, *A. rostrata*, *A. hornemanni*) as suggested by Herremans (1990). Currently, two polytypic species, each with two subspecies, are recognized in North America (AOU 1998, Chesser *et al.* 2009): Common Redpoll (*A. f. flammea*, *A. f. rostrata*) and Hoary Redpoll (*A. h. hornemanni*, *A. h. exilipes*). In Britain, an additional former subspecies of the Common Redpoll (*A. cabaret*, Lesser Redpoll) recently gained specific status (Lifjeld and Bjerke 1996, Sangster *et al.* 2001).

In areas of sympatry between *A. h. exilipes* and *A. f. flammea*, a continuum of phenotypes from the palest *exilipes* to the darkest *flammea* led Troy (1985) to conclude that there is actually one highly variable species involved. However, by re-examining the variation and taking into account sexual and age-specific dimorphism, others have shown that dark *exilipes* (usually female or first-year birds) can appear much like *flammea*, and light *flammea* (older males) can appear much like *exilipes*. Thus, any true intermediates may be examples of convergence of two distinct species (Molau 1985, Knox 1988).

Evidence for hybridization between *flammea* and *exilipes* lies mainly in individuals showing intermediate characters; no known mixed-pair nests have been described (Knox 1988). Further, differences in the timing of migration, breeding habitat, diet, calls, physiology and behavior exist between the two taxa (Knox 1988, Knox and Lowther 2000). Seutin *et al.* (1995) found relatively little genetic differentiation among the redpolls, but suggested this was not surprising given a large population size, nomadic breeding strategy and recent evolutionary divergence. Marthinsen *et al.* (2008) also found low genetic differentiation and suggested the need for field work in areas of sympatry to help resolve several competing hypotheses which could account for the low genetic separation between the two taxa.

James (1991) considered Common Redpoll to be a common summer resident along the Hudson Bay coast of Ontario. Conversely, he regarded Hoary Redpoll as a “rare (and occasional?)” summer resident there, based largely on field work from the first Ontario Breeding Bird Atlas (OBBA1:1981-1985; Cadman *et al.* 1987). In July 1985, D. Shepherd and G. Poole found probable breeding evidence for Hoary Redpoll in two 10 x 10 km squares in the vicinity of West Pen Island. They observed what appeared to be a mated pair and captured three adults that exhibited breeding condition characters. During the same month, an adult Hoary Redpoll was observed in willow scrub 40 km west of Cape Henrietta Maria by D. Evered and E. Kiviat (Middleton 1987). In 1990, three birds were observed at the mouth

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of the Little Shagamu River on 31 May (Wilson and McRae 1993); however, these birds were possibly migrants, as the date is somewhat earlier than the earliest known egg dates at Churchill, Manitoba (6 June – 12 July; Jehl 2004). There have been a number of subsequent summer records of Hoary Redpoll in the northern Hudson Bay Lowlands of Ontario. These include three other records from the second Ontario Breeding Bird Atlas (OBBA) (Cadman *et al.* 2007) farther east along the Hudson Bay coast near Burntpoint Creek (55 14.56' N 84 19.12' W) and Cape Henrietta Maria (55 03.28' N 82 16.65' W) where evidence of probable breeding was found, and near the Sutton River (55 01.9' N 82 48.11' W) where evidence of possible breeding was found (OBBA2: 2001–2005, database; Cadman *et al.* 2007).

Compared to Ontario, the Hoary Redpoll breeds more commonly farther north at Cape Churchill, Manitoba. However, its numbers fluctuate widely from year to year, such that it may comprise as much as 50% to as little as 10% of the total redpoll population (Cooke *et al.* 1975). Similarly, Middleton (1987) proposed that in Ontario Hoary Redpoll probably breeds in low numbers farther south on the coastal tundra, based on breeding evidence from the first OBBA.

Until 2004, no nesting of the Hoary Redpoll had been confirmed for Ontario (Peck and Peck 2006). Here, we present

information on Ontario's first three nests of Hoary Redpoll found in the vicinity of West Pen Island, Kenora District, with discussion of the species' identification and comments on its local abundance.

From 24 June to 7 July 2004, we conducted field work in the vicinity of the Pen Islands in support of the second OBBA. Our base camp was located on a narrow marine beach ridge running parallel to the Hudson Bay coast, approximately 8 km SSW of West Pen Island (56 47.8' N 88 57.7' W). The immediate area is maritime sub-Arctic wet tundra dominated by sedges (*Carex aquatilis*, *C. chordorrhiza*, *C. scirpoidea*) and interspersed with low willow (*Salix* spp.) and Bog Birch (*Betula pumila*) thickets, numerous shallow lakes and ponds, and a parallel series of old, low gravel beach ridges extending inland. These ridges support a lichen-heath community (Johnson 1987) dominated by lichens (*Cladonia* spp.), Mountain Avens (*Dryas integrifolia*), Black Crowberry (*Empetrum nigrum*), Alpine Blueberry (*Vaccinium uliginosum*), Mountain Cranberry (*Vaccinium vitis-idaea*) and Lapland Rosebay (*Rhododendron lapponicum*). Approximately 7 km inland from the coast, widely scattered trees or small copses of 'krummholz' White Spruce (*Picea glauca*) become increasingly frequent on the ridges, giving way to lichen-spruce woodland approximately 10 km inland from the coast.

We observed Hoary and Common redpolls the entire duration of our visit, with up to 6 pairs of Hoaries observed and three nests discovered. Behaviour of one or both of the adults led the observers to the nests; birds were followed at various distances until they visited the nest site.

Several days prior to the discovery of nest #1, a pair of Hoary Redpolls had been observed in the vicinity. Nest #1 was found in a small spruce on the edge of a willow thicket by McCracken on 28 June 2004, less than 100 m south of our base camp. The nest was under frenetic construction entirely by the female, under the very close attention of the male. Within about 5 minutes of discovering the nest, nest building was interrupted by the arrival of a Northern Shrike (*Lanius excubitor*) that flew into the adjacent willow thicket. This prompted immediate mobbing and agitated behaviour on the part of the pair of Hoary Redpolls, plus what was presumed to be a male Common Redpoll that

arrived in the company of several American Tree Sparrow (*Spizella arborea*), a White-crowned Sparrow (*Zonotrichia leucophrys*), and a Yellow Warbler (*Setophaga petechia*).

Nest #2 was found by Jones and Burke on 29 June, 6 km northeast of the base camp. It was visited only twice due to constraints of time and distance. Nest #3, which was found by Burke roughly 300 m east of camp on 6 July, escaped detection until the second last day of fieldwork, despite nearly daily passes of the nest tree by all observers.

Nest construction (nests #1 and #2) and brooding of young (nest #3) were ongoing when the nests were discovered. Characteristics for each nest are given in Table 1 and nest chronologies are in Table 2. Dimensions are missing from nest #1 due to its destruction by a predator (presumed Arctic fox [*Vulpes lagopus*]) and were not taken from nest #2.

Figure 3. Same female Hoary Redpoll, West Pen Island, Kenora District, 5 July 2004. Again, the broad, flat crown and fluffy nasal tufts that cover the base of the bill are apparent here.

Photo: Colin D. Jones





Figure 4. The same female from West Pen Island, Kenora District, 5 July 2004, showing the rump pattern. Although somewhat obscured by wear, the extensive white rump is apparent. Note the amount of wear on the primary and tail feather tips. In comparison Common Redpolls, which were also observed daily, lacked the obvious pale rump.
Photo: Colin D. Jones

Table 1: Characteristics of three Hoary Redpoll nests at West Pen Island vicinity, 28 June –7 July 2004.

| Nest # | 1 | 2 | 3 |
|--|--|--|---|
| UTM Georeference (NAD 83) | 379849 E 6296225 N | 384184 E 6301335 N | 381148 E 6295924 N |
| Date Found | 28 June (JDM) | 29 June (CDJ, PSB) | 6 July (PSB) |
| Description of nest site | Beach ridge, 6 km inland, heath-covered with occasional krummoltz form White Spruce. Large thicket of willow immediately adjacent to nest tree. Ridge bordered to north by wet sedge fen and small tundra lake to south. | Raised beach ridge, 500 m inland, with 5 isolated krummholtz White Spruce bordering willow/birch scrub and wet sedge; 100 m from large Snow Goose (<i>Chen caerulescens</i>) colony. Overgrazed sedge flats 25 m to south. | Beach ridge, 6 km inland, heath-covered and interrupted by standing water/willow/birch swale approx. 3 m tall. Occasional krummholtz White Spruce, reaching 10 m in height. Ridge bordered both sides by wet sedge fen (?) with standing water bodies, 15 m and 35 m to north and south edges of ridge, respectively. |
| Tree species, Height/Nest Height/Distance from trunk | White Spruce krummholtz form ~250 cm/60 cm/15cm | White Spruce krummholtz form 200 cm/125 cm/ 15 cm | White Spruce krummholtz form 300 cm/ 100 cm/ 43 cm |
| Inner/ Outer Diameter | N/a | | 5.2 cm/ 10.1 cm |
| Inner/ Outer Depth | N/a | | 4.0 cm/5.7 cm |
| Outer material | Bulky cup constructed of fine grasses, very fine dead twigs and lichen. | Bulky cup constructed of dead willow twigs and dead grass stalks (Fig. 6). | Bulky cup constructed of dead twigs, lichens and some <i>sphagnum</i> , much like nest 2 (Fig. 7). |
| Lining | Willow catkins, alternate female Willow Ptarmigan (<i>Lagopus lagopus</i>) feathers, white feathers and feather down | Finer grasses, thickly lined with willow catkins and white and black feathers | Finer grasses thickly lined with white feathers and willow catkins. |

Each nest and its contents were photographed and both sexes were carefully identified as Hoary Redpoll. The female at nest #2 was captured by mist-net, measured, photographed and released (Figs. 2-4). Measurements taken were: wing chord (relaxed) = 72 mm; tarsus = 17 mm; exposed culmen = 5.5 mm. A large brood patch was visible. Only the male at nest #2 was

photographed (Fig. 5). The presumed male of nest #3 was determined to be in first basic (formative) plumage and thus appeared darker than the 'expected' classic exilipes male. Females of the other two nests were also photographed and were also *exilipes*. In these and other separate sightings, key Hoary Redpoll features such as: a mainly clear white rump, relatively



Figure 5. Three photos of a male Hoary Redpoll at nest 2, West Pen Island, Kenora District, 29 June 2004. Although poor quality, the photos show an extensively pale, chunky male redpoll that clearly lacks the deep crimson chest and prominent side streaking of a Common Redpoll. *Photos: Peter S. Burke*

Table 2. Chronology of three Hoary Redpoll nests found in West Pen Island vicinity, 28 June –7 July 2004.

| Nest | Visit 1 | Visit 2 | Visit 3 | Visit 4 |
|------|---|---|---|--|
| 1 | 28 June; female building nest (about 80% complete); female closely attended by male; copulation observed. | 1 July; 1 egg in mid-morning. Pair present. | 2 July; 4 eggs in early morning (presumed evidence of egg dumping); 3 eggs were whitish, 1 egg had a light bluish cast. | 3 July; nest depredated by presumed Arctic Fox (<i>Vulpes lagopus</i>) |
| 2 | 29 June; female at nest, male attending, nest empty, almost fully lined. | 5 July; female incubating 4 eggs; female caught, photographed and released. Male present briefly. | | |
| 3 | 6 July; female brooding 3 nestlings approx. 3 days old. Presumed male feeding female on nest. | 7 July; female brooding 3 nestlings. Presumed male feeding female on nest. | | |

faint streaking on the sides and flanks, unstreaked (or nearly so) undertail coverts, fluffy nasal tufts covering a short, thick-based conical bill and a flat-headed and bull-necked appearance (Czaplack 1995, Brinkley *et al.* 2011) were observed. In addition, the Common Redpoll was regularly observed during our expedition and was available for comparison against presumed Hoary Redpoll individuals to ensure identification.

Other species of birds confirmed nesting in close proximity to our Hoary Redpoll nests included American Robin (*Turdus migratorius*), American Tree Sparrow, Horned Lark (*Eremophila alpestris*), Least Sandpiper (*Calidris minutilla*), Dunlin (*Calidris alpina*), Canada Goose (*Branta canadensis*), Smith's Longspur (*Calcarius pictus*) and Savannah Sparrow (*Passerculus sandwichensis*).



Figure 6. Nest of Hoary Redpoll, nest 2, West Pen Island, Kenora District, 5 July 2004. The bulky cup is constructed of dead willow twigs and grass stalks while the deep cup is lined with willow catkins and feathers. The nest tree and several others nearby, sat atop a long gravel beach ridge, isolated by several kilometers from any other trees. *Photo: Colin D. Jones*



Figure 7. Nest of Hoary Redpoll, nest 3, vicinity of West Pen Island, Kenora District 6 July 2004. The nestlings are only a few days old and covered with extensive dark grey down. This nest contained more moss and lichen in the cup's construction than nests # 1 or #2, possibly due to availability.

Photo: Colin D. Jones

Discussion

This note documents the southernmost known nestings of Hoary Redpoll in North America. Since annual breeding populations of Hoary Redpoll are believed to fluctuate widely at a given location (Cooke *et al.* 1975, Jehl 2004), we suggest that these three nests do not represent an expanding southward population into Ontario. Instead, breeding occurrences of the Hoary Redpoll in Ontario likely fluctuate in concordance

with regional climate and local availability of food resources. It is noteworthy that spring and summer 2004 were exceptionally cold in the Hudson Bay Lowlands; the average April-June monthly temperature (-5.9 C) was the coldest for the 12 years: 1996-2007 (Environment Canada 2013). This may well have prompted a more southerly influx of Hoary Redpolls than what otherwise might normally occur.

Though limited to only three nests, our descriptions of nest morphology, placement and height agree with previous studies for Hoary Redpoll (Lanoue and Seutin 1996, Knox and Lowther 2000). First nests in May and June are typically in conifers at Churchill and



Figure 8. Female Hoary Redpoll incubating at nest #3, vicinity of West Pen Island, Kenora District, 6 July 2004. The male of this pair was in its first alternate plumage and looked very similar to the female, not exhibiting the pale pink wash and completely unmarked underparts of an older male.

Photo: Colin D. Jones

Ungava Bay and later in deciduous trees/shrubs (and even on the ground) in July (Lanoue and Seutin 1996). Redpolls can nest twice in a summer due to short nest-building (4 days), incubation (minimum of 10 days) and fledging stages (9 days) (Lanoue and Seutin 1996). Nest #3 would have been initiated on about 17-19 June

(at the latest), which is still several weeks later than the earliest nests typically reported in Quebec and Manitoba. A delayed spring in 2004 probably accounted for a late start for almost all birds nesting in the West Pen Island area, since snow covered much of the northern lowlands until about mid-June (L. Walton, Ontario Ministry of Natural Resources (OMNR), pers. comm.; Burke *et al.* 2006). Moreover, despite our late expedition dates, we found very few passerine nests with young and no instances of adults carrying food to fledglings.

In at least some regions, the Hoary Redpoll is not highly territorial and is known to breed in loose aggregations, sometimes with several pairs nesting in the same thicket (Lanoue and Seutin 1996). Though we did not observe any evidence of such loose coloniality in the Pen Islands region, we found at least six pairs scattered in the study area and it seems reasonable that more nests were present.

Although the Common Redpoll was found in greater numbers than Hoary Redpoll in our study area, we could not detect any differences in habitat use, which is typical in areas of sympatry (Knox and Lowther 2000). The observation of a male Common Redpoll very close to nest #1 on 28 and 29 June and an American Tree Sparrow less than half a metre from nest #3 on 7 July is probably explained by the redpolls' lack of territoriality both inter- and intra-specifically (Knox and Lowther 2000).

The increase from 1 to 4 eggs in one day at nest #1 is perplexing (Table 2). Since there was a very noticeable difference in color in at least one of the eggs (Table 2), coupled with other circumstances, we presume that egg dumping by a female Common Redpoll occurred. This is in keeping with our observations of a male Common Redpoll interacting with the pair of Hoary Redpolls at this nest on two occasions during the nest building phase.

For the most part, species identification was rather straightforward, especially when older males were part of a pair and exhibited classic Hoary field marks. The pair at nest #3 was more problematic, since the male was initially thought to

be another female due to its more heavily marked flanks, darker mantle and lack of pink wash to the chest. However, males in first basic (formative) plumage typically lack the frostiness and pink to the breast of an older male (Knox 1988) and can appear quite dark in early summer due to feather wear. Other characteristics of Hoary Redpolls, such as the unmarked white rump, minimal undertail streaking, fluffy nasal tufts, flat-headed and bull-necked appearance and short conical bill, were noted on this bird.

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