

## An Unusual Ground Nest of the Merlin

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### Introduction

During an Ontario Breeding Bird Atlas northern field expedition along the lower Shamattawa River in the Hudson Bay Lowland in 2004, the authors discovered a Merlin (*Falco columbarius*) nest that was unusual in several respects.

The Merlin breeds throughout the northern forests and prairies of North America, Europe and Asia (Sodhi et. al. 1993). In North America, there are three subspecies: the Black Merlin (*F. c. suckleyi*) of the humid Pacific Northwest, the Taiga Merlin (*F. c. columbarius*) of the boreal forest, and Richardson's Merlin (*F. c. richardsonii*) of the northern prairies and aspen parkland (Pittaway 1994).

Merlins do not build nests. They usually adopt old corvid or hawk nests, in both coniferous and deciduous trees, with little or no modification. Also, in North America, they are rarely known to nest in tree cavities, on cliffs and on the ground (Bent 1938, Fox 1964). Ground nesting has been much more commonly described from Eurasia than from North America (Brown and Amadon 1968, Cramp and Simmons 1980). It has been suggested that ground nesting may be more common at the northern

edge of their range, possibly indicating that the breeding range may extend farther north than previously understood (Sodhi et. al. 1993).

Both sexes are known to incubate, but incubation is predominantly done by the female, with male incubation time positively correlated to clutch size (Sodhi et. al. 1992, 1993).

### Observations

We first discovered an agitated female Merlin (*F. c. columbarius*) in atlas square 16FF08 on 10 June 2004 while travelling up the lower Shamattawa River by motorboat in transit to square 16FF07. When we returned by canoe to this site to camp on 12 June, we observed both a male and female Merlin. In the period 12-16 June, we observed the female much more often than the male, usually perched in a dead tree at the top of a small cliff on the east bank of the Shamattawa River. This female was observed challenging Common Ravens (*Corvus corax*) that were nesting immediately across the river virtually every time one of them attempted to cross the river near the area of this female Merlin's perch. On 14 June, a search for an assumed nest was made in the spruce woods in the

riparian area adjacent to the river. Although we found several suitable old stick nests in the area near the female's favourite riverside perch, none of these were being used as an active nest site. After an hour of searching the trees, with only sporadic agitation by the female, we split up and searched near the cliff edge. This quickly resulted in increased agitation by the female and shortly thereafter the male flushed from somewhere nearby and joined in agitated flight behaviour, with occasional power dives. Within another five minutes, the nest was found on the ground by Coady.

The nest was located in a shallow depression on the bare ground above the top of the cliff. This afforded the incubating bird an excellent view of the adjacent riverside habitat (Figure 1), as well as activity at the Common Raven nest across the river. The nest depression (Figure 2) contained two short, elliptical, reddish eggs in an area with a sparse ground cover of blueberry (*Vaccinium sp.*), Labrador tea (*Ledum groenlandicum*), and reindeer lichen (*Cladina sp.*). The nest location was 16U 603913 6084173 (North American Datum 1983); 54.0° 53.0' 37.59" N latitude, 85.0° 22.0' 47.15" W longitude (see ONRS card #184535). The nest and eggs were photographed (Figure 3), but egg dimensions and weights were not taken to avoid repeated disturbance at the nest site.

During the search for the nest, the male was observed making a

successful kill, which it then brought to the female at her favourite perch. The male then returned to incubation duties at the nest. This nest still contained two eggs on 16 June. Given that we elicited agitated behaviour from the female on 10 June, combined with the most likely two-day egg-laying interval for Merlin (Palmer 1988), it is quite likely that the two eggs may have represented a full clutch.

### Discussion

This Merlin nest was unusual in several respects. It represents the first Merlin nest found on the ground in Ontario (Ontario Nest Record Scheme). A previous nest with five eggs was found about 50 metres up on a cliff ledge west of Aquatuk Lake, Kenora District, by Stephen V. Nash on 24 June 1980 during an ROM expedition (ONRS card #17218). All other nests found to date in Ontario have been in trees. If ground nesting is indeed more prevalent at the northern edge of Merlin range, lack of previous ground nests may simply be an artifact of scant northern field work.

Normally, the female does the majority of incubation at Merlin nests. Our observations at this nest suggest that the majority of incubation was being done by the male, and that the female seemed to have been guarding the nest site from aerial intruders by constant sentry duty at an exposed perch within sight of the nest. Predation has been shown to be a major cause of



**Figure 1:** View of surrounding habitat from the Merlin nest, Shamattawa River, 14 June 2004. Photo by *Mark K. Peck*.



**Figure 2:** View of Merlin nest site, Shamattawa River, 14 June 2004. Photo by *Mark K. Peck*.



**Figure 3:** Nest and eggs of Merlin, Shamattawa River, 14 June 2004. Photo by *Mark K. Peck*.

nest loss in Merlin in Sweden (Wiklund 1990), and tree nesting has been associated with higher success rates than ground nests, likely due to mammalian predation (Newton et. al. 1978).

With Common Ravens nesting directly across the river, it is possible that a ground nest was preferable to a tree nest in this situation, and that incubation roles were reversed to allow the larger female to act as sentry to drive away foraging ravens. In these northern riverside niches, perhaps Common Ravens pose a greater predation risk from above than do mammalian predators from below, thus shifting nesting behaviours.

If indeed this nest represented

a full clutch, this would be a very small clutch size for Merlin. Peck and James (1983, 1993) cite an average clutch size for Ontario nests of 4 to 5 eggs for those nests with suspected full clutches ( $n=28$ ). This nest may have represented a replacement clutch from a failed earlier nesting attempt. However, Morrison (1980) observed no difference in size between first and replacement clutches ( $n=2$ ), with renesting occurring within 300 metres of the first attempt.

### **Acknowledgements**

We would like to thank Mike Cadman and Nicole Kopysh of the Ontario Breeding Bird Atlas for their support and assistance.

Thanks also to the Ontario Ministry of Natural Resources for logistical support, in particular to Ken Abraham and Lyle Walton. For financial support of the trip, we thank the James L. Baillie Fund of

Bird Studies Canada, Environment Canada's Northern Ecosystem Initiative, and the Canadian Wildlife Service. Finally, special thanks to Nick and Maurice Mack of Wild Wind Tours in Peawanuck.

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