

# Possible First Record of Merlin (*Falco columbarius*) Nesting in North Carolina

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## Introduction

Several lines of evidence suggest that Merlins (*Falco columbarius*) successfully nested at Linville Land Harbor, in Avery County, NC, in summer 2020. If true, this would be the first known breeding record for the state of North Carolina (LeGrand et al. 2020), and would appear to be, by approximately 150-200 miles, the farthest south breeding record for the species (eBird 2020). Possible evidence for breeding includes observation by experienced birders of three Merlins together exhibiting begging/feeding behavior on 1 August, photo documentation of Merlins practicing flights uncharacteristic of migration on 3 August, along with verbal descriptions of that flight in full, and verbal descriptions of the loud and raucous calling behavior that often characterizes Merlin families at the nesting grounds during the time in question.

## Background

The historical breeding range of the Merlin in eastern North America includes Canada and only the northernmost fringe of the US (Peterson 1980; Sibley 2000). Data from the United States Geological Survey (2020) estimate that populations have increased by a factor of five since the 1960's and have doubled since the late 1990's. By 2020, eBird breeding range maps included the mountains of NY, PA, and WV, with a small presence in VA (eBird 2020).

Peak spring migration occurs roughly from mid-March to mid-April but can occur from mid-February until early May. Peak fall migration is from late August to late September but can occur from late June through early November. Breeding can occur from March through early September, with young present from April through early September. (Warkentin et al. 2020). See Figure 1.

The sightings mentioned in this report occurred in early June and spanned the entire month of August. The single early June report is well within the breeding window, since migration is not expected to take place at that time.

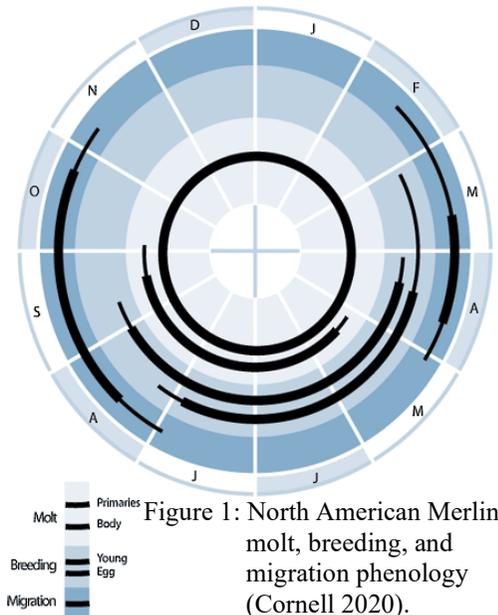


Figure 1: North American Merlin molt, breeding, and migration phenology (Cornell 2020).

The August reports, while within the earliest time frame for fall migration, more closely align with the breeding season. There is only one other August eBird report in the most northwestern NC counties from 2012. Other eBird sightings have been later in the year during migration (2021).

### Sightings

On 28 April, John Frazier photographed a Merlin in flight above Land Harbor Lake in Linville, NC. This Merlin appeared fairly pale in color and may or may not be related to subsequent sightings. Frazier again observed, without photographing, a Merlin on 8 June perched on a small snag by the waterline on the northern shore of the lake by the clubhouse. It was being mobbed by smaller birds for several minutes. There were no more sightings until almost two months later.



Figure 2: Image of Merlin perched at typical snag.  
Photo courtesy of Dean Stewman.

On 1 August, Barbara and Dean Stewman observed three Merlins for over an hour, two of which seemed to be harassing an adult and exhibiting “feeding or begging behavior”. One of the birds, assumed to be adult based on darker, more contrasting plumage, remained perched on a dead snag (Fig. 2) for much of the time. The Stewmans also noted that all three birds gave a “kee-kee-kee” call very “loudly” and “raucously” (Stewman and Stewman, pers. comm., 14 October 2020). Merlins, although typically silent, most commonly

give the “ki-ki-kee” call, which can be used in a variety of situations, including courtship, territory, or other agonistic interactions (Feldsine and Oliphant 1985). An observer in Maine notes hearing similar loud calls from nestlings begging for food, especially when they were almost old enough to fledge (Wells and Wells 2013).

On 3 August the Stewmans observed two Merlins in flight for several minutes. According to them, the birds were “almost flying in tandem” and were “quite acrobatic” (Stewman and Stewman, pers. comm., Oct. 14, 2020). Feldsine and Oliphant (1985)

describe many different flight patterns such as “high circling/soaring,” “powerflying,” and “rocking glide,” which are characteristic of territorial displays, mating, or pair bonding activities. While there is a lack of literature addressing the timeline of adult courtship displays, it may be unlikely that these are pair bonding flights given the proximity to the end of the breeding season. Since the two birds are similar in size, lacking the obvious size difference of a male and female pair, they are more likely to be juveniles at play (Fig. 3). Regardless, the flight observed by the Stewmans differs from the powered, early-morning flights and soaring of migratory Merlins.

A single Merlin was also observed on 2, 5, 9, 11, 18 and 30 August. The bird was perched on the same snag almost every observation. Feldsine and Oliphant (1985) found that Merlins typically use tall trees as perches for guarding their nest sites. Since perching was not observed at the location throughout the summer, nest guarding does not seem very likely. However, the fact that this bird, assuming it is the same individual, remained in one area over the span of weeks seems inconsistent with migratory behavior.



Figure 3: Image of the Merlins performing the synchronized flight observed by the Stewmans.

There were several other sightings of Merlins in the same time frame by a birder, Alex Trifunovic, at Lees McRae College, Avery County, about 8 miles north of Land Harbor Lake. He observed 2 on 14 August, 1 calling on 15 August, and a group of 5 birds flying over on 1 September. Although the September sighting was within peak fall migration, it is possible that these individuals were associated with the same birds at Land Harbor Lake.

### **Discussion**

One possible reason that there is a lengthy time period of no observations between 8 June and 1 August may be due in part to the nature of Merlin nesting behavior. They are very secretive, often nesting in dense conifers or deciduous trees in order to avoid predation (Fox 1964; Hodson 1976; Smith 1978; Sieg and Becker 1990). Incubation averages 30 days, and fledging occurs around Day 29, summing to approximately two

months before the young leave the nest (Cramp and Simmons 1980; Ruttledge 1985; Becker and Sieg 1985; Oliphant and Tessaro 1985; Palmer 1988). This could account for the two-month gap in observations. It is also possible that the lack of observations throughout the summer is because residents were vacationing and not consistently at their homes.

The nest, assuming breeding did occur, could have been located far enough away from Land Harbor Lake to render any obvious behaviors unnoticed during the summer. Males usually give the “ki-ki-kee” call when bringing food to an incubating female, yet no observations of calls were reported before August. The activity of the adults and young over these two months could have been overlooked if the birds were nesting in a secluded location in the surrounding area. Anecdotal accounts exist of “raucous calling” immediately pre- and post-fledging, which could account for the lack of observations of calling until later in the summer (Wells and Wells 2013). There is little other information regarding nestling and fledgling vocalizations during the post-fledging period. In fact, according to *Birds of the World* (Cornell 2020), there is no quantitative data about fledglings after they leave the nest. There is much more to be learned about fledgling behavior, family group behavior, and movements and dispersal, which may bring additional clarity to the sightings this summer (Warkentin et al. 2020).

Merlins are usually solitary outside of the breeding season and would not usually exhibit begging or courtship behaviors at other times (Sodhi et al. 1993). However, they have also been known to loosely migrate together and winter in pairs (Cramp and Simmons 1980; Cade 1982). Perhaps these birds were an early migrating group, but the interesting behavioral displays reported by the Stewmans, the timing of the sightings well within the known breeding period, and the lengthy period of time that Merlins were seen in the area, all suggest otherwise.

The lack of confirmable breeding evidence (i.e., nest, eggs, copulation, etc.) leads us only to speculate based on circumstantial observations. Age assessments of individual Merlins is likely not possible based on the limited number of photographs. However, these observations of Merlins in western North Carolina are certainly intriguing and merit further examination, especially in future breeding seasons.

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