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Editors

John D. Styrsky and Jennifer Nesbitt Styrsky



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Hooded Merganser (*Lophodytes cucullatus*) Young and Probable Brood Parasitism in Culpeper County

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Abstract

On 25 April 2021, the author documented two Hooded Merganser ducklings (*Lophodytes cucullatus*) at Lenn Park associating with a family of Wood Ducks (*Aix sponsa*). No adult Hooded Mergansers were observed. The author monitored the pond through May. The two Hooded Merganser young were with the Wood Ducks from April 25 into early May. The last observation was of only one Hooded Merganser with the Wood Ducks on 10 May 2021. To the author's knowledge, this is the first breeding record for Hooded Mergansers in Culpeper County and a probable case of brood parasitism.

Introduction

Hooded Mergansers (*Lophodytes cucullatus*) are fish-eating, diving ducks that usually inhabit wooded swamps during the breeding season (TWRA 2021). Most Hooded Mergansers depart the Piedmont region of Virginia during Spring migration to breed elsewhere. Female Hooded Mergansers are cavity nesters and can lay up to about 13 eggs in a clutch. Hooded Merganser females often lay their eggs in other Hooded Merganser nests and in the nests of other duck species in what is known as brood parasitism or nest parasitism (TWRA 2021).

There are four existing records of breeding Hooded Mergansers in Virginia's Piedmont region, although none for Culpeper County (Rottenborn and Brinkley 2007). The Virginia Breeding Bird Atlases 1 and 2 (VBBA2) project records have no Hooded Merganser breeding confirmations in Culpeper County. The Hooded Merganser was a priority species in Virginia for the VBBA2, and only 30 breeding observations were submitted statewide.

Observations

While surveying for spring migrants, the author visited Lenn Park frequently, often stopping at a small pond to check for ducks. The author had previously surveyed the park for the VBBA2 and found this often hidden pond though no breeding ducks were observed during the atlas period. The author surveyed the pond regularly in early 2021 waiting quietly at different vantage points behind the trees and vegetation surrounding the pond to minimize disturbing the birds at the pond.

At about noon on 25 April 2021, the author discovered two Hooded Merganser young on the pond at Lenn Park (Culpeper County, Latitude, Longitude: 38.458798°, 77.898088°). The author did not immediately recognize what species the ducklings were and was only able to rule out that they were not young Mallards (*Anas platyrhynchos*) or Wood Ducks. The author spent one hour and 48 minutes observing the ducks on the pond and taking photographs (Fig. 1; Krechmer 2021). The author later concluded that they were Hooded Mergansers and sent the photos to biologists with the Virginia Department of Wildlife Resources for further confirmation.



Figure 1. Adult Wood Duck female with Wood Duck young and one of the Hooded Merganser young (behind the adult female), Lenn Park [ph. Kelly Krechmer] 25 April 2021; (eBird) <https://ebird.org/va/checklist/S86436839,ML330635001>.

Right after the author first spotted the Hooded Merganser young, the two swam right past six six preening Blue-winged Teals (*Spatula discors*) with no interaction and then stopped at the far bank of the pond (Fig. 2). There, they foraged in the shallows, ducking frequently under the water in an apparent attempt to find a meal. The author watched them and puzzled over why there were no adults around for about five minutes when a family of Wood Ducks came into view.



Figure 2. Two Hooded Merganser young foraging by themselves at the edge of the pond, Lenn Park [ph. Kelly Krechmer] 25 April 2021; (eBird) <https://ebird.org/va/checklist/S86436839, ML330637811>.

An adult female Wood Duck with twelve young in tow moved across the water toward the unidentified ducklings who then swam along with the Wood Ducks. They appeared to belong with the Wood Duck brood and all of the young stayed together and interacted as if the Hooded Mergansers were family. The adult female Wood Duck was very vigilant and kept a close watch over all the young. Wood Ducks typically pair up in January for the breeding season. The author previously observed Wood Ducks on the pond in March 2021. Then on April 1, 2021, the author noted a pair of Wood Ducks on the pond (Krechmer 2021).

During the morning hours of 26 April 2021, the author relocated the Wood Duck brood and found that the two Hooded Mergansers were still closely associating with them. The author spent about 2 hours monitoring the pond and taking photos. The female Wood Duck was very protective of them, keeping them close to her and leading them to a protected spot out of view. She kept them away from a potential predator, a Great Blue Heron (*Ardea herodias*), that foraged in the pond nearby.

During the late afternoon of 27 April 2021, the author spent 30 minutes at the pond relocating all 12 Wood Duck young along with the two Hooded Mergansers with the ever vigilant Wood Duck mother. Often the Hooded Merganser young traveled right in front or back of the Wood Duck mother with the Wood Duck young behind or in front of the Hooded Mergansers. It appeared that she was keeping the Hooded Mergansers closer to her than her own offspring.

During the morning hours of 28 April 2021, the author had trouble relocating the ducks. The trees and bushes had begun to leaf out significantly, making it difficult to view the pond. Through various viewpoints, the author spent approximately an hour searching and waiting. Finally, all

were accounted for with the Hooded Merganser young continuing to forage and swim with the Wood Duck young. On this day, there was a Bald Eagle (*Haliaeetus leucocephalus*), a Cooper's Hawk (*Accipiter cooperii*) and three circling Broad-winged Hawks (*Buteo platypterus*) in the skies over the park, which is likely the reason the ducks initially stayed out of sight for so long.

The morning of 29 April 2021, the author spent over an hour searching for the ducks with no success. Follow up visits in the early morning 20 April and 1 May also resulted in no sightings. Then finally during an early morning visit on 3 May, the author found the Wood Ducks with all 12 young thriving. However, the author failed to see either Hooded Merganser young.

Early on 5 May 2021, the author searched and was unable to find the Wood Ducks nor the Hooded Mergansers. There was a Bald Eagle in the sky.

The author spent an hour at the pond during the early morning on 7 May 2021. The two Hooded Mergansers were again located with the Wood Ducks. All 12 Wood Duck young were seen with the watchful mother.

On 8 May 2021, in the early afternoon, the author located all of the Wood Ducks on the pond. However, only one Hooded Merganser was found. It is possible that the other was missed as the young were spreading out and moving about the pond and not staying with the mother as much as previously.

During a 45 minute visit on the afternoon of 10 May 2021, the author photographed the Wood Duck adult female with one Hooded Merganser (Fig. 3). This was the last time the author observed any Hooded Mergansers at the pond. During follow up visits, the author continued to see the Wood Ducks (Krechmer 2021).



Figure 3. Adult female Wood Duck and one Hooded Merganser young, Lenn Park [ph. Kelly Krechmer] 10 May 2021; (eBird) <https://ebird.org/va/checklist/S87839781, ML337024531>.

Discussion

No evidence of any breeding birds was documented on the pond during the five year atlas period. In previous years, it was rare to find any birds on the pond. The increased rain in the last few years appears to have temporarily rejuvenated the pond and nearby Mountain Run creek improving the quality of the water and also allowing fish to travel from Mountain Run creek up into the pond. A few trees also fell down along the pond edges creating hiding and perching spots for birds. The pond is connected by a drainage ditch to Mountain Run creek, which flows through the length of the park along a dirt road used by visitors. There are three separate cattle farm operations abutting the park. One of these cattle farms is adjacent to the sports field at the park's upper entrance. Behind the small cattle farm is the pond.

The author first documented Hooded Mergansers on the pond 2 January 2021 when four were found along with approximately 40 Green-winged Teal. The author noted unprecedented duck presence at the pond during January continuing into March of 2021 (Krechmer 2021).

During March, the author observed Hooded Mergansers, Wood Ducks, Mallards, a Belted Kingfisher (*Megaceryle alcyon*) and a Great Blue Heron catching fish at the pond. Fish were observed traveling upstream from Mountain Run creek through the drainage ditch to the pond. The author concludes that the increase in fish was drawing fish-eating birds in record numbers to the pond. By April, most of the ducks had departed for their breeding grounds. No Hooded Mergansers were observed by the author in early April at Lenn Park.

Hooded Mergansers and Wood Ducks are both cavity nesters and both species may lay eggs in each other's nests (Walker and Stephens 2021). This is called brood or nest parasitism. The young Hooded Mergansers appear to have been part of the Wood Duck brood through brood parasitism. The female Wood Duck was observed by the author paying close attention to the Hooded Merganser young as if they were her own offspring. However, the author saw that the Hooded Mergansers were on their own in the pond at least once putting them at increased risk of predation.

Brood parasitism in this case is presumptive, based on circumstantial evidence. The author documented a prolonged familial and protective type of interaction between the Wood Duck adult female and her Wood Duck young along with the two Hooded Merganser young between 25 April to 10 May 2021. Further, no adult Hooded Mergansers were ever present. These observations suggest, therefore, that the Hooded Mergansers were incubated by the Wood Duck female and were welcomed by her and the Wood Duck young as foster young. It is a possibility,

however, that a Hooded Merganser female had produced a clutch of eggs at the pond, but that she either abandoned it or something happened to her at which point the Hooded Merganser young could have been adopted by the Wood Duck female. What can be concluded for certain is that Hooded Mergansers did breed at this location, the first record of such for Culpeper County.

Acknowledgements

I would like to express my gratitude to Sergio Harding, Nongame Bird Conservation Biologist, Virginia Department of Wildlife Resources who responded quickly to my emails about my Hooded Merganser observation and put me in touch with Gary Costanzo, PhD, Migratory Bird Program Manager, Virginia Department of Wildlife Resources who followed up with me on my observation.

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Photo Identification of Individual Merlins (*Falco columbarius*) in Charlottesville, Virginia, During Winter 2020-2021

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Abstract

During winter 2020-2021, I took photographs of Merlins (*Falco columbarius*) during systematic observations conducted in urban Charlottesville, Virginia. Photographs of sufficient quality to assess plumage characters were obtained in 48 of 55 encounters with Merlins. Six unique individuals were identified, on the basis of pattern (width and shape of transverse bars), shape, and condition (extent of wear) of rectrices, particularly the outer rectrices, which varied appreciably among individuals and were usually easily discerned from ventral views. Estimated minimum population density was one individual per 3.7 km². Repeat observations of unique individuals were obtained, permitting estimation of seasonal residence times (up to 117 days) and dispersal distances (up to 6.8 km). Photo identification revealed four individuals using the same ~0.3 km² area over the season (one regularly and three others intermittently), though seldom occupying the site simultaneously. Photographs documenting rectrix details offer promise to distinguish unique individual Merlins; however, identifications should be considered valid only within a season due to annual complete molt of rectrices.

Introduction

In the Piedmont region of Virginia, the Merlin (*Falco columbarius*) has historically been regarded as a rare transient and winter visitor (Kain 1987, Lerner 1979, Rottenborn and Brinkley 2007). Since at least 1995 (Gaden et al. 2010), Merlins have been observed sporadically in winter in urban areas of Charlottesville. One to three Merlin sightings have been recorded on Charlottesville Christmas Bird Counts in 5 of the last 20 years, from 2000 to 2020 (National Audubon Society 2020), and since the winter of 2018-2019, Merlins have been regularly observed in numbers of up to six individuals at an apparent communal roost on a city golf course at Pen Park, Charlottesville (Chaney et al. 2019, Beamer and Beamer 2020).

In recognition of the presence of Merlins as apparent winter residents in the city, and their relative accessibility, I took the opportunity during the winter of 2020-2021 to test the potential for photographs to distinguish unique individual Merlins, and explore the utility of photo identifications to better understand the status and movements of Merlins in urban Charlottesville. Photographs have been used to

identify individual raptors like Peregrine Falcons (*Falco peregrinus*), Great Gray Owls (*Strix nebulosa*) and Snowy Owls (*Bubo scandiacus* (Zuberogoitia et al. 2013; Solheim 2016), and the approach could serve as an alternative to more labor-intensive and invasive mark-and-recapture methods.

Methods

The study area was Charlottesville city, located in the Piedmont region of central Virginia. Systematic observations were directed to the Belmont neighborhood of Charlottesville. Belmont, established in the 1890s, is primarily residential, with streets in a grid arrangement of 160 meters by 100 meters. Within Belmont, and occupying a high point at 140 meters elevation, is Belmont Park. This public recreational area covers 1.2 hectares and features mature white oaks (*Quercus alba*) which serve as plucking sites and hunting perches for Merlins. Percent tree cover in Belmont is ~20%, assessed at 50 random sample points using the i-Tree Canopy tool v7.1 (<https://canopy.itreetools.org/>) with 2021 Google Earth imagery.

In Belmont, observations consisted of short (~5 minute) inspections of favored plucking sites/hunting perches (tops of tall deciduous trees) at two locations, Sixth Street and Belmont Park (bounding an area of approximately 0.3 km²), conducted 2-3 times every day between 0800 and 1800 EST from 9 January to 2 April 2021 (~42 hours over 84 consecutive days). Other sites in Charlottesville were visited opportunistically from 6 December 2020 through 1 April 2021, including Pen Park, Oakwood Cemetery, Riverview Cemetery, Piedmont Virginia Community College (PVCC), Darden Towe Park, Quarry Park, Rives Park and the Pantops area (Fig. 1). To the extent possible, photographs were obtained of all Merlins observed. Supplemental photographs were obtained coordinating with observers from the Piedmont Virginia Bird Club.

Results

Photographs of sufficient quality to assess plumage aspect were obtained in 48 of 55 encounters with Merlins. Six unique individuals were identified, on the basis of pattern (width and shape of transverse bars, particularly where they meet the rachis), shape, and condition (extent of wear) of rectrices: two adult males (identified as individuals D



Figure 1. Observation sites in Charlottesville, Virginia, winter 2020-2021. Map icons with a black central dot were surveyed daily from 9 January to 2 April 2021 (Belmont neighborhood in inset). Others were surveyed opportunistically from 6 December 2020 to 1 April 2021. Surveyed area is approximately 22 km².

and E) and four “brown types” representing adult females or subadults (A, B, C and F) (Fig. 2). The outer rectrices were most easily evaluated, being visible with ventral views of perched birds with the tail folded (Fig. 2). Photographs of the spread tail (e.g., taken at lift-off) were also useful in distinguishing unique rectrix features. No molt of rectrices or primaries was observed in any individual during the period. Some progression of wear of the rectrix tips was observed in individual C between observations in December and February, though their distinctive emarginate shape was retained throughout.

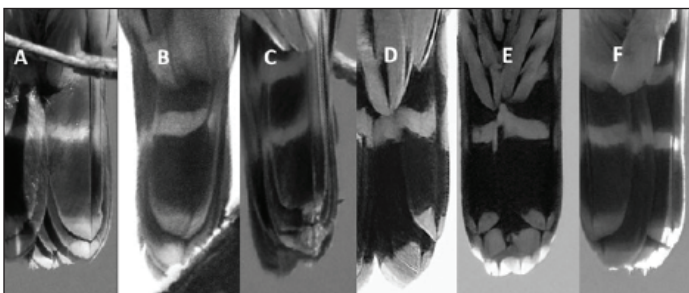


Figure 2. Outer rectrices of unique individual Merlins photographed in Charlottesville city between 19 January and 23 February 2021. Note the differences among individuals in terms of wear (e.g. individual C), ground color (dark brown in males, individuals D and E, creating more contrast with the pale transverse bars) and shape and width of transverse bars (e.g. compare individual B with wide, well-defined, bars to individual A with narrower, more diffuse, bars).

All six individuals were photographed from the dates of February 11 to 23. Repeat observations of unique individuals were obtained, allowing for estimation of minimum seasonal residence time and intra-seasonal dispersal distances traveled. The longest periods between repeat observations of individuals recorded were 117 days

(individual A, 6 December 2020 and 2 April 2021) and 102 days (individual E, 12 December 2020 and 23 March 2021). Distances between sites with repeat observations of the same individual included 1.5 km (individual E, Belmont and PVCC), 4.3 km (individuals A and C, Belmont and Pen Park) and 6.8 km (individual D, Frys Spring and Pen Park; Fig. 3).

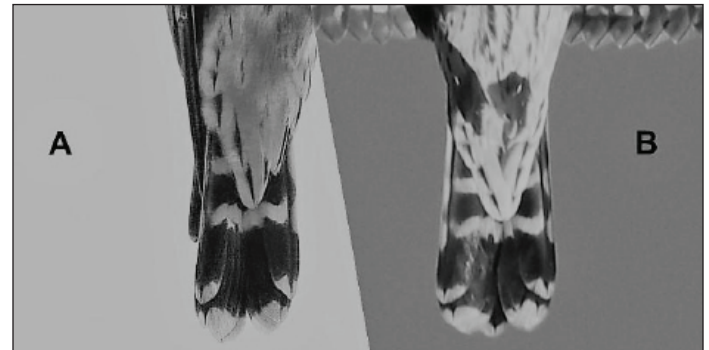


Figure 3. Repeat observations of individual D confirmed by photo-identification, at Pen Park on 19 January 2021 (A) and at Frys Spring on 23 February 2021 (B; photo Baxter Beamer).

In Belmont, four individuals (A, C, E and F) were photo-identified over the study period (Fig. 4). Individual E was most frequently observed, on 25 of 84 days surveyed (30%), at hours between 08:11 EST (~10 minutes before sunrise) and 18:50 pm EST (~20 minutes before sunset). Individuals A, C and F were observed intermittently over the study period, with A increasing in frequency at the end of the period, as E decreased in frequency.

Photographs also permitted the identification of prey items. Seven prey items were identified: 4 House Sparrow (*Passer domesticus*), 2 House Finch (*Haemorhous mexicanus*) and 1 Mourning Cloak (*Nymphalis antiopa*) butterfly.

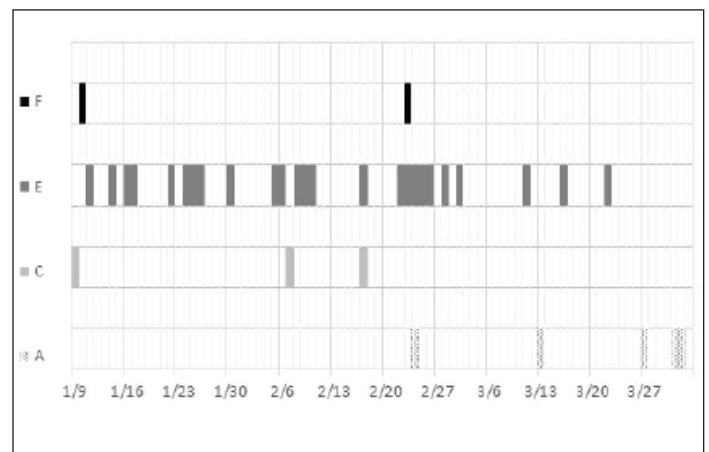


Figure 4. Merlin individuals photo-identified during daily coverage of the Belmont neighborhood (Sixth Street and Belmont Park) from 9 January to 2 April 2021.

Discussion

Photo identification offers promise as a means to distinguish and document unique individual Merlins. The pattern and condition of the rectrices varied appreciably among individuals identified in this study, and could be evaluated solely from inspection of the outer rectrices, visible in photographs with a ventral perspective of perched birds with the tail folded. Despite some evident progression of feather wear, characters distinguishing individuals were constant over the December to March period. Notwithstanding, the approach has limitations. Rectrix patterns can vary across molts (Ellis 2009), and unlike larger raptors where rectrices may be retained longer than one year, the rectrices of Merlins are molted annually, completed by October (Pyle 2008). Thus, inspection of rectrix pattern cannot be expected to reliably confirm returning individuals in subsequent seasons, and each identification should be considered valid only within a season. This approach is best suited to application to small populations (up to 10-20 individuals) where manual inspections are feasible and probability of encountering individuals with near-identical characters is small. New approaches in development using artificial intelligence to identify individual birds from large photographic datasets (Ferreira et al 2020) could potentially make this viable for larger populations.

A small population of Merlins was resident in Charlottesville city during the winter of 2020-2021. Six individual Merlins were identified, two of which were confirmed to be resident for a period of at least three months (December through March). Over a survey area covering approximately 22 km², this minimum population estimate yields an equivalent density of one individual per 3.7 km². Hunting ranges would be larger due to overlap (this study, and Warkentin and Oliphant 1990). Estimated population density of Merlins in Charlottesville was comparable to that of the well-studied urban population in Saskatoon, Saskatchewan, where densities of wintering Merlins ranged from 3.3 to 5.7 km² per individual (derived from Warkentin et al. 1990, reporting 22-38 birds over an urban area of 125.5 km²).

In Belmont, where four different individuals were observed during the study period within an area of ~0.3 km², some occasional overlap of hunting ranges was apparent. Overlap of hunting ranges is also suggested by the relatively long distances measured between repeat observations of the same individual, up to 6.8 km, which exceed the expected average dispersal distance if hunting ranges were non-overlapping (i.e., 2.2 km, the diameter of a circle with an area equal to 3.7 km² [referencing the density estimated above]).

Despite apparent overlap in hunting ranges, individual Merlins were seldom observed at the same site simultaneously, with only 2 of 39 observations in Belmont (5%) involving two birds together. In each of those cases, agonistic interactions between the birds were observed. The only exception was at the apparent communal roost at the Pen Park golf course, where up to three individuals were observed together from ~30-60 minutes before sunset.

The Belmont area was most consistently used by individual E. However, this individual appeared to be absent from the area for intermittent periods of four to eight days (Fig. 4), possibly as a response to prey habituation to the presence of predators, which has been shown to result in increased avoidance behavior in prey species (Møller et al. 2017). Predominant prey species in Charlottesville, where House Sparrows represented 57% of identified prey, were similar to those reported for other urban populations (Sodhi and Oliphant 1993, Josephson-Laidlaw unpubl. data).

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Nesting of Common Ravens (*Corvus corax*) in the Eastern Piedmont of Virginia, Fairfax City Area, 2018-2021

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Abstract

Little is known about Common Ravens (*Corvus corax*) nesting in the Virginia Piedmont, which has been rare in the past but is becoming more common. When a Common Raven nest was discovered inside a large barn in Fairfax City, we decided to monitor the nest for egg laying, incubation, and fledging dates. We did so from April 2018 through May 2021. Each year, this pair nested earlier, with incubation beginning on 24 February the first year and on 1 January by the fourth year. For comparison, three outdoor Common Raven nests in nearby areas were monitored for 1-2 years each. These three nests were located on artificial structures with some overhead protection but were otherwise exposed to weather. At these nests, incubation began between 18 February and 9 March. All observed nests were successful, fledging 2 to 4 young each. The first nestling fledged from each nest about 9 weeks from the start of incubation. The Common Ravens we observed were tolerant of human activity around their nests in this densely populated suburban area. In one case, juveniles joined adults at their nest site from January through March.

Introduction

In recent years, the Common Raven (*Corvus corax*) has been a bird of the Appalachian and Allegheny Mountains. In the Piedmont they are considered an "uncommon and local permanent resident, mostly near the Blue Ridge" (Rottenborn and Brinkley 2007). Trollinger and Reay (2001) noted in the Virginia Breeding Bird Atlas for 1985-1989 that Common Ravens are birds of the western Virginia mountains and are common above 914 m year-round, but also noted that pairs have occasionally nested in the Piedmont. In Maryland it was noted that Common Ravens had begun to occupy new Piedmont sites between the 1982-1989 Breeding Bird Atlas project and the 2002-2006 project (Ellison 2010). When the 2nd Breeding Bird Atlas for Virginia began in 2016, the Common Raven was listed as a priority species for the Piedmont. In April 2018 Common Ravens were reported to be in Willcoxon Park in Fairfax City. We found the nest on 20 April 2018 and began an effort which continued

through spring 2021 to determine egg-laying, incubation, and fledging dates for this breeding pair. In 2020 and 2021 we found and monitored three other nearby Fairfax County Common Raven nests to compare egg-laying, incubation, and fledging dates with the Willcoxon Park nest.

Methods

STUDY AREA. The study area was composed of four nest sites located in a predominantly suburban area west of Washington, D.C. The 'Willcoxon Park nest 2018-2021' is in the Fairfax City Property Yard, a 2.8-ha fenced complex beside Willcoxon Park. The nest is built on rafters in the upper rear corner of a large barn-like structure used to store road salt. A wide, tall door on the west end of the barn is permanently open and provides the only entry. The nest itself can be viewed from only one location outside of the fence, and then only the bottom of the nest is visible. Lights inside the barn sometimes remain on 24-hours a day, but at other times they are left off. The outdoor area is always brightly lit at night. A golf course is located to the west and south, and retail stores and a concrete plant are located to the northeast. Industrial noise levels are very high. The 'Fairview nest 2020' was located 5.2 km ENE of the Willcoxon Park nest. The nest location is in a major commercial, business, and medical area. The nest is at the top of a 30-m highway mast light pole with a 6-light structure at the top. A circular roof is centered over the top of the pole, but otherwise the nest is open on all sides to the elements. The 'Fairview nest 2021' was moved 0.6 km W across the Capital Beltway to another identical light pole, possibly because the 2020 nest had been removed the previous fall. The 'Lake Accotink nest 2021' was in Lake Accotink Park. This nest is 8 km S of the Fairview nests and 18 km SE of the Willcoxon Park nest. The Lake Accotink nest is built on the metal girders of an active railroad trestle and is about 15 m above the outflow from the Lake Accotink dam and 3-4 m beneath the tracks. It is sheltered on one side by the metal span and overhead by the wooden platform of the trestle. Both passenger and freight trains pass over regularly.

FIELD METHODS. Because the Willcoxon Park nest could not be observed directly, we used the breeding pair's behavior between total darkness in the pre-dawn hour to about an hour after sunrise to determine the timing of egg laying, incubation, and hatching. This was done on Sunday mornings when there was no industrial noise. One of us watched the nest while the other kept track of Common Raven activity in the surrounding area. Once we had egg laying and hatching information, we changed to daytime observations at a greater distance and with greater frequency to monitor the nestling to fledging phase.

We assumed egg-laying had commenced when the female left the night-time roost (see 2019 nest observations below) before sunrise and went directly to the nest, remaining there for 15-30 minutes before flying off with the male. Incubation was assumed when the female came from the nest before sunrise (and not from the roost) and then returned within minutes and remained on the nest. Hatching was indicated initially by the adults, quiet during incubation, suddenly becoming vocal (Kilham, 1989) and by feeding trips to nest. Approaching the time for fledging, we visited nests daily. A young bird was considered fledged when it no longer returned to the nest. For instance, we considered that walking on rafters near the nest did not indicate fledging, but that being on the ground did indicate the bird had left the nest permanently.

The Fairview and Lake Accotink nests could be observed directly. They were watched a minimum of once a week to determine if the adults were incubating, feeding young, or if young were near fledging. On a given day, time spent watching a nest varied from 15 minutes to an hour, or more. If the birds' activity was unclear, extra observations were added. All nests were visited daily approaching the time of fledging.

When counting backward to calculate egg-laying or hatching dates based on the date the first nestling fledged, we used 21 days as the average incubation period, based on Stiehl (1985) and Heinrich (2003). We used 42 days as the average nestling period based on Hooper (1977), Stiehl (1985), and Boarman and Heinrich (2020).

Observations

2018 Willcoxon Park nest. The nest with young was found on 20 April. Two birds fledged from the nest, the first on 29 April and the second by 3 May. Counting backwards in time, hatching date was estimated as 17 March and date of onset of incubation was estimated as 24 February.

2019 Willcoxon Park nest. We obtained a complete set of dates for egg laying, hatching, and fledging in 2019. The 2018 fledging date was used to estimate the date to start predawn observations, which began on 6 February. On

this date, we located the nighttime roost so the number of Common Ravens and their exact locations were known before first light. The roost was in deciduous trees 75-90 m from the barn and included immature Common Ravens (see below). Before any adult or immature bird left the roost, one of us would be observing the nest, and the other, the roost. This year, the barn was brightly lit inside and out, day and night.

We first observed egg-laying behavior on 16 February. Seventeen minutes before sunrise the female went directly from the roost to the nest and stayed there for 15 minutes before joining the male waiting in a nearby tree. The same behavior was observed 28 minutes before sunrise on 17 February when she stayed on the nest for 26 minutes before joining the male. On 18 February incubation was suspected when the female was not at the roost and appeared to come from the nest before sunrise. Incubation was corroborated on 23 February and on 3 March when the female was on the nest overnight. She flew from the nest 3-10 minutes before sunrise and returned to the nest 7-12 minutes later. She stayed on the nest for the next 20 minutes, at which point our observations ended for that day. On 9 March hatching was indicated by loud croaks, a flurry of activity, both adults perching on the nest, and feeding trips to the nest. Near the time of hatching, the adult male roosted overnight just inside the barn door for several days.

While making feeding trips, the adults sometimes perched before flying to the nest, and we could recognize food waste from area restaurants. A round cut of cooked steak and multiple thin strips of chicken are two examples. Four Ravens fledged from the nest. We observed that fledging was imminent on 21 April when one of the nestlings was walking on the barn rafters. A young bird was observed on the salt pile under the nest on 22 April and a second young bird was standing on the rafters near the nest. On 23 April, two fledglings were over the 1.8-m fence and on the ground or low in the vegetation. By 25 April, fledglings were high in nearby trees. On 1 May all four fledglings were on roof of the barn at one time. One was adult-sized, two were smaller but equal in size, and one was noticeably the smallest of the four.

In January 2019 two immature birds appeared on the barn roof. We assumed they were the two fledglings from 2018. Their eyes were gray, they had traces of yellow on their bills, and their behavior of exploring, "yelling," and begging was typically juvenile (Heinrich, 1991). They roosted with the adults, but not in the same tree. At times these young birds begged wildly at incoming adults and food was placed on the barn roof or on the ground for them. This behavior was last observed on 23 February. In early February a third Common Raven appeared at the nighttime roost. This bird stayed with the two juveniles and acted like a young bird,

but had no yellow on the bill. On 16 February, the day we thought the adult female had laid an egg, the adult pair flew at one of these immature birds. The adult male's head feathers were erect and he gave short, harsh "barks." This was the only aggression toward immatures we observed. On 23 February, when the adult female was on the nest incubating, the adult male and the three juveniles were at the roost. On 3 March, only two juveniles were at the roost, and after they flew from the roost that morning, we did not see them again. The eggs in the nest hatched about a week later, by 9 March.

2020 Willcoxon Park nest. In 2020, many things changed. The birds moved their roost to an inaccessible area south of the nest. The lighting at the barn became erratic. We used the egg-laying dates from 2019 to determine when to begin our 2020 observations. Observations in January and early February were puzzling as the adults were quiet and rarely seen rather than being conspicuous as they courted and prepared to nest. As we determined later, the reason for this was that they were incubating. On 16 February we observed the two adults feeding nestlings. While the adults were feeding nestlings, all restaurants in the area were closed due to the Covid-19 pandemic, so a major source of food utilized by these birds from restaurant dumpsters was suddenly no longer available. The pattern of feeding nestlings changed from less frequent trips with often larger food items to more frequent trips with food items that were difficult to see. The fledging process was twice as long as normal, taking ten days. On 21 March a fledgling was perched about 2 m from the ground outside the fenced compound. On 26 March two nestlings were walking on the barn rafters near the nest, and they had left the fenced compound by 27 March. On 31 March all four fledglings were on the roof together, one of them very small and rough-looking. Counting backwards, we estimated that hatching date was 8 February and date of onset of incubation was 18 January.

2021 Willcoxon Park nest. We used the egg-laying dates from 2020 to determine when to begin our 2021 observations. We anticipated egg-laying behavior on 17 January 2021, but the adults were quiet and difficult to locate. Late in the week of 17 January the adults became loud and conspicuous, suggesting that eggs had already been incubated and were now hatched. On 24 January, the adult male was perched inside the barn door before first light, which he had only done in previous years when nestlings were present, and both adults were taking food to the nest. Throughout February the feeding rates were low but the food items were often large. Restaurants were open again, and we observed the adults foraging in dumpsters. Between 3-7 March, the adults behaved as if a nestling had fledged or was about to fledge. The male was extremely aggressive toward vultures and crows that flew through the area. The adults carried

food into the barn but not to the nest. The last day we saw food carried into the barn was on 7 March. We suspected fledging had occurred, but all Common Raven activity was now in an inaccessible area south of the nest.

On 11 March through 21 March the adult Ravens began carrying nesting material into the barn. Erroneously assuming that nest-building meant loss of their young, our observations became less frequent, shorter, and more oriented to verifying that the adults were continuing to construct or renovate the nest. On 4 April, however, we found two juvenile birds, gapes still visible at the sides of the bill, flying in the area alone and with the adults. At times the juveniles perched with the adults on the barn, begged, and were fed. Counting backwards, in this case without a definite fledging date, but using 5 March as a best estimate, we estimated that hatching date was 22 January and date of onset of incubation was 1 January.

2020 Fairview nest. When we found this nest on 19 April it contained at least three large, active nestlings. One bird fledged on 21 April and the final bird fledged on 25 April. Counting backwards, we estimated that hatching date was March 10 and date of onset of incubation was 18 February.

2021 Fairview nest. We assumed that incubation had not begun by 14 February because an adult bird was on and off the nest regularly. We did observe incubation on four days from 21 February through 9 March. On 12 March the adult male carried food to the nest, and regular feeding trips were observed from that point through fledging. As in 2020, we observed three nestlings in the nest. On 24 April, all three nestlings were present mid-afternoon. On 25 April a single nestling remained at mid-afternoon and this nestling had fledged by 27 April. Counting backwards, we estimated that hatching date was 13 March and the date of onset of incubation was 20 February.

2021 Lake Accotink nest. We observed adult birds building this nest on 24 February. On 6 March an adult was on and off the nest frequently. Incubation was observed on 12 March and on 30 March nestlings were present. By 9 May the three nestlings were walking and exploring on metal beams at some distance from the nest, but always returned to the nest. Mid-day of 10 May, one nestling had fledged and was on the ground among shrubs and trees about 50 feet from the nest, vocalizing regular "squawks" every few seconds over 50 minutes of observation. By 11 May all nestlings had fledged and they could be located on the wooded hillside along the creek by their regular "squawks". Counting backwards, we estimated hatching date was 29 March and the date of onset of incubation as 8 March.

Table 1 summarizes the breeding phenology and success of Common Ravens that were observed in this study. Estimated onset of incubation ranged from 1 January to 9

Table 1. Phenology of Common Raven nests in a suburban area west of Washington, D.C., 2018-2021

Nest	Year	Onset of incubation (calculated)	Onset of hatching (calculated)	Date first nestling fledged (observed)	Number fledglings
Willcoxon	2018	24 Feb	17 Mar	29 Apr	2
Willcoxon	2019	18 Feb	11 Mar	22 Apr	4
Willcoxon	2020	18 Jan	8 Feb	21 Mar	4
Willcoxon	2021	1 Jan	22 Jan	~5 Mar	2
Fairview	2020	18 Feb	10 Mar	21 Apr	3
Fairview	2021	20 Feb	13 Mar	24 Apr	3
Accotink	2021	9 Mar	29 Mar	10 May	3

March. For comparison, published data document nests with eggs in the Virginia Piedmont from 26 February to 18 March (Rottenborn and Brinkley 2007). All nests in this study were successful.

The average clutch size for Common Ravens is 5.2 eggs, with one egg laid every 24 hours (Boarman and Heinrich 2020). Onset of incubation varies among females and hatching is asynchronous (Boarman and Heinrich 2020). We were unable to determine how many eggs were laid or exactly when incubation began relative to clutch completion. Because this information is lacking, our dates for the start of incubation and hatching may be off by a day or two. Dates for the fledging of the first nestling, except for Willcoxon Park nest 2021, were observed and these dates are accurate within a day. The largest discrepancy between calculated dates and observed dates was for the Willcoxon Park 2019 nest where the calculated hatching was 2 days later than the observed.

Discussion

The Common Ravens in Willcoxon Park nested successively earlier over each of the four years studied. The 2019 nest was initiated about a week earlier than the 2018 nest, the 2020 nest was initiated a month earlier than the nest in 2019, and the 2021 nest was initiated two weeks earlier than 2020 nest. The three outdoor Fairfax County nests were timed similarly with the Willcoxon Park 2018 and 2019 nesting dates, and are in agreement with the Piedmont egg dates reported in Rottenborn and Brinkley (2007). The early nesting dates of the 2020 and 2021 Willcoxon Park nests were unexpected. This suggests that the January dates do not indicate a regional trend toward earlier nesting but are specific to the Willcoxon Park site. If Common Ravens can take advantage of indoor sites that offer protection from wind and precipitation, it would be interesting to see if the early dates become more frequent, particularly as the pair using these sites become more experienced and food remains readily available.

Heinrich (1999) notes that Common Ravens can be flexible in nesting dates and can vary by region to the point of nesting in the fall in some locations. If egg-laying dates are

considered, then the 2021 Willcoxon park nest actually was initiated at the end of December 2020. In New England, the breeding phenology of Common Ravens is tied tightly to food availability (Heinrich 2006). For suburban ravens, however, food is reliably abundant year-round as they willingly scavenge discarded human food. Ellison (2010) commented that Common Ravens could continue to increase in the Maryland Piedmont if they accept artificial nest sites, such as those described in this paper. Hooper (1977) noted that cliff nests were consistently characterized by a sheltering ledge above the nest, an undercut below the nest, and a shielding feature on one side. All of the nest sites described here meet these criteria except for the Fairview nests, which lacked a side shield.

Not only do Common Ravens accept artificial structures, but they also accept human activity near their nests. At Willcoxon Park, the birds fly in and out of the barn passing low over the heads of the people working there. When trucks are backed into the barn, the birds fly high and straight to the nest, rather than flying in low and swooping up to the nest. At Fairview, the nest is high over a major highway intersection and so is farthest from direct contact with people, although in 2021, a small helicopter passed at nest height regularly. The adults did not appear disturbed or react. At the Lake Accotink nest, a major hiking/biking trail passes nearby, and trains regularly traverse the tracks above the nest with overwhelming noise. When incubating, the female did not react when trains passed overhead. When the nestlings were 30-33 days old, they were alerted by the whistle of an approaching train and stretched their necks upward as they watched the tracks 3-4 m over their heads as the train passed. Only when dust and fine debris started raining down in quantity on them did they draw their heads in, and finally with time, sink down into the nest until the train had passed.

Normally juvenile Common Ravens and their parents go their separate ways a couple of months after fledging, and juveniles do not return but join other juveniles and nonbreeders in loose, roving, impermanent flocks. In winter, adults are known to be aggressive toward juveniles over food (Heinrich, 1991). We expected that

when the juvenile birds of the 2018 Willcoxon Park nest left the parental territory, they would join other juveniles or wander about on their own. In January 2019 juveniles returned to the nest site where they were tolerated and fed by the adult. With so few other Common Ravens in the Piedmont, these juveniles might not have been able find a flock to join. The third juvenile that joined them may have been searching for other juveniles with which to flock. We have not detected juveniles returning to the Willcoxon Park nest site during winter since the departure of these three birds in March 2019.

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Virginia Christmas Bird Counts: 2020-2021 Season

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The 2020-2021 Christmas Bird Count (CBC) season will always be remembered because of what we did differently due to the COVID-19 pandemic. The National Audubon Society (Audubon) issued special pandemic protocols for conducting CBCs that included canceling all in-person compilation gatherings, practicing social distancing and wearing masks at all times in the field, carpooling only within existing family or social 'pod' groups, and complying with current state and municipal COVID-19 guidelines. If following these protocols wasn't possible, the 2020 CBC was to be canceled. The only CBCs that were not held in Virginia due to the pandemic were the Dismal Swamp and Cedars Preserve-Jonesville (a new count in 2019) CBCs, and the Nassawadox CBC was only conducted in one sector.

Fifty-six counts were conducted in Virginia in the 2020-2021 CBC season. The results from three of these counts (Chesapeake Bay, Darlington Heights, and Giles County) are not submitted to Audubon for various reasons, but are included as part of this summary of Virginia CBCs. The Bristol, Tennessee count results are also included because most of the count circle is in Virginia, but Audubon includes them with Tennessee's results. The total number of species recorded on the 2020-2021 counts was 214. The total number of individuals was 820,867.

There were a few compiler changes in 2020. George Armistead handed over the reins for the Cape Charles CBC to Ellison Orcutt and Dan Cristol. Rob Bielawski is the new primary compiler for the Back Bay CBC, replacing Andrew Baldelli who became a secondary compiler and Cindy Hamilton was added as a new secondary compiler. The Northern Shenandoah Valley CBC shuffled their compilers: Charles Hagen went from being the primary compiler to become a secondary one, Larry Frey assumed primary compiler duties and Rob Simpson continues as a secondary compiler. George Barlow assumed compiling duties for the Big Flat Mountain CBC from Tom Wieboldt. Robert Riggs passed on compiling duties to Giacomina Thornhill for the Blackford CBC. Lastly, Robert Ake took over compiling the Chesapeake Bay CBC after Ned Brinkley's untimely death at age 55 in the Fall of 2020. Ned restarted this count in 1994 after it hadn't been conducted for over thirty years. Then he conducted and compiled it for the next twenty-

six years. Ned's CBC participation will be sorely missed in Virginia as he helped on numerous counts along the coast from Back Bay up to Wachapreague and west to Hopewell beginning with the Back Bay count in 1978 when he was twelve years old.

Two new species were added for Virginia this year. A Pink-footed Goose was found and photographed on the Hopewell CBC (Figure 1; this sighting has been submitted to the Virginia Avian Records Committee [VARCOM] for review) and a Western Meadowlark was photographed on the Williamsburg CBC. Not only were these new species for CBCs in Virginia, these species had not been observed in the state prior to 2020.



Figure 1. Pink-footed Goose on 2020-2021 Hopewell CBC. Photo taken 11 December, 2020 (count week) by Allen Bryan.

New subspecies or morphs were also reported: for the first time on a Virginia CBC, Rockingham County reported both the Appalachian (call type 1) and the Sitka Spruce (call type 10) Red Crossbills and supported the observations with recordings; a green morph Pine Siskin was recorded and photographed on the Rappahannock CBC; and Back Bay had a count week (CW) sighting of a Gambel's White-crowned Sparrow.

Some of the more unusual species found or species found in unexpected locations are listed here. Five Ross's Goose (4 Hopewell, 1 Walkerton, and CW Back Bay) were discovered after missing them completely last year (Figure

2). Two Eurasian Wigeon were found at Nansemond River and 1 Common Eider was found at Little Creek. Long-tailed Ducks are typically seen in the Coastal region but one was documented on both the Waynesboro and Lexington counts this year (Figure 3).



Figure 2. Ross's Goose on 2020-2021 Walkerton CBC. Photo by Fred Atwood.



Figure 3. Long-tailed Duck on 2020-2021 Lexington CBC. Photo by Dick Rowe.

One Red-necked Grebe was found at Nansemond River and a CW Western Grebe was found at Back Bay. A Green Heron was photographed on the Lynchburg CBC (Figure 4) and one was seen during CW in Chincoteague. Most years, Golden Eagles are found along the coast or in the mountains of western Virginia so the following sightings were somewhat expected: 1 Cape Charles, 1 Highland County, 1 Augusta County, 3 Tazewell, 2 Mount Rogers-White Top Mountain and a CW bird at Wachapreague, but it was a surprise when one was also found on the Central Loudoun count. One Rough-legged Hawk was recorded at Wachapreague. Clapper Rails are commonly observed on coastal CBCs but it was a new species on the Fort Belvoir count this year, and Virginia Rails were recorded

on two inland counts (1 Northern Shenandoah Valley and 1 Lexington). Four Common Gallinules were found (2 Chincoteague, 2 Walkerton [a new species there], and a CW bird at Hopewell). Six Sandhill Cranes (3 at Chincoteague [a new species there] and 3 at The Plains). Lesser Yellowlegs are fairly common on coastal counts but one also turned up on the Washington's Birthplace CBC. Fourteen Razorbills were recorded (1 Chesapeake Bay, 2 Little Creek, and 11 Back Bay). One Royal Tern was found at Little Creek, but a single CW bird was found at both Cape Charles and Back Bay. One Snowy Owl was observed at Nansemond River (plus one CW bird at Chincoteague). Two Ash-throated Flycatchers were recorded (1 Nansemond River and 1 Newport News) and one Western Kingbird was recorded as a new species for the Central Loudoun CBC. Blue-headed Vireos are usually confined to coastal counts but also popped up further inland this year (1 Chincoteague, 4 Cape Charles, 3 Little Creek, 5 Back Bay, 1 Nansemond River, 1 Newport News, 1 Walkerton and 1 Manassas-Bull Run). The 5 Lapland Longspurs tallied on the Rockingham County count were the only ones in the state this year after missing them completely for the past two years. One Clay-colored Sparrow was found at Nansemond River (plus one CW bird at Back Bay). One Summer Tanager



Figure 4. Green Heron on 2020-2021 Lynchburg CBC. Photo by Bob Epperson.



Figure 5. Dickcissel on 2020-2021 Charlottesville CBC. Photo by David Shoch.

in Cape Charles was a new species for their count, 1 Blue Grosbeak at Washington’s Birthplace was a new species for their count, and a Dickcissel was a new species on the Charlottesville CBC (Figure 5).

The only encouraging gamebird numbers are for turkeys, as bobwhite and grouse numbers continue to decline. Only 35 Northern Bobwhite were detected on eight counts plus one CW sighting. These were all single birds except for 15 at Walkerton and 14 at Washington’s Birthplace. Northern Bobwhite was a new species on the Northumberland-Lancaster count. This is a slight improvement over seeing only twenty on three counts in 2019. Northern Bobwhite numbers on Virginia CBCs have been decreasing since their record high count of 2,119 in 1976. This species has undergone an estimated 70 percent decline in Virginia since the mid-1970s (Figure 6). According to Marc Puckett, Small Game Project Leader with the Virginia Department of Wildlife Resources, many landowners that were especially interested in quail hunting stocked quail with hatchery-raised birds

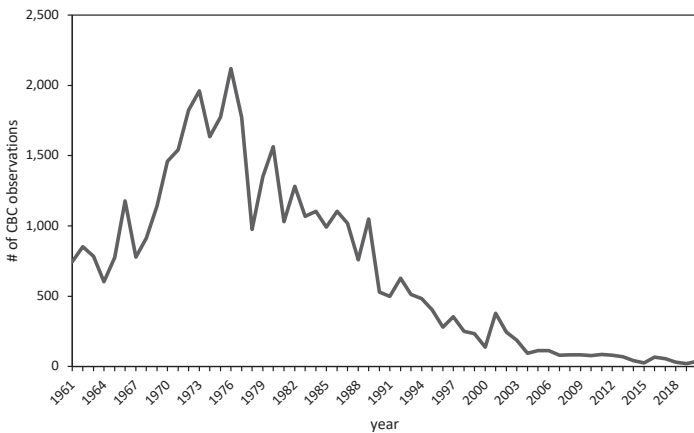


Figure 6. Number of Northern Bobwhites recorded on Virginia CBCs over the last 60 years. Data not corrected for effort (# of observers and hours in the field).

from the mid-1960s into the early 1970s. Quail populations were therefore artificially inflated, but the combination of continuing loss of habitat and particularly harsh winters in 1977 and 1978 likely has resulted in the steady long-term decline of this species in Virginia (M. Puckett, pers. comm.).

Ruffed Grouse numbers on CBCs have also been declining for some time from a record high count of 101 in 1979. Unfortunately, this is the first year since 1935 that not a single Ruffed Grouse was recorded on a Virginia CBC. Numbers of Wild Turkeys recorded on CBCs fluctuate from year-to-year, but over 1,000 turkeys have been seen on the last three CBCs (1,306 in 2018, 1,607 in 2019 and 1,213 in 2020). The 5-year average and the 10-year average for turkeys are similar (1,236 and 1,206, respectively). These averages have been close to each other for at least five years, which

would seem to indicate that despite annual fluctuations, Wild Turkey numbers over time are fairly stable (Figure 7). A few counts saw a record number of turkeys in 2020: 30 Cape Charles, 116 Mathews, and 43 Rockingham County.

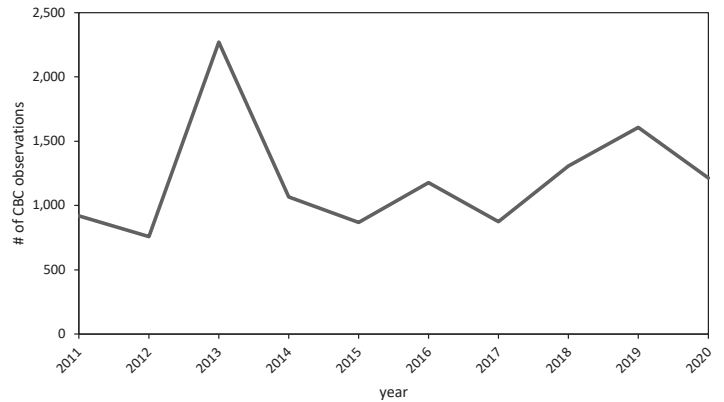


Figure 7. Number of Wild Turkeys recorded on Virginia CBCs over the last 10 years. Data not corrected for effort.

Eight hummingbirds of three species were recorded on this season’s CBCs, which is more than the five hummingbirds logged last year. This year’s birds were 2 Ruby-throated Hummingbirds (1 Back Bay, 1 Newport News, and CW Little Creek), 4 Rufous Hummingbirds (1 Charlottesville, 1 Rappahannock, 1 Augusta County, 1 Lexington [a new species for this count]), 1 Calliope Hummingbird on Big Flat Mountain CBC (Figure 8), and one hummingbird that could not be identified to species in Newport News.



Figure 8. Calliope Hummingbird on 2020-2021 Big Flat Mountain CBC. Photo taken 2 January, 2021 (count week) by Alex Shipherd.

It is always interesting to note the warblers. Seven Black-and-White Warblers were found on 4 CBCs (2 Cape Charles, 3 Little Creek, 1 Nansemond River, and 1 Newport News), 43 Orange-crowned Warblers on 8 CBCs (2 Chincoteague, 12 Cape Charles, 9 Little Creek, 11 Back Bay, 5 Nansemond

River, 2 Newport News, 1 Williamsburg, and 1 Hopewell), 1 Nashville Warbler during CW at both Cape Charles and Back Bay, 15 Common Yellowthroats, 1 CW American Redstart and 1 CW Yellow Warbler in Hopewell, 205 Palm Warblers, including 9 Western and 9 Eastern/Yellow, 213 Pine Warblers, 12,283 Yellow-rumped (Myrtle) Warblers, 3 Yellow-throated Warblers (1 Little Creek, 1 Williamsburg, 1 Blacksburg, and 1 Giles County [the latter two are the same bird observed in a tiny area of overlap between the Blacksburg and Giles County count circles, Figure 9]), 1 Prairie Warbler at Nansemond River, and 1 Yellow-breasted Chat at Back Bay.



Figure 9. Yellow-throated Warbler on 2020-2021 Blacksburg and Giles County CBCs. Photo taken 20 December, 2020 by Jack Webster.

Although The Winter Finch Forecast (Hoar 2020) is primarily written for Ontario, Canada, it often predicts the winter irruption of species moving much farther south of Ontario. This forecast indicated that Purple Finches, Red Crossbills, Pine Siskins, Evening Grosbeaks, and Red-breasted Nuthatches would migrate south out of Canada and into the United States in Fall and Winter 2020-2021. Virginia CBC numbers were higher than usual for most of these species. The 1,233 Purple Finches were the most sighted since 1,281 in 2007. Only five Red Crossbills (4 Rockbridge County and 1 Highland County) were recorded, however, compared to 7 in 2019 and 11 in 2018. An amazing 1,616 Pine Siskins occurred on forty of the Virginia CBCs. This is the highest number since 2,953 were found in 2008. Evening Grosbeaks were the real treat this year, with 467 Evening Grosbeaks recorded on half of the CBCs in Virginia. This is by far the highest number observed in over twenty-five years since 851 were reported in 1995. The 685 Red-breasted Nuthatches identified on fifty CBCs in Virginia are the most since 694 in 2012. Six out of the last ten years, the numbers of Red-breasted Nuthatches

have been well under 100. Black-capped Chickadees were also recorded in unexpected numbers and areas: 167 were spotted on sixteen counts, which is more than double the 10-year average of 72.

New record high numbers of several species were tallied for Virginia in 2020. Red-shouldered Hawks have been increasing in number in the state since 1969 (when only 44 were found) and peaked at 1,043 this year. CBC observers recorded 584 Hairy Woodpeckers and 7,329 Fish Crows. Common Ravens continue to expand eastward, resulting in 622 birds counted last year (10 Fort Belvoir, 26 The Plains, 1 Chancellorsville, 2 Lake Anna, 5 Gordonsville, 40 Northern Shenandoah Valley, 71 Highland County and 44 Mount Rogers-White Top Mountain). White-breasted Nuthatches (3,383) and Carolina Wrens (7,929) were also observed in record high numbers. The 3,030 American Pipits are the second highest number recorded (due to several local high counts: 334 the Plains, 620 Manassas-Bull Run, 190 Charlottesville, 16 Sandy River Reservoir, 175 Lynchburg, 24 Rappahannock, 667 Rockingham County, 166 Augusta County and 25 Mount Rogers-White Top Mountain) since 3,296 were observed in 1985. Observers recorded 147 Nelson's Sparrows (30 Wachapreague, 108 Cape Charles, 8 Little Creek, and 1 Newport News), which is four times the old record of 37 set in 2006. This is the third year in a row that record high counts of Chipping Sparrows have been logged on Virginia CBCs (2,261 in 2020, 2,230 in 2019 and 2,203 in 2018). White-throated Sparrows were also abundant with 30,926 recorded (more than 2,000 above the previous high count of 28,218 in 1977), as were Song Sparrows with 12,611 recorded (nearly 2,000 more than the previous high count of 10,802 in 1992.) Finally, observers tallied 14,363 Northern Cardinals and 43 Baltimore Orioles, which bested the previous high count of 37 from back in 1963.

The numbers for some species are encouraging as they seem to be increasing. An outstanding 1,129 Brown Pelicans were observed in 2020. This is the first time their numbers have exceeded 1,000 since 2006, but this is still well below their high count of 1,553 from 2002. The number of Black Vultures dropped to 6,092 from their record high count of 7,318 set in 2019, but this species continues to increase in number and further expand its range nationwide (Kluever et al. 2020). This is supported by their CBC numbers in Virginia which have been steadily increasing over the last fifty years (Figure 10). Not surprisingly, Turkey Vulture numbers have also increased over the same period with 7,934 in 2020 and a high count of 9,203 ten years ago in 2011. The second highest number of 45 Merlin were seen since the record high count of 47 in 2016. Peregrine Falcon numbers recovered in 2019 and 2020 (32 and 31, respectively) after dipping to

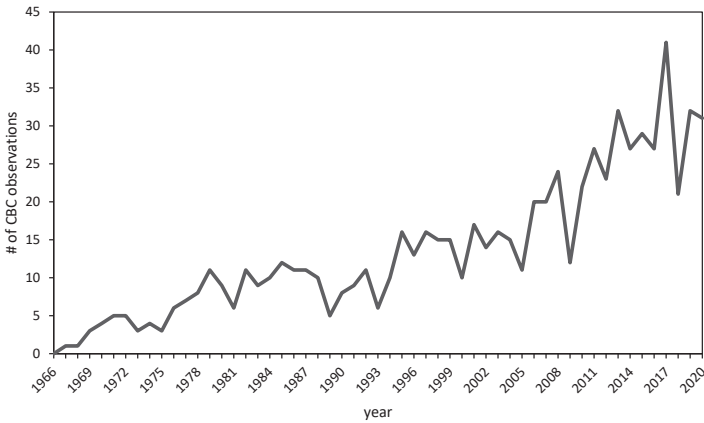


Figure 10. Number of Black Vultures recorded on Virginia CBCs over the last 50 years. Data not corrected for effort.

only 21 in 2018 following a record high count of 41 in 2017. The number of Peregrine Falcons has been increasing over the years since none were documented in 1966 (Figure 11). This increase likely corresponds to rebounding breeding populations largely due to intensive management efforts in Virginia (Rottenborn and Brinkley 2007).

Unfortunately, the numbers for other species are declining. Only 9,745 Snow Geese were observed in 2020, which is

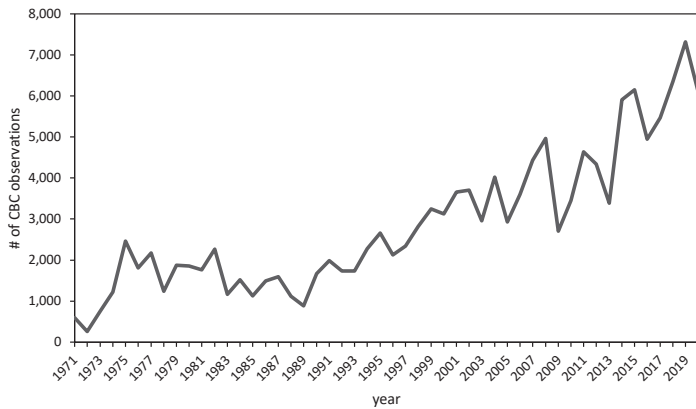


Figure 11. Number of Peregrine Falcons recorded on Virginia CBCs over the last 55 years. Data not corrected for effort.

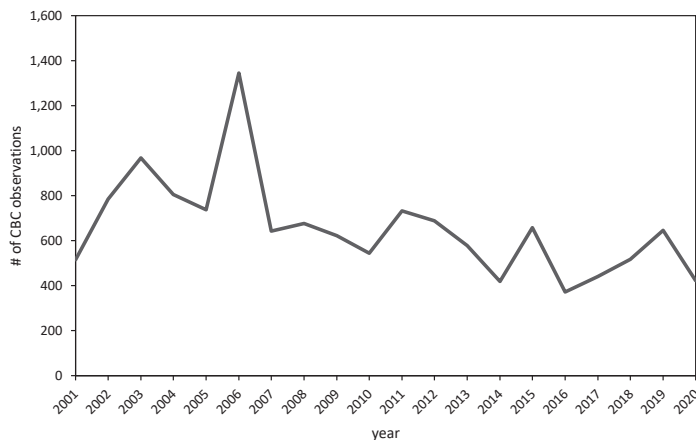


Figure 12. Number of Common Loons recorded on Virginia CBCs in the last 20 years. Data not corrected for effort.

the lowest number since 8,548 were recorded in 2002 and only 15% of the twenty-year high of 63,848 from 2004. Only 423 Common Loons were located, the third lowest number in the last ten years with 372 in 2016 and 419 in 2014 (their ten-year high was 733 in 2011). Common Loon numbers seem to fluctuate quite a bit but are trending downward over the past twenty years (Figure 12). Just over one thousand (1,053) Northern Gannets were reported. Their 5-year average of 2,352 is below their 10-year average of 3,092, which suggests that their numbers are declining. Given that their 5-year average has been below the 10-year average for at least fifteen years, this decline has been going on for several years and represents a dramatic fall from their twenty-year high count of 28,828 in 2001 (Figure 13). Only 137 Sharp-shinned Hawks were observed in 2020. Their numbers have been in decline this century from a high count of 306 in 2002 (Figure 14). Not everyone cares about the 8,294 Rock Pigeons observed,

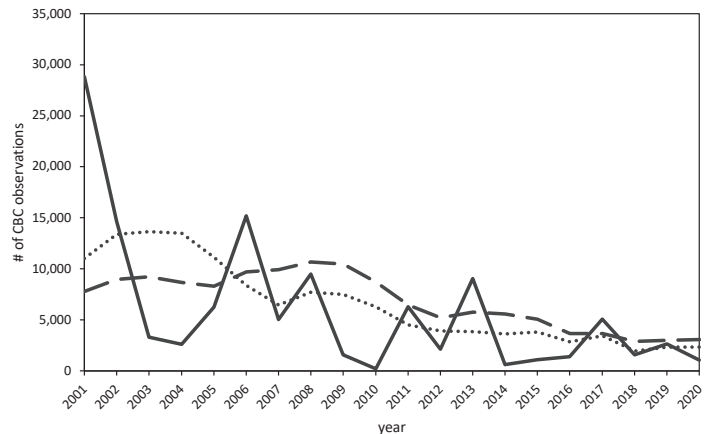


Figure 13. Northern Gannets recorded on individual Virginia CBCs (solid line), 5-year averages (dotted line), and 10-year averages (dashed line) over the last 20 years. Data not corrected for effort.

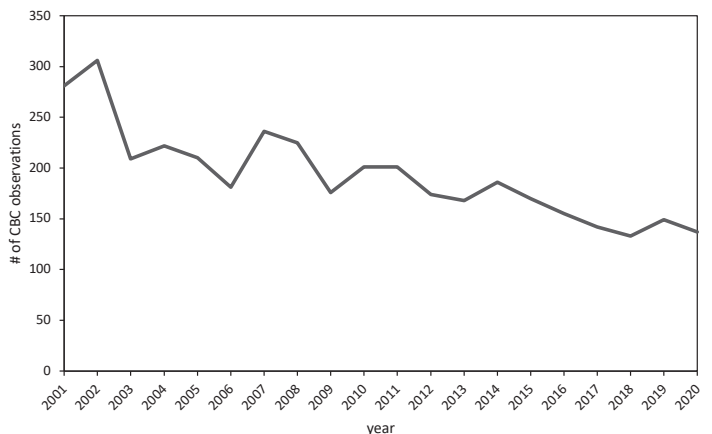


Figure 14. Number of Sharp-shinned Hawks recorded on Virginia CBCs over the last 20 years. Data not corrected for effort.



Figure 15. Loggerhead Shrike on 2020-2021 Blacksburg CBC. Photo by John Ogburn.

but comparing their 5 and 10-year averages confirms that the abundance of this species has been declining for over ten years from a high count of 17,083 in 2004. Loggerhead Shrike numbers dipped below 10 this year as only 6 were recorded (1 Charlottesville, 1 Shenandoah N.P. Luray, 1 Blacksburg [Figure 15], 1 Tazewell, and 2 Glade Spring). This is at least better than the 10-year low of 4 in 2013. Only 34,197 Red-winged Blackbirds were tallied which is the lowest number since 27,802 in 1994. There has been a steep decline in their numbers for the last 15 years since 282,498 were logged in 2006 (Figure 16). According to the American Bird Conservancy (2019), Red-winged Blackbird numbers have been declining for decades for a number of reasons (poisoning, trapping, shooting, habitat loss, and climate change).

A few count circles set new records for number of species (75 at Darlington Heights, 71 Chatham, 72 Rappahannock, 81 Lexington, and 67 Mount Rogers-White Top Mountain) and/or number of individuals recorded (7,409 at Middle Peninsula, 3,429 Chatham, 3,719 Rappahannock, and 3,637 Mount Rogers-White Top Mountain).

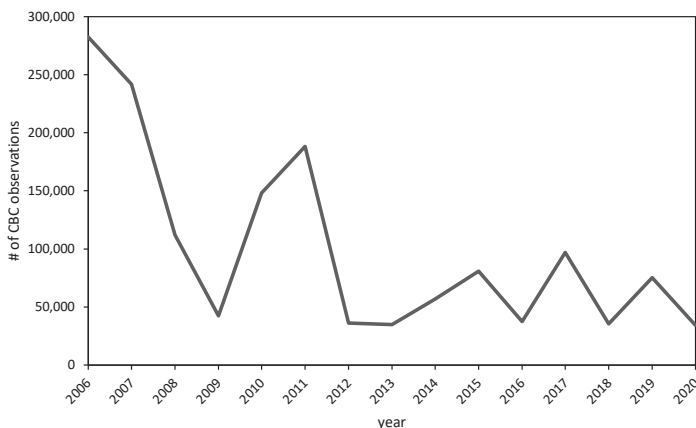


Figure 16. Number of Red-winged Blackbirds recorded on Virginia CBCs over the last 15 years. Data not corrected for effort.

As in the past, species data for all of the Virginia CBCs is recorded in one large table. This comprehensive table listing the fifty-six counts with all of the species reported on each count plus the numbers for each species can be viewed by clicking on the 2020-2021 link on the Christmas Bird Count page on the VSO website (<https://www.virginiabirds.org/events/christmas-bird-counts>). Details on individual Audubon CBCs can also be found on the Audubon Christmas Bird Count website at <http://netapp.audubon.org/cbcoobservation/>.

I am deeply indebted to the three individuals who serve on the CBC Rare Species Vetting Committee who help me review rare bird reports each year. They shall remain anonymous but I want to recognize them and express my gratitude as I couldn't do this without their help and I greatly value their learned opinions.

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ERRATUM

In reference to the article, "Barn Owl Nest Box Productivity in Prince William and Fauquier Counties Virginia, 1986-2009", published by Mark Causey, Lance Morrow, and Jill Morrow (2020, volume 91, pp. 15-19), the authors wish to make the following correction:

On page 16, in the second to last line of paragraph two, column two, the r^2 value was incorrectly reported as 0.0.135. The correct r^2 value is 0.0135.

INFORMATION FOR CONTRIBUTORS

The Raven, the official journal of the Virginia Society of Ornithology (VSO), functions to publish original contributions and original review articles in ornithology relating to Virginia Birdlife. Electronic files are the required form for manuscript submission. Text files, prepared using a Mac OS-compatible word processing program or Microsoft® Word, should contain minimal formatting. Graphics (photos, maps, graphs, charts) should be sent as high quality EPS or JPEG files. An accompanying "cover letter" file should be emailed to the editor stating (1) article title, (2) author(s) full name(s) and email and home or institutional address(es) and, for multi-authored manuscripts, (3) the name of one author designated to carry out correspondence with the editor. If the manuscript or report is technical, a list of persons who would be appropriate reviewers should also be included in the "cover letter" file. Authors are encouraged to consult with the editor on additional matters of content, format, or style.

Most Manuscripts published in *The Raven* concern the distribution, abundance and migration of birds in Virginia. However, if there is evidence of summer residency in Virginia provided, manuscripts describing the distribution, abundance, life history, ecology and behavior of Virginia's migrant birds on their wintering grounds are also welcome. Manuscripts on other ornithological topics, including Virginia-based historical reviews, bibliographical reviews, life histories, and behavioral observations, are also welcomed. In addition, the journal serves to publish the official proceedings of the VSO and other formal items pertaining to all aspects of the Society's activities. *The Raven* may also publish articles pertaining to the activities of various public and private organizations engaged in biological and conservation work in Virginia. *The Raven* is a peer-reviewed journal; all feature articles and short communications are reviewed before a decision about acceptance for publication is made.

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