

COURTSHIP, BREEDING, AND NESTING BEHAVIOR OF YELLOW-CROWNED NIGHT-HERONS IN MIDDLETOWN, ORANGE COUNTY, NEW YORK

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In March 2020, with migration of various waterfowl and waders approaching my Orange County, New York haunts, I began to focus on the possibility that the Yellow-crowned Night-Herons (*Nyctanassa violacea*) discovered here by my grandson Ben and me on 15 April, 2019 (Depew 2019) might return in 2020. Being uncertain of how early the bird actually arrived last year, I began my search in late March 2020 by searching the ponds, streams, and swamps by car in the area near Vanburenville Rd. There appear to be populations of various species of crayfish in this area, a preferred food for Yellow-crowned Night-Herons that breed inland, along with amphibians, flying insects, and other small aquatic prey.

On 19 April, 2020 I was rewarded during the late afternoon with seeing one Yellow-crowned Night-Heron standing near the pond where we discovered it last year, near a residence on Vanburenville Rd. Assuming this was the same individual, which seems very likely, its arrival was only four days later than the date it was discovered in 2019! I immediately reported it on the Mearns Bird Club “WhatsApp” so my fellow club members would be aware. This bird is the fourth recorded occurrence of Yellow-crowned Night-Heron in Orange County, NY by Edgar A. Mearns Bird Club members. I also informed my grandson Ben and the property owner Eleanor Hajas, who were both delighted. Eleanor granted me permission to study the bird again on her property for 2020. During this time of year, the visibility of the pond and swamp is adequate from the public road along the property. It becomes more difficult as the tree leaves develop, making it necessary to study the birds within the property boundaries.

Sex identification of Yellow-crowned Night-Herons can be difficult for the casual observer because the male and female look similar. My observations, while studying a single pair, indicated that courtship displays and bold behavior are male traits. I noticed this year, at the close of breeding season, that the longer, yellow, crown-plume helped me identify the male. The female had a tendency to be more wary and if I wasn’t careful in my movements, she would be the first to flee. Her yellow crown-plume at the end of breeding season was noted to be shorter than the male’s, ending at the nape of her neck.

From the day the first Yellow-crowned Night-Heron appeared, there were many observations made of courtship displays by me and other Edgar A. Mearns Bird Club members during a 13 day period. This led many of us to speculate that the female might be around somewhere. With that in mind, I personally searched the pond and swamp area for the female on five random days during this period but could not locate her. On one occasion I witnessed the male displaying from the old nest that was built by the pair last year in an oak tree leaning over the water

in the swamp. His display included stretching his neck upward, then bowing and spreading his plumage while emitting a short, high-pitched “coo” sound. I speculated that this behavior was to signal that his territory for nesting was claimed. On 2 May, 2020, during a spell of 68° weather, I discovered the female Yellow-crowned Night-Heron. The documented sighting was 13 days after the male’s. Assuming this was the same female, she arrived five days later than she did in 2019.

After the female’s arrival, I observed that the male made many attempts to attract her in hopes of mating with her (see photo A, p. 364). These rituals went on for several weeks from various perches including the old nest in the oak tree. As time went on the ritual would include some added elements. The male would sometimes look at the female and pick up a twig from the nest to show her during courtship display. Perhaps this was to get her interested in nest building or repairing it together.

The Yellow-crowned Night-Herons would sometimes disappear from the property, perhaps to explore foraging opportunities in other areas nearby. I became concerned, however, when on 23 and 24 May both male and female did not appear. I checked the location again and on 30 May the male appeared, but the female was still not visible. Strangely, there were no signs of displays or vocalizations observed. I began to wonder if they had chosen another nesting spot across the swamp on the neighbor’s property, had mated, and started to incubate eggs. The male would sometimes finish foraging in the swamp pool and walk out of the water to that side.

On 3 June, the female and the male were both present again and courtship rituals resumed. This time I noticed that the vocalizations became lower in pitch, sounding as if they were “croaking” to each other. The male flew to where the female was on the bank and the two raised wings up to greet one another! The female then flew to perch on a tree and the male went to the old nest site to display from it with a low-pitched “coo” sound. Scott Baldinger came by and we both witnessed the male flying across the swamp from the nest tree to gather twigs from other trees and carry them back to the old nest. Meanwhile, during all this, the female watched the male and preened. The courtship ritual went on for a little over an hour before it ended. We watched the pair leave the area on foot to go to the opposite side of the swamp again and disappear in the grasses.

On 9 June I witnessed another attempt by the male to mate with the female. The male was perched in a tree and the female was perched below about 20 feet away on a downed tree on the water. They were in full view of each other with the male watching the female. The female preened but then stopped and bent forward, raising her rump in an upward pose for several minutes with her plumage fluffed out. The male took this as a signal to leave his perch and join her. He was fully aware and attentive, with plumage in display mode, but she rejected him by trotting up to the higher side of her tree to escape! See photo B on page 364. She then flew to place herself on a limb of a different tree.

Ten days later, on 19 June, the pair was sitting together on the same limb of the nesting tree. The male was adjusting the twigs in the nest and the two were communicating with “croaking” vocalizations. The male displayed for the female two times and then they walked around the nest on the limb. At 10:55 a.m. copulation took place in the nest (see photo C, page. 364). It took about two minutes for this to be completed.

On the morning of 22 June, with the temperature reaching 90°, I revisited the swamp and the pair was foraging on crayfish and flying insects. At one point, the female flew to the nesting tree first and began to preen on the limb near the nest. The male noticed but continued to forage for fifteen minutes longer, then he joined her in the tree and they greeted each other with “croaking” vocalizations. They tweaked the nest together, then the male moved about four feet away from the nest. The female got on the nest facing the higher side of the limb where the male was and began to pant with her bill wide open for several minutes (see photo D, p. 364). I do not know if her panting was due to the very warm temperature that day or to her high breeding condition. After this, the female rose up, turned in the opposite direction, and allowed the male to mate with her again. This was the first year that I witnessed the mating of the Yellow-crowned Night-Herons. Since I am not at the swamp location every day, there could have been other times when mating took place during the span of four days from 19 June to 22 June.

To my great disappointment, my last view of the pair was on 27 June. I never saw either of the birds on the nest where they should have shared incubation of the eggs—if there were any produced at all. I wondered if the nest had been invaded by a predator, but due to the height of the nest it could not be confirmed that any eggs had been produced. The female was not seen again and I hope she is still alive and just decided to move on. The male did stay a while longer, and by 11 July, he chose to forage in the pond near Eleanor’s house. Renee Davis, a fellow birder, stopped by to get a look at him with her friend Marge as I was leaving. 13 July was the last time I saw the male at the pond, and at dusk he roosted in a tree in the yard. I visited the site at different times of day until 21 July and determined the male had left. I wish to note here that in 2019 the pair of Yellow-crowned Night-Herons were gone sometime after 8 July. So this behavior was repeated again this year.

It is important to note that Yellow-crowned Night-Herons are monogamous in that they form a pair at least for the breeding season, and sometimes for life. The website Animalia (2020) states: “This species is monogamous and nests either on its own or in a colony with four to five nests nearby. Pairs form either during migration or on the breeding range early on in the breeding season.” National Audubon Society’s (2020) online article on Yellow-crowned Night-Herons states: “Breeding behavior not well known. Often nests in isolated pairs or in very small groups, especially in northern part of range.”

My observations of these birds in 2019 and 2020 have continued to provide information about their breeding behaviors; however, I can only use my information to speculate as to why they were not successful in producing young.

The pre-breeding ritual of these Yellow-crowned Night-Herons was fascinating to me since they are obviously a pair, decided to migrate from their wintering area, and return to this same location for likely the second consecutive year. At this time, they would be at least two years old, which is generally the age of sexual maturity. More importantly, there was no competition for mates in this region. Each ritual performed by the male was as though he was trying to win over his mate for the very first time! It caused me to believe that this is an inherited, biological behavior since Yellow-crowned Night-Herons have more of a tendency to live in closer proximity to others of the same species in coastal regions where their numbers are greater. For instance, a greater population of this species exists on Sanibel Island in the state of Florida, U.S. and colonies of dozens of birds are known in New York State on Long Island (Bull 1974).

Taking in the information that I've gathered, there are some points to ponder:

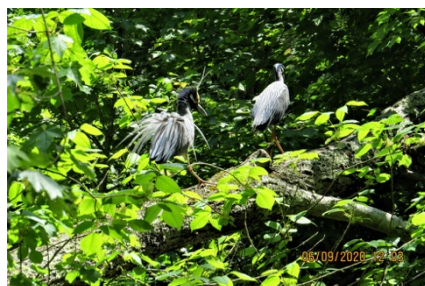
- 1) Will these birds mate for life? It seems that there is some type of bonding that had to occur between the male and female prior to this type of migration for them to arrive at the same location for two consecutive breeding seasons. It's worth considering that both birds were reared in an inland location so that the climate, food, etc. is imprinted already and familiar to them.
- 2) Does courtship last for approximately six weeks in all pairs of Yellow-crowned Night-Herons? There is certainly a lot of energy expense on behalf of the male.
- 3) How does geographic location and climate affect the success of producing viable offspring? When the male arrived each year there were spells of cold temperatures which can affect available food sources. April temperatures can be freezing to just above freezing in Orange County, NY. Is mating taking place too late in the breeding season for this pair?

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Yellow-crowned Night-Herons, Middletown, *Orange*. Photos clockwise from top left. A: The pair on 3 May; B: A mate chase on 9 Jun; C: Panting on the nest on 22 Jun; D: Mating on 19 Jun; all © Joyce Depew. See article on pp. 314-317.