

GREAT BLUE HERON CONSUMES SPRUCE CONES: A UNIQUE BEHAVIOR

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On 16 May 1999 while exploring a section of Keeney Swamp State Forest (Allegany County) sometimes referred to as the "Gordon Hill Forest", I chanced upon a pair of Common Ravens (*Corvus corax*) exhibiting what I took to be nest-building behavior in a section of woods containing numerous clusters of evergreens. After watching their activity from a distance for approximately fifteen minutes, I was fairly confident that I would be able to relocate the cluster of Black Spruce in which they had chosen to locate their nest. Not wanting to disrupt the process, I quietly retraced my steps knowing that I would return at a later date to confirm the existence of what I hoped would be a new nest.

Other commitments kept me from returning to the site until 31 May. Long before I could see the stand of spruce, sounds not unlike young excited ravens might make, reached my ears. I approached the stand from the north and with 7x35 binoculars scanned the tops for a nest. No evidence of a nest was visible but a hoarse "awking" and croaking periodically erupted from the stand. There were without question, at least two or more birds on the south side of the evergreens. Just as I decided to circle the cluster of evergreens and approach from the south, a large bird launched itself into the air from the southern end of the stand and headed in my direction. I instinctively froze.

Much to my surprise, the bird turned out to be a Great Blue Heron (*Ardea herodias*). What happened next surprised me even more. The heron landed in the middle of another Black Spruce 35 to 50 yds. from my location. Awkwardly making its way out on a limb of the tree as far as possible, with wings partially spread for balance, it extended its neck and began tugging and plucking cones and occasionally new growth off the branch above. After collecting four to six cones in its beak, the bird pulled itself in to a more stable position and began crushing them within the back portion of its beak. It took obvious effort, and up to a half-dozen attempts before the heron accomplished the task. Rearranging the contents for ease of swallowing, the bird then did just that.

The Great Blue repeated this process four more times before returning to the nest on the south side of the spruce cluster. I had no doubt that racket that arose from the nest came from young herons expecting to be

fed by a returning parent. Mentally, I chastised myself for not recognizing the familiar sound of young herons sooner. I found better cover hoping for a repeat of what had just occurred.

The wait was not long before the Great Blue was headed in my direction once again. This time the bird landed on the far side of the tree and began the process all over again. Having gathered, crushed, and swallowed what I estimated to be somewhere between 18 and 20 cones, the parent again flew directly to the nest and was greeted with the cries of its hungry offspring.

I was to witness the entire process repeated three more times in trees further away before the adult left the nest for the last time, and headed west towards Black Creek. Having been crouched in hiding for over an hour, I took advantage of the adult's absence to circle the stand of spruce and locate the nest.

The nest itself, located about 50 ft. from the ground near the top of the tree, was another surprise. It was tiny by Great Blue Heron standards, and comprised of what appeared to be loosely woven, small dead branches of evergreens only. I could look through the nest and see two forms moving about within it. I made noises and the forms stopped moving. Spying a small dry dead branch on the ground, I picked it up and snapped it. Two small heads attached to long skinny necks rose over the rim of the nest to look down at me. Having confirmed my count, it was time to leave, and I did.

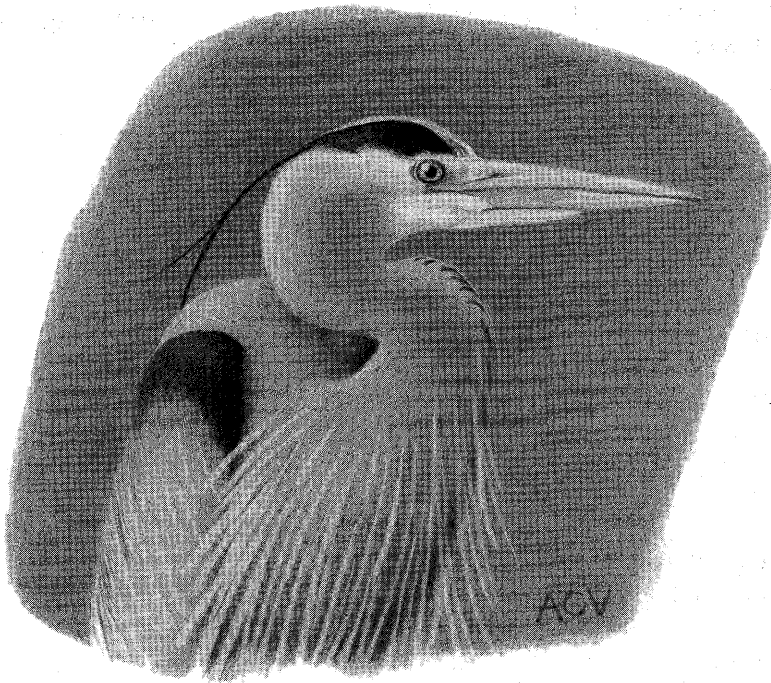
I returned to photograph the nest and birds on 5 Jun and 19 Jun. Both juveniles were in the nest and appeared to be healthy. The nest itself appeared to have been rearranged. On these last two dates both parents were in evidence, taking turns bringing food and watching the nest in the other's absence. On the last date, one the parents discovered me and became highly agitated and distressed. I left as rapidly as possible and did not return to observe the nest again.

Initially my impression was that ravens had started this nest, and that for some reason the Great Blues ended up with it. This was the first time I had ever observed Great Blues nesting in an evergreen. This also was the first time I had ever seen this species pluck and consume spruce cones and new growth shoots (greens). Whether the cones or the new growth were fed to the juveniles is not known, as I did not directly observe such activity. What purpose these items might serve is not known. I speculated that the items might be used for roughage to clear a blockage, or assist in breaking down food in the crop.

Additional research on the subject highlighted my ignorance of the species. As it turns out, nesting in spruce or pine trees by the species is a

common occurrence in some regions of North America. In fact, the species will literally nest from the ground up, in a wide variety of tree species. Nesting on cliffs and ledges is also not unheard of (Ehrlich, Dobkin, Wheye, 1988).

There are a number of reports of small flimsy nests that observers were able to look up through when standing on the ground. The pattern appears to be that first year nests are often constructed this way. Additional layers are applied in each successive year, resulting in the heavier, thicker nest that I am familiar with.



As to the consumption of spruce cones and new growth mentioned in my report, at least three sources listed pine needles as possible inner nest lining material, but there was no mention of cones. The closest my findings have come to seed (cone) consumption by this species were quotes from Audubon, 1840 "...and the only seeds that I have found in its stomach were those of the Great Water Lily..."; and Wilson, 1832 "...and the seeds of splatter docks" (Bent, 1926).

To date, other than adding 'nest lining' to the list, I can still only speculate about what use or function the consumption of Black Spruce cones and new growth might serve for the species.

One final note, ravens are listed as one of the few enemies of Great Blue Herons, often destroying their eggs or young fledglings. It is possible that the "nest building behavior" that I observed from a distance on 16 May, was in reality a partial dismantling of the nest in an attempt to get at the eggs or fledglings while the adult herons were absent. This scenario would be more consistent with raven behavior in the sense that the species tends to nest earlier in the year, and is known to be aggressive towards nesting herons.

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