

Summary of Nest Survey Results along the North Branch of the Chicago River at Horner Park, Chicago, IL

Prepared on February 21, 2014

Prepared by U.S. Army Corps of Engineers, Chicago District

Introduction

A survey of nest structures was performed along the North Branch of the Chicago River at Horner Park, Chicago, IL, in order to determine if the Illinois State Endangered Black-crowned Night-Heron was breeding along the river bank. The Black-crowned Night-Heron has been observed regularly foraging along the North Branch of the Chicago River and along the river bank at Horner Park. The only known nesting colony of Black-crowned Night-Herons within the Chicago Region is located at the Lincoln Park Zoo. Until very recently there was a robust colony south of the Lincoln Park Zoo within Calumet region, but breeding activities have ceased in the last few years after a number of years of poor reproductive success. There has been some speculation that there might be Black-crowned Night-Herons nesting along the river bank at Horner Park. In order to determine the likelihood of Black-crowned Night-Herons nesting within this area, Mason Fidino, Coordinator of Wildlife Management for the Urban Wildlife Institute at the Lincoln Park Zoo, and Walter Marcisz, Calumet Region Black-crowned Night-Heron expert, performed nest surveys along the river bank at Horner Park.

Methods

Nest surveys were performed on foot along the river bank area at Horner Park. Eight potential nest sites had been previously identified, labeled Trees 1-8, please reference attached map. Surveyors visually assessed the potential nests from the ground (Trees 1-8). Nests were assessed based on the type of material used, the condition of the nest, location of the nest within the trees, and probability of what species had built or used the nest in the past. Mason Fidino, accompanied by Brook Herman, U. S. Army Corps of Engineers and Seth Magle, Director of the Urban Wildlife Institute at the Lincoln Park Zoo, performed the nest survey on February 7, 2014. Walter Marcisz, accompanied by Brook Herman, performed the nest survey on February 14, 2014. Surveyors did not coordinate surveys or their results. Both surveyors independently compiled a report of their findings and sent to Brook Herman. A summary of their findings are reported here and their original reports are attached at the end of this summation.

Results

There is a low likelihood the river bank of the North Branch of the Chicago River at Horner Park has nesting Black-crowned Night-Herons. This is based on a number of observations, such as the type of nest material, construction of the nests and location of the nests in relation to tree structure was not consistent with Black-crowned Night-Herons in the Chicago Region. Nests surveyed within the Horner Park river bank area were made primarily of leafy material. Black-crowned Night-Herons predominantly used woody material such as small branches and twigs. A few nests looked they were made of a mixture of woody stems overlain with leafy material, which is inconsistent with Black-

crowned Night Herons in the Chicago Region. Black-crowned Night-Herons nests have a 'pin cushion' or 'sea urchin' appearance because of how the stems are inserted into the nests at all angles during construction. Most nests surveyed did not have this appearance, although nests that had some angled stems also had a layer of leaves, which would not be consistent with Black-crowned Night-Herons. Additionally, most nests were located along the secondary or tertiary branches of trees. Black-crowned Night-Herons, because of the combined weight of the adults and nestlings, are typically located along the main stem or a main branch of a nesting tree to provide stability and support. Because the nest survey was performed during the non-breeding season for the North American population of Black-crowned Night-Herons, one cannot absolutely rule out the ability of Black-crowned Night-Herons to nest along the river bank at Horner Park. However, there is a low probability of this occurring based on the evidence gathered during the nest surveys.

Attachments:

- 1) Map of Tress 1-8
- 2) Walter Marcisz's Report
- 3) Mason Fidno's Report

Montrose Ave.

Area A

Tree 7

Tree 6

Tree 5

Tree 4

Tree 8

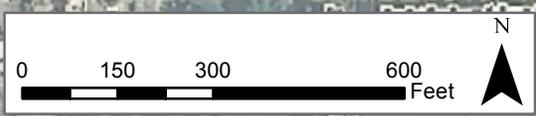
Tree 3

Tree 1

Area B

Tree 2

Irving Park Rd.



Survey of Nests at Horner Park, Chicago, IL, along the Chicago River North Branch.

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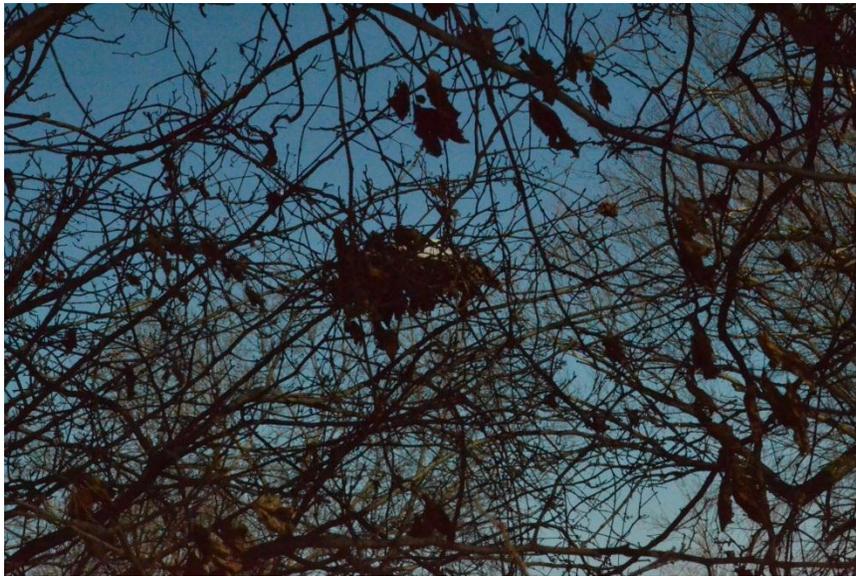
Introduction. A nest survey was conducted by the author at the riverbank within Horner Park from approximately 11:10 to 11:50 AM on the morning of 14 February 2014. The nest survey included a visual assessment of eight currently identified nests depicted on the attached map.

Results. Nest Descriptions: All eight nests were located in shrubs along the riverbank. All were similar in size (approximately fifteen to twenty inches in diameter), constructed of the same materials (leaf nests with a smaller amount of sticks for structure), and placed at a similar height. Given their consistent size, structure, and composition, all eight nests were believed to have been constructed by the same animal, and based on the same parameters, all were identified as nests built by Eastern Gray Squirrel (*Sciurus carolinensis*). Many of the nests were in an obvious state of disrepair, and as such they were viewed as representing nests built and used over a period of years.

Discussion. The eight nests in the survey area had been previously identified as potential nests of Black-crowned Night-Heron (*Nycticorax nycticorax*), but based on the descriptions above, all were clearly nests built by Eastern Gray Squirrel. All eight were leaf nests, and none showed the spiky, loose, stick nest structure that is typical of Black-crowned Night-Heron. It is worth noting that one of the nests (located in Tree 1) contained more sticks than the other nests, forming a loose, flat platform at the bottom of the nest. Despite the larger amount of sticks, leaves accounted for 60–70% of the nest contents, and the overall appearance of the nest closely matched the other seven nests. Therefore, despite the slightly larger percentage of sticks in the nest, the appearance of this nest was also consistent with Eastern Gray Squirrel. One Eastern Gray Squirrel was very active in the immediate vicinity of the nests on the survey date, and others were seen elsewhere in Horner Park. At least one White-footed Mouse (*Peromyscus leucopus*) was observed scurrying through the snow beneath the nests. Birds observed on the survey date included one Mourning Dove (*Zenaida macroura*) which flushed from riverbank shrubs during the survey, and a Mallard (*Anas platyrhynchos*) and several

Common Goldeneye (*Bucephala clangula*) on the Chicago River North Branch adjacent to the study site.

Nest inspection report for Horner Park, Chicago, IL



Document prepared by:

Mason Fidino, Urban Wildlife Institute, Lincoln Park Zoo
Seth Magle, Urban Wildlife Institute, Lincoln Park Zoo

On February 7, 2014 Seth Magle and Mason Fidino of the Lincoln Park Zoo surveyed 13 nests suspected to be created by Black-crowned Night Herons (BCNH) located at Horner Park, Chicago, IL, along the Chicago River North Branch. Before each nest is discussed it is important to understand the ecology and behavior of this species. BCNH nest in colonies, and prefer to nest in close proximity to each other (Parejo et al. 2001). Nesting in this fashion can lower nest-predation rates and provides information to other herons about the location of food sources that vary in space or time. There are times when a single BCNH may nest alone, but when multiple BCNH are nesting they regularly cluster together. Throughout our monitoring of BCNH in Lincoln Park we have observed the success or failure of six different nesting locations and have seen first-hand the nest-site selection process. The common theme for all successful nesting locations is that the BCNH began nesting in very close proximity to one another, often in one or two trees. When a single BCNH began nesting in a location and no other individuals joined them, the nests failed. In the five years that the Lincoln Park Zoo has monitored BCNH we have never seen nests distributed as they are in Horner Park, with the proposed nests split apart by multiple trees over large distances. This configuration is not consistent with the known ecology of this species. To estimate the probability that the nests belong to BCNH we used a number of criteria.

- 1) Nest Placement: BCNH often place nests near tree trunks or in the forked tips of large branches, nests located in areas with little to no structural integrity are not likely to support the weight of BCNH and their young. There is significant variance in the placement of a nest on a tree, but BCNH select locations that can withstand their presence.
- 2) Nest material: While it should be expected for nesting material to be unique to an area depending on the surrounding foliage, size of branches used and presence or absence of leaves can give us some indication on whether or not these are BCNH nests. BCNH are clumsy nest builders at nest, and will stack thick branches to form a platform on which to nest. Leaves are not used in nest construction, but roots may be used to line the inside of the nest. Branches are not woven together in BCNH nests, and the majority of the nests are composed of sticks. 94% of the nest structure is composed of branches, while 6% may be plant material (Durmus and Adizel 2010). Furthermore, BCNH will collect branches from long distances to build their nest, and will not necessarily rely solely on the branches of the tree they are nesting in.
- 3) Distribution of nests: Nests clumped closely together are a signature of this species. Nests placed further apart are more characteristic of other heron species, who build nests in an otherwise similar fashion (e.g. green herons).
- 4) Size of nests: Nests vary greatly, but on average are around 12-18 inches wide and are shorter than they are wide.

Using these criteria we determined that the likelihood of BCNH nesting in Horner Park is incredibly low. Only one nest shared some characteristics with a BCNH nest, and was already in a location that will not be cut down by the Army Corps. Some nests do have characteristics of being built by some type of heron species, but it is our opinion that these nests are more likely green herons than BCNH. See below for a detailed description of each nest.

As the location of these nests are known (aside from one), we will refer to their locations by the tree they are located based off of the map Brook Herman provided. We have included the GPS coordinates of the nest that was not on the map.

Tree 9 (Not on map provided by Brook Herman)

1. **GPS coordinates:**
2. **Nest Placement:** Middle to bottom of the canopy, near trunk of tree.
3. **Nest Material:** predominately small branches, based composed of leaves.
4. **Distribution of nests:** No other nests located within 100 feet.
5. **Size:** Large. > 18 inches
6. **Most likely species that constructed this:** American Crow
7. **Likelihood this is a BCNH nest:** Low (<5%)
8. **Intact and ready for breeding purposes for BCNH:** Possible, but not likely a BCNH nest.

Tree 7

1. **Nest Placement:** On a horizontal portion of a leaning tree trunk, middle-top canopy
2. **Nest Material:** leaves
3. **Distribution of nests:** One other nest in a tree adjacent (tree 6).
4. **Size:** Medium. 12-18 inches wide.
5. **Most likely species that constructed this:** Squirrel. Characteristic squirrel nest.
6. **Likelihood this is a BCNH nest:** Very low (<1%).
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 6

1. **Nest Placement:** Off a branch adjacent to the trunk, middle-top canopy.
2. **Nest Material:** Leaves, twigs
3. **Distribution of nests:** One other nest in a tree adjacent (tree 7).
4. **Size:** Small < 12 inches wide. Taller than it is wide
5. **Most likely species that constructed this:** Currently used as a squirrel nest.
6. **Likelihood this is a BCNH nest:** Very Low (<1%).
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 5

1. **Nest Placement:** Fork in large tree branch, under lots of other tree branches, middle canopy.
2. **Nest Material:** twigs, leaves
3. **Distribution of nests:** No trees with nests adjacent. Trees 6 and 7 close to 30-50 feet away.
4. **Size:** Medium 12-18 inches wide.
5. **Most likely species that constructed this:** Green Heron
6. **Likelihood this is a BCNH nest:** Low (<5%). The branches over this nest are too low to adequately fit BCNH, who are not secretive with their nest placement, while Green Herons are.
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 4.1

1. **Nest Placement:** On small branches far out on the canopy, top canopy
2. **Nest Material:** twigs, leaves

3. **Distribution of nests:** One other nest located in tree 4
4. **Size:** Medium. 12-18 inches wide.
5. **Most likely species that constructed this:** Uncertain, but placement is uncharacteristic of BCNH
6. **Likelihood this is a BCNH nest:** Low (<5%)
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 4.2

1. **Nest Placement:** On small branches far out on the canopy, top canopy
2. **Nest Material:** twigs, leaves
3. **Distribution of nests:** One other nest located in tree 4
4. **Size:** small < 12 inches
5. **Most likely species that constructed this:** squirrel
6. **Likelihood this is a BCNH nest:** Low (<5%)
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 8.1

1. **Nest Placement:** Fork of tree branch, top canopy
2. **Nest Material:** leaves
3. **Distribution of nests:** A few nests in close proximity (tree 3, another nest in tree 8)
4. **Size:** Large > 18 inches
5. **Most likely species that constructed this:** Squirrel
6. **Likelihood this is a BCNH nest:** Low (<5%)
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 8.2

1. **Nest Placement:** Along central portion of horizontal branch, mid-top canopy
2. **Nest Material:** twigs, leaves
3. **Distribution of nests:** A few nests in close proximity (tree 3, another nest in tree 8)
4. **Size:** medium 12-18 inches
5. **Most likely species that constructed this:** Squirrel
6. **Likelihood this is a BCNH nest:** Low (<5%)
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 3

1. **Nest Placement:** On smaller branches, lower canopy over the river
2. **Nest Material:** Twigs, leaves

3. **Distribution of nests:** Multiple nests in area, on 8
4. **Size:** Medium. 12-18 inches
5. **Most likely species that constructed this:** possible heron nest, more likely an old green heron nest
6. **Likelihood this is a BCNH nest: Moderate (10%)** Of all nests located, this has highest chance of belonging to some type of heron species, possibly BCNH. However, the other nests in close proximity do not have characteristics of a BCNH nest and there is no way of determining over the winter if this is an attempted and failed nest, a current nest, or an abandoned nest.
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 1

1. **Nest Placement:** On thin branches in mid-top canopy
2. **Nest Material:** leaves, twigs
3. **Distribution of nests:** closest nests > 100 feet away
4. **Size:** large, but hard to tell, nest has partially fallen off of tree
5. **Most likely species that constructed this:** Green Heron, likely an old nest
6. **Likelihood this is a BCNH nest:** low (<5%), no other nests in vicinity
7. **Intact and ready for breeding purposes for BCNH:** No

Tree 2

1. **Nest Placement:** mid-top canopy, off of large branch
2. **Nest Material:** predominately grass, woven
3. **Distribution of nests:** Tree 2 is closest, > 100 feet away
4. **Size:** Large, > 18 inches
5. **Most likely species that constructed this:** American Crow
6. **Likelihood this is a BCNH nest:** Incredibly low, nest constructed of woven grass, not characteristic of BCNH nests (<1%).
7. **Intact and ready for breeding purposes for BCNH:** No

Conclusion:

While it is difficult to identify the source of a nest during the winter, it is important to think about the nesting behavior of the species who may select for an area. The likelihood of two BCNH nesting 50+ feet apart from one another along a linear habitat patch is low, and the likelihood drops even more when we consider not two but potentially thirteen pairs nesting apart from one another. A decent portion of the nests belong to squirrels, one or two are likely American Crows, and then there are a few probably current or old Green Heron nests. Green Herons, who build smaller nests with smaller branches, do not nest communally and will separate themselves from one another. If BCNH were seen in the area, we suggest they were likely foraging in the river or trying to rob some nests of their young.

References:

Durmus, A. & O. Adizel. Breeding ecology of night heron(*nycticorax nycticorax*) in the Lake Van Basin, Turkey. *The Journal of Animal & Plant Sciences*, 20(2), 2010, Page: 73-78

Kazantzidis, A., Goutner, V., Pyrovetsi, M., & A. Sinis. Comparative Nest Site Selection and Breeding Success in 2 Sympatric Ardeids, Black-Crowned Night-Heron (*Nycticorax nycticorax*) and Little Egret (*Egretta garzetta*) in the Axios Delta, Macedonia, Greece
Colonial Waterbirds , 20(3), (2010) , Page: 505-517

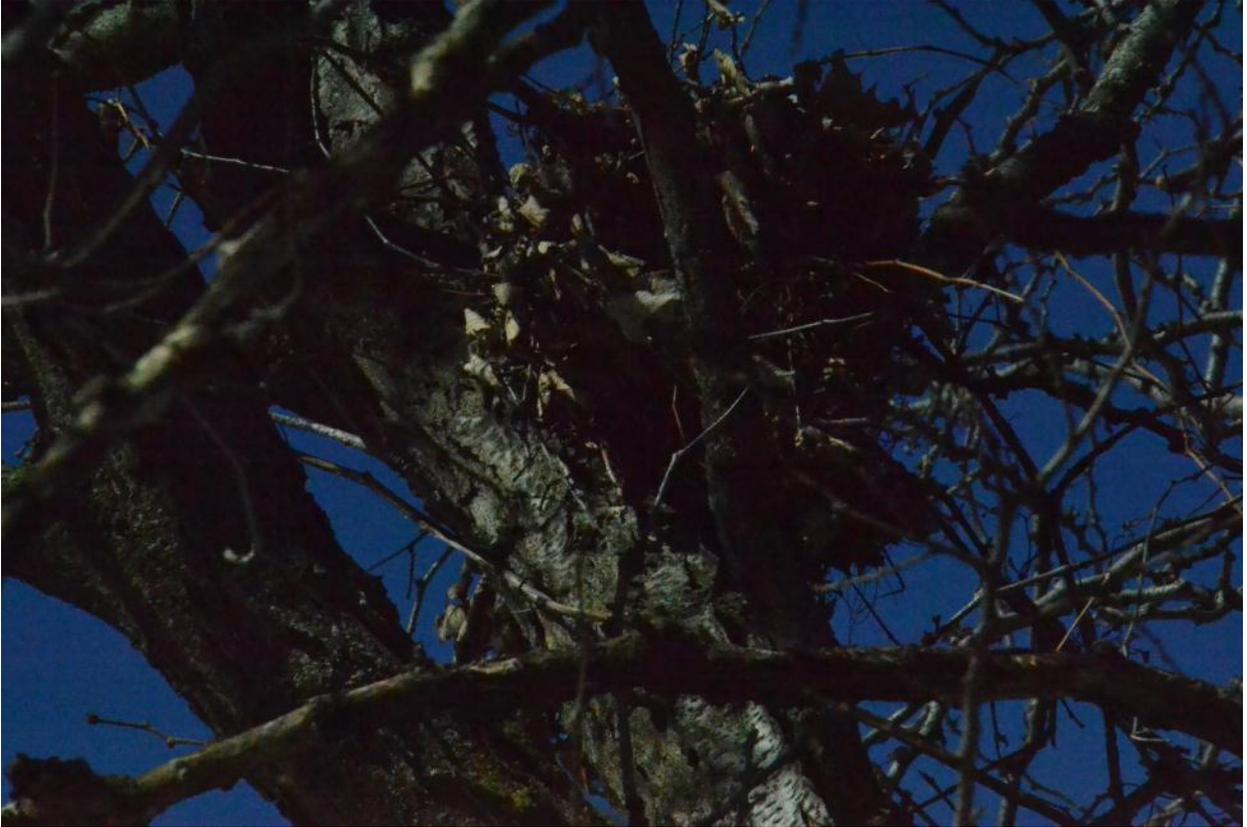
Appendix of nest photos at Horner Park inspected by M. Fidino and S. Magle Ph.D.



Nest 7- close up



Nest 7 – far



Nest 6



Nest 9



Nest 5



Nest 4.1



Nest 4.2



Nest 8.1



Nest 8.2



Nest 3



Nest 1



Nest 2