

2009

An assessment of the Bald Eagle and Great Blue Heron breeding populations along High Rock , Tuckertown, Narrows, and Falls Reservoirs in central North Carolina: 2009 breeding season

B. D. Watts

The Center for Conservation Biology, bdwatt@wm.edu

Follow this and additional works at: https://scholarworks.wm.edu/ccb_reports

Recommended Citation

Watts, B. D. 2009. An assessment of the Bald Eagle and Great Blue Heron breeding populations along High Rock , Tuckertown, Narrows, and Falls Reservoirs in central North Carolina: 2009 breeding season. CCBTR-09-12. Center for Conservation Biology Technical Report Series. College of William and Mary, Williamsburg, VA. 42 pp.

This Report is brought to you for free and open access by the Center for Conservation Biology (CCB) at W&M ScholarWorks. It has been accepted for inclusion in CCB Technical Reports by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.

**AN ASSESSMENT OF THE BALD EAGLE AND GREAT BLUE
HERON BREEDING POPULATIONS ALONG HIGH ROCK,
TUCKERTOWN, NARROWS, AND FALLS RESERVOIRS
IN CENTRAL NORTH CAROLINA: 2009 BREEDING SEASON**



A COOPERATIVE PROJECT BY:
ALCOA POWER GENERATING INC.
&
CENTER FOR CONSERVATION BIOLOGY
COLLEGE OF WILLIAM AND MARY

**AN ASSESSMENT OF THE BALD EAGLE AND GREAT BLUE
HERON BREEDING POPULATIONS ALONG HIGH ROCK,
TUCKERTOWN, NARROWS, AND FALLS RESERVOIRS
IN CENTRAL NORTH CAROLINA:
2009 BREEDING SEASON**

Final Report

January, 2010

**Bryan D. Watts, PhD
Center for Conservation Biology
College of William and Mary
Williamsburg, VA 23187-8795**

Recommended Citation:

Watts, B. D. 2009. An assessment of the Bald Eagle and Great Blue Heron breeding populations along High Rock , Tuckertown, Narrows, and Falls Reservoirs in central North Carolina: 2009 breeding season. Center for Conservation Biology Technical Report Series, CCBTR-09-12. College of William and Mary, Williamsburg, VA. 42 pp.

Cover Photo: Bald Eagle chicks in nest. Photo by Bryan Watts

A Cooperative Project By:

**Alcoa Power Generating Inc.
&
Center for Conservation Biology
College of William and Mary**

TABLE OF CONTENTS

| | Page |
|--------------------------------------|------|
| Background | 1 |
| Methods | 1 |
| Survey Findings | 2 |
| High Rock Reservoir | 2 |
| Bald Eagles | 2 |
| Great Blue Herons/Great Egrets..... | 17 |
| Tuckertown Reservoir | 26 |
| Bald Eagles | 26 |
| Great Blue Herons/Great Egrets | 28 |
| Narrows Reservoir | 29 |
| Bald Eagles | 29 |
| Great Blue Herons/Great Egrets | 32 |
| Falls Reservoir | 38 |
| Bald Eagles | 38 |
| Great Blue Herons | 41 |
| Bald Eagle Nest Summary | 42 |

BACKGROUND

Context

Historically, the Bald Eagle was a common breeding species along major river systems, lakes and coastal areas throughout much of North America. The widespread use of persistent pesticides for crop management in the region resulted in dramatic declines over a 30-40 year period. By the late 1960s, most breeding populations had been decimated by eggshell thinning and associated low productivity. Concern for these populations prompted the elevation of the Bald Eagle to endangered status and led to a national effort to restore historic populations. Since the nationwide ban on many persistent pesticides in 1972, many populations have experienced gradual recoveries in both productivity and total numbers. The state of North Carolina has seen an increase from no breeding pairs in the late 1960s to approximately 60 pairs as of 2003.

Work conducted by The Center for Conservation Biology in 1995 and 1996 at Alcoa Power Generating Inc.'s (APGI) Yadkin Project (FERC #2197) identified areas of consistent use by eagles in inland areas of North Carolina and suggested that nesting activity should be anticipated in the Yadkin-Pee Dee River basin. A survey of this system in 2001 provided confirmation of these suggestions. Since that survey annual efforts to monitor this population have continued. Results of the 2009 survey follow (a summary of all eagle nesting activity since 2001 is provided at the end of this report).

Objectives

The objectives of the eagle survey on Yadkin Project reservoirs were 1) to document the status, distribution and productivity of nesting pairs in association with the Yadkin reservoirs and associated river corridors and 2) to increase our understanding of Bald Eagle natural history in interior regions of North Carolina. A third objective was to determine the status and distribution of breeding Great Blue Herons along the system of reservoirs.

METHODS

Waterways

Waterways covered by the Bald Eagle survey of 2009 included the four Yadkin Project reservoirs: 1) High Rock Reservoir, 2) Tuckertown Reservoir, 3) Narrows Reservoir, and 4) Falls Reservoir. The survey of High Rock Reservoir included the waterways between, and the mouth of, Grants Creek above I85 and the High Rock Reservoir Dam. The survey of Tuckertown Reservoir included waterways between the High Rock Reservoir Dam and the Tuckertown Dam. The survey of Narrows Reservoir included the waterways between Tuckertown Dam and Narrows Dam. The survey of Falls Reservoir included the waterway between Narrows Dam and Falls Dam.

Bald Eagle

Nest Survey - All major waterways and tributaries associated with the study system were surveyed for breeding Bald Eagles. A high-wing Cessna 172 aircraft was used to systematically overfly the land surface at an altitude of approximately 100 m to detect eagle nests. Flights were flown to systematically move between the shoreline and a distance of approximately 1 km to cover the most probable breeding locations for Bald Eagles. All nests detected were plotted on 7.5 min topographic maps and given a unique alpha-numeric code. Each nest was examined to determine its structural condition, the type and condition of nest tree, and the condition of the surrounding landscape. In addition to recording all nests detected, the area was searched for Bald Eagles. All eagles detected within the survey area were recorded. The survey was conducted on 24 March 2009.

Productivity Survey - All active Bald Eagle nests were rechecked to determine productivity. A Cessna 172 aircraft was used to fly low over nests to allow observers to examine nest contents. The number of eaglets present was recorded along with their approximate ages. Each nest was also examined to determine its structural condition. Observations of all Bald Eagles detected were recorded. The survey was conducted on 12 May 2009.

Great Blue Herons

All breeding colonies of Great Blue Herons detected during survey flights were mapped and recorded. Colony locations were plotted on 7.5 min topographic quadrangles. Colonies were examined for size, substrate use, and breeding stage. Colony size estimates were rounded off using a graded scale as follows. A total count was made for colonies < 20 pairs. Estimates for colonies > 20 pairs were rounded off using a graded scale: nearest 5 for < 50, nearest 10 for 50 – 200, nearest 25 for 200 – 450.

SURVEY FINDINGS

High Rock Reservoir

Bald Eagles

Three Bald Eagle territories were observed to be occupied on High Rock Reservoir during 2009 surveys. The territory on upper Abbott's Creek had a single nest. The nest built last year in a hardwood along the shoreline (DA-08-01) had been blown out with only a 1/3 remnant remaining. A new nest (DA-09-01) was built in a loblolly pine to the west and set back from the shoreline. The territory on the upper end of High Rock Reservoir between Smith Grove and Trading Ford also had a single nest. Both of the nests built in 2008 (DA-08-02 and RO-08-01) had been blown out with less than 1/3 remnants remaining. Nest DA-01-01 had been rebuilt in the same crotch of the large white pine and was active. The territory between St. Matthews Church and Panther Creek that has not been occupied since 2002 had been reactivated. A new nest was built in the same tree and position as RO-02-01. This original nest had been lost in a storm in May of 2002.

NEST: DA-01-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| DA-01-01 | Davidson | Southmont | Y | Y | 2 |

Nest Location

This nest is located along the north shoreline almost due east of Trading Ford. The nest tree is positioned on a bluff above the reservoir in a live white oak tree. The nest tree is recessed within the tree cluster such that it is difficult to observe the nest except from directly above. Nest is likely visible from the water within adjacent cove.

Nesting Activity

Bird Activity – On 24 March, 2009 an adult was observed on the nest brooding 2 chicks. Chicks appeared to be 10 days old. On 12 May, 2 chicks were standing in nest and both adults were perched in crown of tree above nest.

Nest Condition – Nest structure is of moderate size. On 24 March, 2009 nest was observed to have a deep cup that was well lined.

Nest Substrate

Substrate Type – Nest was built in a live white oak tree.

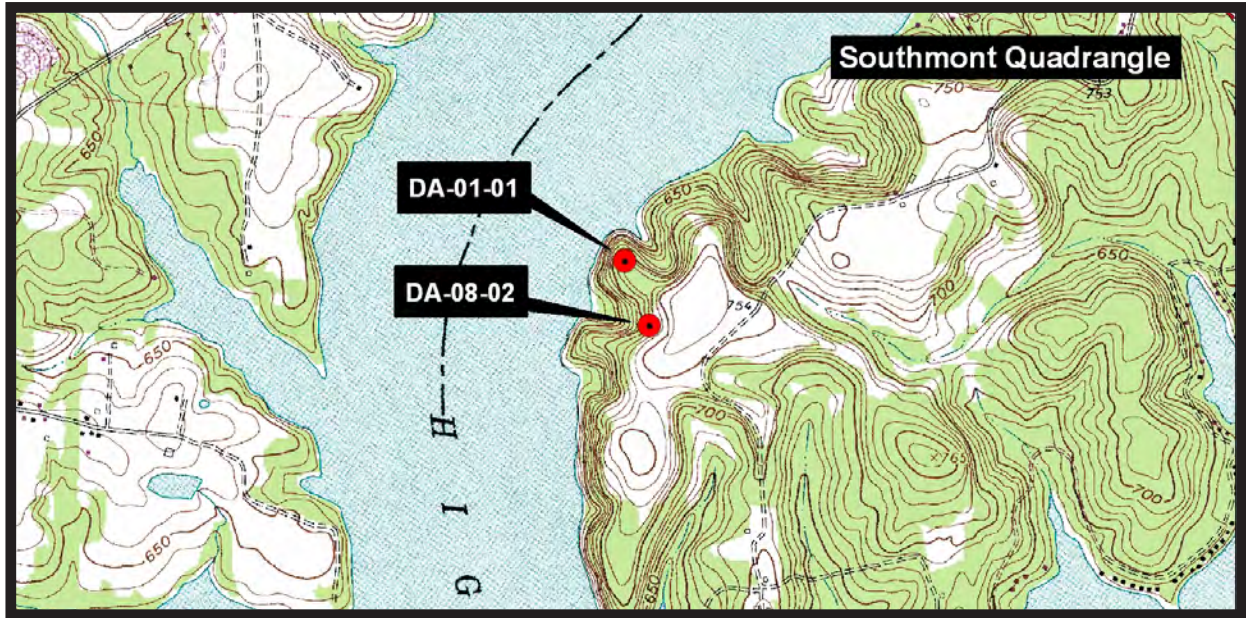
Nest Position – Nest is positioned in a deep stable crotch. Nest tree is on a knoll and in a supercanopy position above surrounding trees. Nest tree is in a commanding position on the landscape. Nest has large deciduous crown above such that sky exposure is <20%.

Substrate Condition – During the first flight the nest tree appeared to be in good condition. During the second flight after some leaf out the tree appeared to be dying with one half of the crown wilting. Tree may have been hit by lightning.

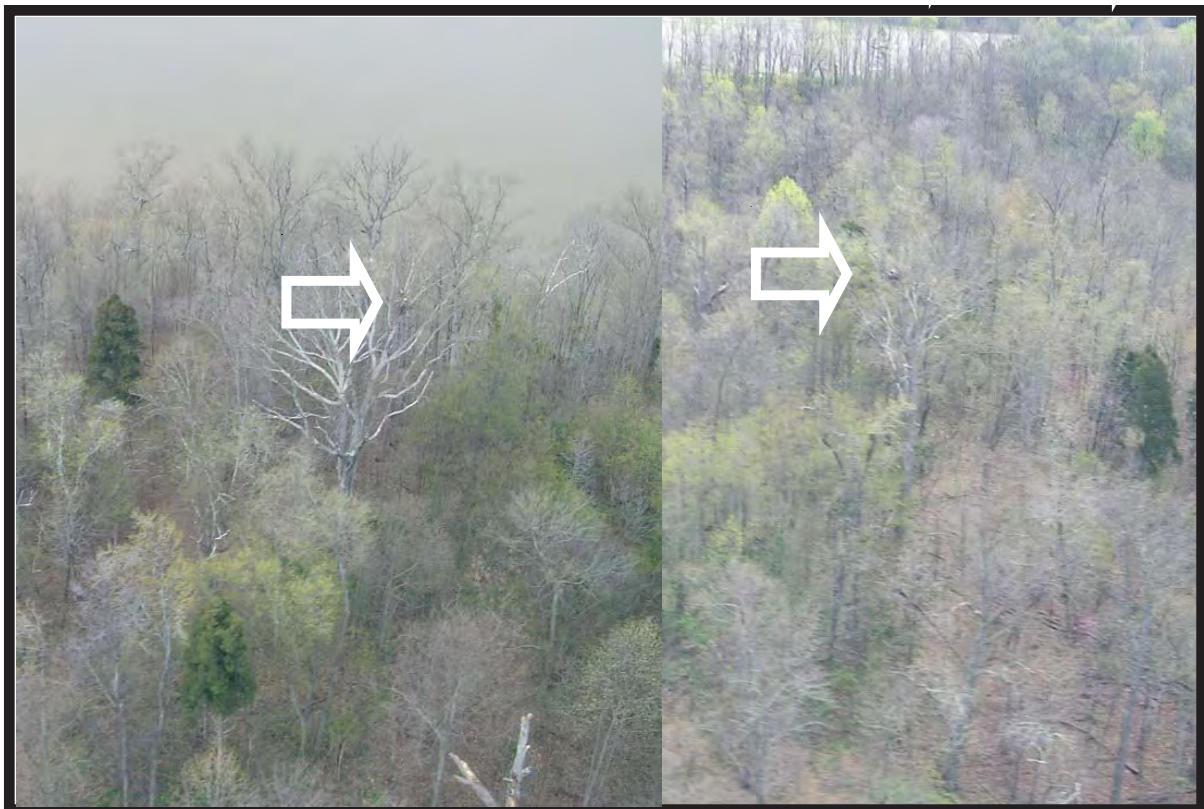
Potential Disturbance

Nest is easily visible before leaf out. However, after leaves emerge, nest has a good visual buffer on all sides. Nest tree is set back from shoreline such that disturbance from water should not be significant. Nest tree is in a fairly remote location with a considerable buffer on upland side. Disturbance potential appears to be limited.

Map location of Bald Eagle nest DA-01-01.



Aerial photos of nest DA-01-01 (photo 2009; B. Watts)



NEST: RO-08-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| RO-08-01 | Rowan | Southmont | Y | N | ----- |

Nest Location

This nest was located along a creek feeding into a small embayment almost due east of the intersection of Goodman Lake Road and Long Ferry Road. The nest is positioned almost due south and within 150 m of previous nest RO-04-01 and along the same tree line. The line of trees is surrounded by regenerating pine stand. Nest is very near end of residential road and must be visible from nearby houses. The tree does not appear to be visible from the water.

Nesting Activity

Bird Activity – On 24 March, 2009 no birds were present in this location. The nest had not been worked on since the spring survey in March of 2008. Birds were present in the territory associated with nest (DA-01-01) on east side of reservoir.

Nest Condition – Nest had been damaged since the spring of 2008 and was only a 1/3 remnant.

Nest Substrate

Substrate Type – Loblolly pine in a supercanopy position at the edge of a regenerating pine stand.

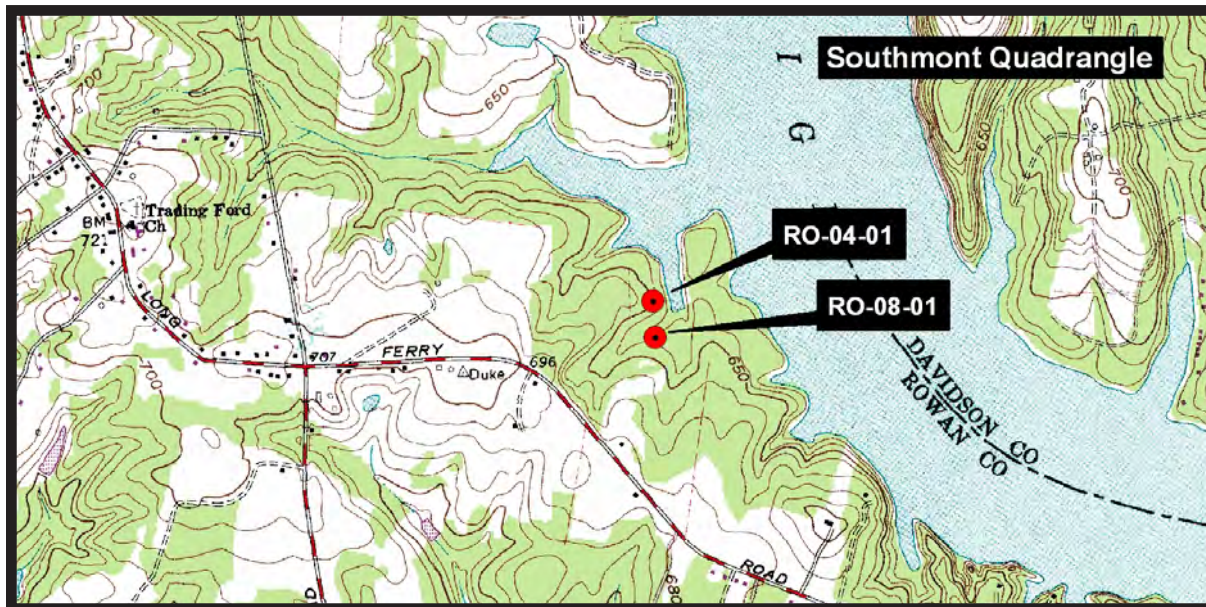
Nest Position – Nest is positioned in upper top crotch and very tight up against crown limbs.

Substrate Condition – Nest tree appears to be in good health with no significant crown damage.

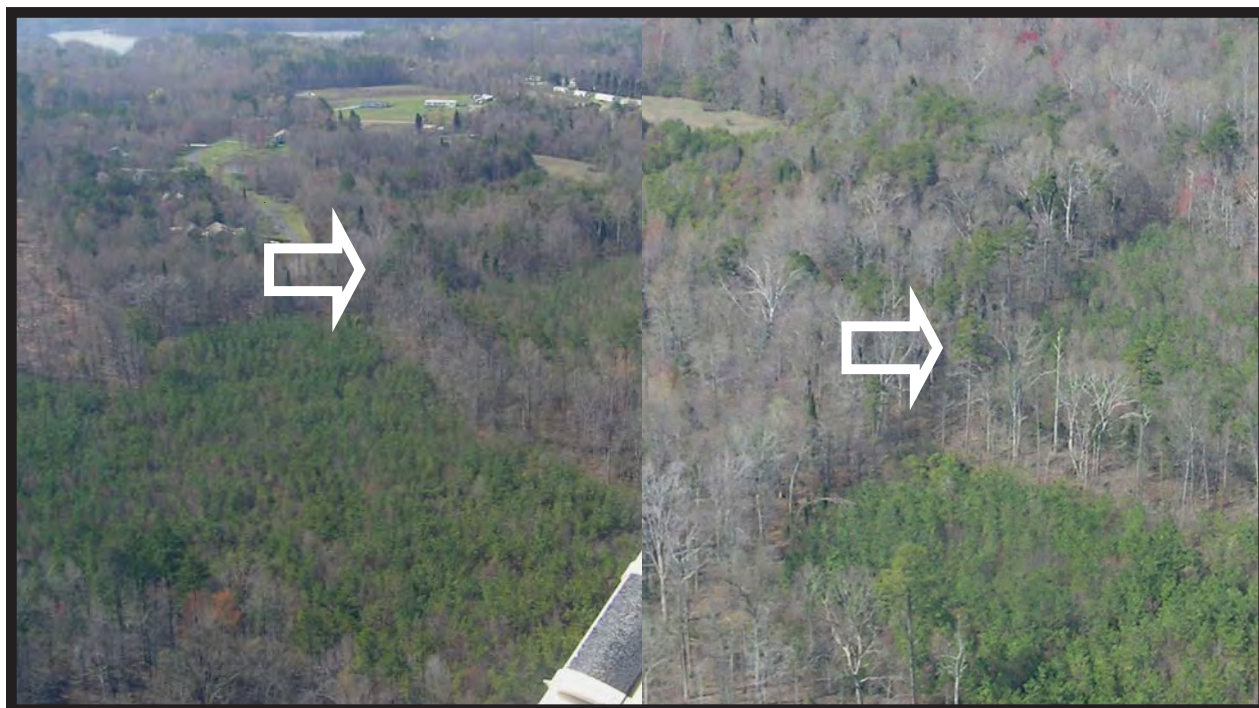
Potential Disturbance

Nest is very close to end of residential road with houses. This nest appears to be visible to houses and very close to residential activity. Disturbance may have prompted the birds to move across the reservoir and to construct a second nest.

Map location of Bald Eagle nest RO-08-01.



Aerial photos of nest RO-08-01 (photo 2008; B. Watts)



NEST: DA-08-02

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| DA-08-02 | Davidson | Southmont | Y | N | ----- |

Nest Location

This nest was located along a steep embankment within a hardwood stand. The hard wood stand is between a farmfield and the reservoir southwest of Smith Grove. The nest must be visible from both the water and the farm during the winter months but is likely not visible after leaf on.

Nesting Activity

Bird Activity – On 24 March, 2009 no birds were present around this nest. Birds were present within the territory in the nearby large white oak where they had rebuilt DA-01-01. This nest had been damaged since May of 2008 and all that remained was a 1/3 remnant.

Nest Condition – Nest had been damaged since the May flight of 2008. The nest was a much reduced 1/3 remnant. No evidence of recent work.

Nest Substrate

Substrate Type – Nest was built in a large, supercanopy tulip poplar.

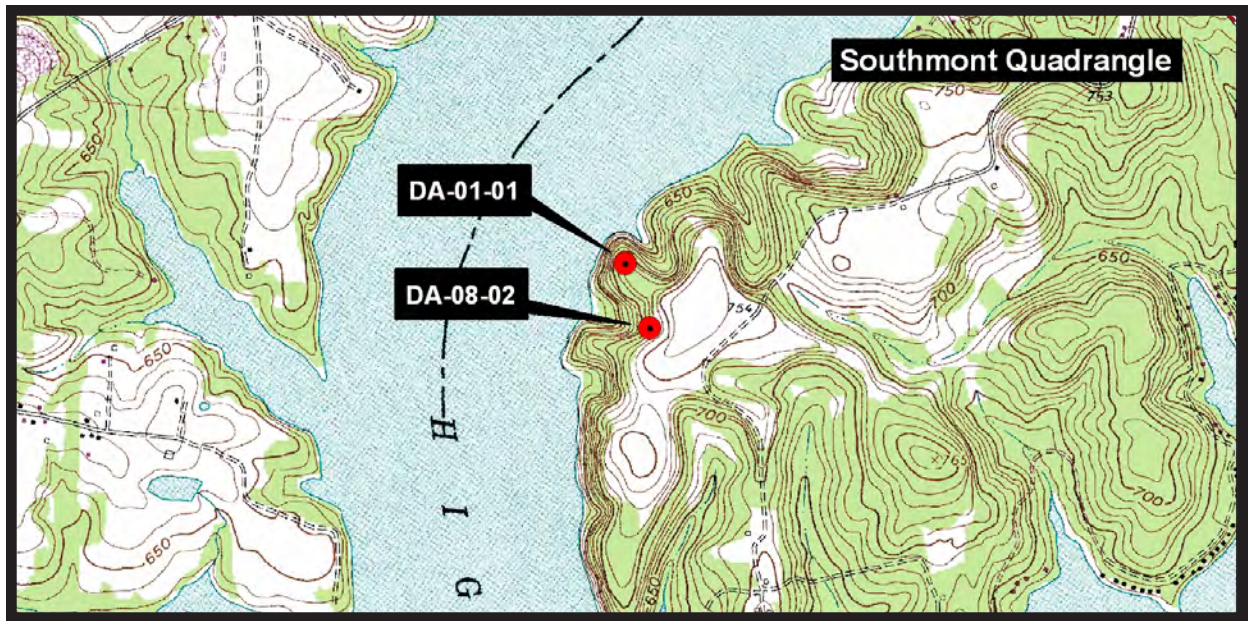
Nest Position – Nest is positioned in upper top of tree. Crotch is wide and fairly close to crown perimeter.

Substrate Condition – Nest tree appears to be in good health with no significant crown damage.

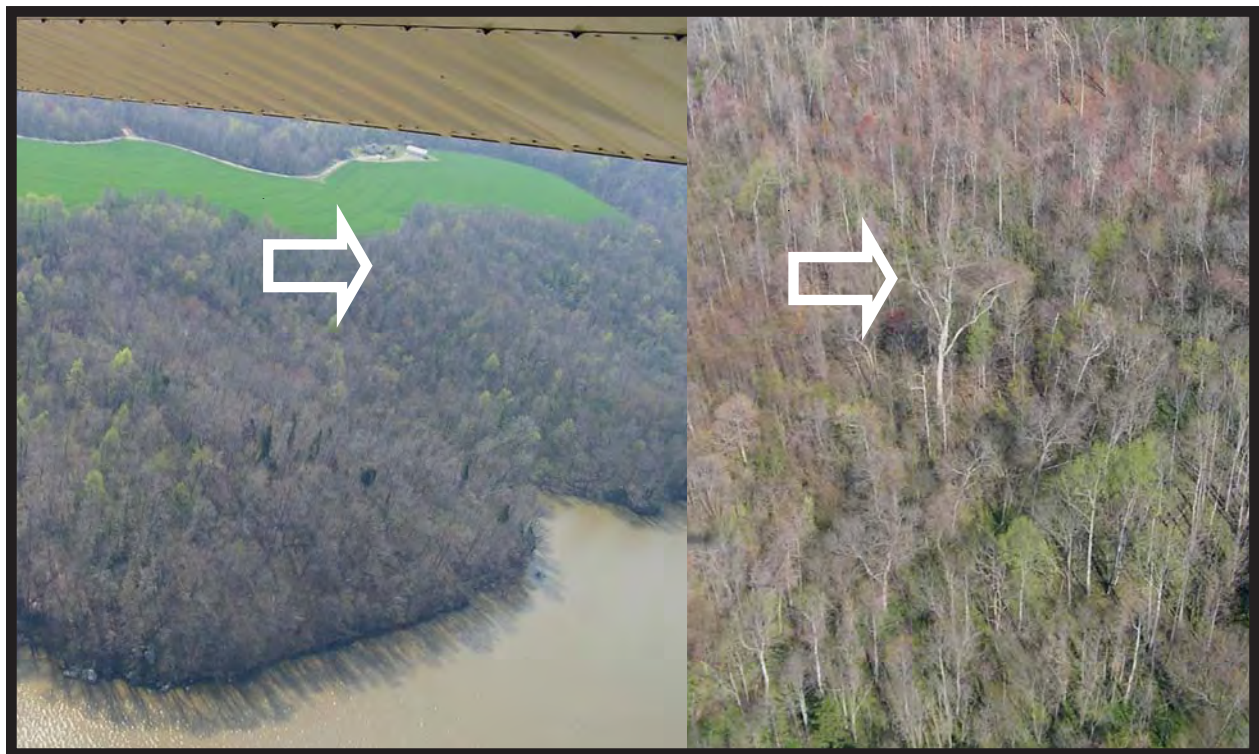
Potential Disturbance

This nest is within a band of forest along a hillside next to the water. The nest is protected from the waterway by a buffer of trees. The nest is more accessible from the adjacent farm field where it is easily visible during the winter months. The nest is away from roads and houses. Human disturbance to this site is likely very limited.

Map location of Bald Eagle nest DA-08-02.



Aerial photos of nest DA-08-02 (photo 2008; B. Watts)



NEST: DA-07-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| DA-07-01 | Davidson | Grist Mounth | Y | N | ----- |

Nest Location

This nest was located on a small island on the upper reach of Abbotts Creek. The nest was positioned on the north end of the island just outside the boundary of Great Blue Heron colony GBH-11. This nest was visible from the water and likely visible from houses along the shoreline.

Nesting Activity

Bird Activity – On 24 March, 2009 both adults were observed within the near area but not associated with this nest or the island. Birds were associated with replacement nest DA-09-01.

Nest Condition – Both nest and nest tree were blown down by March of 2008 but could still be seen during that spring. On 24 March, 2009 no evidence of the nest was detected.

Nest Substrate

Substrate Type – Nest was built in a small, spindly hardwood. The tree is on the lower limit of size for eagles and it is not likely that it will be used for any length of time. The upper portion of the tree appeared vulnerable to windthrow. The tree was along the midline of a narrow island and toward the north end. The tree was not elevated above the surrounding trees but of near equal height.

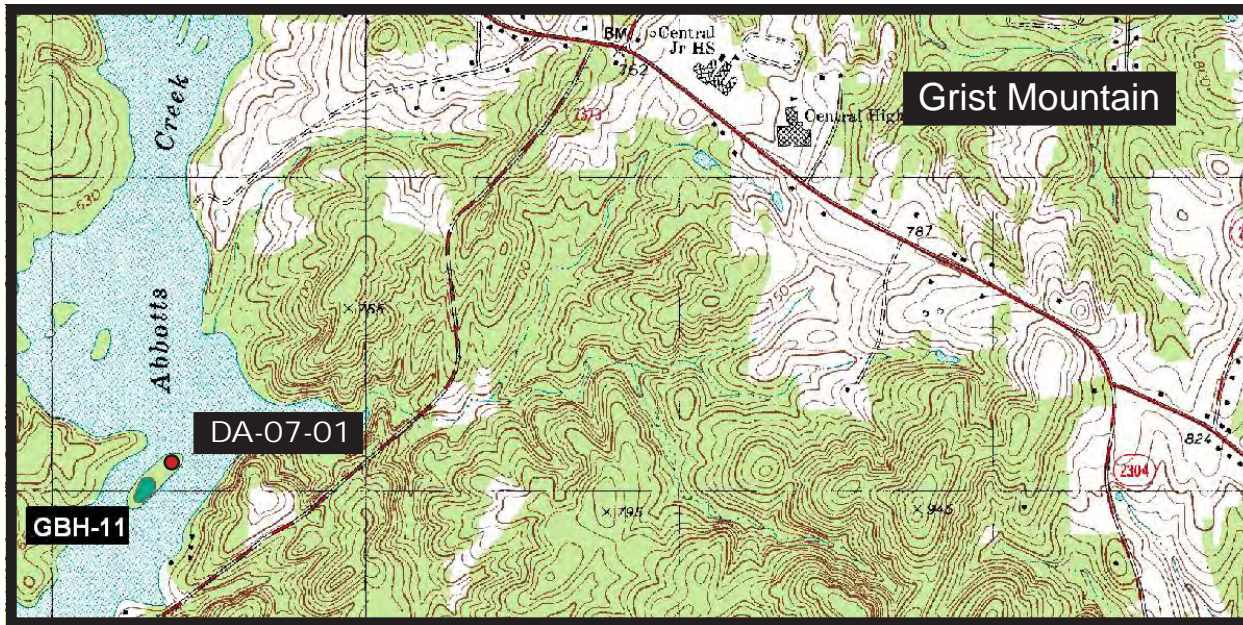
Nest Position – Nest was built in the top crotch of the tree. The crotch was small which will limit nest expansion. The nest was situated in a terminal position on the tree with sky exposure of 100%. Nest is built in a stable, triple-prong top crotch. Nest has a moderate crown above but sky exposure is more than 50%.

Substrate Condition – Blown down.

Potential Disturbance

Potential for disturbance is limited at this site due to isolation from the mainland. The nest is visible from the water and likely from houses along the shoreline.

Map location of Bald Eagle nest DA-07-01.



Aerial photos of nest DA-07-01 (photo 2007; B. Watts)



NEST: DA-08-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| DA-08-01 | Davidson | Grist Mounth | Y | N | ----- |

Nest Location

This nest was located along the shoreline of Abbotts Creek near the Route 47 bridge. The nest tree was within a small patch of forest at the end of a long agricultural field. The nest tree was set back approximately 30-40 m from both the waters edge and the field edge. The nest is likely visible from the water and from Route 47 during the winter months. It is not likely visible during the summer months due to leaves.

Nesting Activity

Bird Activity – On 24 March, 2009 birds were in the area but not associated with this nest.

Nest Condition – The nest was damaged and had been reduced to a 1/4 remnant.

Nest Substrate

Substrate Type – Nest was built in a hardwood within a patch of hardwoods along the shoreline of Abbotts Creek. The tree was only slightly supercanopy above surrounding trees. The tree appeared to be in good condition.

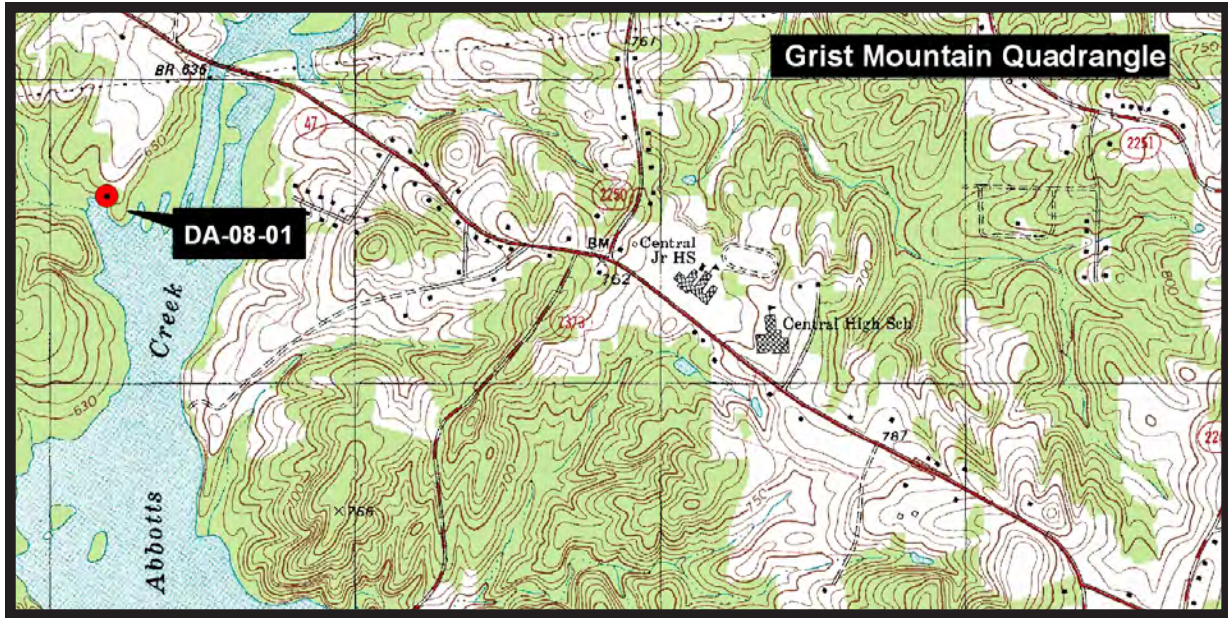
Nest Position – The nest was built in the top crotch of the hardwood. The crotch was terminal in the tree and positioned near the upper crown such that sky exposure was likely greater than 50%.

Substrate Condition – Tree appeared to be in good condition.

Potential Disturbance

Potential for disturbance is limited at this site due to isolation from human activity. The nest tree is fairly close to the shoreline but it is not clear that the water is navigable into the adjacent cove. The tree is close to the edge of a winter wheat field but is fairly distant and remote from the roadway.

Map location of Bald Eagle nest DA-08-01.



Aerial photos of nest DA-08-01 (photo 2008; B. Watts)



NEST: DA-09-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| DA-09-01 | Davidson | Southmont | Y | Y | 1 |

Nest Location

This nest was located along the shoreline of Abbotts Creek east of the community of Cotton Grove and southwest of nest DA-08-01. The nest tree was isolated within a recently cleared area and was likely left because of the nest. The tree is near a new logging road. It may be visible from NC Route 3 and from the water.

Nesting Activity

Bird Activity – On 24 March, 2009 an adult was brooding a single chick that appeared to be approximately 14 days old. The second adult was perched along the shoreline in a hardwood. On 12 May, 2009 a single chick was observed in the nest. No adults were attending.

Nest Condition – The nest was built on lateral limbs surrounding a single leader. The nest was shallow as expected with a first-year nest. On 24 March, 2009 the nest was in good structural condition with a well-formed but shallow cup and had a fresh lining. On 12 May, 2009 the nest had suffered wind damage and was broken over with a portion of the nest hanging. The chick was standing on the small portion of the nest that was still in place.

Nest Substrate

Substrate Type – Nest was built in a thin loblolly pine tree. The tree was isolated within a recent clearcut as if it had been left due to the nest. The tree appeared to be in good condition.

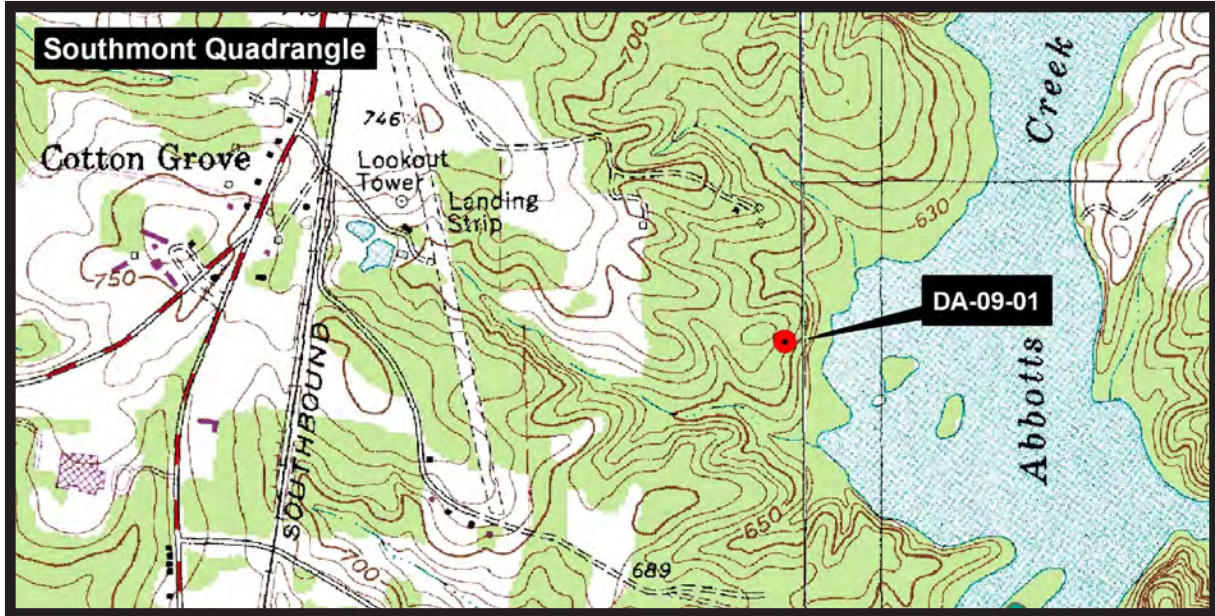
Nest Position – The nest was built on a whirl of lateral limbs around a single leader. The nest was under a full canopy such that sky exposure was less than 20%.

Substrate Condition – Nest tree was in good condition. Because of clearing of surrounding trees it may be subject to wind throw in the future.

Potential Disturbance

The nest is isolated within a recent clearcut and is accessible by a new logging road. There was no evidence of ongoing logging activity when flights were flown. The nest is likely visible from the water and from North Carolina Route 3.

Map location of Bald Eagle nest DA-09-01.



Aerial photos of nest DA-09-01 (photo 2009; B. Watts)



NEST: RO-02-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| RO-02-01 | Rowan | Gold Hill | Y | N | ----- |

Nest Location

This nest was located within a clearcut along the south shoreline of High Rock Reservoir between St. Matthews Church and Panther Creek and north of Bringle Ferry Road. The tree was isolated within a regenerating clearcut. The tree may not be visible from the water due to a pine buffer along the shoreline. The tree was first documented to be used for nesting in 2002 but has not been used since. The original nest blew out and was rebuilt this season.

Nesting Activity

Bird Activity – On 24 March, 2009 an adult was perched along the shoreline and the rim of the nest and surrounding limbs had ample whitewash. The nest was freshly lined. No bird was observed on the nest and on 12 May, 2009 the nest was empty.

Nest Condition – The nest was freshly built and in good condition. The nest had a well-formed, shallow cup and fresh lining. The nest was saucer-shaped as is typical of surface nests.

Nest Substrate

Substrate Type – Nest was built in an isolated loblolly pine tree. The tree was isolated within a young regenerating pine stand. The tree appeared to be in good condition.

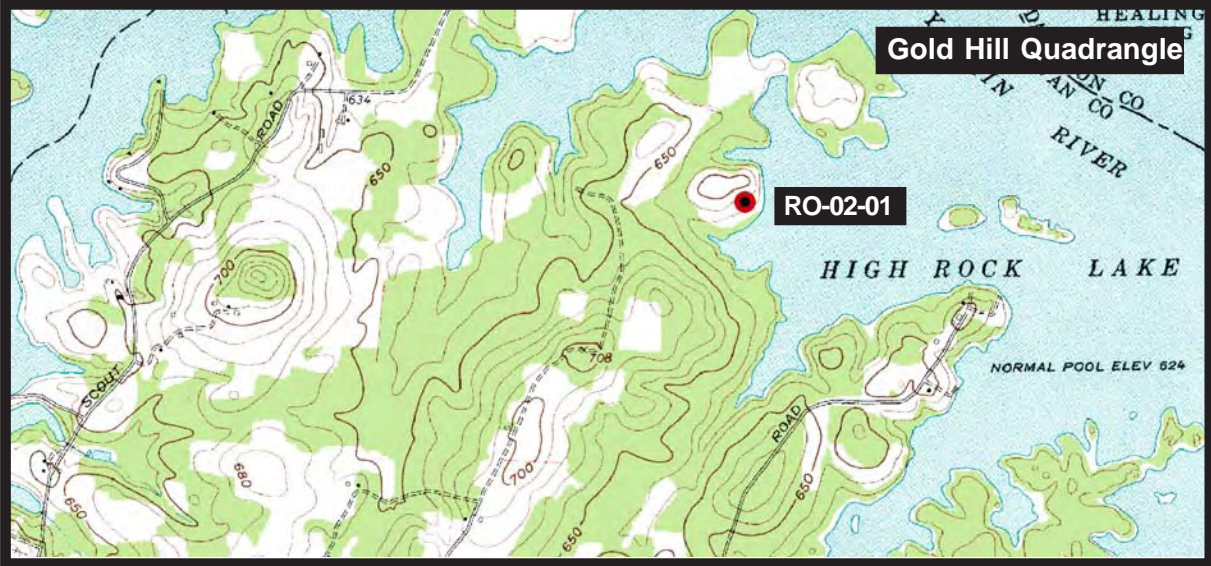
Nest Position – The nest was built on the surface of a pine crown where the crown had received some previous damage. There was no overhanging canopy such that the nest had 100% sky exposure.

Substrate Condition – Nest tree was in good condition.

Potential Disturbance

The nest tree was isolated in a fairly recent clearcut. The site is remote from human disturbance. There is no road access into the site and it is unlikely that the nest is visible from the water due to a tree buffer along the shoreline.

Map location of Bald Eagle nest RO-02-01.



Aerial photos of nest RO-02-01 (photo 2009; B. Watts)



Great Blue Herons/Great Egrets

Six breeding colonies of Great Blue Herons were detected on High Rock Reservoir. All but 1 of these colonies were located on small, forested islands isolated from the shoreline. A seventh colony that was active in 2006 and 2007 was not active. Colony size ranged from 16 to 270 pairs. Total population estimate for this reservoir was 527 breeding pairs. For the sixth year in a row, Great Egrets were found nesting on the reservoir. Pairs were mixed in with the largest colony of Great Blue Herons on the settling pond north of the intersection of Leonard Road and Long Ferry Road. Total population estimate for Great Egrets was 28 breeding pairs.

GBH-01

| Code | County | Topo Quad | Pairs |
|--------|----------|-----------|---------|
| GBH-01 | Davidson | Southmont | 57 GBHE |

Description

This colony was located on a small island near the Route 8 bridge in the mouth of Abbotts Creek. The island supports a mixed stand of loblolly pines and hardwoods. Nests were built in both pines and hardwoods. On 24 March, 2009 57 pairs of Great Blue Herons were counted with 90% incubating and the remainder building. No Great Egrets were detected in the colony on either 24 March or 12 May, 2009.

Map location of Great Blue Heron colony GBH-01



Aerial view of Great Blue Heron colony GBH-01 (Photo 2006; B. Watts).



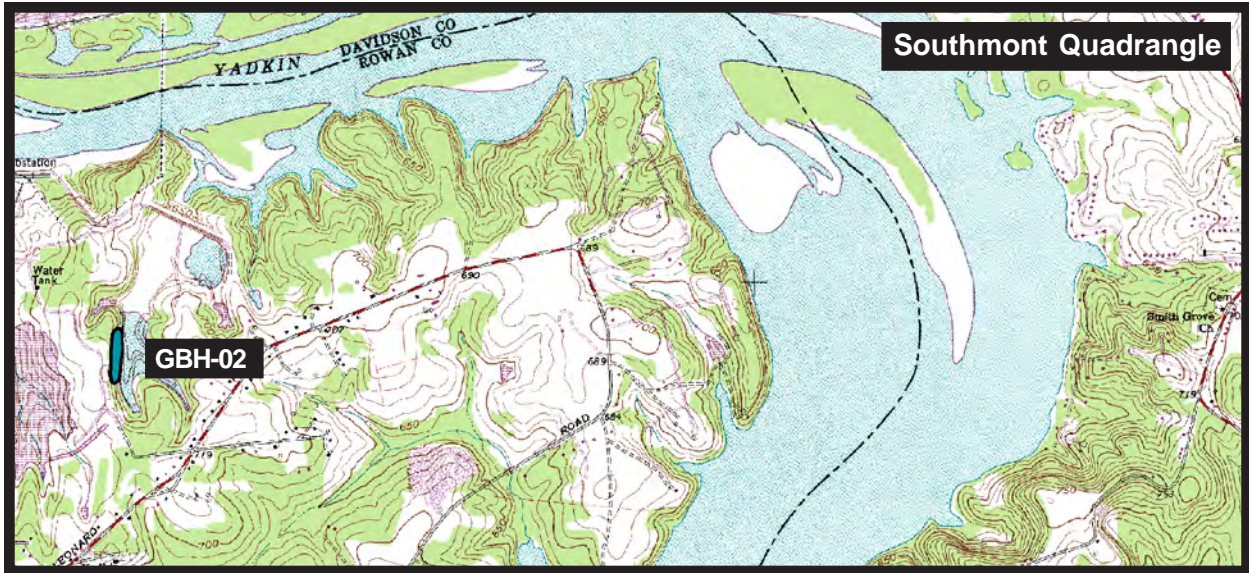
GBH-02

| Code | County | Topo Quad | Pairs |
|--------|--------|-----------|-------------------|
| GBH-02 | Rowan | Southmont | 270 GBHE, 28 GREG |

Description

This colony was located along the western edge of one of Duke Power's settling ponds just north of the intersection of Leonard Road and Long Ferry Road. The pond was lined with a mixed stand of hardwoods and pines. A larger stand of pure loblollies was positioned further from the pond edge. Nests were built along the pond margin in both hardwoods and pines and throughout the pure pine stand. Nest distribution continued to be more restricted as in 2003 due to partial harvest of pine stand in 2002. On 24 March, 2009 90% of Great Blue Herons were incubating and the remaining 10% were building nests. Great Egrets were nesting in the core of the subcolony occupying the pure pine stand. On 24 March, 2009 10 egret pairs were present within the colony. On 12 May, 2009 28 pairs were incubating.

Map location of Great Blue Heron Colony GBH-02



Aerial view of the western portion of Great Blue Heron colony GBH-02 (Photo 2006; B. Watts)



GBH-03

| Code | County | Topo Quad | Pairs |
|--------|--------|-----------|-------|
| GBH-03 | Rowan | Southmont | 87 |

Description

This colony was located on a small, forested island in the mouth of Second Creek. The island was forested with a middle-aged loblolly pine stand. This colony changed from 21 nests in 2002 to 38 nests in 2003 to 33 nests in 2004 to 52 nests in 2005 to 55 nests in 2006 to 73 in 2007 to 75 nests in 2008 and 87 nests in 2009. On 24 March, 2009 90% of pairs were incubating and 10% were building nests.

Map location of Great Blue Heron colony GBH-03

Aerial view of Great Blue Heron colony GBH-03 (Photo 2006; B. Watts)



Aerial view of Great Blue Heron colony GBH-03 (Photo 2006; B. Watts)



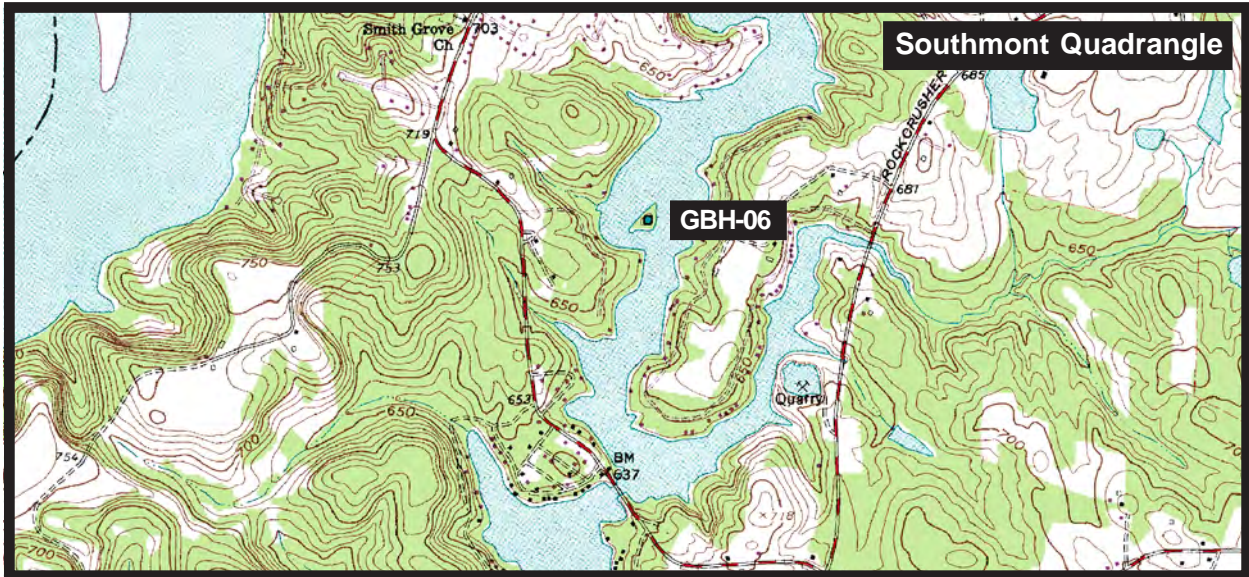
GBH-06

| Code | County | Topo Quad | Pairs |
|-------------|---------------|------------------|--------------|
| GBH-06 | Rowan | Southmont | 55 |

Description

This colony is located on a small forested island within Swearing Creek just above the Linwood Southmont Road bridge. The island is forested with a middle-aged pine stand. On 24 March 2009 there were 55 nesting pairs present compared to 59 pairs in 2008, 68 pairs in 2007, 73 pairs in 2006. An estimated 85% were incubating and 15% were building nests.

Map location of Great Blue Heron colony GBH-06



Aerial view of Great Blue Heron colony GBH-06 (Photo 2006; B. Watts)

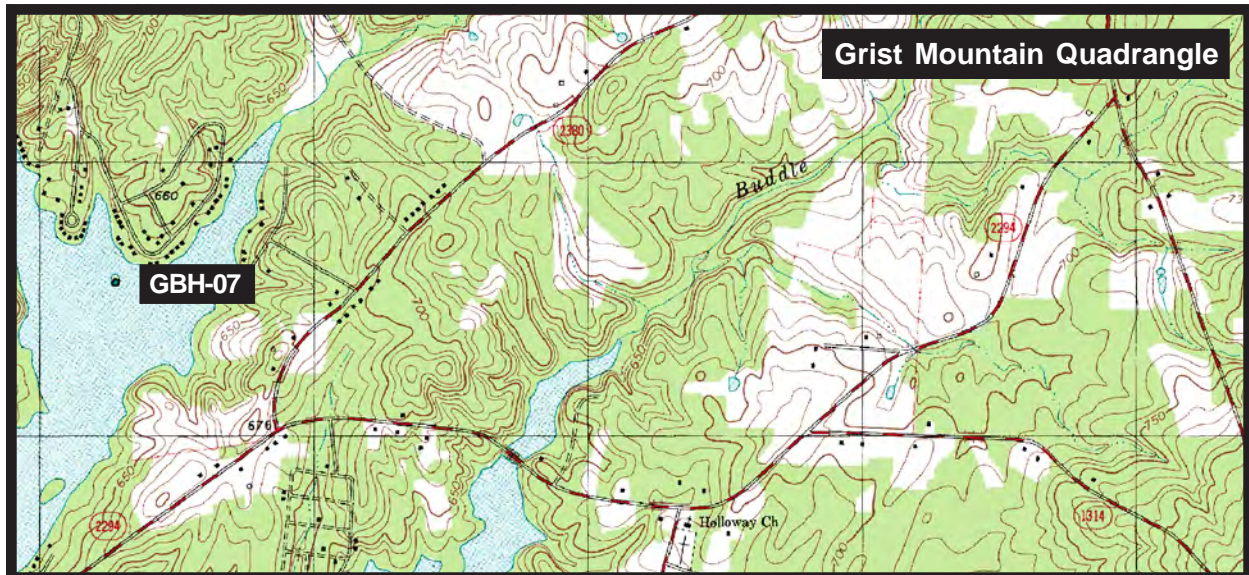


GBH-07

| Code | County | Topo Quad | Pairs |
|--------|--------|----------------|-------|
| GBH-07 | Rowan | Grist Mountain | 42 |

Description

This colony was located on a small forested island within Abbotts Creek off shore of a small development at the end of Route 2373. The island was forested with a mix of pine and hardwood. On 24 March 2009 there were 42 pairs nesting on the island. An estimated 85% of pairs were incubating and 15% were building.

Map location of Great Blue Heron colony GBH-07

Aerial view of Great Blue Heron colony GBH-07 (Photo 2006; B. Watts)



GBH-10

| Code | County | Topo Quad | Pairs |
|--------|----------|-----------|-------|
| GBH-10 | Davidson | Southmont | 0 |

Description

This colony was located on a small forested peninsula that forms the southeastern mouth of Abbotts Creek . The site was forested with a mix of pine and hardwood. On 24 March and later on 12 May, 2009 nests could be seen in the colony area but no birds were present.

Map location of Great Blue Heron colony GBH-10.



Aerial view of Great Blue Heron colony GBH-10 (Photo 2006; B. Watts)



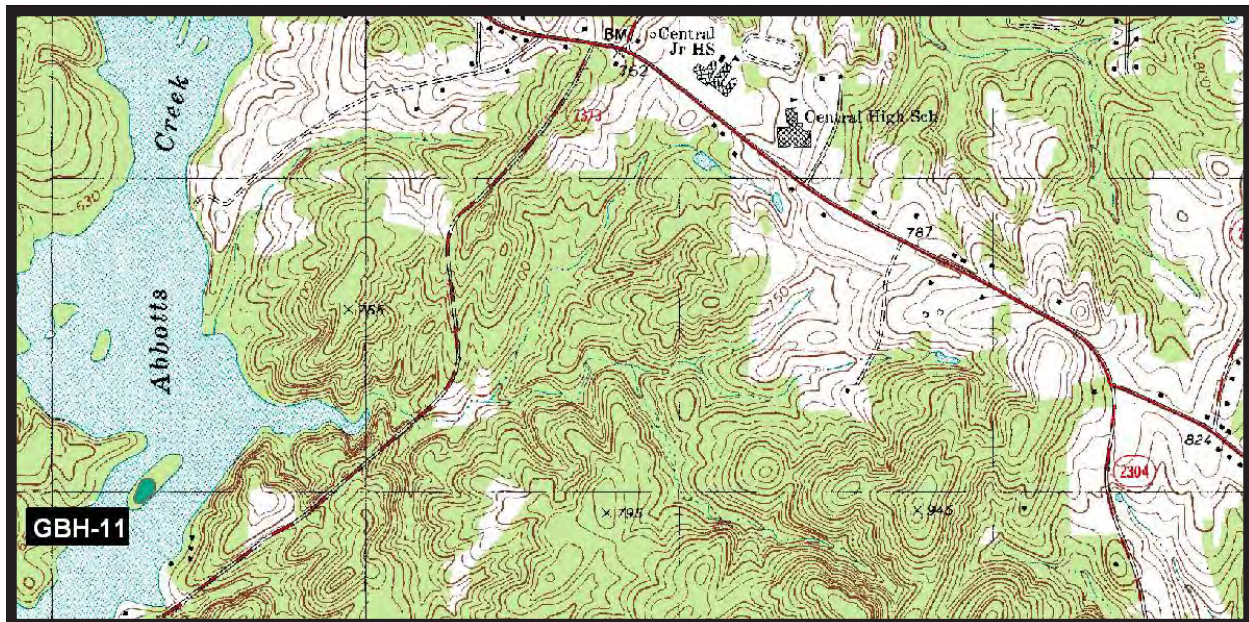
GBH-11

| Code | County | Topo Quad | Pairs |
|--------|----------|----------------|-------|
| GBH-11 | Davidson | Grist Mountain | 16 |

Description

This colony was located on a small forested island in Abbotts Creek . The site was forested with a mix of pine and hardwood. On 24 March 2009 there were 16 pairs nesting on the island. Twelve pairs were incubating and 4 were building.

Map location of Great Blue Heron colony GBH-11.



Aerial view of Great Blue Heron colony GBH-11 (Photo 2006; B. Watts)



Tuckertown Reservoir

Bald Eagles

A single Bald Eagle nest was observed within the Tuckertown Reservoir system for the eighth year. The nest was located within the upper section just downstream of the High Rock Dam.

NEST: RO-02-02

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|-----------|--------|-----------|------------------|-------------|-----------------|
| RO-02-02 | Rowan | High Rock | N | N | ----- |

Nest Location

This nest was located along the south shoreline just down from Cedar Creek. The nest tree is isolated within a recently clearcut area of private land above a farm. The tree is set back from the shoreline with a buffer strip of trees between the nest tree and the shoreline. The nest is not likely visible from the water due to tree buffer. The nest is likely visible from route 2152.

Nesting Activity

Bird Activity – No birds were observed in the vicinity of the nest on either 24 March or 12 May, 2009. In addition, there was no evidence of any maintenance activity on the nest.

Nest Condition – The nest was damaged in a wind storm in the spring of 2008. The nest was broken over on the east side. There was no evidence of any repair or maintenance activity. The nest is still of moderate size and other than the damage sustained is in fairly good structural condition.

Nest Substrate

Substrate Type – Nest was built in an isolated loblolly pine. Nest tree was a specimen loblolly in an ideal condition to be used for a nest tree.

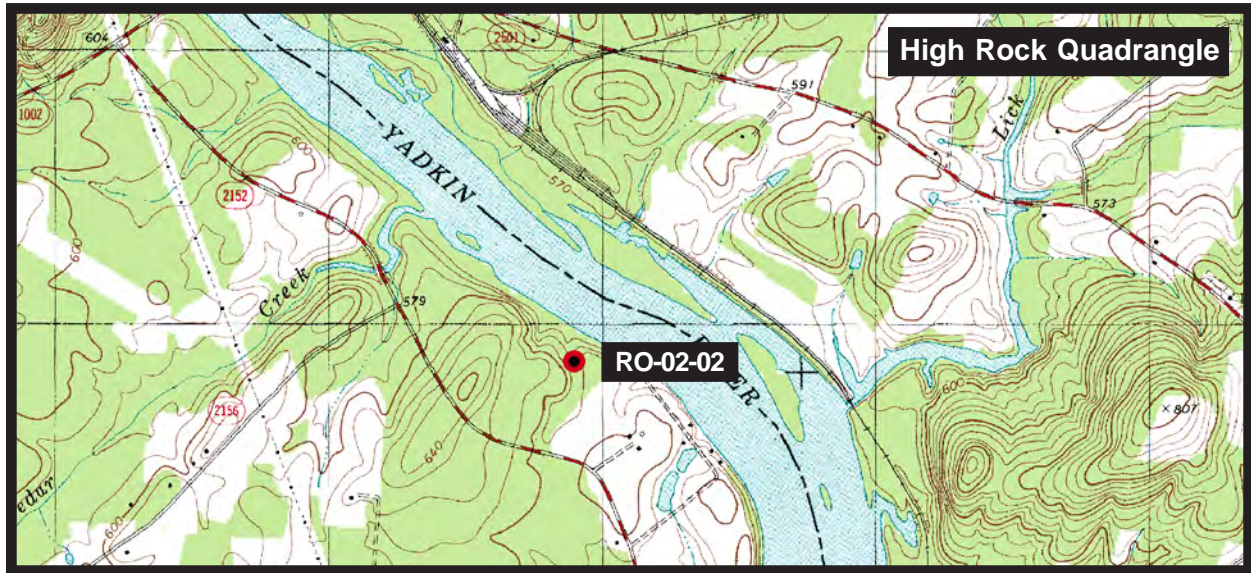
Nest Position – Nest was positioned in a top crotch deep below the crown. This configuration is the most common and apparently most stable position for eagle nests. Nest was under large crown with less than 20% sky exposure.

Substrate Condition – Nest tree appeared to be in good condition with no evidence of crown damage.

Potential Disturbance

Nest tree is in a fairly remote location with a considerable buffer on upland side and tree buffer on water side. Disturbance potential appears to be limited.

Map location of Bald Eagle nest RO-02-02



Aerial view of location of Bald Eagle nest RO-02-02 (Photo 2007: B. Watts)



Great Blue Herons/Great Egrets

A single colony of breeding Great Blue Herons was detected on Tuckertown Reservoir on an island just below the High Rock Dam. Total population estimate for this reservoir is 158 pairs. For the first time, this colony contained 3 pairs of Great Egrets.

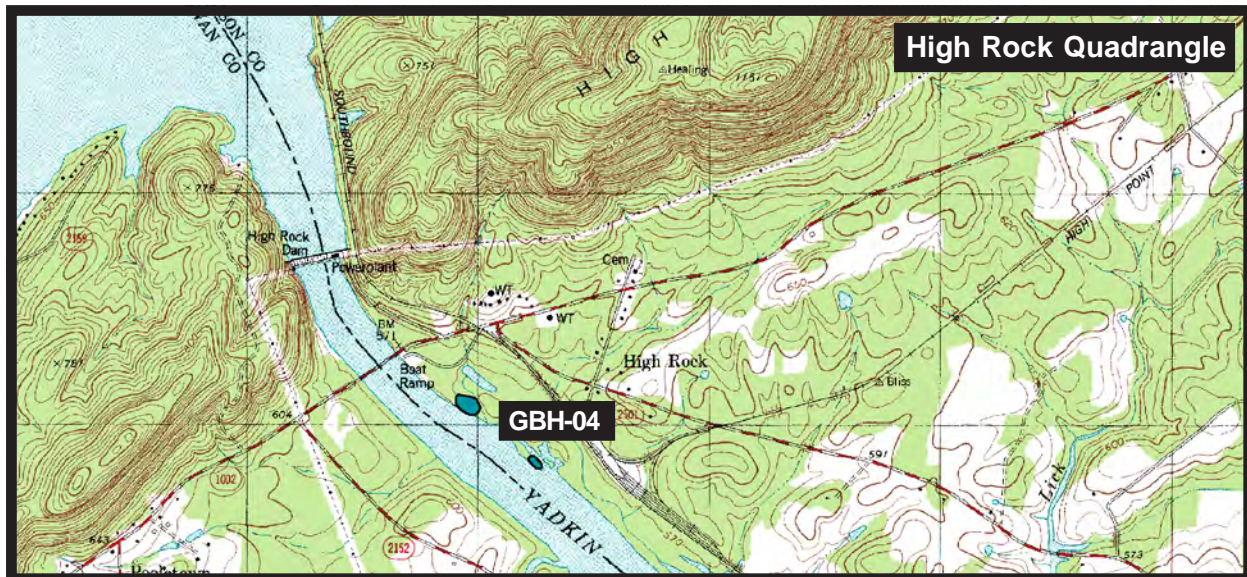
GBH-04

| Code | County | Topo Quad | Pairs |
|--------|----------|-----------|------------------|
| GBH-04 | Davidson | High Rock | 158 GRHE, 3 GREG |

Description

This colony was located on a small forested island and the adjacent forested shoreline just below the High Rock Dam. This island is long and linear and contains a mixed stand of hardwoods and pines. The adjacent shoreline is pine-dominated. There were 2 sub-colonies within this location. The larger sub-colony contained 138 pairs of Great Blue Herons and 3 pairs of Great Egrets and was within the pines along the shoreline. The second sub-colony was on the island and contained 20 pairs of Great Blue Herons. On 24 March 2009 100% of Great Blue Herons were incubating and no Great Egrets were present. On 12 May, 2009 3 pairs of Great Egrets were incubating.

Map location of Great Blue Heron colony GBH-04



Aerial view of location of Great Blue heron colony GBH-04 (Photo 2006: B. Watts)



Narrows Reservoir

Bald Eagles

One Bald Eagle nest was located along the shoreline of Narrows Reservoir. The nest (MO-06-01) located near MO-03-01 was absent.

MO-03-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| MO-03-01 | Montgomery | Badin | Y | Y | 2 |

Nest Location

This nest was located along a bluff set back from the shoreline on Uwharrie National Forest. The nest tree is within a scattered stand of supercanopy trees. The nest does not appear to be visible from the water along the shoreline but may be visible from logging road 6558.

Nesting Activity

Bird Activity – On 24 March, 2009 2 chicks approximately 45 days old were standing on the nest surface and no adult was observed. On 12 May, 2009 a single chick flew from the nest to the east and the second chick was perched along the shoreline. No adults were present.

Nest Condition – Nest structure is of moderate size and similar in appearance to 2005 -2008. On 24 March, 2009 the nest was in good structural condition, had a well-formed cup and fresh lining. The nest showed clear signs of recent work.

Nest Substrate

Substrate Type – The nest was built in a live loblolly pine.

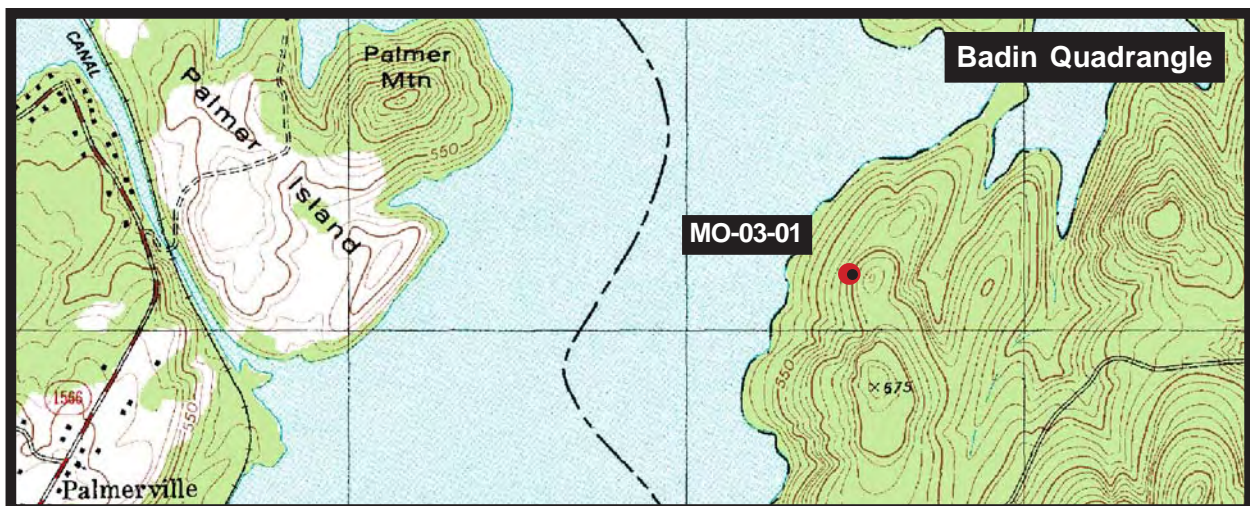
Nest Position – Nest is positioned on a lateral limb up against the trunk. Crown limbs are fairly sparse such that sky exposure was 70%.

Substrate Condition – Nest tree appeared to be in relatively good condition.

Potential Disturbance

Nest tree was protected by a visual buffer of scattered trees. It does not appear to be visible from shoreline but may be seen and accessed from nearby logging road.

Map location of Bald Eagle nest MO-03-01.



Aerial photo showing location of Bald Eagle nests MO-03-01 (l) and MO-06-01 (r). (Photos 2006: B. Watts)



Great Blue Herons/Great Egrets

Four colonies of breeding Great Blue Herons were detected within Narrows Reservoir during 2009. This includes two colonies on islands at the confluence of Beaverdam and Reynolds Creeks and a third on an island between Graveyard Island and Palmer Island and the fourth on an island northeast of Graveyard Island. Total population estimate for this reservoir was 305 pairs. For the first time, Great Egrets were discovered nesting on this reservoir. Two Great Egret pairs nested within GBH-05.

GBH-05

| Code | County | Topo Quad | Pairs |
|--------|------------|-----------|------------------|
| GBH-05 | Montgomery | Badin | 195 GRHE, 2 GREG |

Description

This colony was located on a small forested island near the Pine Haven residential development at the confluence of Beaverdam and Reynolds Creeks. The drainage is highly developed in this area with considerable boat traffic. The island supports a middle-age stand of loblolly pines that has numerous canopy gaps. Nests were built throughout the stand. The colony was estimated to contain 195 pairs of Great Blue Herons and 2 pairs of Great Egrets. As in 2008, an increasing number of pine trees within the stand are now dead. On 24 March, 2009 approximately 90% of Great Blue Heron pairs were incubating and the remaining pairs were building. On 12 May, 2009 2 pairs of Great Egrets were incubating within the colony. This colony has split with some pairs colonizing the offshore island within this creek for the first time.

Map location of Great Blue Heron colony GBH-05



Aerial views of Great Blue Heron colony GBH-05 (Photos 2006: B. Watts)



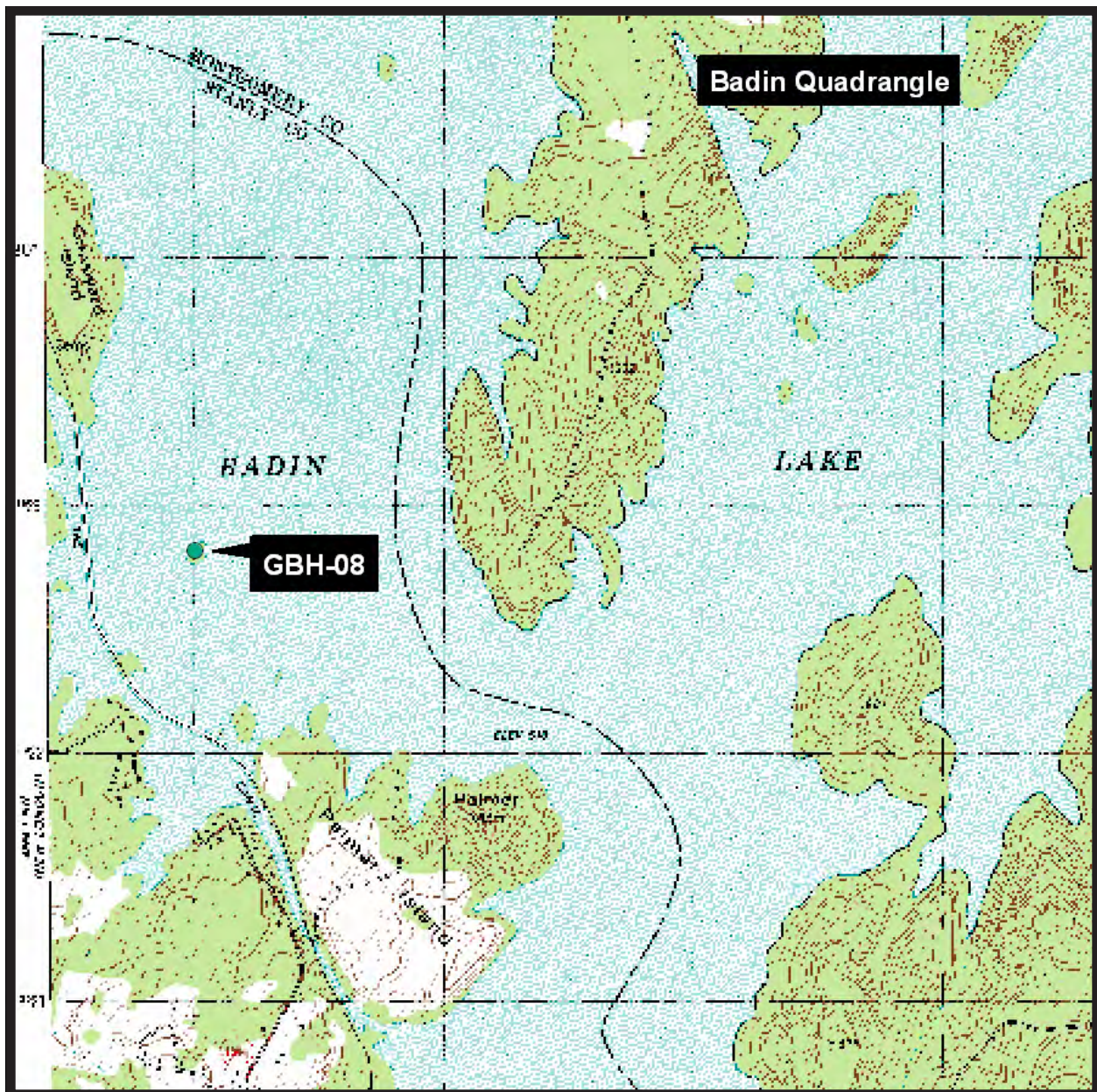
GBH-08

| Code | County | Topo Quad | Pairs |
|--------|--------|-----------|-------|
| GBH-08 | Stanly | Badin | 82 |

Description

This colony was located on a small forested island along the western shoreline of Badin Lake between Graveyard Island and Palmer Island. The island is well isolated from shoreline but subject to regular boat traffic. Nests were scattered in loblolly pines throughout the center of the island. On 24 March 2009 90% of pairs were incubating and remaining were building.

Map location of Great Blue Heron colony GBH-08.



Aerial views of Great Blue Heron colony GBH-08 (Photos 2006: B. Watts)



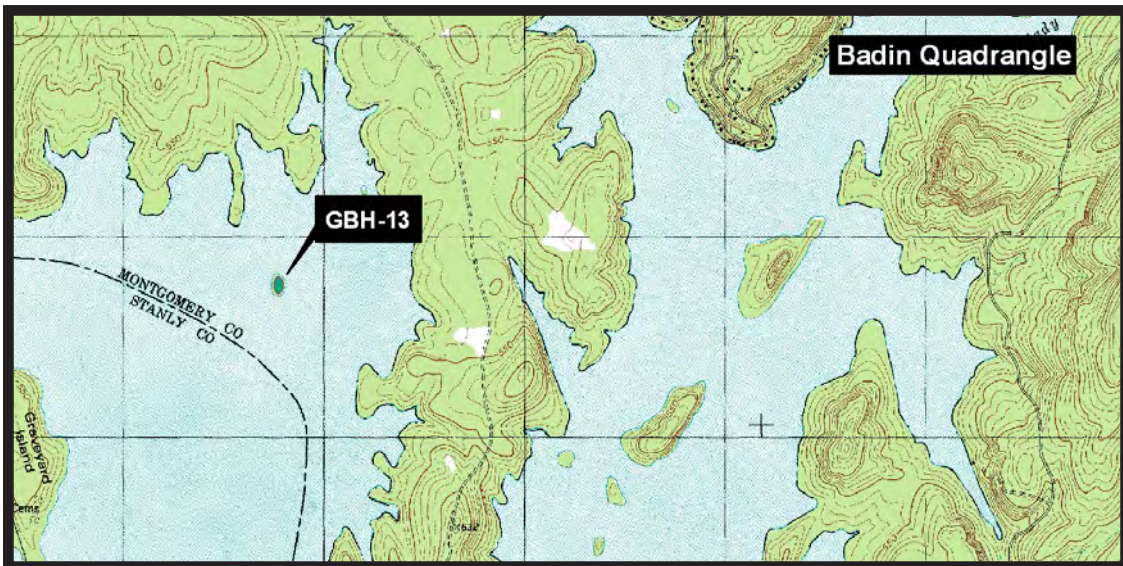
GBH-13

| Code | County | Topo Quad | Pairs |
|--------|--------|-----------|-------|
| GBH-13 | Stanly | Badin | 7 |

Description

This colony was located on a small forested island near the eastern shoreline of Badin Lake and northeast of Graveyard Island. The island is well isolated from shoreline. The forest was a mix of hardwoods and loblolly pines. Nests were scattered in loblolly pines throughout the center of the island. On 24 March 2009 all pairs were incubating. This island is also the location of a roost of Double-crested Cormorants.

Map location of Great Blue Heron colony GBH-13.



Aerial view of Great Blue Heron colony GBH-13 (Photo 2008: B. Watts)



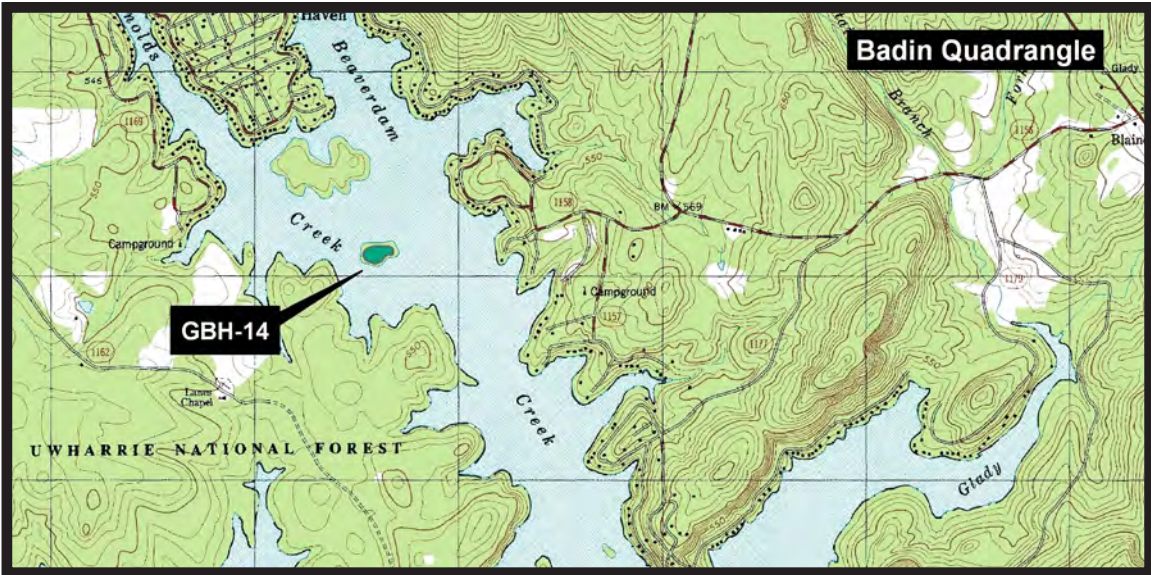
GBH-14

| Code | County | Topo Quad | Pairs |
|--------|------------|-----------|-------|
| GBH-14 | Montgomery | Badin | 21 |

Description

This colony was located on a small forested island within the confluence of Reynolds and Beaverdam Creeks. The island is well isolated from the shoreline. The forest was dominated by loblolly pines. Nests were scattered across the island but in two clusters. On 24 March 2009 all pairs were incubating.

Map location of Great Blue Heron colony GBH-14.



Aerial view of Great Blue Heron colony GBH-14 (Photo 2009: B. Watts)



Falls Reservoir

Bald Eagles

Two Bald Eagle nests were present along this waterway during 2009. One nest (ST-07-01) was located along an unnamed stream southeast of Badin and between routes 1704 and 1719. This nest was just a remnant with no sign of recent activity. A second nest was located downstream on Morrow Mountain State Park. Due to the small size of this waterway, it is unlikely that more than one eagle pair could be accommodated.

NEST: ST-07-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|-----------|--------|-----------|------------------|-------------|-----------------|
| ST-07-01 | Stanly | Badin | Y | N | ----- |

Nest Location

The Bald Eagle nest within Falls Reservoir was located southeast of the community of Badin along an unnamed stream between routes 1704 and 1719. The nest was located within a stand of older oaks along a ravine. The nest has an extensive forest buffer on all sides and is not likely visible from any access points.

Nesting Activity

Bird Activity – On 24 March, 2009 no birds were detected within the nest area. In 2008 the nest had been taken over by a raccoon and eagles rarely return to nests that have been taken over by this species. The active nest within this territory appears to be a replacement nest (ST-08-01).

Nest Condition – On 24 March, 2009 this nest was a 1/4 size remnant with no evidence of recent maintenance activity.

Nest Substrate

Substrate Type – The nest was built in a live white oak tree. The tree was one of many older oaks in the forest stand. The tree was not supercanopy over the remaining stand but was even with other trees.

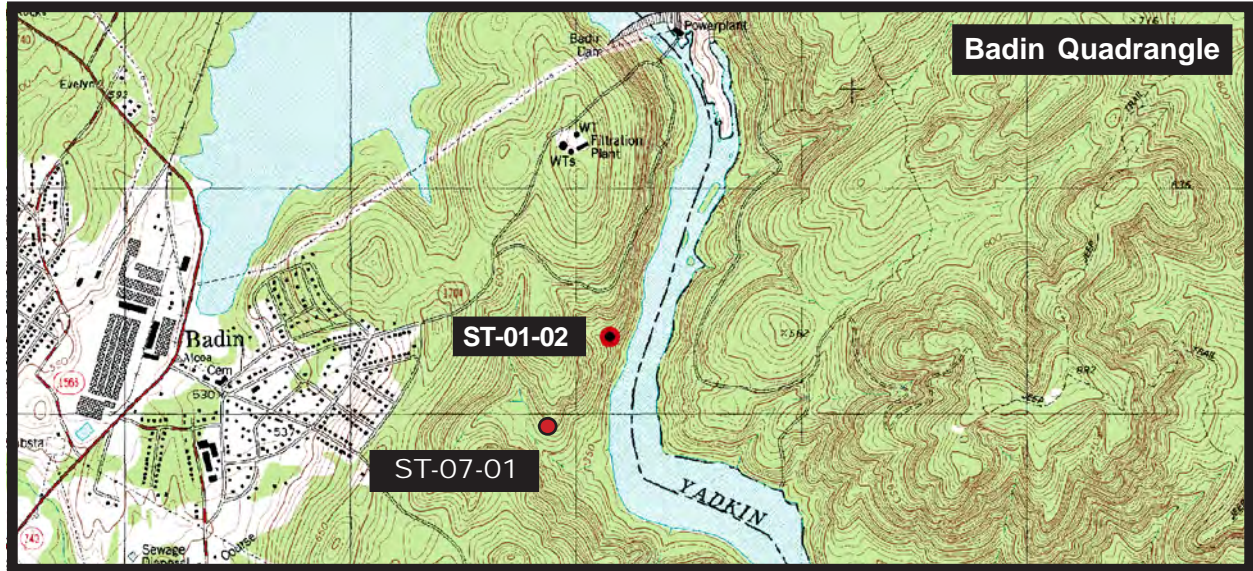
Nest Position – The nest was built in a deep crotch in a very low position under the tree crown.

Substrate Condition – The nest tree was in good condition.

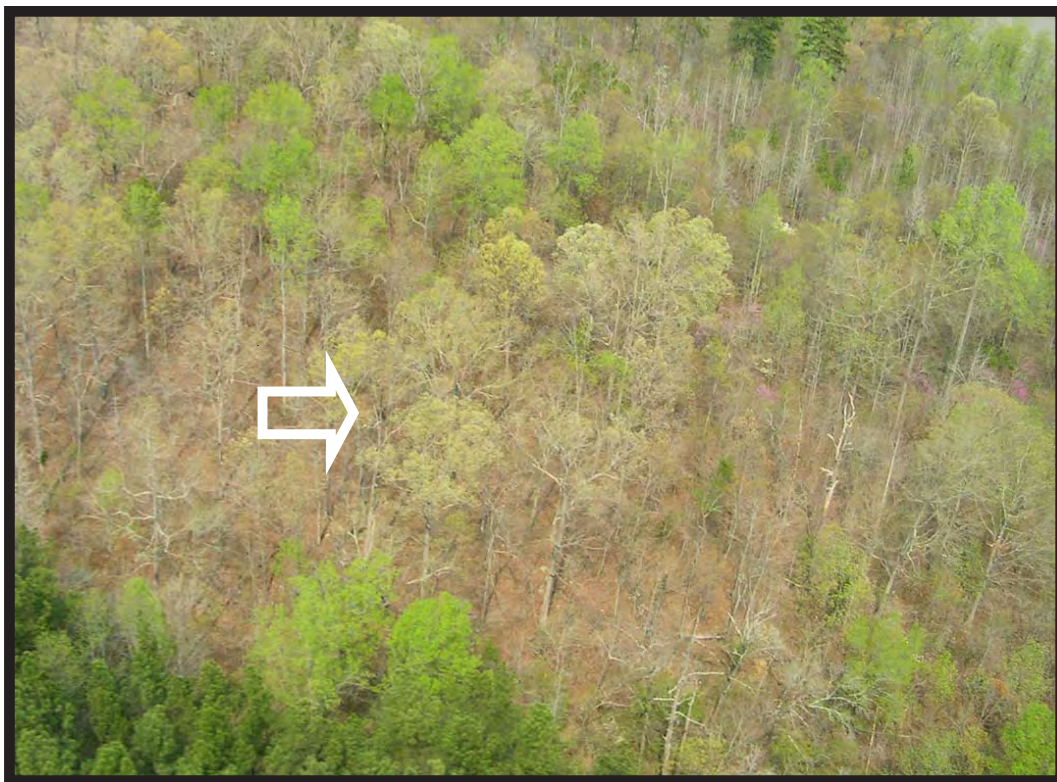
Potential Disturbance

Nest tree was protected by a visual and structural buffer on all sides. Location is fairly remote and access is somewhat difficult from nearby roadway. Disturbance potential appears to be very limited.

Map location of Bald Eagle nest ST-07-01



Aerial view of location of Bald Eagle nest ST-07-01 (Photo 2007: B. Watts)



NEST: ST-08-01

| Nest Code | County | Topo Quad | Active Territory | Active Nest | Chicks Produced |
|------------------|---------------|------------------|-------------------------|--------------------|------------------------|
| ST-08-01 | Stanly | Badin | Y | Y | 0 |

Nest Location

This nest was located within a stand of mixed forest near the shoreline on Morrow Mountain State Park. The nest tree is just north of an active parking lot. The nest was in a forest stand with buffers on all sides. The nest is likely visible during the winter months from both the water and the parking lot.

Nesting Activity

Bird Activity – On 24 March, 2009 the nest contained 2 chicks approximately 16 days old. An adult was perched in an adjacent tree. On 12 May, 2009 the nest was empty and no adults were present. It does not appear that the chicks could have fledged by this date suggesting that the nesting attempt failed.

Nest Condition – On 24 March, 2009 this nest was in good structural condition with a well-formed cup and lining. The nest was of moderate size.

Nest Substrate

Substrate Type – The nest was built in a supercanopy loblolly pine. The tree was one of several scattered older pines supercanopy over hardwoods.

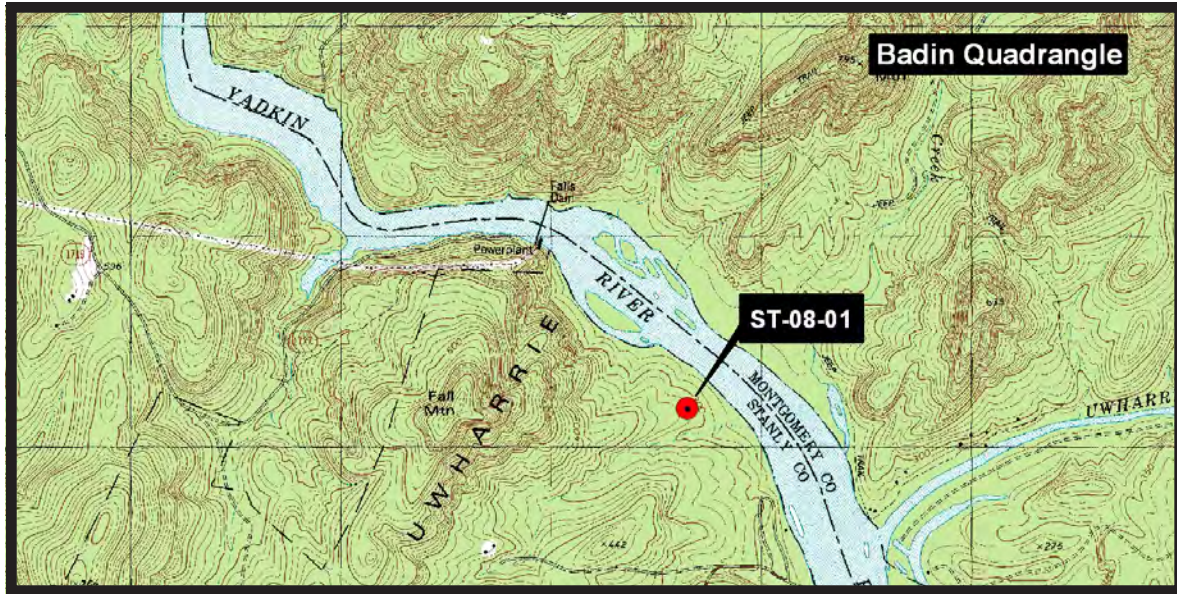
Nest Position – The nest was built in a deep crotch in a very low position under the tree crown. The nest surface likely had only 10-20% sky exposure due to its low position.

Substrate Condition – The nest tree was in good condition.

Potential Disturbance

Nest tree was protected by a forest buffer on all sides. However, the nest is likely visible from both the parking lot and the water during winter and from the water during summer. The nest is fairly close to a public parking lot that appears to receive considerable use. There is potential for human disturbance at this site.

Map location of Bald Eagle nest ST-08-01.



Two different aerial views of nest ST-08-01 (photo 2008: B. Watts).



Great Blue Heron

No Great Blue Heron colonies were detected on Falls Reservoir. Nesting habitat is fairly limited on this waterway. The small forested islands located on the upper reach are the most likely location for future breeding. However, potential for colonization appears limited.

Bald Eagle nest summary (2001-2009).

| Nest Code | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|-----------|----------|---------------|----------|----------|----------|----------|----------|----------|----------|
| DA-01-01 | 1 chick | 2 chicks | 1 chick | Not used | Not used | Absent | Absent | Absent | 2 chicks |
| ST-01-01 | 2 chicks | Not used | Not used | Not used | Absent | Absent | Absent | Absent | Absent |
| ST-01-02 | Not used | Not used | Not used | Not used | Not used | Absent | Absent | Absent | Absent |
| RO-02-01 | | Lost in storm | Absent | Absent | Absent | Absent | Absent | Absent | Rebuilt |
| RO-02-02 | | 0 chicks | 1 chick | 1 chick | 2 chicks | 2 chicks | 3 chicks | 0 chicks | Not used |
| MO-03-01 | | | 1 chick | 1 chick | 1 chick | Not used | 2 chicks | 2 chicks | 2 chicks |
| RO-04-01 | | | | 2 chicks | 2 chicks | 0 chicks | 2 chicks | Absent | Absent |
| MO-06-01 | | | | | | Not used | Not used | Absent | Absent |
| DA-07-01 | | | | | | | 0 chicks | Absent | Absent |
| ST-07-01 | | | | | | | 2 chicks | Not used | Not used |
| RO-08-01 | | | | | | | | Not used | Not used |
| DA-08-01 | | | | | | | | 0 chicks | Not used |
| DA-08-02 | | | | | | | | 0 chicks | Not used |
| ST-08-01 | | | | | | | | 0 chicks | 0 chicks |
| DA-09-01 | | | | | | | | | 1 chick |