

2014

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B. J. Paxton

*The Center for Conservation Biology, [bjpaxt@wm.edu](mailto:bjpaxt@wm.edu)*

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### **Recommended Citation**

Paxton, B. J. 2014. Aerial surveys of Lake Gaston and Roanoke Rapids Lake for nesting bald eagles: 2014 season. The Center for Conservation Biology Technical Report Series: ccbtr-14-08. College of William and Mary & Virginia Commonwealth University of Virginia. 35 pp.

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# **AERIAL SURVEYS OF LAKE GASTON AND ROANOKE RAPIDS LAKE FOR NESTING BALD EAGLES: 2014 SEASON**

**Barton J. Paxton  
Center for Conservation Biology  
College of William and Mary  
Virginia Commonwealth University  
Williamsburg, VA 23187-8795**

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## **Project Partners:**

**Dominion  
The Center for Conservation Biology**



The Center for Conservation Biology is an organization dedicated to discovering innovative solutions to environmental problems that are both scientifically sound and practical within today's social context. Our philosophy has been to use a general systems approach to locate critical information needs and to plot a deliberate course of action to reach what we believe are essential information endpoints.

## **BACKGROUND**

### **Context**

The United States Fish and Wildlife Service (FWS) originally listed the Bald Eagle as federally endangered on 11 March 1967 under The Endangered Species Protection Act of 1966 (16 U.S.C. 668aa-668cc) and subsequently under The Endangered Species Act of 1973 (16 U.S.C. 1531 et seq). The primary reason cited for the original listing was broad-scale population declines linked to dichloro-diphenyl-trichloroethane (DDT) and associated reproductive failure. On December 31, 1972, DDT was banned from use in the United States. Since the ban on DDT and formal listing under The Endangered Species Act, Bald Eagle populations have increased dramatically across much of the lower 48 states. During a periodic population review, the FWS determined that specific reclassification goals had been reached as outlined in regional recovery plans. On 12 July, 1994, the FWS published the proposed rule to reclassify the Bald Eagle from endangered to threatened in most of the lower 48 states (59 FR 35584). This proposal was followed on 12 July 1995 by the formal downlisting of most Bald Eagle populations (60 FR 36000). In the lower 48 states Bald Eagles have increased from an estimated low in 1963 of 417 pairs (Sprunt 1963) to an estimated 5,748 pairs by 1998 (Millar 1999). On 6 July, 1999, the FWS published an Advance Notice of Intent to remove the Bald Eagle from the list of endangered and threatened wildlife (64 FR 36453). On 16 February, 2006 the U.S. Fish and Wildlife Service published a second Advance Notice of Intent to remove the Bald Eagle from the list of endangered and threatened wildlife (71 FR 8238). On 28 June, 2007 the Bald Eagle was formally removed from the list of endangered and threatened species. Since delisting The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d) has become the lead federal legislation protecting the Bald Eagle population. As interpreted in the Notice (71 FR 8238) and the subsequent definition of terms (71 FR 8265) protection of Bald Eagles and their habitats under the BGEPA will be very similar to that provided under the ESA. The national management guidelines presented along with the Notice follow very closely the guidelines that have been used to manage eagles since the 1970s including the use of spatial buffers and activity restrictions to comply with the definition of “disturb”. The Bald Eagle continues to be listed as Threatened in Virginia under Virginia's Endangered Species Act (§29.1-563 - §29.1-570).

Bald Eagles in Virginia have experienced a dramatic recovery from a low of 33 breeding pairs in the 1970s to 726 pairs in 2011 (Watts and Byrd 2011) consistent with the broader Chesapeake Bay (Watts et al. 2008). Recovery within the state includes (1) an increase in the number of breeding territories, (2) an increase in reproductive rate, and (3) an expansion in geographic distribution. Nesting Bald Eagles now occur on most inland reservoirs of notable size. A similar pattern has been observed in inland portions of North Carolina (Watts 2008).

### **Objectives**

Objectives for conducting an eagle survey on Dominion lands are: 1) to document the status, distribution, and success of nesting pairs in association with Project reservoirs; 2) to provide updated information to pertinent parties; and 3) to increase our understanding of Bald Eagle natural history in interior regions of Virginia and North Carolina. Results of the survey are

intended to support the information needs of Dominion required by the Roanoke Rapids and Gaston FERC License.

## **METHODS**

### **Study Area**

The survey area included the Roanoke River drainage between the John H. Kerr Dam and the Interstate 95 Bridge, below Roanoke Rapids, North Carolina. The focal water body included Lake Gaston, Roanoke Rapids Lake and their immediate tributaries.

### **Bald Eagle Survey**

A standard 2-survey approach was used to evaluate bald eagle use of the study area (Fraser et al. 1983). These included a systematic nest survey and a productivity survey.

**Nest Survey** - All forested components of the Lake Gaston and Roanoke Rapids Lake reservoir system were surveyed for evidence of nesting Bald Eagles. The survey covered all shoreline of the reservoir system and their intermediate tributaries, from the John H. Kerr Dam to the interstate 95 bridge, below Roanoke Rapids, NC. 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 systematically moved between the shoreline and a distance of approximately 1 km inland, to cover the most probable breeding locations. All nests detected were plotted on recent aerial imagery layers on GPS enabled tablet computers 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. The nest survey was conducted on 21 March 2014.

**Productivity Survey** - Following the nest survey, all active Bald Eagle nests were rechecked on 27 April 2014 for productivity. A Cessna 172 aircraft was used to fly low over nests, allowing observers to examine nest contents. All eaglets will be counted and aged by sight.

## **SURVEY FINDINGS**

### **Bald Eagles**

Seven territories were observed to be active on Lake Gaston, 2 active territories were found on Roanoke Rapids Lake, and a single active territory was associated with the tail waters of Roanoke Rapids Lake during 2014 surveys. The majority of territories contained a single nest except for ME-14-03, and NO-14-01 which had older alternate nests within their territory. Two inactive territories were located where older damaged nests were located (HA-14-02 and WA-09-03) but no new active nests were observed in the general vicinity of the older nests.

The 10 active territories located during the 2014 survey represent a 100% increase over the 5 territories located during the last survey in 2009.

## **Nest: ME-14-01**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>ME-14-01</b>	<b>Mecklenburg</b>	<b>Virginia</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

### Nest Location

This nest was located in a pine tree near the top of a ridge, along the south shoreline of Lake Gaston, approximately 3.3 kilometers below John H. Kerr Dam. The nest is not easily visible from the water.

### Nesting Activity

*Bird Activity* – On 21 March 2014 an adult was brooding small chicks. On 27 April 2014 2 chicks, approximately 6 weeks old, were present in the nest.

*Nest Condition* – The nest was in good structural condition.

### Nest Substrate

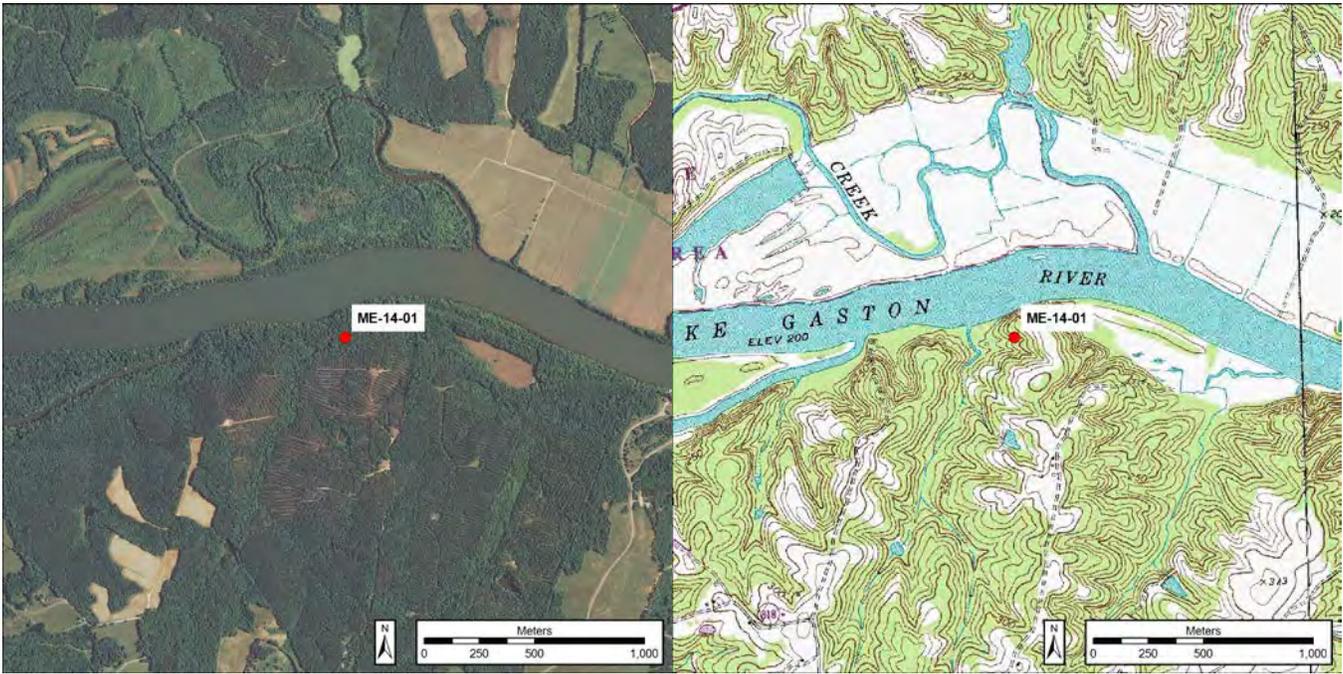
*Substrate Type* – The nest was in a loblolly pine tree in a mixed pine/hardwood forest.

*Nest Position* – The nest was positioned on multiple branches off of the side of the main trunk.

*Substrate Condition* – Nest tree appeared to be in good health

### Potential Disturbance

This nest is not easily visible from the water with no roads or major trails within immediate vicinity. Disturbance is most likely not an issue at this nest site.



Maps and Images of ME-14-01



## Nest: ME-14-02 and ME-14-03

Nest Code	County	State	Active Territory	Active Nest	Chicks Produced
ME-14-02	Mecklenburg	Virginia	Y	N	-
ME-14-03	Mecklenburg	Virginia	Y	Y	2

### Nest Location

ME-14-02 is located in a pine tree on the east side of a small creek along the south shoreline of Lake Gaston, approximately 0.6 kilometers below the mouth of Cotton Creek. ME - 14-03 is located in a hardwood tree on the south shoreline of Lake Gaston, approximately 1.5 kilometers below the mouth of Cotton Creek.

### Nesting Activity

*Bird Activity* – On 21 March 2014 no eagle activity was observed at ME-14-02. On 21 March 2014 an adult eagle was incubating 2 eggs at nest ME-14-03. On 27 April 2014 no eagle activity was observed at ME-14-02. On 27 April 2014 2 chicks, approximately 3 weeks old, were present in nest ME-14-03.

*Nest Condition* – ME-14-02 was slightly damaged and is most likely an older nest for the pair currently occupying nest ME-14-03. Nest ME-14-03 was in good structural condition. In addition, ME-14-03 is likely the same territory that was using nest ME-02-01 (now absent) in 2009.

### Nest Substrate

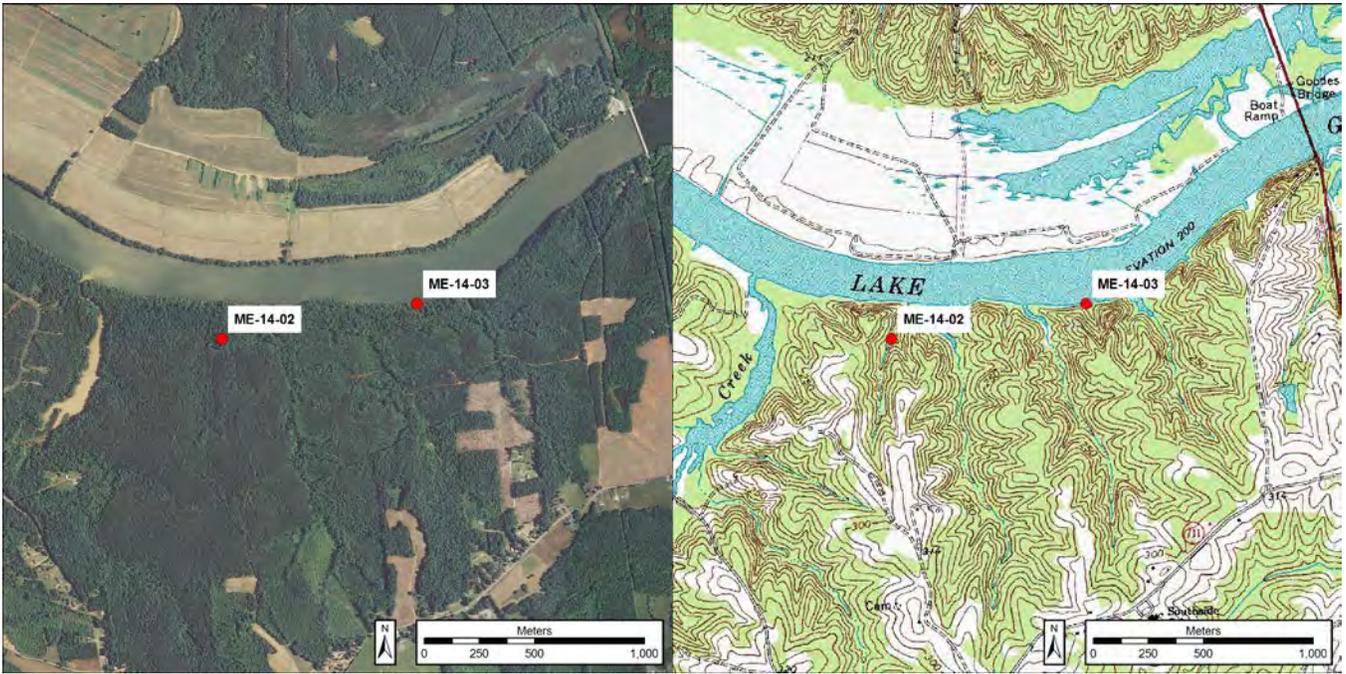
*Substrate Type* – ME-14-02 was in a loblolly pine tree in a mixed pine/hardwood forest. ME-14-03 was located in a hardwood on the immediate shoreline of Lake Gaston.

*Nest Position* – ME-14-02 was positioned on multiple branches off of the side of the main trunk. ME-14-03 was positioned in the terminal crotch of the hardwood.

*Substrate Condition* – Both nest trees appeared to be in good health

### Potential Disturbance

While the old nest, ME-14-02, was not prone to disturbance the new active nest, ME-14-03 is highly visible from Lake Gaston and disturbance is likely from any boat traffic near the nest.



Maps and Images of ME-14-02 and ME14-03



## Nest: ME-14-04

Nest Code	County	State	Active Territory	Active Nest	Chicks Produced
ME-14-04	Mecklenburg	Virginia	Y	Y	0

### Nest Location

This nest was located in a pine tree in a pasture near a pond on the northern shoreline of Lake Gaston, approximately 4.8 kilometers below John H. Kerr Dam, and 0.8 kilometers inland. The nest is not visible from the water but highly visible if you are near the nest.

### Nesting Activity

*Bird Activity* – On 21 March 2014 2 chicks, approximately 1 week old, were present in the nest with an adult. On 27 April 2014 no chicks or eagle activity was observed in or near the nest. This nest obviously failed.

*Nest Condition* – The nest was in good structural condition.

### Nest Substrate

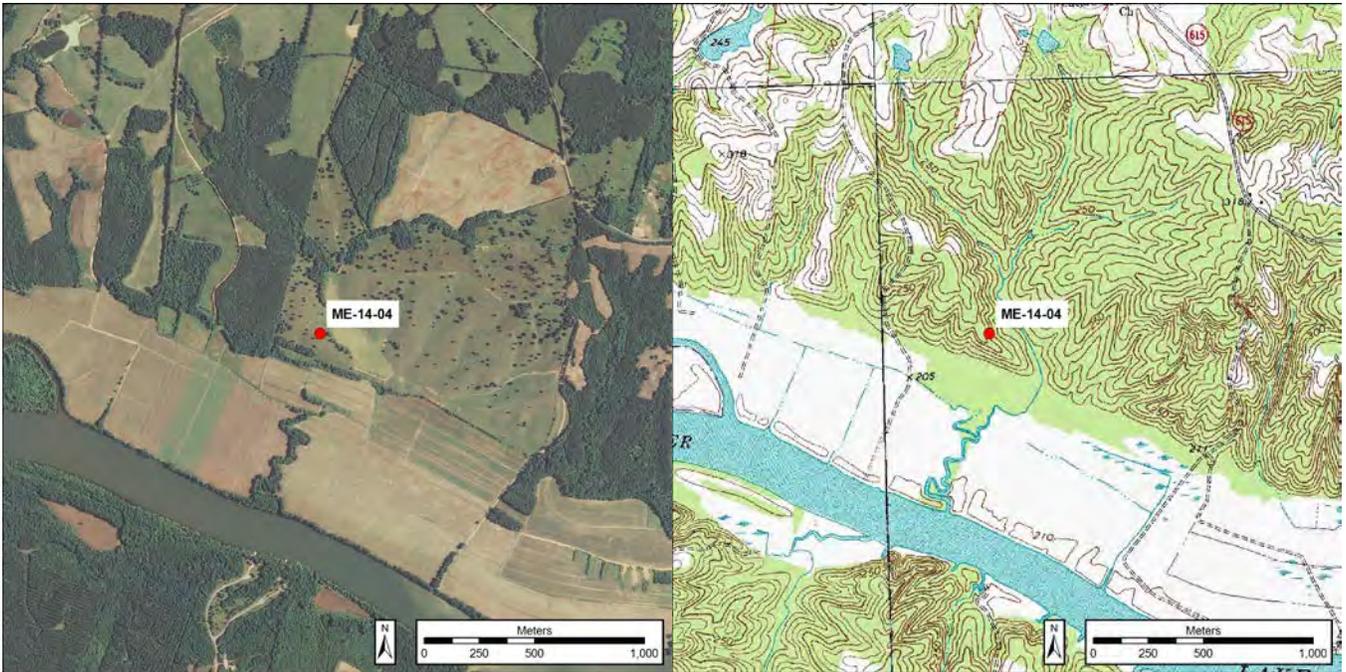
*Substrate Type* – This nest was located in a pine tree in a pasture near a pond on the northern shoreline of Lake Gaston.

*Nest Position* – The nest was positioned in the terminal crotch of the pine tree.

*Substrate Condition* – Nest tree appeared to be in good health

### Potential Disturbance

This nest is not visible from the water but highly visible if one is near the nest. Disturbance would be likely with any recreational or agricultural activities in the pasture or on the pond near the nest.



**Maps and Images of ME-14-04**



**Nest: ME-11-03**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>ME-11-03</b>	<b>Mecklenburg</b>	<b>Virginia</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

Nest Location

This nest was located in one of a few remaining super canopy hardwood trees, along a drainage, in an older clear cut. The nest is located approximately 1.0 km inland of the south shoreline of Lake Gaston, approximately 1.0 kilometers above the interstate 85 bridge.

Nesting Activity

*Bird Activity* – On 21 March 2014 2 chicks, approximately 1 week old, were observed in the nest. On 27 April 2014 2 chicks, approximately 7 weeks old, were present in the nest along with an adult.

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

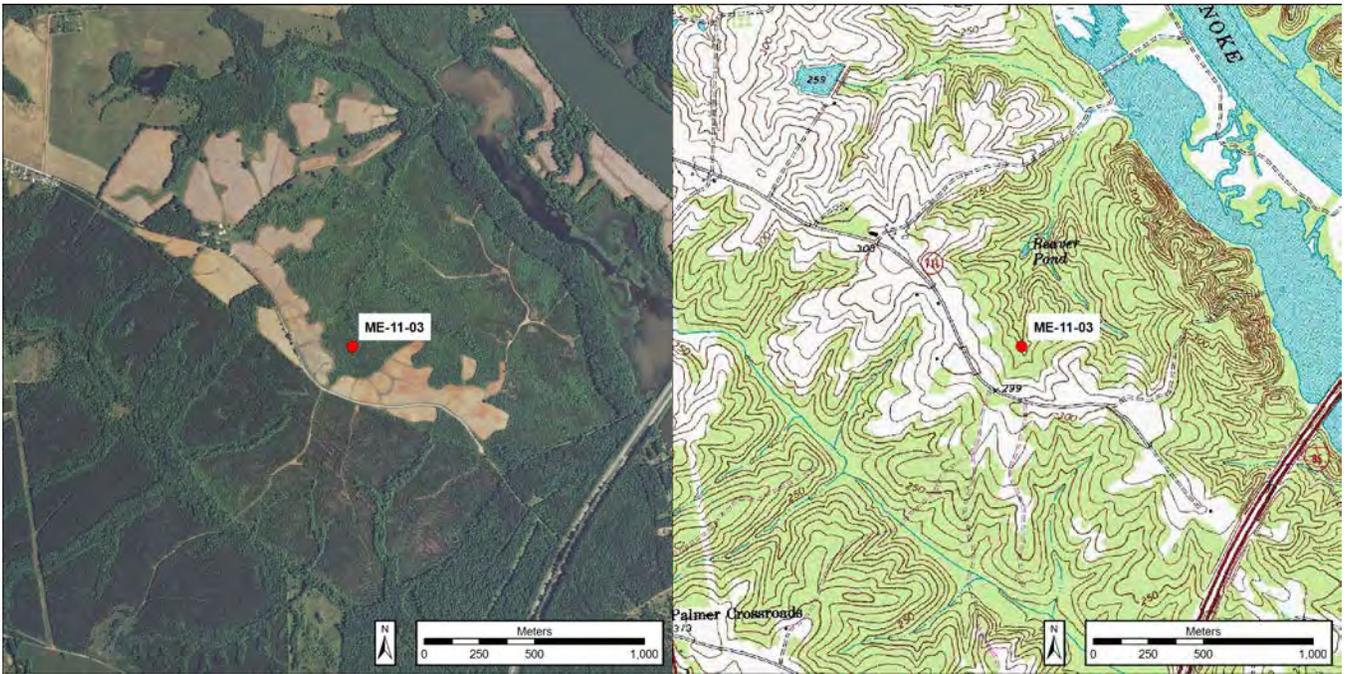
*Substrate Type* – The nest was in a super canopy hardwood tree in an 8 year old clear cut.

*Nest Position* – The nest was positioned at the terminal crotch of the hardwood.

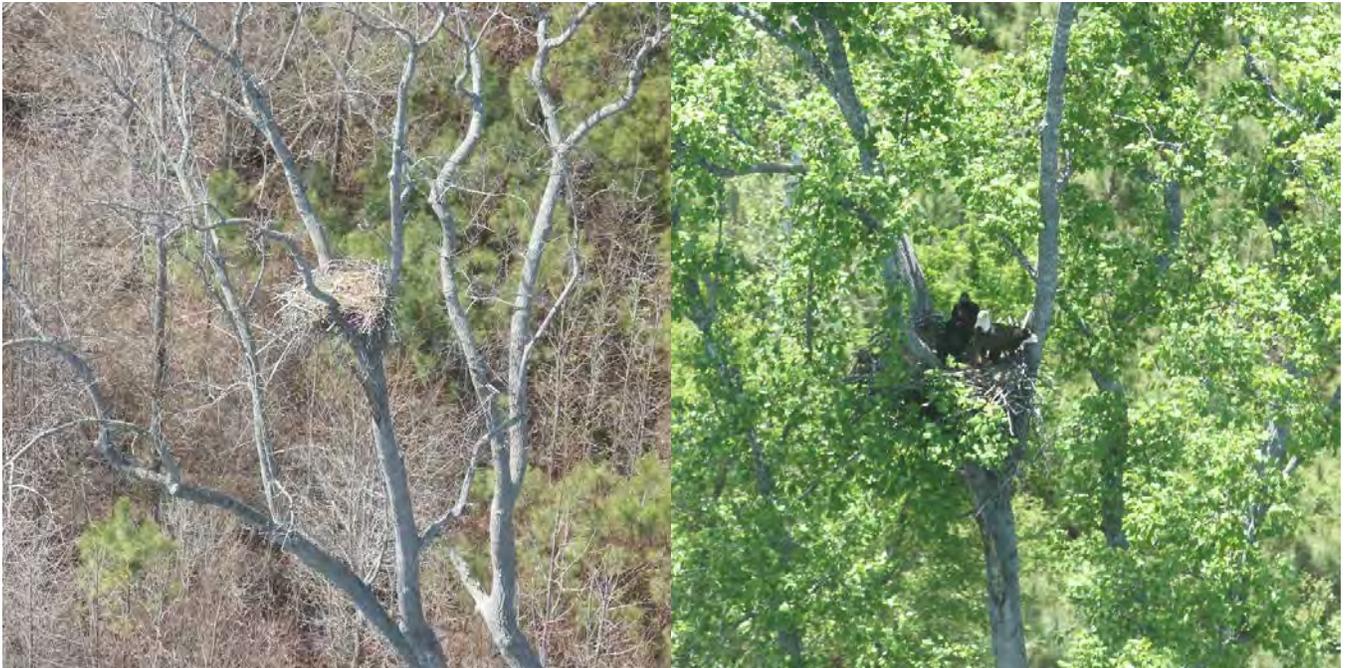
*Substrate Condition* – The tree appeared to be in good health.

Potential Disturbance

This nest is not visible from the water but is visible from route 711 (Hardage Road) with no roads or major trails within immediate vicinity. Disturbance is not likely except for some ranching/agriculture activity on nearby pastures.



**Maps and Images of ME-11-03**



**Nest: WA-09-01**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>WA-09-01</b>	<b>Warren</b>	<b>North Carolina</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

Nest Location

This nest was located in a pine tree on the eastern shore of Hawtree Creek, approximately 1.8 kilometers upstream from the mouth, and 0.3 kilometers upstream from the 1307/712 (Peete Farm Road) bridge. The nest is not visible from the Lake Gaston but easily visible from Hawtree Creek or the Peete Farm Road Bridge.

Nesting Activity

*Bird Activity* – On 21 March 2014 2 chicks, approximately 1 week old, were present in the nest. On 27 April 2014 2 chicks, approximately 6 weeks old, were present in the nest.

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree in a sparse mixed pine/hardwood forest.

*Nest Position* – The nest was positioned on multiple branches off of the side of the main trunk.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

This nest is visible from Hawtree Creek or the Peete Farm Road Bridge. Disturbance is not likely, unless boats are anchored in Hawtree creek near the nest. The nest is set back approximately 75 to 100 meters off of the shore line so boat traffic would most likely not be an issue at this nest site.



Maps and Images of WA-09-01



**Nest: BR-14-01**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>BR-14-01</b>	<b>Brunswick</b>	<b>Virginia</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

Nest Location

This nest was located in a pine tree on the northern shore of Lake Gaston, about equidistant from the shore line and Route 612 (Morristown Road). The nest is not likely visible from the Lake Gaston or Morristown Road.

Nesting Activity

*Bird Activity* – On 21 March 2014 an adult was brooding small chicks. On 27 April 2014 2 chicks, approximately 7 weeks old, were present in the nest along with an adult.

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

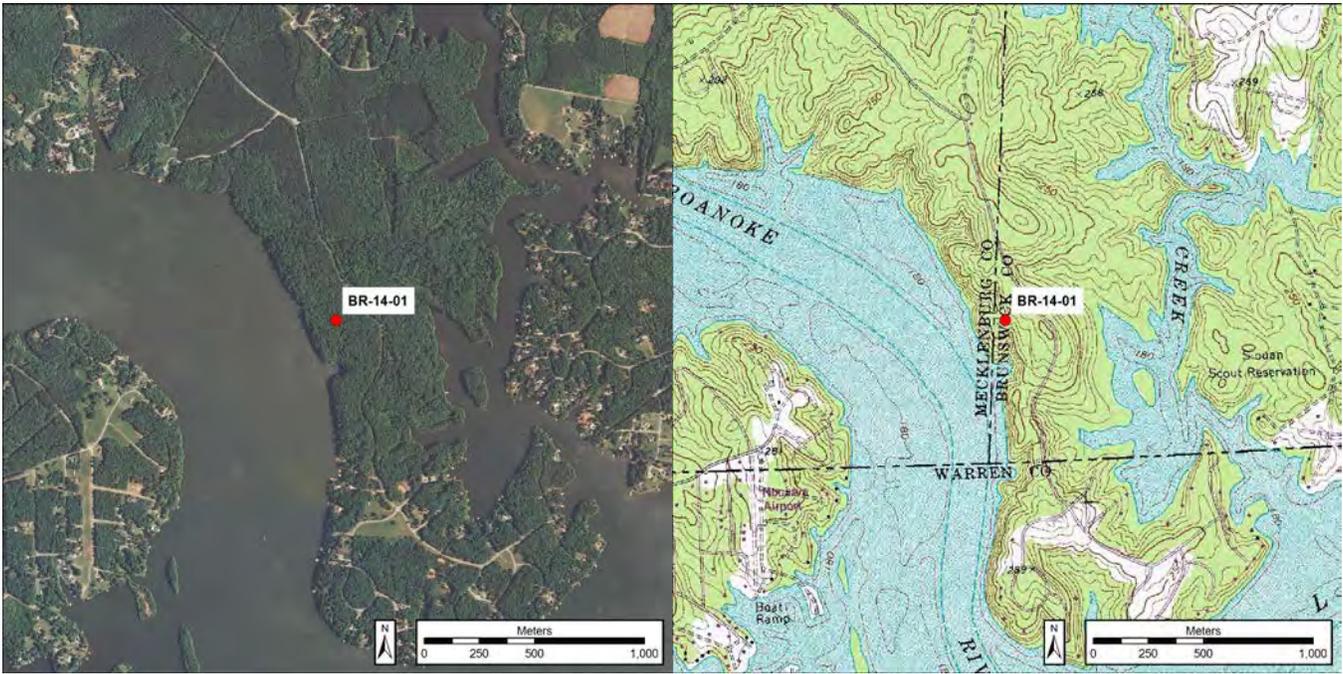
*Substrate Type* – The nest was in a loblolly pine tree in a primarily pine forest.

*Nest Position* – The nest was positioned in the terminal crotch of the pine.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

This nest is not likely visible from the Lake Gaston or Morristown Road. Disturbance is not likely at this nest site.



Maps and Images of BR-14-01



### **Nest: WA-09-03**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>WA-09-03</b>	<b>Warren</b>	<b>North Carolina</b>	<b>N</b>	<b>N</b>	<b>-</b>

#### Nest Location

This nest was located along the south shoreline of Lake Gaston, on a point of land north of the crossroads of Five Forks and northwest of Lyons Creek. The point of land is elevated approximately 50 feet above the lake surface. The nest is in a small block of older loblolly pines next to a newer network of roads and house sites.

#### Nesting Activity

*Bird Activity* – On 21 March 2014 no eagle activity was observed and the nest was damaged and obviously abandoned. No replacement nest was found in a search of the surrounding area. On 27 April 2014 no follow up was conducted.

*Nest Condition* – The nest damaged and partially falling out of the tree.

#### Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree that was on the edge of an older block of pines and a regenerating pine stand. The tree had good access for the birds from the south.

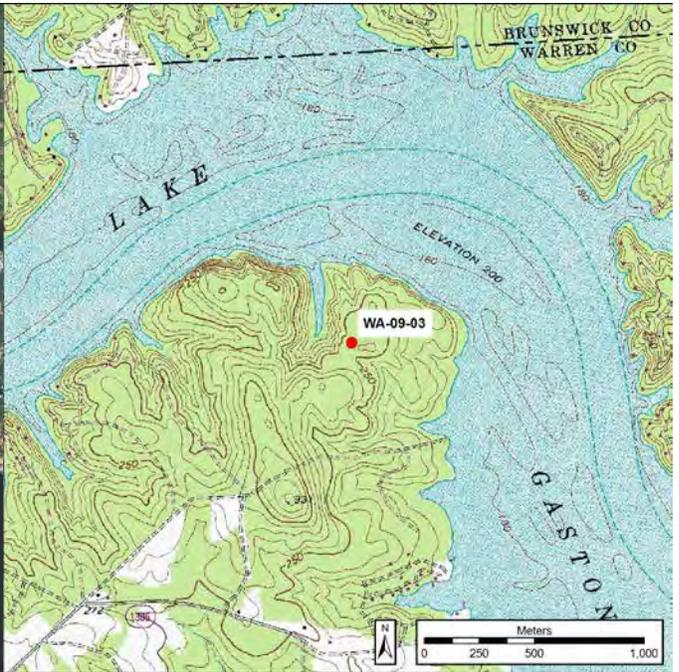
*Nest Position* – The nest was positioned in a multi-pronged top crotch with approximately 50% sky exposure.

*Substrate Condition* – Nest tree appeared to be in good health.

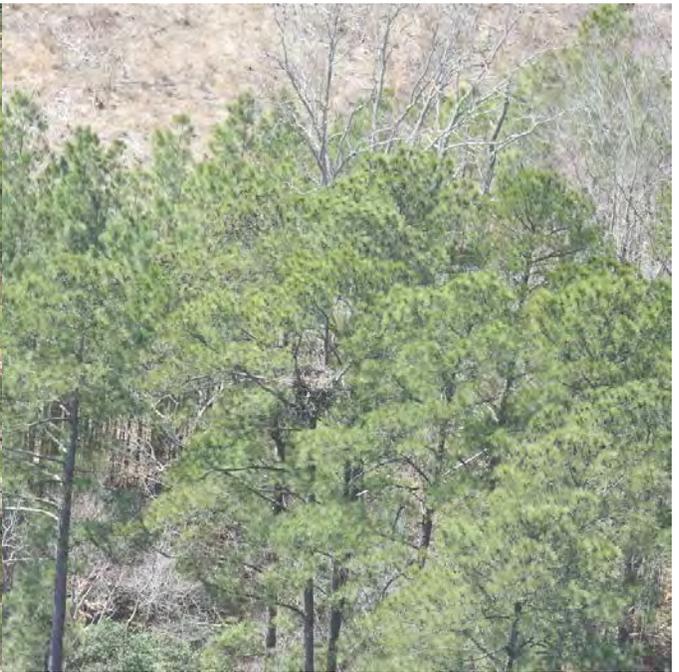
#### Potential Disturbance

The following statement about potential disturbance is from the 2009 survey report

“This nest site is visible from a dirt road and a cleared area to the north. The nest appears to be easily accessible from the clearing. It should be noted that there has been considerable recent changes in land use within the management buffer of this nest site. Human activity appears to include land clearing, road construction, house construction, and fence construction. The dump being used for cleared stumps and vegetation debris is in very close proximity to this nest. A ground visit to examine ongoing sources of disturbance may be warranted.” (Watts 2009)



### Maps and Images of WA-09-03



**Nest: HA-14-01**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>HA-14-01</b>	<b>Halifax</b>	<b>North Carolina</b>	<b>Y</b>	<b>Y</b>	<b>1</b>

Nest Location

This nest was located in a pine on a point of land on the southern shore of Lake Gaston. The nest tree is within a strip of mature trees between a 10 year old clear cut and Heather Glenn Drive. The nest is not likely visible from Heather Glenn Drive. This nest is likely within the territory of the old nest HA-09-01 which is now absent.

Nesting Activity

*Bird Activity* – On 21 March 2014 an adult was observed above the nest. On 27 April 2014 1 chick, approximately 7 weeks old, was present in the nest along with an adult.

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

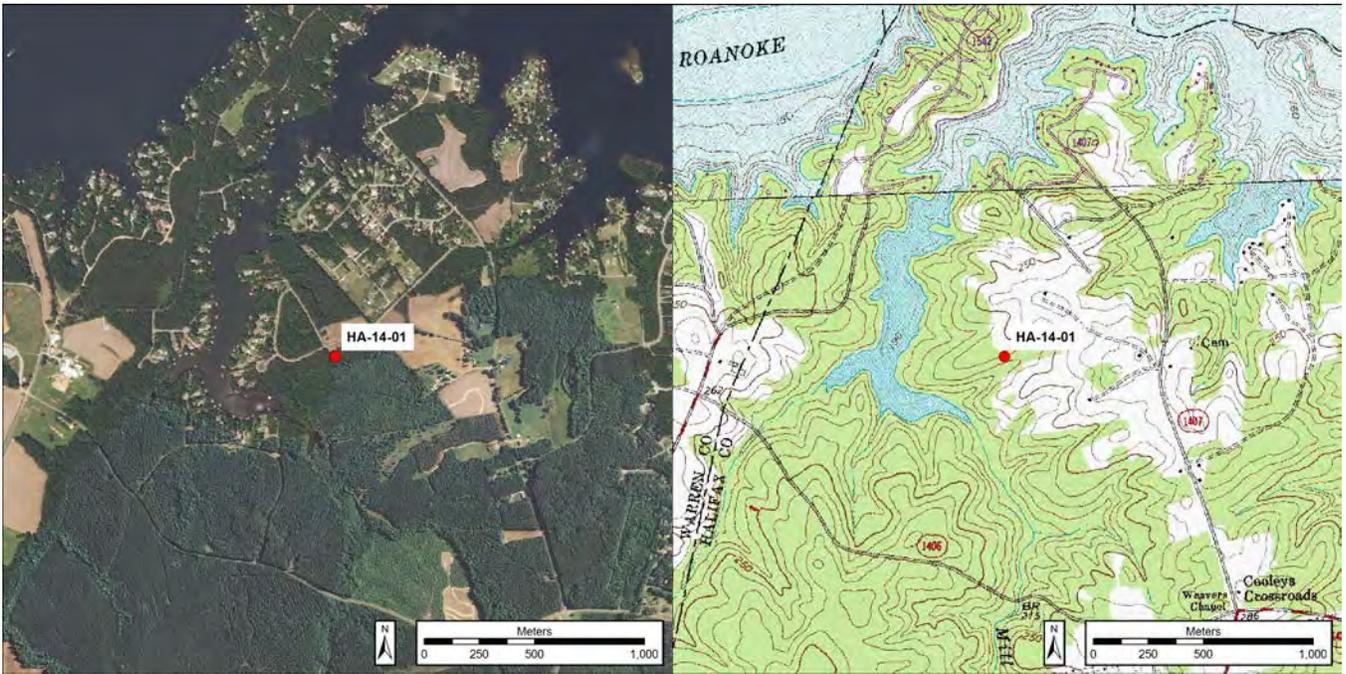
*Substrate Type* – The nest was in a loblolly pine tree within a strip of mature trees between a 10 year old clear cut and Heather Glenn Drive.

*Nest Position* – The nest was positioned in the sub-terminal crotch of the pine.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

The nest is not likely visible from Heather Glenn Drive. Disturbance is not likely unless development occurs along Heather Glenn Drive and/or Rockcrest Lane.



Maps and Images of HA-14-01



**Nest: HA-14-02**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>HA-14-02</b>	<b>Halifax</b>	<b>North Carolina</b>	<b>N</b>	<b>N</b>	<b>-</b>

Nest Location

This nest was located along the south shoreline of Roanoke Rapids Lake, 0.6 kilometers below the upper dam. The nest is situated on the bluff overlooking the lake just east of the powerline right of way. The nest is likely visible from the Roanoke Rapids Lake

Nesting Activity

*Bird Activity* – On 21 March 2014 no eagle activity was observed and the nest was damaged and obviously abandoned. No replacement nest was found in a search of the surrounding area. On 27 April 2014 no follow up was conducted.

*Nest Condition* – The nest damaged and partially falling out of the tree.

Nest Substrate

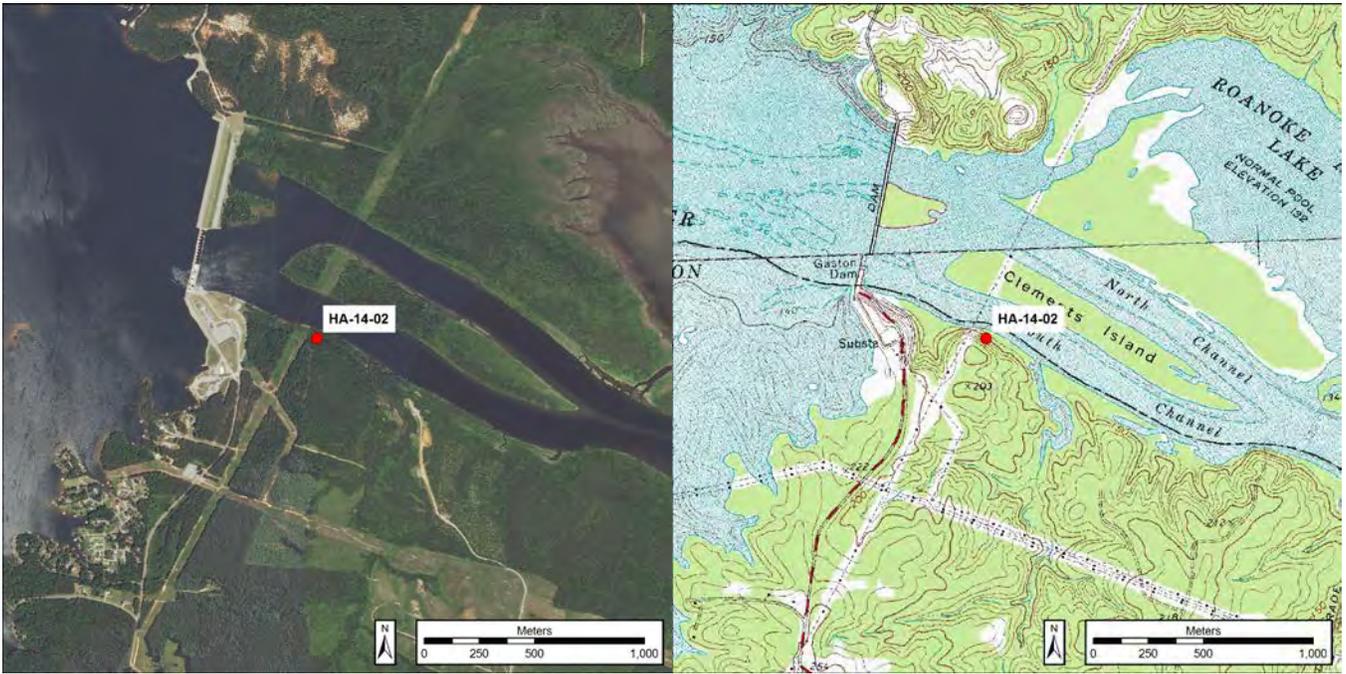
*Substrate Type* – The nest was in a loblolly pine tree overlooking Roanoke Rapids Lake at the edge of a powerline right of way.

*Nest Position* – The nest was positioned in the sub-terminal crotch of the pine.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

While not active this nest was probably not that susceptible to disturbance by boat traffic since it was positioned high on the bluff.



Maps and Images of HA-14-02



**Nest: HA-14-03**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>HA-14-03</b>	<b>Halifax</b>	<b>North Carolina</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

Nest Location

This nest was located in a pine within a strip of mature trees left along a drainage in a 9 year old clear cut. The nest location is approximately 1.9 kilometers inland of the southern shore of Roanoke Rapids Lake.

Nesting Activity

*Bird Activity* – On 21 March 2014 2 chicks, approximately 2 weeks old, were observed in the nest.. On 27 April 2014 2 chicks, approximately 7 weeks old, were present in the nest

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

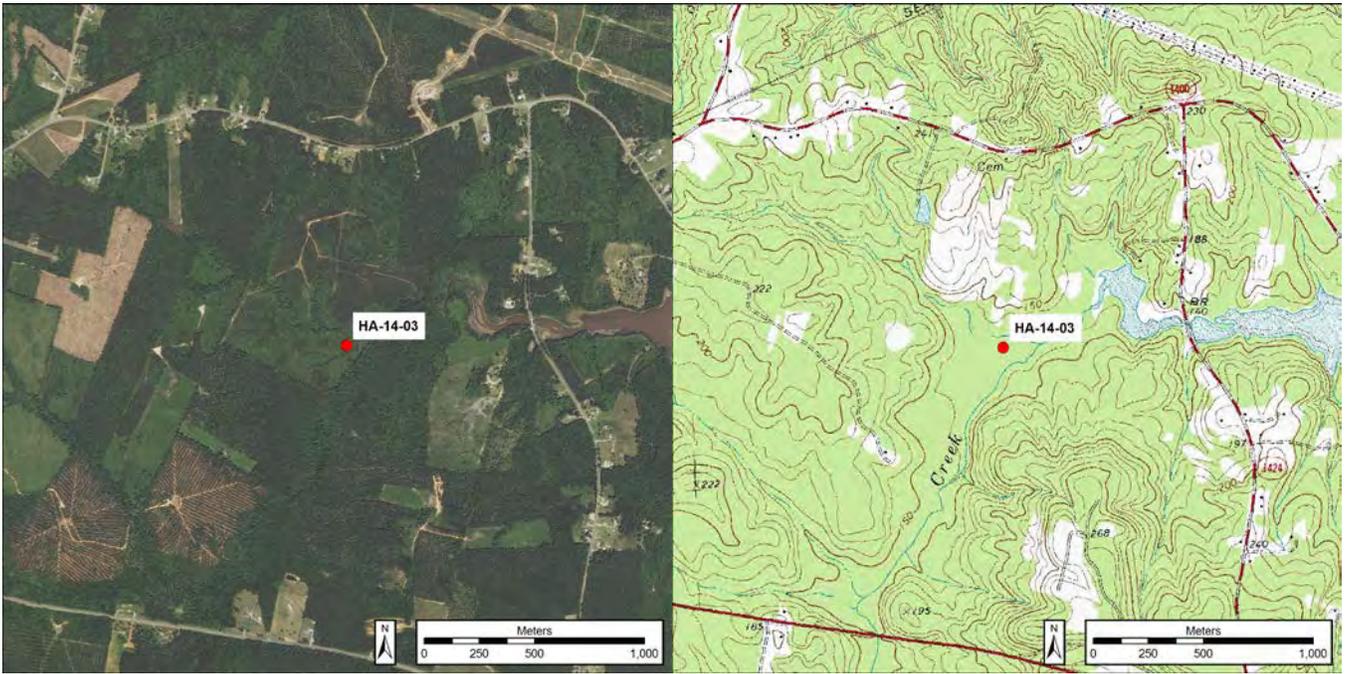
*Substrate Type* – The nest was in a loblolly pine tree within a strip of mature trees along a drainage in a 9 year old clear cut.

*Nest Position* – The nest was positioned in the terminal crotch of the pine.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

The nest is visible from the water or any road. Disturbance is not likely.



Maps and Images of HA-14-03



**Nest: HA-14-04**

<b>Nest Code</b>	<b>County</b>	<b>State</b>	<b>Active Territory</b>	<b>Active Nest</b>	<b>Chicks Produced</b>
<b>HA-14-03</b>	<b>Halifax</b>	<b>North Carolina</b>	<b>Y</b>	<b>Y</b>	<b>2</b>

Nest Location

This nest was located in a pine along a small tributary on the southern shore of Roanoke Rapids Lake, just south of a power line right of way. The nest is approximately 5 kilometer above the lower dam. This nest is likely the same territory of the now absent nest HA-09-02.

Nesting Activity

*Bird Activity* – On 21 March 2014 2 chicks, approximately 5 weeks old, were observed in the nest. On 27 April 2014 no chick or eagle activity were observed at the nest. It is likely that the 2 older chicks, observed on the first survey flight, fledged prior to the second survey flight.

*Nest Condition* – The nest was in good structural condition.

Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree along a small tributary on the southern shore of Roanoke Rapids Lake, just south of a power line right of way.

*Nest Position* – The nest was positioned on multiple branches off of the side of the main trunk.

*Substrate Condition* – Nest tree appeared to be in good health

Potential Disturbance

The nest is possibly visible from the houses to the west, but disturbance is not likely.



Maps and Images of HA-14-04



## Nest: NO-14-01 and NO-14-02

Nest Code	County	State	Active Territory	Active Nest	Chicks Produced
NO-14-01	Northampton	North Carolina	Y	Y	2
NO-14-02	Northampton	North Carolina	Y	N	-

### Nest Location

NO-14-01 was located in a hardwood tree on the edge of an agricultural field on the northern shore of the Roanoke Rapids Lake tailwaters, approximately 1.8 kilometers upstream of the interstate 95 bridge and 0.4 kilometers inland. NO-14-02 was located in a hardwood on a small island in the tailwaters approximately 0.4 kilometers upstream of the interstate 95 bridge.

### Nesting Activity

*Bird Activity* – On 21 March 2014 an adult was observed brooding small chicks at nest NO-14-01, no eagle activity was observed at NO-14-02. On 27 April 2014, 2 chicks, approximately 7 weeks old, were observed in No-14-01 along with an adult. No eagle activity was observed at NO-14-02

*Nest Condition* – Both NO-14-01 and NO-14-02 were in good structural condition. However, while it appeared that NO-14-02 had been worked on during the 2014 season it was not lined and was not in use. NO-14-02 is likely an older alternate nest to the territory of the pair occupying nest NO-14-01.

### Nest Substrate

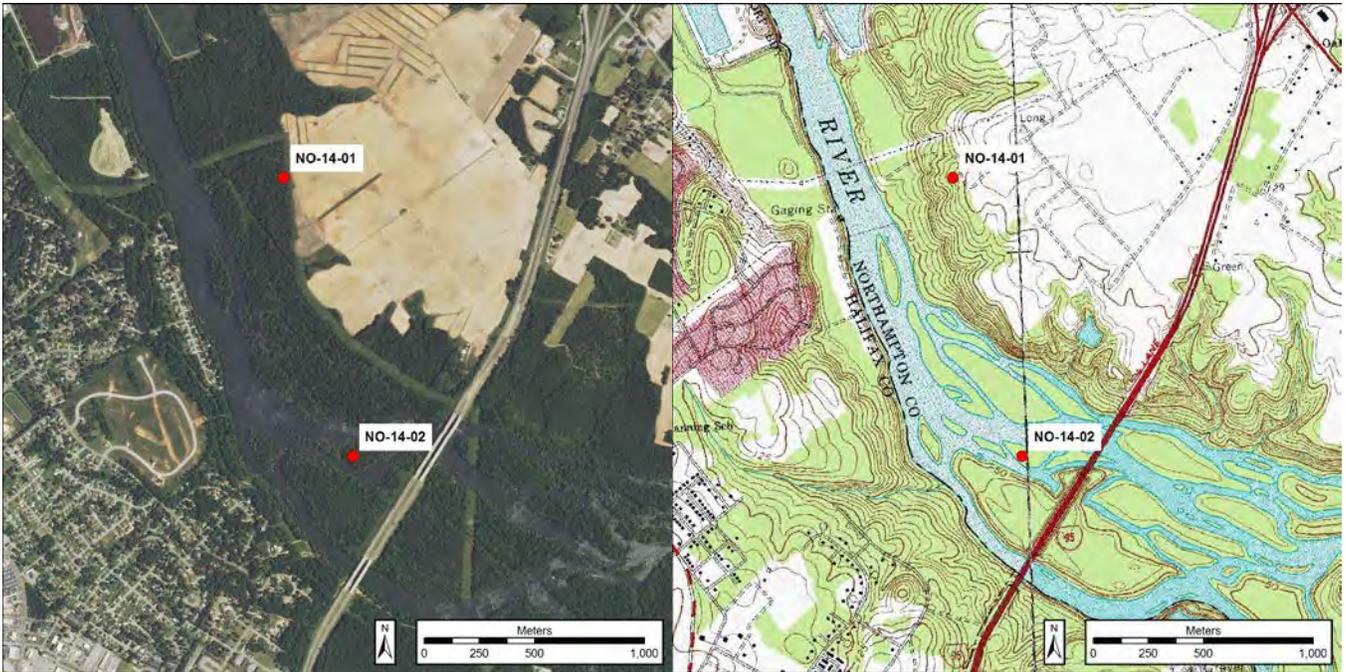
*Substrate Type* – NO-14-01 is located in a hardwood tree on the edge of an agricultural field on the northern shore of the Roanoke Rapids Lake tailwaters. NO-14-02 is located in a hardwood on a small island in the tailwaters approximately 0.4 kilometers upstream of the interstate 95 bridge.

*Nest Position* – Both NO-14-01 and NO-14-02 were positioned in the terminal crotch of the hardwoods.

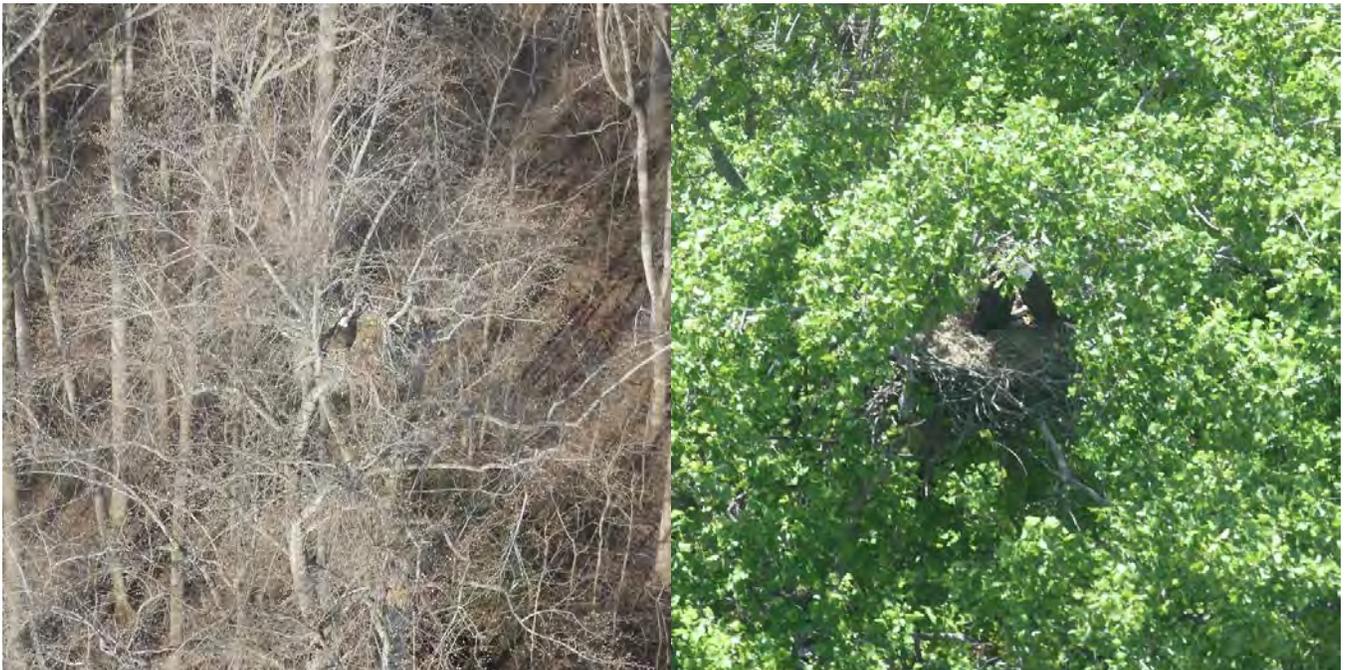
*Substrate Condition* – The hardwood tree of nest NO-14-01 appeared to be in good health. The hardwood tree of nest NO-14-02 had a dead top around and above the nest.

### Potential Disturbance

NO-14-01 is not visible from the water but disturbance would be likely during any agricultural activities occurring in the adjacent agricultural field.



**Maps and Images of NO-14-01 and NO-14-02**



## Great Blue Herons

Three great blue heron colonies were identified during the eagle surveys. Two small colonies were located on Lake Gaston, and a substantial colony of over 100 pairs was observed on the islands in the Roanoke Rapids Lake tailwaters, just downstream of the lower dam.

### Colony: GBHE-1

Colony Code	County	State	Number of active nests
GBHE-1	Northampton	North Carolina	100+

#### Colony Location

GBHE-1 was located approximately 1.8 kilometers downstream of the lower Roanoke Rapids Lake dam. The colony was situated within a large swath of hardwoods on the islands downstream of the dam.

#### Nesting Activity

*Bird Activity* – On 21 March 2014 100+ pairs of Great blue herons were observed incubating and pre-nesting. On 27 April 2014, incubation and chicks were observed.

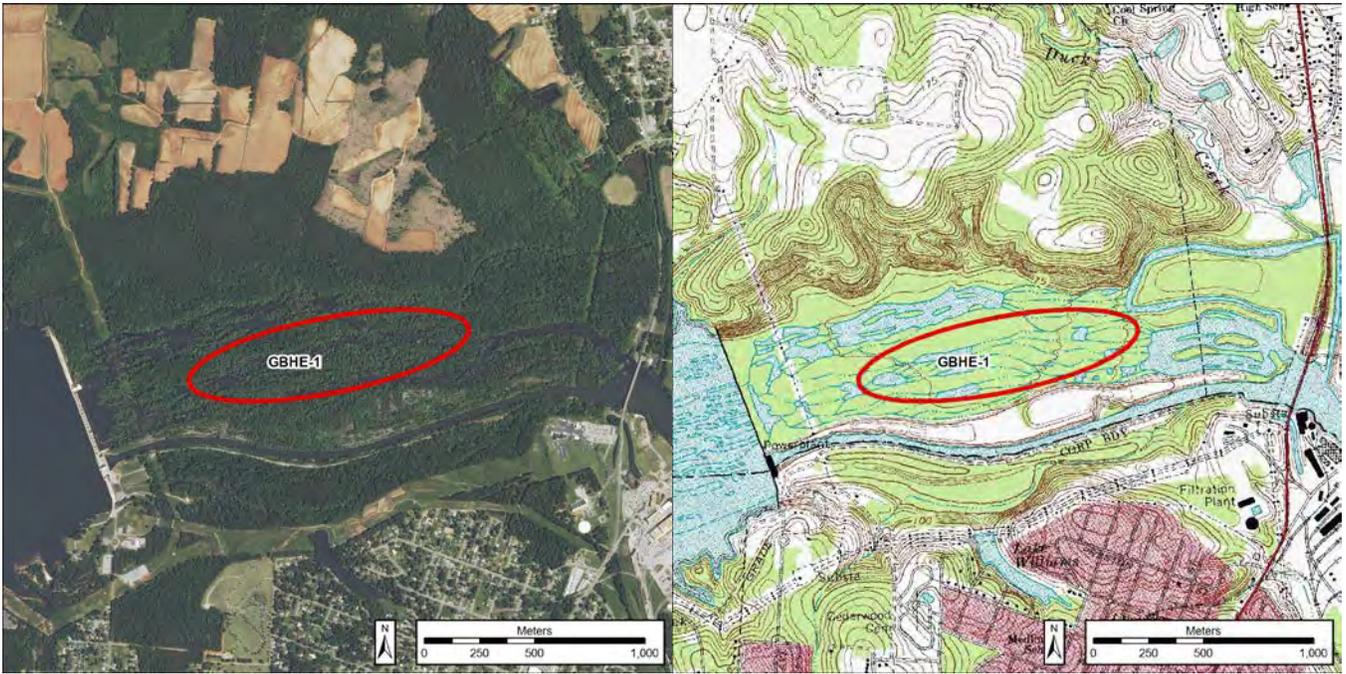
#### Nest Substrate

*Substrate Type* – GBHE-1 was located approximately 1.8 kilometers downstream of the lower Roanoke Rapids Lake dam. The colony was situated within a large swath of hardwoods on the islands downstream of the dam in the Roanoke Rapids Lake tailwaters.

*Substrate Condition* – The hardwood tree of colony GBHE-1 appeared to be in good health.

#### Potential Disturbance

GBHE-1 does not appear to be accessible to the public and is not prone to disturbance.



Maps and Images of GBHE-1



## Colony: GBHE-2

Colony Code	County	State	Number of active nests
GBHE-2	Halifax	North Carolina	6

### Colony Location

GBHE-2 was located in pine trees on a small island in Lake Gaston, approximately 0.8 kilometers upstream of the lower Lake Gaston dam.

### Nesting Activity

*Bird Activity* – On 21 March 2014 6 pairs of Great blue herons were observe incubating and pre-nesting. On 27 April 2014, incubation and chicks were observed.

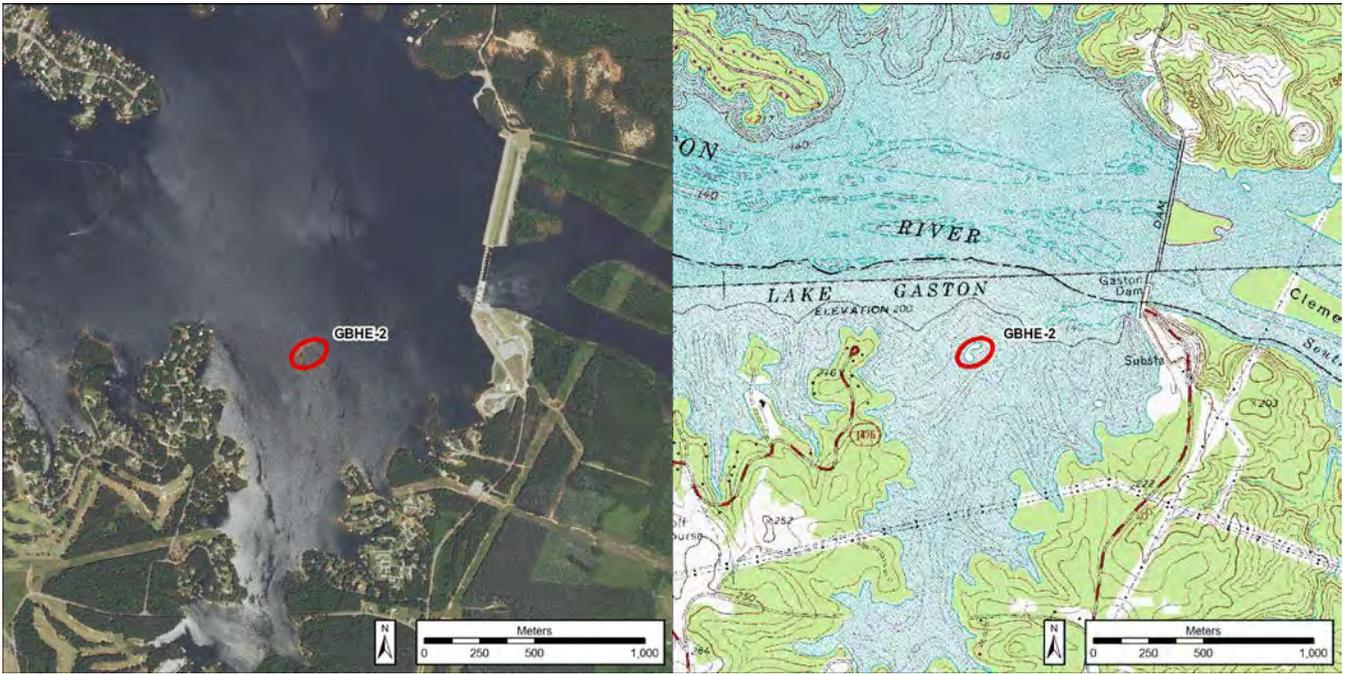
### Nest Substrate

*Substrate Type* – GBHE-2 was located in pine trees on a small island in Lake Gaston.

*Substrate Condition* – The pine trees of colony GBHE-2 appeared to be in good health.

### Potential Disturbance

GBHE-2 would susceptible to disturbance if boaters used the island for recreational activities.



Maps and Images of GBHE-2



## Colony: GBHE-3

Colony Code	County	State	Number of active nests
<b>GBHE-3</b>	<b>Mecklenburg</b>	<b>Virginia</b>	<b>15</b>

### Colony Location

GBHE-3 was located in mixed pines and hardwoods on a narrow linear island of Lake Gaston. The colony was located approximately trees on a small island in Lake Gaston, approximately 4.0 kilometers downstream of the interstate 85 bridge.

### Nesting Activity

*Bird Activity* – On 21 March 2014, 15 pairs of Great blue herons were observe incubating and pre-nesting. On 27 April 2014, incubation and chicks were observed.

### Nest Substrate

*Substrate Type* – GBHE-3 was located in mixed pines and hardwoods on a narrow linear island of Lake Gaston.

*Substrate Condition* – The trees of colony GBHE-2 appeared to be in good health.

### Potential Disturbance

The island GBHE-3 occupes does not appear to have a great deal of recreational draw during the breeding season. Disturbance at the colony would be expected to be minimal.



**Maps and Images of GBHE-3**



**Table 1.** Coordinates of bald eagle nest locations and approximate centers of great blue heron colonies. WGS1984 Decimal Degrees.

Nest or Colony Code	X-coordinate	Y-coordinate
ME-14-01	-78.264306	36.608402
ME-14-04	-78.244278	36.614781
ME-14-02	-78.230244	36.598209
ME-14-03	-78.220310	36.599424
ME-11-03	-78.185301	36.583869
WA-09-01	-78.125730	36.539802
BR-14-01	-78.045209	36.549355
WA-09-03	-78.017934	36.532146
NC-14-01	-77.892483	36.493361
NC-14-02	-77.805364	36.496556
NC-14-03	-77.775560	36.463147
NC-14-04	-77.730250	36.471998
NC-14-05	-77.628001	36.461624
NC-14-06	-77.625002	36.450127
NC-14-07	-78.244278	36.614781
NC-14-08	-78.230244	36.598209
NC-14-09	-78.220310	36.599424
GBHE-1	-77.654790	36.482966
GBHE-2	-77.820825	36.497029
GBHE-3	-78.133832	36.563977

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