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## **Aerial surveys of Lake Gaston and Roanoke Rapids Lake for nesting bald eagles: 2009 season (Draft Report - 29 July, 2009)**

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**AERIAL SURVEYS OF LAKE GASTON AND ROANOKE RAPIDS LAKE  
FOR NESTING BALD EAGLES: 2009 SEASON  
(August, 2009)**

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## 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 an 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 584 pairs in 2008 (Watts and Byrd 2008) 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**

The objectives of the eagle survey on Lake Gaston and Roanoke Rapids Lake were 1) to document the status, distribution and productivity of nesting pairs in association with these waterways and 2) 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 Interstate 95 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 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. The survey was conducted on 20 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. The survey was conducted on 12 May, 2009.

## SURVEY FINDINGS

### Bald Eagles

Four Bald Eagle territories were observed to be active on Lake Gaston and one on Roanoke Rapids Lake during 2009 surveys. This included nests near Cotton Creek, Hawtree Creek, Lyons Creek, Mill Creek, and Deep Creek. All territories were along the south shoreline. All territories contained a single nest except for Hawtree creek that contained an active and an alternate nest.

### NEST: HA-09-02

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
HA-09-02	Halifax		Y	Y	2

#### Nest Location

This nest was located along the south shoreline between Deep Creek and the city of Roanoke Rapids. The nest is positioned over a small ponded wetland just north of a transmission right of way and just east of a house along the shoreline. The nest is visible from both the house and from the water.

#### Nesting Activity

*Bird Activity* – On 20 March, 2009 an adult was incubating. The second adult was not observed. On 12 May, 2009 2 chicks approximately 45 days old were present in the nest.

*Nest Condition* – The nest was in good structural condition with a well-formed cup and fresh lining. The nest was large and clearly not a first-year nest.

#### Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree that was supercanopy over surrounding vegetation. The tree was positioned between regenerating pine stand and a small wetland.

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

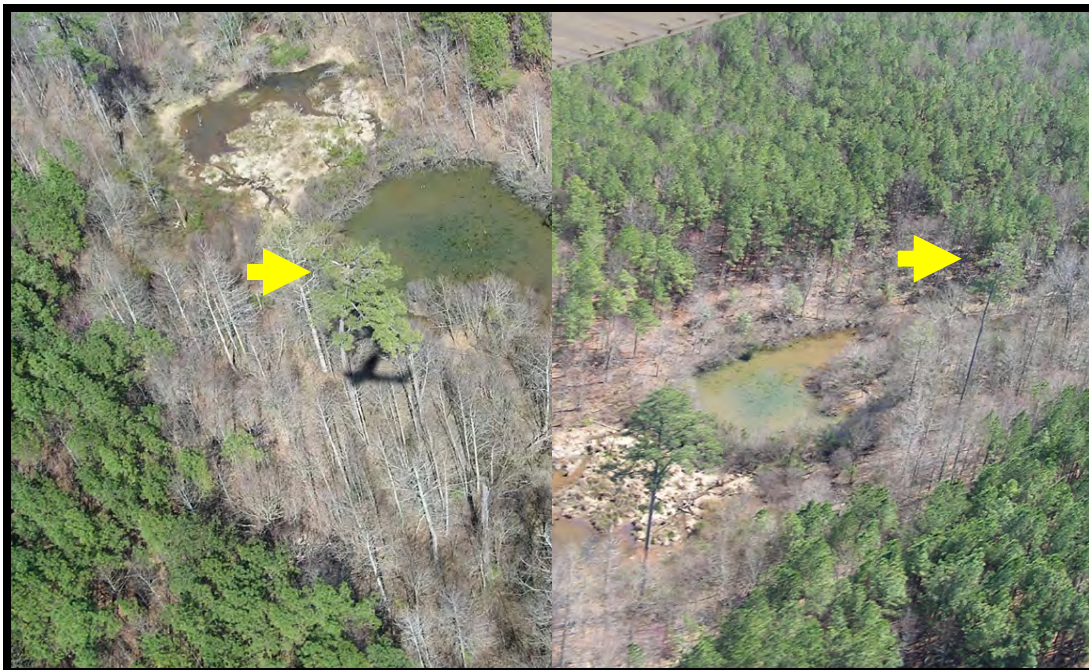
*Substrate Condition* – Nest tree appeared to be in good health with some minor crown damage. The tree has a significant lean and looks vulnerable to windthrow.

#### Potential Disturbance

This nest site is very close to a house along the shoreline and is near a transmission right of way. The nest is easily accessible from the house.



Map and photos of HA-09-02





## NEST: HA-09-01

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
HA-09-01	Halifax		Y	Y	2

### Nest Location

This nest was located along the upper end of Mill Creek. The nest was positioned along a tree line that was supercanopy within a regenerating pine stand. The tree line followed a dry creek extending north east from Mill Creek. The nest is clearly visible from a dirt road and cleared areas to the north.

### Nesting Activity

*Bird Activity* – On 20 March, 2009 one adult was standing on the edge of the nest with 2 chicks approximately 15 days old. On 12 May, 2009 both chicks were present in the nest.

*Nest Condition* – The nest was in good structural condition with a well-formed cup and fresh lining. The nest was large and clearly not a first-year nest.

### Nest Substrate

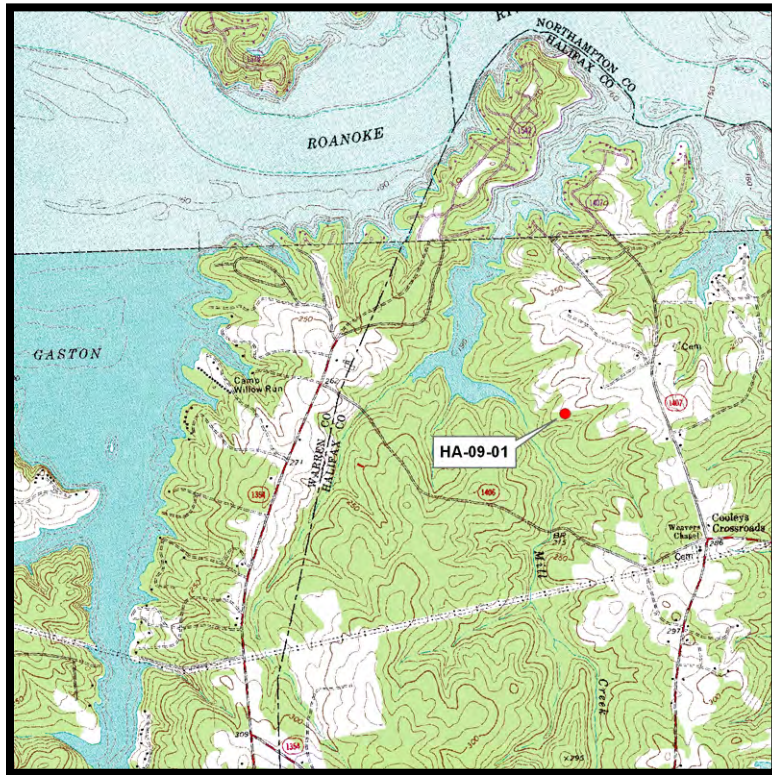
*Substrate Type* – The nest was in an American beech tree that was supercanopy over surrounding vegetation. The tree was positioned along a dry creek bed and surrounded by a regenerating pine stand.

*Nest Position* – The nest was positioned in a large crotch in the crown of a broad hardwood with approximately 30% sky exposure.

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

### Potential Disturbance

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.



Map and photos of HA-09-01





## NEST: WA-09-03

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
WA-09-03	Warren	South Hill SE	Y	Y	1

### Nest Location

This nest was located along the south shoreline 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 new network of roads and house sites. A dirt road was constructed into the stand and near the nest to access a refuse dump full of stumps and trees from the clearing activities. The nest is likely visible from the new access road.

### Nesting Activity

*Bird Activity* – On 20 March, 2009 one adult was standing on a limb above the nest and a single chick approximately 45 days old was in the nest. On 12 May, 2009 the nest was empty and the chick was presumed to have fledged.

*Nest Condition* – The nest was in good structural condition with a well-formed cup and fresh lining. The nest was moderate in size and may have been built within the past year or two.

### 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

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.



Map and photos of WA-09-03.



## NEST: WA-09-02

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
WA-09-02	Warren	South Hill SE	Y	N	-----

### Nest Location

This nest was located in a cluster of loblolly pines between a regenerating pine stand and a wetland on the upper end of Hawtree Creek. The nest appears to be an alternate to the active nest (WA-09-01) in this territory. The nest tree was relatively remote with no road access nearby. The nest seems well protected from disturbance due to the forest and wetland buffers.

### Nesting Activity

*Bird Activity* – On 20 March, 2009 no birds were present at the nest and there was no evidence of recent use. On 12 May, 2009 no birds were present and there was no evidence of recent use.

*Nest Condition* – The nest was in good structural condition but did not have a well-formed cup and had no recent lining. The nest was moderate in size. Based on the condition, the nest appears to have been used in a previous year but did not appear to be in use during the 2009 season.

### Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree that was sandwiched between a young regenerating pine stand and a wetland. There was good nest access from nearly all directions.

*Nest Position* – The nest was positioned in a multi-pronged top crotch with approximately 25% sky exposure.

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

### Potential Disturbance

This nest does not appear to be visible from any obvious human access points. It is surrounded by a good buffer of young pine trees to the north and a wetland to the south. The nest appears to be well protected from disturbance.

## NEST: WA-09-01

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
WA-09-01	Warren	Bracey	Y	Y	2

### Nest Location

This nest was located within a mixed stand of loblolly pines and hardwoods that has been recently thinned. The stand forms a border along Hawtree Creek, south of Rt 1307 and east of the community of Paschall. During the period of leaf off this nest may be visible from the Rt 1307 bridge or from the water. As the hardwoods leaf out during the spring the nest may be difficult to see from a distance.

### Nesting Activity

*Bird Activity* – On 20 March, 2009 an adult was on the nest brooding small chicks. On 12 May, 2009 an adult was perched along the shoreline and 2 chicks more than 50 days old were present in the nest.

*Nest Condition* – The nest was in good structural condition had a well-formed cup and a fresh lining. The nest was moderate in size. It is difficult to determine how long this nest may have been in use.

### Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree that was positioned within a scattered mix stand of pines and hardwoods. The nest was supercanopy over the others and within close proximity to the shoreline.

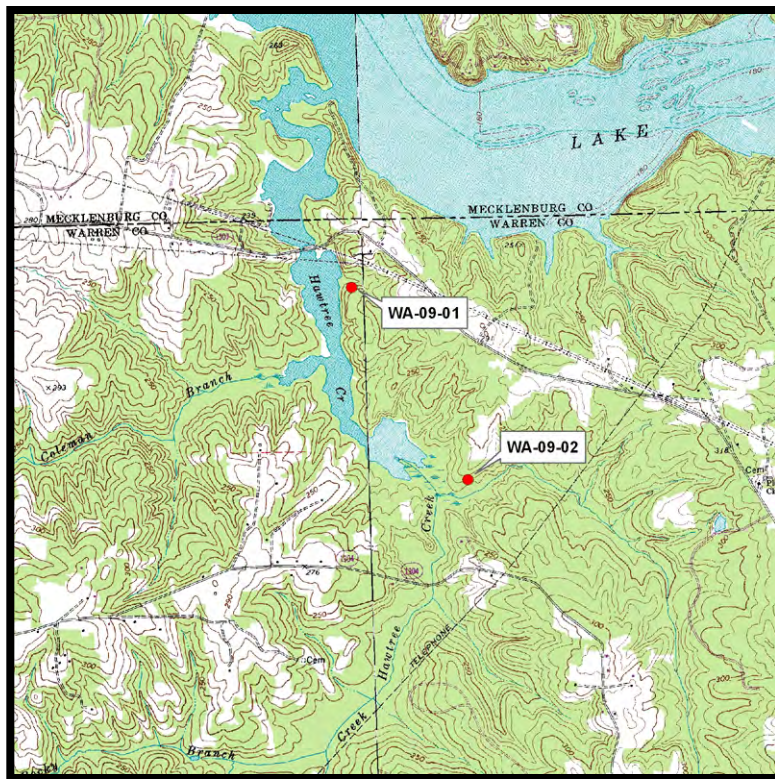
*Nest Position* – The nest was positioned in a multi-pronged top crotch with approximately 25% sky exposure.

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

### Potential Disturbance

This nest may be visible from the water or from the Rt. 1307 bridge but is protected from a considerable forest buffer. The nest appears to be well protected from human disturbance.





Map and photos of WA-09-01 (left) and WA-09-02 (right).



## NEST: ME-02-01

Nest Code	County	Topo Quad	Active Territory	Active Nest	Chicks Produced
ME-02-01	Mecklenburg	Bracey	Y	Y	2

### Nest Location

This nest was located within a cluster of loblolly pines that is positioned on a knoll over a regenerating stand of loblolly pines. The nest is near the south shoreline of the Roanoke River, just west of Route 1. The nest location is fairly remote with a good buffer of forest.

### Nesting Activity

*Bird Activity* – On 20 March, 2009 an adult was perched on the edge of the nest with 2 chicks approximately 10 days old. On 12 May, 2009 both chicks were present but adults were not seen.

*Nest Condition* – The nest was in good structural condition had a well-formed cup and a fresh lining. The nest was moderate to large in size. This nest was built in 2002 and has been in continuous use since that time. This is the third nest used in this territory that dates back to 1997.

### Nest Substrate

*Substrate Type* – The nest was in a loblolly pine tree that was positioned within a cluster of loblollies that sit on a knoll overlooking a young pine stand.

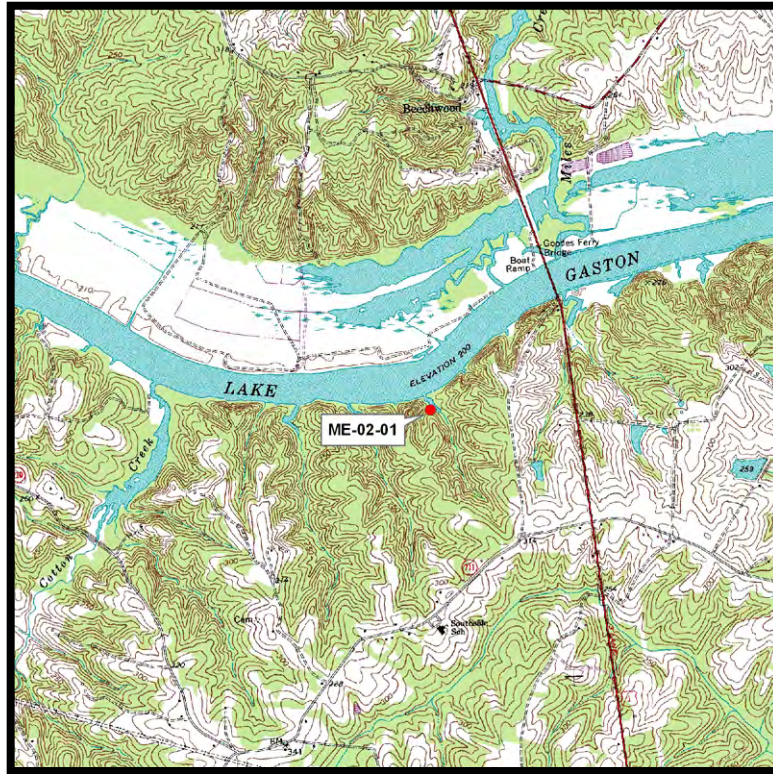
*Nest Position* – The nest was positioned in a multi-pronged top crotch with approximately 50% sky exposure.

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

### Potential Disturbance

This nest does not appear to be visible from any human access points. The nest is on a section of the Roanoke that does not appear to get much human use. On the upland side, the nest is protected by an extensive buffer of young pines. The nest appears to be well protected from human disturbance.





**Map of nest ME-02-01.**

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