

**AMERICAN BALD EAGLE
HABITAT CONSERVATION PLAN
FOR THE LAKE JAMES PROJECT
BURKE AND MC DOWELL COUNTIES, NORTH CAROLINA**

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**SUBMITTED
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1.0. INTRODUCTION

1.1 Purpose

Crescent Resources, Inc. and lot owners are requesting authorization for the potential incidental taking of 1 existing bald eagle (*Haliaeetus leucocephalus*) nest and any future bald eagle nests located on their properties at Lake James in the western Piedmont of North Carolina (Figure 1). The taking of the existing eagle nest includes habitat modification and associated disturbance during and following construction of a single-family home residential subdivision called Southpointe on Lake James (Southpointe). The nest tree and nest will not be disturbed. The remaining Crescent properties are currently undeveloped, but will potentially be developed and timbered within the next 20 years.

All existing lots surrounding the nest tree are slated for home construction. Disturbances caused by the development of Southpointe and remaining Crescent lands at Lake James may have adverse impacts on the bald eagles at the Southpointe nest and nests that occur at the lake in the future. Pursuant to Section 9 of the Endangered Species Act (ESA), these disturbances qualify as harassment and may result in the potential incidental taking of the nest and eagles. The purpose of this low effect Habitat Conservation Plan (HCP) is twofold. First, it is submitted as a required part of the application for an Incidental Take Permit (ITP) for the taking of 1 bald eagle nest and future eagle nests on the Crescent Resources properties at Lake James. Second, it

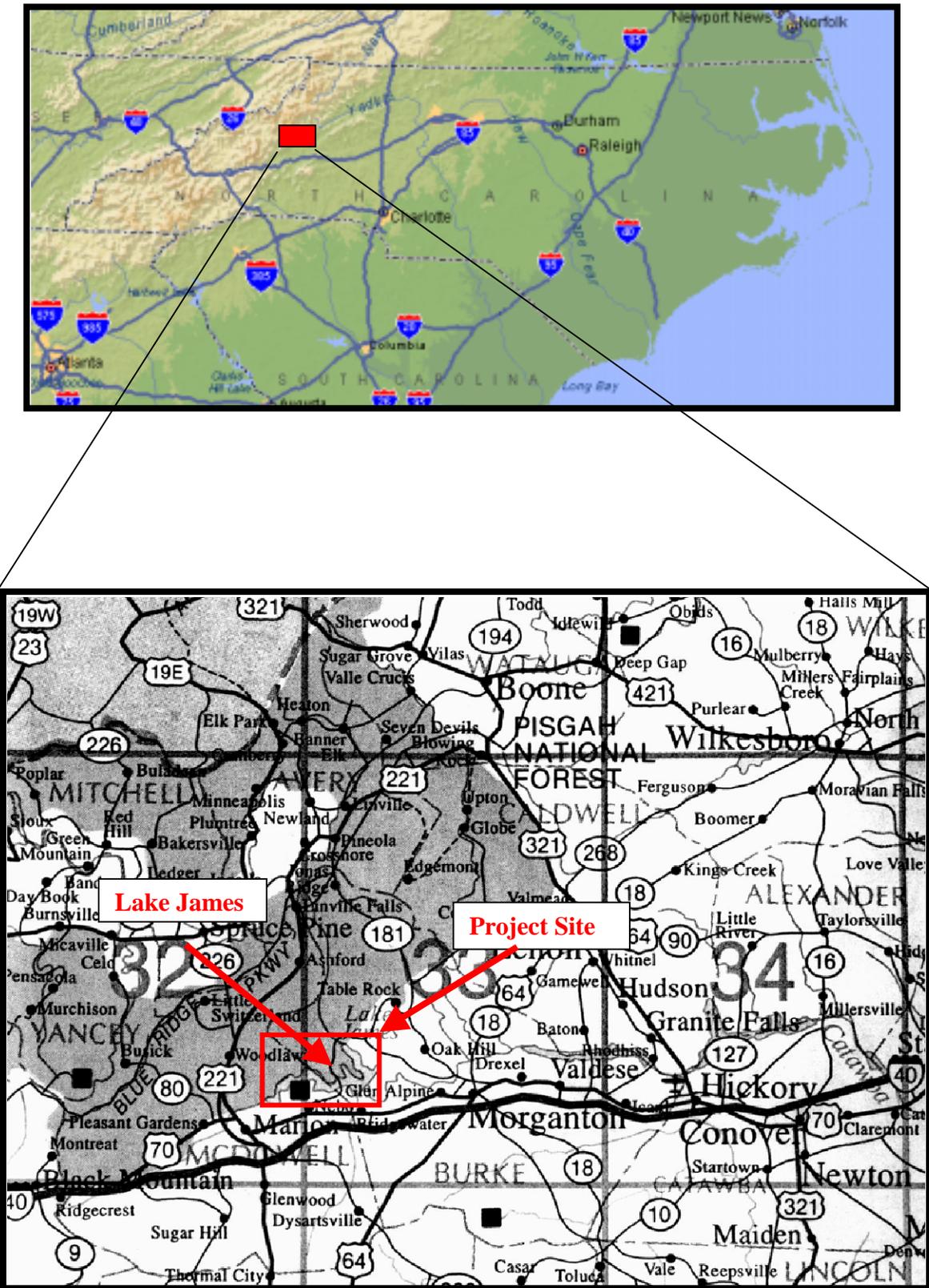


Figure 1. General location of the Crescent Resources, Inc. lands surrounding Lake James, Burke and McDowell counties, North Carolina

is intended to outline the terms and conditions under which the Applicant will mitigate for this potential Incidental Take.

At present, the bald eagle is proposed for de-listing. When the bald eagle is de-listed, Crescent Resources will continue maintaining bald eagle habitat at Lake James under this same HCP pursuant to an Implementing Agreement between the USFWS and Crescent Resources.

1.2 Project Location

The project site (HCP Area) addressed in this HCP consists of approximately 11,700 acres of land surrounding Lake James in Burke and McDowell Counties, North Carolina (Figure 2). Lake James is a 6,510-acre lake with over 150 miles of shoreline. The Lake James State Park is located on the southern portion of the lake just off of NC Highway 126 and the Town of Marion is located approximately 2 miles to the southwest. The majority of the land surrounding the lake is wooded and undeveloped.

Approximately 350 acres of land within the project site is currently being developed as a residential subdivision called Southpointe on Lake James. This residential subdivision is located on the northeastern portion of Lake James in Burke County (Figure 3). Crescent Resources intends to develop Southpointe into 259 lots designated for single-family homes. Southpointe is divided into 5 phases with each phase consisting of 30 to 60 lots. Lot sizes range from 0.6 to 2.0 acres in size. The remaining land within the subdivision will be used for street right-of-ways, common open areas and an amenity area. The amenity area lot is approximately 4.5 acres in size and is located on the mid-western portion of the subdivision (see Figure 3). This site will contain a clubhouse, swimming area and boat docks.

At present, roads and utility installation are complete and lot sales are occurring for Phases I and II of the subdivision. Phases III through V are expected to be developed during the

LEGEND

 Crescent properties (to be included in HCP)

 PISGAH NATIONAL FOREST

 PISGAH NATIONAL FOREST

Lands not owned by Crescent (not in HCP)

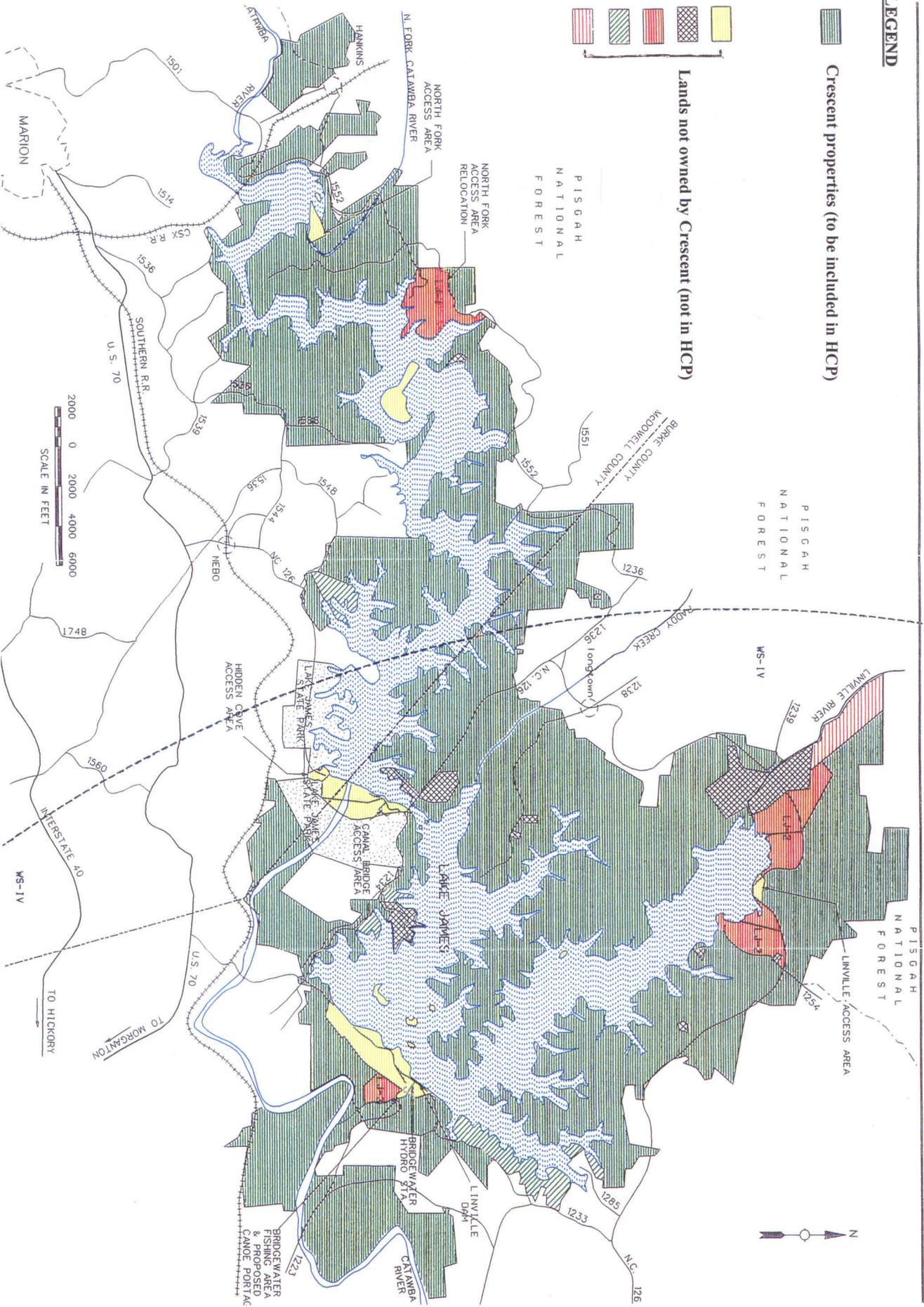
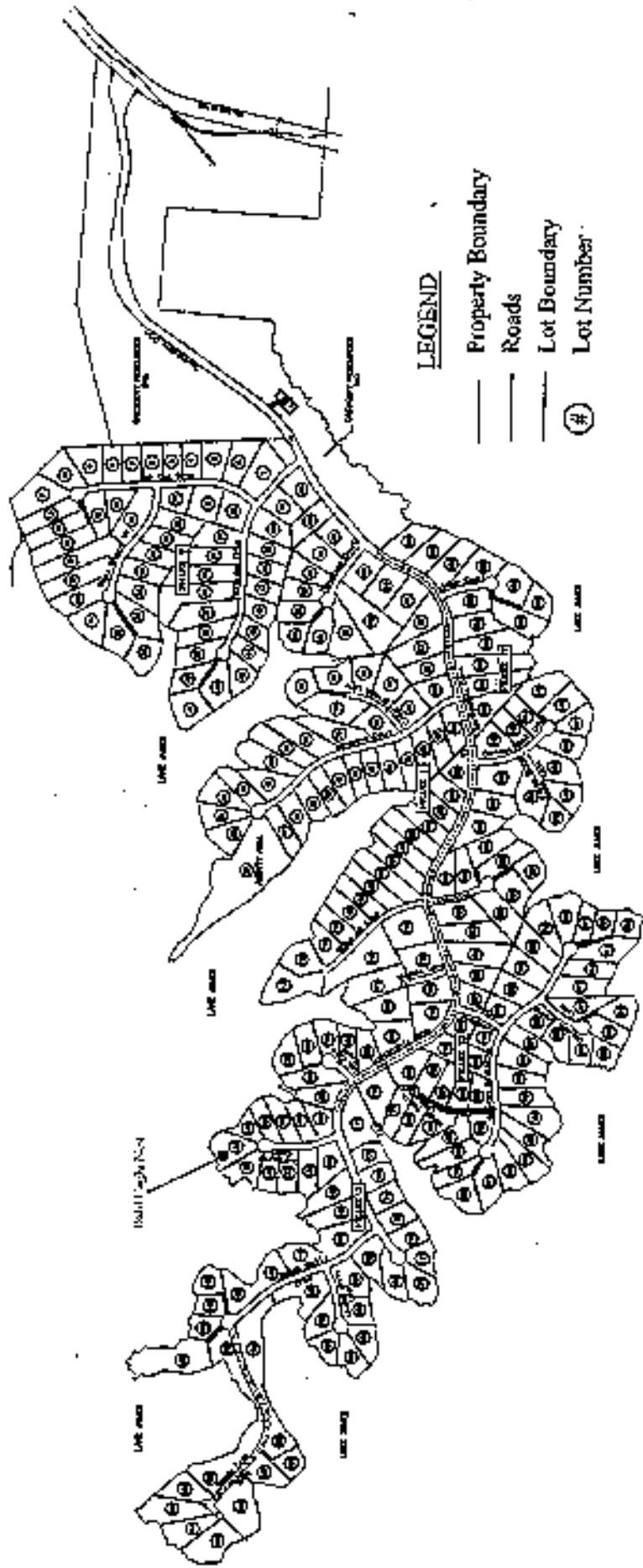
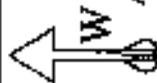


Figure 2. Properties owned by Crescent Resources, Inc. (shown in green) included in the Bald Eagle Habitat Conservation Plan for Lake James in Burke and McDowell Counties, North Carolina.



1 inch equals 800 feet



AutoCAD file provided by Land Design Engineering Services, Inc.

*Dr. J.H. Carter III
& Associates, Inc.*

Figure 3.

The Southpointe on Lake James development owned by Crescent Resources, Inc., Burke County, North Carolina.

next few years. The bald eagle nest addressed in this HCP/ CCA is located in a tree on Lot 134 of Phase II (Figures 3 and 4).

1.3 Background

Development of the road and utility infrastructure of Phase II of the Southpointe property by Crescent Resources occurred between 15 June and 30 November 1998. The construction timeline (including commencement dates) consisted of surveying the streets (6-15-98), clearing trees for the roads (7-1-98), installing a storm drainage system (7-15-98), developing the curb and gutter system (8-10-98), installing waterlines (9-15-98), laying stone and paving roads (10-15-98) and installing sanitary sewer lines (11-15-98). This phase of development was complete by the end of November 1998. Lot sales began in July 1998 and 57 lots have been sold to date.

In February 1999, a representative from Duke Power Lake Management noticed a small bald eagle nest in a tree on Lot 134. He immediately contacted Crescent Resources, who then reported the situation to the USFWS.

All of the lots in the culdesac where the eagle nest is located have already been sold and the Applicant cannot legally impose “after-sale” restrictions on lot owners or take away the lot owner’s ability to utilize their property for house construction. Lot 134 had been sold to Charles and Vera Smith on 31 August 1998. Mr. and Mrs. Smith have agreed to allow Crescent to legally represent them in this HCP in reference to the bald eagle nest on their lot. The term “Applicant” in this HCP shall refer to Crescent Resources and their legal representation of Mr. and Mrs. Smith.

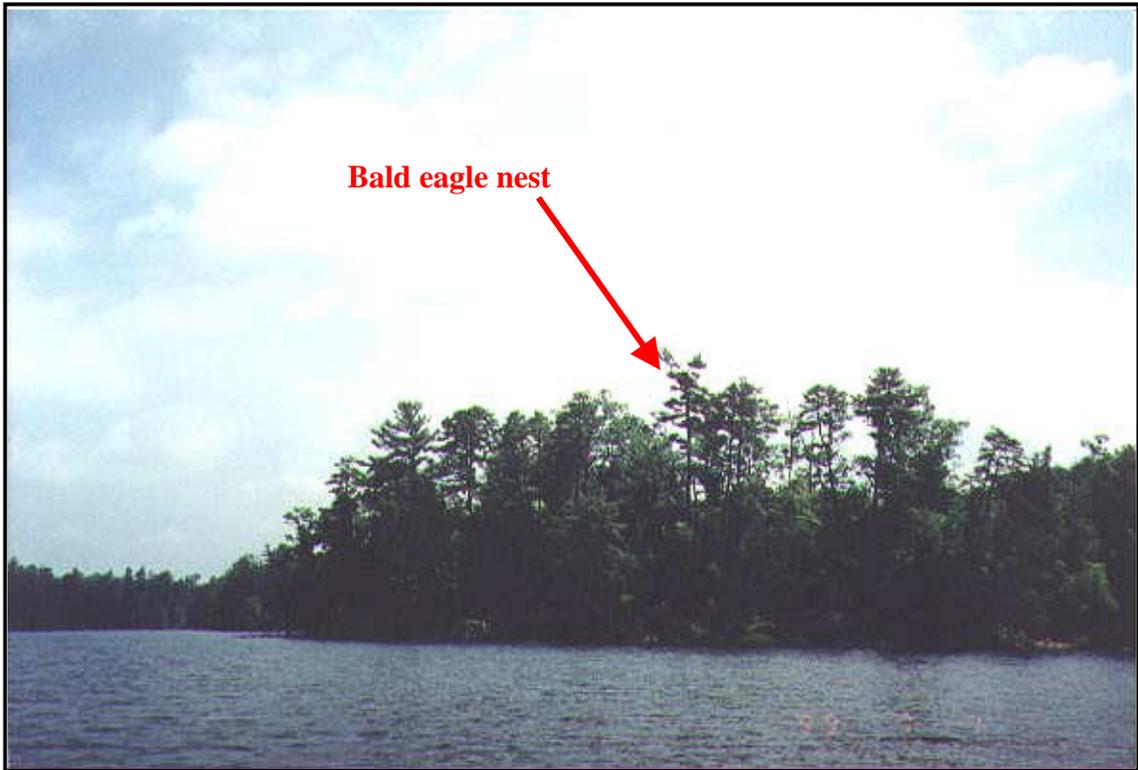


Figure 4. Bald eagle nest located on Lot 134 of the Southpointe on Lake James development, Burke County, North Carolina.

1.4 Endangered Species Act

Section 3 of the ESA defines “take” as any action that would “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect” any threatened or endangered species. “Harass”, as defined by regulation (50 CFR 17.3), includes “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering”. Any harassment caused by the development of lots surrounding the bald eagle nest at Southpointe or future eagle nest sites would be incidental to otherwise legal activities, and therefore eligible for consideration for an ITP. The removal of nearby trees, human presence, construction activity and noise from residential occupancy may disturb eagles in the immediate area and prevent them from nesting at the established Southpointe nest, thus resulting in a potential incidental taking.

The *Habitat Management Guidelines for the Bald Eagle in the Southeast Region* (USFWS, 1987) (Guidelines) recommend a minimum buffer (primary zone) of 750 feet outward from a nest tree, depending on the proximal and spatial configuration of the nest tree, feeding area and roost trees. The primary zone is the most critical area that must be maintained to promote acceptable conditions for eagles. Recommended year-round maintenance required in a primary zone includes: a) preventing residential, commercial or industrial development, tree cutting, logging, construction and mining and b) use of chemicals that are toxic to wildlife. Unauthorized human entry into the primary zone should be restricted during the nesting season.

The “secondary zone” is defined as a protected area extending outward from the boundary of the primary zone. The minimum recommended secondary zone is 750 feet outward from the primary zone. The Guidelines state that restrictions in the secondary zone are needed to

minimize disturbance that might compromise the integrity of the primary zone and to protect important areas outside the primary zone. Recommended year-round restricted activities within the secondary zone include: a) development of new commercial and industrial sites, b) construction of multi-story buildings and high density housing developments between the nest and the eagle's feeding area and c) use of chemicals toxic to wildlife. Other construction activities may take place within the secondary zone during the non-nesting season. Minor activities (e.g., fishing, camping, picnicking, hunting, recreational off-road vehicle use, hiking and bird-watching) are permitted year-round within the secondary zone. The layout of the secondary zone should be contiguous with foraging areas and provide protected access between the nest and foraging areas. The specific application of these management guidelines to this HCP will be addressed in section 3.3.1.

1.5 Bald and Golden Eagle Protection Act

Another federal regulation of potential concern to the Applicant is the Bald and Golden Eagle Protection Act (Act). The Act provides for the protection of bald and golden eagles (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest or egg, unless allowed by permit (16 U.S.C. 668(a), 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 688 (C), 50 CFR 22.3). While the Act covers direct impacts to the bird, nest and eggs, it does not include indirect impacts caused by disturbances to surrounding habitat. However, it is possible that if the nest tree is killed due to developmental damage, the Applicant could be in violation of the Act. If the developers of Lot 134 take care not to damage the existing nest tree,

the lot owner should not be at risk of violating the Act. Nonetheless, the Applicant would like assurances from the USFWS that, in conjunction with the ITP, the Applicant would not be held in violation of the Bald and Golden Eagle Protection Act for indirect impacts to the bald eagle due to habitat modification within the HCP Area for the life of this agreement.

2.0 AMERICAN BALD EAGLE BIOLOGICAL OVERVIEW

2.1 Site Characteristics and Vegetation

The 11,700 acres of property owned by the Applicant at Lake James is located in the western Piedmont of North Carolina, in the foothills adjacent to the Pisgah National Forest. Uplands in the Lake James area are dominated by the Dry-Mesic Oak-Hickory Forest and Dry Oak-Hickory Forest – Piedmont Upland Variant and Dry Pine Variant vegetative communities. The overstory in these upland areas includes white (*Pinus strobus*), shortleaf (*P. echinata*), pitch (*P. rigida*), table mountain (*P. pungens*) and Virginia pines (*P. virginiana*), sweet gum (*Liquidambar styraciflua*), white oak (*Quercus alba*) and post oak (*Quercus stellata*). Typical understory vegetation includes sourwood (*Oxydendrum arboreum*), red maple (*Acer rubrum*) and flowering dogwood (*Cornus florida*). Lower slopes and drains in the HCP and project area are forested with the Mesic Mixed Hardwood Forest - Piedmont Subtype vegetative community. The overstory consists of white pine, tulip poplar (*Liriodendron tulipifera*), northern red oak (*Quercus rubra*) and an occasional eastern hemlock (*Tsuga canadensis*). Typical understory species in this community type include red maple, flowering dogwood, mountain laurel (*Kalmia latifolia*), rosebay rhododendron (*Rhododendron maximum*) and American holly (*Ilex opaca*).

The majority of land included in this HCP is wooded and undeveloped. Six subdivisions have been developed by the Applicant around the lake. Additionally, 6 privately-owned out-

parcels occur around Lake James (see Figure 2). A private marina and the Lake James State Park are located on Lake James just off NC Highway 126. Eleven public boat ramps are located at various points along the lake. Rural residential areas, agricultural lands and woodlands occur east and south of Lake James and the Pisgah National Forest and Blue Ridge Mountains lie to the north and west. Major towns nearby include Marion, approximately 2 miles to the southwest and Morganton approximately 7 miles to the east.

2.2 Pertinent American Bald Eagle Biology

The bald eagle is a large, brown North American fish eagle in the hawk family (*Accipitridae*). It can range from 27-35 inches in length and weigh from 7 to 14 pounds. Its wingspan is almost 7 feet. The bald eagle's plumage is mostly dark brown and adults have a pure white head and tail. Both sexes look alike. Juveniles have dark brown heads and white mottling on the belly, wings and tail. Adult plumage is obtained in the fourth or fifth year.

The bald eagle is found throughout the lower 48 states of the United States, Alaska and Canada. It typically inhabits mature conifer forests close to clean bodies of water populated with fish, most often rivers, estuaries, coasts or large lakes. It feeds primarily on fish, when available, but may also eat other birds and mammals. It is sometimes a predator, catching surface fish and other prey in its talons, but more often a scavenger, eating carrion from the ground (e.g. dead fish washed up on shore).

Bald eagles usually first breed at age 4-5 years and may mate for life. Its nesting season in the southeast United States is usually from mid-December through June. A typical nest consists of large sticks lined with softer materials such as weeds, grasses and sod. A nest may be reused and added to for years and can become quite large, measuring 6 to 8 feet across and up to

12 feet deep. Nests are typically built in the tops of very tall conifers located near water. Usually, the nest trees are taller than any surrounding trees.

Eagles usually lay 2 eggs (1-3) and incubation is typically 34-38 days. The young fledge approximately 9 to 14 weeks after hatching. Eagles may live up to 30+ years in the wild and often return to within 100 miles of their birthplace to nest.

Potential eagle food sources on Lake James appear to be seasonally and spatially limited. Lake James is a cold water, deep reservoir (up to 130 feet deep) and most of the shoreline is steep with little to no exposed shoreline. As a result, large live fish are generally not available to foraging eagles. The steep, wooded shoreline provides poor habitat for eagles scavenging dead fish. Between February and March 2000, USFWS biologists observed an eagle carrying large fish to another adult sitting on the nest at Southpointe. Based on the direction from which the eagle flew, however, it is believed that the fish did not come from Lake James.

Eagles may also forage on American coots (*Fulica americana*) that inhabit some of the shallow coves at Lake James in the winter. Coots depart Lake James in March / April and no eagles have been seen beyond that time period. Eagles observed elsewhere along the Catawba River may indicate other potential foraging sites.

2.3 Impacts to the Bald Eagle

2.3.1 Historical Impacts and Current Status

As many as 75,000 pairs of nesting bald eagles may have lived in the lower 48 United States when the bird was adopted as our national symbol in 1782 (USFWS web page). It was a common nesting species along the coast of the Southeast as well as along major rivers and lakes. Its population diminished rapidly, however, due to habitat destruction, nest disturbance, shooting

and most notably, the contamination of its food source by the pesticide DDT. Nesting populations were reduced to less than 2% of their former numbers by the 1960s (NWF 1999). The bald eagle below the 40th parallel was listed as endangered in 1967 and received protection under the Endangered Species Act of 1973 (16 U.S.C. 1531-1543). Due to efforts to protect the bald eagle and its habitat, population reintroduction programs and the banning of DDT, its population has steadily increased. The bald eagle was reclassified as threatened throughout the continental United States in July 1995 (*Federal Register*, July 12, 1995). On July 6, 1999, the USFWS published a proposed notice to remove the bald eagle from the Endangered Species List (*Federal Register* 64,128:36454-36464) within a year.

In the early 1940s, the bald eagle was considered “not uncommon” in the coastal region of North Carolina (Murphy 1989). However, by 1962 only 1 bald eagle breeding site was documented as active (Murphy 1989). During the past 16 years, the bald eagle population has been gradually increasing in North Carolina, as shown in Table 1 (provided by D. Allen, North Carolina Wildlife Resources Commission, Nongame Section). As of 2000, 33 bald eagle nesting territories were documented in North Carolina (D. Allen, NCWRC, pers. comm.), 29 of which had breeding pairs of eagles that fledged chicks. In the western portion of the state, individual bald eagles were sighted at Lake Rhodhiss, Fontana Lake and Chatuge Lake during the past 6 years (C. McGrath, NCWRC, pers. comm.). An active bald eagle nest exists on the Yadkin River in Stanly County and in February and March 1999, 2 bald eagles were seen possibly building a nest on the Catawba River near Lake Wylie, Gaston and Mecklenburg Counties (M. Cantrell, USFWS, pers. comm.). While nesting activity was observed (e.g., stick carrying), no nest has been found yet at Lake Wylie. In March 2000, a new nest was discovered at Blewett Falls Lake, Anson County, with 2 adult bald eagles and chicks (Cantrell, USFWS, pers. comm.).

County	Year	Production by Year																
	Found	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
Hyde #1	84	2	3	1	0	2	0	2	0	1	0	0	*ND	ND	2	1	2	2
Washington #1	85			1	2	2		3	1	3	0	2	ND	2	2	1	2	3
Beaufort #1	88					2	2	2	1	1	0	0	1	ND	0	2	2	1
Chowan #1	90							2	2	1	2	2	1	0	0	0	ND	1
Chatham #1	91								0	0	2	1	0	0	1	1	1	1
Pasquotank #1	92									1	2	2	2	0	1	0	0	2
Chatham #2	94											0	3	0	3	3	1	1
Chowan #2	94											1	1	1	3	3	2	0
Granville #1	94											1	3	1	2	2	1	2
Guilford #1	94											1	1	2	2	1	2	Occ.
Tyrrell #1	95												1	1	1	0	ND	1
Stanly #1	95												0	0	1	3	0	1
Beaufort #2	96													1	0	1	2	2
Pitt #1	96													2	2	1	A	3
Pitt #2	96													2	0	A,ND	3	2
Pamlico #1	97														3	0	1	2
Pamlico#2	97														2	0	ND	1
Washington #2	97														1	0	ND	1
Stanly #2	97														0	0	0	0
Hyde #2	97														ND	ND	0	1
Continued on next page																		

ND = No data collected.

A = Active territory. The territory shows evidence of actual breeding such as incubation, eggs or young present, but no young apparently fledged.

Occ = Occupied territory. The territory shows the presence of one or more adults during the breeding season, but no nesting apparently occurred.

Table 1. Nesting Activity of Bald Eagles in North Carolina, 1984-2000*

2000 Summary: 33 occupied territories
32 active territories
29 successful nests
8 new nests in 2000

* Data provided by D. Allen, North Carolina Wildlife Resources Commission, Nongame Section

County	Year	Production by Year																
	Found	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00
Chatham #3	98															3	2	2
Chatham #4	98															2	2	A
Currituck #1	98															1	2	1
Currituck #2	98															2	2	0
Martin #1	98															0	0	0
Craven #1	98															1	2	2
Pitt #3	99																A	1
Burke #1	99																A	A
Wilson #1	99																1	1
Bertie #1	00																	A
Hyde #3	00																	1
Lenoir #1	00																	1
Anson #1	00																	1
Onslow #1	00																	2
Harnett #1	00																	3
Pamlico #3	00																	1
Tyrrell #2	00																	2
TOTAL		2	3	2	2	6	2	9	4	7	6	10	13	12	26	28	30	45

ND = No data collected.

A = Active territory. The territory shows evidence of actual breeding such as incubation, eggs or young present, but no young apparently fledged.

Occ = Occupied territory. The territory shows the presence of one or more adults during the breeding season, but no nesting apparently occurred.

Table 1 (cont.). Nesting Activity of Bald Eagles in North Carolina, 1984-2000*

2000 Summary: 33 occupied territories
32 active territories
29 successful nests
8 new nests in 2000

* Data provided by D. Allen, North Carolina Wildlife Resources Commission, Nongame Section

Presently, the Florida Fish and Wildlife Conservation Commission is conducting a monitoring study on fledgling survival of bald eagles from both rural and suburban areas in Florida. Their study monitors the migratory routes of these fledgling eagles using 5-year satellite transmitters. Several of these monitored eagles were tracked into North Carolina in 1998, 1999 and 2000, including parts of western North Carolina near Lake James. Other than these individual sightings and the possible nest building near Lake Wylie mentioned above, no breeding pairs or nesting areas were documented in North Carolina west of Stanly County prior to 1999.

In February of 1999, 2 bald eagles were discovered at the nest at Lake James, Burke County, North Carolina. No eggs or young were documented at that time, however, a pair of bald eagles were observed at this nest again from December 1999 through March 2000.

Observations made by USFWS biologists during February and March 2000 documented 3 bald eagles in the vicinity of the nest. One of the eagles was seen sitting on the nest throughout the day, suggesting the presence of eggs. In mid-March, an eagle was observed carrying large fish to another adult sitting on the nest. The third week in March 2000 was unseasonably cold and the eagles were no longer seen at the Southpointe nest afterwards. The nest is believed to have failed due to the cold weather. This nest represents the first documented case of nesting bald eagles in the western third of North Carolina.

2.3.2 Impacts Due to Habitat Modification at Lake James

With the exception of the Southpointe project site, all of the land included in this HCP is currently undeveloped. However, gradual development and timbering of this land over the next 20 years is expected to occur. The Applicant's development philosophy is to blend structures

along Lake James into communities that places strong emphasis on the preservation and enhancement of the existing natural environment (further details on this design philosophy can be found in Section 2.3.2.1). Nonetheless, the development of the Applicant's lands surrounding Lake James will result in the permanent alteration of natural and semi-natural habitats within the project area.

Primary impacts to the bald eagle include disturbances from typical residential construction activities such as removal of trees, use of bulldozers and heavy machinery and carpenters or other contractors using various tools. Human activity and construction related noise will be most prevalent during daylight hours. After housing construction is completed, disturbance impacts will be caused by the occupancy of the residential homes located on lots adjacent to the existing and future bald eagle nest trees. Activities typical of residential use such as lighting, noise from automobiles, mowing lawns, outside human activities, loud music, etc., can cause continued disturbance and may possibly prevent a pair of bald eagles from nesting in the area. Although it is generally thought that human development disturbs bald eagles and prevents them from nesting, some bald eagles have been known to adapt to residential disturbances and continue to nest or establish new nests near houses or other human developments (Millsap 1999). Thus it is possible that residential use of lots surrounding the existing nest and future nests on Lake James may not have the anticipated adverse impacts.

Recreational use of the lake, such as camping, use of motorized boats and use of jet skis in areas near the existing nest or mitigation sites will also result in potential noise disturbances. Since bald eagle nesting occurs in the winter in the Southeast, it is likely that camping and recreational use of the lake (typically occurring in the late spring and summer) will have little to no overlap with eagle nesting activity.

Another effect of human recreational use of Lake James is shoreline impact to eagle foraging habitat. Waves generated by recreational equipment such as motorized boats and jet skis can damage and erode shorelines. However, impacts on bald eagle foraging is anticipated to be minimal since most of the shoreline at Lake James is steep with little to no exposed shoreline. In order to control shoreline erosion, the Applicant, in conjunction with Duke Power Company, is presently investigating the use of shoreline management guidelines such as bioengineering (i.e., fabric matting and planting of native shrubby vegetation at Lake James).

Other than the existing bald eagle nest at Southpointe, no other bald eagle nests have been found within the HCP Area. Therefore, even if development did not occur within 1,500 feet of the existing nest, the remainder of the HCP Area could probably be developed without restrictions during the next 20 years. At some point, the existing bald eagle nest would be surrounded by development and less habitat would be available than would be the case if this HCP was approved.

2.3.2.1 Habitat Modification at the Southpointe Project Site

The Southpointe project site is the first portion of the HCP Area to be developed. The Applicant's development philosophy imposes the following development restrictions on Southpointe:

- 1) Lot owners must maintain a 65-foot, undeveloped setback along the shoreline of Lake James. Trees with a diameter greater than 6 inches within the 65-foot buffer cannot be cut.
- 2) "Mature trees" outside of the building envelope and lake buffer area within a lot may not be cut, damaged or removed without specific approval from the Architectural Control

Committee (ACC) for Southpointe. “Mature trees” are defined as evergreen trees with a diameter of 6 inches or greater, deciduous trees with a diameter of 3 inches or greater and dogwoods or other flowering trees with a diameter of 1.5 inches or greater. The retention of mature trees within a lot will be enforced by charging monetary fines for each tree that is cut or damaged.

- 3) Any shoreline structures such as docks and piers must be approved and permitted through Duke Power prior to development. The use of rip-rap, bulkheading or other shoreline stabilization methods may not be initiated without approval by Duke Power Company, the Burke County Planning Administrator and the ACC. Piers, docks, boatslips and seawalls must be located and constructed so as to minimize grading and clearing of vegetation at or near waterfront areas.
- 4) Development on any property below 1200 feet elevation must first be approved and permitted by Duke Power.

The existing nest tree on Lot 134 of the Southpointe development is a large white pine, approximately 90 feet in height and 31.875 inches in diameter at breast height (dbh). The tree is located approximately 90 feet from the drop-off to the lake shoreline. While the nest tree falls outside of the 65-foot undeveloped lake buffer area, it and other large trees immediately surrounding it are still protected by the Southpointe ACC guidelines as mature trees.

The ACC’s enforcement of mature tree retention within the 65-foot lake buffer will help minimize the impacts to bald eagle habitat at Southpointe and future nest sites at Lake James. Nonetheless, the development of a single-family home on Lot 134 and homes on adjacent lots may result in the loss of some adjacent habitat and cause harassment due to structural

development around the nest tree. Development plans for a proposed dwelling on Lot 134 are not currently available.

2.4 Impacts to Other Federally Listed Species

Several other federally listed species are known to occur in Burke and McDowell Counties, North Carolina (Table 2); however, no incidental take of other federally listed species is anticipated or requested.

3.0 AMERICAN BALD EAGLE CONSERVATION PLAN

3.1 Scope

The HCP Area consists of approximately 11,700 acres of land owned by the Applicant surrounding Lake James in Burke and McDowell Counties, North Carolina (see Figure 2). The lake and islands within it are owned by Duke Power Company and are not included in the HCP Area because they are not owned by the Applicant. The HCP Area is predominantly woodland at this time. Lands surrounding the HCP Area include the Lake James State Park (approximately 565 acres in size), wooded lands owned by Duke Power Company and a few privately owned parcels located within the Applicant's property. All of the land included in the HCP Area borders Lake James.

This HCP outlines the Applicant's mitigation and monitoring responsibilities in exchange for the potential incidental taking of the bald eagle nest tree at Southpointe, as well as any naturally occurring bald eagle nests found in the HCP Area. It also provides a long-term vehicle for management of bald eagle habitat at Lake James should the bird be de-listed. Specifically,

Table 2. Protected species that may occur in the Lake James area, Burke and McDowell Counties, North Carolina.

NAME		STATE STATUS	FEDERAL STATUS
ANIMALS			
<i>Haliaeetus leucocephalus</i>	American bald eagle	SE	T
<i>Clemmys muhlenbergii</i>	bog turtle	ST	T
PLANTS			
<i>Geum radiatum</i>	spreading avens	SE-SC	E
<i>Hexastylis naniflora</i>	dwarf-flowered heartleaf	ST	T
<i>Isotria medeoloides</i>	small whorled pogonia	SE	T
<i>Liatris helleri</i>	Heller's blazing star	ST-SC	T

KEY:

- E = Federal Endangered
- T = Federal Threatened
- SE = State Endangered
- ST = State Threatened
- SC = Species of Concern

the measurements and guidelines described in section 3.3 of this HCP shall be carried out for a duration of 50 years.

3.2 Alternatives

3.2.1 No Action

There are few practical alternatives to the proposed potential incidental take of the existing bald eagle nest in the HCP Area. In an attempt to avoid take, the lot owners could forgo development of lots surrounding the nest tree or develop it in a manner that would retain a 750-foot radius buffer around the nest tree. However, all lots in the culdesac surrounding the existing bald eagle nest were sold prior to the nest's documented existence. This alternative could have severe economic consequences for the Applicant and would not secure the long-term survival of the bald eagle at Lake James or promote its recovery in North Carolina.

Not allowing the lot owners their right to reasonable use of their property will not forgo the development of other areas in the HCP over the next 20 years. If this HCP is not approved and implemented, harassment of the bald eagle due to structural development within the HCP Area will still occur over time. Providing protected nesting habitat now for the bald eagle will minimize the potential harassment of eagles that choose to nest at those sites in the future.

3.2.2 Reduced Take Alternatives

3.2.2.1 Alternative 1

At present, the bald eagle is proposed for de-listing to candidate status. The Applicant could choose to postpone development of land surrounding the bald eagle nest until after the bald eagle is removed from the list of threatened species. The eagle would still be protected by the

Bald and Golden Eagle Protection Act, the Migratory Bird Treaty Act and the Lacey Act. Bald eagle habitat, however, is not protected by any of these laws. Thus, it is possible that the project site could be developed in the near future without a HCP or ITP. Regardless, this alternative would require the Applicant to require the lot owners within 750 feet of the Southpointe nest to postpone development of their lots for an undefined period of time (until the bald eagle is delisted). Again, this alternative could have severe economic consequences for the Applicant and would not secure the long-term survival of the bald eagle at Lake James or promote its recovery in North Carolina.

3.2.2.2 Alternative 2

The Applicant could apply for the potential incidental take of the existing bald eagle nest in Southpointe and mitigate for the loss through the construction of eagle nest platforms at locations on Lake James or on the Catawba River. Bald eagle nesting platforms in other projects/states, however, have had little success even when they were placed near existing nests (D. Allen, NCWRC, pers. comm.). Thus, the potential for mitigation success will be low while the Applicant will be required to spend substantial amounts of time and money to build, maintain and monitor nesting platforms. This alternative is clearly not in the best interest of either the bald eagle or the Applicant.

3.2.3 Proposed Plan – Preferred Alternative

The Applicant proposes to mitigate for the potential incidental take of the existing bald eagle nest in Southpointe by providing 6 undeveloped sites, each with a 300-foot radius primary buffer zone (approximately 6.5 acres of land each), around Lake James for bald eagle habitat conservation. Each of the 6 mitigation sites will contain at least 1 large, prominent pine tree

sufficient in size to accommodate a bald eagle nest. The Applicant will perform initial silvicultural work at each site, if necessary, and install basic nesting structures in the prominent pine tree at 2 of the mitigation sites. Rather than placing permanent conservation easements or deed restrictions upon the mitigation sites, adaptive management will be used. Adaptive management is discussed in further detail in section 3.5.

Although the preferred alternative may result in the potential incidental take of 1 bald eagle nest and an undetermined number of potential young at the Southpointe nest, it will ultimately provide better nesting alternatives for bald eagles in the Lake James area than would any of the other alternatives listed above. More specifically, the preferred alternative will create bald eagle nesting alternatives in areas that will contain minimal human disturbance. Additionally, it will provide a means to manage for bald eagle nesting habitat and monitor the bald eagle population in the Lake James area in the immediate future. This preferred alternative best meets the Applicant's reasonable use of property while protecting them from potential liability under Section 9 of the ESA and providing them with regulatory certainty with regards to development and timbering of their lands. The Applicant will commit to performing the mitigation and monitoring activities as prescribed in this HCP for a period extending through the life of this HCP (50 years).

3.3 On-Site Mitigation and Minimization Measures

3.3.1 On-Site Mitigation or Replacement

The Applicant will implement the following measures to enhance and maintain habitat for the bald eagle on Lake James.

- 1) Six mitigation sites have been selected for management of bald eagle habitat.

Management of these sites will include some initial silvicultural treatment (e.g., selective thinning, pruning, etc.), if necessary, to enhance to dominance of a potential nest tree.

These sites shall have relative isolation from human disturbance and vegetation that is not higher than the potential nest tree. The locations of these sites are flexible and may be repositioned by the Applicant according to the adaptive management measures described in Section 3.5.

- 2) The Applicant will provide an undeveloped, forested primary buffer zone with a radius of approximately 300 feet around each of the 6 mitigation sites (approximately 6.5 acres each). While the Bald Eagle Habitat Management Guidelines for the Southeast recommend a primary buffer zone of a 750-foot radius surrounding a bald eagle nest tree, these general guidelines may vary depending on site location and topographic variation. From January to March 2000, biologists from the USFWS in Asheville observed the bald eagles at the Southpointe nest. Throughout the observation period, the flush distance of the Southpointe eagles relative to human approach was approximately 300 feet. Based on the field observations at the Southpointe nest, the USFWS agreed to 300-foot radius primary buffers at each of the 6 mitigation sites. Any development that occurs outside the 300-foot primary buffer zones should have minimal impact on the mitigation sites due to the nature of the Applicant's development philosophy (see section 2.3.2.1), thus no secondary buffer zones are being proposed.

- 3) The Applicant will install a basic nesting structure in the prominent pine tree at 2 of the mitigation sites to encourage use by the returning eagles. The nesting structures will consist of cables and a base of sticks in order to simulate the start of a bald eagle nest.

- 4) If a bald eagle (or pair) builds a nest within a mitigation site, that site shall be protected from development and timbering disturbances for the life of this agreement or as long as the nest exists, whichever ends first.

3.3.1.1 Site Selection

A field review of potential bald eagle mitigation sites was conducted on 24 February 2000 at Lake James and on the Catawba River. The bald eagle typically nests in mature conifer forests close to clean bodies of water populated with fish, most often rivers, estuaries, coasts or large lakes. Their nests are typically built in the tops of very tall conifers located near water. Usually, the nest trees are taller than any surrounding trees. In order to ensure that the mitigation sites are adequate with respect to the bald eagle's habitat requirements, each site was selected based on the following requirements: The site must (a) be located adjacent to the lake, (b) have relative isolation from human disturbance, (c) have at least 1 pine tree large enough to support a bald eagle nest and (d) have vegetation (after any necessary silvicultural treatment) that is not higher than the potential nest tree.

Eleven potential mitigation sites that met these criteria were evaluated (Figure 5). Two of these sites were on the Linville arm of the lake, 2 were on or near the Paddy's Creek arm and 7 were on the Catawba River arm of Lake James. All sites had large white, shortleaf or pitch pines. Several of the potential sites border the main body of the lake, which could present problems with recreation related disturbances. However, these sites may be used as alternate sites if further investigation identifies significant problems with 1 or more of the preferred sites. The initial selections for preferred mitigation sites are sites #s 2, 4, 5, 6, 7 and 8 (Figures 6-11). The 300-foot radius primary buffer zones for each of these 6 sites are shown in figures 12-14. Big Island, the only island within Lake James that contains suitable bald eagle nesting habitat,

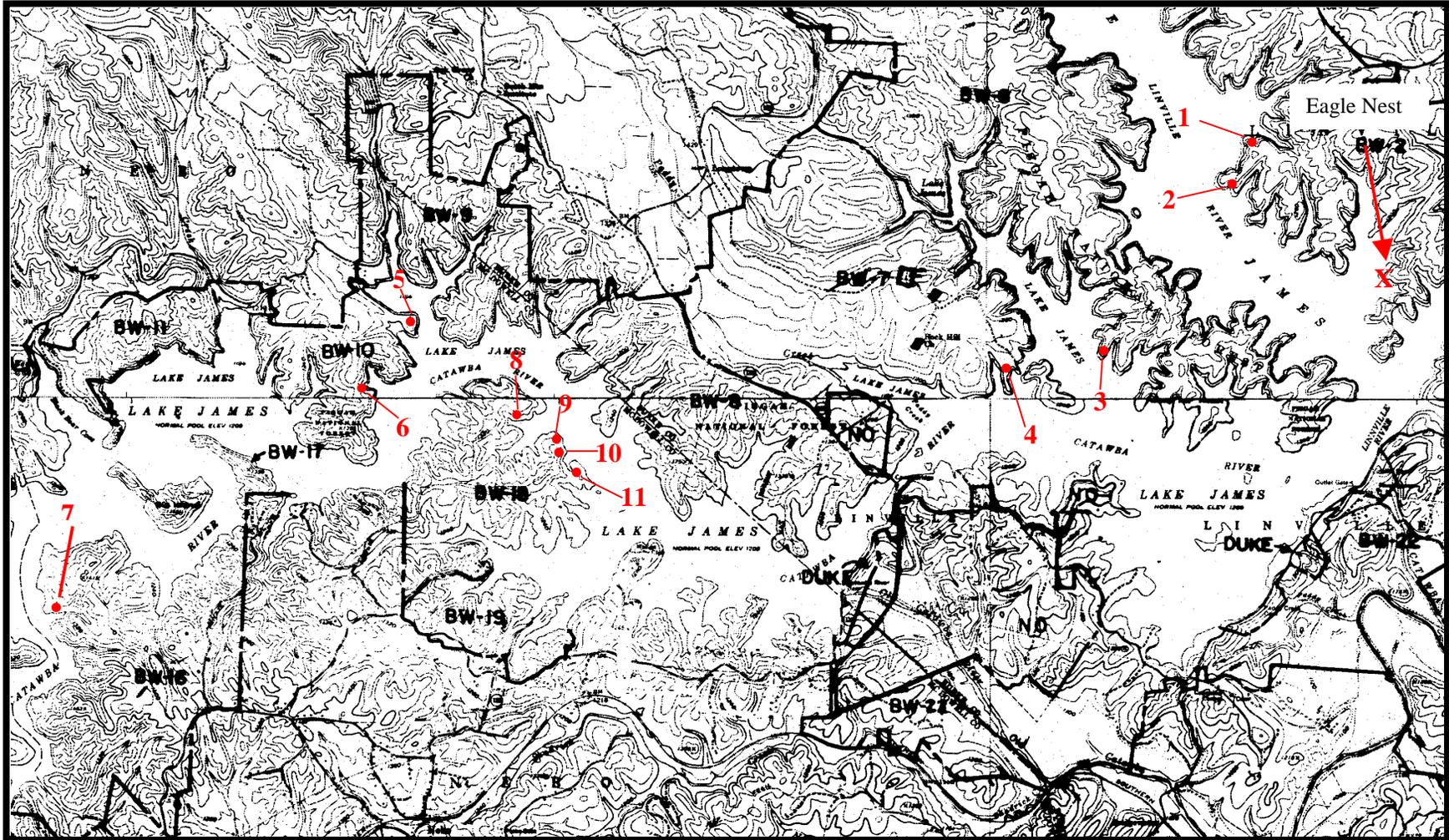


Figure 5. Location of mitigation site alternatives in the HCP area at Lake James, Burke and McDowell Counties, North Carolina.



Figure 6. Bald eagle mitigation site #2 at Lake James, Burke County, North Carolina.



Figure 7. Bald eagle mitigation site #4 at Lake James, Burke County, North Carolina.



Figure 8. Bald eagle mitigation site #5 at Lake James, McDowell County, North Carolina.

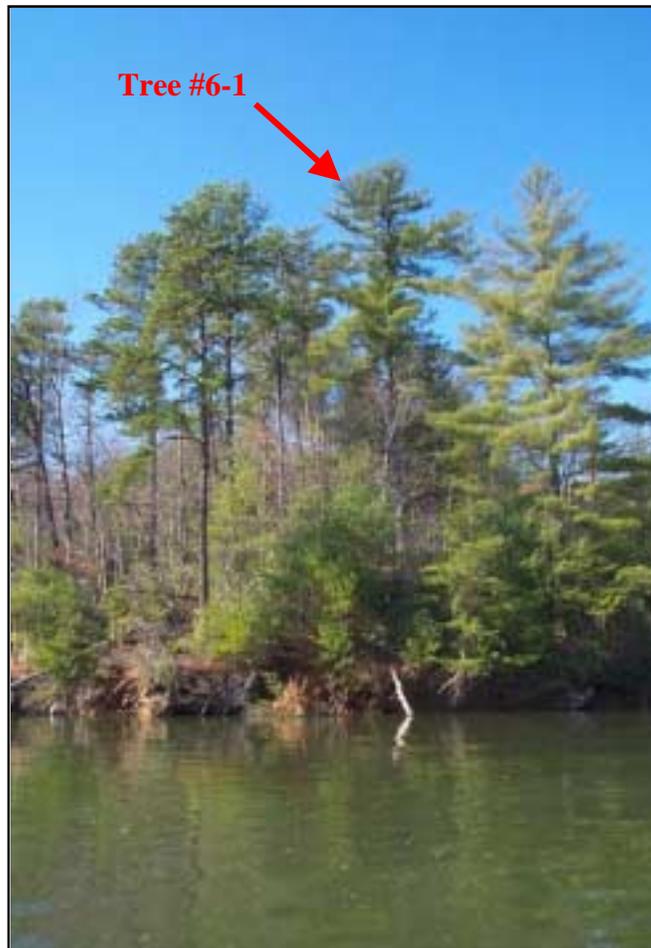


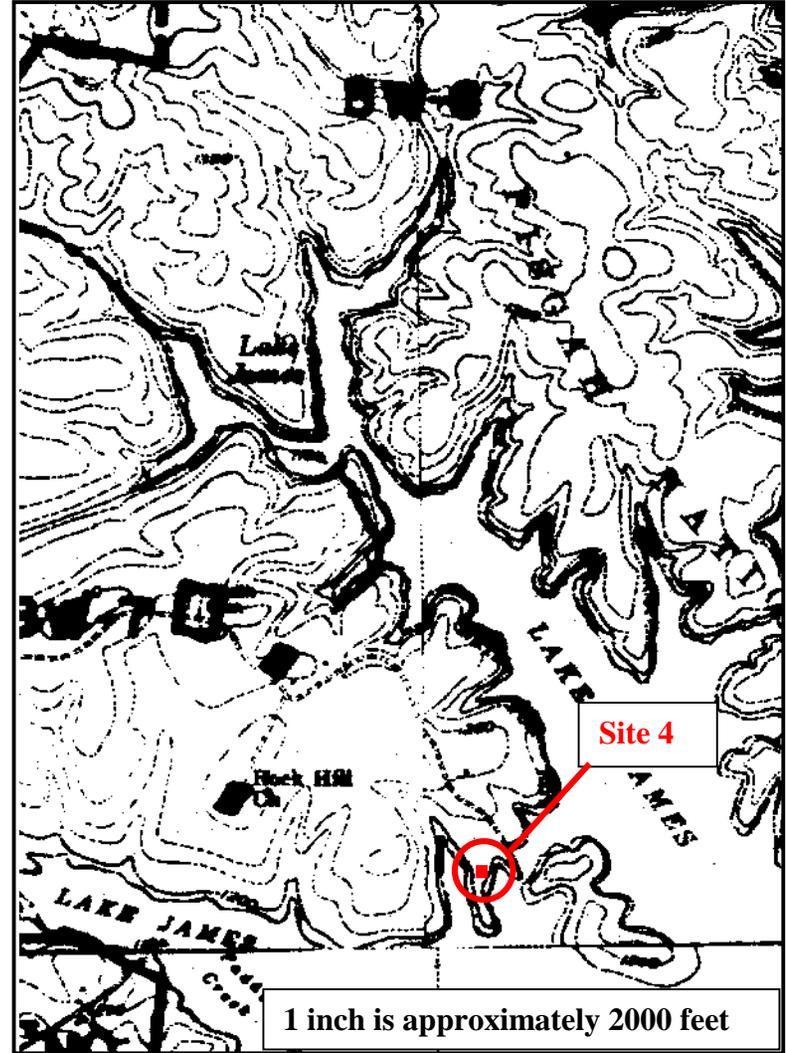
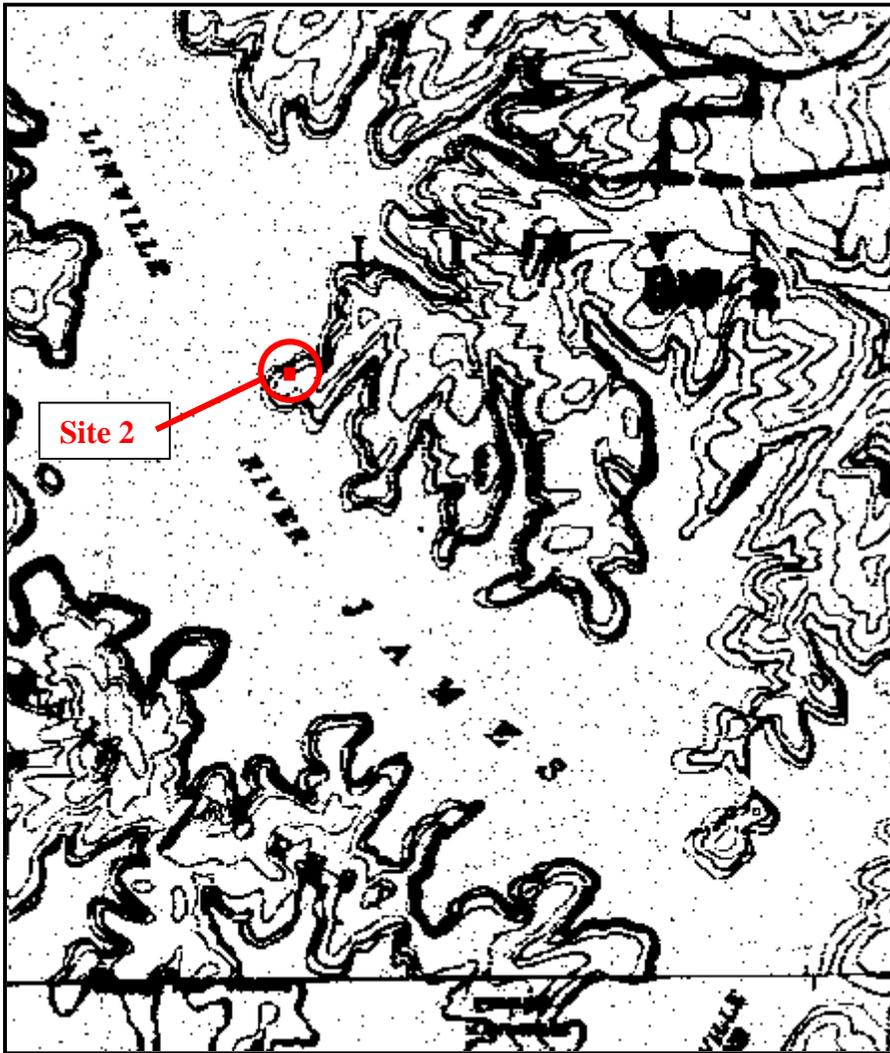
Figure 9. Bald eagle mitigation site #6 at Lake James, McDowell County, North Carolina.



Figure 10. Bald eagle mitigation site #7 at Lake James, McDowell County, North Carolina.



Figure 11. Bald eagle mitigation site #8 at Lake James, McDowell County, North Carolina.



Primary Zone

Figure 12. Recommended 300-foot radius primary management zones for mitigation sites 2 and 4 at Lake James, Burke and McDowell Counties, North Carolina.

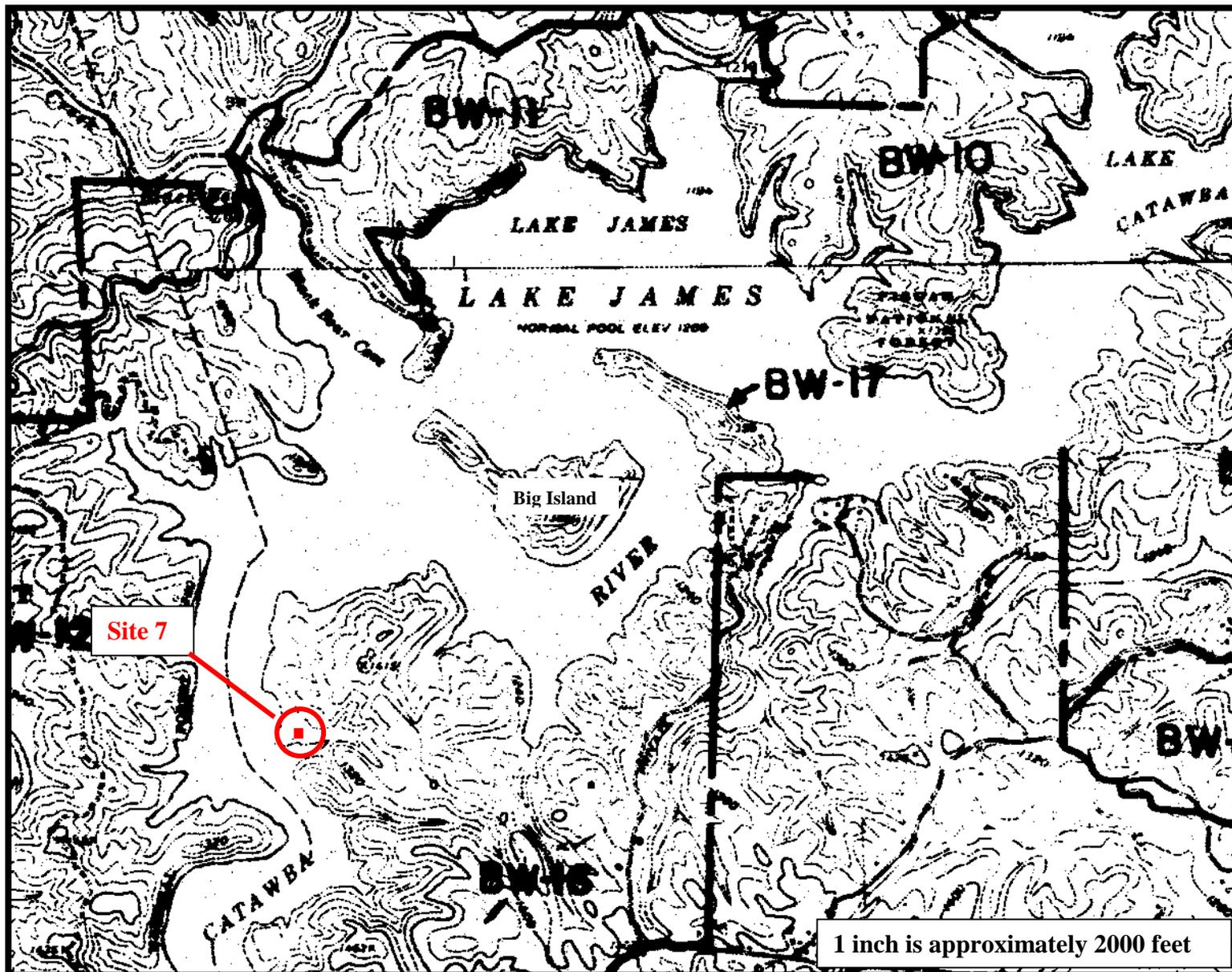


Figure 13. Recommended 300-foot radius primary management zone for bald eagle mitigation site 7 at Lake James, McDowell County, North Carolina.

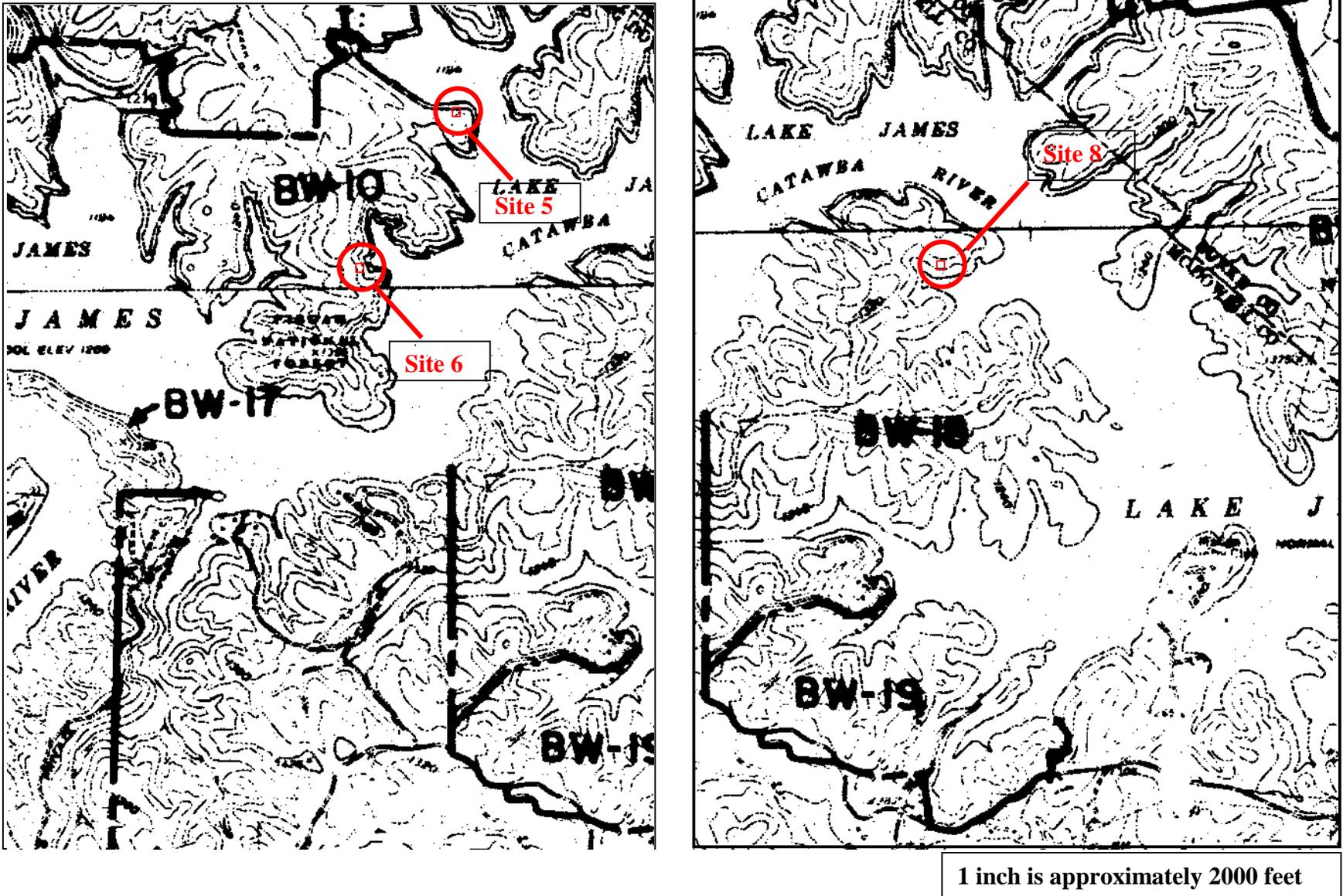


Figure 14. Recommended 300-foot radius primary management zones for mitigation sites 5, 6 and 8 at Lake James, McDowell County, North Carolina.

was initially considered for mitigation sites. However, the islands in the lake do not belong to Crescent Resources and, therefore, are not a part of the HCP Area. Duke Power, the owner of Lake James and the islands within it, does not wish for their properties to be included in the HCP Area.

Site #2 is on a small peninsula on the Linville Arm of the lake. Two bald eagles were observed perched in large pines at this site on 24 February 2000. There are 2 trees at site #2 that can potentially support a nest. Tree #2-1 is a large white pine that faces the water to the SE. One of the eagles seen on 24 February was perched in this tree. Tree 2-1 has a dbh of 23.6 inches and is approximately 75 feet tall. The overstory consists of white, pitch and shortleaf pines and tulip poplar. The midstory/understory is open and contains switch cane (*Arundinaria tecta*), American holly and mountain laurel. The BA surrounding tree #2-1 is 75 sq. ft. of pine and 65 sq. ft. of hardwood (including both the midstory and overstory). Tree #2-2 is a large pitch pine that faces the water to the NE. This tree has a dbh of 20.4 inches and is approximately 70 feet tall. The BA surrounding tree #2-2 is 95 sq. ft. of pine and 20 sq. ft. of hardwood (including both the midstory and overstory). Silvicultural treatment will be minimal at this site requiring only the pruning of a few limbs on trees around pine trees 2-1 and 2-2.

Site #4 is on a small peninsula near the Paddy's Creek arm of the lake. There are 2 trees at site #4 that can potentially support a nest. Tree #4-1 is a large pitch pine that faces the water to the SE. Tree 4-1 has a dbh of 20.5 inches and is approximately 45 feet tall. Tree #4-2 is a large pitch pine that is located about 10 feet south of tree #4-1. Tree #4-2 has a dbh of 20.8 inches (with a double trunk) and is approximately 45 feet tall. The overstory surrounding both trees at this site consists of white and Virginia pines and scarlet oak (*Quercus coccinea*). The understory is open and contains American holly, red maple and sweet gum. The BA surrounding

these 2 trees is 80 sq. ft. of pine and 0 sq. ft. of hardwood (including both the midstory and overstory). Timber at this site was recently thinned and would require no silvicultural treatment.

Site #5 is on a small peninsula on the Catawba arm of the lake. There is 1 tree at site #5 that can potentially support a nest. Tree #5-1 is a large white pine that faces the water to the east. Tree 5-1 has a dbh of 37.2 inches and is approximately 90 feet tall. The overstory consists of white, Virginia and shortleaf pines. The midstory/understory is open to light and contains mountain laurel, white pine regeneration, scarlet oak, rock chestnut oak (*Quercus prinus*) and an occasional eastern hemlock. The BA surrounding tree #5-1 is 50 sq. ft. of pine and 20 sq. ft. of hardwood (including both the midstory and overstory). No initial silvicultural treatment will be required at this site.

Site #6 is on a small peninsula on the Catawba arm of the lake. There is 1 tree at site #6 that can potentially support a nest. Tree #6-1 is a large white pine that faces the water to the east. The overstory consists of white and Virginia pines. The midstory/understory is moderately dense and contains mountain laurel and white pine regeneration. Ground data were not obtained (dbh, tree height, BA), however the site was noted to have a high pine BA (including both the midstory and overstory). Further data will be collected at a later date. Silvicultural treatment will be required at this site in order to thin the mid- and overstories.

Site #7 is on a small peninsula on the Catawba arm of the lake. There is 1 tree at site #7 that can potentially support a nest. Tree #7-1 is a large shortleaf pine that faces the water to the SSW. Tree 7-1 has a dbh of 25.5 inches and is approximately 66 feet tall. The overstory consists of shortleaf, white and Virginia pines and tulip poplar. The midstory/understory is light to moderately dense and contains American holly, southern red oak (*Quercus falcata*) and black alder (*Alnus serrulata*). The BA surrounding tree #7-1 is 20 sq. ft. of pine and 20 sq. ft. of

hardwood (including both the midstory and overstory). Minor silvicultural treatment will be required at this site in order to thin the mid and overstories.

Site #8 is on a small peninsula on the Catawba arm of the lake. There is 1 tree at site #8 that can potentially support a nest. Tree #8-1 is a large white pine that faces the water to the SSE. Tree 8-1 has a dbh of 32.9 inches and is approximately 85 feet tall. The overstory consists of Virginia pine, white oak and tulip poplar. The midstory/understory is moderately dense to dense and contains white pine regeneration, white oak and southern red oak. The BA surrounding tree #8-1 is 75 sq. ft. of pine and 55 sq. ft. of hardwood (including both the midstory and overstory). Silvicultural treatment will be required at this site in order to thin the mid and overstories.

The 2 basic nesting structures proposed in section 3.3.1 (item 3) will be installed in trees 2-1 (Site 2) and 5-1 (Site 5), as these sites seem to have the best potential for attracting the bald eagle. Site 2 is the closest site to the existing nest and a bald eagle was seen perched in tree 2-1 on 24 February 2000. Tree 5-1 (Site 5) is the largest of the mitigation site pine trees and the most similar in size to the existing nest tree.

3.3.2 Minimization of Impact to the Existing Nest at Southpointe

In order to minimize the impact of development to the existing bald eagle nest at Southpointe, development was restricted within a 750-foot primary management zone surrounding the existing nest tree during the nesting season. The USFWS notified landowners within the primary zone that development restrictions were in place through 15 June 2000 (end of the bald eagle nesting season). The USFWS met individually with these lot owners to discuss development restrictions and timing. An exception to these restrictions was made for 1 of the lot

owners, thereby allowing him to perform minor habitat modification in a manner that did not disturb the eagles. These habitat modification activities took place within the 750-foot primary zone, but were at least 500 feet from the nest tree. These activities were monitored closely by the USFWS in order to make sure there was no disturbance to the eagles (M. Cantrell, USFWS, pers. comm.). These restrictions would allow potential nestlings in the nest to fledge prior to developmental disturbances. After 15 June 2000, development will be allowed to occur around the nest tree. While the nest tree cannot be harmed or cut, disturbance around the tree will be permitted by the USFWS.

3.4 Monitoring and Reporting

Following are the monitoring and reporting responsibilities of the Applicant:

- 1) The Applicant will be responsible for monitoring the HCP Area for the occurrence of bald eagle nests for the length of this agreement (50 years). Monitoring will include (a) annual checking of the 6 mitigation sites for signs of bald eagle nesting activity and (b) an annual reconnaissance of the entire lakefront for signs of bald eagle nesting activity. If a bald eagle nest is detected, the Applicant will inform the USFWS and/or the N.C. Wildlife Resource Commission. If the annual checks reveal that 1 of the potential nest trees dies or becomes otherwise unusable during HCP period (leaving no suitable nest tree at the enhancement site), the Applicant shall inform the USFWS and the Applicant shall choose an alternate mitigation site within the HCP Area that meets the criteria specified in Section 3.5.
- 2) The Applicant will allow the USFWS or other properly permitted and qualified persons designated by that agency to enter Applicant-owned properties in the HCP Area upon

reasonable advanced notice (verbal or written request 48 hours in advance) for the purpose of monitoring the nest, mitigation sites and any bald eagles. Access to properties not owned by the Applicant must be obtained from the respective lot owners when needed.

- 3) The Applicant will submit an annual report by 31 January to the USFWS and State detailing the results of work achieved and observations made relative to implementation of the enhancement measures during the preceding year.

Monitoring and enhancement activities shall be considered complete at the end of the 50-year period.

3.5 Adaptive Management

As an alternative to using permanent easements, the new HCP proposes to adaptively manage the mitigation site locations based on 1) future bald eagle activity at Lake James and 2) future development plans of the Applicant. The adaptive management would work as follows: if a bald eagle nest occurs outside of the initially selected mitigation sites and the new nest is in a location acceptable to the Applicant, 1 of the designated mitigation sites (e.g., Site #2) may be replaced by the new eagle nest site. At that point, a 300-foot primary management zone will be placed around the new nest and that location will be designated as a mitigation site. The original mitigation site (e.g., Site #2) will then be released from protection and its 300-foot buffer removed. A mitigation site may also be moved and replaced if the Applicant chooses to develop or harvest timber on lands containing a mitigation site, as long as the site does not contain a bald eagle nest. This adaptive management will provide the Applicant with reasonable use of their

land while allowing the flexibility to protect bald eagle nests that may occur outside of the initially selected mitigation sites.

In order to ensure that relocated mitigation sites are adequate with respect to the bald eagle's habitat requirements, the new sites must meet the 4 requirements specified in section 3.3.1.1 of this document. Prior to re-locating a mitigation site, the Applicant must submit an informal amendment to the HCP to the USFWS, as described in Section 3.8 of this document.

3.6 Funding

(a) Mitigation / Monitoring Activities

The Applicant will provide the funding necessary to carry out the enhancement measures as described in this HCP or as modified in the approved HCP. The Applicant will place adequate funds in an escrow account or provide a bond sufficient to carry out the enhancement for a total of 5 years. This account must be verified by the USFWS.

The Applicant will also sign an Implementing Agreement that will legally bind them to performing the mitigation as prescribed in this HCP for a period extending through the life of this agreement. Development within the HCP Area will be allowed to proceed upon approval of the HCP and signing of the Implementing Agreement.

3.7 Unforeseen Circumstances

If the Applicant or USFWS become aware of any unforeseen circumstances that are not covered by this HCP, all parties involved must be notified and potential modifications to the HCP shall be jointly agreed upon.

3.8 Permit Amendments

Any formal amendment to this HCP will follow the standard permitting procedures, including written notification to the USFWS with supporting information and justification. Formal amendments include those changes that will significantly alter the requirements of the HCP or cause adverse affects to the bald eagle. Informal amendments to this HCP may occur upon written notification to the USFWS. Informal amendments include any minor changes that will not significantly alter the requirements of this HCP or produce an adverse effect on the bald eagle (e.g., moving mitigations sites using adaptive management guidelines). Both formal and informal amendments must be approved in advance by the USFWS.

4.0 SUMMARY

Two bald eagles were discovered at a nest in Southpointe development at Lake James in February 1999. These eagles returned to occupy the nest from December 1999 through March 2000. The owners of lots surrounding or containing the nest tree will be developing single-family homes in the near future. The Applicant owns a total of 11,700 acres of land adjacent to Lake James, all of which will be covered by this low effect HCP. Since the remainder of this land may be developed at some point in the future, the Applicant proposes that the ITP include any bald eagle nests found on the HCP Area during the next 50 years. Mitigation for the loss of the existing nest and possible future nests will occur at 6 sites within the HCP Area. Each of these 6 sites will be managed for bald eagle habitat through the use of silvicultural treatments. The Applicant will also install basic nesting structures on a prominent pine tree at 2 of the mitigation sites to encourage use by the returning eagles. The existing nest, potential nest trees at mitigation sites and any bald eagles that appear on the lake will be monitored for nesting

activity for the length of this HCP. The goal of this low effect HCP is to (1) provide bald eagle nesting habitat at 6 locations in order to compensate for the potential loss of habitat at 1 existing site and any future bald eagle nests that may occur within the HCP Area for a period of 50 years and (2) provide a long-term vehicle for management of bald eagle habitat at Lake James, should the bird be de-listed, while providing the Applicant with regulatory certainty with regards to development and timbering of their lands.

5.0 REFERENCES

- Gross, Nick. 1996. American Bald Eagle Habitat Conservation Plan, Osceola County, Florida. USFWS permit 816732. 50 pp., plus appendices.
- Hunter, P., N.A. Mahony, P.J. Ewins, D. Baird and M. Field. 1997. Artificial nesting platforms for bald eagles in Southern Ontario, Canada. *Journal of Raptor Research* 31 (4):321-326.
- Martin, Chester O., Wilma A. Mitchell and Donald A. Hammer. 1986. "Osprey Nest Platforms: Section 5.1.6, US Army Corps of Engineers Wildlife Resources Management Manual," Technical Report EL-86-21, US Army Engineer Waterways Experiment Station, Vicksburg, Miss. 31 pp.
- Millsap, Brian, Laura Philips, Tim Breen, Nancy Douglas and Jay Jones. 1999. Annual Performance Report, Comparative Fecundity and Survival of Bald Eagles Fledged from Suburban and Rural Natal Areas. Florida Fish and Wildlife Conservation Commission, Tallahassee, Fl. 17 pp.
- Millsap, Brian, Laura Philips, Tim Breen, Nancy Douglas and Jay Jones. 1999. "Comparative Fecundity and Survival of Bald Eagles Fledged from Suburban and Rural Natal Areas". Current tracking data posted on World Wide Web site <http://wld.fwc.state.fl.us/eagle/> and <http://wld.fwc.state.fl.us/eagle/2000frames.htm>.
- Murphy, Thomas M. 1989. Southeastern States Bald Eagle Recovery Plan. South Carolina Wildlife and Marine Resources Department, USFWS, Green Pond, South Carolina. 41 pp., plus appendices.
- National Wildlife Federation. 1999. "Keep the Wild Alive! – American Bald Eagle". World Wide Web site <http://www.nwf.org/nwf/wildalive/eagle>.

North Carolina Natural Heritage Program. 1999. Endangered and Threatened Species Element Lists for Burke and McDowell Counties. Lists obtained from NC NHP Database on World Wide Web site <http://www.ncsparks.net/nhp/element.html>.

Schafale, Michael and Alan Weakley. 1990. Classification of the Natural Communities of North Carolina, Third Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation. Pp 44-46 and 69-72.

USFWS. 1987. Habitat Management Guidelines for the Bald Eagle in the Southeast Region, Third Revision. 9 pp.

USFWS. 1999. "How Are Bald Eagles Protected?" found on World Wide Web site <http://www.fws.gov/r3pao/eagle/protect/laws.html>.

Vaughan, Ray. 1994. Endangered Species Act Handbook. Government Institutes, Inc. Maryland. Pp. 63-75.