



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Ecological Services
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January 30, 2007

Colonel Dionysios Anninos
U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510-1096

Attn: Jeanne Richardson
Regulatory Branch

Re: Rivers Bend East, Project No. 05-
v0125, Chesterfield County, Virginia

Dear Colonel Anninos:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers (Corps) permit application for the proposed Rivers Bend East housing development in Chesterfield County, Virginia. Your June 16, 2006, request for formal consultation was received on June 20, 2006. This document represents the Service's biological opinion on the effects of that action on the bald eagle (*Haliaeetus leucocephalus*), federally listed threatened. This biological opinion is submitted in accordance with Section 7 of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), the Bald and Golden Eagle Protection Act (BGEPA) of 1940 (16 U.S.C. 668-668d), and the Migratory Bird Treaty Act (MBTA) of 1918 (40 Stat. 775, 16 U.S.C. 703-712). Comments under the Fish and Wildlife Coordination Act of 1958 (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) follow the Biological Opinion.

This biological opinion is based on information provided by the Corps and the Applicant, meetings, electronic mail, telephone conversations, field investigations, and other sources of information. A complete administrative record of this consultation is on file in this office.

I. CONSULTATION HISTORY

The consultation history of this permit application is provided in Appendix A.

II. BIOLOGICAL OPINION

DESCRIPTION OF PROPOSED ACTION

Rivers Bend East LLC (Applicant) has applied to the Corps for a Department of the Army permit. Rivers Bend East proposes to construct a high density, 350-lot, single-family, residential development on a 355-acre parcel. The enclosures provide a project location map and a site map entitled, "Meadowville Landing at Rivers Bend," which is dated March 1, 2006. Wetland impacts are estimated at 0.7 acres and stream impacts are estimated at 1,000 linear feet. To minimize impacts to the eagle, the Applicant has voluntarily placed a variable-width buffer along 12,000 linear feet of shoreline. The Applicant will restrict home height to two stories for homes along the James River. The Applicant will place time of year restrictions on the external construction of homes on Lots 97-121, 298-299, and 355.

The "action area" is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The Service has determined that the action area for this project is the James River and adjacent land on the southern bank within 750 feet of the river from the Interstate 295 bridge downstream to 750 feet downstream of the project area boundary.

STATUS OF THE SPECIES RANGEWIDE

Species Description – The bald eagle is a large bird of prey with a wingspan of 6½ feet. It is found primarily near the coasts, rivers, and lakes of North America. The Chesapeake Bay bald eagle population was listed as endangered in 1978. The Chesapeake Bay recovery region encompasses Virginia, Delaware, Maryland, the eastern half of Pennsylvania, the panhandle of West Virginia, and the southern two-thirds of New Jersey. The Chesapeake Bay Recovery Team prepared a Recovery Plan that is pertinent to this opinion (USFWS 1990).

On August 11, 1995, the bald eagle population in the Chesapeake Bay was reclassified from endangered to threatened due to increasing numbers and range expansion (50 CFR Part 17 36000-36010). In the Chesapeake Bay Recovery Region, delisting requires (1) a nesting population of 300 to 400 pairs with an average productivity of 1.1 eaglets per active nest, sustained over 5 years and (2) permanent protection of sufficient nesting habitat to support 300 to 400 bald eagle pairs. Additionally, enough roosting habitat to accommodate population levels commensurate with increases throughout the Atlantic region resulting from increased productivity is required (USFWS 1990). Since 1992, the criteria of the number of breeding pairs and productivity per nest (300, 1.1, respectively) have been met. However, there has been little permanent protection of nesting habitat within the Chesapeake Bay region. Over 80% of the bald eagle nests in Virginia and Maryland are located on private and corporate lands.

The Service announced a nationwide "Intent to Delist" proposal in July 1999, followed by a notice for public comment in the Federal Register (Proposed Rule, Volume 64, No. 128; Tuesday, July 6, 1999). The Service re-opened the public comment period (Proposed Rule,

Volume 71, No. 32; Thursday February 16, 2006). The public comment period closed on June 19, 2006. No further action has been taken, and the species is still listed as of the date of this Biological Opinion.

Life History/Populations Dynamics – Unless otherwise noted, the information in this section was taken from VDGIF (1994) and Watts *et al.* (1994).

Bald eagles breed at four to five years of age, the same time they develop their white head and tail. Adult birds generally mate for life, establishing nesting territories that they return to each year. Nesting pairs may remain near their territory year-round, particularly toward the southern range of the species.

In addition to the resident breeding population, Virginia has three major bald eagle “concentration areas” where sub-adults and non-breeding adults congregate. These areas are used for foraging, perching, and roosting during one or more seasons of the year. The James River eagle concentration area runs from the Interstate 295 bridge to just downstream of Wards Creek. The Rappahannock River concentration area runs from Mount Creek, near Rappahannock Academy, to just north of the Route 360 bridge at Tappahannock. The Potomac River concentration area runs along the Virginia shoreline from Accotink Bay at Fort Belvoir to the Route 301 bridge. Immature and non-mated eagles range widely. Northern pairs also migrate south during the winter when rivers and lakes freeze. These birds tend to congregate in both summer and winter concentration areas, where feeding opportunities are good and human disturbance is minimal. Although eagles from Virginia account for a portion of the birds found in these concentration areas, many come from outside the state. Birds from both southeastern and northern states converge on these Virginia sites. Protection and management of these concentration areas may be more important to the continued recovery of the bald eagle in Virginia and throughout the East Coast than any other habitat.

In 1989, it was estimated that up to 1,000 eagles may use this concentration area over the course of a summer (M.A. Byrd, College of William and Mary, pers. comm. 1989). Between 1985 and 1993, eagle use of the concentration area increased dramatically from a high daily count of 47 in 1985 to 146 in 1993. In the early 1990s the peak numbers stabilized, suggesting that the area may have reached its carrying capacity for eagles (Watts and Whalen 1997). J. Cooper (Virginia Department of Game and Inland Fisheries [VDGIF], pers. comm., 2007) stated that the 2006 survey found 421 eagles on one day in June and 304 eagles on one day in July from the I-295 bridge to Burwell Bay / Mulberry Island. Cooper believes 1,000 individual eagles use the concentration area throughout the year, with a peak of 500 eagles at any one time. There is a numerical peak during the winter and another peak during the summer (J. Cooper, VDGIF, pers. comm., 2007). Watts and Whalen (1997) found that eagles were broadly distributed over the study area (between Interstate 295 Bridge to Burwell Bay / Mulberry Island). However, eagle density was not evenly distributed. The majority of the high density eagle observations (>4 eagles/survey/km) were within the Powell Creek area. The action area is a subset of the James River eagle concentration area and comprises ten percent of the total river miles of the concentration area. There are no more precise surveys or population estimates for the action

area.

During the day, eagles spend approximately 94% of their time perching (Gerrard *et al.* 1980, Watson *et al.* 1991). During the breeding season, 54% of that time is spent loafing, 23% scanning for food or eating, and 16% nesting (Watson *et al.* 1991). Eagles prefer high perches in trees that rise above the surrounding vegetation to provide a wide view that faces into the wind (Gerrard *et al.* 1980). In Maryland, eagles used shoreline that had more suitable perch trees, more forest cover, and fewer buildings than unused areas at all times of the year (Chandler *et al.* 1995). Chandler *et al.* (1995) found that distance from the water to the nearest suitable perch tree was shorter for areas used by bald eagles than areas that did not receive eagle use. In their study, eagles tended to perch within 164 feet of the shore. They recommended that shoreline trees greater than 7.9 inches in diameter at breast height and dead trees not be removed. Eagles often locate prey from a shoreline perch, and hunting forays from perches appear to be more successful than those initiated from flight (Jaffee 1980). Gerrard *et al.* (1980) found that after a successful fishing trip, eagles flew to a low perch to feed; these perches were less than 33 feet above the water and were well below the level of neighboring treetops. Clark (1992) observed that, within the Powell Creek concentration area on the James River, eagles perched in shoreline trees, flew out to pick up fish, and then returned to the perch to eat.

Bald eagles are opportunistic foragers, preying on fish, birds, and small mammals, as well as scavenging carrion. In the summer, fish are the primary component of the diet. Eagles in Virginia feed on shad, catfish, carp, menhaden, perch, and eels depending on their seasonal availability. In the fall and winter, eagles shift their foraging to waterfowl and supplement their diet to a greater extent with carrion. Because the main diet of bald eagles inhabiting the Chesapeake Bay and its tributaries during the summer is fish, the majority of birds are likely to be present along the shoreline at any given time (Wallin and Byrd 1984). Foraging is a key behavior that influences daily and seasonal activity budgets (Watson *et al.* 1991). Foraging patterns may be strongly influenced by tidal fluctuations. Several studies have found that eagles foraged much more than expected during low tides and less than expected at high tides (McGarigal *et al.* 1991, Watson *et al.* 1991). In King George County, Virginia, overall bald eagle foraging frequency was highest from 4:35 to 6:00 a.m., with a small decline from 6:00 to 10:00 a.m. At 10:00 a.m. foraging decreased further and then remained the same until 6:00 p.m. when it decreased rapidly (Jaffee 1980).

Watts and Whalen (1997) conducted boat and eagle observations from three pier locations within the Powell Creek eagle concentration area on the James River during the summer of 1997. They found that the timing of morning eagle activities was earlier on weekends/holidays than on weekdays and that afternoon eagle activity was later on weekends/holidays than on weekdays. When examining timing of their eagle observations across all days, morning eagle activity was highest at 6:00 a.m., considerably lower at 7:00 a.m., and then remained fairly steady with a slight downward trend until 11:30 a.m. After that time, eagle activity declined and remained low for the rest of the day. Foraging activities did not differ between weekdays and weekends/holidays either in the morning or afternoon. Peak eagle foraging began at dawn and continued until 8:30 a.m. After 8:30 a.m., eagle foraging activity declined and remained fairly stable until

11:00 a.m., when the amount of foraging decreased rapidly and remained low for the rest of the day. Between 6:00 and 8:30 a.m., 55% of morning foraging was documented. By 9:30 a.m., 70% of foraging had occurred. By 10:00 a.m., 79% of foraging had occurred, and 95% of all morning foraging activities had occurred by 11:00 a.m.

During the late afternoon/early evening, bald eagles fly inland to roost for the night. Most summer eagle roosts in the Chesapeake Bay region were found in greater than 100-acre forest blocks and were further from human development than random sites (Buehler *et al.* 1991b). Ninety-five percent of the roosts were within 2,362 feet of water and 50% were at least 2,231 feet from the nearest building (Buehler *et al.* 1991b). Trees used for roosting were larger in diameter, taller, and more accessible from the air than other available trees (Keister and Anthony 1983, Buehler *et al.* 1991b). Another important attribute of communal roosts is proximity to food sources (Keister and Anthony 1983). Because food for eagles occurs in the water, suitable habitat along rivers is important. Clark (1992) found that, within the Powell Creek concentration area, distance to the roost was the most important habitat factor that influenced eagle distribution along the shoreline. Buehler *et al.* (1991b) determined that on the Northern Chesapeake Bay “. . . fewer than 2% of the random trees met the minimum habitat values of roost trees, indicating that suitable roost trees are scarce relative to other trees. This relative scarcity suggests that if shoreline forest is removed indiscriminately, roost habitat could become limiting to the bald eagle population in the future.”

Status and Distribution – Historically, bald eagles were plentiful along major river systems and coastal areas in the United States and Canada. However, habitat loss associated with human settlement, and later, the use of persistent pesticides (such as DDT) for crop management, resulted in a dramatic decline in eagle populations. By the late 1960s, most breeding populations had been decimated by eggshell thinning and associated low fecundity. Since the nationwide ban on most persistent pesticides, bald eagle populations have experienced gradual recovery in both fecundity and total numbers.

In Virginia, the bald eagle breeding population has steadily increased from an estimated low of approximately 32 pairs in the late 1960s to approximately 485 known occupied territories in 2006 (J. Cooper, VDGIF, pers. comm. 2006), with approximately 35 pairs suspected to be nesting in the Piedmont and mountains, which is not surveyed regularly. Eagles numbers have risen steadily in the last two decades except for 2004, when numbers were down slightly from 2003, probably as a result of the impacts of Hurricane Isabel in September 2003, which damaged or destroyed 24% of the known nests from 2003 (Watts and Byrd 2004). Habitat loss now poses a greater threat to the bald eagle since its preferred habitat is where most of the human population growth is occurring in the United States.

During summer, the Chesapeake Bay supports migrant bald eagles from breeding populations in Florida and elsewhere in the southeast. While in the Bay, migrant eagles congregate in six concentration areas where they forage and utilize communal roosts. Peak counts of birds using the upper James River Concentration Area increased by a factor of five between 1982 and 1991

(Watts 1999). This level of increase is generally consistent with the growth in the populations believed to utilize the Bay during summer. Collectively, summer concentration areas within the Chesapeake Bay support a minimum of 1,500 birds. This composite number is based on peak bald eagle estimates within concentration areas during the mid-1990s from shoreline surveys. Peak counts include: James River (450), upper Rappahannock River (320), Upper Potomac River (500+), Pocomoke River (30), Nanticoke River (150), and the upper Chesapeake Bay including Aberdeen Proving Ground (100).

Threats to the Species – Although the bald eagle has rebounded over the past 25 to 30 years, current patterns of habitat loss in the Chesapeake Bay region are likely to eventually slow or halt this recovery. Shoreline development throughout the Chesapeake Bay is reducing available habitat and poses the single greatest threat to the eagle population. Nesting, roosting, and foraging habitat is being lost to shoreline development for housing, business, industry, recreational facilities, public utilities, and transportation. Conversion of woodlands to agricultural fields and timber harvesting is also resulting in the loss of eagle habitat. As the human population along these shoreline areas continues to grow, more undisturbed wooded habitat used by bald eagles will be permanently altered. In addition, water-based recreation in the Chesapeake Bay region has increased dramatically since the 1970s, resulting in disturbance to eagles in breeding, roosting, and foraging areas. Between 1990 and 1999, the population in Virginia increased 11% (Almanac 2001) and boat registration increased 7% during that time (P. Smith, VDGIF, pers. comm. 2006). The number of active watercraft registrations in Charles City County and Prince George County increased from 761 and 1,743 in 1997, to 817 and 1,850 in 2005, respectively, a total of 163 boat registrations (P. Smith, VDGIF, pers. comm. 2006).

Chronic human activity may result in disuse of areas by eagles. Buehler *et al.* (1991b) found that bald eagle use of shoreline was inversely related to building density (magnitude of effect was greatest in summer) and directly related the development set back distance. Clark (1992) concluded that “increased numbers of waterfront buildings and decreased amounts of shoreline woodland . . . negatively affect eagle shoreline use.” Clark (1992) found that eagle numbers decreased with increased numbers of buildings and amount of medium duty roads. Buehler *et al.* (1991a) found that in the northern Chesapeake Bay, 76% of shoreline areas may now be unsuitable for eagle use because of the presence of development within 1,640 feet of the shoreline. Up to an additional 10% of the shoreline was found to be unsuitable at times because of boat and pedestrian traffic. When shoreline is developed, it is irretrievably lost as eagle habitat (Buehler *et al.* 1991b). Human activity resulting in even temporary disruption of the bird's environment represents a major source of potential disturbance in many eagle populations (McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). Human activity in perching areas can interrupt feeding and cause birds to relocate (Fraser 1988, Stalmaster and Kaiser 1998). Watts and Whalen (1997) examined eagle density as a function of human presence and their results suggest that the presence of people had a negative effect on shoreline use by eagles. Watts and Whalen (1997) stated that “. . . it is clear that eagles avoid shoreline segments that regularly have people within 100 m [328 feet] of the water.” Buehler *et al.* (1991b) seldom observed eagles on the northern Chesapeake Bay within 1,640 feet of human activity and found that the birds rarely used developed areas or areas frequented by people on foot. During the summer, birds on the

northern Chesapeake Bay flush, on average, when humans get within 577 feet (Buehler *et al.* 1991b). Once birds are disturbed, they do not return to the area until several hours after the disturbance has occurred and only when the disturbance no longer persists (Stalmaster and Newman 1978, Stalmaster and Kaiser 1998).

Buehler *et al.* (1991b) stated, “We assume there is an upper limit to the number of eagles that can be supported by any stretch of undeveloped shoreline. Thus, as shoreline continues to be modified, we believe that the length of remaining undeveloped shoreline may become the limiting factor for some eagle populations, including the Chesapeake population.” Bald eagles in Virginia will maintain sustainable numbers only if there is adequate habitat for nesting, roosting, and foraging free from human disturbance. Management to preserve and protect these shoreline areas is essential to the continued growth and recovery of the Chesapeake Bay’s nesting, summering, and wintering bald eagle population.

Feeding behavior of bald eagles can be disrupted by the mere presence of humans (Stalmaster and Newman 1978, Stalmaster and Kaiser 1998). Early morning human activities are potentially the most disruptive to eagle foraging activity (McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). Disturbance may result in increased energy expenditures due to avoidance flights and decreased energy intake due to interference with feeding activity (Knight and Knight 1984, McGarigal *et al.* 1991, Stalmaster and Kaiser 1998). “The difference between the presence of a species when food is available versus the ability of that species to utilize the food is important. Whereas scavengers might be present in an area and appear to be unaffected by human activity, closer inspection would be required to determine whether the individuals are actually able to feed on that food” (Knight *et al.* 1991). Camp *et al.* (1997) found that wildlife responds to disturbance physiologically before responding behaviorally. They stated that heart rate increases and attention is diverted to human activities at a distance greater than what actually causes the wildlife to flush. Knight *et al.* (1991) examined winter bald eagle concentration areas in Washington and found that when anglers (not in boats) were present, fewer bald eagles were feeding and the eagles shifted their foraging from early morning to late afternoon. “. . . The presence of anglers disrupted feeding, which reduced energy intake and increased energy expenditure through avoidance flights. The ultimate effect of such disturbances on energy budgets and individual fitness is unknown” (Knight *et al.* 1991).

During particular stages of the nesting cycle, bald eagles are very sensitive to human disturbances around nest sites. Depending on the specific site and pair, even minor disturbance may cause a loss of feeding opportunity, loss of eggs or small chicks due to exposure, or complete abandonment. For breeding birds with chicks, loss of foraging time within the feeding territory may result in a decline in brood provisioning that may result in brood reduction or complete failure, depending on the severity of the energy shortage (Watts 2006). Construction activity has been shown to adversely impact bald eagles during the breeding season within the Chesapeake Bay (Therres *et al.* 1993). Human disturbance and activities associated with construction have been shown to cause nest abandonment, nest failure, and/or loss of foraging opportunities. Disturbance that occurs with enough frequency to keep adults off the nest and prevent them from regulating the temperature of eggs or small chicks or from providing enough

food to the brood to allow them to thrive, may cause complete abandonment of the site (Watts and Parsons Transportation Group Inc. of Virginia 2006).

Human activity in the surrounding uplands (within 100 m of the shoreline) has been shown to affect shoreline use by eagles. A comparison of shoreline use by eagles within both the James and Rappahannock River Bald Eagle Concentration Areas showed that just one person in the uplands had a negative influence on eagle use (Watts and Whalen 1997, Watts 1998a). Because bald eagles avoid contact with humans, consistent human activity may prevent eagles from using locations. For this reason, chronic (i.e., daily) human disturbance within potential foraging habitat would effectively render those areas unsuitable and prevent eagles from accessing prey populations. Over time, the loss of access to the prey resources associated with human-impacted shorelines reduces the capacity of the area to support eagles and the population would decline to a new equilibrium with the remaining landscape. For non-breeding birds, this loss would result in a reduction in use of both the shoreline and associated communal roosts as birds are forced to focus activities in other areas. This represents a loss of foraging habitat for migrant populations during the non-breeding period of their annual cycle. For breeding birds, this loss may result in nest failure and ultimately in territory abandonment, potentially leading to a reduction in the local breeding population.

For non-breeding birds, loss of foraging opportunity may have an impact on their daily energy budget. However, non-breeding birds are not tied to specific foraging areas and so, in most situations, should be able to compensate for losses by moving to alternate foraging locations as long as suitable alternate foraging areas exist. It is unlikely under normal circumstances that this disruption in foraging would reduce survivorship in non-breeding eagles. Chronic disturbance within primary foraging areas has also been shown to change roost use (Watts 2006). For example, construction of a fishing pier in Charles City County caused a shift in the distribution of foraging eagles and the use of communal roosts (Watts 1995). Shifts in both foraging and roosting areas could result in long-term population impacts if suitable alternate locations are lost due to development of shoreline areas around the Chesapeake Bay and its tributaries.

In addition to human activity, removal of shoreline vegetation results in disturbance to eagles and loss of habitat. Clark (1992) found that within the Powell Creek concentration area on the James River, eagle abundance increased with increases in woodland width (defined as maximum width of woodland in each sampling plot measured in meters inland from the shore), snags (defined as number of standing dead trees over five meters in height on the shore of each sampling plot), and woodland length (defined as maximum length of woodland in each sampling plot measured in meters along the shoreline), which are indicative of the amount of forest habitat available. These three variables indicated lack of development, presence of a vegetative screen from human activities, and the presence of perching habitat. Removal of tall, large diameter trees will decrease the amount of perching and roosting habitat available (Buehler *et al.* 1991b). Luukkonen *et al.* (1989) recommended maintaining shorelines with forested buffers at least 328 feet wide. In addition, the buffer should have a minimum of one tree per 820 feet of shoreline that is at least 15.7 inches in diameter at breast height, is accessible to eagles, and contains suitable perching limbs. They also recommended conserving trees greater than or equal to 23.6

inches in diameter at breast height.

It has been documented that eagles are more tolerant of sounds when the sources were partially or totally concealed from their view (*e.g.*, Stalmaster and Newman 1978, Wallin and Byrd 1984). Strips of vegetation that reduce line-of-sight will allow closer presence of humans and provide perching and roosting trees (Stalmaster and Newman 1978). Stalmaster (1980) recommended restricting land activities 820 feet from eagles perched in shoreline trees to protect 99% of the birds. He suggested that boundaries could be shortened to 246 to 328 feet in width if at least 164 feet of this zone contains dense, shielding vegetation.

Boating activity is likely to adversely impact eagles because it disrupts feeding activity and affects large areas in short periods of time (Knight and Knight 1984). Activities of recreational boaters are not predictable and thus are especially disruptive to birds (Wallin and Byrd 1984). McGarigal *et al.* (1991) found that eagles usually avoided an area within 656 to 2,952 feet of a single stationary experimental boat, with an average avoidance distance of 1,300 feet. During this time, eagles spent less time foraging and made fewer foraging attempts. McGarigal *et al.* (1991) recommend a 1,312 to 2,624 foot wide buffer around high-use foraging areas. Knight and Knight (1984) studied wintering eagles in Washington and found that a 1,148 foot wide buffer would protect 99% of birds perched in shoreline trees from a single canoe. However, eagles feeding on the ground were more sensitive to disturbance and required larger buffers. Knight and Knight (1984) found that a buffer of at least 1,476 feet would be required to protect 99% of eagles feeding on the ground from a single canoe.

Stalmaster and Kaiser (1998) studied wintering eagles on the Skagit River in Washington and found that eagles foraging on the ground were intolerant of humans within 300 m, especially in the morning and that the “. . . manner in which eagles responded to motorboats demonstrated that this activity was extremely disruptive to the population, even though only a small number of human were involved.” Luukkonen *et al.* (1989) studied non-breeding eagles in North Carolina and found “eagles and people tended to concentrate their activities on different portions of both lakes.” They estimated that boat densities of more than 0.5 boats/km² altered eagle distribution patterns. “Disturbance by boaters or others may negatively affect eagle energy budgets by causing unnecessary eagle movements and by displacing eagles from foraging areas” (Luukkonen *et al.* 1989). Wood and Collopy (1995) studied breeding and non-breeding eagles on three lakes in Florida. They found a significant negative relationship between boat numbers and eagle numbers on one of the lakes. The other two lakes did not show this relationship but did not receive as much boat traffic. Boat use was highest on weekends and eagle use was highest on weekdays. Moving boats seemed to be more disruptive than stationary boats. Boating activity reduced the number of eagles using the shoreline, increased the perching distance from the shoreline, and increased the flushing distance (mean flush distance was 174 feet).

Moving boats, as well as stationary boats, disrupt eagles. Buehler *et al.* (1991b) found that on the northern Chesapeake Bay, eagles were flushed by an approaching boat at an average distance of 575 feet. Byrd (CCB, pers. comm. 1989) has observed that when eagles are flushed by

recreational boats from perch sites along the James River, they usually fly inland and cease foraging for at least several hours. Watts and Whalen (1997) studied boats and eagles on the James River. They found that nearly 25% of eagles perched on the shoreline flushed when their survey boat was within 656 feet of the shoreline. When the boat was within 328 feet of the shoreline, nearly 80% of the birds flushed. During shoreline surveys, they found that nearly 50% of all boats observed were within 656 feet of the shoreline and more than 35% were within 328 feet. Jon boats, jet skis, and bass boats tended to be closer to the shoreline than sport boats (defined as v-hull type boats). “The general distribution of boats relative to the shoreline . . . in combination with the observed flushing probabilities . . . suggest [sic] that a large number of boats may directly influence shoreline use by eagles” (Watts and Whalen 1997). Their data analysis suggested that the presence of boats within 656 feet of the shoreline has a significant negative effect on shoreline use by bald eagles.

Watts and Whalen (1997) stated that “a significant negative correlation was found between number of boats and eagle observations” They documented a total of 80 human-caused bald eagle disturbance events; 74 caused by boats, 5 caused by people on shore, and 1 caused by a truck passing close to shore. Of the 80 disturbance events, 66 were documented during the morning and 14 during the afternoon. There was no difference in timing of morning disturbance between weekdays and weekends. Most boat/eagle interactions occurred outside of the main channel. The frequency of fishing boats (defined as bass boats or boats with similar profiles; the boat occupants were not necessarily fishing at the time of observation) stopping in the main body of the river was less than for other types of boats. The frequency of sport boats (defined as v-hull type boats) that stopped (65%) was more than that of other boat types. The location of stationary boats was documented; 62% were close to shore and 38% occurred in the river channel. “The majority of the boat stops lasted for 10 minutes or less, however, some boats anchored for several hours.” Overall, 74% of boats passed through, 13% of boats stopped, and 14% of boats used tributaries. Ninety percent of all boats entering tributaries were fishing-type boats. Nearly 75% of all boats observed outside of the channel were fishing-type boats. Forty-eight of 51 disturbances caused by boats outside of the channel resulted from eagles being flushed when a boat approached too close to the shoreline. The majority (51%) of boat/eagle interactions involved fishing boats. “The frequency of sport boats causing disturbances was less than the frequency of sport boats observed . . . because most activity by these boats was confined to the channel. The frequency of industrial boats involved in disturbances [16%], however, was greater than the frequency of industrial boats observed [5%] during surveys . . .” (Watts and Whalen 1997). All disturbances from industrial boats were caused by flushing of perched eagles when the boat wake struck the shore. Watts and Whalen (1997) concluded that when compared to other types of boats, fishing boats were most likely to leave the channel, pass into tributaries, and cause eagle disturbances. Fishing boats also frequented nearshore areas throughout the day, suggesting that a single boat may disturb eagles along a considerable amount of shoreline. “. . . Fishing boats are typically spaced out along the shoreline such that several boats may disturb long stretches of shoreline” (Watts and Whalen 1997). Fishing boats are most likely to be present during early morning hours when eagle foraging is at its peak (Stalmaster and Kaiser 1998).

Watts (1998b) studied boat use within the Rappahannock River Bald Eagle Concentration Area. He found that sections of river just upstream of Tappahannock and near Port Royal tended to have the greatest use. These distributions reflected the major population centers and water access points. From a sample of 199 boats, types included sport boats (41%), bass boats (33%), jon boats (13%), sail boats (6%), and jet skis (3%). Within both the James and Rappahannock River Bald Eagle Concentration Areas, boat type was associated with the likelihood of impacting foraging eagles along the shoreline (Watts and Whalen 1997, Watts 1998b). Recreational fishing boats tend to get onto the water earlier and disturb eagles during their primary foraging period compared to sport boats. These boats also tend to impact a greater portion of the shoreline compared to pleasure boats that tend to move more frequently along marked channels. Smaller craft such as bass boats and jet skis have more potential to impact eagles because they have shallow drafts and are more capable of moving closer along the shoreline and accessing shallow coves (Watts and Parsons Transportation Group Inc. of Virginia 2006).

Clark (1992) found that within the Powell Creek eagle concentration area on the James River, eagle abundance decreased with increased numbers of “boat landings.” Boat landings were defined as “. . . piers, boat ramps, and sites where boats are regularly landed or anchored on the shore” Wallin and Byrd (1984) had similar findings within the Caledon concentration area on the Potomac River. Clark (1992) recommended that additional boat landings within or adjacent to the Powell Creek concentration area be discouraged, including those on tributary creeks of the James River.

Chemical poisoning and shooting are now less of a threat than in past years, but continue to cause loss of eagles. The Service, U.S. Environmental Protection Agency, and the states monitor pesticide-related eagle mortalities; restrictions on some types of pesticides have resulted from eagle mortalities. With increased petrochemical transport activities in the Chesapeake Bay region, the potential exists for eagles to come into contact with oil resulting from spills. Eagle deaths occasionally occur throughout the species’ range due to collisions with power lines or electrocutions at power poles. In Virginia, power companies have voluntarily agreed to place “perch guards” on many power poles that have a high risk of eagle electrocution.

In reaching a decision of whether the proposed action is or is not likely to jeopardize the continued existence of the bald eagle, the Service must factor into its analysis, previous biological opinions and any incidental take permits issued pursuant to ESA Sections 7 and 10.

Since 1992, there have been 12 non-jeopardy biological opinions (one was on an eagle Habitat Conservation Plan) and incidental take permits anticipating take of the bald eagle in Virginia. These opinions have addressed anticipated take at bald eagle concentration areas, nests, or both. Take has been in the form of harm and harassment. Take within concentration areas has not been quantified and take associated with eagle nests has typically included the nesting pair and their eggs or eaglets. The following are brief descriptions of the biological opinions that have been completed for this species:

- March 13, 1992: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by Charles City County, Virginia to construct a public fishing pier, riprap, four fish attracting structures, scenic outlooks, nature trails, a boardwalk, picnic facilities, two parking lots, and temporary and permanent restroom facilities on the James River at the terminus of Route 618. In this biological opinion the Service also addressed a proposal by the Virginia Department of Transportation to widen Route 618 to allow improved access to the park. The project action area was defined as the 9.7 ha (24-acre) County Park, the adjacent uplands, and the section of the James River fronting on the County Park property. The project was expected to result in harm and harassment within the action area, but the number of eagles to be harmed or harassed was not estimated.
- June 30, 1992: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by Virginia Power Company to construct a 230 kilovolt, 43 km-long aerial transmission line across the James River in Chesterfield and Henrico Counties, Virginia. Approximately 15 km of the new line would be located on new right-of-way. The project action area was determined to be the Presquile National Wildlife Refuge, Curles Neck Farm, the Slash, and Jones Neck including the James River and associated shoreline from Presquile National Wildlife Refuge to Jones Neck. Incidental take in the form of harassment was not specified but harm from collisions with transmission lines was estimated to be one eagle every four years.
- June 30, 1993: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by five applicants to provide private recreational access to the James River and to protect eroding shorelines of the James River in Prince George County, Virginia. Applicants proposed to construct piers, boat ramps, boathouses, a bulkhead, and to place shoreline riprap. The project action area was defined as the James River between Powell and Wards Creeks and 500 m inland from the James River shoreline between these Creeks. Incidental take in the form of harassment and harm was anticipated but the amount of incidental take was not specified.
- September 18, 1996: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by a private citizen to provide private recreational access to the Potomac River and to protect eroding shorelines in King George County, Virginia. The applicant proposed to install a boat ramp, community pier, bulkhead, groins, concrete breakwaters, and six community mooring dolphins. The project action area was determined to include the area of direct project development, 460 m of the Potomac River shoreline, and tributaries potentially impacted by boaters originating from the proposed boat ramp. Incidental take was anticipated in the form of harassment through disturbance by watercraft in the Potomac River and its tributaries. The amount of take was not specified.
- May 12, 1997: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by a private applicant to construct a pier and

four, free-standing mooring piles on the southern branch of Owens Pond in Northumberland County, Virginia. The project action area was defined as the area within 240 m of an active bald eagle nest near the project location. The Service anticipated that incidental take in the form of harm and harassment would be no more than two bald eagles.

- June 23, 1998: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by Charles City County, Virginia to construct a public boat ramp on the James River. The project action area was defined as the mainstem James River and 750 linear feet landward of the shoreline on both sides of the River between the Benjamin Harrison Bridge and Tyler Creek. The Service anticipated that incidental take in the form of harm and harassment would be half of the bald eagles (45) utilizing the James River shoreline in the summer within the action area. Subsequent to issuance of the biological opinion but prior to the Corps' final action, Charles City County withdrew the permit application.
- December 18, 2000: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by Arlington County Home Owner's Association to construct a 22.9 m-long by 6.1 m-wide rock groin and place 344 cubic meters of sand along 40 linear m of Chesapeake Bay shoreline in Northampton County, Virginia. The project action area was defined as a 177 m section of beach from Old Plantation Creek to Elliott's Creek. It was located within 230 m of an active bald eagle nest. Incidental take was expected to be in the form of harassment of one pair of adult bald eagles and death to their eggs or unfledged young.
- April 11, 2001: The Service submitted a non-jeopardy biological opinion to the National Park Service for current operations at Jamestown Island, James City County, Virginia. Current operations included vehicular access and maintaining facilities on the Island such as trash pick-up, storm debris clean-up, snow and ice prevention and removal, leaf removal, and routine maintenance activities. The project action area was defined as the land, water, and airspace within 402 m (1,320 feet) of an active bald eagle nest located on the western tip of Jamestown Island. The project was expected to result in harassment of an adult pair of bald eagles, less than the level that would cause nest abandonment.
- May 18, 2001: The Service submitted a non-jeopardy biological opinion to the Norfolk District Corps of Engineers for the proposal by Cresswell and Company, L.L.C. to construct a 123-m pier with 14 boat slips along Gunston Cove on Mason Neck in Fairfax County, Virginia. The project action area was defined as the Mason Neck Bald Eagle Concentration Area and inland areas within 230 m of the shoreline of Gunston Cove. The project was expected to result in incidental take in the form of harm and harassment of eagles within three shoreline segments of the bald eagle concentration area.
- March 4, 2003: The Service submitted a non-jeopardy biological opinion to the National Park Service, Colonial National Historical Park to expand visitor facilities, enhance

research and educational activities, and further protect the archival materials at Colonial National Historical Park. The project action area was defined as a portion of the north and west park boundaries and the interpretive path around the remainder of the island. The action area was also defined as the land, water, and airspace within 402 m (1,320 feet) of three bald eagle nests. The project was expected to result in harassment or harm of one pair of bald eagles and their eaglets.

- September 14, 2006: The Service submitted a non-jeopardy biological opinion to the Federal Highway Administration, the Corps' Norfolk District, and the U.S. Coast Guard over the Route 624 bridge replacement over Cat Point Creek in Richmond County. The Service anticipated take associated with the Rappahannock eagle concentration area and with four nests. Foraging habitat within the entire action area (15 river km) may be reduced or eliminated due to increased boating activity resulting from the higher bridge. Impacts to the nests could be to the level of nest abandonment.

Recovery Goals and Accomplishments - The following provides information on current recovery goals and accomplishments towards delisting the species in the three recovery regions pertinent to this opinion. The reference for the following regional recovery information was the Federal Register, Volume 71, No. 32; Thursday, February 16, 2006.

Chesapeake Recovery Region

Delisting Goals: Sustain a nesting population of 300-400 pairs with average productivity of 1.1 young per nest over five years, and permanently protect enough habitat to support this nesting population and enough roosting and foraging habitat to support population levels commensurate with increases throughout the Atlantic Coastal area. Habitat protection will be accomplished through landowner cooperation, land easements and acquisition, incentive programs, and a continuing effort to pursue broad-based shoreline protection through State legislation and policy initiatives.

Achievements: The numeric recovery goals were met in 1992 when the number of nesting pairs exceeded 300 nesting pairs, and the population has continued to increase with over 900 nesting pairs reported in 2006. The average productivity of 1.1 young per nest over 5 years has been met, with the average between 1998 and 2003 exceeding 1.2 young per nest. However, there has been very little permanent protection of nesting or roosting habitat within the Chesapeake Bay region. Approximately 80% of the nest sites in the Chesapeake Bay area are on private lands. Habitat has been protected for approximately 200 nesting pairs. These protected lands include, but are not limited to, National Wildlife Refuges, State management areas, National Park Service lands, and conservation easements. Since 1990, occupied breeding areas for the bald eagle have more than doubled in this region, indicating that habitat has not been a limiting factor and that potential nesting habitat is still available for an increasing population of bald eagles, despite land development pressures.

Southeastern Recovery Region

Delisting Goals: The original recovery plan stated that delisting would be considered if the recovery trend continues for five years after reclassification goals are met, and the criteria for delisting would be developed when the species is reclassified from endangered to threatened. After reclassifying the species to threatened in 1995, the Southeastern States Bald Eagle Recovery Team reconvened to consider criteria for delisting. The current recommendations of the recovery team are to achieve 1,500 occupied breeding areas over the most recent three-year period, with average productivity of 0.9 young per occupied breeding area over the same three-year period, and have eight of eleven States meet their nesting and productivity goals.

Achievements: The delisting goal of 1,500 occupied breeding areas over the most recent three-year period has been met, with over 1,700 pairs counted in 2000. Production between 1997 and 2000 averaged 1.24 young per occupied territory, thus exceeding the 0.9 goal for the last surveyed consecutive three-year period. Individual population goals for all eleven States were first attained in 2000, and the population levels have continued to increase.

Northern Recovery Region

Delisting Goals: By the year 2000, establish 1,200 occupied breeding areas distributed over a minimum of 16 States with an average annual productivity of 1.0 young per occupied nest.

Achievements: The delisting goal was achieved in 1991, with 1,349 occupied breeding areas distributed over 20 States. Since 1991, average productivity was estimated to be greater than 1.0. In 2000, the Northern States Recovery Region had an estimated 2,559 occupied breeding areas. When the recovery plan was approved in 1983, nesting bald eagles were considered extirpated in Connecticut, Indiana, Kansas, Massachusetts, New Hampshire, Nebraska, and Utah, and there was no evidence that the species had ever nested in Vermont or Rhode Island. [Since publication of the Federal Register, bald eagles nested in Vermont in 2006 (Vermont Fish and Wildlife Department 2006)].

Currently, the Service is assessing the status of the eagle in each recovery region to determine the appropriateness of delisting.

ENVIRONMENTAL BASELINE

As defined in 50 CFR 402.02 “action” means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. The “action area” is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. The direct and indirect effects of the actions and activities resulting from the Federal action must be considered in conjunction with the effects of other past and present Federal, state, or private activities, as well as the cumulative effects of reasonably certain future state or private activities within the action area.

The Service has determined that the action area for this project is the James River and adjacent land on the southern bank within 750 feet of the river from the Interstate 295 bridge downstream to 750 feet downstream of the project area boundary.

The action area includes part of the James River bald eagle concentration area. Eagles use this stretch of the river in large numbers during both the summer and winter, preferring different sections during different seasons. It is the Service's position that the James River bald eagle concentration area is vitally important to the species' continued recovery in the eastern United States. The increased clearing of shoreline and upland vegetation and construction of houses, combined with increasing boating pressure within the concentration area, continue to degrade the area and decrease the amount of habitat available to eagles. At present, it is unknown at what point human disturbance may cause eagles to abandon the concentration area. The James River bald eagle concentration area is utilized by summering, post-breeding, migrating, and resident eagles from three recovery regions (Chesapeake Bay, Northern, and Southern) and is the largest known summer eagle concentration area in the eastern United States. There are no known bald eagle nests within the action area.

Status of the Species Within the Action Area – The James River bald eagle concentration area is the largest known eagle concentration area on the East Coast. It is utilized by bald eagles from the Northern, Southern, and Chesapeake Bay recovery regions throughout the year. Eagles using this area feed and perch along the James River during the day and roost in adjacent large, wooded tracts at night. The concentration area has at least four characteristics that draw large number of eagles: long stretches of undeveloped, forested shoreline; long stretches of undisturbed shoreline (lack of boat and other human activity); many large trees along the shoreline (for perching); and an abundant source of food (fish and waterfowl). Elimination of any of these characteristics could cause eagles to abandon the concentration area.

Birds seen during July and August are a mix of Chesapeake Bay birds, summering southern eagles, and northern eagles, which are beginning to migrate south for the winter (Wallin and Byrd 1984). Gerrard *et al.* (1980) found that immature eagles typically do not remain in any one place for more than one or two days during their first three years of life. As discussed, the action area is important for three bald eagle recovery regions. Marked birds from Florida, South Carolina, Tennessee, and New Jersey have been identified within the concentration area.

Factors Affecting Species Habitat Within the Action Area

The shoreline of the James River in the action area was originally mixed pine-hardwood forested uplands and emergent and forested wetlands. At various times during the past, sites have been cleared for plantations, agricultural use, forestry practices, subdivisions, and water-dependent activities. At present, the shoreline has a variable-width forested buffer ranging from 100 to over 750 feet. The inland area that is not forested is agricultural.

EFFECTS OF THE ACTION

Beneficial Effects – Beneficial effects are those effects that are wholly positive, without any adverse effects. As defined, there are no beneficial effects in the proposed action.

Direct Effects – There is little clearing of vegetation proposed within the action area. What was forested will generally remain so, and what was agricultural land will become a housing development. No vegetation within 100 feet of the river will be cleared. A vegetative buffer varies in width from 100 feet to the end of the action area at 750 feet. The decreased vegetative buffer and the increased level of activity associated with a housing development will degrade the habitat suitability for eagles. At the east end, where the vegetated buffer will be between 300 and 400 feet, there is a ridge approximately 100 feet from and parallel to the shore. Consequently, eagles perching on the shoreline will not be able to see potential impacts beyond the vegetated buffer. We anticipate a small level of take in this area. The Service anticipates a degradation of eagle concentration area habitat for a distance of 4,500 feet. Of that distance, we anticipate eagles will not be able to utilize the 100-foot buffer area, which runs for approximately 2,400 feet. Take would be anticipated in the form of harm that would decrease the use of the shoreline to foraging, perching, and roosting eagles.

Indirect Effects – Indirect effects are defined as those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). Increased human population in the area caused by the proposed action is likely to contribute to a small increase in boat traffic on the James River. The nearest public boat ramp, by road, is located approximately seven miles upstream, outside the eagle concentration area. The next closest public boat ramp is located at the Benjamin Harrison Bridge, approximately ten miles away. Increased use of this boat ramp may result in an adverse effect not rising to the level of take.

Interrelated and Interdependent Actions - As defined in 50 CFR 402.02, interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. No activities interrelated to and interdependent with the proposed action are known at this time.

Cumulative Effects - Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA.

It is possible that lot owners with river front lots may apply to the Corps for individual piers. It is also possible that the community association may attempt to provide a community boat ramp or community pier. Either of these actions would require a separate consultation, and impacts from either action are not considered cumulative effects in this consultation.

Human activity in the surrounding uplands, and especially within 100 m of the shoreline, is likely to cause disturbance to eagles. Use of fertilizers and herbicides will decrease water

quality in the James River, contributing to reduced food availability for eagles.

CONCLUSION

Since 1992, there have been 12 non-jeopardy biological opinions (one was on an eagle Habitat Conservation Plan) and incidental take statement anticipating take of the bald eagle in Virginia. These opinions have addressed anticipated take at bald eagle concentration areas, nests, or both. Take has been in the form of non-lethal harm and harassment.

The impacts of the increased human activity within the eagle concentration area's 750-foot buffer in conjunction with the direct, indirect, and cumulative effects of existing and reasonably foreseeable activities within the action area, will appreciably reduce bald eagle habitat within the eagle concentration area. The anticipated reduction of habitat is likely to cause a decline in bald eagle use of 4,500 feet of the concentration area, likely eliminating 2,400 feet of concentration area utilization on the south bank of the river. The Service believes the action is not likely to jeopardize the continued existence of the species. No critical habitat has been designated for this species; therefore, none will be affected.

III. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to Section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are nondiscretionary, and must be undertaken by the Corps and/or become binding conditions of any permit, license, grant, or contract issued by the Corps for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions, or (2) fails to require any applicant, licensee, grantee, or contractor to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, license, grant, or contract document, the protective coverage of Section 7(o)(2) may lapse. Monitoring is not required because the amount of take is small, and the percentage of individuals affected as compared to the three Recovery Units' total number of

eagles is small.

AMOUNT OR EXTENT OF TAKE

The Service anticipates that incidental take of the bald eagle will be difficult to detect because direct killing/immediate death of birds is not likely. Instead, loss of vigor and relocation to marginal habitat are expected. While these types of activities are likely to result in injury, they are not easily observed. Eagle habitat used for foraging, perching, and roosting throughout the action area will be affected by human activities. The incidental take is expected to be in the form of harm. The Service expects decreased eagle use of the shoreline within approximately 4,500 feet of the concentration area and the elimination of 2,400 feet of the concentration area for foraging, perching, and roosting. The Service expects approximately 100 eagles may be non-lethally harmed annually.

EFFECT OF THE TAKE

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species.

REASONABLE AND PRUDENT MEASURES

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize take of bald eagles:

- o Minimize impacts of eagles, including educational measures to inform residents of the potential for their activities to disturb foraging, perching, and roosting bald eagles.

TERMS AND CONDITIONS

To be exempt from the prohibitions of Section 9 of the ESA, the Corps must comply with the following terms and conditions, which implement the reasonable and prudent measure, described above and outline required reporting/monitoring requirements. These terms and conditions are nondiscretionary.

1. A educational display shall be placed and maintained in a common space informing residents of the large numbers of bald eagles utilizing the shoreline of the James River. This may be either a large, outdoor, weather-proof sign or an indoor display. The display shall describe the use of the area by eagles, educational information on the natural history of the bald eagle, and the importance of the James River eagle concentration area to bald eagle recovery. The proposed display's size, language, layout, and location must be submitted to and approved by the Service prior to December 31, 2007 and installed prior to the completion of the thirtieth house.

2. Land clearing and external house construction for Lots 97-121, 298-299, and 355 shall not occur from January 1 to February 28 of any year.
3. Land clearing and external house construction for Lots 97-121, 298-299, and 355 shall not occur before 9:00 a.m. from December 1 to 31 or May 1 to July 31 of any year.
4. Houses on Lots 97-121, 298-299, and 355 shall be restricted to no higher than two stories, not counting a basement or attic.
5. Care must be taken in handling any dead specimens of proposed or listed species that are found in the project area to preserve biological material in the best possible state. In conjunction with the preservation of any dead specimens, the finder has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not unnecessarily disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to the ESA. The reporting of dead specimens is required to enable the Service to determine if take is reached or exceeded and to ensure that the terms and conditions are appropriate and effective. Upon locating a dead specimen, notify the Service at the following address:

Virginia Field Office
U.S. Fish and Wildlife Service
6669 Short Lane
Gloucester, VA 23061
Phone (804) 693-6694
Fax (804) 693-9032

To the extent that this statement concludes that take of any threatened or endangered species of migratory bird will result from the agency action for which consultation is being made, the Service will not refer the incidental take of any such migratory bird for prosecution under the BGEPA or MBTA if such take is in compliance with the terms and conditions specified herein.

IV. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to further minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service has no conservation recommendations.

V. REINITIATION NOTICE

This concludes formal consultation on the actions outlined in the initiation request. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The Service recommends that the Corps avoid and minimize all wetland impacts. If unavoidable impacts remain, we generally recommend that scrub/shrub and forested wetland impacts be compensated by restoring former wetlands or by creating similar wetlands from low habitat value upland sites on a 2 to 1 areal basis. These general recommendations incorporate more than simple areal replacement because of the inherent risk in wetland restoration/creation and the time lag between the loss of existing habitat and the replacement of that habitat value. We also recommend that all stream impacts be compensated on a 2 to 1 linear footage basis and that all floodplain impacts be compensated on a 1 to 1 square footage basis.

Regarding stream compensation, the Service recommends stream restoration at a 2 to 1 linear footage basis or enhancement at a 5 to 1 linear footage basis. We also recommend that stream restoration plans include detailed success criteria approved by the Service. These general compensation recommendations incorporate more than simple areal replacement because of the inherent risk in habitat restoration/creation and the time lag between the loss of existing habitat and the replacement of that habitat value.

The Service appreciates this opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. If you have any questions, please contact Mr. Eric Davis of this office at (804) 693-6694, extension 104.

Sincerely,

Karen L. Mayne
Supervisor
Virginia Field Office

Enclosure

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Appendix A. Consultation History

10-22-04 Corps sends Service email notification of the project.

02-09-05 Townes Site Engineering (Consultant) sends Service a letter with a copy of the Joint Permit Application they sent the Corps.

02-15-05 Consultant sends revised map.

04-09-05 Corps sends Service interagency coordination form.

04-28-05 Service, Corps, Applicant, and Consultant meet at Corps office.

05-17-05 Service sends Corps a letter regarding the formal consultation process and possible terms and conditions.

05-31-05 Consultant sends Corps a letter, with a copy to the Service, responding to Service's possible terms and conditions.

07-27-05 Corps sends Consultant's proposed Biological Evaluation to the Service.

07-27-05 Consultant sends Service and Corps a courtesy copy of their request to the Virginia Marine Resources Commission of a permit for a community dock to be added to the existing project description.

08-03-05 Service, Corps, Applicant, and Consultant meet on site.

08-19-05 Service sends Corps a letter responding to issues raised during the site visit.

09-13-05 Corps sends Service draft Biological Evaluation.

11-10-05 Service, Corps, VDGIF, Applicant, and Consultant meet at Service's office. Applicant drops boat ramp from the project description.

11-18-05 Service sends Corps a letter responding to issues raised during the meeting.

06-16-06 Corps sends Service request for formal consultation.

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FWS, R5, ES, ES, Hadley, MA (Marty Miller)
FWS, R5, LE, Richmond, VA (Rick Perry)
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