

September 18, 1996

Colonel Robert H. Reardon, Jr.  
District Engineer  
Norfolk District, Corps of Engineers  
Fort Norfolk, 803 Front Street  
Norfolk, VA 23510-1096

Attn: Ms. Nancy Bland  
Regulatory Branch

Re: CENAO-CO-R94-1658-05, Robert E. Reid, Jr.,

King George County, Virginia

Dear Colonel Reardon:

The U.S. Fish and Wildlife Service has reviewed permit application 94-1658-05 for Mr. Robert E. Reid, Jr.'s proposed recreational access to the Potomac River and shoreline stabilization measures located in King George County, Virginia. Your January 5, 1996 request for formal consultation was received on January 12, 1996. Consultation was extended at the mutual agreement of the U.S. Army Corps of Engineers and the Service on June 5, 1996. This document represents the Service's biological opinion on the effects of that action on the bald eagle (Haliaeetus leucocephalus) in accordance with Section 7 of the Endangered Species Act of 1973, as amended, (16 U.S.C. 1531 et seq.). A complete administrative record of this consultation is on file in this office. This letter also provides the separate comments of the Service and the Department of the Interior pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), which are included following the biological opinion.

## I. CONSULTATION HISTORY

The consultation history regarding this project is provided in Appendix A.

## II. BIOLOGICAL OPINION

### DESCRIPTION OF PROPOSED ACTION

The project is located off State Route 642 on the Potomac River, a tributary of the Chesapeake Bay, in King George County, Virginia (Figure 1). It is approximately 6,000 feet west of a summer bald eagle concentration area known as the Caledon concentration area. The stated purpose of the project is to provide private recreational access to the Potomac River and to protect eroding shorelines. The permit applicant proposes to install a 48-foot by 5-foot community pier which will include 6 wet slips, 5 timber

mooring piles, an 8-foot by 5-foot L-head, and a floating pier component anchored off the channelward end of the L-head. A concrete boat ramp 12 feet wide and 48 feet long is proposed. The applicant also proposes 1,474 feet of bulkhead landward of mean-high water, which does not require authorization from the Corps. In association with the bulkhead, the applicant proposes to construct 35 groins, two concrete breakwaters (8-feet long, 3-feet high, and 5-feet wide), and 6 community mooring dolphins located 267 feet offshore. The boat ramp will impact 192 square feet of nonvegetated wetlands.

The proposed boat ramp, pier, mooring piles, and shoreline protection measures are planned for the 332-acre Eagle Bay subdivision. The boat ramp will be utilized by residents of Eagle Bay subdivision to access the Potomac River. Mr. Robert E. Reid, Jr. has also authorized use of the Eagle Bay boat ramp by personnel of the Virginia Department of Conservation and Recreation's Caledon State Natural Area to conduct bald eagle surveys and to enforce boating restrictions within the waters off Caledon. Eagle Bay subdivision will offer a maximum of 67 home sites, a private clubhouse, a swimming pool, tennis courts, and a golf course. Wetland impacts associated with construction of the infrastructure for Eagle Bay subdivision were authorized under Corps Nationwide Permit 26 (permit application 94-3037-50).

## RANGEWIDE STATUS OF THE SPECIES

### **Life History**

The bald eagle is a large bird of prey with a wing span of 6.5 feet. The bald eagle is found primarily near seacoasts, rivers, and lakes of North America. A scavenger, the bald eagle feeds primarily on fish and carrion. They tend to be a social species and non-breeding birds are often found in large numbers concentrated in areas where feeding opportunities are good and in communal night roosts.

Adult bald eagles have white heads and tails, but immature birds are mainly brown. Adult plumage develops slowly, with full plumage not in place until the birds reach four to five years of age. Adult birds mate for life, establishing nesting territories that they return to each year. Nesting pairs may remain near their territory year round, particularly towards the southern range of the species. Immature and non-mated eagles range widely, migrating north and south from their original nest sites. 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, locations where feeding opportunities are good and human disturbance is minimal.

During the day, eagles have been observed to spend approximately 94% of their time perching (Gerrard et al. 1980, Watson et al. 1991). During the breeding season on the Columbia River estuary, Watson et al. (1991) determined that 54% of that time is spent loafing, 23% foraging, and 16% nesting. 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). Birds 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 tree tops. Clark (1992) observed that, within a James River, Virginia concentration area, eagles perched in shoreline trees, flew out to pick

up fish, and then returned to the perch to eat.

The main diet of bald eagles in the Chesapeake Bay during the summer is fish (U.S. Fish and Wildlife Service 1982). Therefore, the majority of birds are likely to be present along shorelines 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 along tidal rivers may be strongly influenced by tidal fluctuations. Several studies have found that birds 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 (the Caledon concentration area) 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, then remained the same until 6:00 p.m. when it decreased rapidly (Jaffee 1980). Within a bald eagle concentration area on the James River in Virginia, the number of foraging eagles decreased as time of day increased (Clark 1992). Feeding behavior can be disrupted by the mere presence of humans (Stalmaster and Newman 1978). McGarigal et al. (1991) found that because eagles had to spend more time scanning for intruders as human activity in an area increased, feeding efficiency declined.

Non-mated and non-nesting eagles are often found in communal night roosts. 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 than other available trees (Keister and Anthony 1983, Buehler et al. 1991b). Another important attribute of communal roosts is their proximity to food sources (Keister and Anthony 1983). Because food for eagles occurs in the river, suitable habitat along the river is important. Clark (1992) found that, within a James River eagle concentration area in Virginia, distance to the roost was the most important habitat factor that influenced eagle distribution on the shore. 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 indiscriminantly, roost habitat could become limiting to the bald eagle population in the future."

### **Status and Threats to the Species Within its Range**

The widespread use of DDT was primarily responsible for the precipitous decline of the bald eagle in North America in the 1960s and the listing of the Southern bald eagle as an endangered species in 1967, (the remaining bald eagle populations in the coterminous United States were listed as endangered or threatened in 1978 and the "Southern" designation was dropped). This pesticide entered the food chain and accumulated in the fatty tissues of adult females and impaired calcium release that is necessary for egg shell formation, thus inducing thin eggs and reproductive failure. In 1963, a National Audubon Society survey reported only 417 active nests in the lower 48 states, with an average of 0.59 young produced per active nest. The bald eagle population in the lower 48 states has increased in number and expanded in range since then. This improvement is a direct result of the banning of DDT and other persistent organochlorines, habitat protection, and other recovery efforts. In 1994, approximately 4,450 occupied breeding areas were reported with an estimated average young per occupied territory of 1.17. After carefully assessing

the best scientific and commercial information available regarding past, present, and future threats faced by this species, the Service reclassified the bald eagle to threatened in the lower 48 states in July 1995.

Although environmental contaminants remain a threat to the bald eagle, habitat loss and degradation pose a significant threat since the eagle's preferred habitat, coasts and shorelines, is also where most of the human population growth is occurring in the United States. Human disturbance associated with habitat loss and degradation also remains a long-term threat to the bald eagle.

Human activity resulting in even temporary disruption of the eagle's environment represents a major source of potential disturbance (McGarigal et al. 1991). Eagles rarely used developed areas or areas frequented by people on foot and are seldom seen within 1,640 feet of human activity (Buehler et al. 1991a; Stalmaster and Newman 1978; Byrd 1989, pers. comm.; Knight and Knight 1984). Recreation in the Chesapeake Bay region has increased dramatically since the 1970s, resulting in disturbance to eagles in breeding and feeding areas. These activities have caused birds to be displaced from prime habitat and have resulted in reductions in reproductive activity and success (U.S. Fish and Wildlife Service 1982). Early morning human activities are potentially the most disruptive to eagle foraging activity (McGarigal et al. 1991). Chronic human disturbance may result in disuse of areas by eagles (U.S. Fish and Wildlife Service 1989).

Boating activity can adversely impact eagles because it disrupts feeding activity and affects large areas in short periods of time (Knight and Knight 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. In effect, a single stationary boat displaced eagles from 69 to 124 acres of available foraging habitat. Moving boats disrupt eagles as well as stationary boats. Buehler et al. (1991a) found that on the northern Chesapeake Bay, eagles were flushed by an approaching boat at an average distance of 575 feet. Within a James River, Virginia eagle concentration area, birds perched on the shoreline within 164 feet of the river are likely to be flushed (Bradshaw 1993, pers. comm.). Byrd (1989, pers. comm.) has observed that when eagles are flushed by a boat from perch sites along the James River, they usually fly inland and cease foraging for at least several hours. However, eagles may become accustomed to some human activities that occur on a regular basis and that are nondisruptive in nature. For example, within a James River, Virginia eagle concentration area, barges that maintain steady speeds and remain within the channel do not cause eagles to flush. Unlike commercial shipping, activities of recreational boaters are not predictable and thus are especially disruptive to birds (Wallin and Byrd 1984). Clark (1992) recommended that increased recreational boating use of a James River concentration area in Virginia be discouraged in order to preserve the area and prevent eventual abandonment by eagles.

The presence of personal watercraft, such as jet skis and other forms of small, fast-moving craft, are expected to be especially disruptive to bald eagles due to their unlimited access to shallow waters and shoreline, the noise produced, and to their erratic and unpredictable movements. Distance to disturbance and noise levels has been shown to be the most important aspects of human disturbance from aquatic vehicles (Grubb and King 1991, McGarigal et al. 1991, Knight and Knight 1984). Jet skis and other personal watercraft, unlike boats, are not limited to certain water depths, therefore, operators can and do travel adjacent and onto shorelines. Such activity can place personal watercraft in close proximity to bald eagles foraging along a shoreline. Bald eagles may habituate to normal activities (Stalmaster and Newman

1978). However, the very nature of a personal watercraft means that its movements will be erratic and unpredictable. Caledon State Natural Area personnel have observed bald eagles eliciting a disturbance response due to the presence of jet skis within approximately 500 to 600 feet of the Potomac River shoreline (Nina Cox, Caledon Chief Ranger 1996, pers. comm.). Personal watercraft will be especially disruptive to bald eagles perching and foraging along Virginia's shorelines as a result of a combination of disturbance factors, including their repetitive movements into and away from the shoreline and their access for drivers and the vehicles in very close proximity to the shoreline and actually onto beaches (Keith Cline, Nongame Biologist, Virginia Department of Game and Inland Fisheries 1996, pers. comm.).

Human activity resulting in even temporary disruption of the bald eagle's environment represents a major source of potential disturbance (McGarigal et al. 1991). Human disturbance in perching areas can interrupt feeding and cause birds to relocate (Fraser 1988). Eagles rarely used developed areas or areas frequented by people on foot and are seldom seen within 1,640 feet of human activity (Buehler et al. 1991a; Stalmaster and Newman 1978; Byrd 1989, pers. comm.; Knight and Knight 1984). During the summer, birds in the northern Chesapeake Bay flush, on average, when humans get within 577 feet (Buehler et al. 1991a). Once birds are disturbed (i.e. flushed), 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; Byrd 1989, pers. comm.). 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).

Clark (1992) found that increased numbers of waterfront buildings and decreased amounts of shoreline woodland negatively affected eagle shoreline use. Clark (1992) found that within a James River, Virginia concentration area woodland width, snags, and woodland length were correlated with eagle numbers. Eagle abundance increased with woodland width and length and number of snags, which are indicative of the amount of forest habitat available, lack of development, presence of a vegetation screen from human activities, and the presence of perching habitat. Chandler et al. (1995) found that bald eagles on the northern Chesapeake Bay used shoreline that had more suitable perch trees (height greater than or equal to 6.1 meters, diameter at breast height greater than or equal to 20 centimeters, and shoreline accessibility greater than or equal to 30 degrees), more forest cover, and fewer buildings than unused areas. Suitable perch tree availability, human development, and distance from water combine to affect eagle use of shoreline habitat. When shoreline is developed, it is irretrievably lost as eagle habitat (Buehler et al. 1991b). 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."

## **Recovery Goals and Accomplishments**

On July 12, 1995, the Service published its final decision in the Federal Register (Vol. 60, No. 133, Pp. 36000 to 36010) to reclassify the bald eagle from endangered to threatened in the lower 48 states. The bald eagle remains classified as threatened in Michigan, Minnesota, Wisconsin, Oregon, and Washington, where it was already listed as threatened. The Service determined that reclassification goals have been met for all five bald eagle populations. A threatened species is defined as any species that is likely to become

an endangered species within the foreseeable future throughout all or a significant portion of its range.

The bald eagle populations of the United States have been divided by the Service into five recovery groups: Pacific, Southwest, Northern, Southeast, and Chesapeake Bay. Birds from the Northern, Southeast, and Chesapeake Bay populations utilize roost sites and concentration areas in Virginia. The Southeast bald eagle population includes birds from Florida, Georgia, South Carolina, North Carolina, Kentucky, Tennessee, West Virginia west of the 80th meridian, Alabama, Mississippi, Arkansas, Louisiana, and Texas west to the 100th meridian (U.S. Fish and Wildlife Service 1984). In 1995, 1,129 occupied territories were reported with an average of 1.2 young per occupied territory. Reproductive success for the years 1990 to 1994 averaged 1.47 young per occupied territory. To reclassify this population as threatened, the recovery plan calls for documentation of 600 occupied breeding areas (i.e., the presence of a pair of eagles during the breeding season in an area which contains a nest) distributed in at least 9 of the 12 southeastern states. The recovery plan further states that reproductive success must be greater than 0.9 young per occupied nest, greater than 1.5 young per successful nest, and at least 50% of the nests successful in raising at least one young, based on a three-year average. Delisting may be considered if the recovery trend continues for five years after reclassification goals are met.

Twenty-four states are included in the Northern bald eagle recovery group. To delist the population, the recovery plan indicates that 1,200 occupied breeding areas must be distributed over at least 16 states, with an average annual productivity of at least one young per occupied nest. In 1995, there were 1,883 known occupied territories distributed over 21 states with an estimated 1.1 young per occupied territory. The Northern States Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service 1983) emphasizes long-term protection and management of eagle breeding and wintering areas.

Delisting goals for the Chesapeake Bay bald eagle population require sustaining 300 to 400 pairs with an average productivity of 1.1 young per active nest over five years with permanent protection of sufficient habitat to support this nesting population and enough roosting and foraging habitat to support population levels commensurate with increases throughout the Atlantic coast area (U.S. Fish and Wildlife Service 1990). A goal of management and recovery is to ensure preservation of selected, well-distributed habitats (U.S. Fish and Wildlife Service 1982). The recovery plan indicates the need to "Minimize disturbance and loss of bald eagles. Activities of man, either directly against the birds themselves, or indirectly through disturbance of areas frequented by bald eagles, continues to be a serious limiting factor to Chesapeake Bay Region eagles" (U.S. Fish and Wildlife Service 1982). In 1995, 394 occupied territories and 1.4 young per occupied territory were reported. However, limited progress has been made toward habitat protection.

#### 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 1,500 feet of Potomac River shoreline within the Eagle Bay subdivision, and the Potomac River shoreline within the entire length of the Caledon bald eagle concentration area, and 164 feet inland from those shorelines (please refer to Figure 1). The action area also includes tributaries of the Potomac River within the boundaries of the Caledon bald eagle concentration area. The action area was determined to include the area of direct project development as well as the Potomac River shoreline and tributaries potentially impacted by boaters originating from the Eagle Bay subdivision boat ramp.

Status of the Species - King George County, Virginia and Charles County, Maryland support a summer concentration of bald eagles along southern and northern shorelines of the Potomac River. The Virginia portion of this six-mile area extends west from approximately the mouth of Chotank Creek to approximately 1,500 feet west of Somerset Beach (please refer to Figure 1). One of only two summer bald eagle concentration areas in Virginia and one of the most significant summering areas on the Atlantic Coast, the Caledon area supports a mix of bald eagles from the Chesapeake Bay, Southeastern, and Northern recovery regions (Wallin and Byrd 1984). Sightings of marked bald eagles within the concentration area have included birds from Massachusetts, New York, Pennsylvania, South Carolina, and the Chesapeake Bay region (Cline 1983, pers. obs. in Wallin and Byrd 1984). Eagles using this area feed and perch along the Potomac River during the day and roost in adjacent tracts of large, wooded areas at night, but the majority do not nest in the vicinity. The reasons why eagles congregate in this area may include an abundant prey base and the relatively undeveloped nature of this shoreline. Three separate bald eagle communal roosts, areas where eagles congregate to perch at night, are found within this concentration area on the Caledon State Natural Area and the adjacent Cedar Grove Farm (Cline and Byrd 1994). Two of these roost sites are located adjacent to the Potomac River. Thirteen active breeding territories occur within or near the concentration area (Cline and Byrd 1994).

A shoreline bald eagle census of the Caledon concentration area was undertaken from March through November 1983 to estimate the number and seasonal variation of bald eagles present in the area and to determine which sections of shoreline are most heavily utilized (Wallin and Byrd 1984). The census route included the Caledon and Cedar Grove shoreline (10 kilometers), five kilometer (km) sections of shoreline to the east of Cedar Grove and to the west of Caledon, and a 20 km section of the Maryland shoreline. Over 1200 bald eagle sightings were recorded during 52 censuses. The highest number of eagles, averaging 39 per census, was observed in August, with adult birds reaching their peak in late July (averaging 18 adults per census) and immature birds reaching their peak in late August (averaging 29 immatures per census). The largest number of eagles (55) was sighted on August 24. For adults, immatures, and all eagles, the average number of birds observed was significantly higher within the 5 km block along Caledon's shoreline than in any of the other 5 km blocks. The average number of bald eagles observed within the 5 km block containing the project site was 3.3 birds.

The shoreline bald eagle census route established for the Wallin and Byrd (1984) study was monitored from May through October 1993 (Hardesty 1993). Along the Virginia shoreline, a total of 716 bald eagle sightings was recorded during 28 censuses. The greatest number of eagles was again observed during August when 46 birds were sighted per census. The average number of adult eagles observed per census (21 adults) peaked in July, and the average number of immature eagles observed per census (25

immatures) peaked in August. The largest number of eagles (65) was sighted on July 20. As in the previous survey, the average number of adult, immature, and all eagles was significantly higher within the 5 km census block along Caledon than in any of the other 5 km blocks. The average number of bald eagles observed within the 5 km block containing the project site was 3.4 birds.

The States of Virginia and Maryland established a no-boating zone for the 3.5 miles of shoreline within the Caledon State Natural Area boundaries extending 1000 feet offshore. This area is closed to boating, except for authorized commercial vessels, from April 15 to October 15, and has been in place since 1989. The Caledon bald eagle concentration area extends to the west approximately 2,000 feet and to the east approximately 2.5 miles beyond the boundaries of this no-boating zone. That portion of the Caledon bald eagle concentration area located to the east of Caledon State Natural Area lies within the Cedar Grove Farm. The property owner of Cedar Grove Farm is concerned for bald eagles utilizing the shoreline and minimizes their disturbance by preventing illegal trespass onto his private shoreline (Keith Cline, Nongame Biologist, Virginia Department of Game and Inland Fisheries 1996, pers. comm.). The 2,000 feet of shoreline within the concentration area west of Caledon State Natural Area is afforded no protection from habitat destruction or human disturbance.

Wallin and Byrd (1984) found that the presence of boat landings (i.e. piers, private boat ramps, or areas where boats were routinely left anchored just offshore) significantly affected the distribution of bald eagles within the study area. The total number of adult, immature, and all bald eagles observed within each 0.5 km census block was negatively correlated with the number of boat landings. Wallin and Byrd documented 11 boat landings within the 5 km census block containing the project site, 1 boat landing within the 5 km census block along the Caledon shoreline, 1 boat landing within the 5 km census block along the Cedar Grove shoreline, and 6 boat landings within the 5 km census block east of Cedar Grove. Forty-two boat landings were documented within the 20 km census route along Maryland's shoreline.

Numerous marinas and commercial/community boat ramps exist within the vicinity of the Caledon bald eagle concentration area. Aquia Marina and Willow Landing are facilities with wet and dry boat storage and boat ramps located on Aquia Creek, a tributary of the Potomac River, west of the eagle concentration area and the project site. Waugh Point Marina, located on Potomac Creek, a Potomac River tributary west of the eagle concentration area and the project site, is a private marina with 50 boat slips, dry boat storage on 50 acres, and a boat ramp. Fairview Beach Yacht Club, located on the Potomac River west of the concentration area and project site, provides 24 boat slips and a boat ramp for the Fairview Beach community. The boat ramp is open to the public for a ten dollar fee per use. Discussions with the operators of Fairview Beach Yacht Club and Waugh Point Marina indicate that many boat owners travel as far east as the U.S. Route 301 bridge, distances of approximately 15 and 20 miles, respectively. A boat ramp operated by Francis Martin and permitted by the Corps (permit number 93-0312-52) is located on the Potomac River between the project site and the eagle concentration area. The Martin boat ramp is utilized by 4 to 6 boaters. Other boating facilities include two boat ramps on Nanjemoy Creek, a Potomac River tributary within the Maryland portion of the Caledon concentration area, and Goose Bay and Aquia Land, marinas located in Maryland between the concentration area and the U.S. Route 301 bridge.

Effects of the Action - The Eagle Bay subdivision site is located over one mile from the western edge of

the Caledon bald eagle concentration area. Therefore, infrastructure development for this subdivision (permit application 94-3037-50) was determined to not likely adversely effect the bald eagle. Construction activities associated with the shoreline stabilization measures for the pending permit application (number 94-1658-05) will also not likely adversely effect the bald eagle given the buffering distance between the project site and the concentration area and the limited existence of available perching habitat along the shoreline of the project site. While the proposed pier, mooring piles, and boat ramp will not result in direct impacts, such as habitat loss, to bald eagles, indirect effects will occur as a result of increased human activity on the Potomac River in the vicinity of the Caledon concentration area.

The types of boats likely to utilize the proposed Eagle Bay subdivision facilities are motorized pleasure and fishing boats less than 25 feet in length, sailboats less than 30 feet in length, and non-motorized boats less than 20 feet in length. The use of personal watercraft, such as jet skis, is also likely. Based on studies done in other areas, the Virginia Department of Conservation and Recreation, Division of Planning and Recreation Resources has indicated that most boaters usually stay within five miles of the point at which they launch their boats (Commission on Outdoor Recreation 1982). Most of the non-sail boats of the size that would be launched from the proposed facilities will have drafts of two feet or less, well within a range that could bring the boats close to the shoreline. Sixty-seven homeowners and their guests will have access to the Eagle Bay subdivision boat ramp. The permit application indicates that a total of 12 boats will, potentially, be moored at the proposed mooring and pier facilities. The construction of a boat ramp, pier, and mooring piles can result in an increase in boat traffic greater than anticipated from the number of homesites in the Eagle Bay subdivision because guests, neighbors, and relatives are likely to use the facilities as well. It is not unlikely that during the summer and on holidays (e.g., Fourth of July, Memorial Day) more than the one or two boats owned by each homeowner could utilize the proposed boat ramp.

Mr. Robert E. Reid, Jr. has also authorized use of the Eagle Bay boat ramp by personnel of the Virginia Department of Conservation and Recreation's Caledon State Natural Area to conduct bald eagle surveys and to enforce boating restrictions within the waters off Caledon. Bald eagle surveys are conducted by Caledon personnel once per week from May 1 through September 30 of each year (Nina Cox, Caledon Chief Ranger, 1996 pers. comm.). Generally, these surveys involve traveling by boat within 100 to 200 feet of the Virginia shoreline of the Potomac River at a slow rate of speed to document the occurrence of bald eagles. Caledon personnel will, in addition to the survey trips, periodically conduct surveillance of boaters in the Potomac River to ensure compliance with the no-boating zone. The surveillance boating trips are especially useful during periods of peak boating activity such as holidays and weekends.

Aquatic vehicle traffic (sail boats, fishing boats, ski-boats, survey and law enforcement boats, and personal watercraft) resulting from the proposed project will be disruptive to bald eagles foraging along the Potomac River shoreline and perching and roosting within 164 feet of the shoreline, within the Caledon concentration area. As an aquatic vehicle leaves the Eagle Bay subdivision and travels east to the eagle concentration area, birds will be flushed and likely will fly inland. During days when several aquatic vehicles leave and return to the proposed facilities and travel up and down the Potomac River, there is a high probability that eagles will be flushed multiple times, forcing them to fly inland for prolonged periods. This results in increased time spent scanning for boats while trying to forage, yielding a decrease in food intake and/or inability to forage after being forced inland from numerous disruptions. Reduced foraging by nesting eagles

within the action area could seriously impact the survival of their young. It should be noted that because of the large number of eagles within the concentration area, even one boat or personal watercraft may flush a large number of birds, resulting in a significant disruption of foraging for several hours. The majority of use of the proposed facilities is likely to occur between April and November, coinciding with summer eagle use of the area.

Because the use of aquatic vehicles is unpredictable and eagle numbers vary on a given shoreline segment, a total acreage of disturbance cannot be determined. However, several possible scenarios are likely. For example, when conducting bald eagle counts within a James River concentration area during the summer, Virginia Department of Game and Inland Fisheries personnel run a single boat along the shoreline down one side of the James River and up the other. VDGIF has flushed more than 150 individual eagles within a few hours (Bradshaw 1993, pers. comm.). This activity is not that different than that of an angler moving from one fishing location to another or an individual utilizing a personal watercraft. During one day the recreator is likely to move their vehicle multiple times, flushing eagles during each move and, once the boat or personal watercraft is stationary, eagles will avoid the area around the boat or personal watercraft, resulting in additional disturbance.

The no-boating zone along the 3.5 miles of Caledon State Natural Area shoreline serves to protect a portion of the bald eagle concentration area from disturbance. However, the protection is not complete as boaters often ignore the marked buoys and enter the no-boating zone (Nina Cox, Caledon Chief Ranger 1996, pers. comm.). The ability of Maryland to patrol this area of the Potomac River is limited, as in all states, by staffing and budget constraints. As boating activity on the Potomac River increases within the vicinity of and in the Caledon concentration area, it is not unreasonable to assume that the number of recreators ignoring the no-boating signs and entering the restricted zone will increase. Violations of the no-boating zone are expected to occur more likely by operators of personal watercraft. A recent report published in *The Virginian Pilot*, July 29, 1996, indicates that, although jet skis account for under five percent of the total registered boats in Virginia, they are involved in one-third of boating accidents. The high accident rate is attributed, in part, to their fast speed, reckless activities of the jet ski operators, and riding too close to the shoreline. Thus, increased use of personal watercraft is highly likely to result in increased disturbance to bald eagles foraging, perching, and roosting along the Potomac River shoreline within the no-boating zone.

The indirect effects associated with the use of aquatic vehicles from the Eagle Bay subdivision facilities will result in the functional loss of foraging, perching, and roosting habitat in areas of the Potomac River that are traversed by these vehicles. Because the use of aquatic vehicles is unpredictable and eagle numbers may vary on a given shoreline segment, a total acreage or amount of disturbance cannot be quantified. However, based upon the distances and areas that such vehicles are likely to travel, eagles throughout the entire Caledon concentration area could be adversely impacted through harassment.

Cumulative Effects - Cumulative effects include the effects of future State, 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.

Bald eagles utilize a six-mile section of the Potomac River, both the Virginia and Maryland shorelines, to forage and perch. Eagle roosting and nesting sites are located within close proximity to the Virginia shoreline. Direct and functional loss of this significant eagle habitat has and will result from habitat destruction from development activities and increased human disturbance to eagles. Review of aerial photographs and U.S. Geological Survey maps and discussions with individuals familiar with King George County illustrates the continuing development pressures on lands surrounding the bald eagle concentration area. For instance, the Virginia Potomac River shoreline west of Caledon State Natural Area consists predominately of open farmland with small scattered tracts of forestland either developed, under development, or platted for development. The Virginia shoreline east of the concentration area is also undergoing tremendous development pressure. The development influx is also not limited to the shoreline. For instance, a large parcel (greater than 900 acres) adjacent and to the south of Caledon State Natural Area is currently for sale with residential development potential. Grey et al. (1988) found that developed area in the Chesapeake Bay will increase by 77 percent between 1978 and 2020. Therefore, an increase in shoreline development will result in increased habitat loss through vegetation clearing and functional habitat loss resulting from eagle avoidance of developed areas and areas of human activity along the shoreline.

Increased development concurrent with increased boat traffic, if not controlled, could result in the eventual abandonment of the Caledon eagle concentration area. If this occurs, the summering, post-breeding, migrating, and resident birds from the three bald eagle recovery populations using this area may move into isolated habitat patches in adjacent areas, if any are available. It is not unreasonable to assume that at least some eagles may have to move a great distance away to find suitable habitat and a source of food. This would result in decreased productivity for the resident nesting pairs. Impacts to non-resident birds are more difficult to quantify, but are likely to include increased migration distance and increased disturbance from human activities caused by the forced use of fragmented habitat, resulting in decreased energy intake, increased likelihood of injury or death, and decreased productivity.

The cumulative impacts of the proposed waterfront facilities, in conjunction with the cumulative effects of existing and reasonably foreseeable activities within and adjacent to the Caledon bald eagle concentration area, are likely to adversely affect and appreciably reduce bald eagle habitat within the concentration area. Long-term impacts are likely to include reduction in the foraging habitat of both nesting and migratory eagles, and potential abandonment of the concentration area. Such impacts will only be avoided if appropriate controls on shoreline development and use of watercraft are implemented. This will require a willingness on the part of landowners and local, state, and Federal agencies to work together to develop appropriate mechanisms to protect the Caledon bald eagle concentration area.

## CONCLUSION

After reviewing the current status of the bald eagle throughout its range and in the action area, the environmental baseline for the action area, and the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that shoreline stabilization and construction of a boat ramp, mooring piles, and a pier at Eagle Bay subdivision in King George County, as proposed, is not likely to jeopardize the continued existence of the Southeast, Northern, and Chesapeake Bay bald eagle recovery populations.

No critical habitat has been designated for this species, therefore, none will be affected.

While it is the opinion of the Service that the proposed project is not likely to jeopardize the continued existence of the bald eagle, it is the Service's opinion that the project will contribute to serious adverse impacts to the eagles that utilize this area, particularly in conjunction with the cumulative effects of existing and proposed human activities within and outside the concentration area. One of the most significant summering concentrations of bald eagles on the Atlantic Coast, the Caledon concentration area provides essential feeding and migratory habitat for the three bald eagle recovery populations of the eastern United States. As significant shoreline development and increasing boat traffic continue to occur, this essential eagle habitat will be lost. It is unknown whether there are other areas within the Chesapeake Bay that could provide suitable replacement habitat if the Caledon concentration area is lost. The loss of the Caledon eagle concentration area is likely to have a major adverse effect on the continued recovery of the three eastern United States bald eagle populations.

### III. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 9 of the ESA, as amended, prohibit taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. Harm is further defined 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 as 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 any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. 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 a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

### AMOUNT OR EXTENT OF TAKE

The Service anticipates that take of bald eagles will result from this proposed action due to disturbance of eagles perching, foraging, and roosting within the Caledon concentration area. The incidental take of bald eagles is expected in the form of harassment through disturbance from aquatic vehicles using the Potomac River and its tributaries. Aquatic vehicles utilizing the Potomac River and its tributaries will flush eagles foraging or perching within at least 164 feet of the shoreline. Each boat or personal watercraft will flush eagles as it travels within the concentration area. Every time a boat stops, the area up to 2,952 feet around it will likely be avoided by eagles. When the boat moves again more birds will be flushed. A few boats fishing or one personal watercraft moving along the shoreline could functionally eliminate a significant portion of the shoreline and riverine habitat from eagle use for an entire day.

The potential number of watercraft originating from Eagle Bay subdivision and entering the concentration area cannot be accurately quantified. However, several assumptions can be made to give an estimate of the possible number of boats and/or personal watercraft that may use the boat launching facilities in the

subdivision. The subdivision will have 67 lots, but not every property owner is likely to own a boat or personal watercraft. Property owners could, however, allow friends and relatives to use the boat launching facilities. Based on boat usage from other facilities, it is unlikely that more than 50 percent of the property owners, their friends, and relatives would launch boats or personal watercraft on a given day. Therefore, a reasonable “worst case” estimate would be that up to 34 watercraft are likely to use the Eagle Bay subdivision boat launching facilities and any waterfront private piers. Outside the Caledon State Natural Area’s no-boating zone, the Service anticipates that the Eagle Bay boaters and personal watercraft will cause daily, significant harassment of bald eagles during their primary foraging period of dawn to dusk from April through October. The greatest amount of watercraft use will likely occur on weekends and holidays, such as Memorial Day, July 4th, and Labor Day. Within the Caledon State Natural Area’s no-boating zone, the Service anticipates that approximately 50 percent of the boaters will ignore the buoys, enter the no-boating zone, and harass eagles. Take, in the form of harassment, will occur along at least six miles of the Potomac River northern and southern shorelines between the point 1,500 feet west of Sommerset Beach and the mouth of Chotank Creek and at least 164 feet landward of either shoreline (please refer to Figure 1). Take is also expected to occur in tributaries of the Potomac River, within the boundaries of the Caledon bald eagle concentration area.

#### REASONABLE AND PRUDENT MEASURES

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any permit issued to the applicant in order 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 require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of Section 7(o)(2) may lapse. The Service considers the following reasonable and prudent measures to be necessary and appropriate to minimize take of the bald eagle.

ÿ To minimize the extent of harassment to bald eagles, measures must be taken to limit the number and type of aquatic vehicles, originating from the Eagle Bay subdivision, within the Caledon concentration area.

ÿ To minimize the extent of harassment to bald eagles, measures must be taken to limit the number of aquatic vehicles, originating from the Eagle Bay subdivision, entering the 3.5 mile no-boating zone along the Caledon State Natural Area shoreline.

ÿ To minimize the extent of harassment to bald eagles, measures must be taken to inform the Eagle Bay subdivision homeowners of the potential for their activities on the Potomac River and its tributaries to disturb foraging, perching, and roosting bald eagles.

#### TERMS AND CONDITIONS

In order 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 measures described above. These terms and conditions are nondiscretionary.

1. Terms and Conditions 2 through 5 must be completed prior to construction of the pier, mooring piles, and boat ramp and evidence thereof must be presented to the U.S. Fish and Wildlife Service.
2. The deed restrictions for Eagle Bay subdivision will state that the boat ramp is to be used for launching boats owned by Eagle Bay lot owners only, with the exception of bald eagle survey and law enforcement boats launched by personnel of the Virginia Department of Conservation and Recreation's Caledon State Natural Area or other Federal, State, and local agencies on an emergency basis. The deed restrictions for Eagle Bay subdivision will state that personnel of the Caledon State Natural Area may launch from the Eagle Bay boat ramp to conduct bald eagle surveys and to enforce the no-boating zone along Caledon's shoreline.
3. If any of the six Eagle Bay subdivision waterfront lot owners (lots 10 through 15) propose to develop additional boat mooring/docking facilities, such activities will be reviewed by the Corps of Engineers under its individual permit review process. In order to notify waterfront lot owners of this requirement, the permit (94-1658-05) will be recorded with the Eagle Bay subdivision/property deeds.
4. Vehicle access to the boat ramp common area will be controlled by a gate system. Only Eagle Bay lot owners will possess keys/combinations to the gate lock. The lot owners will close and lock the gate each time they pass through.
5. A large weather-proof sign will be placed and maintained at the boat ramp at all times, informing users of the 1,000 foot no-boating zone along the Caledon State Natural Area. This sign will describe the buoys marking the no-boating zone, explain that boaters should honor the boating restrictions, identify the dates the no-boating zone is active, and describe the purpose of the no-boating zone. This sign will also provide educational information on the natural history of the bald eagle and the significance of the Caledon concentration area. A second, smaller sign will be installed to alert Eagle Bay property owners that no personal watercraft are to be launched from the boat ramp. The Service will have 30 days to approve the language for the sign.
6. If the Eagle Bay clubhouse is built, the permittee will install a permanent bald eagle educational display in the Eagle Bay clubhouse within 30 days of completion of the clubhouse. The developer will seek the assistance of individuals and agencies knowledgeable of the bald eagle and the Caledon State Natural Area. The display will be submitted for review and approval by the Service no later than 30 days prior to the projected completion date for clubhouse construction.
7. The permittee is required to notify the Service before initiation of construction and upon completion of the project at the address given below. All additional information to be sent to the Service should be sent to the following address:

Virginia Field Office

U.S. Fish and Wildlife Service  
Mid-County Center, U.S. Route 17  
P.O. Box 480  
White Marsh, VA 23183  
Phone: (804) 693-6694  
Fax: (804) 693-9032

8. Care must be taken in handling any dead specimens of the bald eagle 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, initial notification must be made to the following Service Law Enforcement office:

Division of Law Enforcement

U.S. Fish and Wildlife Service  
8301 Willis Church Road  
Richmond, VA 23231  
(804) 771-2481

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 the consultation is being made, the Service will not refer the incidental take of any such migratory bird for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), or the Bald and Golden Eagle Protection Act of 1940, as amended (16 U.S.C. 668-668d), 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 and other recovery activities, or to develop information to benefit the species.

The Service recommends that the Corps deny the construction of the boat ramp for Eagle Bay subdivision. As discussed throughout this biological opinion, boat and other watercraft traffic adversely affect bald eagles and result in functional loss of habitat. Denial of the boat ramp will avoid adverse impacts to bald eagles by restricting the amount of boat traffic within the Caledon eagle concentration area. The Service has previously indicated, in a letter dated December 18, 1995, that elimination of the boat ramp from the proposed activity will result in an undetectable impact to bald eagles by reducing the potential increase in

boating activity on the Potomac River to a maximum of 12 boats, that is, those boats moored at the six waterfront lots and at the community pier.

In order for the Service to be kept informed of actions that minimize or avoid adverse effects or benefit listed species or their habitats, the Service requests notification of the implementation of any of these conservation recommendations by the Corps.

#### V. REINITIATION - CLOSING STATEMENT

This concludes formal consultation on the action outlined in the Corps 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 and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the 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.

The amount and extent of take identified in this biological opinion is based upon the proposed subdivision plan, including 67 total residential lots and moorings for 12 boats within the Potomac River. If the total number of subdivision lots and/or the number of moorings is increased, reinitiation of formal consultation will be required.

Unless information in this biological opinion is protected by national security or contains confidential business information, the Service recommends that you forward a copy to the following agency:

Virginia Department of Game and Inland Fisheries  
Environmental Services  
P.O. Box 11104  
Richmond, VA 23230

If this opinion is not provided by the Corps and does not contain national security or confidential business information, the Service will provide a copy to this State agency ten business days after the date of this opinion.

#### FISH AND WILDLIFE COORDINATION ACT COMMENTS

The following comments constitute the report of the Service and the Department of the Interior on this project and are submitted under provisions of the Fish and Wildlife Coordination Act. The description of the resources of the project site and the impacts associated with the construction and use of the proposed facilities included under the Service's biological opinion are pertinent to our comments under the Fish and Wildlife Coordination Act. It is the Service's position that this six-mile stretch of the Potomac River used by bald eagles as a summer concentration area is vitally important to the species' continued recovery in the

eastern United States. Increased boating and personal watercraft traffic within the concentration area, along with ongoing residential development within and surrounding the concentration area, will continue to degrade the area and decrease the amount of habitat available to eagles. We recommend that the Corps implement the "Conservation Recommendations" on page 16 by denying construction of the boat ramp for Eagle Bay subdivision. The Service recommends that the conditions provided on pages 14 and 15 of the biological opinion be included as conditions of any Corps permit issued to Mr. Reid and that the permit be recorded with the property deeds associated with Eagle Bay subdivision.

The Service appreciates the opportunity to work with the Corps in fulfilling our mutual responsibilities under the ESA. If you require additional information or wish to discuss our comments further, please contact Ann F. Jennings of this office at (804) 693-6694

Sincerely,

Karen L. Mayne  
Supervisor  
Virginia Field Office

#### LITERATURE CITED

Bradshaw, D. 1993. Personal Communication. Virginia Department of Game and Inland Fisheries. Richmond, VA.

Buehler, D. A., T. J. Mersmann, J. D. Fraser, and J. K. D. Seegar. 1991a. Effects of human activity on bald eagle distribution on the Northern Chesapeake Bay. *Journal of Wildlife Management* 55:282-290.

Buehler, D. A., T. J. Mersmann, J. D. Fraser, and J. K. D. Seegar. 1991b. Nonbreeding bald eagle communal and solitary roosting behavior and roost habitat on the northern Chesapeake Bay. *Journal of Wildlife Management* 55:273-281.

Byrd, M. A. 1989. Personal Communication. College of William and Mary. Williamsburg, VA.

Chandler, S. K., J. D. Fraser, D. A. Buehler, J. K. D. Seegar. 1995. Perch trees and shoreline

development as predictors of bald eagle distribution on Chesapeake Bay. *Journal of Wildlife Management* 59(2):325-332.

Clark, K. H. 1992. Shoreline foraging habitat selection by bald eagles (*Haliaeetus leucocephalus*) in a non-breeding eagle concentration area on the James River, Virginia. M.S. Thesis. College of William and Mary. Williamsburg, VA.

Cline, K. W. and M. A. Byrd. 1994. Bald eagle management in Virginia: a comprehensive plan. Virginia Department of Game and Inland Fisheries, Richmond, VA.

Commission on Outdoor Recreation. 1982. Tidewater Virginia recreational boating access study. Virginia Division of Planning and Recreation Resources. Richmond, VA.

Fraser, J. D. 1988. A strategy for protecting bald eagles in Sullivan County, New York. Catskill Center for Conservation and Development, Inc. Arkville, NY.

Gerrard, J. M., P. N. Gerrard, and W. A. Whitfield. 1980. Behavior in a non-breeding bald eagle. *Canadian Field-Naturalist* 94:391-397.

Gray, R. J., J. C. Breeden, J. B. Edwards, M. P. Erkiletian, J. P. Blase Cooke, O. J. Lighthizer, M. J. Forrester, Jr., I. Hand, J. D. Himes, A. R. McNeal, C. S. Spooner, W. T. Murphy, Jr. 1988. Population growth and development in the Chesapeake Bay watershed in the year 2020. U.S. Environmental Protection Agency, Chesapeake Bay Estuary Program, Annapolis, MD. 73 pp.

Grubb, T. G. and R. M. King. 1991. Assessing human disturbance of breeding bald eagles with classification tree models. *Journal of Wildlife Management* 55:500-511.

Hardesty, R. L. 1993. Caledon Natural Area bald eagle study.

Jaffee, N. B. 1980. Nest site selection and foraging behavior of the bald eagle (*Haliaeetus leucocephalus*) in Virginia. M.S. Thesis. College of William and Mary. Williamsburg, VA.

Keister, G. P., Jr. and R. G. Anthony. 1983. Characteristics of bald eagle communal roosts in the Klamath Basin, Oregon and California. *Journal of Wildlife Management* 47:1072-1079.

Knight, R. L. and S. K. Knight. 1984. Responses of wintering bald eagles to boating activity. *Journal of Wildlife Management* 48:999-1004.

McGarigal, K., R. G. Anthony, and F. B. Isaacs. 1991. Interactions of humans and bald eagles on the Columbia River estuary. *Wildlife Monograph* 115.

Stalmaster, M. V. and J. R. Newman. 1978. Behavioral responses of wintering bald eagles to human activity. *Journal of Wildlife Management* 42:506-513.

U.S. Fish and Wildlife Service. 1984. Southeastern states bald eagle recovery plan. Atlanta, GA.

U.S. Fish and Wildlife Service, Region 5. 1982. Chesapeake Bay region bald eagle recovery plan. Newton Corner, MA.

U.S. Fish and Wildlife Service, Region 5. 1983. Northern states bald eagle recovery plan. Newton Corner, MA.

U.S. Fish and Wildlife Service, Region 5. 1989. Final Environmental Assessment. Proposal to protect endangered bald eagle habitat Prince George Co., VA. Newton Corner, MA.

U.S. Fish and Wildlife Service, Region 5. 1990. Chesapeake Bay region bald eagle recovery plan: first revision. Newton Corner, MA.

Wallin, D. O. and M. A. Byrd. 1984. Caledon State Park bald eagle study. Department of Biology, College of William and Mary. Williamsburg, VA.

Watson, J. W., M. G. Garrett, and R. G. Anthony. 1991. Foraging ecology of bald eagles in the Columbia River estuary. *Journal of Wildlife Management* 55:492-499.

#### Appendix A - Consultation History

05-10-95 The Service received an interagency coordination form for permit application 94-1658-05, Mr. Robert E. Reid, Jr., from the Corps.

05-22-95 The Service received a copy of the public notice for permit application number 94-1658-05, Mr. Robert E. Reid, Jr.

06-08-95 The Service contacted the Corps by phone to indicate that consultation would be required pursuant to Section 7 of the ESA due to potential impacts to bald eagles. The Service requested a copy of the complete permit application.

06-15-95 The Service received the complete permit application.

08-11-95 The Service requested additional information from the Corps in order to address the impacts of permit application 94-1658-05, Mr. Robert E. Reid, Jr.

10-30-95 The Service received a response to the request for additional information prepared by the permit applicant's consultant.

- 12-13-95      The Service participated in a field review of the project site with the Corps.
- 12-18-95      The Service provided comments to the Corps indicating that the proposed activity may affect bald eagles utilizing the Potomac River as a result of increased boating activity. The Service indicated that modifying the project to eliminate the boat ramp would avoid the likelihood of adverse impacts to the bald eagle.
- 01-12-96      The Service received the Corps' request to initiate formal consultation.
- 03-12-96      The Service participated in a meeting with the permit applicant's representatives, the Corps, and the Virginia Department of Game and Inland Fisheries to discuss potential measures for eliminating and reducing impacts to the bald eagle.
- 03-28-96      The Corps requested a copy of the Service's draft biological opinion.
- 05-06-96      The Service provided a copy of the draft biological opinion to the Corps.
- 05-30-96      Mr. Reid indicated in a phone conversation with the Corps project manager that the total number of lots within the Eagle Bay subdivision had been increased over what was indicated in the permit application.
- 06-03-96      The Service requested concurrence from the Corps on a 60-day extension on the consultation period due to the modification in the proposed project. In order to complete the biological opinion, the Service requested information on the location and quantity of additional acres and subdivision lots, including waterfront lots, within the Eagle Bay subdivision.
- 06-05-96      The Corps concurred with the Service that an extension of the consultation period was warranted in light of the change in the overall project plan for Eagle Bay subdivision.
- 08-05-96      As the information requested by the Service had not been provided, Mr. Reid granted an extension to the consultation period to 30 days following transmittal of the requested additional information to the Service.
- 08-19-96      Information requested on expansion of the proposed Eagle Bay subdivision was received by the Service.

(filename\Corps404\reidbo)  
(AJennings/9/14/96)

bcc: ARD-South, Hadley, MA  
Endangered Species Coordinator, Region 5  
CBFO Reading File  
CBFO, Annapolis, MD  
    (ATTN: Andy Moser)  
FWS-LE, Richmond, VA  
FWS-LE, Fredericksburg, VA  
FWS-Ecological Services Field Offices, Region 5  
    (ATTN: Endangered Species Specialists)  
        Bald Eagle Recovery Coordinator, Jody Gustitus Millar, FWS, 4469-48th Avenue Court,  
        Rock Island, Illinois, 61201

10 business days after the date of this letter, mail copies to:

\_\_\_\_\_ VDGIF, Richmond, VA

    (ATTN: Ray Fernald)

    (ATTN: Keith Cline)

Division of Natural Heritage

    Virginia Department of Conservation and Recreation

Dr. Mitchell Byrd, College of William and Mary

Manager, Caledon State Natural Area