



# Federal Register

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**Monday,  
July 9, 2007**

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## **Part III**

# **Department of the Interior**

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**Fish and Wildlife Service**

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### **50 CFR Part 17**

**Endangered and Threatened Wildlife and Plants; Removing the Bald Eagle in the Lower 48 States From the List of Endangered and Threatened Wildlife; Final Rule; Endangered and Threatened Wildlife and Plants; Draft Post-Delisting and Monitoring Plan for the Bald Eagle (*Haliaeetus leucocephalus*) and Proposed Information Collection; Notice**

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

RIN 1018-AF21

**Endangered and Threatened Wildlife and Plants; Removing the Bald Eagle in the Lower 48 States From the List of Endangered and Threatened Wildlife****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** The best available scientific and commercial data indicate that the bald eagle has recovered. Therefore, under the authority of the Endangered Species Act of 1973, as amended (Act), we, the U.S. Fish and Wildlife Service, remove (delist) the bald eagle (*Haliaeetus leucocephalus*) in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. This determination is based on a thorough review of all available information, which indicates that the threats to this species have been eliminated or reduced to the point that the species has recovered and no longer meets the definition of threatened or endangered under the Act.

Fueled by a reduction in the threats to the bald eagle, the population in the lower 48 States has increased from approximately 487 breeding pairs in 1963, to an estimated 9,789 breeding pairs today. The recovery of the bald eagle is due in part to the reduction in levels of persistent organochlorine pesticides (such as DDT) occurring in the environment and habitat protection and management actions. The protections provided to the bald eagle under the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA) will continue to remain in place after the species is delisted. To help provide more clarity on the management of bald eagles after delisting, we recently published a regulatory definition of "disturb", the final National Bald Eagle Management Guidelines and a proposed rule for a new permit that would authorize limited take under BGEPA and grandfather existing Act authorizations.

**DATES:** This rule is effective August 8, 2007.

**FOR FURTHER INFORMATION CONTACT:** Chief, Branch of Recovery and Delisting, telephone (703) 358-2061 or facsimile (703) 358-1735.

Additional information is also available on our Web site at <http://www.fws.gov/migratorybirds/BaldEagle.htm>.

[www.fws.gov/migratorybirds/BaldEagle.htm](http://www.fws.gov/migratorybirds/BaldEagle.htm). Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 1-800-877-8339 for TTY assistance, 24 hours a day, 7 days a week.

**SUPPLEMENTARY INFORMATION:****Background**

Information about the bald eagle's life history can be found in our February 16, 2006, reopening of the public comment period on the proposed delisting rule (71 FR 8238) (U.S. FWS 2006a) and our five recovery plans for the bald eagle (U.S. FWS 1982, 1983, 1986, 1989, 1990), Gerrard and Bortolotti (1988), and Buehler (2000).

**Previous Federal Actions**

Bald eagles gained protection under the Bald Eagle Protection Act (16 U.S.C. 668-668d) in 1940 and the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) in 1972. A 1962 amendment to the Bald Eagle Protection Act added protection for the golden eagle and the amended statute became known as the Bald and Golden Eagle Protection Act (BGEPA).

On March 11, 1967 (32 FR 4001), the Secretary of the Interior listed bald eagles south of 40 north latitude as endangered under the Endangered Species Preservation Act of 1966 (Pub. L. 89-699, 80 Stat. 926) due to a population decline caused by DDT and other factors. On February 14, 1978, the Service listed the bald eagle as endangered under the Act (16 U.S.C. 1531 *et seq.*) in 43 of the contiguous States, and threatened in the States of Michigan, Minnesota, Wisconsin, Oregon, and Washington (43 FR 6230, February 14, 1978). Sub-specific designations for northern and southern eagles were removed.

On February 7, 1990, we published an advance notice of proposed rulemaking (55 FR 4209) to reclassify the bald eagle from endangered to threatened in the 43 States where it had been listed as endangered and retain the threatened status for the other 5 States. On July 12, 1994, we published a proposed rule to accomplish this reclassification (59 FR 35584), and the final rule was published on July 12, 1995 (60 FR 36000).

On July 6, 1999, we published a proposed rule to delist the bald eagle throughout the lower 48 States due to recovery (64 FR 36454). Due to the availability of new information, on February 16, 2006 (71 FR 8238), we reopened the public comment period on our July 6, 1999 (64 FR 36454), proposed rule to delist the bald eagle in

the lower 48 States. The reopening notice contained updated information on several State survey efforts and population numbers. Simultaneously with the reopening of the public comment period on the proposed delisting, we also published two **Federal Register** documents soliciting public comments on two new items intended to clarify the BGEPA protections for the bald eagle after delisting: (1) A proposed rule for a regulatory definition of "disturb" (71 FR 8265, February 16, 2006), and (2) a notice of availability for draft National Bald Eagle Management Guidelines (71 FR 8309, February 16, 2006). On May 16, 2006, we published three separate notices in the **Federal Register** that extended the public comment period on the proposed delisting (71 FR 28293), the proposed regulatory definition of "disturb" (71 FR 28294), and the draft Guidelines (71 FR 28369). The comment period for all three documents was extended to June 19, 2006.

On December 12, 2006, we published in the **Federal Register** a notice requesting public comment on two BGEPA items. First, we re-opened the public comment period on our February 16, 2006, proposed regulatory definition of "disturb." Second, we also announced the availability the draft environmental assessment on the definition of "disturb" (71 FR 74483).

On October 6, 2004, we received a petition, dated October 6, 2004, from the Center for Biological Diversity, the Maricopa Audubon Society, and the Arizona Audubon Council requesting that the bald eagle population found in the Sonoran Desert (as defined by Brown 1994) or, alternately, in the upper and lower Sonoran Desert (as defined by Merriam (Northern Arizona University 2006, p. 2)) be classified as a distinct population segment (DPS), that this DPS be reclassified from a threatened species to an endangered species, and that we concurrently designate critical habitat for the DPS. On August 30, 2006, we made a 90-day finding (71 FR 51549) that the petition did not present substantial scientific or commercial information indicating that the petitioned action may be warranted.

On January 5, 2007, the Center for Biological Diversity and the Maricopa Audubon Society brought suit against the Service, *Center for Biological Diversity v. Kempthorne*, CV 07-0038-PHX-MHM (D. Ariz.), challenging the Service's 90-day finding that the Sonoran Desert population did not qualify as a DPS, and further challenging the Service's 90-day finding that the Sonoran Desert population should not be up-listed to endangered

status. That suit is still pending. However, the Service's finding in this final delisting rule supersedes the Service's 90-day petition finding because it constitutes a final decision on whether the Southwestern bald eagles, including those in the Sonoran Desert, qualify for listing as a DPS. This decision was made after notice and comment, as described above, and was based on all of the relevant information that the Service has obtained. Even if the court in the 90-day finding suit were to find that the plaintiffs' petition warranted further review, this finding addresses the same issues that the Service would have considered as part of a 12-month finding had the Service made a positive 90-day finding on the petition. This document constitutes the Service's final determination on these issues, and is judicially reviewable with respect to them; therefore, any controversy regarding the August 30, 2006, 90-day finding is now moot.

On June 5, 2007, we published four documents in the **Federal Register** announcing one proposed action and three final actions under the BGEPA: (1) A final rule on the regulatory definition of "disturb" (72 FR 31132); (2) a notice of availability for the final National Bald Eagle Management Guidelines (72 FR 31156); (3) a notice of availability for the final environmental assessment on the definition of "disturb" (72 FR 31156); and (4) a proposed rule for a new permit that would authorize limited take under BGEPA, and to grandfather existing Act authorizations after delisting occurs under the Act (72 FR 31141).

### **Bald Eagle Recovery**

Section 4(f) of the Act directs us to develop and implement recovery plans for listed species. In establishing the recovery program for the species in the mid-1970s, the Service divided the bald eagle population in the lower 48 States into five recovery regions. These recovery regions were administrative boundaries to help the Service plan for recovery, given the information we had at the time. During this timeframe the bald eagle population was continuing to decline and little was known about where the important areas might be. Given the lack of information on this issue, the Service generally decided that recovery planning should be conducted in all parts of the range. However, as discussed below in the Conclusion of the 5-Factors analysis section, based on the information present today, the southwest region is a not a significant portion of the range.

In some cases, we appoint experts to recovery teams to assist in the preparation of recovery plans. For the

bald eagle, separate recovery teams composed of experts in each geographic area prepared recovery plans for their region. The teams established recovery objectives and criteria and identified tasks to achieve those objectives. Coordination meetings were held regularly among the five teams to exchange data and discuss progress towards recovery.

We used these five recovery plans to provide guidance to the Service, States, and other partners on methods to minimize and reduce the threats to the bald eagle and to provide measurable criteria that would be used to help determine when the threats to the bald eagle had been reduced so that the bald eagle could be removed from the Federal List of Endangered and Threatened Wildlife.

Recovery plans in general are not regulatory documents and are instead intended to provide a guide on how to achieve recovery. There are many paths to accomplishing recovery of a species in all or a significant portion of its range. The main goal is to remove the threats to a species, which may occur without meeting all recovery criteria contained in a recovery plan. For example, one or more criteria may have been exceeded while other criteria may not have been accomplished. In that instance, the Service may judge that, overall, the threats have been reduced sufficiently, and the species is robust enough, to reclassify the species from endangered to threatened or perhaps to delist the species. In other cases, recovery opportunities may be recognized that were not known at the time the recovery plan was finalized. Achievement of these opportunities may be counted as progress toward recovery in lieu of methods identified in the recovery plan. Likewise, we may learn information about the species that was not known at the time the recovery plan was finalized. The new information may change the extent that criteria need to be met for recognizing recovery of the species. Overall, recovery of species is a dynamic process requiring adaptive management, and judging the degree of recovery of a species is also an adaptive management process that may, or may not, fully follow the guidance provided in a recovery plan.

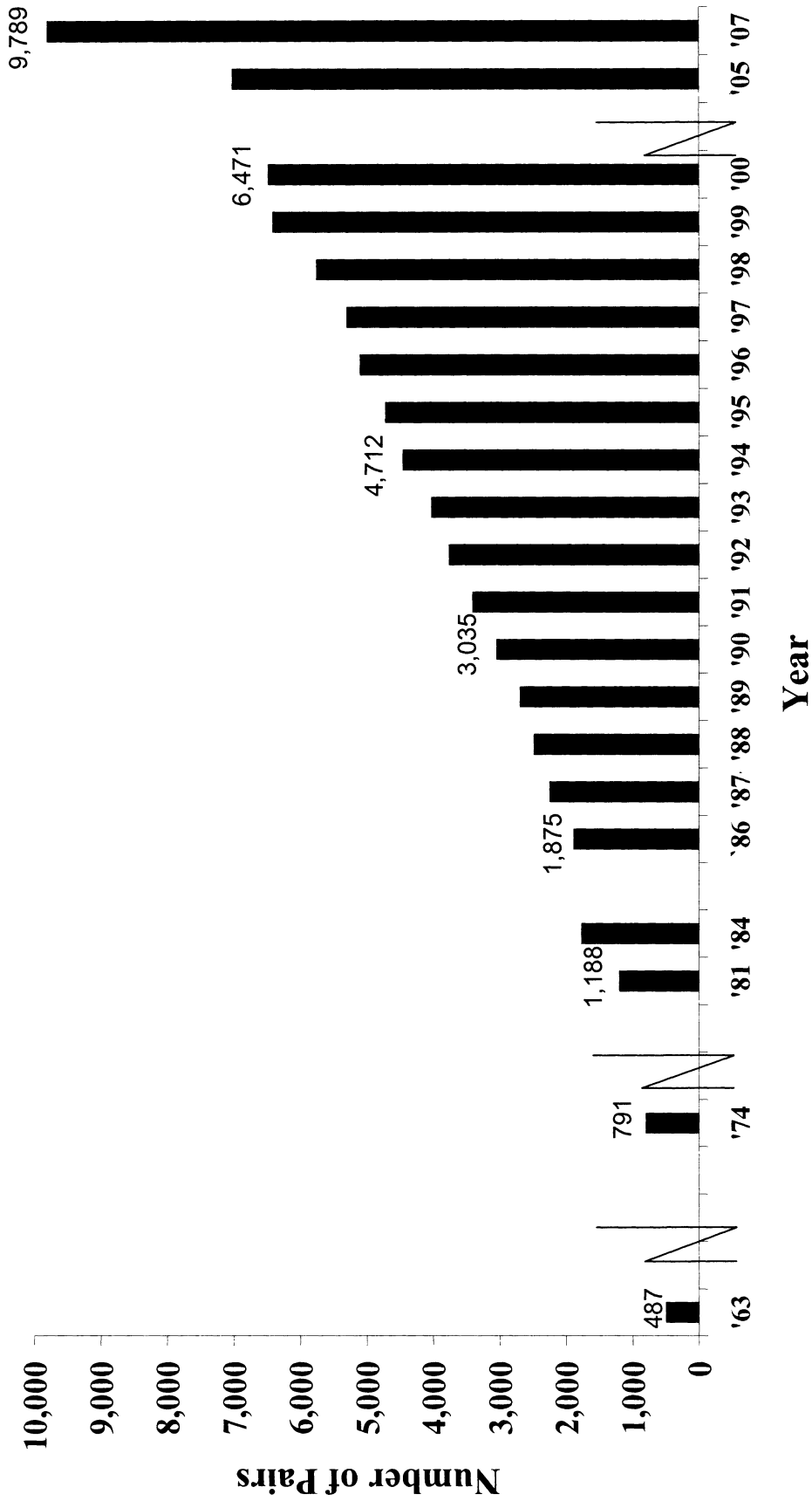
Recovery of the bald eagle has been a dynamic process. As new information became available, it was used during the recovery implementation process to help the Service determine whether recovery was on track. For instance, after the bald eagle was downlisted in 1995, the Southeastern Recovery Plan did not have specific delisting goals, and the Service used the recovery team

to help determine the appropriate goal. This new delisting goal is considered the best available data in helping the Service determine whether the threats have been removed and to move forward with the delisting.

All of the bald eagle recovery plans established goals for the number of occupied breeding areas and the productivity of the populations in the individual recovery regions. By setting a goal to monitor population numbers and productivity, the Service could determine whether the threats that led to the bald eagle's endangerment were being removed. With the reduction in levels of persistent organochlorine pesticides (such as DDT) occurring in the environment and the habitat protection and management actions that have been put in place, the bald eagle population has shown a remarkable increase in numbers. Between 1990 and 2000, the bald eagle population had a national average productivity of at least one fledgling per nesting pair per year. As a result, the bald eagle's nesting population increased at a rate of about 8 percent per year during this time period. Since 1963, when the Audubon Society estimated that there were 487 nesting pairs, bald eagle breeding in the lower 48 States has expanded to more than 9,789 nesting pairs today (U.S. FWS 1995, p. 36001; U.S. FWS 1999, p. 36457.)

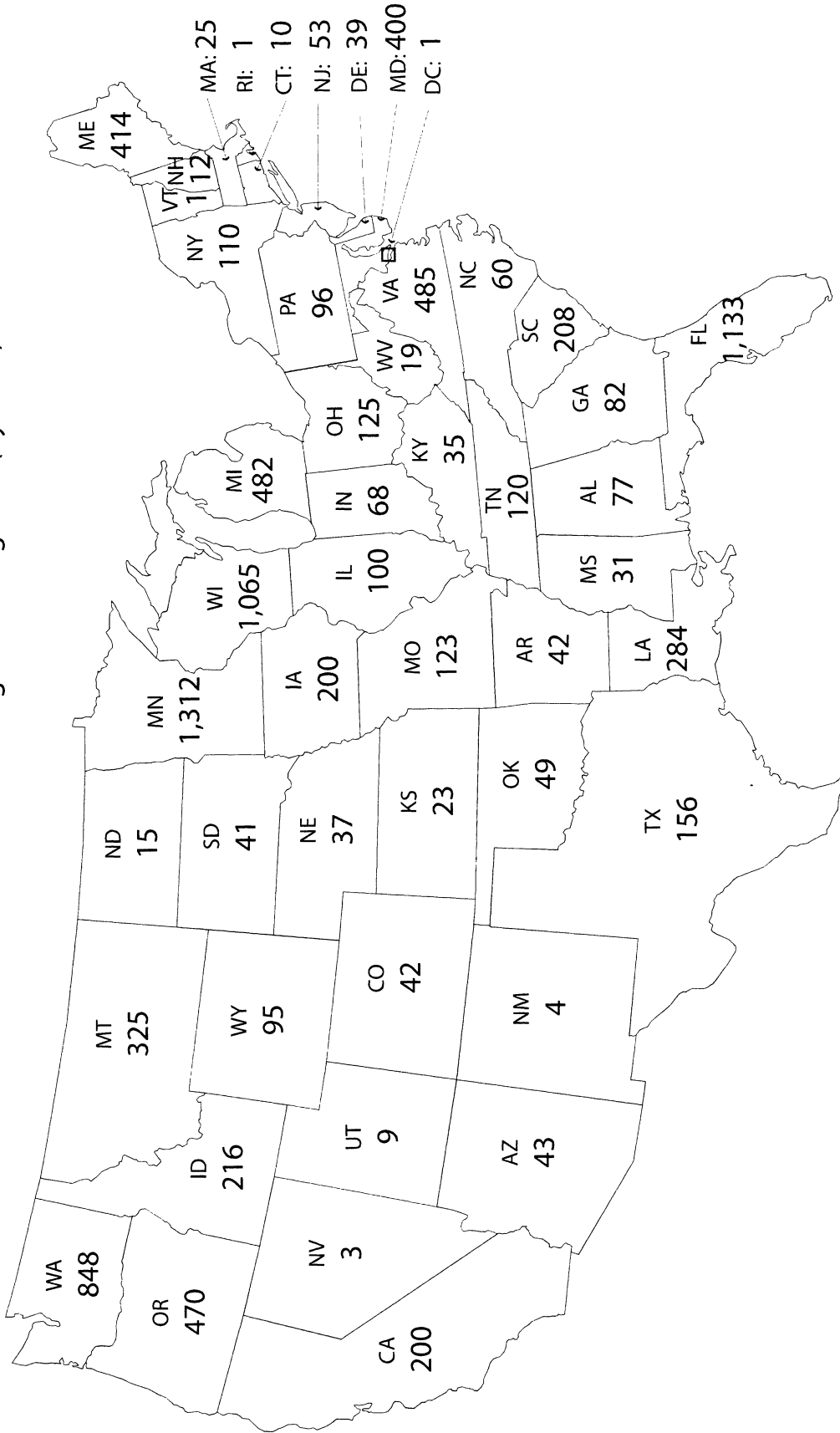
Some States have shown increases in their bald eagle pairs over the past several years. For example, Illinois had an estimated 36 pairs in 1999, but the State had an estimated 100 pairs in 2006 (Conlin 2006, p. 1). Iowa had an estimated 100 pairs in 1999, and their bald eagle population has doubled to an estimated 200 pairs in 2006 (Vonk 2006, p. 1). Minnesota had an estimated 681 pairs in 2001, and an estimated 1,312 pairs in 2005 (Moore 2006, p. 1). In recent decades, Vermont was the only State in the conterminous United States that did not have nesting bald eagles. In 2006, a pair of bald eagles nested in Vermont for the first time since the 1940s, and now Vermont has one nesting pair (Amaral 2006, p. 3). To date, the bald eagle's population growth has exceeded all the numeric goals established in the five recovery plans. In most of the recovery regions, the numeric goals for breeding pairs have been significantly exceeded. For example, the delisting goal in the Northern States Recovery Plan calls for 1,200 breeding pairs distributed over a minimum of 16 States. Today, there are an estimated 4,215 breeding pairs covering every State in that recovery region.

**BILLING CODE 4310-55-P**



Estimated number of bald eagle pairs in lower 48 states from 1963 - 2007

**U.S. Fish & Wildlife Service**  
**Final Rule to Delist the Bald Eagle in the Lower 48 States**  
**Estimated Number of Bald Eagle Breeding Pairs (by State)\***



**Total Pairs: 9,789**

\* State information 2004, or later

For more information on recovery of the bald eagle in general and specific recovery of the individual recovery areas, see the discussion on pages 8240–8243 of the February 16, 2006, reopening of the public comment period on the proposed rule to delist the species (71 FR 8238).

### Summary of Comments and Recommendations

We requested written comments from the public on February 16, 2006 (71 FR 8238), when we reopened the public comment period on our July 6, 1999 (64 FR 36454), proposed rule to delist the bald eagle in the lower 48 States. In that reopening notice, we responded to comments previously received on the July 6, 1999 (64 FR 36454) proposed delisting rule. Therefore, the preamble to this final rule addresses only the comments we received on the February 16, 2006, notice. The comment period was reopened from February 16, 2006, to May 17, 2006. During that time, we received two requests to extend the public comment period. In response to those requests, on May 16, 2006 (71 FR 28293), we extended the public comment period to June 19, 2006. As part of the reopening of the public comment period, we also contacted the States and Tribes to solicit their comments.

In conformance with our policy on peer review, published on July 1, 1994 (59 FR 34270), we solicited opinions from three scientific experts who are familiar with this species to peer review the proposed rule. We received comments from two of the three peer reviewers, and those two peer reviewers convened panels of scientific experts to review the information provided. Their comments are included in the summary below. One peer reviewer generally supported the proposed delisting, and the other peer reviewer did not.

We reviewed all comments received from the peer reviewers, State and Tribal agencies, and the public for substantive issues and new information regarding the proposed delisting. We received a total of 387 new comments.

Section 4(b)(1)(A) of the Act requires that determinations as to whether any species is a threatened or endangered species shall be made “solely on the basis of the best scientific and commercial data available,” including all information received during the public comment period. Comments merely stating support or opposition to the proposed delisting without providing supporting data, although noted, were not considered substantial and therefore were not considered in our determination. Substantial comments received during the comment period have either been addressed

below or incorporated directly into this final rule.

### Peer Review Comments

*Issue:* Several commenters, including one of the peer reviewers, stated that threat of habitat loss, including foraging, breeding, and wintering/roosting habitat (including communal roosting areas), due to development will continue because there are no adequate habitat protections (existing regulatory mechanisms) for bald eagles after delisting. One peer reviewer acknowledged that BGEPA and MBTA provide protection to birds, their nests, and eggs, but opined that those statutes offer no protection to habitat. In addition, the commenters believed that the proposed regulatory definition of “disturb” and the draft National Bald Eagle Management Guidelines will not be adequate to provide habitat protection. One peer reviewer expressed an opposite opinion stating that the proposed BGEPA definition and guidelines provide an adequate framework for protecting eagles and their habitat using BGEPA and MBTA.

*Response:* As discussed in detail under Factor A, the bald eagle population is continuing to increase in the lower 48 States, showing that reduced availability of habitat is not a current threat to the species. Nesting habitat is secure on many public and private locations throughout the lower 48 States. We acknowledge that some habitat threats continue to exist. However, this localized habitat loss will be limited by the operation of various Federal laws that will remain in effect after delisting (e.g., BGEPA, MBTA, and the Clean Water Act (CWA)).

The commenters are correct in that the BGEPA contains no provisions that directly protect habitat, except for nests. However, as further discussed under Factor A below, individual bald eagles are protected from certain effects that are likely to occur as the result of various human activities, including some habitat manipulation. Activities that disrupt eagles at nests, foraging areas, and important roosts can wound, kill, or disturb eagles, all of which are prohibited by the BGEPA. Through promulgation of the regulatory definition of disturb (72 FR 31132; June 5, 2007) and issuance of the National Bald Eagle Management Guidelines (72 FR 31156; June 5, 2007), we have clarified that eagle nests, important foraging areas, and communal roost sites are afforded protection under the BGEPA to the degree that adjacent habitat modification would disturb, injure, or kill eagles.

*Issue:* One of the peer reviewers stated that the final delisting rule should include a list of updated population

data by State with references to the survey from which the data were obtained.

*Response:* We have included an updated national population estimate in this final rule along with a map with the estimated number of breeding pairs per State. To ensure that our determination on the status of the bald eagle was based “solely on the basis of the best scientific and commercial data available” as required by the Act, we used State population data provided to us directly by a State agency, the Pacific Flyway Council, or from a State Web site. Based on this information, there are an estimated 9,789 bald eagle pairs in the lower 48 States. We believe this is a conservative estimate based on the results of our pilot studies for the post-delisting monitoring plan (USFWS 2007). For example, in the pilot study conducted by Minnesota, 872 known nest sites were observed as occupied in 2005. Incorporating the use of area random plots for our pilot study, Minnesota’s estimate of nesting bald eagle pairs increased to 1,312. Minnesota estimates that their known nest survey, which is similar to those conducted by each of the States and used to produce data for the delisting, may only count two-thirds of the breeding pairs in the State (Moore 2006, pp. 1–2).

*Issue:* Both peer reviewers expressed concern about using out-dated recovery plans and delisting criteria. One peer reviewer recommended that the delisting criteria in the recovery plan for Southeastern United States bald eagles should be peer reviewed before finalizing the delisting. One commenter thought the Service should seek more advice from the recovery team members.

*Response:* Recovery plans are not regulatory documents and are instead intended to provide guidance to the Service, States, and other partners on methods of minimizing threats to listed species and on criteria that may be used to determine when recovery is achieved. There are many paths to accomplishing recovery of a species, and recovery may be achieved without fully meeting all criteria in a recovery plan. Overall, recovery of species is a dynamic process requiring adaptive management, and judging the degree of recovery of a species is also an adaptive management process that may, or may not, fully follow the guidance provided in a recovery plan.

Over the years, the Service sought advice from several recovery teams. In the Southeast, we used the advice of the recovery team to give us a population target that would indicate that the threats had been reduced. We believe

this is the best available information at this time.

*Issue:* One peer reviewer and several commenters noted concern over the viability of the Southwest population of bald eagles based on low numbers of breeding pairs, relatively low productivity, relatively high adult mortality, and threats of habitat alteration and human disturbance. Based on this information, the peer reviewer recommended designating the population as a DPS and deferring the delisting.

*Response:* As further discussed in the Summary of Factors Affecting the Species section, the Service does not believe the bald eagle population in the Southwest meets the criteria stated in our DPS policy (61 FR 4722; February 7, 1996), nor is this population a significant portion of the range of the lower 48 States population of bald eagles. Therefore, consideration of the viability of, or threats to, the Southwestern population, standing alone, is not relevant to the delisting determination for the lower 48 States bald eagle population.

*Issue:* Several commenters, including peer reviewers, commented that a post-delisting monitoring (PDM) plan should be in place when delisting occurs and should remain in effect longer than 5 years. In addition, the plan should be comprehensive and scientifically based to monitor changes in population, productivity, wintering populations, habitat, and contaminants.

*Response:* Based on comments from the 1999 proposed delisting rule, we have been working steadily on the development of a revised national post-delisting monitoring plan, including conducting several pilot studies in cooperation with the States, to produce a monitoring plan that will be more scientifically robust than previously proposed in the 1999 proposed delisting rule. We have modified the draft post-delisting monitoring plan to take into account the life cycle of the bald eagle.

We are making the revised draft of the monitoring plan is available for public comment simultaneously with this rule elsewhere in today's **Federal Register**. We agree that a plan should ideally be in place at the time of delisting; however, given the proposed 20-year monitoring effort, we believe the plan will be finalized in a sufficient amount of time to adequately monitor the status of the species after delisting. Given the continued increase in the population, we do not expect a precipitous decline over the short term, prior to our completion of the final monitoring plan.

## Other Comments

### *Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

*Issue:* One commenter stated that the delisting criteria have not been met for habitat protection in the Chesapeake Bay region. Another commenter stated that while lands have been protected in the Chesapeake Bay Recovery Region to sustain the targeted levels of breeding pairs, the proposed delisting does not address protection of summer and winter concentration areas. The commenter noted that neither the Service's National Wildlife Refuges nor State management areas provide enough land to provide the necessary concentration areas. Another commenter stated that habitat loss and development are not limiting factors in Maryland, and are not likely to cause endangerment in the future. The commenter believes that the Chesapeake Bay Critical Area Program will continue to conserve forested shoreline habitat, and that it is not necessary for us to fully meet the habitat preservation goals in the Chesapeake Bay Recovery Plan.

*Response:* The Chesapeake Bay bald eagle population has experienced significant growth over the past 30 years. Within the Chesapeake Bay Bald Eagle Recovery Region, approximately 280 nests occur on Federal or State lands (48 nests from Koppie 2007b and 230 nests from Otto 2007). In addition to the long term habitat protection afforded on these lands, nearly 200 other nests occur within areas regulated by the Maryland Critical Areas Act (Koppie 2007b), which is discussed below. Together, these areas will continue to play active roles in providing additional protection of nests, nest buffers, forest blocks, and roosting habitat for bald eagles in the foreseeable future.

Habitat loss is still likely to occur in this region in the foreseeable future through incremental land clearing. It is projected that between 1978 and 2020, the developed area of the Chesapeake Bay watershed will increase by 74 percent in Maryland and 80 percent in Virginia (Gray *et al.* 1988). The Service acknowledges ongoing shoreline development will continue for the foreseeable future, which will likely set limits on the rate of future expansion and overall population growth of the bald eagle in the Chesapeake Bay region. Bald eagle nesting pairs currently continue to increase despite the increased construction of new homes, business parks, boat marinas, and other infrastructure within habitats sustaining bald eagles. Therefore, it appears that

unoccupied forested habitat currently still remains available, leading to the conclusion that the species has not yet reached the carrying capacity limits for nesting eagle pairs in the Chesapeake Bay region. The Service anticipates a continued upward population growth at least through the next decade based on the availability of habitat and behavioral adaptation. In addition, bald eagles have been able to adapt to higher densities of birds by decreasing the size of nesting territories in certain areas of the region where birds are starting to saturate the habitat. At some point, the Service expects the growth rate to decrease and level off, establishing a population that is stable over the long term.

A study published in 1996 used modeling to predict that the population of bald eagles in the Chesapeake Bay region would increase until reaching carrying capacity, after which there would be a rapid decline of the population (Fraser *et al.* 1996, p. 185). However, we find that model to be unconvincing for a number of reasons. First, it predicts that a decline might have begun by about 2005, but bald eagle numbers continue to increase in the Chesapeake Bay area. In Maryland, the population has increased from 338 breeding pairs to 400 between 2003 and 2004, and in Virginia bald eagle pairs increased from 371 to 485 between 2003 and 2006.

Second, the predictive model showing a decline in the Chesapeake Bay bald eagle population does not take into account nest protection measures or refugia such as State and Federal wildlife refuges (Fraser *et al.* 1996, p. 185). In Virginia, the Eastern Virginia Rivers National Wildlife Refuge Complex was established to protect bald eagle nesting sites and communal roost sites that are part of concentration areas along the Rappahannock and James rivers. These refuges are within the Rappahannock River Watershed and the James River Watershed, which hold approximately half of Virginia's nesting population of bald eagles. In addition, the first "eagle refuge," Mason Neck National Wildlife Refuge, was established to protect bald eagles along the Potomac River in 1967. In Maryland, communal roost sites and nesting areas are protected at the U.S. Army Aberdeen Proving Ground, Blackwater National Wildlife Refuge, Naval Surface Warfare Center at Indian Head, and an area below the Conowingo Dam along the Susquehanna River. All these areas (excluding the Conowingo Dam) are located within forested habitats on federal lands and therefore have long term protection, as explained under Factor A (Koppie 2007a).

Third, the model does not take into account the increase in bald eagle tolerance to human disturbance. The Service has documented several cases in which bald eagles around the Chesapeake Bay have continued to nest and successfully produce young within distances that were previously considered too close to human activity (Koppie 2007a). In addition, in both Virginia and Maryland, compression of nesting territories (i.e., eagles nesting in closer proximity to each other than in recent decades) has been observed, suggesting that the density of nesting pairs can be higher than once documented (Koppie 2007a).

In addition, certain State authorities and programs may afford additional, unquantifiable habitat protection. For example, in Maryland the Critical Area Act covering the Chesapeake Bay and Atlantic Coastal Bays enables the State and local governments to jointly address the impacts of land development on habitat and aquatic resources. This program can indirectly protect bald eagle habitat by, among other things, categorizing predominant land uses, focusing new development towards existing developed areas, and designating natural resource areas, habitat protection areas and buffers. These measures may reduce the rate of bald eagle habitat alteration depending on how they are employed across the landscape. To the extent that the Critical Areas program is maintained, it has the potential to contribute to forested shoreline preservation within 1,000 feet of the Chesapeake and Atlantic Coastal Bays where upwards of 70 percent of Maryland's eagles nest (Koppie 2007b).

There are currently an estimated 1,093 breeding pairs in the Chesapeake Bay Recovery Region. Habitat loss is still likely to occur in the Chesapeake Bay region in the foreseeable future. However, based on the number of nests and associated habitat found on protected lands, the existence of refuges and other lands specifically to conserve concentration and foraging areas, the availability of additional unoccupied habitat, behavioral adaptation, potentially increased compression of nesting territories, and the continuation of protection under BGEPA (as discussed under Factor A), we do not expect the bald eagle population in the Chesapeake Bay area to decline below the recovery target of 300–400 nesting pairs in the foreseeable future. Similarly, we do not anticipate that habitat loss will have a significant negative impact on important concentration areas.

*Issue:* Eagles have not recovered in the Southwestern United States. They

are threatened with oil and gas development. The Bureau of Land Management is allowing gas wells and pipelines to be constructed in prime eagle habitat, and it will only get worse after delisting. For example, the Bureau of Land Management is allowing gas wells and pipelines to be constructed in prime bald eagle habitat around Navajo Reservoir.

*Response:* We do not have any data to indicate that oil and gas development is currently threatening the future security of the bald eagle or its habitat in the Southwest. The Bureau of Reclamation manages the land around the Navajo Reservoir, and the Resource Management Plan includes areas specifically designated to protect bald eagles (U.S. BR 2005, p. 2–2, map 2–1). We believe the measures described in the Resource Management Plan will provide adequate protections for bald eagles and their habitat around the Navajo Reservoir after delisting.

*Issue:* One commenter stated that the final rule needs to include a discussion on the declines in some fisheries as a past and present concern. For example, the demise of a kokanee salmon run in Glacier National Park ended a large autumn aggregation of bald eagles in that area. Declines in alewives and herring in Maine have also restricted eagle aggregations.

*Response:* Bald eagle populations have increased despite isolated declines in local fish populations. As opportunistic feeders, bald eagles will move to alternative food sources, particularly during the non-nesting season. Therefore, we do not believe this is a threat that would limit the population of bald eagles in the lower 48 States, or a significant portion of its range in the foreseeable future such that continued protection under the Act would be warranted.

*Issue:* One commenter felt that a State-level management plan for bald eagles in the Southwest Recovery Region was needed because the Arizona Bald Eagle Nestwatch Program will likely disappear after delisting.

*Response:* The Conservation Assessment and Strategy for the Bald Eagle in Arizona has been developed by the Arizona Game and Fish Department, cooperating agencies, and Tribes to continue management practices for the bald eagle after delisting, including the Bald Eagle Nestwatch Program (Driscoll *et al.* 2006, pp. 1, 33). As we stated in our August 30, 2006, petition finding, the Arizona Bald Eagle Nestwatch Program will likely remain in place because the funding comes from a variety of sources, including State wildlife grants, donations, Arizona

Game and Fish Department's Heritage Funds (State lottery), and matching funds for Federal grants. In any case, there is no specific requirement under the Act for a State management plan.

*Issue:* BGEPA does not require landowners or developers to provide notification of their projects that may affect eagle nests. BGEPA and MBTA only come into effect after discovery of an infringement. There currently is no mechanism under BGEPA to allow for lawful activities (such as transportation construction and maintenance) to proceed. Left without options, landowners will be very tempted to cut down nest trees rather than lose the use of their property.

*Response:* Actions that result in take as defined under BGEPA or MBTA are prohibited unless permitted by the Service. Thus, such notification is not required under either statute, but an action resulting in take is prohibited nonetheless. As currently occurs under the Act, providing such notification may be in the interest of a project proponent as it can help them avoid potential legal liabilities from enforcement of BGEPA or MBTA. We believe that working cooperatively with landowners to avoid or minimize adverse impacts to bald eagles is likely to achieve more positive conservation than reliance on regulatory enforcement. In addition, we have proposed a program that would allow us to authorize limited take associated with otherwise lawful activities under BGEPA (72 FR 31141; June 5, 2007), similar to the incidental take authorizations that we have made under sections 7 and 10 of the Act.

#### *Factor B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

*Issue:* Poaching and illegal trade of bald eagle parts is still a threat that will increase if the bald eagle is delisted.

*Response:* There is no legal commercial or recreational use of bald eagles, and such uses of bald eagles will remain illegal under various statutes, as described under Factor B below. We consider current laws and enforcement measures apart from the Act sufficient to protect the bald eagle from illegal activities, including poaching and illegal trade.

*Issue:* Eagle parts and feathers should continue to be available for Native American religious and cultural needs. If the bald eagle is delisted, Native Americans should be given priority for eagle parts and feathers.

*Response:* To respond to the religious needs of Native Americans, in the early 1970s, we established the National Eagle Repository in Commerce City, Colorado,



which serves as a collection point for dead raptors, including bald eagles. As a matter of policy, all Service units transfer salvaged bald eagle parts and carcasses to this repository. Federal and State conservation agencies, zoological parks, rehabilitators, and others who may legally possess and transport dead bald and golden eagles are encouraged to send the dead birds, and their parts, to the repository so they can be utilized by federally recognized Native American Tribes (16 U.S.C. 668a and 50 CFR 22.22).

Native Americans are given priority for eagle parts and feathers, and only members of Federally recognized tribes can obtain a permit from us authorizing them to receive and possess whole eagles, parts, or feathers from the repository for religious purposes. This policy is authorized by the provisions of BGEPA and will continue after delisting.

*Issue:* One commenter did not want the bald eagle delisted due to the importance of the bald eagle to Native American religious and spiritual practices and ceremonies. Another commenter recommended continuing the Act's protections until recovery had been achieved such that Native Americans no longer need a permit for Indian religious activities. Several commenters stated that Native Americans should not be allowed to sacrifice eagles, even if doing so is for religious ceremonies.

*Response:* As required by the Act, we are delisting the bald eagle because it no longer meets the definition of a threatened species; the bald eagle will continue to be protected under the BGEPA and MBTA once it is delisted. These statutes prohibit unauthorized take and require permits for limited designated uses of eagles, their parts, and related items. The BGEPA expressly authorizes issuance of permits to take bald eagles for the religious purposes of Indian tribes. We will continue to issue only permits that we determine are consistent with the preservation of the bald eagle.

#### *Factor C. Disease or Predation*

*Issue:* One commenter stated that avian influenza is a threat to the bald eagle and that it should be thoroughly discussed in the delisting rule. Another commenter was concerned about the threats to bald eagles from other diseases such as avian vacuolar myelinopathy, West Nile virus, and raptor beak overgrowth syndrome.

*Response:* The Department of the Interior is currently testing migratory birds for the presence of H5N1 high path avian influenza. At this time, there

are no confirmed cases of migratory birds, including bald eagles, testing positive for avian influenza in the United States (USGS 2007a). At least 80 bald eagles and possibly thousands of American coots have died from avian vacuolar myelinopathy since it was discovered in 1994 at DeGray Lake in Arkansas. Studies on avian vacuolar myelinopathy are continuing, but the cause is still unknown (USGS 2007b). These and other diseases may affect individual bald eagles at the local level, but as discussed below under Factor C, are not considered to be a significant threat to the overall bald eagle population.

#### *Factor D. The Inadequacy of Existing Regulatory Mechanisms*

*Issue:* Several commenters were concerned that many States and local jurisdictions will remove the protections for the bald eagle after delisting. One commenter stated that Memoranda of Agreement should be in place between the Service and the States to provide protection for the bald eagle after delisting. One commenter wanted to make sure that States with small bald eagle populations will still provide protection after delisting. One State government commented that State laws provide little habitat protection. Several States indicated that they will play a large role in bald eagle conservation after delisting.

*Response:* Some States will likely maintain the sensitive status of the bald eagle under individual State laws; however, such protection is not needed to assure that the bald eagle population in the lower 48 States will continue to be a viable population after delisting. As described in the discussions of Factors A and B below, the Service believes that BGEPA and other Federal laws that will remain in place after delisting provide the necessary protections in the future for a recovered bald eagle population. Many States have developed State-specific management plans, regulations, and/or guidance for landowners and land managers to protect and enhance bald eagle habitat, and we encourage the continued development and use of these planning tools to benefit bald eagles. Such measures can only offer more protection for bald eagles than is already offered by BGEPA and MBTA. The States will play a key role in continuing to monitor bald eagles in the lower 48 States to make sure that the species continues to maintain its recovered status.

*Issue:* One commenter asserts that BGEPA and MBTA will continue to protect bald eagles after delisting, and, because of these protections, bald eagles

will likely become overpopulated in some areas of the country.

*Response:* The bald eagle has not yet reached carrying capacity in many parts of its range, and we anticipate that the population will continue to increase in these areas following delisting. In prime congregation areas, numbers of nesting pairs will level off as the nesting habitat reaches carrying capacity. Many of the bald eagles displaced from saturated habitats will be able to relocate to other suitable habitats. However, territorial competition between eagles will likely maintain a naturally fluctuating population once carrying capacity has been reached.

*Issue:* Several commenters were concerned that the Service will not maintain adequate funding for staff to provide technical assistance or enforce BGEPA after delisting.

*Response:* The Service is committed to maintaining adequate staff to respond to requests for technical assistance. The ultimate mechanisms for delivering that assistance will be determined prior to making a decision on the proposed BGEPA permit program (72 FR 31141; June 5, 2007).

*Issue:* Several commenters expressed concern that the proposed delisting did not include grandfathering of existing take authorizations/permits under sections 7 and 10 of the Act.

*Response:* After delisting of the bald eagle, the Service will honor existing Act authorizations until the Service completes a final rulemaking for permits under the BGEPA. We do not intend to refer for prosecution the incidental take of any bald eagle under the MBTA, as amended (16 U.S.C. 703-712), or the BGEPA, as amended (16 U.S.C. 668-668d), if such take is in full compliance with the terms and conditions of an incidental take statement issued to the action agency or applicant under the authority of section 7(b)(4) of the Act or the terms and conditions of a permit issued under the authority of section 10(a)(1)(B) of the Act. The Service has proposed a rulemaking to establish criteria for issuance of a permit to authorize activities that would "take" bald eagles under the BGEPA. The Service has addressed the existing Act authorizations in that rulemaking, which if finalized, might extend comparable authorizations under the BGEPA (72 FR 31141; June 5, 2007).

#### *Factor E. Other Natural or Manmade Factors Affecting Its Continued Existence*

*Issue:* Several commenters were concerned about ongoing impacts of contaminants. One commenter noted that mercury is still a threat to bald

eagles in the Northeast United States. Another commenter noted that PCBs and DDE were still an ongoing threat to the Great Lakes population of bald eagles. Another commenter noted that the upper Midwest population of bald eagles is experiencing a heavy metal contaminant problem that affects the ratio of immature eagles to adults. Another commenter stated that too many nests in northern Illinois have zero productivity due to contaminants.

*Response:* As we discuss further in Factor E below, we acknowledge that certain contaminants may pose a threat to individual bald eagles. We believe many of these instances are localized and that contaminants will not be a large enough threat to limit the population of bald eagles in the lower 48 States or any significant portions of its range in the foreseeable future such that the protection of the Act would be warranted. This is evidenced by the population increases that have occurred despite the presence of certain levels of contaminants, including mercury and PCBs, in the environment.

*Issue:* One commenter was concerned that climate change may be an issue, and we should, therefore, keep the bald eagle listed until we can guarantee that habitats are safe.

*Response:* Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is a threatened or endangered species shall be made "solely on the basis of the best scientific and commercial data available." We did not receive any data during the public comment period to indicate that climate change is currently threatening the future security of the bald eagle or its habitat. Since the bald eagle is currently successful in a wide range of climate conditions throughout North America, climate change will not likely be a factor threatening the species in the foreseeable future.

#### General Comments

*Issue:* The Service may take too long to re-list the bald eagle if it is warranted.

*Response:* If data from the post-delisting monitoring plan show that the bald eagle population is decreasing below a trigger threshold specified in the plan, we will investigate the cause of the decline and take the necessary measures to address the decline. If the population decline is severe, then we will promptly evaluate whether re-listing under the Act is warranted, including the Act's provision for emergency listing, as appropriate.

*Issue:* The Service used an out-of-date, non-scientific population productivity value of 0.7 young/pair.

*Response:* Our information indicates that a productivity value of 0.7 young/pair for a stable population is still the best available data (see Sprunt *et al.* 1973, p. 104; Buehler 2000, p. 20).

*Issue:* The delisting is too reliant on current eagle numbers. Research on survivorship, sex ratios, and population recruitment are all important parameters of recovery, not just productivity. Delisting criteria should be based on numbers of active nests, not breeding pairs.

*Response:* The recovery criteria and goals were established by recovery teams composed of experts in each geographic region. The purpose of the criteria was to allow the Service to monitor the status of the recovery efforts. By setting a goal to monitor population numbers and productivity, the Service, in conjunction with the recovery teams, could determine whether the threats that led to the bald eagle's endangerment had been removed. Monitoring the additional parameters would have been more costly and would not provide any more data that would enable the Service to monitor recovery. Given the increase in the population parameters, the threats have been shown to have decreased to the point where the bald eagle no longer meets the definition of threatened or endangered under the Act.

*Issue:* The population data presented are estimates and not supported by field work. Data provided by the commenter indicate that the percentage of immature eagles to adults is dropping, which may influence reproduction or survival in the bald eagle population.

*Response:* The data discussed by the commenter are midwinter counts collected on one day in a 2-hour period from northern Minnesota to Reelfoot, Tennessee. These data, on their face, did show a fluctuation in the number of immature bald eagles throughout the time period from 1961 to 2006, with some years having a higher number than others. However, these data also indicated a trend of increasing adults from 470 in 1961 to 1,299 in 2006. Throughout this time period, the number of adults also fluctuated. Because surveys of wintering bald eagles, such as the midwinter counts described above, are weather dependent (mild winters cause fewer birds to move south) and can include birds migrating down from Canada, the Service has relied on nesting data as the stronger indicator of bald eagle population trends in the lower 48 States. We plan to continue monitoring population trends with implementation of our post-delisting monitoring plan. However, we support the public involvement related

to midwinter counts, and such data have highlighted the importance of wintering habitats used by these eagles.

#### Distinct Vertebrate Population Segment

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or removing species from listed status. "Species" is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). We, along with the National Marine Fisheries Service (now the National Oceanic and Atmospheric Administration—Fisheries), developed the Policy Regarding the Recognition of Distinct Vertebrate Population Segments (DPS policy) (61 FR 4722; February 7, 1996), to help us in determining what constitutes a Distinct Population Segment (DPS). The policy identifies three elements that are to be considered in a decision regarding the status of a possible DPS. These elements are: (1) The discreteness of the population in relation to the remainder of the species to which it belongs; (2) the significance of the population segment to the species to which it belongs; and (3) the population segment's conservation status in relation to the Act's standards for listing. Our policy further recognizes it may be appropriate to assign different classifications (i.e., threatened or endangered) to different DPSs of the same vertebrate taxon (61 FR 4725; February 7, 1996).

#### Sonoran Desert Distinct Population Segment

As discussed above, the Service made a negative 90-day finding on a petition to list the Sonoran Desert bald eagle population as an endangered DPS (71 FR 51549; August 30, 2006). In this final determination on the proposed delisting of the entire bald eagle population in the lower 48 states, we also consider, as a final determination, whether the Sonoran Desert population of the bald eagle constitutes a DPS, and should remain listed as either an endangered or threatened species. The main bald eagle population center of the Sonoran Desert currently consists of 42 breeding pairs (AZ Game and Fish Dept. 2006, p. 6) that are found in the southern half of Arizona, west of the New Mexico state boundary. One breeding pair in Arizona is found outside the Sonoran Desert.

#### Discreteness

The DPS policy states that a population segment of a vertebrate

species may be considered discrete if it satisfies either one of the following two conditions: It must be markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors; or it must be delimited by international boundaries within which significant differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act. The second criterion, international boundaries, is easily addressed because the Sonoran Desert population of bald eagles is not delimited by international boundaries that could be the basis of a review of management of habitat, conservation status or regulatory mechanisms. Therefore, the Sonoran Desert population of bald eagles is not discrete based on this criterion. As discussed below, under the first criterion, we find that the Sonoran Desert population is markedly separated from other populations as a consequence of behavioral factors. Therefore, we do not address separation by physical, physiological, or ecological factors.

In looking at whether Sonoran Desert bald eagle are markedly separated from other populations it is helpful to evaluate whether there is a level of interchange between this population and adjacent populations. Biologists in Arizona made a concerted effort to band all nestlings in Arizona since 1987. Of those birds that were sighted with bands between 1987 and 2005, 41.8 percent hatched in Arizona, 18.8 percent likely hatched in Arizona before 1987 (due to a different band type), less than one percent were from another State, and 38.8 percent were from unknown origin (unbanded) (Driscoll *et al.* 2006, p. 26). One adult breeding in Arizona is known to have originated from another State (banded as a nestling in 1988 in southeast Texas). Only one nestling with a band was identified as subsequently nesting outside the recovery region (Temecula, California) (Driscoll *et al.* 2006, p. 27). Roughly 20 percent of the population does not receive a band for a variety of reasons (*e.g.*, logistics of reaching the nestlings), and therefore 38 percent of the population without bands would not be unusual.

In addition, because of the clinal variation in these birds, bald eagle populations from around the same latitude would likely be the supplier of birds that would immigrate into the population. Currently, we do not have any populations surrounding the Sonoran Desert that are large enough

that juveniles would likely start to disperse into the Sonoran Desert. Within the last 30 years, these adjacent populations have not increased in size to the same degree as we have seen with the populations in other parts of the bald eagle's range. Given that we do not have large bald eagle population centers surrounding the Sonoran Desert, and given the limited habitat found between currently known populations, it is likely that interchange between the Sonoran Desert and other populations will be minimal in the foreseeable future.

These data indicate that immigration to and emigration from the Sonoran Desert population is very limited. Reproductive isolation of the bald eagles nesting in the Sonoran Desert region of Arizona, although probably not absolute, appears to be substantial. Our DPS Policy does not require that populations experience total reproductive isolation in order to meet the discreteness criterion; rather, they need only to be "markedly separated." We believe the documented low levels of immigration and emigration indicate that this population is currently markedly separated from other bald eagles in the United States.

On the basis of the immigration by the southeast Texas eagle, in 1995, the Service determined as part of the Service's final rule reclassifying the bald eagle from endangered to threatened (60 FR 36000; July 12, 1995) that eagles in the Southwestern Recovery Region were not reproductively isolated. The banded bald eagle from Texas, although located within the Southwestern Recovery Region, occupies an area outside the Sonoran Desert. Furthermore, no additional banded bald eagles from outside the Sonoran Desert have been discovered immigrating into the Sonoran Desert since 1995. In addition, the analysis during the 1995 rule was conducted prior to implementation of the DPS policy in 1996. Therefore, now reviewing the same question in the context of the DPS policy, combined with more data on immigration and emigration, leads us to a conclusion that this population is discrete.

#### Significance

If we determine that a population segment is discrete under one or more of the discreteness conditions, then we evaluate its significance based on "the available scientific evidence of the discrete population segment's importance to the taxon to which it belongs" (61 FR 4725). We make this evaluation in light of congressional guidance that the Service's authority to list DPSs be used "sparingly" while encouraging the conservation of genetic

diversity (61 FR 4722; February 7, 1996). This consideration may include, but is not limited to the following elements: (1) Evidence of the persistence of the population segment in an ecological setting that is unusual or unique for the taxon; (2) evidence that loss of the population segment would result in a significant gap in the range of the taxon; (3) evidence that the population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside of its historic range; and (4) evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

(1) Evidence of the persistence of the population segment in an ecological setting that is unusual or unique for the taxon.

As stated in the DPS policy, the Service believes that occurrence in an unusual ecological setting is potentially an indication that a population segment represents a significant resource warranting conservation under the Act (61 FR 4724). In considering whether the population occupies an ecological setting that is unusual or unique for the taxon, we evaluate whether the habitat shares many features common to the habitats of other populations. The Sonoran Desert bald eagle population inhabits a desert ecosystem characterized by hot and dry summers that, on its face, seems to represent an ecological setting that is highly unusual or unique for the species. However, bald eagles in the Sonoran Desert population essentially use the same ecological niche as those in other parts of the lower 48 States population. Bald eagles in the Sonoran Desert feed primarily on fish, consistent with bald eagles in other parts of the range. Habitat structure and proximity to a sufficient food source are usually the primary factors that determine suitability of an area for nesting (Grier and Guinn 2003, p. 44). Nationwide, bald eagles are known to nest primarily along seacoasts and lakeshores, as well as along banks of rivers and streams (Stalmaster 1987, p. 120). Similar to the remainder of the population, bald eagle breeding areas (eagle nesting sites and the area where eagles forage) in the Sonoran Desert are located in close proximity to a variety of aquatic sites, including reservoirs, regulated river systems, and free-flowing rivers and creeks.

We considered whether cliff nesting is an adaptation to the conditions in the Sonoran Desert that indicates the Southwest is a unusual or unique ecological setting for bald eagles. While Stalmaster (1987) noted that cliff nesting

is common in Arizona, he also noted that exceptions to tree nests in other areas do occur. Gerrard and Bortolotti (1988, p. 41) note that bald eagles in other areas may nest on cliffs if suitable trees are not available. For instance, bald eagles are known to nest on cliffs on the Channel Islands off California (NOAA 2006). Bald eagles in Alaska also are known to nest on cliffs, sea stacks, hillsides, and rock promontories where there are no suitable nest trees (Sherrod *et al.* 1976, p. 153). It is likely that up to 10 percent of the bald eagles in Alaska nest on the ground (Schempf 2007). Ground nesting has been documented in northwestern Minnesota and Florida but is the exception rather than the rule (Hines, P. and H. Lipke 1991; Shea, R.E. and Robertson W.B. Jr. 1979). Eagles also nest in a variety of odd situations, such as utility poles, abandoned heavy equipment, mangroves, and root wads washed up on sandbars. Cliff nesting in the Sonoran Desert bald eagles does not seem to be an indication of a behavioral adaptation unique to the Sonoran Desert. Bald eagles will use whatever high nest sites are available near riparian areas they inhabit: in the Sonoran Desert these sites often happen to be cliffs. In fact, although bald eagles utilize cliffs, ledges, and pinnacles for nesting in the Sonoran Desert, they have also nested in cottonwood, willow, sycamore, pinyon pine, and ponderosa pine trees. Many Sonoran Desert eagle pairs have built and used both tree and cliff nests within their territories. This behavior demonstrates the flexibility in nest site selection that bald eagles have throughout the eagles' entire geographic range.

Bald eagles in the Sonoran Desert are smaller in size and breed earlier in the season than most other bald eagles, which could indicate behavioral adaptations to a unique setting. However, examination by latitude reveals differences between birds in the northern regions and birds in the southern regions. For instance, Stalmaster (1987, pp. 16–17) notes northern eagles are much larger and heavier than their southern counterparts. This is consistent with Bergmann's Rule, which holds that animal size increases with increasing latitude due to changes in environmental temperature. Consistent with this rule, Hunt *et al.* (1992) reports that bald eagles in Arizona are smaller than those in Alaska, California, and the Greater Yellowstone Region. Gerrard and Bortolotti (1988, p. 14) note that bald eagles in Florida, which is farther south than Arizona, are the smallest,

with a gradation of small to large from south to north. Timing of various breeding events in bald eagles is also tied to latitude of the nesting area, with eagles at more northern latitudes breeding at later dates (Stalmaster 1987, p. 63). Stalmaster (1987, p. 63) notes that bald eagles in Florida initiate breeding activities in October, even earlier than Sonoran Desert bald eagles. Bald eagles in Florida also lay eggs earlier (Stalmaster 1987, p. 63; Gerrard and Bortolotti 1988, p. 76). Accordingly, Florida bald eagles hatch and fledge earlier than those in the Sonoran Desert.

In summary, Stalmaster's (1987) and Gerrard and Bortolotti's (1988) studies indicate that bald eagles in other parts of the lower 48 States are known to nest on cliffs if suitable trees are not available. Hunt *et al.* (1992) notes that Florida bald eagles are the smallest bald eagles, and that eagle size increases as the nest sites are located farther north. Stalmaster (1987) notes that bald eagles in Florida initiate breeding activities in October, even earlier than Sonoran Desert bald eagles. The best available scientific information indicates that the Sonoran Desert bald eagles are not unique in these behavioral aspects. Instead, bald eagle behavior and morphology gradually changes at different latitudes from north to south within the lower 48 States. In fact, even though bald eagles do persist in the Southwest desert setting, they remain consistently associated with riparian ecosystems. Bald eagles use whatever high nest sites are available near riparian areas they inhabit in the Sonoran Desert; these sites often happen to be cliffs. Therefore, because these riparian areas are common to eagle habitats throughout the species' range, the best available data indicate that the Sonoran Desert population of eagles does not occupy an ecological setting that is unusual or unique for the taxon or that has resulted in any adaptations that are unusual or unique for the taxon.

Many biological opinions prepared by the Service in connection with section 7 consultations in the Sonoran Desert and other Service documents issued over the last 30 years stated that Arizona bald eagles live in a unique ecological setting and demonstrate unique behavioral characteristics, including the use of cliffs instead of trees as nest sites, breeding at earlier times of the year, and development of smaller body sizes. Many of these biological opinions and other documents were issued prior to the Stalmaster (1987) and Gerrard and Bortolotti (1988) studies. Furthermore, these Service documents were prepared prior to the issuance of the DPS policy in 1996, or abstracted from such earlier

biological opinions without re-analyzing their relevance. The term "unique ecological setting" was not used in these documents in the context of its meaning within the DPS policy, which requires that the unique ecological setting be important to the taxon as a whole. While the climate conditions differ in the Southwest compared to other parts of the lower 48 States where bald eagles are found, this attribute alone does not complete the requirements of the DPS policy. A unique ecological setting must also provide some element that makes the members of the population important to the taxon as a whole, such as an evolutionary advantage (61 FR 4724–4725). The factual statements in the biological opinions and other documents concerning the location of the population within the desert and the description of their behaviors did not include consideration of the population's importance to the taxon as a whole because these documents were either issued prior to the promulgation of the DPS Policy or were issued for other purposes than evaluation of the population under the DPS Policy.

The biological opinions and other documents, prior to 1995, also stated that the Arizona bald eagles had been considered a distinct population for the purposes of section 7 consultation and recovery efforts under the Act. The practice of dividing species distributed across the large areas within the United States into separate recovery regions was employed for management convenience (71 FR 51555). For the bald eagle, we created five different recovery plans for these regions. The Service's current practice, however, is to create one plan for the listed entity because the previous practice led to confusion regarding the status of the recovery plan entity under section 4 of the Act. In addition, "recovery units" have been, and continue to be, identified as part of the recovery planning process for listed species as a management convenience. In the past, for the purposes of section 7 consultation, the Service may have only evaluated whether the impact of a proposed action was jeopardizing the management unit, either the recovery plan entity or the recovery unit. However, this process was discontinued based on the consultation handbook that was finalized in March 1998 (USFWS and NMFS 1998, p. 4–36). As previously discussed, separating the listed entity into smaller management pieces may be useful in addressing the conservation needs of the species. However, it is important to note that the establishment of separate recovery plans or "recovery units" within a plan does not create a

new listed entity under section 4 of the Act. The Service has since acknowledged that for both recovery planning and consultation, the listed entity is the appropriate level of analysis.

The Sonoran Desert can experience periods in the summer that are hot, with low humidity, but it is not a unique ecological setting for bald eagles for the purpose of the significance prong of the DPS policy. The best available scientific data suggest that the ecological setting is essentially the same as used by bald eagles elsewhere—riparian habitat. Although the Sonoran Desert obviously differs in some ways from other habitats that the bald eagle inhabits, every area differs somewhat from other occupied areas and the mere existence of difference does not settle this question. To the degree that the Sonoran Desert differs from other ecological settings used by the bald eagle, we conclude that it does not differ in a way that is dispositive under the DPS policy, because the adaptations exhibited by bald eagles in the Sonoran Desert are not unique to this setting. Rather, the variability in bald eagle nest site selection, breeding phenology, and size are noted elsewhere in the range where the species confronts similar limitations, such as the absence of nesting trees or high temperatures.

The question under the DPS policy is whether persistence of a species in an unusual or unique ecological setting supports a conclusion that the discrete population segment is important to the taxon to which it belongs (See *National Association of Home Builders v. Norton*, 340 F.3d 835, 849 (9th Cir. 2003) emphasizing that under the DPS policy significance must be to the taxon as a whole). The mere fact that a species persists in an ecological setting that differs to some degree from other ecological settings in which it is found does not mandate a finding that a population is significant. Here, we find that the species' persistence in the Sonoran Desert does not support such a conclusion because there is no evidence that these particular eagles have adapted in response to these conditions in any way that benefits the taxon as a whole because similar adaptations are found in other settings. Without evidence of such an adaptation, there is likewise no evidence that the bald eagle's persistence in the Sonoran Desert is important to the bald eagle as a whole.

Therefore, we conclude that the discrete population of bald eagles in the Sonoran Desert is not "significant" within the meaning of the DPS policy as a result of persistence in a unique or unusual ecological setting.

(2) Evidence that loss of the population segment would result in a significant gap in the range of the taxon.

As "[t]he plain language of the second significance factor does not limit how a gap could be important," *National Ass'n of Home Builders v. Norton*, 340 F.3d 835, 846 (9th Cir. 2003), we considered a variety of ways in which the loss of the Sonoran Desert population might result in a significant gap in the range of the bald eagle in the lower 48 States, much less the broader taxon. There has been much speculation about the loss of the Sonoran Desert population given that repopulation of this area would have to occur from northern Mexico or adjacent States, and available evidence indicates that little immigration has occurred in this population. We agree that the low number of eagles in neighboring States would likely require a large amount of time to repopulate the Sonoran Desert region, if they ever did. The small number of bald eagles and large distances between neighboring populations currently limit immigration and emigration between them, and bald eagles in the neighboring populations would have to increase their population size and expand their distribution to occupy the gaps.

Given repopulation through immigration is unlikely in the foreseeable future, we have to evaluate whether this would represent a significant gap to the taxon. The current range of the Sonoran Desert bald eagle could be significant if the population in the Sonoran Desert is numerous and constitutes a significant percentage of the total number of bald eagles, the loss of which would be a significant gap in the population. Bald eagles in the Sonoran Desert are neither numerous nor constitute a significant percentage of the total bald eagles within the lower 48 States. Currently, 43 pairs are found in Arizona, which represents less than 1% of the current estimated number of breeding pairs of bald eagles in the lower 48 states. In addition, this area did not support a large proportion of the bald eagle population historically. A small number, estimated at 15–20 breeding pairs, historically bred in this area (Tilt 1976, p. 15). Given the historical and current population number of bald eagles in the lower 48 States, the Sonoran Desert population of bald eagles represents a relatively small number of breeding pairs in comparison to other areas within the lower 48 States. Also, significant numbers of bald eagles that breed elsewhere do not winter in the Sonoran Desert.

In addition, as discussed in the first and fourth significance factors, we have no evidence that loss of the Sonoran

Desert population would represent a significant gap due to a loss of biologically distinctive traits or adaptations or genetic variability of the taxon. In addition, as discussed in the discreteness section, loss of the Sonoran Desert population would not create a significant gap by impeding gene flow within the taxon, as the Sonoran Desert population does not connect otherwise unconnected populations. Finally, loss of the Sonoran Desert population would not result in a significant gap in the range of the taxon due to the sheer reduction of existing or potential geographical range. The actual amount of suitable bald eagle habitat in the Sonoran Desert, limited to a few riparian corridors, is a tiny fraction of the total suitable habitat available for bald eagles in the lower 48 States, much less their entire range. The limited size of the current and historical bald eagle population in the Sonoran Desert directly reflects that fact.

(3) Evidence that the population segment represents the only surviving natural occurrence of a taxon that may be more abundant elsewhere as an introduced population outside of its historic range.

The Sonoran Desert population does not represent the only surviving natural occurrence of the bald eagles in the lower 48 States.

(4) Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics.

Hunt *et al.* (1992, pp. E–96 to E–110) contains the genetic work completed to date on the Arizona bald eagle population. Vyse (1992, p. E–100, E–101) notes the data are inconclusive, as evidenced by such statements as: "These findings must be assumed to be preliminary (and treated with due caution), because of a lack of information concerning sampling procedures. The results we have obtained could easily be explained by sampling procedures"; and "At present these data (Hinfl/M–13) are too incomplete to be considered further." In addition, Zegers *et al.* 1992, p. E–106 to E–109): "Question 4 \* \* \* is difficult to answer with precision because of the different sample sizes between 1985 and 1990 \* \* \*. [T]his difference is possibly an artifact of the many fewer samples in 1985"; "six loci may not be enough to give a reliable estimate of the true genetic distance"; and "We feel caution should be exercised when interpreting these results due to the low numbers of individuals sampled from most states but especially because of the few loci examined."

Although Hunt *et al.* (1992) suggested that the desert Arizona population may be reproductively isolated, neither enzyme electrophoresis nor DNA fingerprinting resolved any specific genetic markers with which Arizona eagles could be differentiated from other populations. The available genetic studies on bald eagles are dated, the sample size was small, and researchers conducting the studies found the results to be inconclusive. As discussed above, the Sonoran Desert population does not display any biologically distinctive traits that could signal any unique genetic characteristics. Therefore, given the assumptions and cautions in using the data, we have determined that the best available data do not support a conclusion that the Sonoran Desert bald eagle population has genetic characteristics that are markedly different from other bald eagles.

### Conclusion

We have reviewed the best scientific and commercial data available and have evaluated the data in accordance with 50 CFR 424.14(b). On the basis of our review, we find that although the Sonoran Desert bald eagle population is discrete, it is not significant in relation to the remainder of the taxon. Sonoran Desert bald eagles lack any biologically or ecologically distinguishing factors. Although they do persist in an arid region, Sonoran Desert bald eagles do not have any adaptations that are not found in bald eagles elsewhere. The adaptability of the species allows its distribution to be widespread throughout the North American continent. Therefore, we conclude that the Sonoran Desert population of the bald eagle in the lower 48 States is not a listable entity under section 3(16) of the Act.

### Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species, reclassifying species, or removing species from listed status. "Species" is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). Once the "species" is determined we then evaluate whether that species may be endangered or threatened because of one or more of the five factors described in section 4(a)(1) of the Act. We must consider these same five factors in delisting a species. We may delist a species according to 50 CFR 424.11(d) if

the best available scientific and commercial data indicate that the species is neither endangered nor threatened for the following reasons: (1) The species is extinct; (2) the species has recovered and is no longer endangered or threatened (as is the case with the bald eagle); and/or (3) the original scientific data used at the time the species was classified were in error.

A recovered species is one that no longer meets the Act's definition of threatened or endangered. Determining whether a species is recovered requires consideration of the same five categories of threats specified in section 4(a)(1) of the Act. For species that are already listed as threatened or endangered, this analysis of threats is an evaluation of both the threats currently facing the species and the threats that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting and the removal or reduction of the Act's protections.

A species is "endangered" for purposes of the Act if it is in danger of extinction throughout all or a "significant portion of its range" and is "threatened" if it is likely to become endangered within the foreseeable future throughout all or a "significant portion of its range." The word "range" in the significant portion of its range (SPR) phrase refers to the range in which the species currently exists. For the purposes of this analysis, we will evaluate whether the currently listed species, the bald eagle in the lower 48 States, should be considered threatened or endangered. Then we will consider whether there are any portions of bald eagle's range in danger of extinction or likely to become endangered within the foreseeable future.

For the purposes of this final rule, we consider "foreseeable future" for the bald eagle to be 30 years. Bald eagles fully mature at 4 to 5 years of age (Buehler 2000, p. 19). Gerrard and Bortolotti (1988) observed that successful breeding may not occur for 2 years or more after reaching maturity. Thus, a life cycle from birth to breeding is about 6 years (Gerrard and Bortolotti 1988, p. 57). We used 5 bald eagle generations (30 years) to represent a reasonable biological timeframe to determine if threats could depress the population size and therefore would be significant. We have roughly 30 years of detailed information on how bald eagle populations have responded to the threats identified when the species was listed. Based on this body of information and the combination of bald eagle biology and the threats of greatest consequence (contaminant exposure,

shooting, and habitat modification), we conclude that 30 years is a reasonable timeframe over which we can extrapolate the likely extent of the threats and their impact on the species.

The following analysis examines all five factors currently affecting, or that are likely to affect, the bald eagle in the lower 48 States within the foreseeable future.

*A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.* This section will first describe the habitat needs of the bald eagle. It will then discuss the potential threats to that habitat, and the degree to which those threats are ameliorated by various factors. Our analysis concludes that: (1) The habitat threats to such a wide-ranging species, while not readily quantifiable, are much less significant than once feared given the strong recovery of the eagle over the last 30 years; (2) the threats that do exist vary considerably across the landscape, based in part on the ownership of the land in question and the fact that many lands have significant protection independent of the Act; (3) nesting habitat on protected lands is likely sufficient to maintain the recovered population in the foreseeable future; (4) several regulatory mechanisms will limit the degree to which habitat loss will occur on other lands; and (5) recent anecdotal data suggest that even when habitat loss occurs, the impact on bald eagles may be less than previously anticipated.

Throughout their life cycle, bald eagles are associated with a variety of aquatic habitats. Beyond this generalized need for aquatic habitat, bald eagles are not particularly specialized in their habitat needs, thriving near a variety of different environments, including reservoirs, lakes, rivers, estuaries, and coastal areas throughout North America. Within the aquatic habitats, bald eagles feed primarily on fish, but may also consume waterfowl, gulls, cormorants, and a variety of carrion.

Bald eagles usually nest in trees near water, but may use cliffs in the southwestern United States and Alaska. Ground nests have also been reported from Alaska. Nests are usually built in large trees along shorelines, but may be up to one-half mile or more from the shoreline. Adults use the same breeding territory, and often the same nest, year after year. They may also use one or more alternate nests within their breeding territory.

The habitat needs of bald eagles vary somewhat outside of the breeding cycle, although bald eagles are still strongly

dependent on aquatic habitats as their primary food source. The timing and distance of dispersal from the breeding territory varies. Some bald eagles stay in the general vicinity of their breeding territory while some migrate up to hundreds of miles to their wintering grounds and remain there for several months. Young eagles may wander randomly for several years before returning to nest in their natal areas. Eagles seek wintering (non-nesting) areas offering an abundant and readily available food supply with suitable night roosts. Night roosts typically offer isolation and thermal protection from winds. Bald eagles generally concentrate in large numbers in suitable habitat areas in the winter. Important breeding and wintering areas have generally been located in areas at distances from human activity. As discussed below, however, recent data have begun to challenge long-held assumptions that bald eagles require significant isolation from all human activity.

The eagle's decline was largely due to chemicals now known to impair reproductive success (see discussion of this threat under Factor E). Through the recovery planning process, however, various threats to habitat were noted, such as loss of nesting, roosting, and perching habitat through recreational shoreline development, forestry, and urban and suburban expansion. In addition, habitat can be degraded through human disturbance, especially during breeding season. However, as discussed in detail below, in the context of the eagle's dramatic recovery (and continuing population increases), the threat posed by future destruction or modification of habitat is minor compared to what would be required for the bald eagle to be likely to become in danger of extinction throughout all or a significant portion of its range within the foreseeable future.

Currently, habitat availability is not preventing the growth of the bald eagle population in the lower 48 States. Areas that were unoccupied have been repopulated, and the eagle population continues to increase, indicating that carrying capacity has not been reached in many parts of their range. Based on the most recent data, the population in a few States with relatively limited habitat may have started to stabilize; Colorado has shown a slight decline in the numbers of pairs between survey years of 2001 and 2005 (Ver Steeg 2006, p. 2). Other States continue to experience rapid population growth: the number of pairs in Illinois and Iowa doubled between 1999 and 2006 (Conlin 2006, p. 1; Vonk 2006, p. 1). Most States are continuing to show a slight increase

in the number of breeding pairs. The population in the lower 48 States as a whole will likely continue to increase in the foreseeable future but at a gradually declining rate that is much slower than has been documented during the past 30 years of the recovery period. Once the carrying capacity has been reached in different parts of the range, we expect the population to naturally stabilize and then fluctuate.

When the recovery planning started, the bald eagle population was at a precarious stage and any threat to the remaining birds was identified, given the uncertainty of its continued survival, much less recovery. At that time, any significant habitat loss (particularly if it affected the remaining pairs) was of grave concern. However, with the eagle population increasing by well over an order of magnitude since that time, the immediate concern posed by habitat loss has dissipated. The only remaining concern related to habitat is whether, over the long term, development or other factors might cause habitat loss sufficient to limit the eagle population to a point that the viability of the population is threatened.

In the future, available habitat will almost certainly limit the population of bald eagles in the lower 48 States. Furthermore, we acknowledge that habitat loss will likely eventually result in slow declines of bald eagle populations in some areas. Through comments and information in our files, we are aware that heavy development pressures and important eagle habitat overlap in parts of Florida and the Chesapeake Bay region. According to the U.S. Census Bureau, Florida is the third fastest growing State in the nation, and the State's human population is projected to increase by 79 percent by 2030 (compared to 2000). The Chesapeake Bay region States (Maryland, Delaware, and Virginia) all have varying degrees of projected increase that average around 32 percent over the same time period. Moreover, the population of bald eagles in Florida has started to stabilize, not showing an increase or decrease between 2003 and 2005. Thus, it is likely that the number of breeding pairs in Florida will begin to decline within the foreseeable future, and possible that the same result could occur in the Chesapeake Bay region.

The relevant question under section 4 of the Act, however, is whether such a decline will occur in the foreseeable future to a degree that the bald eagle is likely to become in danger of extinction again throughout all or a significant portion of its range. In analyzing this question, we considered the fact that the habitat threats that do exist vary

considerably across the landscape. This is in part based on the ownership of the land in question—some lands have significant protection independent of the Act. Because the threats do vary across the range, we discuss in greater detail at the end of this section those portions of the range that have come to our attention based on comments or information in our files.

One of the biological factors that will ensure the bald eagle is not now endangered or likely to become so in the foreseeable future is that bald eagles are not particularly specialized in the type of aquatic habitat they use, but instead thrive near a variety of different environments including reservoirs, lakes, rivers, estuaries, and the marine environment. Currently, bald eagles occupy one or more of these environments in each of the lower 48 States, and have large breeding populations in those geographic areas that historically supported significant breeding populations. This tremendous distribution of bald eagles throughout the lower 48 States, combined with the species' ability to exploit such a wide range of geographic habitat settings, provides an important buffer against any potential threats to any of the significant portions of the range and to the species as a whole.

High quality habitat has been characterized as those areas in which human development and disturbance are absent (McGarigal *et al.* 1991). However, recent data suggest that eagles across many parts of their range are demonstrating a growing tolerance of human activities in proximity to nesting and foraging habitats. Eagles in these situations continue to successfully reproduce in settings previously considered unsuitable. For example, where our Southeastern nesting management guidelines have been followed in Florida, some bald eagle pairs have shown a remarkable adaptation to human presence by nesting in residential subdivisions and commercial and industrial parks, and on cell phone towers and electric distribution poles. A common thread throughout these urban and suburban landscapes is the availability of ample food sources such as natural lakes, rivers, and ponds; artificial stormwater retention ponds; and public landfills (Millsap *et al.* 2002, p. 10). A study of bald eagle nesting patterns in western Florida detected no differences in nest-site occupancy, nest success, or number of young fledged between bald eagles occupying suburban or rural nest sites, except bald eagles in suburban sites nested earlier (Millsap *et al.* 2002, pp. 14, 25). In western Washington,

breeding bald eagles responded less to pedestrian activity than had been documented in other studies in the United States, possibly reflecting a higher degree of habituation to human activities by eagles in this area (Watson 2004, p. 301). The Service has documented several cases in which bald eagles around the Chesapeake Bay have continued to nest and successfully produce young within distances that were previously considered too close to human activity (Koppie 2007a). In addition, in both Virginia and Maryland, compression of nesting territories has been observed, suggesting that the density of nesting pairs can be higher than once documented (Koppie 2007a). This evidence suggests that as eagles begin to reach the carrying capacity in local areas and face development or other encroachments, some eagles will successfully adapt to these circumstances. To the extent that this is true, degradation of habitat due to human disturbance is not as large a threat as once believed.

To understand the potential for nesting habitat loss due to development in the foreseeable future, we used a GIS (Geographic Information Systems) analysis to estimate the number of known bald eagle nests throughout the lower 48 States that occur on "protected land." The "protected" land category includes Federal, State, Tribal, and other areas designated as privately protected, such as lands owned by The Nature Conservancy or similar non-governmental entities. To identify such lands, we used the Conservation Biology Institute Protected Areas Database, the National Atlas Federal Lands data layer, and the State GAP Analysis data (Otto 2007). Included in another data layer are the bald eagle nests in the lower 48 States that are identified as a result of a compilation of data we received from individual States.

The resolution and quality of this information was not at a highly detailed scale, so there may be nests assigned to the wrong type of land use. For instance, the data from the National Atlas Federal lands data layer only includes Federal lands of 640 acres or more. However, given that our analysis was done at a broad scale, the resolution and quality of this data can generally give us an indication of the percentage of nests over the entire 48 States on protected land. Our intent in this analysis was only to gain perspective on those lands on which eagle nesting habitat is not likely to be lost in the foreseeable future due to the particular land category status. These areas may not all be managed specifically for bald eagles; however, as discussed below, a

variety of legal and practical considerations will act to minimize negative impacts to bald eagle habitat once the protections of the Act are removed.

Through the GIS analyses, we have identified more than 6,000 bald eagle nests in the lower 48 States on lands that provide protection for bald eagles. Of these, more than 3,400 occur on Federal lands managed by the Departments of Agriculture or the Interior, and an additional 275 occur on lands managed by the Department of Defense, including approximately 170 on lands managed by the U.S. Army Corps of Engineers. The remaining roughly 2,700 nests included within the 6,000 bald eagle nest figure are found on lands in either State or private ownership. Based on many years of conducting consultations under section 7 of the Act, reviewing habitat conservation plans under section 10 of the Act, reviewing National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) documentation for Federal actions, and other interactions with Federal and State agencies, we have found that management activities on public lands usually provide for maintaining some vegetation buffers of varying widths along riparian corridors and coastal areas. These were sometimes required by the Service as reasonable and prudent measures to address impacts to eagles, but often these buffers were incorporated into project planning because they were required to satisfy another of the action agencies' governing environmental or management laws, or because maintaining such buffers represents a good management practice even in the absence of a legal requirement. The practice of maintaining vegetative buffers is particularly relevant to (and generally supportive of) bald eagle conservation, because of the need of the species to have nesting and roosting sites (generally in trees) in close proximity to water.

As mentioned in the Effects of This Rule section, we intend to honor the existing incidental take statements associated with existing section 7 consultations, as long as the action agency and other covered entities comply with all their terms and conditions. We therefore anticipate that habitat that would be either protected or conserved as a result of these Act authorizations remaining in place. Looking to the foreseeable future, each land management agency has its own authorizing statutes and implementing regulations that may either directly or indirectly conserve habitat for bald eagles, such as by means of buffers (as

discussed above). The following paragraphs discuss some of the relevant authorities for the Federal agencies managing land with substantial numbers of eagle nests.

The U.S. Forest Service reports that bald eagles occur on 142 National Forests in the lower 48 States (Bosch 2006). More than 2,000 known bald eagle nests are found within these areas. The Forest Service manages most of its lands for multiple uses, including management for timber production, recreation, and the needs of wildlife, fish, and sensitive plants. Under the National Forest Management Act of 1976 (16 U.S.C. 1600 *et seq.*), it is the policy of Congress that all forested lands in the National Forest System shall be maintained in appropriate forest cover with species of trees, degree of stocking, rate of growth, and conditions of stand designed to secure the maximum benefits of multiple use sustained yield management in accordance with land management plans. Particular habitat protection for bald eagle is afforded through the protection of streams, stream-banks, shorelines, lakes, wetlands, and other bodies of water from detrimental in changes in water temperature, blockages of water courses and deposits of sediment (16 U.S.C. 1604(g)(3)(E)(iii)). In developing, maintaining, and revising management plans for units of the National Forest System, the Secretary of Agriculture is required to provide for multiple-use and sustained-yield of the products and services obtained from the System in accordance with the Multiple-Use, Sustained-Yield Act of 1960, including coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness (16 U.S.C. 1604(e)(1)).

The number of nests on Forest Service lands has grown substantially over the last 30+ years, and there is no indication that we have achieved the carrying capacity of the National Forest System. Even at some point in the future when the system's carrying capacity is reached, the multiple-use, sustained yield policies of the U.S. Forest Service are generally consistent with the conservation needs of the bald eagle because they will maintain a large-scale, shifting mosaic that should provide generally stable habitat conditions and a stable number of breeding pairs throughout the National Forest System.

The Service's National Wildlife Refuge (NWR) System contains more than 160 national wildlife refuges that provide important nesting grounds for bald eagles (U.S. FWS 2006c, p. 1). These refuges host more than 600 bald eagle nests. The Service established four



refuges specifically to provide management for the bald eagle: the Bear Valley NWR in Oregon was established in 1978 to protect a major night roost site for wintering bald eagles; the Karl E. Mundt NWR in South Dakota/Nebraska protects one of the important bald eagle winter roosting areas and provides important habitat for 100–300 individual bald eagles; the Mason Neck NWR in Virginia protects essential nesting, feeding, and roosting habitat; and the James River NWR in Virginia protects one of the largest summer roosting areas for juvenile bald eagles east of the Mississippi River.

The mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans (16 U.S.C. 668dd). Refuges may be opened for public access and limited uses, with priority afforded to wildlife-dependent recreation. Evaluation of proposed uses typically requires an examination of the appropriateness and compatibility with the System mission and the purposes for which a particular refuge has been established, among other considerations.

The System regulations at 50 CFR part 27 contain a number of prohibitions regarding wildlife that are applicable to bald eagles, including taking, disturbing, or injuring them on refuge lands without a permit. In administering the System, the Secretary of the Interior shall provide for the conservation of fish, wildlife, and plants and their habitats within the System and ensure that the biological integrity, diversity, and environmental health of the System are maintained for the benefit of present and future generations of Americans. The Service applies those requirements through its Administrative Manual Chapter on Biological Integrity, Diversity, and Environmental Health (601 FW 3). Key underlying principles of the policy are that wildlife conservation comes first; each refuge is managed to ensure its biological integrity, diversity, and environmental health; and biological integrity, diversity, and environmental health is considered in a landscape context.

The number of nests on refuges has also grown substantially over the last 30+ years, and there is no indication that we have achieved the carrying capacity of the NWR system. When carrying capacity is reached at some point in the future, the policies and management practices of the Service,

with their emphasis on wildlife conservation and the requirement that all uses of System lands meet the test of being compatible with the purposes for which a particular unit of the System was established, are consistent with the conservation needs of the bald eagle because they will provide generally stable habitat conditions and numbers of breeding pairs throughout the system. Therefore, we expect that units of the National Wildlife Refuge System will continue to be managed in ways that contribute substantially to the conservation of bald eagles and meet their habitat needs.

Approximately 130 National Park units have bald eagles located within their boundaries, according to the National Park Service Endangered Species database (U.S. NPS 2006), with more than 300 bald eagle nests on the lands managed by the National Park Service (NPS). These lands include National Parks, National Seashores, National Monuments, and National Wild and Scenic Rivers. Lands managed by the National Park Service are subject to the NPS Organic Act of 1916, which provides that the “fundamental purpose” of those lands “is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations” (16 U.S.C. 1). Most units of the National Park System also have their own specific enabling legislation, but the 1970 General Authorities Act makes it clear that all units are united into a single National Park System. Furthermore, no activities shall be allowed “in derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress” (16 U.S.C. 1a–1).

NPS regulations specifically protect wildlife, including nests, by prohibiting disturbing wildlife or nests from their natural state and by prohibiting take of wildlife and the intentional disturbance of nesting or breeding activities (36 CFR 2.1(a), 2.2(a)). The basic policy document applied to the NPS is Management Policies 2006 (“MP”). Those policies provide that NPS will manage natural resources “to preserve fundamental physical and biological processes, as well as individual species, features, and plant and animal communities,” and “will try to maintain all the components and processes of naturally evolving park ecosystems” (MP 4.1). With respect to wildlife, NPS “will maintain as parts of the natural

ecosystems of parks all plants and animals native to park ecosystems” by “preserving and restoring the natural abundances, diversities, distributions, habitats, and behaviors of native plant and animal populations and the communities and ecosystems in which they occur”; “restoring native plant and animal populations in parks when they have been extirpated by past human-caused actions”; and “minimizing human impacts on native plants, animals, populations, communities, and ecosystems, and the processes that sustain them” (MP 4.4.1).

NPS relies on natural processes whenever possible to maintain native species, but “may intervene to manage individuals or populations of native species” if the intervention will not cause unacceptable impacts to the population of the species or to the ecosystem, and if it is necessary for one of several reasons, such as an unnaturally high or low population due to human influences or to protect a rare species (MP 4.4.2). Based on these requirements, management of NPS lands has and will continue to support the conservation needs of bald eagles, and there is little likelihood that eagles on NPS lands will suffer habitat-based disturbance.

The Bureau of Land Management (BLM) manages lands with more than 200 bald eagle nests. Similar to the U.S. Forest Service, BLM lands are generally managed for multiple-use purposes, under the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 *et seq.*), which includes a declaration of policy that “the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use” (43 U.S.C. 1701(a)(8)). For mining activities, BLM provides specific protections for eagle nests and concentration areas (43 CFR 3461.5(k) and (l)). As with lands of the National Forest System, such multiple-use practices are generally consistent with the conservation needs of bald eagles because on a system-wide basis they provide for a generally stable amount and distribution of bald eagle habitat.

The Department of Defense and the U.S. Army Corps of Engineers collectively manage lands that host more than 440 bald eagle nests.

Department of Defense facilities that support at least 275 of these nests include some 43 Army, 17 Navy, 7 Air Force, and 3 Marine Corps installations with nesting or regular eagle use. Under the Sikes Act, the Secretary of Defense must provide for the conservation of natural resources on each installation (16 U.S.C. 670a), with an Integrated Natural Resources Management Plan. Each plan is prepared in cooperation with the Service and the State wildlife agency. As appropriate to the installation, the plan includes provisions for wildlife management (with respect to all wildlife, not just species listed under the Act), habitat enhancement, and wetland protection. As applicable, such plan's primary management goals typically seek to maintain and improve forested habitat for eagles, minimize human disturbance in eagle nesting and wintering areas, improve food supplies, and minimize hazards to eagles. Nests are protected by special management areas. To maintain effective protections, installations have a priority to monitor their nesting and wintering eagles.

In addition, two other authorities specific to management of migratory birds (including bald eagles) on Department of Defense installations are relevant. First, the Armed Forces are authorized by regulation under the Migratory Bird Treaty Act to take migratory birds incidental to military readiness activities (50 CFR 21.15). However, this authorization is contingent upon the Armed Forces conferring and cooperating with the Service to develop and implement appropriate conservation measures to minimize and mitigate any significant adverse effects on a population of a migratory bird species that the Armed Forces determine may result from those activities. Second, on July 31, 2006, the Department of Defense entered into a Memorandum of Understanding (MOU) with the Service under Executive Order 13186, discussed below.

The remainder of the nests on Defense and Corps lands, at least 65 nests, are on lands managed by the Army Corps of Engineers. These lands include major riparian corridors, such as the Mississippi and Missouri Rivers, associated with large civil works projects maintained for navigation and flood control. The projects, with their aquatic suitable habitat for eagles, are likely to remain in place in the foreseeable future. To the extent further work on these projects is proposed, established policies require the Corps to consider opportunities to enhance habitat for wildlife (33 CFR 236.4(b)), including bald eagles. The Corps must

also consult with the Service under a provision of the Fish and Wildlife Coordination Act (16 U.S.C. 662) to determine how the Corps can protect wildlife, again including bald eagles. While Defense and Corps lands are managed primarily for military readiness and civil projects, they have historically made significant, positive contributions to eagle conservation. Eagles have also adapted to many of the military, training, and operational activities on these lands. Because of the management plans and conservation measures in place on the Defense and Corps lands, the Service believes that these lands will continue to contribute to eagle recovery for the foreseeable future.

According to the GIS analysis described above, approximately 40 percent of the total of approximately 15,000 known bald eagle nests occur within the "protected lands" category where long-term adverse habitat modification is unlikely to occur. Note that there are more known nests than known breeding pairs. This is because some breeding pairs have more than one nest and because some known nests are abandoned (not currently maintained by any breeding pair). The underlying data used in this analysis is with respect to all known nests, and is without any indication of whether a particular nest is currently active, serves as an alternate nest, or has been abandoned. On the other hand, there are certainly additional nests on protected lands (and elsewhere) currently used by breeding pairs that are not in our data set. The pilot study conducted for the bald eagle post-delisting monitoring plan indicates that the State data for number of nests only accounts for 42 to 81 percent of actual nests (Otto 2007).

Although there is not a scientifically established quantitative correlation between nests and breeding pairs, and therefore we cannot state precisely how many breeding pairs in fact nest on protected lands in a given year, these data give us an indication of the amount of nesting habitat that is protected. Moreover, the 40 percent of nests on protected lands are distributed throughout all areas that are significant for breeding and wintering. These areas therefore will provide protections to significant areas of bald eagle nesting, roosting, perching, and feeding habitat and will continue to provide strongholds throughout the range of the species in the foreseeable future.

Combining the five recovery plans' goals for the bald eagle breeding population leads to a total delisting goal of about 4,000 breeding pairs in the lower 48 States. This level,

coincidentally, represents about 40 percent of the 9,789 currently known breeding pairs. While the numbers of recorded nests to breeding pairs are not exact comparisons and, as indicated above, the protection on protected lands is not absolute, our analysis does indicate that it is highly likely that the number of breeding pairs necessary to maintain the species' recovery can be accommodated for the foreseeable future on the protected lands.

In addition to the habitat protection afforded on account of management related to ownership, several other factors will limit the degree to which habitat loss will occur on any lands in the foreseeable future. First, eagle habitat in some areas, because of its remoteness, faces little threat associated with human population expansion. For example, northern Minnesota, Wisconsin, and Michigan have 2,859 breeding pairs and development pressures are negligible within the northern portions of these States.

Second, a number of applicable laws will at least indirectly protect bald eagle habitat. The most important of these is the BGEPA, a Federal statute that applies throughout the United States regardless of land ownership status. The BGEPA (16 U.S.C. 668–668d), enacted in 1940 and since amended, was then intended to be the primary vehicle to protect and preserve bald eagles. The statute prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs (16 U.S.C. 668(a)). The BGEPA further defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (16 U.S.C. 668c).

Even after the bald eagle was added to the List of Threatened and Endangered Wildlife under the Act, BGEPA's prohibition against disturbance continued to be an important component in protecting eagles from human interference. For instance, the Service, in conjunction with various States, developed guidelines based upon BGEPA that have been an essential component of our technical assistance to the public and have helped people avoid harmful impacts to eagles.

But given that the BGEPA will now be the primary law preserving bald eagles, and recognizing the need for predictability in implementing it in the foreseeable future, we further clarified our interpretation of the BGEPA's take prohibition. On June 5, 2007, we published a final rule (72 FR 31132, effective on July 5, 2007) defining the

term “disturb” under 50 CFR 22.3 as meaning:

to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior (72 FR 31139).

This definition largely reflects how “disturb” has been interpreted in the past by the Service and other Federal and State wildlife and land management agencies. The final definition of “disturb” encompasses impacts that, based on the best scientific information available, are likely to cause injury to an eagle, or a decrease in its capacity to reproduce. This may include effects from disturbance caused by habitat manipulation.

Although the BGEPA is not a land management law (it contains no provisions that directly protect habitat except for nests), it does protect eagles in their habitat. Activities that disrupt eagles at nests, foraging areas, and important roosts can illegally disturb eagles. Therefore, areas adjacent to eagle nests, important foraging areas, and communal roost sites are indirectly accorded protection under the BGEPA to the degree that their loss would disturb or kill eagles. Those losses may result from habitat alteration. For instance, in our final rule defining “disturb” we noted:

Removal of trees is not in itself a violation of the Eagle Act. The impacts of such action can be a violation, however, if the loss of the trees kills an eagle, or agitates or bothers a bald or golden eagle to the degree that results in injury or interferes with breeding, feeding, or sheltering habits substantially enough to cause a decrease in productivity or nest abandonment, or create the likelihood of such outcomes (72 FR 31137).

We also intend the definition to apply to a situation where eagles, as part of their normal nesting behavior, return to the vicinity of the nest, but the habitat alterations are so vast in scale that the eagles become agitated as a result, alter their behavior, and never return to the nest itself (72 FR 31136).

We have also finalized after public notice and comment National Bald Eagle Management Guidelines (72 FR 31156; June 5, 2007) that are to be used in conjunction with this new definition of the term “disturb.” The Guidelines are intended to: (1) Publicize the provisions of the BGEPA that continue to protect bald eagles, in order to reduce the possibility that people will violate the law; (2) advise landowners, land

managers, and the general public of the potential for various human activities to disturb bald eagles; and (3) encourage additional nonbinding land management practices that benefit bald eagles. The Guidelines themselves are not law. Rather, they are recommendations based on several decades of behavioral observations, science, and conservation measures to avoid or minimize adverse impacts to bald eagles. The document is intended primarily as a tool for landowners and planners who seek information and recommendations regarding how to avoid disturbing bald eagles.

It is important to note that the Guidelines contain numerous recommendations that relate to bald eagle habitat. For instance, to avoid disturbing nesting bald eagles, we recommend: (1) Keeping a distance between the activity and the nest (distance buffers), (2) maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and (3) avoiding certain activities during the breeding season. The buffer areas serve to minimize visual and auditory impacts associated with human activities near nest sites. Ideally, buffers would be large enough to protect existing nest trees and provide for alternative or replacement nest trees. Again, the primary purpose of these Guidelines is to provide information that will minimize or prevent violations of only Federal laws governing bald eagles.

When this rule becomes effective, the Act’s protections and prohibitions will no longer apply to the bald eagle. We recognize that the above-described BGEPA habitat protections that will remain are not identical to those afforded under the Act, nor are they intended to be. There is, however, considerable overlap in the statutory definitions of “take” under both statutes (16 U.S.C. 1532(19) and 668c). Moreover, the regulatory definitions of “harm” and “harass” (50 CFR 17.3) that further define the term “take” under the Act are similar to the newly promulgated “disturb” definition under BGEPA.

As described, we have interpreted “disturb” to include certain biological or behavioral effects caused by activities, including some habitat manipulation. This view is supported by the only court to have addressed the relationship between the prohibitions of the Act and the BGEPA:

Both the Act and the Eagle Protection Act prohibit the take of bald eagles, and the respective definitions of “take” do not suggest that the ESA provides more protection for bald eagles than the Eagle

Protection Act\* \* \*. The plain meaning of the term “disturb” is at least as broad as the term “harm,” and both terms are broad enough to include adverse habitat modification.

(*Contoski v. Scarlett*, Civ No. 05–2528 (JRT/RLE), slip op. at 5–6 (D. Minn. Aug 10, 2006).

Unlike the Act, the BGEPA does not include a private right of action, meaning a third party cannot bring legal action to enforce the statute, but the BGEPA provides criminal and civil penalties for persons who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle \* \* \* or any golden eagle, alive or dead, or any part, nest, or egg thereof” (16 U.S.C. 668 (b)). A violation of the Act can result in a criminal fine of \$100,000 (\$200,000 for organizations), imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony. We anticipate that traditional governmental enforcement of the BGEPA prohibitions will continue to have a deterrent effect despite the absence of a private right of action.

Finally, the Act provides broad substantive and procedural protections for listed species but at the same time allows significant flexibility to permit activities that affect listed species. In particular, the Act provides that we may exempt or authorize the incidental take of listed wildlife in the course of otherwise lawful activities (sections 7(b)(4) and 10(a)(1)(B), respectively). Nationwide, since 2002, the Service has issued an average of 52 incidental take statements per year that covered anticipated take of bald eagles under section 7 of the Act. During that same 5-year period, we also issued about two (1.8) incidental take permits per year under section 10(a)(1)(B) of the Act for bald eagles. The requirements, including minimization, mitigation, or other conservation measures, of those authorizations were designed to ensure that those actions did not jeopardize the continued existence of the bald eagle. It is also apparent that these limited authorizations did not impede the recovery of the bald eagle. The number of section 7 informal consultations concluding that the bald eagle would not likely be adversely affected by a particular action is also notable. For example, in 2006, although we issued 57 section 7 incidental take statements, we engaged in 5,184 informal consultations where take was either not anticipated, or averted through early coordination, incorporation of

management recommendations, or project modification.

The regulations at 50 CFR part 22 govern the issuance of bald eagle permits for certain types of take, transportation, and possession, such as for Indian religious purposes, scientific research and exhibition, and depredation. The BGEPA regulation does not presently contain take mechanisms similar to that of the Act with respect to incidental take coverage. On June 5, 2007, however, we published a proposed rule to create such a permitting scheme under the BGEPA (72 FR 31141). The public comment period closes on September 4, 2007. The regulations we have proposed would (1) establish a take permit under the BGEPA, (2) provide BGEPA authorizations comparable to the authorizations granted under the Act to entities who continue to operate in full compliance with the terms and conditions of permits issued under section 10 of the Act and incidental take statements issued under section 7 of the Act, and (3) authorize take of eagle nests in limited circumstances that pose a risk to human safety or to the eagles themselves.

We anticipate that, if that proposal is adopted through the final rule, the majority of permits would be issued to cover activities that cause disturbance in proximity to eagle nests, important foraging sites, and communal roosts. However, by adhering to the National Bald Eagle Management Guidelines, landowners and project proponents will be able to avoid bald eagle disturbance under the BGEPA most of the time. We anticipate only rarely issuing permits for take associated with activities that adhere to the Guidelines because the great majority of such activities will not take bald eagles. In this capacity, the Guidelines and technical advice that we will provide will function much like our informal consultations under section 7 of the Act, but will be available to all landowners. If when applying the Guidelines, avoiding disturbance is not practicable, the project proponent may apply for a take permit. Additionally, in some limited cases, where other forms of take besides disturbance are unavoidable, we anticipate that a permit may be issued for such other form of take.

For reasons enumerated in our proposal, we cautiously estimate the number of eagle take permits would increase if the proposal is adopted from an average of 54 authorizations currently issued under the Act to 300 BGEPA permits, annually. But we may only issue these authorizations if they are "compatible with the preservation"

of bald eagles (16 U.S.C. 668a). Like the Act, this BGEPA standard acknowledges that limited take of eagles is not inconsistent with the protection of the species.

As suggested in our proposed rule, we believe the demand for permits, and the effects of issuing those permits, both individually and cumulatively, including minimization and mitigation measures, would not be significant enough to cause a decline in eagle populations from current levels. Our proposal identifies a recognized threshold for determining the level of decline that would be incompatible with the BGEPA standard, which we regularly employ to assess other species we manage under the MBTA. We recognize that external factors could arise that negatively affect eagle populations. Whatever the cause, if data suggest population declines are approaching a level where additional take would be incompatible with the preservation of the eagle, we would refrain from issuing permits until such time that we determine the take would be compatible with the preservation of the bald eagle. For a fuller explanation of the proposed threshold and safeguards, see the proposed rule at 72 FR 31143–31144.

In summary, the BGEPA will remain in force following delisting. The BGEPA prohibits the take of bald eagles, including disturbance, which we have identified and interpreted to occur in some circumstances as a result of habitat alteration. Adherence to the Guidelines, as appropriate in a given situation, may provide for buffers or other measures that protect bald eagle habitat on both private and public lands. Although a take permitting scheme has been proposed, it should not significantly diminish these habitat protections. The proposed permitting mechanism should not reduce the bald eagle population to a level that might necessitate re-listing. Rather, based on the current proposal, we conclude that the number of anticipated permits, coupled with BGEPA's protective "preservation" standard, should ensure that the population will not decline below current levels. Therefore, we expect BGEPA to contribute to the availability of habitat for the recovered bald eagle population in the foreseeable future.

To a much lesser extent, the MBTA also provides indirect protection to bald eagle habitat. The MBTA makes it unlawful to at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase,

purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof (16 U.S.C. 703(a)). Bald eagles are among the migratory birds protected by the MBTA. Therefore, a modification to eagle habitat that directly takes or kills a bald eagle (such as cutting down a nest tree with chicks present) would constitute a violation of the MBTA, as well as the BGEPA.

The Clean Water Act (CWA) (33 U.S.C. 1251 *et seq.*) is the cornerstone of surface water quality protection in the United States. It will continue to protect aquatic habitats upon which the bald eagle depends following delisting. The CWA employs a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. These tools are employed to achieve the broader goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters so that they can support "the protection and propagation of fish, shellfish, and wildlife and \* \* \* recreation in and on the water" (33 U.S.C. 1251(a)(2)).

The first step in achieving these goals is the establishment of water quality standards (WQS), either by States or the Environmental Protection Agency (EPA) (33 U.S.C. 1313). Necessary reductions in pollutant loading are achieved by implementing the following: (1) The Section 402 National Pollution Discharge Elimination System permit program, covering point sources of pollution; (2) the Section 404 permitting program, regulating the placement of dredged or fill materials into wetlands and other waters of the United States; and (3) Section 401, which requires federal agencies to obtain certification from the State, territory, or Indian tribes before issuing permits that would result in increased pollutant loads to a waterbody. Surface waters are monitored to determine whether the WQS are met. If they are, then anti-degradation policies and programs are employed to keep the water quality at acceptable levels. If waterbodies are not meeting WQS, they must be identified and a strategy for meeting the standards developed. The most common type of strategy is the development of a Total

Maximum Daily Load (TMDL). TMDLs determine what level of pollutant load would be consistent with meeting QWS. TMDLs also allocate acceptable loads among sources of the relevant pollutants. These regulatory programs, coupled with the CWA's protective goals, will continue to help protect the aquatic habitats and prey species of the bald eagle in the foreseeable future.

In 2001, the President signed Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," requiring Federal agencies to incorporate migratory bird conservation measures into their agency activities. Under this Executive Order, each Federal agency whose activities may adversely affect migratory birds was required to enter into a Memorandum of Understanding (MOU) with the Service, outlining how the agency will promote conservation of migratory birds. The Executive Order has a number of provisions that specifically relate to habitat, including the requirements that agencies, as practicable, (1) restore and enhance habitat, (2) prevent or abate the pollution or detrimental alteration of the environment, (3) design habitat conservation principles, measures, and practices into agency plans and planning processes, (4) ensure that NEPA analyses evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern, and (5) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors.

The Executive Order also encourages an agency to implement those criteria immediately even if it has not yet completed its MOU. Two MOUs have been approved to date with the Department of Defense (U.S. FWS 2006d) and the Department of Energy (U.S. FWS 2006e) that emphasize a collaborative approach to conservation of migratory birds, including minimizing disturbance to breeding, migration, and wintering habitats. While these MOUs are non-binding and therefore are not considered here as existing regulatory mechanisms, they provide an opportunity for us to continue to reduce the threat of habitat loss to bald eagles after delisting by working with our Federal partners.

In addition, the Fish and Wildlife Coordination Act (16 U.S.C. 661-667d) (FWCA) requires that agencies sponsoring, funding, or permitting activities related to water resource

development projects request review by the Service and the State natural resources management agency. The Service's review is non-binding, and therefore the Coordination Act is not considered here as an existing regulatory mechanism. However, given that bald eagles reside in aquatic habitats, FWCA will allow the Service to continue to make recommendations on minimizing and offsetting impacts that might occur from these types of activities on bald eagles.

In conclusion, the bald eagle population is continuing to increase in the lower 48 States, showing that reduced availability of habitat is not a current threat to the species. Nesting habitat is secure on many public and private locations throughout the lower 48 States. Although localized habitat loss due to development may be a threat to individual bald eagles in the foreseeable future, particularly on private lands, we expect these threats will be reduced by the Federal laws that will remain in effect after delisting (e.g., BGEPA, MBTA, and CWA) and will not be of sufficient magnitude or intensity to threaten or endanger the species throughout all or a significant portion of its range. In addition, bald eagles have demonstrated increasing levels of tolerance to human disturbance that will allow bald eagles to use habitats previously thought to be unavailable due to disturbance.

Even in the areas where the threat of development is the greatest, we find that the bald eagle is secure for the foreseeable future. In the Chesapeake Bay region, as discussed in our response to comments above, at least 482 breeding pairs nest on federal lands, and we do not anticipate that number to drop in the foreseeable future, even if the numbers of breeding pairs eventually begin to decrease on some other lands (particularly private lands). Even in Florida, where the development pressure outside of protected lands is likely to be greatest, the current population of over 1,133 breeding pairs could suffer a substantial decrease (which we think unlikely within the foreseeable future, for all of the reasons discussed above) without the bald eagle being or likely to become in danger of extinction. The recovery goal for the southeastern region, as updated by the recovery team, is for 1,500 breeding pairs. The southeastern region includes Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, and eastern Texas. Florida's current bald eagle estimate alone is 76 percent of what would be needed for the entire 11-State region. Florida would have to

reverse its upward trend and lose nearly two-thirds of its current breeding pairs to get back down to the southeastern recovery goal. We have no data suggesting that a change of this magnitude is reasonably foreseeable. Finally, although the limited habitat available in Arizona makes the bald eagles there particularly vulnerable to habitat threats, as discussed elsewhere, Arizona is not a significant portion of the range of the bald eagle, and what threats do exist there will not affect the conservation of the species throughout all of the lower 48 States, much less its entire range. Therefore, threats of present or future destruction, modification, or curtailment of the bald eagle's habitat or range do not rise to the level where the bald eagle population in the lower 48 States meets the definition of either threatened or endangered throughout all or a significant portion of its range.

*B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes.* The bald eagle population's first major threat was large-scale mortality from unregulated shooting that occurred early in the last century. The threat was significantly reduced when the shooting of bald eagles was prohibited in 1940 with the Bald Eagle Protection Act, which is now the BGEPA. Shooting of bald eagles was prohibited by an additional law when bald eagles were added to the list of birds protected by the MBTA in 1972.

The Madison National Wildlife Health Center monitored causes of wildlife mortality, between 1963 and 1993, including bald eagle mortality. Out of the 4,300 bald and golden eagles rangewide (including Alaska) that were known to be killed, 15 percent of the bald eagles were killed due to shooting (La Roe *et al.* 1995, p. 68). Even if all of the 4,300 eagle deaths that were investigated were bald eagles, the deaths from shooting would be around 645 deaths spread across a 30-year timeframe. In 1997, Alaska alone had 8,250 breeding pairs (Buehler 2000, p. 37), and the Service estimated the lower 48 States population as 5,295 breeding pairs. In addition, during this same timeframe, the bald eagle population continued to increase, suggesting that this level of mortality was not a serious threat to the bald eagle in the lower 48 States. Since this threat is not centered in any specific geographic area, there are no significant portions of the range that might be threatened for this reason with extinction in the foreseeable future.

There is no legal commercial or recreational use of bald eagles, and such uses of bald eagles will remain illegal

into the foreseeable future under BGEPA and MBTA. We consider current laws and enforcement measures sufficient to protect the bald eagle from illegal activities, including trade. The BGEPA prohibits the taking or possession of, and commerce in, bald and golden eagles, with limited exceptions. The law provides significant protections for bald eagles by prohibiting, without specific authorization, take, possession, sale, purchase, barter, offering to sell or purchase or barter, transport, export or import any bald or golden eagle, alive or dead, or any part, nest, or egg thereof. Take under the BGEPA is defined as "to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" (16 U.S.C. 668c).

The Service will continue to enforce the take prohibitions in the BGEPA. Over the past 5 years, the Service has seen an increase in the investigation of suspected BGEPA violations. In 2006, 324 cases under BGEPA were investigated, a portion of which were bald eagles (Garlick 2007). Legal imports and exports of bald eagle parts, feathers, and live birds have increased over the past 5 years. In 2006, there were 142 bald eagle imports and exports of which the Service is aware (Garlick 2007). These numbers are still relatively low compared to the bald eagle population in the lower 48 States of 9,789 breeding pairs, particularly given that many of these circumstances did not involve taking of live birds from the wild. As the population of bald eagles continues to increase, we would expect a corresponding increase in the number of investigations. We expect that even if this same low level of illegal take, and import and export of eagle feathers and parts, to continue in the foreseeable future, it will be without any significant effects to the species.

The bald eagle is a designated migratory bird that benefits from protections under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712), which implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not.

We exercise very strict control over the use of bald eagles or their parts for scientific, education, and Native

American religious activities (50 CFR 22.21, 22.22). To respond to the religious needs of Native Americans, we established the National Eagle Repository in Commerce City, Colorado, which serves as a collection point for dead eagles (see 50 CFR 21.31(e)(4)(vi)(C)). As a matter of policy, all Service units (as well as many other Federal and State agencies) transfer salvaged bald eagle parts and carcasses to this repository. Members of Federally recognized tribes can obtain a permit from us authorizing them to receive and possess whole eagles, parts, or feathers from the repository for religious purposes. After removal from protection under the Act, we will still have the ability to issue permits under BGEPA for limited exhibition and education purposes, selected research work, and other special purposes, including Native American religious use, consistent with Federal regulations implementing the BGEPA (50 CFR part 22). We will not issue these permits if they are incompatible with the preservation of the bald eagle under the BGEPA or the terms of the conventions underlying the MBTA (16 U.S.C. 668a and 16 U.S.C. 704(a), respectively), and therefore, these permits are not a threat to the bald eagle population in the lower 48 States.

In summary, there is no current overutilization of the bald eagle for commercial, recreational, scientific, or educational purposes, and the protections afforded by BGEPA and MBTA will continue to reduce this threat to prevent the likelihood of endangerment for the bald eagle in the lower 48 States or a significant portion of its range into the foreseeable future.

*C. Disease or Predation.* Predation has been documented, but it does not constitute a significant problem for bald eagle populations. Eggs, nestlings, and fledglings are the most vulnerable to predators. Eggs in tree nests have been reportedly predated by black-billed magpies (*Pica pica*), gulls, ravens and crows, black bears (*Ursus americanus*), and raccoons (*Procyon lotor*). Nestlings have been reportedly killed by black bears, raccoons, hawks and owls, crows and ravens, bobcat (*Felis rufus*), and wolverine (*Gulo gulo*), although there is little actual documentation. Nestling mortality is more likely due to the effects of starvation and sibling attack. Few nonhuman species are capable or likely to prey on immature or adult bald eagles. The exception to this is at the time of nest departure; fledglings on the ground are vulnerable to mammalian predators.

Immatures and adults in poor condition from starvation, injury, or disease may also be vulnerable to

mammalian predators. Bald eagles will defend their nest against other avian species, especially ravens and other raptor species (Buehler 2000, p. 14).

Diseases such as avian cholera, avian pox, aspergillosis, tuberculosis, and botulism may affect individual bald eagles, as do parasites such as the Mexican chicken bug, but are not considered to be a significant threat to overall bald eagle numbers. According to the National Wildlife Health Center (NWHC) in Madison, Wisconsin, only a small percentage of bald eagles submitted to the NWHC between 1985 and 2003 died of infectious disease. The widespread distribution of the species generally helps to protect the bald eagle from catastrophic losses due to disease. Recently, H5N1 high path avian influenza may affect eagles. Currently the Department of the Interior is testing migratory birds for the presence of H5N1 high path avian influenza. At this time, there are no confirmed cases of migratory birds, including bald eagles, testing positive for avian influenza in the United States (USGS 2007a).

Based on data compiled from the National Wildlife Health Center, 99 bald eagles died of avian vacuolar myelinopathy (AVM) between 1994 and 2003. Confirmed cases of bald eagle deaths due to AVM are recorded in Arkansas, North Carolina, South Carolina, and Georgia. Studies on avian vacuolar myelinopathy are continuing, but the cause is still unknown. Natural or manmade toxins are suspected as the most likely cause of AVM based on histopathological findings. A sentinel study demonstrated that exposure to the agent that causes AVM is site-specific, seasonal, and relatively short in duration (USGS 2007b). These States' bald eagle populations have increased between 1994 and 2005, and, based on the most recent population estimates, have a total of 392 breeding pairs. Based on the increase in the population levels, these localized mortalities are not having a significant impact on the bald eagle in the lower 48 States or these portions of the range. We do not expect this disease to be a threat in the foreseeable future because there has been no increase in the number of mortalities throughout the 9 years of monitoring and the number of mortalities is extremely small in relation to the total population. The mortalities are also small in relation to the population in these portions of the range, such that these portions will not become threatened in the foreseeable future.

In more recent years, the West Nile Virus (WNV) has affected some individual bald eagles. According to

NWHC, between January 2002 and January 2004, 81 bald eagles were tested for WNV at the Center, and four tested positive. Individual States have also conducted tests on dead bald eagles with an overall small percentage testing positive. For example, the State of New York annually counts the number of bald eagles residing in the State, which has averaged more than 300 individual bald eagles each year since 2000. Within the State of New York, only two confirmed cases of WNV have been present. Given the small percentage of bald eagle mortality due to WNV, we expect this threat will not significantly affect the bald eagle population in the lower 48 States or any significant portion of its range in the foreseeable future.

During several years in the 1990s, bald eagles wintering along the lower Wisconsin River experienced an unusual rate of mortality. Beginning in 2000–2001, after a gap of 5 years, similar bald eagle mortality has reoccurred each winter, with less than 30 confirmed cases as of 2004. Many of the eagles exhibit signs of neurologic impairment. One hypothesis is that the syndrome is caused by a severe thiamine deficiency as a result of feeding largely on gizzard shad, but that hypothesis remains to be adequately tested (Wisconsin Department of Natural Resources 2005). This syndrome is very localized, and is not having a significant impact on the Statewide bald eagle population given that Wisconsin's eagle population has been rising each year since the mid-1980s, with 1,065 nesting pairs counted in 2006 (Eckstein 2007, p. 3). Given the small percentage of Wisconsin bald eagles affected by this disease, this threat will not affect the lower 48 States' bald eagle population in all or a significant portion of its range in the foreseeable future.

In summary, like all wildlife populations, the bald eagle is affected by numerous natural and environmentally related diseases, as well as predation. While these diseases and predation may have measurable impacts on small, local populations, no known natural or environmentally related disease threats currently have, or are anticipated to have, widespread impacts on the bald eagle population in the lower 48 States. While these impacts are measurable, they are not affecting those small areas given the increase in the population levels of bald eagles in those areas. We do not expect an increase in this threat in the foreseeable future, and, therefore, this is not a threat to any significant portion of the bald eagle's range. Therefore, neither predation nor disease is likely to

constitute a significant threat to the bald eagle currently or in the foreseeable future throughout all or any significant portion of its range.

D. *The Inadequacy of Existing Regulatory Mechanisms.* As with all of the five factors, we have to determine whether any particular factor is a threat to the species. The main threats to the bald eagle at the time of listing were threats to reproductive success from contaminants and habitat loss or degradation. Regulatory mechanisms, in and of themselves, were never identified as a threat for bald eagles. Indirectly, regulatory mechanisms were needed to assure that the threats identified in the other factors were removed or reduced. Because we address these regulatory mechanisms in the other factors, we will only mention them briefly in this section.

The BGEPA explicitly protects individuals and nests (16 U.S.C. 668); it will also minimize threats to bald eagle habitat because acts that disturb bald eagles, their nests, or their eggs violate the prohibitions of the BGEPA. The MBTA also provides protection by making it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, sell, barter, purchase, deliver; or cause to be shipped, exported, imported, transported, carried or received any migratory bird (which bald eagles are considered), part, nest, egg or product, manufactured or not. In addition to these laws that provide direct protection to the bald eagle, the Clean Water Act and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA; 7 U.S.C. 136 *et seq.*) provide regulations indirectly contributing to the reduction of various manmade threats. Given the level of threats identified in the discussion of the other factors, these protections, taken together, provide adequate regulatory mechanisms for the bald eagle in the lower 48 States in the foreseeable future, and, therefore, factor D is not a threat throughout all or any significant portion of the range.

E. *Other Natural or Manmade Factors Affecting Its Continued Existence.* Bald eagles have been subjected to direct and indirect mortality from a variety of human-related activities such as poisoning (including indirect lead poisoning), electrocution, collisions (such as impacts with vehicles, power lines, or other structures), and death and reproductive failure resulting from exposure to pesticides.

The first major decline in the bald eagle population probably began in the mid to late 1800s. Widespread shooting for feathers and trophies led to extirpation of eagles in some areas.

Shooting also reduced part of the bald eagle's prey base (waterfowl and shorebirds). Carrion treated with strychnine, thallium sulfate, and other poisons was used as bait to kill livestock predators and indirectly killed many eagles as well. These were the major factors that contributed to a reduction in bald eagle numbers through the 1940s. Shooting and poisoning of bald eagles and other migratory birds is now prohibited by BGEPA and MBTA, as discussed in Factor B.

In the late 1940s, shortly after World War II, the use of dichloro-diphenyl-trichloroethane (DDT) and other organochlorine pesticide compounds became widespread. Initially, DDT was sprayed extensively along coastal and other wetland areas to control mosquitoes (Carson 1962, p. 122). Later, it was widely used as a general crop insecticide. Dichlorophenyl-dichloroethylene (DDE), the principal metabolic breakdown product of DDT, devastated eagle productivity from the 1950s through the mid-1970s. DDE accumulated in the fatty tissue of adult female bald eagles, and impaired calcium metabolism necessary for normal eggshell formation, causing eggshell thinning. Many eggs broke during incubation, while others suffered embryonic mortality resulting in massive reproductive failure. On December 31, 1972, the U.S. Environmental Protection Agency, under the authority of FIFRA, canceled and suspended registration of DDT in the United States.

The threat of death and reproductive failure was dramatically reduced in 1972 when DDT was banned from use in the United States. An additional step to halt the bald eagle's decline was taken in 1976, when FIFRA registrations of dieldrin, heptachlor, chlordane, and other toxic persistent pesticides were cancelled for all but the most restricted uses in the United States. The residual effects of DDT are now highly localized and have a negligible impact on the bald eagle population in the lower 48 States.

The organochlorine compound concentrations are continuing to decline even in the localized areas in which high levels have persisted through time. For instance, the Channel Islands area of southern coastal California has historically had severe problems related to DDE impacts to bald eagle productivity because this was a DDT manufacturing site (64 FR 35460). On March 16, 2006, biologists with the Montrose Settlements Restoration Program announced that a bald eagle egg successfully hatched on Santa Cruz Island in the Northern Channel Islands (NOAA 2007, p. 1). This bald eagle

successfully fledged and took its first flight on July 14, 2006 (NOAA 2007, p. 1). This is the first successful bald eagle fledging on the Northern Channel Islands since 1949 when they nested on Anacapa Island (NOAA 2007, p. 1). Given the recent success in this area, other areas that had high levels of organochlorine concentrations will likely show similar success in the foreseeable future.

The threat of pesticide-related impacts on bald eagles will continue to decline after delisting due to the requirement that pesticides be registered with the Environmental Protection Agency (EPA). Under the authority of FIFRA, the EPA requires environmental testing of new pesticides. It specifically requires testing the effects of pesticides on representative wildlife species before a pesticide is registered. The registration process provides a safeguard to avoid the type of environmental catastrophe that occurred from organochlorine pesticides, such as DDT, that led to the listing of this species as endangered. In addition, the Food Quality Protection Act (1996) has resulted in a similar EPA review of existing pesticides already on the market. This protection from effects of pesticides afforded under the FIFRA will continue into the future even after delisting the bald eagle under the Act.

Polychlorinated biphenyls (PCBs) have been demonstrated to cause a variety of adverse health effects including effects on the immune system, reproductive system, nervous system, and endocrine system. In 1976, manufacturing, processing, and distribution in commerce of PCBs were prohibited by Section 6(e) of the Toxic Substances Control Act (15 U.S.C 2601, 2605(e)). Some industrial and commercial applications where PCBs were used include: Electrical, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; and in pigments, dyes, and carbonless copy paper. More than 1.5 billion pounds of PCBs were manufactured in the United States prior to 1977 (U.S. EPA 2007, p. 1). PCBs do not readily break down and may persist in the environment for decades. Individual bald eagles may consume prey that has accumulated high levels of PCBs, leading to a risk of reproductive failure (Bowerman 1993). Given the prohibitions in the use of PCBs, we expect impaired reproductive success because of PCBs to be relatively low and localized to those areas in the range where concentrations remain relatively high. Monitoring of concentrations of PCBs throughout each of the Great Lakes has shown concentrations of PCBs in lake trout that are stable or decreasing

(Environment Canada and the U.S. EPA 2005, pp. 122–131). Although there are areas around the Great Lakes that have not yet recovered to the level present before persistent organic pollutants were used, the reproductive rates in the shoreline populations of Great Lakes bald eagles as a whole have increased. This population increase indicates that widespread effects of persistent organic pollutants have decreased (Environment Canada and U.S. EPA, 2005 p. 272). Given that PCB use is prohibited and monitoring data show the levels of PCBs decreasing, we expect the effects of PCBs to continue to decrease in the foreseeable future and not to affect the bald eagle population in the lower 48 States or any significant portion of its range.

Mercury occurs naturally in the earth's crust and cycles in the environment as part of both natural and human-induced activities. The amount of mercury mobilized and released into the biosphere has increased since the beginning of the industrial age. Mercury has long been known to have toxic effects on humans and wildlife. Mercury is a toxic, persistent, bioaccumulative pollutant that affects the nervous system.

Mercury is emitted into the atmosphere by industrial activities like coal-fired power generation. It can travel long distances in the atmosphere and can be deposited on the surface of the earth in remote areas far from the industry emitting the atmospheric mercury. Mercury that accumulates in soil can be transported to waterways in runoff and subsurface water flow. Once in the water, mercury begins to accumulate in the aquatic organisms, with concentrations highest at the top of the food chain. Methylmercury is the form of mercury that bioaccumulates in fish. Mercury contamination is the most frequent basis for fish advisories, represented in 60 percent of all water bodies with advisories. Forty-one States have advisories for mercury in one or more water bodies, and 11 States have issued Statewide mercury advisories.

Consumption of prey with elevated levels of mercury can cause adverse effects on growth, development, reproduction, metabolism and behavior in birds (Eisler 1987, p. 36). Elevated levels of mercury have been reported in bald eagles in the Northeast, Great Lakes region, Northwest, Florida, and recently Montana. An ongoing study of the exposure and impacts of mercury on bald eagles in Maine and New Hampshire indicates that concentration levels are suggestive of reproductive or behavioral impacts (DeSorbo and Evers 2006, p. 5). However, bald eagle

population levels in these areas have continued to increase even with the increasing mercury concentration levels. While potentially high levels of mercury may be present in localized areas, there currently are no data suggesting that the bald eagle populations in these localized areas are adversely affected. If the mercury concentration did increase in these isolated small areas, only a few bald eagle pairs would be affected around these particular lakes. These lakes would likely be too small to meaningfully contribute to the resilience, redundancy, or representation of the bald eagle in the lower 48 States. Therefore, mercury exposure currently is having a negligible impact on the bald eagle population in the lower 48 States and any significant portions of its range.

EPA has recognized the need for regulations for water-quality criteria and in 2001 announced a new water quality-criterion for methylmercury that is protective of human health. On August 9, 2006, EPA announced draft guidance for implementing the water quality criterion (71 FR 45560). Given that high mercury concentrations affect a variety of different species, including humans, we expect that under the current laws mercury levels will continue to be monitored and managed to a point that mercury will not have significant adverse effects on the bald eagle population in the lower 48 States or a significant portion of its range in the foreseeable future.

Lead poisoning has caused death and suffering in birds and other wildlife for many years. Bald eagles died from lead poisoning as a result of feeding on waterfowl that were killed or crippled by hunters using lead shot. Bald eagles also died from feeding on waterfowl prey that had inadvertently ingested lead shot in the environment as they fed. Since 1991, the Service has recommended phasing out of lead shot for waterfowl hunting (U.S. FWS, 2006b, p. 2). However, the use of lead shot continues in most States for hunting upland game birds. Another contributor to possible lead poisoning is use of lead fishing sinkers. Such use remains legal in every State except New Hampshire, and could potentially pose a threat to the bald eagle. However, according to a report in 1995, after 30 years of study, lead poisoning was diagnosed in only 338 eagles, including both bald and golden, from 34 States. Even if a majority of these deaths were bald eagles over the 30-year period, this represents a relatively small number of bald eagles given the large increase we have seen in the population during that same timeframe (LaRoe *et al.* 1995, p.



68). Lead poisoning is a threat to a very few individual bald eagles each year and we do not expect the numbers of bald eagles affected by lead to increase given the increased public awareness of the threats posed by using lead shot.

Other causes of injury and mortality to individual bald eagles continue to exist. Of the 4,300 bald and golden eagle deaths investigated between the early 1960s and 1990s, accidental death and impacts with vehicles, power lines, or other such structures accounted for 23 percent of the bald eagle deaths rangewide (including Alaska) (LaRoe *et al.* 1995, p. 68). Low numbers of these types of impacts can be found scattered throughout the population, and are not concentrated in any specific geographic region of the lower 48 States. Because these threats are found in low levels throughout the population, the population as a whole can absorb these impacts. Considering the increase in the population size of bald eagles in the lower 48 States during the time period studied, these impacts were not a significant threat to the population as a whole. Given the 30-year time period studied and the continued increase in the population size during that time period, this threat will likely not increase in the foreseeable future to the point where the bald eagle in the lower 48 States or a significant portion of its range will meet the definition of threatened or endangered under the Act.

Raptor electrocution has been a concern since the early 1970s and accounted for 12 percent of the causes of bald eagle mortality in the 4,300 bald and golden eagle deaths studied since the 1960s (LaRoe *et al.* 1995, p. 68). Generally, electrocutions are more prevalent in sites where a susceptible species' prey base is present and where suitable perches, other than power structures, are lacking. Birds can be electrocuted during any season, but there can be seasonal fluctuations in electrocution frequency that are related to weather conditions or bird behavior (USGS 1999, p. 358). Raptor electrocutions generally can be reduced by adopting safe electrical-pole-and-line configurations or managing raptor perching. With the increase in the bald eagle population, electrocution mortality has likely increased (Koppie 2007a). However, given the continued increase in the population, the effects of such deaths are negligible on the population as a whole and there are no particular areas within the range where this threat is concentrated. The Service and the Edison Electric Institute's Avian Power Line Interaction Committee (APLIC) have worked together to develop guidelines to minimize the

incidence of bird electrocutions on power lines. Their "Avian Protection Plan Guidelines" provide detailed guidance to utility company employees for minimizing and avoiding the incidence of bird electrocutions, including the bald eagle. They are used in conjunction with APLIC's "Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006" to reduce the number of avian electrocutions on existing and new utility poles. Although this is only guidance, it illustrates the collaborative working relationship to minimize bird electrocution. Given the small number of individual birds that are killed by electrocution and the continued increase in the population size, this is not a significant threat to the bald eagle in the lower 48 States or a significant portion of its range currently or in the foreseeable future.

Development of wind energy production facilities is increasing in localized areas of the lower 48 States, especially in the Atlantic coast flyway area. National projections by the U.S. Department of Energy for U.S. onshore installed wind-energy capacity show an increase from 11.9 GW in 2005 to 72.2 GW in 2020 (National Academy of Sciences 2007). Some wind power facilities have caused mortality to birds of prey and other avian species. There is no evidence, however, indicating that bald eagles have been taken to date. But post-construction studies at existing wind power facilities have been limited in scope and duration, and facilities are now being proposed in areas where bald eagles are more likely to occur. Bald eagles may still be susceptible to mortality, injury, or disturbance in the future if wind energy facilities are not carefully sited to avoid breeding, foraging, or migratory areas. But BGEPA and MBTA prohibitions on the take of bald eagles will still apply after delisting, thereby creating an incentive for thoughtful siting and design of future wind facilities. If wind power development is not carefully planned, bald eagle take may occur in the foreseeable future. But we currently do not have any data indicating that this threat would rise to the level of causing the bald eagle population to be threatened or endangered, especially given the protections afforded by BGEPA and the MBTA.

The main cause of bald eagle endangerment in the lower 48 States, the use of pesticides, has been reduced by cancellation or limitations placed on use of key pesticides under FIFRA. Some contaminants are still prevalent in certain local areas of the lower 48 States that cause death or reduced productivity

in a small number of eagles within the population. In addition, several other minor threats remain for individual bald eagles, including electrocution and vehicle strikes. However, due to the large geographic range of the bald eagle and its widespread recovery, these localized negative impacts appear to have a negligible effect on regional or national populations and, therefore, are not threats to the bald eagle population in the lower 48 States. We have determined that these other natural or manmade factors affecting the bald eagle are not likely to cause the bald eagle to become endangered or threatened in the foreseeable future throughout all or any significant portion of its range.

#### Conclusion of the 5-Factor Analysis

As required by the Act, we considered the five potential threat factors to assess whether the bald eagle is threatened or endangered throughout all or a significant portion of its range in the lower 48 States. When considering the listing status of the species, the first step in the analysis is to determine whether the species is in danger of extinction throughout all of its range. If this is the case, then the species is listed in its entirety. For instance, if the threats on a species are acting only on a portion of its range, but they are at such a large scale that they place the entire species in danger of extinction, we would list the entire species.

The wide distribution of bald eagles throughout the lower 48 States, combined with the eagles' ability to exploit a wide range of geographic aquatic habitat settings, provides an important buffer against any potential threats to any of the significant portions of the range and to the species as a whole. Bald eagles have demonstrated increasing levels of tolerance of human activities that will allow bald eagles to use habitats previously thought to be unavailable due to the proximity of human activities. Several regulatory mechanisms will remain after delisting that will continue to protect bald eagles and their nests. Approximately 40 percent of the bald eagle nests occur on areas where long-term adverse habitat modification is unlikely to occur, including National Wildlife Refuges, National Parks, and National Forests. The BGEPA, MBTA, and CWA will continue to limit threats to habitat.

Large-scale mortality from unregulated shooting, like that which occurred early in the last century, has been eliminated and is prohibited by both the BGEPA and the MBTA. Like all wildlife populations, the bald eagle is affected by numerous natural and environmentally related diseases.

However, these localized effects on individuals are not significantly affecting the bald eagle population in the lower 48 States or a significant portion of its range, nor are they likely to do so within the foreseeable future.

The main cause of bald eagle endangerment in the lower 48 States, the use of certain organochlorine pesticides, has been banned or reduced. While some contaminants are still prevalent in certain local areas of the lower 48 States, these localized impacts are not having a significant effect on the population levels of bald eagles in the lower 48 States. Regulatory mechanisms such as FIFRA will continue to regulate levels of contaminants such that the bald eagle in the lower 48 States will likely not become endangered in the foreseeable future. Moreover, the existing regulatory mechanisms summarized here have been proven adequate to control all of the potentially significant human-caused threats identified for the species.

Bald eagle recovery goals have been met or exceeded for the species on a rangewide basis. There is no recovery region in the lower 48 States where we have not seen substantial increases in eagle numbers. We believe the surpassing of recovery targets over broad areas and on a regional basis, and the continued increase in eagle numbers since the 1995 reclassification from endangered to threatened, demonstrates that threats have been reduced or eliminated such that the bald eagle population in the lower 48 States no longer meets the definition of threatened or endangered.

Having determined that the bald eagle in the lower 48 States does not meet the definition of threatened or endangered, we must next consider whether there are any significant portions of its range that are in danger of extinction or are likely to become endangered in the foreseeable future. On March 16, 2007, a formal opinion was issued by the Solicitor of the Department of the Interior, "The Meaning of 'In Danger of Extinction Throughout All or a Significant Portion of Its Range'" (U.S. DOI 2007). We have summarized our interpretation of that opinion and the underlying statutory language below. A portion of a species' range is significant if it is part of the current range of the species and is important to the conservation of the species because it contributes meaningfully to the representation, resiliency, or redundancy of the species. The contribution must be at a level such that its loss would result in a decrease in the ability to conserve the species.

The first step in determining whether a species is threatened or endangered in a significant portion of its range is to identify any portions of the range of the species that warrant further consideration. The range of a species can theoretically be divided into portions in an infinite number of ways. However, there is no purpose to analyzing portions of the range that are not reasonably likely to be significant and threatened or endangered. To identify only those portions that warrant further consideration, we determine whether there is substantial information indicating that (i) the portions may be significant and (ii) the species may be in danger of extinction there or likely to become so within the foreseeable future. In practice, a key part of this analysis is whether the threats are geographically concentrated in some way. If the threats to the species are essentially uniform throughout its range, no portion is likely to warrant further consideration. Moreover, if any concentration of threats applies only to portions of the range that are unimportant to the conservation of the species, such portions will not warrant further consideration.

If we identify any portions that warrant further consideration, we then determine whether in fact the species is threatened or endangered in any significant portion of its range. Depending on the biology of the species, its range, and the threats it faces, it may be more efficient in some cases for the Service to address the significance question first, and in others the status question first. Thus, if the Service determines that a portion of the range is not significant, the Service need not determine whether the species is threatened or endangered there; conversely, if the Service determines that the species is not threatened or endangered in a portion of its range, the Service need not determine if that portion is significant.

The terms "resiliency," "redundancy," and "representation" are intended to be indicators of the conservation value of portions of the range. Resiliency of a species allows the species to recover from periodic disturbance. A species will likely be more resilient if large populations exist in high-quality habitat that is distributed throughout the range of the species in such a way as to capture the environmental variability within the range of the species. It is likely that the larger size of a population will help contribute to the viability of the species. Thus, a portion of the range of a species may make a meaningful contribution to the resiliency of the species if the area

is relatively large and contains particularly high-quality habitat or if its location or characteristics make it less susceptible to certain threats than other portions of the range. When evaluating whether or how a portion of the range contributes to resiliency of the species, it may help to evaluate the historical value of the portion and how frequently the portion is used by the species. In addition, the portion may contribute to resiliency for other reasons—for instance, it may contain an important concentration of certain types of habitat that are necessary for the species to carry out its life-history functions, such as breeding, feeding, migration, dispersal, or wintering.

Redundancy of populations may be needed to provide a margin of safety for the species to withstand catastrophic events. This does not mean that any portion that provides redundancy is a significant portion of the range of a species. The idea is to conserve enough areas of the range such that random perturbations in the system act on only a few populations. Therefore, each area must be examined based on whether that area provides an increment of redundancy that is important to the conservation of the species.

Adequate representation ensures that the species' adaptive capabilities are conserved. Specifically, the portion should be evaluated to see how it contributes to the genetic diversity of the species. The loss of genetically based diversity may substantially reduce the ability of the species to respond and adapt to future environmental changes. A peripheral population may contribute meaningfully to representation if there is evidence that it provides genetic diversity due to its location on the margin of the species' habitat requirements.

To determine whether the bald eagle is threatened in any significant portion of its range, we first considered how the concepts of resiliency, representation, and redundancy apply to the conservation of this particular species. The recovery of the bald eagle in the lower 48 States provides important perspective. The species has demonstrated that it had sufficient resiliency and redundancy to recover from a severe population crash. That recovery was due in large part to the widespread distribution of the species: once the threats (most significantly the use of DDT) were removed, the population began to expand back into the main breeding and wintering areas that we currently see today housing a majority of the population. These breeding and wintering areas are distributed in such a fashion as to

capture a majority of the latitudinal and environmental conditions that vary throughout the range. Approximately 75 percent of the breeding population occurs in these key core areas that are distributed throughout the northern, southern, eastern, and northwestern portions of the lower 48 States. In general, the large breeding areas have large expanses of aquatic habitat such as Florida, the Chesapeake Bay region, Maine, the Great Lakes, and the Pacific Northwest (Buehler 2000, p. 1). Winter habitat can also be characterized by having roost sites that are open and close to water with good food availability (Buehler 2000, pp. 3, 7). Bald eagles tend to congregate in large population centers during the winter such that large populations are present in a few areas that have good habitat characteristics. In the lower 48 States, these wintering concentration areas are found mainly along rivers in the Pacific Northwest, including the Puget Sound and the lower Klamath Basin; and along major inland river systems in the Midwest and the Chesapeake Bay.

The main breeding and wintering areas again provide adequate resiliency and redundancy for the bald eagles in the lower 48 States. Although there is little data on the genetic diversity within the species, these same areas appear to provide for adequate representation. A variation in body size in bald eagle individuals is present that is likely due to environmental temperature changes in latitude, as discussed in the significance discussion in the DPS section of this rule. Bald eagles in the southern States tend to be smaller and lighter than eagles found in the northern States (Stalmaster 1987, pp. 16–17). However, we do not have any data currently suggesting this morphological difference is heritable. Even if this trait was heritable, the current distribution of the main breeding and wintering areas discussed above does capture this environmental variation.

Applying the process described above for determining whether a species is threatened in a significant portion of its range, we next addressed whether any portions of the range of the bald eagle in the lower 48 States warranted further consideration. We noted that, as discussed in Factor E, there are several small geographic areas where localized contaminant threats still exist. However, we concluded that these did not warrant further consideration because (1) they are very small (in the context of the range of this species) and affect only a few bald eagles, and thus there was no substantial information that they were a significant portion of the range, or (2)

the contaminant levels are decreasing and eagle populations increasing, and thus there was no substantial information that the bald eagles in these areas were likely to become in danger of extinction in the foreseeable future.

In contrast, the threat of habitat loss discussed in Factor A found in Florida and the Chesapeake Bay region is distributed over relatively larger geographic areas of obvious importance to bald eagle conservation. Therefore, we determined that these areas warranted further consideration as portions of the range that may be both significant and threatened. However, as discussed separately in the Factor A analysis, we conclude that the threat of habitat loss in Florida and the Chesapeake Bay region does not rise to the level that the bald eagle is likely to become in danger of extinction in these portions of the range in the foreseeable future. Therefore, we need not determine whether Florida or the Chesapeake Bay region constitute a significant portion of the bald eagle's range.

Finally, we decided to assume that the Sonoran Desert population, as well as the population in the broader area of the Southwest (Arizona, New Mexico, Utah, and Nevada), of which the Sonoran Desert population is the major component, warranted additional consideration out of an abundance of caution and based on the controversy concerning the status of the bald eagles in this region. The following provides our analysis of whether these portions of the range are significant.

Turning first to the question of whether the Sonoran Desert portion of the range makes a meaningful contribution to the representation of the bald eagle, we note that the Sonoran Desert population is a peripheral population, and, as such, requires special consideration, as differing environmental conditions at the periphery of a species' range may give rise to genetic adaptations valuable to the long-term conservation of the species. However, as discussed immediately above and in detail in the DPS analysis, there is no evidence that the morphological and behavioral characteristics of bald eagles in the Sonoran Desert are genetically based (and, therefore, heritable). Even if they were genetically based, the best available data suggest that those characteristics are sufficiently represented in other portions of the species' range. Therefore, we conclude that the Sonoran Desert population does not make a meaningful contribution to the representation of the bald eagle. We reach the same conclusion for the

broader population in the Southwest because there is no evidence that the breeding pairs in the broader area have adaptations that are not sufficiently represented in other portions of the range.

Next, we conclude that the Sonoran Desert and broader southwest portions of the range do not make a meaningful contribution to the resiliency of the bald eagle. As discussed previously, habitat suitability determines the density and distribution of bald eagle populations. The Southwest, for example, does not contain particularly high-quality habitat: it does not support large expanses of the bald eagle's preferred breeding habitat type of forested areas adjacent to large bodies of water (Buehler 2000, p. 6). Therefore, this geographic area, both historically and currently, supports a small number of breeding pairs that are more widespread and fewer in number compared to other regions with abundant prey and nest substrate (Jacobsen *et al.* 2006, p. 27). Several accounts suggest that the breeding areas may have been more widespread prior to European development; however, these accounts do not suggest a large breeding population ever occurred in this region of the United States.

The isolation of the Sonoran Desert population and the fact that the ecological setting in the Southwest differs somewhat from other portions of the bald eagle range might provide some insulation from threats that in the future may affect other portions of the range. Therefore, these portions of the range might make some contribution to the resiliency of the species. However, we find that any such contribution is minor, and, therefore, not meaningful because of the small number of pairs that are present in this area. Nor does the southwestern portion of the range include any important concentration of habitat necessary to carry out the life-history functions of the bald eagle.

Finally, we conclude that the Sonoran Desert and broader southwestern portions of the range do not make a meaningful contribution to the redundancy of the bald eagle. As discussed above, even the broader southwestern portion of the range contains only a small number of bald eagles and a tiny portion of the suitable habitat in the lower 48 States. Given the overall numbers of eagles and their broad distribution in the lower 48 States, the southwestern portion of the range provides almost no redundancy to the species.

In light of the above, we conclude that neither the Sonoran Desert nor the Southwest constitute a significant

portion of the range of the bald eagle in the lower 48 States, and its loss would not result in a decrease in the ability to conserve the bald eagle. Therefore, we do not need to determine whether either of these portions of the range are in fact threatened. We note that although we have determined that these portions of the range are not significant for the purposes of section 4 of the Act, we recognize that the bald eagles in the Southwest have great importance to people in this region, particularly Native Americans, and will continue to be protected under the BGEPA. We will continue to work with the States, tribes, and conservation organizations in this region continue to conserve the bald eagle in the southwestern United States.

In summary, the bald eagle has made a dramatic resurgence from the brink of extinction. The banning of DDT, coupled with the cooperative conservation efforts of the Service, States, other Federal agencies, non-government organizations, and individuals, have all contributed to the recovery of our National symbol. We have determined that none of the existing or potential threats, either alone or in combination with others, are likely to cause the bald eagle to become in danger of extinction within the foreseeable future throughout all or any significant portion of its range. The bald eagle no longer requires the protection of the Act, and, therefore, we are removing it from the Federal List of Endangered and Threatened Wildlife.

#### Effects of This Rule

This final rule revises 50 CFR 17.11(h) to remove the bald eagle in the lower 48 States from the Federal List of Endangered and Threatened Wildlife, and also removes the special rule for the bald eagle at 50 CFR 17.41(a). The prohibitions and conservation measures provided by the Act, particularly sections 7, 9, and 10 no longer apply to this species. Federal agencies will no longer be required to consult with us under section 7 of the Act in the event that activities they authorize, fund, or carry out may affect the bald eagle. Critical habitat was not designated for the bald eagle, so the delisting will not affect critical habitat provisions of the Act.

The provisions of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (including prohibitions on the taking of bald eagles) will remain in place. This rule will not affect the bald eagle's status as a threatened or endangered species

under State laws or suspend any other legal protections provided by State law. This rule will not affect the bald eagle's Appendix II status under CITES.

For existing section 7 and 10 authorizations under the Act that cover bald eagles, the Service will honor existing Act exemptions and authorizations of incidental take until such time as the Service completes a final rulemaking for permits under the Bald and Golden Eagle Protection Act. We do not intend to refer for prosecution the incidental take of any bald eagle 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 full compliance with the terms and conditions of an incidental take statement issued to the action agency or applicant under the authority of section 7(b)(4) of the Act or the terms and conditions of a permit issued under the authority of section 10(a)(1)(B) of the Act. The Service has proposed a rulemaking to establish criteria for issuance of a permit to authorize activities that would “take” bald eagles under the Bald and Golden Eagle Protection Act (72 FR 31141, June 5, 2007). The comment period for the proposed rulemaking will close on September 4, 2007. Applying the preservation standard of the BGEPA, we do not anticipate that the proposed permitting program would reduce the bald eagle population below its current level.

#### Post-Delisting Monitoring

Section 4(g)(1) of the Act requires us, in cooperation with the States, to implement a monitoring program for not less than 5 years for all species that have been recovered and delisted. The purpose of this requirement is to develop a program that detects the failure of any delisted species to sustain itself without the protective measures provided by the Act. If, at any time during the monitoring period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing. We have proposed a draft post-delisting monitoring plan in a separate part of today's **Federal Register** and expect to finalize that post-delisting monitoring plan within a year.

#### Paperwork Reduction Act

This rule does not contain any new collections of information other than

those already approved under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

#### National Environmental Policy Act

We have determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### References Cited

A complete list of all references cited herein is available upon request from the Headquarters Office (see **FOR FURTHER INFORMATION CONTACT** section).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

#### Regulation Promulgation

■ Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

#### PART 17—[AMENDED]

■ 1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

#### § 17.11 [Amended].

■ 2. Section 17.11(h) is amended by removing the entry for “Eagle, bald” under “BIRDS” from the List of Endangered and Threatened Wildlife.

#### § 17.41 [Amended].

■ 3. Section 17.41 is amended by removing and reserving paragraph (a).

Dated: June 28, 2007.

**Dirk Kempthorne,**  
*Secretary of the Interior.*

**H. Dale Hall,**

*Director, Fish and Wildlife Service.*

[FR Doc. 07–4302 Filed 7–6–07; 8:45 am]

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