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Steve Spangle, Field Supervisor  
U.S. Fish and Wildlife Service  
Arizona Ecological Services Field Office  
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Subject: Raptor Research Foundation Comments on Bald Eagle Status Review

Dear Mr. Spangle:

This letter contains comments from the Raptor Research Foundation (RRF) for U.S. Fish and Wildlife Service's (USFWS) consideration as USFWS works to complete its Status Review for the Bald Eagle (*Haliaeetus leucocephalus*) in the Sonoran Desert Area of Central Arizona and Northwestern Mexico (73 FR 29096). Throughout this letter, we refer to this population of Bald Eagles as "Southwest population."

In a letter dated August 11, 2006, RRF responded to USFWS's request for comments on the proposed delisting of the Bald Eagle. In this response (Attachment 1), RRF noted that the Southwest population appears to be less viable than populations in other parts of the country and may not warrant delisting at this time. In its July 9, 2007 Final Rule Removing the Bald Eagle in the Lower 48 States from the List of Endangered and Threatened Wildlife (72 FR 37346), USFWS concluded that the Southwest population meets only 1 of 2 required criteria that USFWS applies to determine whether a population represents a Distinct Population Segment (DPS). USFWS concluded that the Southwest population is discrete, but not "significant in relation to the remainder of the taxon." Therefore, USFWS did not make a separate delisting decision for the Southwest population.

RRF disagrees with USFWS's conclusion that the Southwest population is not a DPS, particularly with respect to 2 of the 4 criteria that USFWS applies to determine significance (61 FR 4722): "Persistence of the discrete population segment in an ecological setting unusual or unique for the taxon" and "Evidence that the discrete population segment differs markedly from other populations of the species in its genetic characteristics." RRF reiterates its previous concerns regarding threats to the Southwest population. These points are outlined, below.

## **I. Distinct Population Segment**

### **A. Persistence ... in an Ecological Setting Unusual or Unique for the Taxon**

RRF believes that the Southwest population does exist in an ecological setting that is unusual and unique among Bald Eagle populations. RRF does not believe this criterion can be dismissed by the explanation that Bald Eagles in the Southwest population "essentially use the same ecological niche as those in other parts of the lower 48 States population"; RRF does not believe this is an appropriate interpretation of this criterion. Almost by definition, individuals of the same raptor species occupy the same ecological niche in different ecosystems.

Further, USFWS based its conclusion that the Southwest population is not unusual or unique on a point-by-point comparison of life history characteristics to those of Bald Eagles in other populations. RRF believes that the appropriate comparison is the sum total of these characteristics. In other words, the Southwest population is unusual and unique when its complete ecology is compared to that of other Bald Eagle populations. Demonstrating that each separate life history characteristic is encountered somewhere else in the species' range is not an appropriate logical structure for this analysis.

USFWS concludes that even if differences existed between the Southwest population and populations in other parts of the species' range, "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." Again, RRF feels that this is not the best logical perspective from which to derive a decision. The Southwest population is unusual and unique due to the sum total of ecological characteristics that allow it to persist year-round in a hot, arid environment that is different from environments that support other breeding populations of Bald Eagles.

RRF urges USFWS to reconsider its conclusion that the Southwest population persists in an ecological setting that is neither unusual nor unique, with these perspectives in mind.

### **B. Evidence that the DPS Differs Markedly ... in its Genetic Characteristics**

Analyses needed to determine whether the Southwest population differs markedly from other Bald Eagle populations in its genetic characteristics have not been carried out. However, morphological and behavioral differences suggest that genetic differences may exist. Differences in size of birds and eggs are documented, as are behavioral differences like timing of nesting and post-fledging movement patterns of young (Hunt et al. 1992). In this most detailed study of Arizona's Bald Eagle population, Hunt et al. (1992) posed the notion that movement patterns of young suggest "genetic control of a migratory adaptation." Also, Hunt et al. (1992) found in Arizona eggs unique microstructure features of eggshells that could impact "water loss from Bald Eagle eggs from an arid climate such as Arizona."

Analysis of nuclear and mitochondrial DNA from Bald Eagle tissue samples similar to the assessment performed by Proudfoot et al. (2006) for Ferruginous Pygmy-owls would reveal either evidence of distinct eagle groups, or lack of such distinction. For the Ferruginous Pygmy-owl, genetics data demonstrated the importance of the Sonora, Mexico - Arizona population of this raptor, and focused management attention onto this population. With knowledge of the genetic limits of this distinct owl population, the recovery team can now identify and prioritize protection for requisite habitats, and know the significance of population parameters like recruitment and mortality rates.

RRF urges USFWS to carry out the analyses needed to determine whether the Southwest population differs markedly from other populations of Bald Eagles in its genetic characteristics.

## **II. Threats**

RRF remains concerned with threats to the Southwest population. As stated in our August 11, 2006 letter,

*We continue to be concerned about the viability of the Southwest population of Bald Eagles based on the low number of breeding pairs, relatively low productivity, relatively high adult mortality, and threats of habitat alteration and human disturbance.*

*We are not aware of any data showing a clear, long-term increase in the Southwest Bald Eagle population (Arizona, New Mexico, and Mexico). The delisting proposal notes that there were 46 occupied breeding territories in Arizona and New Mexico in 2003, and that Arizona's 41 pairs produced an estimated 0.75 young/pair in 2004. This is a relatively small population for such a large geographic area, and productivity is lower than in any other part of the eagle's range. Coupled with relatively low productivity, adult mortality is relatively high: 12-16% of the breeding population per year (Arizona Game and Fish Department 1999). In most eagle populations, natural mortality of adults is usually less than 10% (McCollough 1986, Wood 1992, Bowman et al. 1995). Since 1983, the Arizona Nest Watch Program has been involved in the rescue of more than 50 nestlings and eggs. If the nest watch program is discontinued, productivity likely will fall below that needed to maintain a stable or increasing population.*

*Compounding conservation difficulties posed by low numbers, lower productivity, and higher adult mortality, the Southwest population is faced with a variety of threats related to rapidly increasing human populations. For example, in 1996 and 1997, almost 14,000 human activities and nearly 4,000 gunshots were recorded within 1 km of 13 different nests in Arizona (Arizona Game and Fish Department 1999). The most productive eagle breeding areas in the Southwest population are in the Salt and Verde drainages in or adjacent to Maricopa County. The human population in this area is projected to double to 6 million*

*people within the next 30 years (Arizona Game and Fish Department 1999). Significant threats to Arizona Bald Eagles include human developments, recreational disturbance, fishing-line entanglement, and habitat modification due to grazing and flood control (Arizona Game and Fish Department 1999). In summary, we do not believe that the Southwest Bald Eagle population is secure, and we question whether even current numbers can be sustained without active management and habitat protection.*

USFWS's revised definitions and management guidelines only partially alleviate threats to the Southwest population, where actions that jeopardize Bald Eagle environs are not only small-scale actions that threaten individual eagles and nest trees (the primary focus of the guidelines), but also large-scale planning and development endeavors. Especially important are water resource management plans: many Bald Eagles in the Southwest population depend on the Verde and Salt rivers, watersheds that planners anticipate will sustain the areas of greatest human population expansion in Arizona. Further, USFWS's management guidelines are advisory in nature. RRF urges USFWS to consider protecting the Southwest population as Threatened or Endangered. The Endangered Species Act provides the best opportunity for Bald Eagle habitat needs to be addressed early in project development. Planners are familiar with this process, and legally mandated consideration of Bald Eagle issues at the onset of planning discussions offers the greatest likelihood that projects will be implemented in a manner that does not jeopardize the Southwest population.

In summary, RRF believes that the Southwest population warrants designation as a DPS based on its persistence in an ecological setting that is unique and unusual among Bald Eagle populations, and possibly genetic differences as well. Analyses needed to determine whether there are genetic differences between the Southwest population and other Bald Eagle populations should be promptly carried out. RRF urges USFWS to consider protecting the Southwest population as Threatened or Endangered under the Endangered Species Act, based on the population's small size and its vulnerability to population-level threats that are not completely mitigated by other laws and USFWS's Bald Eagle management guidelines.

Thank you for your consideration of RRF's comments. Please do not hesitate to contact me if there is any way in which RRF can assist USFWS in completing its status determination, or with other matters involving the Southwest population.

Sincerely,

Leonard Young, President  
Raptor Research Foundation, Inc.

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