



**Maricela  
Constantino/CBFO/R5/FWS/D  
OI**

06/02/2006 06:07 AM

To Douglas Krofta/ARL/R9/FWS/DOI@FWS

cc

bcc

Subject bald eagle 90day finding and briefing paper

Doug,

I've attached the briefing paper and outline for the bald eagle finding along with the early read copy of the finding. You should be able to see my comments in the early read copy of the finding.



S\W eagle outline 5-11.doc



S\W eagle 90d advance read 5-15 \w\comment.doc



S\W eagle 90-d bp 5-10.doc

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Maricela A. Constantino, Biologist  
U.S. Fish and Wildlife Service  
Endangered Species, Branch of Listing  
4401 N. Fairfax Drive, MS 420  
Arlington, VA 22203  
703/358-1871 (phone)  
703/358-1735 (fax)

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Petition to List the Bald Eagle as a Distinct Population Segment, List the Population as Endangered, and Designate Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 90-day petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 90-day finding on a petition to classify the bald eagle (Haliaeetus leucocephalus) as a distinct population segment, list the population segment as endangered, and designate critical habitat for the population segment under the Endangered Species Act of 1973, as amended (Act). We find that the petition does not provide substantial scientific or commercial information indicating that the petitioned action of designating a distinct population segment of the bald eagle, listing that population as endangered, and

designating critical habitat for that population segment may be warranted. Therefore, we will not be initiating a further status review in response to this petition. We ask the public to submit to us any new information that becomes available concerning the status of the species or threats to it.

DATES: The finding announced in this document was made on XXXXXXXX, 2006.

We must receive your comments on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### ADDRESSES

All materials received, as well as supporting documentation used in preparation of this proposed rule, will be available for public inspection, by appointment, during normal business hours at U.S. Fish and Wildlife Service, 2321 W. Royal Palm Road, Suite 103, Phoenix, Arizona 85021.

FOR FURTHER INFORMATION CONTACT: Steve Spangle (see address above), telephone, 602-242-0210; facsimile, 602-242-2513.

#### SUPPLEMENTARY INFORMATION:

##### Background

Section 4(b)(3)(A) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information to indicate that the petitioned action may be warranted. We are to base this finding on information provided in the petition. To the maximum extent practicable, we are to make this finding within 90 days of our receipt of the petition, and publish our notice of this finding promptly in the Federal Register.

Our standard for substantial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted” (50 CFR 424.14(b)). If we find that substantial information was presented, we are required to promptly commence a review of the status of the species, if one has not already been initiated under our internal candidate assessment process.

In making this finding, we relied on information provided by the petitioners and evaluated that information in accordance with 50 CFR 424.14(b). Our process of coming to a 90-day finding under section 4(b)(3)(A) of the Act and section 424.14(b) of our regulations is limited to a determination of whether the information in the petition meets the “substantial information” threshold.

On October 6, 2004, we received a formal 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 riparian areas of central Arizona and northwestern Mexico be classified as a distinct population segment (DPS) and reclassified as an endangered species, in accordance with the Act. The petition also requested that critical habitat be designated for the DPS.

The Service requested clarification on the boundaries of the Sonoran population, as defined by the petitioners, on February 11, 2005. The petitioners responded with that clarification on March 5, 2005, requesting that we consider in the DPS analysis those bald eagles nesting along riparian areas in the Sonoran desert. Further action on this petition was precluded by higher listing priorities. On January 19, 2006, we received from the petitioners a 60-day Notice of Intent (NOI) to sue the Service for failure to respond to the petition. On March 27, 2006, the Center for Biological Diversity and Maricopa Audubon Society filed a lawsuit against the U.S. Department of the Interior (DOI) and the Service for failure to respond within 90 days to the petition.

### Species Information

The bald eagle (Haliaeetus leucocephalus) is the only species of sea eagle native to North America. Literally translated, Haliaeetus leucocephalus means white-headed sea eagle (USFWS 1995). Bald eagles are birds of prey of the Order Falconiformes and Family Accipitridae. Bald eagles vary in length from 28 to 38 inches (71 to 97 centimeters), weigh between 6.5 to 14 pounds (2.9 6.4 kilograms), and have a 66 to 96 inches (1.8-2.6 meters) wingspan. Distinguishing features include a yellow hooked bill

and yellow unfeathered legs and feet. Adults of the species have a dark brownish-black body color, black talons, with a white head, neck, and tail. Their legs and feet are featherless and yellow. Immature bald eagles are mostly dark brown and lack a white head and tail until they reach approximately five years of age (AGFD 2006, pg. 1).

Gerrard and Bartolotti (1988, p. 2) note that bald eagles are believed to have nested on both coasts, along all major rivers and large lakes in the interior from Florida to Baja California in the south, and north to Labrador and Alaska. The species is known to have bred in every state and province in the United States and Canada except Hawaii (Hunt et al. 1992, p. A-9).

Hunt et al. (1992, p. A-11 to A-12) summarized the earliest records from the literature for bald eagles in Arizona. Coues noted bald eagles in the vicinity of Fort Whipple in 1866 (now Prescott), and Henshaw reported bald eagles south of Fort Apache in 1875. The first bald eagle breeding information was recorded in 1890 near Stoneman Lake by S.A. Mearns. Additionally, Bent reported breeding eagles at Fort Whipple in 1866 and on the Salt River Bird Reservation (since inundated by Roosevelt Lake) in 1911. Additionally, there are reports of bald eagles along rivers in the White Mountains from 1937, and reports of nesting bald eagles along the Salt and Verde Rivers as early as 1930.

The bald eagle population of the Southwest recovery region reaches throughout Oklahoma and Texas west of the 100th meridian, all of New Mexico and Arizona, and

the area of California bordering the Lower Colorado River (USFWS 1982, p. 1). The vast majority of these breeding bald eagles are found within the state of Arizona. The occurrence of breeding bald eagles in the state of New Mexico is very limited (USFS 2004, p. 153). In 2001, the New Mexico Department of Game and Fish (NMDGF) reported the occurrence of four bald eagle nest sites in New Mexico, all on private lands.

Nationwide, bald eagles are known to nest primarily along seacoasts and lakeshores, with banks of rivers and streams also used (Stalmaster 1987, p. 120). In the Southwest, bald eagle breeding areas (BA) are located in close proximity to a variety of aquatic habitats, including reservoirs, regulated river systems, and free-flowing rivers and creeks. The term “breeding area” is used to define eagle nesting sites and the area where they forage. Nests are placed mostly on cliff edges, rock pinnacles, and in cottonwood trees. However, artificial structures, junipers, pinyon pines, sycamores, willows, ponderosa pines, and snags of these trees also have housed eagle nests.

In Arizona, the majority of nests are located in the Upper and Lower Sonoran Life Zones, including the riparian habitats and transition areas of both zones (Hunt et al. 1992, p. A-17). Representative vegetation of these life zones includes Arizona sycamore (Platanus wrightii), blue paloverde (Cercidium floridum), cholla (Opuntia spp.), Fremont cottonwood (Populus fremontii), Gooding willow (Salix gooddingii), mesquite (Prosopis spp.), saguaro (Carnegiea gigantea), and tamarisk or salt cedar (Tamarix pentandra; an exotic species) (Brown 1994, p. 200 ).

Historical evidence to document bald eagles nesting in New Mexico is lacking, although unverified reports suggest one or two pairs may have nested in southwestern New Mexico prior to 1928. In the mid-1980s, a pair established a territory in Colfax County in an area where bald eagles concentrated in winter, and in 1987 an active nest was discovered nearby which produced two fledglings that year. In 1988, an active nest was discovered in Sierra County, also in an area of wintering eagle concentration; the nest fledged one young that year. Through 1999, those two nests together fledged a minimum of 31 young, with that in Colfax County being one of the more productive nests in North America. Additional nesting activity was recorded elsewhere after the mid-1980s, always in areas of wintering concentrations, including in San Juan, Rio Arriba, Quay, and Sierra counties. However, in each instance eagles built nests only to abandon the effort prior to egg laying; such “practice” nests are not uncommon among inexperienced adults. In 1998, two additional nests were discovered in Colfax County, and each fledged young in both 1998 and 1999 (five young total) (Williams 2000, abstract). Bald eagles wintering in New Mexico are often found in upland habitats.

Bald eagles are long-lived bird species. Southwestern bald eagles are known to exceed 12 years of age (USFWS 1999, p. 36454; Hunt et al. 1992, p. A-v).

Bald eagles primarily eat fish, but they will also eat amphibians, reptiles, birds, small mammals, carrion (dead animals), and carcasses of large mammals (cows, elk, deer, etc.). Their food habits can change daily or seasonally, but when a choice is available, bald eagles invariably select fish over other prey. Bald eagles will scavenge,



steal, or actively hunt to acquire food. Carrion constitutes a higher proportion of the diet for juveniles and subadults than it does for adult eagles. Bald eagles are primarily a perch and wait hunter in order to detect carrion or passively detect available live prey (Stalmaster 1987, p. 93).

Food strongly influences bald eagle productivity (Newton 1979, Hansen 1987). A female's health in the months preceding egg laying can affect egg production, and the prey availability during the breeding cycle affects the survivorship of nestlings and post-fledging juveniles. Thus, any factor affecting the adults' ability to acquire food can influence productivity and adult survivorship (Newton 1979). The most common fish eaten in the Southwest are Sonora and desert suckers; channel and flathead catfish; common carp; largemouth, smallmouth, yellow, and white bass; and black crappie. Less common are roundtail chub, green sunfish, bluegill, tilapia, and rainbow trout (USFWS 1982, p. 11). Prey availability has decreased on the upper Salt River in Arizona. The introduction of predatory flathead catfish in the late 1970s nearly extirpated native fish populations. Flathead catfish, while available as bald eagle prey when smaller, grow to large sizes (up to 50 pounds, or 22.6 kilograms) making them unavailable. In turn, flathead catfish populations have increased while other fish species have decreased. Consequently, productivity in the four bald eagle BAs on the upper Salt River has decreased from 1.12 in the 1980s to 0.29 in the 1990s.

Eagles in the Southwest frequently construct nests on cliffs. By 1992, of the 111 nest sites known, 46 were in trees, 36 on cliffs, 17 on pinnacles, 11 in snags, and one on

an artificial platform (Hunt et al. 1992, p. A-17). However, while there were more nests in trees, one study found that cliff nests were selected 73 percent of the time, while tree nests were selected 27 percent of the time. Additionally, eagles nesting on cliffs were found to be slightly more successful in raising young to fledgling, though the difference was not significant. Nests may be used year after year. Hunt et al. (1992, p. A-20) determined the mean diameter of nests was five feet (156 centimeters).

Bald eagles in the Southwest establish their breeding territories in December or January and lay eggs in January or February, which is early compared with bald eagles in more northerly areas. It is believed that this is a behavioral adaptation so chicks can avoid the extreme desert heat of midsummer and adults can take advantage of food resources for the rearing of eaglets. Young fledgling eagles can remain in their nest area through June learning how to fly and land, while still being primarily fed by adult eagles (Hunt et al. 1992, p. C-6 – C-7).

About 45 days after leaving the nest, young bald eagles migrate to Canada, Northern California, Idaho, Montana, North and South Dakota, Oregon, Washington, and Wyoming (Hunt et al. 1992, p. A-104 – A-114). One- to three-year-old subadults return to Arizona in September and October. Resident adult bald eagles often stay in their BAs year-round, although local short-term migrations are common.

The first major decline in bald eagle populations began in the mid- to late-1800s (USFWS 1999, p. 36455). Nationwide bald eagle surveys conducted in 1973 and 1974

revealed the declining trend of bald eagle population numbers throughout the lower 48 states. More recently however, the nesting populations of bald eagles have been increasing throughout the U.S. Surveys conducted between 1963 and 1998 show that active nest sites in the lower 48 states have grown from 417 to over 5,748 occupied BAs (USFWS 1995, p. 36001; USFWS 1999, p. 36457). Today, the Service estimates the population nationwide to be at approximately 7,066 breeding pairs (USFWS 2006, p. 8239).

The bald eagle was originally listed as endangered due to the species' reproductive failure caused by pesticide use (mainly dichloro-diphenyl-trichloroethane [DDT]), and unrestricted killing by humans. The widespread use of DDT and other persistent organochlorine compounds in the 1940s for mosquito control and as a general insecticide caused considerable declines in bald eagle populations. The pesticide DDT breaks down into dichlorophenyl-dichloroethylene and accumulates in the fatty tissues of adult females, leading to impaired calcium release necessary for egg shell formation. Thinner egg shells led to reproductive failure, which is considered the primary cause of declines in the bald eagle population. DDT was banned in the United States in 1972 (USFWS 1995, p. 36000).

#### Previous Federal Action

On March 11, 1967 (32 FR 4001), bald eagles south of 40 degrees north latitude were listed as an endangered species. Bald eagles north of this line were not listed at that

time because those populations had not experienced the same threats and population declines as of 1967. On February 14, 1978, the Service listed the bald eagle as endangered in 43 states, and threatened in five others (43 FR 6233). Bald eagles were not listed in Alaska, and are not found in Hawaii. On July 12, 1995, the FWS reclassified the bald eagle from endangered to threatened in the lower 48 states (60 FR 36000), under the Act. The bald eagle remained classified as threatened in Michigan, Minnesota, Wisconsin, Oregon, and Washington where it was originally listed as threatened.

On July 6, 1999, the FWS proposed to remove the bald eagle from the List of Endangered and Threatened Wildlife in the lower 48 states of the U.S., including the southwest recovery region. The comment period on that proposal was re-opened on February 16, 2006 (71 FR 8238), and subsequently on XXXXXX, 2006 (XX FR XXXX).

### Threats Analysis

Pursuant to section (4) of the Act, we may list a species, subspecies, or DPS of vertebrate taxa on the basis of any of the following five factors: (A) present or threatened destruction, modification, or curtailment of habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

In making this finding, we first evaluated whether threats to the bald eagle as

represented in the petition and other information may pose a concern with respect to its survival. Further detail and specific literature citations for information presented below are available in the petition. The Act identifies the five factors to be considered, either singly or in combination, to determine whether a species may be threatened or endangered. Our evaluation of these threats, based on information provided in the petition and available in our files, is presented below. Because we determined that the threats, as listed in the petition, are not likely to result in the extinction of the species, we believe that listing the southwestern population as endangered is not justified at this time.

A. Present or Threatened Destruction, Modification, or Curtailment of the Species'

Habitat or Range

Development, Recreation, and Water Use

The petition notes that the Southwest has already lost more than 90 percent of its historical riparian habitat,, and that the loss of riparian habitat is continuing due to increasing development, dewatering via groundwater pumping and diversions, destructive cattle grazing, and lack of vegetation-rejuvenating floods. The petition contends that the southwestern bald eagle population faces imminent and accelerating loss of increasing amounts of habitat vital to their long-term survival. Specifically, the petition notes that most of the BAs are located along the Salt and Verde rivers near the Phoenix metropolitan area and the towns of Cottonwood and Camp Verde, where habitat loss is occurring due to the increasing human population in central Arizona. The petition notes

that, in Maricopa County, the human population is expected to double to more than six million people over the next 30 years. Growth in Cottonwood, on the Verde River, is projected to increase by 148% and in Camp Verde by 158% between 1994 and 2040. The petition notes that increases in human populations of this magnitude will result in increased housing development, water demands, and recreational use.

The petitioners contend that development will affect the suitability of many BAs due to their proximity to areas with large human populations and projected population growth rates. The petition notes that increased recreational use, development, and water use will follow increasing population sizes, and cites examples of past consultations addressing these issues.

The petition cites recent examples of recreational impacts to southwestern bald eagle BAs, including river tubing on the Salt River, which increases the human presence near the Blue Point BA, as well as campground development at Roosevelt Lake, which could affect the Sheep and Tonto BAs. The petition cites, as development examples, a 360-home development and golf course within 1.0 miles of the Box Bar BA; the development of lakeside resorts at Lake Pleasant near the Pleasant BA; and continued housing, road, and business developments along lower Tonto Creek near the Sheep and Tonto BAs.

The petition notes that dewatering of the middle portion of the Verde River is accelerating so that flows have at times been reduced to 12 cubic feet per second in

summer months near the Camp Verde White Bridge gage. The petition contends that this dewatering is resulting in a reduction in base flows, and that increased populations in Cottonwood and Camp Verde are leading to increased groundwater pumping. The petition indicates that groundwater pumping in Arizona has repeatedly been demonstrated to result in a depletion of surface flows, degradation and loss of riparian habitats, and adverse impacts and local extirpation of aquatic flora and fauna.

The petition notes that increased water demand is expected to have adverse effects on flows within rivers and resulting impacts on riparian habitats. The petition further notes that 51 percent of all known desert nests in Arizona have been in riparian trees and snags. The petition notes that bald eagles at 11 BAs, including the Box Bar, Coolidge, Doka, Fort McDowell, Perkinsville, Pinto, 76, Sheep, Sycamore, Tonto, and Winkelman BAs, nest solely in riparian trees, and that the cottonwood trees used for nesting in these BAs have become overmature, are dying, and are not being replaced. The petition contends that the loss of habitat in these BAs is particularly damaging to the future stability of the southwestern population, as they have collectively contributed 22 percent of all recorded fledglings since 1971. The petition notes that the Fort McDowell BA has fledged 34 young, second only to the Blue Point BA, which has fledged 35 young.

Substantial detail is provided in the petition regarding specific development activities and resulting effects to southwestern bald eagle BAs. The petition notes that pressures associated with human population growth are increasing and will continue to do so as the human population increases.

**Response to the Petition** – The information provided with respect to this threat substantiates that human population growth is expected to continue in areas in close proximity or used by the southwestern bald eagle population. The petition details the expected increase in impacts of projects and activities related to an expanding human population that are expected to have an effect on bald eagle BAs in the southwestern population. The petition clarifies that the BAs to be affected by human population expansion are responsible for a large percentage of fledglings produced in the southwestern population. We agree with the information presented in the petition on this point, but do not believe that the level of impact due to increased human population expansion will necessarily endanger the bald eagle. |

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

No specific threats were identified in the petition for this category.

**C. Disease or Predation**

No specific threats were identified in the petition for this category.

**D. Inadequacy of Existing Regulatory Mechanisms**

*Intensive Management Required*



The petition states that the southwestern population's survival is dependent, in good part, on heroic human support and management by the Arizona Bald Eagle Nestwatch Program (ABENP). The petition notes that, over a two-year period in 1996 and 1997, 13,999 human activities and 4,000 gunshots were recorded within 0.5 mile of 13 nests. The petition contends that signs, education, and the threat of fines are insufficient deterrents to people, and that monitoring by nestwatchers has been, and continues to be, a crucial component of southwestern bald eagle management.

The petition additionally notes that, since 1983, sixteen percent of all southwestern bald eagle fledglings have been saved by direct intervention of the ABENP, with that intervention directly responsible for saving up to 60 percent of a single year's nestlings in some cases. The petition notes that BAs such as Bartlett, Cliff, and 76 would rarely produce young without the aid of nestwatchers.

The petition further notes that the ABENP could become inadequate in the future as its funding is not secure. The funding comes from State grants such as AGFD's Heritage Fund, mandatory Federal agency contributions as mitigation for takings of the bald eagle under the Act, and volunteer funding. The petition finds that Heritage funding is insecure because it is derived from the state lottery, and income from the lottery has been decreasing. Additionally, the petition notes that there have been legislative attempts to divert lottery funds from protective wildlife activities. The petition contends that removal of the bald eagle from the endangered species list will terminate mandatory

Federal agency funding as well; for example, the Bureau of Reclamation has already asked for clarification from the Service on funding termination for one of its projects. The petition notes that the Service response to this request confirms that funding is required only until the bald eagle is delisted. The petition provides additional examples of the tenuous nature of funding for the ABENP and states that there are few binding consultations for any agency to commit funding to existing bald eagle programs; funding assistance by agencies is primarily based upon available funds and where the agencies choose to allocate them. The petition notes that approximately 63 percent of all funds spent on bald eagles come from agencies other than AGFD.

**Response to Petition** – The information presented with respect to the need for, and funding vulnerability of, the ABENP is substantiated in the petition. The petition clarifies that the nestwatchers are instrumental in minimizing threats to BAs during the breeding season, which likely boosts the productivity levels of these BAs. There are currently no other existing regulatory mechanisms that accomplish this work.

Consequently, should funding of the ABENP decrease or be eliminated, existing regulatory mechanisms will likely prove inadequate for continued protection of the southwestern population. The species will, however, continue to be protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

#### *Habitual Violation of Law and Lack of Agency Resolve*

The petition states that the Service has been engaged in efforts to downlist the

bald eagle since at least 1989. The petition notes that an attitudinal change accompanied downlisting efforts and this change contributes to the increasing threats to the continued existence of the southwestern bald eagle. Specifically, the petition contends that the attitudinal shift perpetuates: a) cattle grazing within riparian habitat critical to the southwestern bald eagles; b) dam operations with water releases that are improperly timed for replenishment of riparian nest trees; c) dewatering of remnant free-flowing rivers; d) introduction of exotic fishes in native fish habitat; e) continuing and increasing low-flying aircraft; and f) approval of excessive amounts of take of southwestern bald eagles. The petition provides detailed information for each of these categories, which is summarized below.

*1. Cattle Grazing Within Riparian Habitat* – The petition notes that cattle grazing in riparian areas is known to impede growth of replacement cottonwood nest trees. The petition cites numerous biological opinions by the Service as stating that riparian habitat loss is due, in part, to livestock grazing, that overgrazing continues as a threat and disturbance to bald eagles, and that overgrazing exacerbates adverse effects to riparian growth as well as to existing eagle nesting, perching, and foraging habitat.

*2. Dam Operations Result in Improperly Timed Water Releases* – The petition notes that poorly timed water releases are a threat to riparian habitat. The petition further notes that riparian habitat losses continue on the lower Verde and Salt rivers as a result of dam operations, and that maintenance of existing water development features such as dams or diversion structures is a continuing threat and disturbance to bald eagles. The

petition contends that dam operations degrade existing eagle tree nesting and perching habitat and retard riparian regeneration; alter the hydrological regime of the lower Verde River by reducing the magnitude, frequency, and duration of high flow events; and restrict the flow of sediment, decreasing recruitment of early successional riparian species. The petition indicates that the effects of dams and their operation are the most important limiting factors in shaping the riparian plant community.

3. *Dewatering of Remnant, Free-flowing Rivers* – The petition notes that flows in the Verde River have decreased to as low as 12 cfs during the month of June in some years. The petition also notes that increasing groundwater pumping by the growing population of Cottonwood and Camp Verde threatens to render sections of the Verde River intermittent, and that the Verde River baseflow is provided by groundwater discharge from the alluvium and Verde Formation, so that any withdrawal from this aquifer is expected to eventually deplete Verde River flows. The petition again notes that the human population in Cottonwood and Camp Verde is expected to grow by 148 and 158 percent, respectively, between 1994 and 2040. The petition also notes that Prescott and Prescott Valley are developing a plan to use water from the Big Chino Basin, which may affect groundwater discharge into the upper Verde River.

4. *Exotic Fish Introductions* – The petition notes that one study found native fish populations to be a crucial component to suitable breeding habitat. The petition indicates that at least 50 species of nonnative fish have been introduced into the Gila River basin, with potentially another 10 to 15 incidental occurrences of other nonnative species. They

note that nonnative species are considered to be extremely difficult, if not impossible, to remove once established. They also note that, in order to manage for native species, fish barriers are planned in areas like the upper Verde River, and that construction and maintenance of those barriers may result in take of bald eagles through harassment or harm. A discussion under Factor E below indicates the petition's concern on the decline of native species, especially Sonora sucker and desert sucker and their use by bald eagles as a prey base.

5. *Continued and Increasing Low Flying Aircraft* – The petition notes that there have been increases in low-flying aircraft, including private, military, and emergency aircraft, and that these aircraft are a concern for BAs on the lower Salt and Verde rivers and under military training routes. The petition cites examples of aircraft recorded less than 150 feet over active nests. The noise disturbance and sonic booms produced by military aircraft can flush incubating adults from the nest. The petition notes that the AGFD has worked with the Federal Aviation Administration and the Arizona Department of Transportation to establish a 2000-feet above ground level advisory along the Salt and Verde rivers, but although marked on Arizona aeronautical maps, this advisory is generally disregarded.

The petition notes that a biological opinion evaluated the Department of the Air Force proposal to widen and/or realign segments of military training routes in Arizona in 1994. According to the petition, the Service acknowledged the loss of nine eagles or eggs and 18 disturbances per breeding season each year over the 50-year life of the

project.

*F. Excessive USFWS Approval of Southwestern Bald Eagle Deaths* - The petition contends that the USFWS has approved Federal activities responsible for the deaths of at least 29 southwestern bald eagles in the last decade, noting that these activities will result in a cumulative 491 taking deaths over the next 50 years. The petition contends that 30 percent of occupied eagle nesting territories in Arizona may be adversely affected by these planned projects.

**Response to the Petition** – With respect to cattle grazing, dam operations, dewatering of rivers, introduction of exotic fishes in native fish habitat, and low-flying aircraft, ~~we believe~~ the petition presents substantial information on the various categories of threats to the species, noting the numerous consultations completed by the Service. As noted within the petition, the Service has recognized the impacts of these threats to eagles and their habitat over a period of several years. ~~H-We feel, however, that~~ recognition of these threats by the Service within biological opinions does not indicate a lack of agency resolve. It is the USFWS' responsibility, under the Act, to evaluate the impacts of the threats on listed species and to determine how impacts may be minimized and whether or not the project will jeopardize the continued existence of the species. If the project does not result in a jeopardy determination, the Service is responsible for developing reasonable and prudent measures that will minimize the adverse impacts of the action on the species under consultation. Reasonable and prudent measures are restricted to actions that cause only minor changes to the project and are within the legal authority and

jurisdiction of the agency or applicant to carry out.

The biological opinions cited within the petition determine the impacts of various activities on the bald eagle and its habitat, assess whether incidental take will occur, make a jeopardy/no jeopardy determination, and provide reasonable and prudent measures to minimize incidental take, when appropriate. In addition, each consultation includes sections on environmental baseline and cumulative effects which are used to evaluate the effects of the current action against the background of previous impacts and total expected take for the species. For each of these opinions, the Service provided a take statement and determined that that level of take would not jeopardize the continued existence of the species, indicating that, although there may be some level of adverse effect, we do not believe that the threats imposed by the various actions, when considered cumulatively with previous actions, would result in extinction of the species.

We do not believe, based on the above discussion, that the Service has authorized excessive levels of take for bald eagles in the Southwest. It is important to note that ~~we~~ ~~believe~~ the high level of take described in the petition with respect to the items E and F above is a misinterpretation on the part of the petitioners. The petition indicates that, for one consultation regarding expansion of military training routes, the Service allowed for the loss of nine eagles or eggs and 18 nest disturbances annually over the 50-year life of the project. The Service provides a take statement for overhead flights that allows for take in the form of direct mortality of one adult or immature bald eagle, bald eagle nestling, or bald eagle egg, or two instances of disturbance per active nest per nest

season. Incidental take in the form of harm of more than one eagle, nestling, or egg would require the Air Force to reconsult immediately. Further, the reasonable and prudent measures require the Air Force to avoid active bald eagle BAs during the breeding season. The total take for this opinion was therefore one bald eagle mortality over the life of the project and 18 disturbance events per year (two at each of nine BAs) outside of the breeding season each year for the life of the project. The total mortality associated with this particular project is therefore one bald eagle, rather than the 450 attributed to it in the petition.

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

##### *Small Population Size*

The petition notes that bald eagles once nested along every major river and large lake in the continental United States, and that they are no longer found in all areas of their historical range. The petition further notes that the southwestern population of the bald eagle is extremely small, without prospect for significant expansion. The petition notes that there are fewer than 60 nesting pairs of bald eagles in the population, and that the population occupying BAs may be overestimated. Their concern for overestimation of the population is based on the fact that members of breeding pairs recorded as occupying, but not breeding in a BA, may also occupy adjacent BAs. They note that two males were observed to move between BAs, and that it is possible that adults recorded as occupying one BA may have come from an adjacent occupied BA.



The petition notes that BAs may have been occupied in years prior to their discovery, and that, if this is the case, the continued increase in the number of BAs represents an increase in the number of *discovered* BAs, rather than an increase in the actual number of breeding birds. Undercounting of the population in previous years results in a greater discrepancy between past and current known numbers of breeding birds, which reflects as a greater increase in the population than that which might actually have occurred.

The petition further notes that there is not enough surviving suitable habitat available to allow for the population to increase substantially or expand its distribution. They note that the AGFD has concluded that riparian habitat improvement and prey base modifications will be necessary before population sizes increase in Arizona. Thus, the petitioners believe that the southwestern population will likely continue to remain small into the foreseeable future.

The petition notes that the small size of the southwestern bald eagle population is, in and of itself, problematic. They estimate, using AGFD survival estimates of juveniles and nestlings, that there are approximately 166 individual eagles in the southwestern population. The petition contends that the population is biologically, behaviorally, and ecologically isolated, so that the population faces challenges derived directly from its small size and isolation. The petition maintains that the population dynamics of such a population is essentially similar to that of an isolated metapopulation. The petition

references a study on the examination of the effects of widespread habitat destruction on regional metapopulations of raptor populations, noting that the study found that most species persist regionally as metapopulations or as sets of populations which are linked by dispersing individuals. This allows for recolonization of unoccupied habitat patches following local extinction events. However, the petition states that the loss of suitable habitat patches, or disturbances in the surrounding landscape, can disrupt this process and lead to the regional extinction of a species. The study cited found that the persistence of the species is at risk in significant portions of its range due to continued destruction and concomitant fragmentation of its habitat. As this pattern continues, a previously continuous population is separated into smaller, isolated demographic units that are at higher risk of local extinction due to demographic factors and/or environmental phenomena.

The petition contends that four “categories of analysis” are applicable to the question of the long-term survivability for raptors in general, including demographics, genetics, patch dynamics, and environmental change. The petition indicates that, based on population biology principles, if a typical vertebrate species such as a raptor is reduced to a genetically effective size of 50, it may suffer from inbreeding depression, and further, that demographic stochasticity and inbreeding depression may interact, with the effects of one exacerbating the other, and hasten the decline of a population. The petition states the concern that populations that are reduced in size tend to lose genetic variability through genetic drift, reduced average individual heterozygosity, and a reduced pool of allelic variation. The petition contends that a population size of roughly

1,000 or larger is required to maintain all of the genetic variation of that population.

Below that size, the population will lose genetic variation at a rate proportional to the size of the population. The petition concludes that the southwestern population has population characteristics of extended adult longevity, high juvenile mortality, intense territoriality, and may be in a position to enter a geometric population decline.

### *Mortality*

The petition contends that the level of mortality in the southwestern population is higher than can support a stable population, noting that adult mortality is higher than recruitment for the population. The petition states that, from 1987 to 1990, the rate of mortality for breeding adults has averaged 16 percent of the breeding population per year or 5.25 breeding adult mortalities per year. From 1991 to 1998, the rate of mortality was 11.9 percent, or 5.13 breeding adult mortalities per year.

The petition further contends that the high presence of subadults in breeding pairs likely reflects the high adult mortality rates. Twelve subadult plumaged birds were observed holding territories in Arizona from 1987 to 1990, with seven subadult plumaged birds observed holding territories in Arizona since 1991. The petition notes that the AGFD found that, for 39 known vacancies of BAs, 15 (38.5 percent) were filled by adults and 24 (61.5 percent) by near-adults or subadults. The petition states that this pattern is not observed in other populations, and that in Saskatchewan, population stability was maintained in part by bald eagles deferring first breeding to age six. The petition states

that a 1992 survey of 14 bald eagle biologists throughout North America determined that the known incidence of breeding subadults outside of Arizona was 0.02 percent. The petition concludes that the persistent presence of three- and four-year-old breeding bald eagles in Arizona has created concern for the health of the breeding population.

The petition contends that mortality for fledglings is also excessive, and that most southwestern nestlings die prematurely. The petition notes that, according to AGFD data, from 1987 to 1998, 97 fledglings have been found dead, and concludes that few southwestern bald eagles survive to adulthood.

#### *Productivity*

The petition states that the reproductive rates for the southwestern population are lower than those known for bald eagles in any other location. The petition indicates that the AGFD determined that productivity rates are lower than those recorded throughout North America. For the southwestern population, productivity rates from 1975 to 1984 were 0.92 young per occupied BA, but that since then, the average productivity rate has been 0.78. The petition notes that productivity rates over a similar time span in Alaska, Florida, Washington, and Wisconsin, averaged 0.96 young per occupied BA. The petition adds that, in some areas of the southwestern population, productivity rates are even lower. For example, productivity along the Salt River declined to 0.26 in the 1990s.

The petition further contends that BAs that formerly produced the majority of the

fledglings are producing fewer fledglings, and that the most productive nests are in relatively close proximity to the rapidly growing Phoenix metropolitan area, so that survivability in these BAs is becoming increasingly problematic. The petition states that the Salt and Verde rivers support the bulk of the southwestern population, and that it is in the lower parts of these drainages and nearby lakes where prey is most abundant and bald eagles are most productive. However, the proximity of these areas to Phoenix results in high recreation use. Due to predicted human population expansion (see factor A above), the petition predicts increased recreational and development pressures in close proximity to BAs along the Salt and Verde rivers.

The petition further notes that southwestern bald eagles on private lands are either not reproducing or are destined to fail. The petition cites the Winkelman BA as an example, noting that this BA on private property is now surrounded by housing, recreation, and industry. The petition states that the Camp Verde and Perkinsville BAs are also on private property, and are surrounded by private lands that have recently been sold or for which plans to sell are underway. The petition cites the reproductive history of these BAs, noting that the Camp Verde and Winkelman BAs have a record of reproductive failure, and that the Perkinsville BA failed in 2002 and faces further threats from potential dewatering of the upper Verde River.

The petition includes information developed by the petitioners through the use of Vortex (version 9) modeling. The petition notes that the petitioners worked with AGFD data. Some of the model assumptions are that the population is a closed population and

not demographically linked to other populations, and that there is a 1:1 ratio of males to females in the adult population. Because the petitioners determined that fecundity in the lower Verde and Salt BAs were inflated artificially by AGFD's stocking of exotic rainbow trout and Salt River Project's release of native fish captured from irrigation canals, BAs were divided into two groups of those on the lower Salt and Verde rivers, and those in other areas.

Additional detail regarding parameters used in and determinations derived from the model are in the petition. The petition notes that the model determined that juvenile and adult survival were the most critical parameters for the model. The petition indicates that the model demonstrates a high risk of extinction for the southwestern population within the next 57 to 82 years.

**Response to the Petition** – The data and information presented in the petition is consistent with the information in our files [on this point](#). The petition presents substantial information to indicate that the southwestern population is small; productivity is lower than other bald eagle populations; and adult and nestling mortality are high. The petition cites work by other authors to highlight the potential problems encountered by small populations. We know that, for 2005, 39 of the 47 known BAs were occupied by nesting pairs of bald eagles. We are aware that the distribution and abundance of breeding Arizona bald eagles has improved over the past decade, but that overall population sizes will be limited by habitat and prey availability. In addition, while we agree that adult and nestling mortality are high, we also know that the population has continued to increase in

the number of breeding pairs. We believe that, while mortality levels are high, they are at a level that may pose some threat to the population's health, but are not resulting in a danger of the population becoming extinct.

### *Declining Prey Base*

The petition notes that the primary prey item for bald eagles during spring is the native Arizona sucker population, consisting of desert and Sonora suckers. The petition cites recent reports indicating that Sonora sucker and desert sucker remain in approximately 73 percent and 74 percent, respectively, of the locations in which they were historically recorded, noting that they have a low probability of local extirpation, but that fragmentation of their range and isolation of individual populations could further reduce their occurrence in a watershed. With respect to the potential effects of a decline in the native fish prey base, the petition quotes the biological opinion completed for the Central Arizona Project. The petition indicates that in that opinion, the Service concluded that take of bald eagles was anticipated in the form of harm through alteration of the quantity and quality of the food base.

The petition cites, as a specific example, the effects of the decline of native suckers on the Salt River. The petition states that native suckers, which are a crucial prey species during the breeding season for bald eagles, became absent from the Salt River during the 1990s. The petition cites studies noting that the lack of native fish species along those portions of the Salt River occupied by bald eagles may have reduced productivity from 0.69 in the 1980s to 0.26 in the 1990s.

**Response to the Petition** – The petition presents substantial information to indicate that effects to the prey base are expected to have resulting effects on bald eagle, and that native fish species are continuing to decline. However, we do not believe the information presented indicates that the prey base has been reduced to a level that would cause the southwestern bald eagle population to be in danger of becoming extinct.

### *Contaminants*

The petition claims that insecticides such as carbofuran, endosulfan, fenthion, phorate, and terbufos continue to threaten the bald eagle, noting that hundreds of bald eagle deaths have been linked to carbofuran nationwide. The petition further states that DDT and its derivatives are still found in Arizona, noting that toxic levels of DDE (a breakdown product of DDT) were found in an addled egg from the Sycamore BA in 1997. The petition notes that DDT and its derivatives are still found in Arizona waterways.

The petition notes that chlorfenapyr resulted in a decline in the number of eggs, viable embryos, and hatchlings of mallards, and that this chemical has been put to use within the United States. The petition further states that toxic levels of mercury have been found in eggs from the Verde and Salt River BAs, and that mercury contamination has also been found in the Tonto Creek BA and Gila River at levels high enough to cause failure in eggs. The petition notes that mercury concentrations in the southwestern population were higher than those reported for most other North American populations.



The petition states that studies have determined that concentrations of mercury above 2 parts per million (ppm) are known to impair hatching, and concentrations of 1.5 to 4.5 ppm (dry weight) are considered toxic. Of thirteen eggs collected between 1994 and 1997, mercury levels ranged from 2.11 to 8.02 ppm for eggs from the Tower, 76, Pinal, and Winkelman BAs, and between 1.5 and 2.0 in three eggs from the Tower and Horseshoe BAs. They note that the Service considered concentrations of heavy metals to be a concern in Arizona.

The petition contends that mercury in bald eagles comes primarily from their prey, noting that contaminants studies detected elevated levels of mercury in prey items ranging from 0.06 to 0.97 micrograms per gram (ug/g) with highest mean levels recovered from Lake Pleasant, the Salt River, and Alamo Lake. The petition contends that these highest means were above the National Contaminant Biomonitoring Program's recommendation for no observable effects of 0.1 ug/g.

The petition notes that methylmercury is the form of mercury that accumulates at greater rates than inorganic mercury, and that most mercury in fish or wildlife organisms is in the form of methylmercury. They further note that methylmercury is more efficiently absorbed and preferentially retained.

The effects of mercury contamination have been studied in mallards. The petition cites a study on the effects of mallards that were fed 3.0 ppm methylmercury dicyandiamide for two years. They report that lesions resulted, including necrosis and

hemorrhaging in the lining of the brain. The petition contends that the risk to bald eagles is increasing, noting that addled bald eagle eggs collected in Arizona between 1995 and 1997 contained more than two to six times higher concentrations of mercury than eggs collected between 1982 and 1984.

**Response to Petition** – The petition presents some substantial information on the presence and effects of contaminants on the southwestern bald eagle population. The petition provides substantial information specific to bald eagles in Arizona to indicate that contaminants in the form of DDT and mercury continue to present a threat to the southwestern population; however, we have been evaluating the effects of these types of actions for many years, always concluding that such activities are not likely to jeopardize the continued existence of the species. We do not believe the discussion provided in the petition offers sufficient proof to indicate that contaminant-related threats are growing to the point that they would result in extinction of the southwestern population of bald eagles.

#### *Fishing Line and Tackle*

The petition cites AGFD data that finds that fishing line and tackle have been found in nests and have entangled bald eagles. There have been 62 separate instances involving entanglement, and 19 BAs with fishing line and/or tackle in nests or entangled individuals since 1986. The petition notes that mortalities have resulted from entanglement. The petition indicates that bald eagles encounter fishing line primarily by

catching dead or dying fish with fishing line or tackle still attached, but that some birds have become entangled while perched on the shoreline or while feeding on dead shorebirds and waterfowl that have themselves been entangled.

The petition states that the persistent occurrence of fishing line indicates the level of recreational pressure in many of the BAs and contends that, as the human population of central Arizona increases, so will the accompanying recreational demands on riparian areas. The petition concludes that these increased recreational pressures will lead to even greater incidences of fishing line and tackle in nests and resulting adverse effects to southwestern bald eagles.

**Response to Petition** – The petition presents substantial information indicating that fishing line and tackle have required intervention or caused mortality of bald eagles in the southwestern population. Information elsewhere in the petition substantiates the statement within this section that increased recreational pressures are likely to result from the anticipated human population growth in Phoenix, Cottonwood, and Camp Verde. The petition does not mention AGFD’s monofilament recovery program. Although this program is voluntary, it has helped to educate anglers and reduce the amount of improper disposal of monofilament. We believe that monofilament will continue to be a problem for southwestern bald eagles, but do not believe that the petition provided sufficient information to conclude that this threat will lead to extinction of the species.

*Climate Change*

The petition notes that adaptation to the Southwest's combination of high temperature and low humidity is considered one of the characteristics that demonstrate the uniqueness of the southwestern eagle population. The petition continues, however, to state that heat stress is also a leading cause of nestling mortalities. The petition notes that the Service determined that this situation will likely become more common, citing more days above 100° Fahrenheit in 1990 than 1989. The Service noted that the heat makes it difficult for adult eagles to incubate eggs or brood young nestlings. Older nestlings have fallen from nest cliffs while attempting to reach shade or have fledged prematurely from nests without shade, usually resulting in their mortality. The petition cites studies that indicate that 23 nestlings died and seven pre-fledged due to heat stress. The petition cites additional information regarding heat-related mortalities.

In addition to heat, the petition notes that global warming will lead to more frequent drought cycles. They note that the Service determined that, between 1993 and 2001, eagles that depend on Roosevelt Lake for food had lower reproduction as the lake's surface area declined.

**Response to Petition** – The petition presents some information to indicate that heat is a stressor for the southwestern population, and that drought and declining water levels at reservoirs may result in decreased productivity. We believe insufficient information was presented to indicate how this threat will increase in the future.

### *Eggshell Thinning*

The petition contends that eggshell thinning remains a potential problem for bald eagles in the Southwest. The petition cites studies in noting that eggshell thinning greater than 10 percent causes problems in reproduction for other bald eagle populations. Similarly, the petition notes that studies have determined that a population would experience reproductive problems when eggshell thinning has become severe (15 to 20 percent) for a period of years.

The petition presents information on eggshell fragments collected from 32 southwestern BAs between 1977 and 1997. Mean eggshell thicknesses were compared with those from Baja California, which had a mean of 0.591 mm. The means for southwestern bald eagles were 0.539 mm (1977 to 1985); 0.562 mm (1987 to 1990); 0.552 mm (1991 and 1992); and 0.534 mm (1993 to 1997). In comparison with the Baja California mean eggshell thicknesses, these studies found a comparative 8.8 percent thinning for 1977 to 1985; 4.9 percent from 1987 to 1990; 6.6 percent in 1991 and 1992; and 9.7 percent from 1993 to 1997. Sample sizes and collection periods varied between studies. The petition notes that, since 1993, the annual percent thinning exceeded 10 percent in 1994 and 1995, and remained high at 9.9 percent in 1996 and 1997.

The petition notes that the cause of the eggshell thinning is not known at this time. While chlordane and DDE were the most frequently detected organochlorines in fish sampled near eagle nests, they were present at levels below those associated with

eggshell thinning in bald eagles. The petition further notes studies found that trace elements, especially mercury, were elevated, as were aluminum, arsenic, copper, and zinc.

**Response to Petition** – The petition provided substantial information indicating that eggshell thinning is a continuing problem for the southwestern bald eagle population, and that, although the cause is unknown, thinning has shown an increase from 4.9 in 1987 to 1990 to 9.7 in 1993 to 1997. We believe that eggshell thinning warrants further study and monitoring; however, at this time we are not aware of any data that indicates that thinning at these levels is resulting in losses of eggs.

#### Finding

We have reviewed the petition and literature cited in the petition. After this review and evaluation, we find the petition does present substantial information to indicate that there are numerous threats still facing the southwestern bald eagle population. However, we believe the petition does not present substantial information to indicate that these threats are increasing to a level that places the population in danger of becoming extinct. Because the level of threats was not demonstrated to be high enough in the Southwest to warrant consideration of listing of the southwestern population of the bald eagle as endangered, the evaluation of whether or not the southwestern bald eagle population warrants designation as a distinct population segment is moot, as is, subsequently, the need to designate critical habitat for that segment. We encourage

interested parties to continue to gather data that will assist with the conservation of the species. If you wish to provide information regarding the bald eagle, you may submit your information or materials to the Field Supervisor, Arizona Ecological Services Office (see ADDRESSES section above).

#### References Cited

A complete list of all references cited herein is available, upon request, from the Arizona Ecological Services Office of the U.S. Fish and Wildlife Service (see ADDRESSES section above).

#### Author

The primary author of this notice is Steve Spangle, U.S. Fish and Wildlife Service, Arizona Ecological Services Office (see ADDRESSES).

#### Authority:

The authority for this action is section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.).

Dated:

Signed:

Director, Fish and Wildlife Service

Billing Code



## D R A F T

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May XX, 2006

Summary Outline of Petition to Designate as a Distinct Population Segment the Southwestern Population of Bald Eagle (*Haliaeetus leucocephalus*); submitted by Robin Silver, Center for Biological Diversity (CBD) on October 6, 2004.

#### Introduction

The CBD petition argues that the threats to the continued existence of the southwestern population of bald eagles are increasing, requiring reclassification from threatened to endangered. Grouped by the relevant three out of five listing factors, their arguments, and our responses follow in the Table below.

Analysis for Threats Analyses			
Petition claims for current status and threat Factor A. The present or threatened destruction, modification, or curtailment of its habitat or range.	Petition Information Source	Information in Service Files	Service conclusion regarding petition claim
<i>The majority of the breeding areas (BAs) are on the Salt and Verde Rivers near the Phoenix area where human population is expected to double to more than six million over the next 30 years.</i>	See petition p. 37  DES 2004 Arizona Republic 3/25/98	While it is possible that continued human population expansion will eventually result in a declining southwestern eagle population, such a conclusion is speculative as to timing and magnitude of such population-level effects.	Information may or may not be substantial.
<i>Ninety percent of the riparian habitat in the southwest is estimated to have been lost due to</i>	See petition p. 39  AGFD 1993, Krueper 1993, Lofgren et al. 1990	While this information appears to be accurate, we question whether there is enough information to	Information may or may not be substantial.

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<i>increasing development, dam operations, dewatering via groundwater pumping and diversions, off-road vehicles, woodcutting, agricultural developments, destructive cattle grazing, and lack of vegetation-rejuvenating floods.</i>		reliably predict the effects of these factors on nesting bald eagles.	
<b>Petition claims for current status and threat Factor D. Inadequacy of Existing Regulatory Mechanisms</b>			
<i>The petitioners claim that the FWS approved excessive numbers of bald eagle deaths, through take statements in section 7 consultations. They note that AGFD concluded that 30% of occupied BAs in the Southwest would be adversely affected by planned projects.</i>	See petition page 82 AGFD 1994b	The adverse effects anticipated during section 7 analyses have not affected the southwestern bald eagle at the population level and affirms the non-jeopardy conclusions in these biological opinions.	Although losses to bald eagles have occurred, status of the species does not reflect an “excessive” number of eagle deaths.
<i>The FWS has reduced protections afforded to the species by downlisting to threatened, which results in less habitat protection for eagles.</i>	See petition page 82-83	The bald eagle population has continued to expand to its current level of 50 active breeding areas in 2006.	Information does not appear to be substantial.
<i>The population is dependent</i>	See petition p. 31	Species will still receive	Bald Eagle Nestwatch

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<i>on intensive human support and management by the Arizona Bald Eagle Nestwatch Program, which is key in minimizing human impacts on breeding birds.</i>	AGFD 1999, 2000, 2003; USFWS 2003	protection from the Bald and Golden Eagle Protection Act and Migratory Bird Treat Act.	Program has been a huge success. Information appears to be substantial; however, does not indicate that endangered status is warranted.
<b>Petition claims for current status and threat Factor E. Other Natural or Manmade Factors Affecting the Species' Continued Existence</b>			.
<i>The populations is small without prospect for significant expansion as there is little remaining unoccupied, suitable riparian habitat.</i>	See petition p. 22  AGFD 1999, 2000	No information in files refutes.	Information appears to be substantial.
<i>Mortality of breeding adults exceeds recruitment, resulting in population instability.</i>	See petition p. 27  Hunt et al. 1992	The number of breeding bald eagles continues to rise in Arizona with the breeding population at 50 pairs in 2006.	Information may or may not be substantial.
<i>AGFD notes that most (15 of 39) known replacement of adult eagles in breeding pairs have been subadult eagles, indicating an insufficient number of adults in the floating population.</i>	See petition p. 28  AGFD 1994b	No information in files refutes.	Information appears to be substantial.

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<i>A population viability analysis (PVA) demonstrated a high risk for extinction for the population within the next 57 to 82 years.</i>	See petition p. 96  CBD 2004e	Species continues to increase not decrease. Two new breeding areas were located in 2006 in Arizona.	Information may or may not be substantial.
<i>Reproductive rates are lower for the southwest than for the rest of the United States.</i>	See petition p. 35-36  AGFD 1999	No information in files refutes.	Information appears to be substantial.
<i>Heat stress, due to high temperatures and low humidities, is the leading cause of nestling mortality. The Southwest is currently experiencing drought conditions which are expected to exacerbate these conditions for several years.</i>	See petition p. 63  AGFD 1999a, 2000; Driscoll 1999; Hunt et al 1992	No information in files.	Information appears to be substantial.

**Conclusion**

**While we believe threats are continuing, we conclude at this time, based on the information in the petition, that the level of threats present does not place the southwestern population in danger of becoming extinct.**

Literature Cited in the Petition

Arizona Game and Fish Department (AGFD). 2003. Arizona Bald Eagle Nestwatch Program: 2002 Summary Report, James T. Driscoll, Technical Report 215, Nongame and Endangered Wildlife Program, Arizona Department of Game and Fish, July 2003.

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Lofgren, S. et al. 1990. Final Report and recommendations of the governor's riparian habitat task force (Executive Order 89-16, Streams and Riparian Resources). Report submitted to the Honorable Rose Mofford, Governor of the State of Arizona, 1990.

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**DRAFT**

**DATE:** April 14, 2006

**STATE:** AZ

**BRIEFING FOR THE DIRECTOR**

**PREPARED BY:** Steve Spangle, Field Supervisor, Arizona Ecological Services Office

**SUBJECT:** Petition for the Southwestern Population of the Bald Eagle (*Haliaeetus leucocephalus*)

**BACKGROUND:** On October 6, 2004, the Arizona Ecological Services Office (AESO) received the above- referenced petition from the Center for Biological Diversity (CBD) to list the “Southwestern Desert Nesting Bald Eagle” (hereafter southwestern population) as endangered with critical habitat. Upon reviewing the petition and conferring with the AESO, the Regional Office requested that CBD clarify the geographic extent of the population to be analyzed for consideration as a Distinct Population Segment (DPS). CBD provided clarification for the DPS analysis from CBD on March 9, 2005. We were unable to work on the 90-day finding during fiscal year 2005 due to court-ordered deadlines for other listing actions and budget limitations. On January 19, 2006, the AESO received a copy of the Notice of Intent (NOI) to sue for failure to issue a 90-day or a 12-month finding on the petition. On March 27, 2006, the CBD and Maricopa County Audubon Society filed a complaint in the District Court of Arizona.

- **PETITION INFORMATION:** The CBD petition raised three areas for analysis, including designation of the “Southwestern Desert Nesting Bald Eagle” as a DPS, reclassifying that DPS to endangered, and designating critical habitat for the DPS. In order to make a positive finding, we would have to find that the petition presents substantial information that the southwest population is (1) discrete, (2) significant, and (3) that the threats to the DPS indicate that listing as endangered may be warranted. Since the petition does not present substantial information to indicate listing as endangered may be warranted, as discussed below, we do not find it necessary to make a finding on the DPS issue.

The petition argues that threats to the continued existence of the southwestern population are increasing, requiring reclassification of the southwestern population to endangered. Grouped by the relevant three out of five listing factors, their arguments are as follows:

**Present or Threatened Destruction, Modification, or Curtailment of the Species’ Habitat or Range.** Human populations within the proposed DPS are expected to double over the next 30 years. This growth will result in continued housing and infrastructure development, as well as increased water needs.

**Inadequacy of Existing Regulatory Mechanisms.** The petitioners claim that the Service authorized excessive take of bald eagles through section 7 consultations and has reduced protections afforded to the species under the ESA by downlisting to threatened. In addition, this population is dependent on intensive human support and management (e.g., Arizona Bald Eagle Nestwatch Program), which is key in minimizing impacts on breeding birds.



**Other Natural or Manmade Factors Affecting the Species' Continued Existence.** The proposed DPS encompasses a small population which experiences high mortality of multiple life stages. A population viability analysis demonstrated a high risk of extinction for this population within the next 57 to 82 years. Additionally, on-going threats include eggshell thinning, low reproductive rates as compared to other populations, declining native fisheries, and contaminants.

- **SERVICE EVALUATION OF THE INFORMATION:** While this information appears to be reliable, we question whether there is enough information to reliably predict the effects of these factors on nesting bald eagles. The information presented discusses threats to bald eagles, but does not provide justification that reclassification from threatened to endangered may be warranted. In addition, the proposed rule to delist the bald eagle in the lower 48 states, as well as the February 16, 2006, reopening of the comment period, discuss specifically that the bald eagle in the southwest is exceeding the reclassification goals outlined in the recovery plan.

**MAIN DECISION OR MESSAGE:** We believe that the petition did not provide substantial information to warrant initiation of a status review for reclassification of the southwestern population of nesting desert bald eagles. Therefore, we recommend that the Service make a negative 90-day petition finding.

In addition, the 90-day finding is funded this fiscal year, therefore we recommend pursuing a settlement in this case to establish a deadline for the 90-day finding.

**CONTACT:** Steve Spangle, Field Supervisor, Arizona Ecological Services Office, Phoenix, Arizona, 602-242-0210