

## DEPARTMENT OF THE INTERIOR

## Fish and Wildlife Service

## 50 CFR Part 17

## Endangered and Threatened Wildlife and Plants; Determination of the Northern Aplomado Falcon To Be an Endangered Species

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** The Service determines the northern aplomado falcon, *Falco femoralis septentrionalis*, to be an endangered species under provisions of the Endangered Species Act of 1973, as amended. This subspecies historically occurred in southeastern Arizona, southern New Mexico, southern Texas, much of Mexico, and the western coast of Guatemala. It has been extirpated as a breeding species from the United States, and at present is known to nest only in portions of eastern Mexico. This falcon is threatened by continued habitat loss and by contamination with organochlorine pesticides. No critical habitat has been proposed. This rule will implement the protection provided by the Endangered Species Act of 1973, as amended, for *Falco femoralis septentrionalis*.

**DATE:** The effective date of this rule is March 27, 1986.

**ADDRESSES:** The complete file for this rule is available for public inspection during normal business hours, by appointment, at the Service's Regional Office of Endangered Species, 500 Gold Avenue, S.W., Room 4000, Albuquerque, New Mexico.

**FOR FURTHER INFORMATION CONTACT:** Mr. Steve Hoffman, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

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

The northern aplomado falcon is perhaps one of our most colorful birds of prey. ("Aplomado" in Spanish means gray or lead-colored.) Adults are characterized by rufous underparts, a gray dorsum, a long and banded tail, long legs, and a distinctive black and white facial pattern. *Falco femoralis septentrionalis* (family Falconidae) was first described by Todd in 1916; the type specimen had been taken in 1887 near Ft. Huachuca, Arizona. This subspecies is the largest form of *Falco femoralis* and weighs about 9-14 ounces (250-400 grams) (Hector 1981). Aplomados are intermediate in size between American

kestrels (*Falco sparverius*) and peregrine falcons (*Falco peregrinus*). The northern aplomado falcon does not seem to be migratory, since most collected adults were taken in winter months in the United States (Hector 1981). Hector (1980, 1981, 1982, 1983) summarized the literature dealing with the northern aplomado falcon and reported on the historic and recent distributions of the species, and on its habitat, diet, and behavior. Kiff *et al.* (1978) documented eggshell thinning and pesticide contamination in the subspecies.

Egg laying has been recorded between the months of January and September; eggs are usually laid in April or May. Aplomado falcons feed on birds, insects, rodents, small snakes, and lizards (Hector 1981). In eastern Mexico, the majority of prey items are insects; however, birds make up over 90 percent of the dietary biomass (Hector 1981).

Typical northern aplomado falcon habitat is open rangeland and tropical savanna containing scattered mesquites (*Prosopis juliflora*), yuccas (*Yucca elata* and *Yucca treculeana*), oaks (*Quercus oleoides*), acacias (*Acacia farnesiana*), or palms (*Sabal mexicana*). In central Mexico, the falcon has also been found in open pine woodland (*Pinus montezumae*). The most recent reported United States nesting occurred in yucca/mesquite grassland near Deming, New Mexico, in 1952. In the same year, a second nest was found in northern Chihuahua, Mexico; this is the most recent documented nesting attempt for northern Mexico. The essential components of northern aplomado falcon habitat are open terrain with scattered trees, relatively low ground cover, an abundance of small to medium-sized birds, and a supply of nesting platforms (stick nests or large bromeliads) (Hector 1983).

The historic breeding range of the northern aplomado falcon, as represented by museum specimens or eggs, included southeastern Arizona, southern New Mexico, and southern Texas in the United States, the States of Tamaulipas, Chiapas, Campeche, Tabasco, Chihuahua, Coahuila, Sinaloa, Jalisco, Guerrero, Veracruz, Yucatan, and San Luis Potosi in Mexico, and the western coast of Guatemala. It is now extirpated as a breeding species from the United States and is presently known to nest regularly only in portions of northern and central Veracruz, northern Chiapas, western Campeche, and eastern Tabasco, mostly in palm and oak savanna (Hector 1981.)

Considered together, the habitat preferences of the subspecies and the timing of its decline in the United States

implicate habitat degradation due to brush encroachment as the main factor responsible for the disappearance of the subspecies from the United States. Secondly, overcollecting of the falcons and their eggs may have temporarily reduced their numbers in some parts of the United States. However, collecting pressure, by itself, could not account for the continued absence of the aplomado falcon north of Mexico. Currently, the most serious threat to this falcon is the continued use of DDT and other persistent pesticides within the ranges of the falcon and some of its prey species.

*Falco femoralis septentrionalis* was first considered by the Service in 1973 as a possible candidate for endangered status (United States Department of the Interior 1973); however, more information was needed to support such a determination. Additional information is now available to the Service to support a determination of endangered (Kiff *et al.* 1978, Hector 1980, 1981, 1982, 1983). The northern aplomado falcon is presently listed by the State of Arizona as extirpated from that State (Arizona Game and Fish Commission 1982) and by the State of Texas as a protected nongame species (Texas Park and Wildlife Code 127.70.12.001-.008). A 1983 status report for this subspecies was prepared by Dean P. Hector of the University of California at Los Angeles, under contract with the Service. Upon evaluation of that report, the Service has concluded that the status of this species most closely fits endangered as defined in Section 3 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

*Falco femoralis septentrionalis* was included in category 2 of the December 30, 1982, Vertebrate Notice of Review (47 FR 58454). Category 2 includes those taxa that are thought to possibly warrant listing, but for which more information is needed to determine biological status and to support listing. That information is now available for this subspecies in the current status report (Hector 1983) and the Service published a proposed rule to list this subspecies as endangered on May 20, 1985 (50 FR 20810).

**Summary of Comments and Recommendations**

In the proposed rule and associated notifications, all interested parties were requested to submit factual reports on information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested

parties, including the government of Mexico, were contacted and requested to comment. Newspaper notices that invited general public comment were published in the *Sun-News* in Las Cruces, New Mexico, on June 7, 1985; *The Brownsville Herald* in Brownsville, Texas, on June 14, 1985; the *Arizona Daily Star* in Tucson, Arizona, on June 13, 1985; and the *Hudspeth County Herald-Dell Valley Review* in Del Rio, Texas, on June 21, 1985.

Sixteen letters were received in support of the proposal and one letter expressed neither support nor opposition. Summaries of the comments follow:

The Arizona State Clearinghouse had no comments on the proposal. The New Mexico Wildlife Federation, the Raptor Research Foundation, the Texas Natural Heritage Program, Fort Huachuca (U.S. Army), and Roland Wauer (Assistant Superintendent, Great Smoky Mountains National Park) supported the proposal. The Arizona Game and Fish Department, W. Grainger Hunt (Senior Ecologist, BioSystems Analysis, Inc.), and the Rob and Bessie Welder Wildlife Foundation supported the proposal and offered comments and/or suggestions for recovery efforts. Gale Monson supported the proposal and stated that there are no records of this falcon for the Mexican State of Sonora.

The Texas Department of Water Resources stated that review of planned and/or potential water resource projects located in the species's habitat indicated no significant conflicts with the Service's proposal to list this species.

The Texas Parks and Wildlife Department stated that this species has been listed as the equivalent of threatened by the State of Texas since 1977 and is recommended for elevation to State endangered status. It also stated that there have been recent reports of isolated aplomado falcons occasionally being seen along the barrier islands adjacent to the Laguna Madre in south Texas.

The National Wildlife Federation supported the proposal and attached a copy of biological information that it had earlier supplied during preparation of the proposal. That information had been incorporated as part of the proposal.

The National Audubon Society supported the listing and offered suggestions for recovery efforts. In addition, it commented that reasons for the species decline could be identified as follows: (1) the loss of open grassland habitat due to overgrazing and other excessive range practices; and (2) reduced breeding success due to organochlorine contamination. This

society also stated that it appears unlikely that pesticide contamination played a major role in the northern aplomado falcon's extirpation in the U.S., because the heavy use of pesticides such as DDT began shortly after World War II and did not receive widespread application in the Southwest until after 1952. The proposed rule stated that the reasons for decline were mainly habitat degradation due to brush encroachment and secondarily overcollecting of the falcons and their eggs. The rule stated that currently, the most serious threat to the falcon is the continued use of DDT and other persistent pesticides.

Dean P. Hector supported listing of the northern aplomado falcon but believed that it should be listed as threatened rather than endangered. His comments and the Service's responses follow.

1. Agricultural development probably improves availability of prey such as doves, cowbirds, blackbirds, grackles, etc., that are common in farming areas. Agricultural development, however, was certainly detrimental in that it led to increased contamination of prey species by pesticide residues. Service response: Some birds do increase, but most species decrease. A large portion of the prey of this falcon is composed of insects, most of which are eliminated in farming operations (e.g., cotton). The Service could find no reports for this species being regularly found in or around agricultural fields, only in open rangelands. It has not adapted to such alterations in the habitat, while the two other falcons in the same area (American kestrel, *Falco sparverius*, and prairie falcon, *Falco mexicanus*) regularly are found in and around agricultural areas within the former range of the aplomado falcon.

2. There is little or no evidence regarding the occurrence of the aplomado falcon on the Central Plateau of Mexico. In addition, nothing is known about the effect of brush encroachment on the habitat of the aplomado falcon on the Central Plateau of Mexico. Service response: More research is needed. There have been no reports of active nests in this area for several decades.

3. "No data presently exist that show conclusively that . . . remaining populations are threatened by reproductive failure due to pesticide contamination." At present, we know only that the species is showing signs of heavy contamination in eastern Mexico. It seems likely, however, that pesticide contamination is having a detrimental effect on reproductive output, in view of the effect of DDT on other upper-trophic-level raptors." Service response:

Levels of DDE and DDT in aplomado eggs (Kiff *et al.* 1978) and data on eggshell thinning in the aplomado (Hector 1981), when compared with the occurrence of eggshell thinning in peregrine falcon populations that declined due to pesticide contamination (Peakall and Kiff 1979), offer sufficient evidence to indicate that aplomado populations are threatened by reproductive failure due to pesticide contamination. Actual reproductive failure in the past or now taking place has not been documented, but the threat clearly remains so long as such contaminants remain in the ecosystem.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that the northern aplomado falcon, *Falco femoralis septentrionalis*, should be classified as an endangered species. Procedures found at Section 4(a)(1) of the Act and regulations promulgated to implement the listing provisions of the Act (codified at 50 CFR Part 424) were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in Section 4(a)(1). These factors and their application to the northern aplomado falcon are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The northern aplomado falcon has suffered severe population declines in the United States (Hector 1981). These declines appear to have resulted primarily from brush encroachment on open rangelands, which eliminated the open grasslands with scattered trees preferred by this species and provided better concealment for prey species. Brush encroachment involves the proliferation in open savanna or grassland of woody vegetation, such as mesquite and creosote bush, and has been fostered by severe overgrazing, suppression of range fires, and other vegetative disturbances (Humphrey 1958). Such encroachment has been well documented for southeastern Arizona (Hastings and Turner 1965), for south-central New Mexico (Buffington and Herbel 1967), and for the southern Texas coastal plains (Johnston 1973). Brush encroachment is probably still a factor limiting the distribution of the northern aplomado falcon. In addition, agriculture development may have also contributed to the decline of the falcon by eliminating nesting sites.

*B. Overutilization for commercial, recreational, scientific, or educational purposes.* The collection of northern aplomado falcons for scientific purposes has been minimal for the past 50 years. In addition, the species has rarely been used for falconry purposes. Falconry is not known to have had much effect on the aplomado falcon due to the difficulty of obtaining the species in the United States. Some overcollecting of northern aplomado falcons and their eggs may have occurred in the early 1900s and may have contributed to a temporary decline of the species in the United States, but collecting is not likely to be a significant factor now and cannot account for the continued absence of the aplomado north of north-central Mexico. At least one falcon has been found shot in eastern Mexico (Hector pers. comm.). The frequency with which this occurs is unknown.

*C. Disease or predation.* Nothing is known about the effect of disease or predation on population productivity. One parasite, a botfly, has been reported (Hector 1982). This fly infests young aplomado falcons; however, it is not known under what conditions this insect could cause high mortality rates among nestlings. It is very unlikely that botfly parasitism has played a role in past declines of the aplomado. No instances of animal predation on northern aplomado falcons have been documented.

*D. The inadequacy of existing regulatory mechanisms.* The Migratory Bird Treaty Act (16 U.S.C. 701-711) establishes provisions regulating the taking, killing, possessing, transporting, and importing of migratory birds, including all subspecies of *Falco femoralis*. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) includes all members of the family Falconidae, including *Falco femoralis*, on Appendix II that are not on Appendix I. CITES provides for regulation of import and export of its listed species.

In Texas, *Falco femoralis septentrionalis* is classified by the State as a protected nongame species (Texas Parks and Wildlife Code 127.70.12.001-.008). In Arizona, it is included in Group 1 of the State list of threatened native wildlife, which comprises those species that are known to be extirpated from Arizona, but that still exist elsewhere (Arizona Game and Fish Commission 1982). This species is not listed in New Mexico (New Mexico State Game Commission 1985).

These classifications call attention to the plight of this subspecies in the United States. They also provide some

protection by regulating taking and exploitation of the aplomado; however, they do not provide any protection to the habitat of the subspecies. The northern aplomado falcon is not subject to damaging levels of direct exploitation. Instead, the species is sensitive to habitat degradation and chemical contamination, and needs the type of active management and protective measures provided for in the Endangered Species Act.

*E. Other natural or manmade factors affecting its continued existence.* The most important threat to the present survival of the northern aplomado falcon is the continued use of persistent organochlorine pesticides within the range of this falcon and some of its prey species. Recent data strongly suggest that such pesticide use is causing extreme eggshell thinning in some populations of northern aplomado falcons (Kiff *et al.* 1978). Levels of DDE and DDT in membranes of 20 clutches of aplomado eggs collected in Veracruz (1957-1966) averaged 390 parts per million. In a more recent sample (1977), collected along a 500-mile transect from northern Veracruz to western Campeche, DDE (DDT not reported) residue levels averaged 297 parts per million for seven samples of eggshell fragments (Kiff *et al.* 1978). The eggshell thickness index for eggs in these 1957-66 and 1977 samples averaged 25 and 24 percent less, respectively, than pre-DDT eggs from the same populations. Eggshell thinning of greater than 20 percent of pre-DDT levels is likely to result in nesting failure. In 1977, two nestings in Veracruz were observed to have failed due to eggshell breakage during incubation (Hector 1981). On the average, eggs of the northern aplomado falcon collected in eastern Mexico are proportionately thinner than eggs collected from peregrine falcon populations that declined due to pesticide contamination (Peakall and Kiff 1979).

The aplomado falcon has undergone severe losses in range and numbers in the past, and remaining populations are threatened by reproductive failure due to pesticide contamination. Experiences with the endangered peregrine falcon show that pesticide contamination can lead to severe, rapid population declines, and to the eventual extirpation of such populations of the affected species. The levels of pesticide contamination and rates of eggshell thinning found in the remaining populations of the northern aplomado falcon exceed those found to have been the cause of nesting failure in populations of the peregrine falcon in the 1960's and 1970's.

The Service has carefully assessed the best scientific and commercial information available, as well as the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list the northern aplomado falcon as endangered throughout its historic range. The above factors make it apparent that this subspecies is in danger of extinction throughout all or a significant portion of its range and, consequently, that the appropriate status for this subspecies is endangered, as defined in Section 3 of the Act. Therefore, either no action or listing as threatened would be contrary to the Act's intent.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate any habitat of a species that is considered to be critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for the northern aplomado falcon at this time, because there are no known active nesting areas within the past 25 years in the United States. Critical habitat is not designated in areas outside U.S. jurisdiction (50 CFR 424.12(h)).

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required by Federal agencies, and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402 and are now under revision (see proposal at 48 FR 29990; June 29, 1983).

Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species, or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service. No Federal involvement is known or expected.

The northern aplomado falcon is already covered under the provisions of the Migratory Bird Treaty Act (16 U.S.C. 701-711), that regulate the taking, killing, possession, transport, and import of covered species. It is also included on Appendix II (as a member of the family Falconidae) of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which controls the import and export of subject species. International trade of this species and its products is minimal.

The Act and its implementing regulations found at 50 CFR 17.21 set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of a commercial activity, or sell or offer for sale in interstate or foreign commerce listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been illegally taken. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered animal species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not available. Since this falcon is not in commercial trade to any extent, such

hardship permits are not expected to be issued.

The Service will determine whether this species should be placed upon the Annex of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, which is implemented through section 8A(e) of the Act, and whether it should be considered for other appropriate international agreements.

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in conjunction with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

#### Literature Cited

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#### Author

The author of this final rule is Alisa M. Shull, Endangered Species Staff, U.S. Fish and Wildlife Service, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

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

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

#### Regulation Promulgation

#### PART 17—[AMENDED]

Accordingly, Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, is amended as set forth below:

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

**Authority:** Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. Amend § 17.11(h) by adding the following, in alphabetical order under "BIRDS," to the List of Endangered and Threatened Wildlife:

#### § 17.11 Endangered and Threatened wildlife.

\* \* \* \* \*

(h) \* \* \*

| Species                        |  | Historic range                          | Vertebrate population where endangered or threatened | Status | When listed | Critical habitat | Sc n |
|--------------------------------|--|---|--|--------|-------------|------------------|------|
| Common name                    | Scientific name                              |   |  |        |             |                  |      |
| BIRDS                          |  |   |  |        |             |                  |      |
| Falcon, northern aplomado..... | <i>Falco femoralis septentrionalis</i> ..... | U.S.A. (AZ, NM, TX), Mexico, Guatemala. | Entire.....  | E      | 216         | NA               |      |

Dated: February 9, 1986.

**P. Daniel Smith,**

*Deputy Assistant Secretary for Fish and Wildlife and Parks.*

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