

Northern Aplomado Falcon (*Falco femoralis septentrionalis*)

NMPIF level: Biodiversity Conservation Concern, Level 1 (BC1)

NMPIF assessment score: 14

NM stewardship responsibility: Low

National PIF status: No special status (due to populations outside North America)

New Mexico BCRs: 18, 34, 35

Primary breeding habitat(s): Chihuahuan Desert Grassland

Summary of Concern

The Northern Aplomado Falcon is a federally listed endangered species of Mexico and the southwestern United States. No United States nesting had occurred since 1952, prior to managed re-introduction in south Texas beginning in the mid-1990s and one confirmed instance of successful breeding in New Mexico in 2002. Aplomados were largely eliminated in the Southwest and northern Mexico due to shrub encroachment in desert grasslands and other habitat loss. A controversial program for managed introduction of Aplomado Falcons from subtropical grassland habitats into Arizona and New Mexico has been proposed by The Peregrine Fund and the U.S. Fish and Wildlife Service.

Associated Species

Swainson's Hawk, Chihuahuan Raven (Stewardship), Eastern Meadowlark, Scott's Oriole

Distribution

Aplomado Falcon has a scattered and somewhat uncertain distribution, including portions of northern and southeast Mexico, Central America, and large parts of South America. The Northern Aplomado Falcon (*F. f. septentrionalis*) was once fairly common along the southern Gulf Coast of Texas and throughout large portions of the southwest and Mexico. Prior to recent recovery, the species had been considered extirpated in the United States, with the last confirmed nesting occurring near Deming, New Mexico in 1952. Remnant populations remain in portions of northern and southeast Mexico. Captive-raised birds have been released in south Texas since the mid-1990s, and now some 40 breeding pairs occur in the wild along the Texas Gulf Coast.

In New Mexico, after an absence of verified occurrences for nearly 40 years despite repeated searches, an explosive increase in sightings, many verified, began in the early 1990s. It is believed that a previously unknown remnant population in Chihuahua apparently passed through an ecological bottleneck and began reclaiming its former range, including into New Mexico. Best documented post-1980 New Mexico localities include Gray Ranch and Animas Valley, Hidalgo County; Separ and Hachita, Grant County; Carlsbad, Eddy County; San Antonio, Socorro County, and three individuals observed in 1999 in Doña Ana and Otero Counties (various records cited in Keddy-Hector 2000). After a 50 year absence, the first successful nesting of wild Aplomado Falcons in the United States was observed in Luna County in 2002. Although widespread drought has perhaps slowed down this apparent re-colonization, birds still persist in this area and sightings have occurred at other parts of southern New Mexico, including two individuals on Otero Mesa in Otero County in summer 2005 (Meyer and Williams 2005).

Ecology and Habitat Requirements

Northern Aplomado Falcons occupy various habitats throughout their large range. Those in the Gulf Coast region of Texas and Mexico occupy coastal prairie habitat, coastal savannahs, marshes and tidal flats. Birds in southern Mexico occupy river floodplains and riparian woodlands, and upland deciduous forest. In northern Mexico, Arizona and New Mexico, Aplomado Falcons have a strong association with Chihuahuan desert grasslands, with scattered tall yuccas and mesquite (Keddy-Hector 2000). Larger shrubs or small trees must be widely spaced. Foraging areas used by released falcons in south Texas contained 2.6 trees/ha (Perez et al. 1996). Dense, lightly grazed or ungrazed grasslands are preferred. Northern Chihuahua nest sites contained 11–140 trees/ha, but this count included smaller shrubs (Montoya et al. 1997). Preferred habitat often contains tobosa swales; other dominant grass species include blue, black, and sideoats grama (Montoya and Zwank 1995). In eastern Mexico, home ranges were 2.6-9.0 km², or 11-39 pairs/100 km² (Hector 1988). In northern Chihuahua, 10 home ranges occupied approximately 400 km², and individual home-range sizes based on radiotelemetry were 3.3-21.4 km² (Montoya et al. 1997).

In desert regions, nest platforms are typically situated on tall yuccas 6-10 feet off the ground. This species uses old (and perhaps sometimes freshly constructed) nests of ravens and other raptors. In the southwestern United States, Aplomados used nests of Chihuahuan Raven, Swainson's Hawk, White-tailed Kites, and Crested Caracara (Hector 1988). A clutch of 2 or 3 eggs is laid, usually mid-March to mid-April. The diet consists largely of birds and insects, and mated pairs often hunt cooperatively when pursuing avian prey. In Chihuahua, frequently caught species included meadowlarks, Northern Mockingbird, Common Nighthawk, Western Kingbird, Brown-headed Cowbird, Mourning Dove, Cactus Wren, Pyrrhuloxia, Ash-throated Flycatcher, Blue Grosbeak and Canyon Towhee (Montoya et al. 1997). A large amount of avian biomass may be important to sustaining a breeding population.

Conservation Status

Species Assessment

DISTRIBUTION	1
THREATS	5
GLOBAL POPULATION SIZE	4
LOCAL POPULATION TREND	3
IMPORTANCE OF NEW MEXICO TO BREEDING	1
COMBINED SCORE	14

Northern Aplomado Falcon is a Biodiversity Conservation Concern, Level 1 species for New Mexico, with a total assessment score of 14. It is also a taxon of general conservation concern. It does not appear on the PIF Watch List only because this list does not consider sub-specific taxa, and South American populations of Aplomados appear secure. Northern Aplomado Falcon was federally listed as endangered in 1986. It is also listed as endangered in the state of New Mexico. It receives a maximum vulnerability score of 5 from NMPIF for threats to breeding in the state.

Population Size

PIF estimates a species population of 200,000, including South American taxa. No estimates for population size of Northern Aplomado Falcon in Mexico exist; about 40 pairs exist in the wild in the United States (Young et al. 2004, Meyer and Williams 2005).

Population Trend

Historically, Northern Aplomado Falcon was reduced to zero in the United States and to small numbers in scattered areas of Mexico. Little information is available on trends outside the United States.

Threats

In its 1986 endangered ruling, the U.S. Fish and Wildlife Service (1986) cited continued habitat loss and contamination with organochlorine pesticides as the principal threats facing the Northern Aplomado Falcon. Severe eggshell thinning and pesticide contamination were detected in eggs collected in eastern Mexico in 1957-1977 (Kiff et al. 1980). In northern Mexico and the southwestern United States, heavy concentrations of DDE/DDT in potential falcon prey persist within the historical distribution of the falcon (Mora and Anderson 1991, Henry 1992). Birds and other organisms collected from lower Rio Grande,

Laguna Madre, and other south Texas water bodies contained heavy loads of PCBs, heavy metals, and organochlorine pesticides. Pesticide loads in Aplomados may vary with the predominance of insectivorous versus granivorous species in the diet, and with proximity of breeding and foraging locations to agricultural areas (Keddy-Hector 2000).

Extirpation from the southwest is thought to be the result of brush encroachment, which has reduced the open grasslands with scattered trees preferred as foraging and nesting habitat (U.S Fish and Wildlife Service 1986). Loss of habitat to farming has also contributed (Keddy-Hector 1998). Brush encroachment involves spread of woody vegetation such as mesquite and creosote bush through open grassland or savannah, and has been fostered by severe overgrazing, suppression of range fires, and other vegetative disturbances (Keddy-Hector 2000).

In New Mexico, degradation of Chihuahuan Desert grassland habitat due to a combination of drought, overgrazing, and various forms of disturbance, including energy development, present the greatest threats to species recovery efforts. Currently, plans for extensive new mineral leasing on Otero Mesa threaten the largest remaining area of high quality Chihuahuan Desert grassland in the state. This is also the location of the most recent Aplomado sighting, and a proposed site for managed introduction.

In the view of NMPIF, introduction as currently proposed represents another huge threat to Aplomado Falcons in New Mexico. This action will swamp native Chihuahuan Desert Aplomados with sub-tropical grassland Aplomados (with unknown consequences), will mask the most impressive natural, unassisted population recovery process we have ever seen in any species of bird, and (through the establishment of "10j" status under the Endangered Species Act, will eliminate habit protection provisions for the species.

Management Issues and Recommendations

Management for Northern Aplomado Falcon in New Mexico must work to prevent inappropriate species reintroduction efforts and focus on protection and enhancement of large areas of appropriate desert grassland habitat.

NMPIF Recommendations

- Preserve or establish large expanses of grasslands with scattered shrubs (especially yucca) in Hidalgo, Luna, Dona Ana, Otero, and Eddy Counties.
- Avoid any management actions on public lands that would further decrease habitat suitability, or decrease the likelihood of success of unassisted population recovery.
- Pursue education and outreach to spread information regarding species habitat requirements and beneficial land management practices.

Species Conservation Objectives

NMPIF Objectives

- Re-establish a viable resident population in New Mexico, without the managed introduction of birds from wet tropical and subtropical habitats.

Sources of Information

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