

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Animal Abstract

Element Code: ABNKD06041

Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Falco femoralis septentrionalis*

COMMON NAME: Northern Aplomado Falcon

SYNONYMS:

FAMILY: Falconidae

AUTHOR, PLACE OF PUBLICATION: Species *F. femoralis*: Temminck, 1822. Subspecies *F. f. septentrionalis*: Todd, W.E.C., 1916, Proc. Biol. Soc. Wash., 29:95-98.

TYPE LOCALITY: Collected near Fort Huachuca Military Reservation, Cochise County, Arizona.

TYPE SPECIMEN: USNM 111485 (adult male), collected by H.C. Benson on May 6th, 1887.

TAXONOMIC UNIQUENESS: Three subspecies are recognized within the species, based on differences in size and coloration; *F. f. septentrionalis*, *F. f. femoralis*, and *F. f. pichincha*. The latter two are confined primarily to South America, only *F. f. septentrionalis* is found in the United States. *F. f. septentrionalis* is distinguished from other subspecies by range, a lighter-gray upper surface, complete black abdominal band, and larger size (Blake 1977).

DESCRIPTION: Medium sized colorful falcon with a wingspan from 40.0-48.0 in (102.0-122.0 cm), and lengths of 15.0-16.5 in (38.0-43.0 cm). Clark and Wheeler (1987) reported "lengths of 14-18 inches (35-45 cm); wingspans of 31-40 inches (78-102 cm), and weights of 8.4-16.0 oz (208-460 g)." The upper parts slate to bluish gray in color, underparts are tricolored with a whitish to buffy upper breast separated from a cinnamon belly. The under tail coverts are separated by a blackish belly-band that narrows at the mid-belly. On the face and head, surrounding the typical falcon dark eye and mustache, parallel white and black stripes connect each eye with the nape. The tail is long, blackish, and strikingly marked by six to eight white bars. The thighs and under tail coverts are a distinctive orange-brown color. The fleshy eye ring, cere, and legs are brilliant yellow; iris color is dark brown. Sexes are similar in appearance, but females noticeably larger than males.

Juveniles are more brown in color than adults. The whitish areas from the head through the breast, is replaced by cinnamon coloring, and the breast with bold dark streaking. The dark tail has 9 or more thin buffy bands. The cere, eye-ring, and leg colors are pale yellow to yellow.

AIDS TO IDENTIFICATION: A long tailed falcon with long pointed wings intermediate in size between American kestrel (*Falco sparverius*) and Prairie falcon (*Falco mexicanus*).

Extremely graceful and rapid in flight, though more listless than a Merlin (*Falco columbarius*) or Peregrine (*Falco peregrinus*). American kestrel is smaller, has rufous tail and back and 2 mustache marks, and lacks dark cummerbund. In flight, tail appears shorter and underwings paler than those of Aplomado. Merlin is smaller, has completely streaked underparts, and lacks distinct facial pattern and dark cummerbund. Peregrine falcon is larger, has broader wings and a single mustache mark, and lacks dark cummerbund. Prairie falcon is larger and paler, has broader wings with a black center on underwing, and lacks dark cummerbund. Crested Caracara (*Caracara cheriway*) has similar pattern on body but is much larger and has different head pattern, much longer neck, and different wing shape. Mississippi Kite (*Ictinia mississippiensis*) is similar in size and silhouette and also has light line on trailing edge of wing, but lacks strong face pattern and cummerbund. (Clark and Wheeler 1987).

ILLUSTRATIONS:

- Color drawing (Peterson, 1990:187)
- Color drawing (Birds of North America, 1987:201)
- Color drawing (Robbins et al, 1983:81)
- Color drawing (National Geographic, 1999: 121)

TOTAL RANGE: Historically extended from Trans-Pecos Texas across southern New Mexico and Southeastern Arizona to the northern Yucatan along the Gulf of Mexico, and along the Pacific slope of Central America north of Nicaragua (USFWS 1990). Currently the northern aplomado falcon is considered an uncommon to fairly common resident of tropical savannahs on the Atlantic slope from southeastern San Luis Potosi and Veracruz to western Campeche, and on the Pacific slope in Oaxaca. The only known wild-nesting population in Chihuahua has declined sharply, almost to extirpation, in recent years (Macías-Duarte et al. 2016). Nesting is known in Tamaulipas and suspected in Coahuila, Nuevo Leon, and Durango (USFWS 2014). The last documented nesting of wild aplomado falcons in the United States was in Luna County, New Mexico in 1952. Small reintroduced populations exist in Brownsville and Rockport, Texas. A territory in Luna County New Mexico has been intermittently occupied since 2000, with a pair successfully fledging young in 2014 (USFWS 2013).

RANGE WITHIN ARIZONA: Before 1890 a fairly common resident in southeast Arizona. Since then virtually extirpated in the state, with only two credible records since about 1910: near McNeal, Cochise County on 13 November 1939, and St. David on 7 October 1940 (Monson & Phillips 1981). Reported observation in 1977 west of Rodeo, New Mexico in Cochise County, Arizona. Sight records since 1940 are unsubstantiated, and the falcon is considered possibly extirpated in Arizona (NatureServe 2021).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Appear to be non-migratory throughout range, though harsh weather conditions and prey availability in winter may influence occupancy of territories in northern extant of the range (USFWS 2014). Differences in prey abundance and nest site availability can impact home range size, but on average home range is estimated to be approximately 8,400 acres (34 square kilometers) (USFWS 1990, 2002).

Aplomados are especially vocal during the courtship period, and both male and female give *chip* calls, sometimes in concert. Hungry young utter tremulous *chitters*. Adults utter a fast-paced *kee-kee-kee* in the presence of territorial intruders and potential predators of eggs and nestlings. (Keddy-Hector 1998). Active flight is rapid and direct, with light, quick wing beats, but when the bird is not pursuing prey, flight is slower, buoyant, and kestrel-like. The Aplomado glides on flat wings or with wrists below body and wingtips curved upward; it soars on flat wings. This falcon hovers when its prey goes under cover. Main prey (birds) are captured after a rapid direct flight from a perch, sometimes including a long tail-chase or pursuit in heavy brush on foot. They hunt from both exposed and inconspicuous perches. Hunting from soar, cooperative hunting by pairs, and pirating from other raptors have been reported. They regularly gather at grassfires to hunt displaced prey. (Clark and Wheeler 1987).

They have a strong fidelity to nesting territories. Mated individuals soar together, hunt together, perch near one another, and feed together throughout the year. Aplomado Falcons probably reach physiological maturity at the end of their first year, but do not form a pair bond until the spring of their second year. (Keddy-Hector 1998).

REPRODUCTION: Courtship consists of aerial display by the male, and mutual soaring and diving by the pair. Aplomado falcons nest in abandoned stick nests constructed by other raptors or corvids. Natural platforms may also be utilized. Nest sites are commonly found in large multi-stemmed yuccas, mesquites, and other desert trees. Eggs are white/pinkish-white, marked with brown. The nesting season is fairly variable, and egg-laying has been recorded any time between January and September, but most clutches are produced from March to May. Clutch size is generally 2-3 eggs. Both adults participate in incubation (typically 32 days), but females brood newly hatched nestlings closely, which may be the only time of year that mated males hunt alone. Nestlings fledge at around 35 days after hatching, and remain near the nest for at least a month. Both adults provide food to the fledged young.

FOOD HABITS: Aplomado falcons feed primarily on birds (up to quail-sized), to a lesser extent on insects, and uncommonly on bats, small rodents, small snakes, and lizards (Hector 1985). Most small to medium-sized birds are potential prey items. They also snatch food from the ground, including small mammals and reptiles. Even fish was found in the stomach of one; and a fledgling hummingbird in another (Brown et al 1968). Pairs often hunt together, frequently late in the day after sunset. This falcon searches for prey from observation posts in trees, while soaring, or while flying at a fast pace just above or through dense shrubs and trees (Wetmore 1926a). They often hunt well before sunrise and well after sunset (Friedman and Smith 1955). Nest monitoring of Chihuahuan population revealed a strong dependence of reproductive success and nest initiation timing upon abundance of grassland birds, which is dependent upon precipitation (Hunt et al. 2013).

HABITAT: The Aplomado Falcon has extremely broad habitat preferences, with essential habitat elements appearing to be open terrain with scattered trees, low ground cover, an abundance of insects and small to medium-sized birds, and a supply of nest sites (USFWS 1990). As woody plant cover increases the probability of aplomado falcon presence decreases (Young et al. 2002). Most late nineteenth- and early twentieth-century Aplomado records from

Arizona, New Mexico, trans-Pecos Texas, and central Mexico were in semi-desert grassland or riparian associations with scattered trees and shrubs, with elevations from 3,300-4,900 feet above sea level. They are most abundant in the coastal grasslands of Texas and the savanna country of eastern Mexico. (Keddy-Hector 1998).

ELEVATION: The only reliably documented Arizona observation occurred in 1977 at an elevation of 4,180 ft (1275 m). Most records from southwestern United States are from 3,300-4,900 feet (1007-1495 m) above sea level. The full species was reported from sea level to above 14,100 ft (4300 m) (Johnson 1965).

PLANT COMMUNITY: In the northwestern region of the range, yucca and honey mesquite grasslands and riparian woodlands adjacent to grasslands (Ligon 1961, Keddy-Hector 1990, USFWS 2014).

POPULATION TRENDS: According to Phillips *et al.* (1964), “Though found by most of the early explorers in or near southern Arizona, the Aplomado Falcon disappeared abruptly for unknown reasons, leaving its seasonal status here in considerable doubt.” Causes for decline of this subspecies have included widespread shrub encroachment resulting from control of range fires and intense overgrazing (Service 1986, and Burnham *et al.* 2002, in Service 2006) and agricultural development in grassland habitats used by the falcon (Hector 1987, and Keddy-Hector 2000, in Service 2006). Historically, pesticide exposure was likely a significant cause of the subspecies extirpation from the United States, with the initiation of widespread DDT (dichloro-diphenyl-trichloroethane) use after World War II (Service 2006). In the 1950s, falcons in Mexico were heavily contaminated with DDT residue. These high levels resulted in a 25 percent decrease in eggshell thickness (Kiff *et al.* 1980, in Service 2006), resulting in reproductive failure from egg breakage (Service 1990, in Service 2006).

Currently, the increased presence of the great-horned owl (*Bubo virginianus*), which preys upon the falcon, long-term drought, and shrub encroachment in areas of Chihuahuan grasslands, may be limiting recovery of this subspecies. However, Aplomado falcons are relatively tolerant of human presence, tolerating approach of their nests by researchers to within 100 meters (328 feet). (Service 2006). Formal surveys and reliable sightings submitted to the Service show that a small number of falcons have occurred in New Mexico, with a small number of sightings occurring in every decade since the 1960s (in Service 2006).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: LE,XN in Arizona & New Mexico (USDI, FWS 2006)
LE (USDI, FWS 1986)

STATE STATUS: 1 (AZGFD, AWCS 2022)
[1A (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[Endangered (AGFD, TNW 1988)]

OTHER STATUS:

A, Determined Threatened in Mexico,
(NORMA Oficial Mexicana NOM-059-
SEMARNAT-2010)
[P, MFENSL, 1994]

MANAGEMENT FACTORS: Threats include habitat change in the Chihuahuan desert, primarily driven by conversion to agriculture; drought and water depletion; climate change; wind turbine strikes; and declines in prey abundance. Use of pesticides is no longer considered a threat to the survival of the Northern Aplomado Falcon. Formerly, areas that may have been structurally suitable for the birds might have actually been unsuitable because organochlorine pesticides were applied heavily to agricultural lands where falcons foraged. The birds currently breeding in south Texas are showing a high degree of adaptation with regard to nesting habitat (pers. comm. Jenny 2001). This would appear to indicate that the importance of a viable prey base is more significant a factor in the birds return, than the abundance of a particular historical habitat type.

PROTECTIVE MEASURES TAKEN: Habitat restoration has been implemented on 11,170 ha (27,601 ac) of aplomado falcon occupied chihuahuan desert grassland in southwestern New Mexico (USFWS 2014). Aplomado falcon reintroductions were conducted between 1985 and 2013 in south Texas, 2002 to 2011 in west Texas, and 2006 to 2011 in New Mexico. Reintroductions in south Texas have resulted in a potentially self-sustaining population of approximately 28 pairs. Only one pair has shown persistence in New Mexico, and no pairs have persisted in west Texas.

With the goal of re-introducing the Northern Aplomado Falcon to the southwestern United States, a captive breeding program initiated by The Peregrine Fund at the World Center for Birds of Prey, Boise, ID in the late 1980s is ongoing. Populations in Arizona and New Mexico were designated nonessential experimental populations in 2006 to permit the release of Aplomado Falcons in New Mexico without causing undue concerns for private sector and military use of public lands (USFWS 2006). The recovery goal for the US is 60 pairs, set by the USFWS. An anticipated self-sustaining population is expected in the US southwest by 2005.

SUGGESTED PROJECTS: Restoration of desert grassland habitat. Monitoring of suitable and historic habitat in Southeastern Arizona for possible re-establishment of this population from re-introduced experimental nonessential population in New Mexico, and native birds from Mexico.

LAND MANAGEMENT/OWNERSHIP: 1977 record in Arizona on private land.

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- Dean P Keddy-Hector. National Endangered Species Network (NESN).
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ADDITIONAL INFORMATION:

The Aplomado Falcon takes its common name from the Spanish word *aplomado*, which refers to the blue-gray or lead-colored dorsal plumage. The scientific name, meaning literally “femoral falcon,” is presumably a reference to its long legs.

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