ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** ABNKC19120
Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Buteo regalis*
COMMON NAME: Ferruginous Hawk, Ferruginous Rough-legged Hawk
SYNONYMS:
FAMILY: Accipitridae

AUTHOR, PLACE OF PUBLICATION: Gray, 1844, Buteo regalis was coined by G.R. Gray in 1844 (Sharpe 1874).

TYPE LOCALITY: A Ferruginous Hawk shot on 24 Dec 1836 near Monterey, CA, was incorrectly named *Falco ferrugineus*. The specimen held by the British Museum was collected on an unknown date but prior to 1841 in the vicinity of Real del Monte, Hidalgo, Mexico.

TYPE SPECIMEN: The Type Specimen is held by The British Museum, London, England.

TAXONOMIC UNIQUENESS: Monotypic species, no subspecies recognized. One of 25 species in genus *Buteo*, 1 of 13 North American species in genus.

DESCRIPTION: Although no subspecies are recognized, there are dark morphs that grade in color from brownish black to reddish brown. Adults are usually entirely white in front from the breast up through the side of the head, where light gray grades from the top of the head and down the back. The rusty shoulder patches contrast to the gray back. Immature birds are browner over the entire back and lack the rusty shoulder patches. The tail of both adults and young are lighter at the base and slightly barred or, in older birds, washed with rusty brown. This raptor was once called the "Ferruginous Rough-legged Hawk" for the tarsus that is "roughed" with feathers all the way to the toes. In adults, this feathering is rust colored and is visible in flying birds as a V when the legs are held together. Seen from below, flight feathers lack barring. The large gape, thought to be used for thermoregulating, gives this bird a large head compared with other buteos. (Glinski 1998). A crow-sized bird with lengths of 23-25 inches (58-63 cm), wingspan of 53 inches (135 cm), and weights of 2.2-4.5 lbs.

AIDS TO IDENTIFICATION: Robust broad winged hawk with large head, wide gape, and full chest. Overhead typical adults show a dark V formed by the rufous thighs (Peterson 1990). The typical color is lighter, and the Ferruginous Hawk often appears to be a big white

bird when viewed from a distance, a good field mark. Not to be confused with the pale morph of the Red Tailed Hawk (*B. jamaicensis fuertesi*), which lacks white patches in wing, has more rounded wings, and vague dark-headed pattern. Rough-legged Hawk (*B. lagopus*) frequently hovers, has band on tail, and is heavily marked below. Swainson's Hawk (*B. swainsoni*) has similar shape but lacks wing patches.

ILLUSTRATIONS:

Color drawing (Peterson 1990:177)
Color drawing (Glinski 1998: Plate 21)
Color drawing (National Geographic 1999:119)
Color photos (Farrand, Jr. 1988:9, 228)

TOTAL RANGE: No records outside the Americas. Primarily found in the western states of North America, southern Canada and down into central Mexico. Breeds form se. Alberta s. Saskatchewan, and extreme sw. Manitoba, south through central and w. portions of N. and S. Dakota between the Great Plains and Rocky Mountains all the way south to northern Arizona and New Mexico. The winter range is primarily from central Mexico north through the southwestern and mid-western United States.

RANGE WITHIN ARIZONA: Currently: breeds in northern Arizona on the Colorado Plateau, otherwise from September to April, can be seen in virtually any part of Arizona with open environs, particularly in agricultural fields and native grasslands (Glinski 1998). Historically: uncommon but widely distributed summer resident of the grassy plains of northern Arizona, and a local and irregular summer resident in southeastern Arizona (Phillips et al 1964). In 1915 observed at deep wells, west of the Chiricahua Mountains, Cochise County.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: In flight, the Ferruginous Hawk holds its wings in a slight dihedral, which encourages a rolling motion that stabilizes lift in open areas, where winds can interfere with flight. They give harsh alarm calls, *kree-a* or *kaah*, chiefly in breeding season. On wintering grounds in Arizona when birds are approached while perched, may give a shrill *keeerrrrr* (Glinski 1998). Often hovers when hunting or soars in a dihedral. Perches in trees, on poles, and on the ground. Before the elimination of bison (*Bison bison*) in the west, its nests were often partially constructed of bison bones and wool (Bechard et al 1995).

REPRODUCTION: Today this hawk uses nest substrates ranging from cliffs, trees, utility structures, and farm buildings to haystacks and even ground level. Both members of pair build or refurbish nest; male brings most material to the nest, whereas female spends more time arranging materials and forming nest bowl (Bechard et al 1995). Nests are usually quite large and bulky made up of coarse sticks, and frequently contain cow dung. In Arizona, courtship has been observed as early as the first week of March. From 2 to 5 (usually 3 to 4)

eggs are laid and incubation begins in late April or early May. Both sexes incubate but the female takes over the significant portion of the task as the incubation period progresses. Incubation period is estimated between 32-33 days (Palmer 1988). Young typically first leave the nest at 38-50 days; males (smaller in size) leave as much as 10 days before females (Bechard et al 1995). Ferruginous hawks generally are erratic breeders and for unknown reasons, shift nesting territories. The species appears to be especially sensitive to human disturbance during the breeding season, especially during incubation (Hall et al, 1988).

FOOD HABITS: The primary prey of the Ferruginous Hawk are rabbits (*Lepus* sp.), ground squirrels (*Spermophilus* sp.), and pocket gophers (*Thomomys* sp.). In the Southwest, limited information suggests prairie dogs (*Cynomys* sp.) and rabbits are important (Glinski 1998). Populations and the reproduction of this hawk can fluctuate with the availability of these prey. In winter Ferruginous Hawks typically aggregate where ground squirrels and especially prairie dogs are numerous. They are "sit-and-wait" hunters, and groups of 5 to 10 birds will often perch in and around prairie dog towns (Bechard et al 1995). May also take birds such as Meadowlarks. When locusts or Jerusalem crickets are swarming it takes large numbers. Snakes may also be taken (Brown et al 1968).

HABITAT: In Arizona, the open scrublands and woodlands, grasslands, and Semidesert Grassland in the northern and southeastern parts of the state are the potential haunts of breeding Ferruginous Hawks. During winter, they select the same areas, along with agricultural areas statewide; it does not use cultivated lands for nesting, however (Glinski 1998). Avoids high elevation, forest interior, and narrow canyons. In general, the Ferruginous hawk breeds in open areas with little topographic relief. Hunting areas are typically open grasslands, preferably those dotted with suitable low hills or short trees, which serve as perches (Hall et al 1988).

ELEVATION: In Arizona, 3,500 ft - 6,000 ft (1,067.5 – 1,830 m).

PLANT COMMUNITY: Occurs in grasslands, sagebrush (*Artemesia* spp.) country, saltbush (*Atriplex* sp.) grease-wood (*Sacobatus vermiculatus*) shrublands, and the periphery of western pinyon (*Pinus*)-juniper (*juniperus*) and other forests (Olendorf 1993).

POPULATION TRENDS: Since 1990, about 5,842-11,330 individuals estimated for the entire North American population (Olendorff 1993). Other estimates of population numbers: 14,000 individuals for the population in the grassland of the Great Plains alone (Schmutz et al.1992). Considered declining in several areas, but no data available on percent declines or reasons for declines. Apparent declines during 1980s within core breeding range, suggested by vacancy of many historic nests. Between 1979 and 1992, populations stable in Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, N. and S. Dakota, Texas, Washington, and Saskatchewan (Olendorff 1993). During this period, population increases of up to 50% or more apparently occurred in Oregon, Wyoming, Alberta, ad Manitoba. Declines in past 10 years confirmed only in n. Utah and e. Nevada (Olendorff 1993).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 1996)
[C2 USDI, FWS 1994]

STATE STATUS: 2 (AZGFD, AWCS 2022)
[1B (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[Threatened (AGFD, TNW 1988)]

OTHER STATUS: None, USDA FS Region 3, 2013
[Forest Service Sensitive USDA, FS Region 3 2007]
Bureau of Land Management Sensitive (USDI, BLM AZ 2008, 2010)
Group 3 (NNDFW, NESL 2000, 2005, 2008)
PR, Determined Subject to Special Protection in Mexico. (NORMA Oficial Mexicana NOM-059-SEMARNAT-2010)

MANAGEMENT FACTORS: The detrimental effects of human activity on the species encompass; shooting and trapping, egg collecting, pesticides and other contaminants, collisions with stationary or moving objects, disturbance at nest site, and degradation of habitat through habitat loss and fragmentation. In prairie Canada, where the Ferruginous Hawk's breeding range has been reduced by 50%, apparently healthy populations remain in areas where ranching is the dominant land use.

PROTECTIVE MEASURES TAKEN: Artificial nest platforms are particularly useful in increasing populations in previously occupied areas where available trees have died and fallen, in large areas that have been converted from tree/shrub communities to grass/shrub communities, or where availability of nest sites is a limiting factor (Olendorff 1993). Effective conservation measures, beyond addressing single limiting factors, must address conservation at its roots through ecosystem considerations (Bechard et al 1995).

SUGGESTED PROJECTS: Studies to determine breeding needs and impacts of various human activities on breeding birds.

LAND MANAGEMENT/OWNERSHIP: BIA, State Land Department, Private.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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