

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

Animal Abstract

Element Code: ABNQA08010

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Rhynchopsitta pachyrhyncha*

COMMON NAME: Thick-billed Parrot

SYNONYMS: *Macrocercus pachyrhynchus*

FAMILY: Psittacidae

AUTHOR, PLACE OF PUBLICATION: *Macrocercus pachyrhynchus* Swainson. 1827.
Philos. Mag., new ser., 1, no. 6, p. 439.

TYPE LOCALITY: Table land, Mexico.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: The Thick-billed Parrot is the only surviving parrot species whose natural distribution once included parts of the continental United States (Snyder et al. 1999).

DESCRIPTION: Thick-billed Parrots are 15–16.5 inches (38–42 cm) long (Sibley 2000), chunky and are a dull olive-green with red at the bend of their wings and on the lower thighs. They also have a red forehead (Snyder et al. 2020), black bill, and red eyebrow. Their tail is long and pointed (Snyder et al. 2020). The legs and feet are gray and there is no sexual dimorphism (Snyder et al. 1999). They have a gray or bright yellow under wing patch that shows in flight. Their wingspan is 32 inches (81.3 cm) and they weigh 15 oz (425.3 g) (Sibley 2000). Juvenile birds have largely white upper mandibles, a dark iris, reduced red on the thighs and a lack of red superciliary stripes, wing bends and carpal edges. Their flight is rapid and wing beats are shallow (Snyder et al. 2020).

AIDS TO IDENTIFICATION: Juvenile birds have pinkish bills, that gradually darken to black adult coloration after one year. Juveniles lack red eyebrow mark and have grey eye rings (Snyder et al. 1999). Adult Thick-billed Parrots can be identified by their loud and sharp kah ha and kah ha ha ha ha ect. call that can be heard from over 1.5km away under windless conditions. They can be differentiated from Maroon-fronted Parrots (*Rhynchopsitta terrisi*) by having a red forehead and being slightly smaller (Snyder et al. 2020).

ILLUSTRATIONS: Color photo (Terres 1980)
Color drawing (Sibley 2000)
Color photo (Snyder et al. 2020)

TOTAL RANGE: Thick Billed Parrots breed in the mountains of Chihuahua and Durango, Mexico (Snyder et al. 2020). They historically ranged as far north as the pine forests of central Arizona and southern New Mexico (Snyder et al. 1994), but presently are limited to high elevations of the Sierra Madre Occidental of northwest Mexico from northwest Chihuahua and northeast Sonora south to northwest Durango (Snyder et al. 2020).

RANGE WITHIN ARIZONA: No naturally occurring populations remain in Arizona, as the last credible sighting north of the border was in 1938 (Monson and Phillips 1981). Reintroduction efforts in the Chiricahua Mountains in Cochise County occurred in the 1980's, with 88 individuals being released between 1986 and 1993 (Snyder et al. 1989, Snyder et al. 1994). Successful breeding by one pair occurred in 1988, yielding two fledglings (Snyder et al. 1994). Attempts to maintain this flock were terminated in 1993, due to an excessive mortality rate among the ill-adapted released birds, many of which were preyed on by Northern Goshawks (Snyder et al. 1994). The flock persisted until at least 1995, perhaps later (Arizona Game and Fish Department 1996), but the species is now almost certainly extirpated (USFWS 2013). Historically, summer dispersal of these birds had been seen as far north as Flagstaff and Payson along the Mogollon Rim. Evidence of historical breeding activity in Arizona is limited, due to a lack of research conducted when the species was still present in the United States. Due to historical accounts of the species being present in the Chiricahua mountains year-round during the turn of the century, it is speculated that populations not only visited but reproduced in Arizona before their extirpation (Johnson 1992).

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Hand reared birds have been unsuccessful at foraging, flocking, and avoiding predators in the wild (Snyder et al. 1994). Parent-reared birds hatched in captivity have had greater success. Wild birds released in southeastern Arizona migrate north to central Arizona. This pattern matches the northward migration of birds in Mexico. It may be possible to establish a nonmigratory flock using captive bred birds if the migratory behavior is learned rather than innate. Flocks may have a minimum size required for breeding and protection from predators, as the mortality rates of reintroduced parrots were generally highest when population sizes were small (Snyder et al. 1994). Known predators include various raptors (e.g. Goshawk) and ringtails. Calls from the flock are earsplitting and can be heard for half a mile. Flocks have a habit of following anyone traveling through their home forests and keeping up such an uproar, that it drives off or alerts the wild animals naturalists may be seeking. They often fly in a V or line formation during extended flights (Snyder et al. 2020).

REPRODUCTION: Thick-billed Parrots commonly nest in tree cavities created by lightning strikes, disease, woodpecker activity, or a combination of these processes (Lanning and Shiflett 1983). They have been historically known to nest in cavities made by the Imperial Woodpecker (*Campephilus Imperialis*), but this woodpecker is now extremely rare and considered to be likely extinct. Thick-billed Parrots have been found to prefer nesting sites that are almost

completely enclosed, as 76% of nesting sites found in a 1979 study on nesting ecology were completely enclosed except for the entrance (Lanning and Shiflett 1983). Laying and incubation of 2–4 eggs occurs between mid-June and late July. The eggs are white, and the female performs the incubation for 25–28 days. Newly hatched chicks are nearly naked, with only a sparse covering of white down, and their eyes are closed (Snyder et al. 2020). The female performs brooding and feeding of nestlings; the male brings food to the nest. Fledging of 1–3 young occurs about two months after hatching between early September and late October (Lanning and Shiflett 1983).

FOOD HABITS: Thick-billed Parrots feed primarily on pine seeds by tearing open pine cones with their heavy bills (Terres 1980). In the U.S., the species has been known to feed primarily on cones from Chihuahua pine, Mexican pinyon, and Ponderosa pine (Snyder et al. 1994, Snyder et al. 2020). Chihuahua pines provide an especially reliable food source as they generally produce cones yearly, providing seeds year round as their cones are slow to open. The species has also been observed eating buds, acorns and juniper fruits (Snyder et al. 1994). An interesting component of their diet is tree bark; reasons for eating tree bark are unknown. Foraging habits include removing cones from trees, and extracting seeds in a spiral manner by prying off scales. Depending on the size and type, processing of a single cone can take 1–20 minutes or longer. Thick-billed Parrots often forage in tight flocks near treetops to maximize their chances of detecting and escaping raptors (Snyder et al. 2020).

HABITAT: Temperate coniferous forests, including mature pine-oak forests, pine forests, and fir forests. Nests have been found almost exclusively at elevations above 2000m, with most nests occurring above 2400m. Reasons for such high elevation nesting are uncertain, but may relate to the distribution of pine trees providing food during breeding season (Snyder et al. 2020). While some populations have been known to migrate long distances seasonally, evidence regarding seasonal migrations of Mexican populations is indirect, and does not conclude whether all populations are migratory. Migration patterns observed from reintroduced birds in Arizona suggest that seasonal migrations of at least some populations may tend to follow mountain ranges. While distances traveled during migratory periods are speculative, the usual absence of the species from Chihuahua and Sonora in the winter suggest that some populations migrate over 1000 km between summering and wintering areas (Snyder et al. 2020). The species exhibits considerable temporal irregularities in its distribution, being considered nomadic in response to yearly variations in cone crop (Snyder et al. 1994).

ELEVATION: 6,000–9,000 ft. (1,830–2,745 m) (Snyder et al. 2020).

PLANT COMMUNITY: Temperate coniferous forests (Snyder et al. 2020).

POPULATION TRENDS: Formerly found in north to south-central and southeastern Arizona. The last large flock in the Chiricahua Mountains was observed in 1918. The last reliable reports were in 1935 and 1938 (Monson and Phillips 1981). Survives in the highland pine forests of the Sierra Madres. At least one pair from reintroduction efforts in the 1980's, successfully bred in central Arizona in 1988. The species is undergoing a large, significant decline (BirdLife

International 2021). Anecdotal evidence suggest a continued general decline in flock sizes and the frequency of sightings throughout its range, including local extinctions at formerly occupied sites (Snyder et al. 2020).

SPECIES PROTECTION AND CONSERVATION

Status definitions: <https://bit.ly/hdms-status-definitions>

Heritage Network Conservation Status Rank definitions: <https://bit.ly/hdms-rank-definitions>

ENDANGERED SPECIES ACT STATUS: LE (USFWS 2023)
STATE STATUS: 1 (AZGFD, AWCS 2022)
HERITAGE NETWORK STATUS: G1G2
 SH
OTHER STATUS: Not Forest Service Sensitive (USDA, FS Region 3 1999)
 EN (IUCN, BirdLife International 2021)
 P, Determined Endangered (Secretaría de Medio Ambiente y Recursos Naturales 2000, 2010)

PREVIOUS STATUS

STATE STATUS: 1A (AZGFD, SWAP 2012)
 Endangered (AZGFD, WSCA 1996 in prep)
 Endangered (AZGFD, TNW 1988)
OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1988)

MANAGEMENT FACTORS: Thick-billed Parrots do not raid agricultural crops, but utilize pine forests for food and shelter. Large pines, both alive and dead, are used for nest cavities (Lanning and Shiflett 1983). The greatest management need is protection of nest sites (large trees). Forest management practices should be modified to leave some suitable trees throughout the forest as potential nest sites. The Thick-billed Parrot is threatened in Mexico by deforestation and harvesting for illegal trade. Thick-billed Parrots began being captured and sold in the black market pet trade in the 1980s, being sold for hundreds of dollars when smuggled into the United States (Johnson 1992).

PROTECTIVE MEASURES TAKEN: Reintroduction effort started in 1986 using confiscated birds being smuggled into the United States (Johnson 1992). Attempts to maintain the reintroduced flocks were terminated in 1993 due to an excessive mortality rate among the ill adapted released birds. Captive breeding for reintroduction is underway at the Tyson Research Center in Missouri, and the Aviculture Breeding and Research Center in Florida. Illegally possessed birds may be donated through an amnesty program. An agreement was signed between the Ejidotutuaca, the Wildlands Project, Pronatura and Naturalia creating a 15 year moratorium on any cutting of timber in a region of southern Chihuahua that hosts the most

important remaining nesting habitat of the Thick-billed Parrot. More than 100 active nests have been found in the region in recent years and it may represent more than 10% of the total breeding population. There is also a ban on the cutting of spruce, Douglas fir and Abies fir throughout the Sierra. These are trees that often serve as nest sites for the parrots.

SUGGESTED PROJECTS: Studies relating to the Thick-billed Parrot's wintering habitat and range need to be performed. Surveys of current and potential nesting areas need to continue to allow identification and conservation of the most crucial areas of habitat for this species.

LAND MANAGEMENT/OWNERSHIP:

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Thick-billed Parrots are locally known as “guacas” or “guacamayas”.

Suffered massively from shooting in the U.S. and were essentially gone from the U.S. territory by 1920. Their garrulousness, relatively large size and tame inquisitive behavior made them easy targets for sustenance hunting prospectors and other early settlers.

Revised: 1992-01-28 (JGH)
 1994-03-27 (LAJ)
 2003-06-10 (AMS)
 2023-01-04 (MBL)
 2024-11-05 (CPS)

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Arizona Game and Fish Department. 2024. *Rhynchopsitta pachyrhyncha*, Thick-billed Parrot. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. 7 pp.