

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

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Choeronycteris mexicana*

COMMON NAME: Mexican Long-tongued Bat, Hog-nosed Bat

SYNONYMS:

FAMILY: Phyllostomidae

AUTHOR, PLACE OF PUBLICATION: Tschudi, J.J., 1844. Untersuchungen uber die Fauna Peruana. St. Gallen, parts 1-6, p. 72, 262pp.

TYPE LOCALITY: Mexico

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: In Arizona *Choeronycteris* is 1 of 3 genera in the family Phyllostomidae. *C. mexicana* is the only species in the genus that comes as far north as Arizona. According to NatureServe (2002), *Choeronycteris mexicana* is regarded as a monotypic species by Jones and Carter (1976) and Koopman (in Wilson and Reeder 1993); nominal subspecies *ponsi* from northwestern Venezuela was not accepted as valid (probably not a *Choeronycteris*). See Van Den Bussche (1992) for an analysis of phylogenetic relationships of phyllostomid bats based on restriction-site variation in the ribosomal-DNA gene complex.

DESCRIPTION: A rather large bat with a long, slender nose, and large eyes. It has a nose leaf that is broad at the base and pointed at the tip (looks like a small triangular bump near the nose tip), measuring about 5.0 mm high, which may help direct the ultrasonic echolocation signals the bat sends through its nostrils. Other measurements include the forearm between 42.0-48.0 mm (1.7-1.9 in.), a wingspan of 33-38 cm (13-15 in), the hind foot between 11.0-14.0 mm (0.44-0.56 in.), and the weights ranging between 10-25 grams. The tail is approximately 10 mm in length, about one-third the length of the naked interfemoral membrane. The dorsal pelage color varies from buffy brown to dark grayish-brown, palest on shoulders; venter is paler; ears pale brownish gray. The tongue is long and extendable, and can extend up to a third of their body length. Upper incisors are small, but do not fill the space between the canines. There are no permanent lower incisors, but one to four deciduous teeth may persist in adults. In flight, the wings make a swishing sound similar to that produced by long-nosed bats.

AIDS TO IDENTIFICATION: Species of the Phyllostomidae family found in Arizona, including *Choeronycteris mexicana*, are identified by the presence of a flap or leaf of skin extending from the tip of the nose. Bats of the other three families in Arizona lack such a

nasal leaf. *Leptonycteris curasoae yerbabuena* lacks a visible tail and is larger (forearm 51.0-55.0 mm [2.04-2.2 in.]; hind foot 14.0-14.7 mm [0.56-0.59 in.]). The tail of *Macrotus* extends to slightly beyond the interfemoral membrane.

ILLUSTRATIONS:

B&W photo (Hoffmeister 1986:63)

Color photo (Whitaker 1980: plate 180)

Color photo (In [Http://www.angelfire.com/az/chiricahua/choer.html](http://www.angelfire.com/az/chiricahua/choer.html))

Color photo (Tuttle in

http://www.enature.com/fieldguide/showSpecies_LI.asp?imageID=18928)

Color photo (BCI in <http://www.batcon.org/discover/species/cmexica.html>)

Color photo (Wilson 1999)

Color photo (Harvey 1999)

Color photo (Whitaker 1996)

Color photos & line drawing (Smithsonian NMNH, North American Mammals,

http://www.mnh.si.edu/mna/image_info.cfm?species_id=43)

TOTAL RANGE: Southern California, southern Arizona, southwestern New Mexico, southern tip of Texas and much of northern and central Mexico. According to the Nevada Bat Working Group there was a single individual found in Las Vegas.

RANGE WITHIN ARIZONA: Southeast Arizona, from the Chiricahua Mountains extending as far north as the Santa Catalina Mountains and as far west as the Baboquivari Mountains. AGFD HDMS unpublished records show them in Pinal, Pima, Graham, Santa Cruz and Cochise counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Peak activity for *Choeronycteris mexicana* occurs 1.5 hours after sunset and then at low levels until about 3 hours after sunset. They are less gregarious than other colonial bats and less inclined to roost with other bat species. In roosts, they do not cluster closely together but hang 2.0-5.0 cm (0.8-2.0 in.) apart, usually by only one foot so they can swivel 360° to detect predators. Roosts usually consist of 15 or fewer individuals, but when considering roosts in close proximity to each other, population numbers may reach up to 40-50. This species is thought to migrate seasonally to take advantage of suitable sources of food. They normally migrate south across the border into Mexico to spend the winter. Southern Arizona is at the extreme northern edge of its range, where it is found in sexually segregated and nursery colonies during the summer.

REPRODUCTION: Females segregate from the males, and according to Cockrum and Petryszyn (1992), only adult females move north from Mexico into the United States with the males remaining “in the southern part of the range during the time that young are being nourished by the mothers in the north.” The young (typically one baby) are born mid to late

June and early July, but parturition may be as late as September in Mexico. As with many species of bats, the fetus is about 30% of the mother's weight. Parturition usually lasts about 15 minutes, resulting in the birth of a neonate in a remarkably advanced state of development. The newborn bat is surprisingly well furred on the dorsum with a dense, dark pelage; the venter is scantily furred with silvery hair. Young grow rapidly and can probably fly within 2-3 weeks. After the young become volant, these bats move about opportunistically in search of food. Females are known to carry their young in flight.

FOOD HABITS: This bat feeds on nectar, pollen, probably insects, and occasionally fruit of columnar cacti (these bats are not typically found in low desert situations). They especially feed on the flowers of paniculate agaves. The bristle-like tongue and lack of lower incisors, aid this bat in lapping up flower nectar and pollen.

During winter some are reported to feed at hummingbird feeders. It is not known if they are feeding on other things at that time.

HABITAT: Mesic areas in canyons of mixed oak-conifer forests in mountains rising from the desert; in Mexico includes arid thorn scrub, and tropical deciduous forests. Caves and abandoned mines are favored daytime retreats where they prefer to roost in the dimly lit areas often near the entrance. They are also often found in shallow caves or rock shelters. A few are found in palo verde-saguaro areas. Some of their range overlaps with *Leptonycteris*, but is not great (see Hevly 1979). *Choeronycteris* usually occupies higher elevations than *Leptonycteris* when it arrives in spring, and they may use the same roost year after year. Based on a study conducted by Carter and Peachey in 1996, all roost sites in the Cienega Creek Natural Preserve, except one, were located immediately adjacent to the creek. The roost sites consisted of pocketed, eroded clay soil holes such as sink holes, or soil piping caves. The majority of the soil piping caves were only a few meters long and 1-2 meters high, having a characteristic dome ceiling which seems to be where the bats prefer to roost.

ELEVATION: Records from 2,540 - 7,320 ft. (774- 2,233 m), but most are from 4,000 - 6,000 ft. (1,220 - 1,830 m).

PLANT COMMUNITY: In the northern part of this bat's range, roost sites are commonly associated with mesic areas in oak-conifer woodlands or semi-desert grasslands. Dominant species include: oaks (*Quercus*), alligator juniper (*Juniperus deppeana*), manzanita (*Arctostaphylos*), yucca and agave. Near Tucson, they feed predominantly on cactus and *Agave* species. Cryan and Bogan (2003) observed species of *Agave* as the consistent floral characteristic of all sites visited, with *Agave schottii* observed blooming at occupied sites before mid-June, after which blooming *A. palmeri* was encountered.

POPULATION TRENDS: Unknown. Based on a recent study by Cryan and Bogan (2003), there is not sufficient evidence to conclude that populations in Arizona and New Mexico have increased or decreased in recent years. Searches of rock crevices and shelters in historical

roost areas often revealed multiple roosting groups, suggesting that aggregations of *C. mexicana* are dispersed among several proximate sites.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:	None (USDI, FWS 1996) [C2 USDI, FWS 1989, 1991, 1994]
STATE STATUS:	WSC (AGFD, WSCA in prep) [State Endangered AGFD, TNW 1988]
OTHER STATUS:	Bureau of Land Management Sensitive (USDI, BLM AZ 2008, 2010) [None (USDI, BLM AZ 2005)] [Bureau of Land Management Sensitive (USDI, BLM AZ 2000)] Forest Service Sensitive (USDA, FS Region 3 2007) [None (USDA, FS Region 3, 1999)] [Forest Service Sensitive USDA, FS Region 3, 1988] LR/nt (Chiroptera Specialist Group 1996, In: IUCN 2006) Determined Threatened (Secretaria de Medio Ambiente 2000) [Determined Threatened, Secretaria de Desarrollo Social 1994]

MANAGEMENT FACTORS: This species is very wary of humans and easily disturbed. They are difficult to survey for because they roost in small (5-15) colonies. Threats include recreational caving, mine reclamation, renewed mining, and loss of riparian habitat. Because of its propensity for moving between roosts in a small area, the loss of riparian vegetation may be a greater threat to the species than disturbance at a particular roost (Cryan and Bogan 2003). In addition, the loss of food resources (Agaves in Mexico [over harvesting]) due to development, fire or grazing may also have an affect on this species.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Restrict human disturbances at known roost sites. Due to their susceptibility to population decline, bat populations should be monitored. Research is needed on habitat needs, food habits, pollination role, survivorship, distribution, roosting patterns, and life history. In addition, studies looking at movement and revisits, possibly through banding, are needed, along with the possible affects of artificial feeders on their health.

LAND MANAGEMENT/OWNERSHIP: BIA - Tohono O'odham and San Carlos Reservations; BLM - Safford and Tucson Field Office; DOD - Fort Huachuca Military Reservation; NPS - Organ Pipe Cactus National Monument and Saguaro National Park; USFS - Coronado National Forest; State Land Department; Kartchner Caverns State Park; Pima County; Agua Caliente County Park; Cienega Creek Nature Preserve; AMNH Southwestern Research Station; TNC - Ramsey Canyon and Muleshoe Ranch Preserves; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

Dr. Paul Cryan – USGS, Fort Collins Science Center, Fort Collins, CO.
Ronnie Sidner – Tucson, AZ.

ADDITIONAL INFORMATION:

In the 1980s (at least) in late August approximately 100 of these bats congregated in an old log homestead in Ramsey Canyon, Huachuca Mountains. Dr. E.L. Cockrum (pers comm 1992) speculated that the congregation may be due to the females and fledged young gathering near a food source, the numerous hummingbird feeders in the canyon.

Ronnie Sidner reports that they have been observing them more frequently at hummingbird feeders, and higher in the Santa Catalina Mountains.

Choeronycteris mexicana. From the Greek *choiros* meaning pig (refers to the pig-shaped snout) and *nykteris* meaning bat. The specific epithet, *mexicana*, refers to its major distribution, and where the species was first described.

Revised: 1991-12-26 (JSP)
1992-05-03 (BKP)
1992-09-28 (RBS)
1994-03-29 (DCN)
1997-03-03 (SMS)
2003-03-10 (AMS)
2006-09-27 (SMS)

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