ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AMACA01010
Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Mormoops megalophylla*
COMMON NAME: Ghost-Faced Bat, Peter's Ghost-faced Bat, Leaf-chinned Bat, Leafchin Bat, Peter's Leaf-chinned Bat, Lappet-chinned Bat, Old Man Bat, Moustache Bat
SYNONYMS: *Aello megalophylla*
FAMILY: Mormoopidae (= subfamily Chilonycterinae of family Phyllostomidae)

AUTHOR, PLACE OF PUBLICATION: Peters, W. 1864. Ober einige neue Säugethiere und Fishe Monatsber. k. Preuss. Akad, Wiss., Berlin p. 381.

TYPE LOCALITY: Designated as Parras, Coahuila by Smith (1972: 16).

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: The family Mormoopidae is found only in the western hemisphere and primarily in the tropics. In this family, *Mormoops* is 1 of only 2 to 4 (depending on authority) genera and in this genus, *M. megalophylla* is 1 of only 2 species. This is the only genus and species of the family Mormoopidae found as far north as the U.S. (Arizona and southwestern Texas). This genus is considered to be the most specialized of the family because of the long narrow wings, funnel-shaped mouth, and other adaptations for swift flight and insect capture.

DESCRIPTION: *Mormoops megalophylla* is a medium-sized bat with long, lax fur that is brownish to reddish brown above. Total length from 78-98 mm, tail 19.5-28.3 mm long, and length of forearm from 46-56 mm; weight from 15-16 g. It has prominent leaf-like folds of skin that extend from ear to ear across the chin; the central fold, in front of the lower lip, is covered with small wart-like prominences. The face is short and the forehead high; the rostrum sharply upturned. Its ears are small, round and connected across the forehead and its lower part forms a pocket below the eye. The tragus is complexly folded. The end of the tail projects upward from near the middle of the interfemoral membrane. There is no other bat in the U.S. with these characteristics.

AIDS TO IDENTIFICATION: In Arizona, bats of this family, genera, and species are easily distinguished from all other families, genera, and species by their distinctive facial ornamentations and their tails. Lappets of skin reaching from ear to ear depend from the chin and are quite conspicuous when the animal is in flight. The proximal half of the tail is contained within the tail membrane while the distal half protrudes above. The fur is reddish brown to brown.

The skull of this bat is clearly distinguished from all other bats in Arizona by the extremely uptipped rostrum which gives the bat a somewhat pug-faced look.

Mormoops may be distinguished from 2 species of *Pteronotus* (*P. davyi*, the naked-backed bat, and *P. parnellii*, the mustached bat) where their ranges overlap in central and southern Sonora by the abruptly rising forehead; complex tragus without a long pointed pinna; long, lax fur; and wings attached lower on the side of body. The *Pteronotus* species have only a slightly rising forehead; a non-complex tragus with a long pointed pinna; short, stiff fur; and wings that attach higher up on the sides nearer the dorsal midline.

Of the 2 species in the genus *Mormoops, M. megalophylla* is the only one occurring in North America (*M. blainvillii* [=*Aello cuvieri* Leach], Antillean ghost-faced bat, which occurs only on islands in the Caribbean); it is also the larger of the 2 (forearm usually 50 mm as opposed to 41 mm).

ILLUSTRATIONS: Black and white photo (Barbour and Davis 1969: 24, & plate I)
Color photo (Whitaker 1980: plate 154)
Color photo (*In* http://www.batcon.org/discover/species/mmegal.html)
Color photo (Wilson 1999)
Color photo (Harvey et al. 1999)

TOTAL RANGE: From southwestern and southern Texas and southern Arizona, southward through Mexico (including southern Baja California, the Mexican Plateau, and Yucatan Peninsula) into Central America as far as eastern Honduras and El Salvador. In South America, *M. megalophylla* is known from several widely separated localities along the Caribbean coast of Colombia, Venezuela, Trinidad, and the Dutch West Indies, and also is known from the arid upper Patia Valley in northern Ecuador.

RANGE WITHIN ARIZONA: Found only once in Arizona in June, 1954, when two females were taken near Patagonia in the southern foothills of the Santa Rita Mountains on the Coronado National Forest, in a mist net over a waterhole in a deciduous woodland riparian habitat. Nothing further is known about its distributional status in Arizona. The nearest known colonies are in Sonora about 150 miles south of where they were netted in Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: This is a colonial, cave dwelling bat whose distribution is closely correlated with the distribution of caves, crevices and abandoned mine tunnels which serve as daytime roosts. Although it may be found roosting in numbers of several 1000 to 500,000, *Mormoops* does not cluster in compact groups as do most other cave dwelling bats, but rather roost singly, spread out over the ceiling about 15 cm (6 in) apart. Maximum sizes of colonies reported from Texas are 3,000-4,000 and 6,000. When asleep during the day this species rests with the back arched and the head tucked ventrally almost to the chest.

It is believed to be non-migratory and spends its life in one general locality. It appears to be unpredictably nomadic with colonies being found in a cave for a period of time, then suddenly disappearing, apparently shifting to new living quarters in some other cave.

It is not known to hibernate. During the winter it may gather in caves, or parts of caves, where the air is considerably warmer than outside the cave. In Texas during January, a cave contained a colony of 1550 in a room with a temperature of 27° C (80° F). In Nuevo Leon, Mexico during November, about a half million individuals were found in cave with a relative humidity of 86 % and temperature of 21° C (70° F); outside temperature was 15° C (59° F).

Although it has been observed using a cave also used by other species such as *Myotis velifer* and *Tadarida brasiliensis*, each species used a different part of the cave.

REPRODUCTION: From what little is known about the reproductive biology of *Mormoops*, it appears that the period of reproduction is confined to late winter and early spring, even in the tropics, and there is only one offspring each year. In the northern part of its range (Mexican states of Coahuila and Nuevo Leon bordering Texas) pregnant females have been reported in March, April and May, each with a single embryo. In Arizona, 1 female was found to be pregnant with 1 fetus in June. Elsewhere, in Mexico and Central America, sexually mature females taken between January and June are likely to be gravid or lactating. Young are normally born in June. No nursery colonies have been found in the U.S. part of its range.

FOOD HABITS: The food of this bat appears to consist entirely of flying insects. The only specific item reported from study of stomach contents is “wing scales of lepidoptera.” This bat is thought to forage high above the ground since it is seldom caught in mist nets. It is a strong, swift flier, seems unable to detect mist nets, and thus flies into a mist net with considerable force, which suggests that it forages in areas unobstructed by tall vegetation. However, in Tamaulipas 1 was shot about 2 m (6 ft) above the ground, in Yucatan 18 were caught in mist nets set “in or near forests,” and 3 were taken in southern Chiapas, Mexico in nets set across a tree-bordered, shallow stream where about a dozen species of bats came to drink.

HABITAT: In Arizona the 2 females were taken over a waterhole located in a riparian community of mature cottonwood, sycamore, and willow at an elevation of 4450 feet, in oak woodland.

In Texas, *M. megalophylla* has been captured in both lowland and upland areas but is most common in desert scrub and river floodplain habitats. Specimens have been collected or individuals observed in all months except December; thus *Mormoops* appears to be resident in some part of its Texas distribution year around. There is a strong correlation between the Trans-Pecos, Texas, distribution of this bat and areas having annual precipitation of ten to twelve inches and average annual temperatures above 64 °F.

This bat uses caves, mines, and rarely buildings and railroad tunnels for day roosts. Buildings may be used as night roosts.

Throughout its range the genus *Mormoops* is reported to occupy "humid to arid and semi-arid regions, usually below 3,000 meters."

ELEVATION: 4,450 feet (1,357 m) in Arizona.

PLANT COMMUNITY: Desertscrub and riparian woodlands in Texas. Riparian woodland within oak woodland in Arizona.

POPULATION TRENDS: Although this species is widely distributed, it is not numerous anywhere in its range. It has neither federal nor state protection designation, but is listed as "Uncommon" in Arizona.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: None
OTHER STATUS: None

MANAGEMENT FACTORS: Arizona is at the extreme northwestern edge of its range. No nursery colonies are known north of central Sonora. Locating and protecting key cave roosts is important.

PROTECTIVE MEASURES TAKEN: Unknown.

SUGGESTED PROJECTS: Studies of the distribution, habitat, population, and life history are needed for this species.

LAND MANAGEMENT/OWNERSHIP: The only Arizona collection site is on the Coronado National Forest.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Revised: 1991-12-27 (DBI)
1992-05-03 (BKP)
1992-10-20 (RBS)
1994-03-25 (DCN)
2004-02-20 (AMS)

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Arizona Game and Fish Department. 20XX **(= year of last revision as indicated at end of abstract)**. X...X **(= taxon of animal or plant)**. Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.