ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AMACC01080
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Myotis auriculus*
COMMON NAME: Southwestern Myotis
SYNONYMS: *Myotis evotis apache*
Myotis evotis auriculus
Myotis keenii apache
Myotis keenii auriculus
FAMILY: Vespertilionidae

AUTHOR, PLACE OF PUBLICATION: Baker and Stains, Univ. Kans. Mus. Nat. Hist., 9:83, 1955.

TYPE LOCALITY: 10 mi west and 2 mi south of Piedra, Tamaulipas Mexico.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: There are 88 species of *Myotis* worldwide and 9 species in Arizona. *Myotis auriculus* was once considered a subspecies of either *Myotis keenii* or *M. evotis*, and was not named until 1969. *M. auriculus* is a member of the long-eared *Myotis* group, including *M. evotis*, *M. keenii*, *M. milleri*, *M. septentrionalis*, and *M. thysanodes*. Relationships within this group and among other *Myotis* species are poorly known. There is two currently recognized subspecies: *M. auriculus auriculus*, occurring in eastern Mexico, and *M. auriculus apache*, occurring in western Mexico, southwestern New Mexico, and southeastern Arizona.

DESCRIPTION: *M. auriculus* is a robust member of the genus *Myotis*, with a forearm length of 27 to 41 mm (1-1.6 in), wingspan of 270 mm (10.6 in), a calcar of 13 to 15 mm, and a skull length of generally greater than 15.7 mm. It has a distinct sagital crest and a relatively inflated skull. Their long ears (19 to 22 mm) distinguish them from all other *Myotis* species except members of the long-eared *Myotis* group. They occur sympatrically with *M. evotis* and *M. thysanodes* in Arizona. They can be distinguished from these species by their overall more brownish coloration, their dorsal coloration is dull brown with the hairs possessing a darker basal band and the ventral pelage is buffy. The flight membranes and ears are brown and have no obvious or microscopic fringe of hairs on the posterior margin of the interfemoral membrane.

AIDS TO IDENTIFICATION: *M. auriculus* can be distinguished from *M. evotis* by brownish rather than blackish ears and membranes and from *M. thysanodes* by their lack of a distinct, macroscopic fringe of hairs on the posterior edge of the interfemoral membrane. Ear length in *M. auriculus* averages less than 21 mm, whereas ear length in *M. evotis* averages

greater than 21 mm. Sufficient variation in color and ear length of these species exists that identification can be difficult. Researchers should take extra care in identifying these animals and make note of questionable identifications.

ILLUSTRATIONS: B&W photos (Barbour and Davis 1969:80,81; Fig.37)
B&W photo (Warner 1982:1; Fig.1)
Color photo (Wilson 1999)
Color photo (Harvey 1999)

TOTAL RANGE: Southwestern United States (southeastern and south-central Arizona and western New Mexico) and Mexico north of the Mexican state of Jalisco. However, the actual distribution of this species throughout its range is poorly known and there is some evidence that northward range extensions are occurring much farther in Arizona and New Mexico.

RANGE WITHIN ARIZONA: According to AGFD HDMS unpublished records (accessed 3-6-03) it has been found in Gila, Maricopa and Cochise counties. In winter, known only from Chiricahua Mountains and Huachuca Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: *M. auriculus* is most active one or two hours after sunset at temperatures between 11 and 19 degrees Celsius. They fly at an average speed of 12.9 km/hr. Little is known of the roosting, migratory, or wintering habits of this species, as they have been poorly studied. Pregnant females have been observed roosting in caves. They are active from April through September in the southwestern United States. The echolocation calls are characterized by low intensities, short durations, and low frequencies, which is consistent with a gleaning foraging strategy and specialization on moth prey. Their relatively short, broad wings also suggest that they are capable of maneuverable flight and use a hovering and gleaning foraging strategy.

REPRODUCTION: Like their close relatives in the long-eared *Myotis* group, they probably mate in hibernacula in the fall, with ovulation and fertilization occurring the following spring. They give birth to one young yearly in June or early July. The timing of parturition may be affected by climatic conditions.

FOOD HABITS: Southwestern Myotis are classified by Findley (1987), as hovering gleaners, which capture prey from the surfaces of vegetation, rocks, or the ground. They eat primarily moths. In areas where they are sympatric with *M. evotis*, they specialize on moths while *M. evotis* switch to consuming mainly beetles.

HABITAT: Though primarily found in ponderosa pine habitat and other semi-arid woodland habitats, these bats are also sometimes captured in desert grasslands and are found in tropical deciduous forests in eastern Mexico. *M. auriculus* seems to be restricted to montane forests throughout much of its range, although individuals may be encountered in lower elevation habitats during seasonal migrations.

ELEVATION: 1,200 - 7,300 ft. (366 - 2,227 m).

PLANT COMMUNITY: *M. auriculus* is found from desert scrub habitats to pine-fir forests. This may vary seasonally.

POPULATION TRENDS: Populations seem to be stable, though little data exists throughout the range of this species. They may be expanding their range northwards in the United States.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 2 (AZGFD, AWCS 2022)
[1C (AGFD SWAP 2012)]

OTHER STATUS:

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: The hibernation and migratory habits of this species, as well as most *Myotis* species, are unknown. It is important to understand more about the habitat requirements of this species throughout the year and throughout its range. Also, the two subspecies of *M. auriculus* occupy somewhat disjunct ranges; the possibility of significant genetic divergence among populations exists and should be investigated.

LAND MANAGEMENT/OWNERSHIP: USFS - Coronado National Forest; AMNH Southwestern Research Station; Private. USFS-Apache-Sitgreaves National Forest (likely).

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

Gale Monson - United States Forest Service

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ADDITIONAL INFORMATION:

"One of the reasons so little is known about this bat is that it was not recognized as a species until 1955. Before then, it was thought to be a subspecies of the long-eared bat (*Myotis evotis*), and one will not find it discussed in publications written before 1955" (Monson, 1973).

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