

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract

Element Code: AMACC09010
Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Idionycteris phyllotis* Allen
COMMON NAME: Allen's Lappet-browed Bat; Allen's Big-eared Bat; Mexican Big-eared Bat
SYNONYMS: *Corynorhinus phyllotis* Allen, 1916:352
Idionycteris mexicanus Anthony, 1923:1
Plecotus phyllotis
FAMILY: Vespertilionidae

AUTHOR, PLACE OF PUBLICATION: Allen, G.M. 1916. Bull. Mus. Comp. Zool., 60:352.

TYPE LOCALITY: San Luis Potosi, Mexico, probably from near city of San Luis Potosi or near Rio Verde.

TYPE SPECIMEN: MCZ 5943, Edward Palmer

TAXONOMIC UNIQUENESS: Monotypic species. This species formerly was included in the genus *Plecotus* (Handley 1959, Jones 1973). Williams et al. (1970) argued for generic recognition of *Idionycteris* separate from *Plecotus* based on the distinctness of its standard karyotype from that of other plecotine bats. Hoffmeister (1986) cited external morphological, cranial, bacular, and chromosomal features in regarding *Idionycteris* as a genus distinct from *Plecotus*. This treatment is widely accepted (Czaplewski 1979, Banks et al 1987, Jones 1997, Baker et al. 2003, Bradley et al. 2014, ASM 2023, and Simmons and Cirranello 2023). Frost and Timm (1992) evaluated morphological and karyological characters and concluded that *I. phyllotis* and *E. maculatum* are sister species and that both belong in the genus *Euderma*. However, subsequent morphological and chromosomal analyses concluded that while closely related, *I. phyllotis* and *E. maculatum* should be regarded as generically distinct (Tumlison and Douglas 1992, Qumsiyeh and Bickham 1993, Bogdanowicz et al 1998, Hooper and Van Den Bussche 2001).

DESCRIPTION: Tawny above with hairs dark brown at base; underparts slightly lighter. No fur on wings or membranes. The ears are large, 4.0 cm () long with two flaps (lappets) projecting forward from the base of the ears; tragus 1.6 cm (). Ears often protected by folding and coiling them into "rams' horns" which lay along the sides of their necks. No glandular enlargements on muzzle; keeled calcar.

AIDS TO IDENTIFICATION: The presence of the forward-projecting lappets at the base of the ears distinguish *Idionycteris phyllotis* from the other 4 big-eared bats with which it may be confused: *Euderma maculatum* (Spotted bat), *Antrozous pallidus* (Pallid bat), *Macrotus californicus* (California leaf-nosed bat) and *Corynorhinus townsendii* (Townsend's big-eared bat) (Hoffmeister, 1986). Call is a loud, distinctive "peep" at about 1 second intervals, similar

to *E. maculatum* but lower in pitch. Also emits a "rapid clicking" or "low, barely audible cheeping" much like *C. townsendii*.

ILLUSTRATIONS:

Black and white photo (Barbour and Davis 1969: 184)

Color photo (Barbour and Davis 1969: plate XIX)

Black and white photo (Hoffmeister 1986: 106)

Color photo (Whitaker 1980: plate 142)

TOTAL RANGE: In the central highlands of Mexico from the Distrito Federal, San Luis Potosi, Tamaulipas and Durango, northward into west-central New Mexico to the Colorado River Valley, Arizona (Barbour and Davis, 1969). Typically found in mountainous regions at higher elevations. Seasonal movements, and cold season distribution unknown.

RANGE WITHIN ARIZONA: Specimens taken across most of Arizona, but not known from the southwestern deserts of Arizona. Most Arizona specimens have been collected from the southern Colorado Plateau, the Mogollon Rim and adjacent mountain ranges.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Flights characterized by "swift, direct flights from one place to another, interspersed with slower flights and by occasional near hoverings, as if the bat were carefully seeking an exit" (Barbour and Davis, 1969). Capable of highly maneuverable flights, can hover and even fly vertically. Their roosts are often loosely associated with roosts of *Corynorhinus townsendii*, *Myotis californicus* (California Myotis), and *Myotis thysanodes* (Fringed Myotis). Trees are commonly used as roosts on the Coconino and Apache-Sitgreaves National Forests, in Arizona (AGFD 1996). Per Barry Spicer (1992 pers. comm.), there is no information on male or winter roosts, with the single exception of one individual observed in February 1992, in a through and through adit, in the Union Pass area near Kingman.

REPRODUCTION: Reproduction in this species is poorly known. Females form maternity colonies in the early summer. Males are possibly solitary roosters during this time. Young born mid to late June in Arizona, begin to fly by late July. Arizona maternity roosts are known from the Kingman area, and the Aravaipa Canyon area in the Galiuro Mountains. Lactating females have been captured in the vicinity of Flagstaff.

FOOD HABITS: Fragile skull and jaw suggest that *I. phyllotis* feeds primarily on soft-bodied insects. This is supported by diet studies, which have found the main food to be small moths (Microlepidoptera, 6-12 mm in size). There are also records of *I. phyllotis* feeding upon soldier beetles (Cantharidae), dung beetles (Scarabeidae), leaf beetles (Chrysomelidae), roaches (Blattidae) and flying ants (Formicidae). Food is gleaned from the surface, or pursued and taken in flight.

HABITAT: In Arizona, bats are netted most often in ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas of sycamores, cottonwoods and willows. They have also been collected in white fir and in Mohave desertscrub. Boulder piles, cliffs, rocky outcrops or lava flows is the common terrain at or near most collection locations. Typically netted along streams or over ponds where the bats may be seeking insects, water or both. They roost in caves and abandoned mineshafts.

ELEVATION: 1,320 - 9,800 ft (403 - 3,225 m), but most observations are at altitudes between 3,500 - 7,500 ft (1,100 - 2,500 m).

PLANT COMMUNITY: Ponderosa pine, pinyon-juniper, Mexican woodland and riparian areas of sycamores, cottonwoods and willows.

POPULATION TRENDS: Very poorly known. Barbour and Davis (1969) and Hoffmeister (1986) point to the paucity of pre-1955 records for Arizona and discuss the possibility that this species has only recently expanded its range into Arizona, Nevada, Utah and New Mexico.

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)]

OTHER STATUS: Bureau of Land Management Sensitive
(USDI, BLM AZ 2010, 2017)
Not BLM Sensitive (USDI, BLM AZ 2008)
[Bureau of Land Management Sensitive
(USDI, BLM AZ 2000, 2005)]
Forest Service Sensitive (USDA, FS Region
3 2007, 2013)

MANAGEMENT FACTORS: Maternity colonies are easily disturbed, often resulting in abandonment.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Survey for maternity and hibernaculum roost sites.

LAND MANAGEMENT/OWNERSHIP: BLM - Arizona Strip and Kingman Field Offices; NPS - Grand Canyon National Park; USFS - Apache-Sitgreaves, Coconino, Coronado, Kaibab and Tonto National Forests; BIA - Hualapai Reservation; State Land Department; AGFD Viet Ranch; TNC - Aravaipa Canyon Preserve; Private.

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

I. phyllotis is readily trapped in mist nets; they do not seem as adept at avoiding them as some of the other big-eared bats, such as *Corynorhinus townsendii*. *I. phyllotis* is most often netted 1½ - 2 hours after dusk. These bats are fairly docile and seldom attempt to bite when captured.

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