ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract **Element Code:** AMACC05030
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Lasiurus cinereus* (Palisot de Beuvois, 1796)
COMMON NAME: Hoary Bat
SYNONYMS: *Aeorestes cinreus* (Palisot de Beuvois, 1796)
Atalapha mexicana Saussure, 1861:97
Vespertilio cinereus Palisot de Veauvois, 1796:18
Vespertilio pruinosus Say, 1823:167
Vespertilio villosissimus Geoffroy St. Hilaire, 1806:204
Lasiurus cinereus Allen, 1864:21
FAMILY: Vespertilionidae

AUTHOR, PLACE OF PUBLICATION: Palisot de Beauvois. Cat. Raisonne Mus. Peale Phila. 1796:18.

TYPE LOCALITY: Philadelphia, Philadelphia Co., Pennsylvania, USA.

TYPE SPECIMEN: HT: ?

TAXONOMIC UNIQUENESS: The genus *Lasiurus* includes 20 extant species (ASM 2023). The three subspecies of *Lasiurus cinereus* recognized by Wilson and Reeder (2005) (*L. c. cinereus*, *L. c. semot*us, and *L. c. villosissimus*) have been elevated to species status by Baird et al. (2015). This has been adopted by the American Society of Mammalogists (2023) and Simmons (2023). Also see Baird et al. (2017).

Baird et al. (2015, 2017, 2021) split *Lasiurus* into three distinct genera: *Lasiurus* (red bats), *Aeorestes* (hoary bats), and *Dasypterus* (yellow bats), but this arrangement has, to date, not been widely adopted by the scientific community under the argument that there is insufficient justification for changing the well-established zoological nomenclature for these species (see Ziegler et al. 2016, Novaes et al. 2018, and Teta 2019). Francis et al. (2023) recommended recognizing *Lasiurus*, *Dasypterus*, and *Aeorestes* as subgenera within the genus *Lasiurus*. Following ASM (2023) and Simmons and Cirranello (2023), HDMS continues to recognize this species in *Lasiurus* until further research convincingly argues for a different treatment. Schmidly and Bradley (2016) and Morgan et al (2019) adopted the change to *Aeroestes*.

New World Lasiurus were placed in the genus *Nycteris* by Hall (1981); few if any other authors have followed this change

DESCRIPTION: A large bat with a total length 128-146 mm, forearm 46-58 mm, wingspread 380-410 mm, tail 60 mm, hind foot 12 mm, and ear 17 mm; weight 20-35 g. The interfemoral membrane is heavily-furred. Ears are rounded, edged with black, and do not

reach as far as the nostrils when laid forward; the tragus is short and broad. The hind foot is one-half as long as the tibia; the dorsal side has thick fur. The calcar is twice as long as the hind foot, distinctly, yet narrowly keeled on posterior edge with lobes on tip. Teeth are large and strong. The coat is yellowish brown to mahogany brown or mixed dark brownish and gray, tinged with white-tipped hairs producing a frosty or hoary effect. The wrist and shoulder patches are whitish, while the throat patch is yellowish. Juveniles appear nearly grayish, but still have a frosty appearance.

AIDS TO IDENTIFICATION: The minute upper molars of *Lasiurus cinereus* are proportionally smaller than those in *L. borealis*, and are occasionally absent. The swift and direct flying style can distinguish *L. cinereus* from any other bat in the United States, except where the largest of the free-tailed bats occur. This is the only vespertilionid producing audible sound during flight other than *Eptesicus fuscus* (Barbour and Davis 1969). This species is not easily confused with other lasiurines because of large size and distinctive color (Shump and Shump 1982).

ILLUSTRATIONS:

Black and white photos (Barbour and Davis 1969: 143, 145; Figs. 79-80)
Black and white photo (Ingles 1954: 68)
Black and white photo (Tuttle 1982: 1)
Color photo (Wilson 1999)
Color photo (Harvey et al. 1999)
Color photo (Bruce D. Taubert, in Arizona Wildlife Conservation Strategy website https://awcs.azgfd.com/species/mammals/lasiurus-cinereus)

TOTAL RANGE: Most widespread of all the American bats, they range near the limit of trees in Canada, southward to at least Guatemala, and in South America from Brazil to Argentina and Chile; also found in Hawaii. Uncommon throughout most of the eastern United States and in the northern Rockies, but common in the prairie states and the Pacific Northwest. Winters in southern California, southeastern United States, Mexico, and Guatemala.

RANGE WITHIN ARIZONA: Statewide.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Although there is much circumstantial evidence to support the assumption that this bat migrates, wintering sites are not well documented and no specific migration patterns have been plotted. Nevertheless, large groups have been spotted in spring and fall, when they would be expected to be migrating or breeding. According to NatureServe, “the migration takes place in waves, with large numbers passing through an area on a few nights in spring and fall. Females precede males in spring migration. In the north, some may hibernate rather than migrate. Those migrating through the western U.S. in fall go south at least into Mexico.” In the U.S., adult females bear young in the northeastern, Midwestern and prairie states. Adult

males summer in the western states, generally in montane areas. The swift (about 21.3 km/h) direct flight makes them readily identifiable on the wing anywhere in the United States. They are quite active 40 minutes to one hour after sunset. They generally are solitary, roosting primarily in foliage in trees. Important predators include various birds (hawks and owls) and snakes.

REPRODUCTION: In North America, breeding occurs September-November, with delayed fertilization. Gestation lasts 90 days. The litter size is 1-4 (average 2), with one litter per year born between mid-May and early July in most areas. Hoary bats give birth to their young while hanging upside down in the leafy shelter of their daytime retreat. The newborn's skin is brown, darker on the body than on the wings, and lighter beneath. The throat and head are much paler and their feet are nearly black. Fine, silver-gray hair covers their dorsal area. The hoary bat's ears and eyes are both closed at birth and open on days three and twelve, respectively. The young cling to the mother in the day, while she sleeps, and hang on to a twig or a leaf while she hunts at night. Young are able to fly at 4 weeks. Probably becomes sexually mature in first summer. Female sometimes may carry young during feeding flight.

FOOD HABITS: Little is known of their food habits, but they appear to have a strong preference for moths. It is believed that the bat approaches a flying moth from the rear, engulfs the abdomen-thorax in its mouth and then bites down, allowing the sheared head and wings to fall to the ground. These bats are also known to eat beetles, grasshoppers, termites, dragonflies, and wasps with foraging behavior extremely flexible. According to Furlonger et al. (1986), L. cinereus was significantly more active over sites with cover than those without cover and was positively associated with edge situations. Barclay (1984), states that foraging activity appears to be variable with adults and juveniles foraging continuously for 1-4 hours beginning 30-45 minutes after sunset. The first foraging period may involve flights up to 40 km round trip, followed by several shorter flights ending about 1 hour before sunrise. According to Bishop (1947) and Orr (1950), in Shump and Shump (1982), "Even during times of presumed insect abundances, they have been seen attacking pipistrelles."

HABITAT: They prefer deciduous and coniferous forests and woodlands. A solitary bat, *L. cinereus* roosts primarily among foliage in trees, although unusual roosts include a woodpecker hole, the nest of a gray squirrel, under driftwood, and clinging to the sides of buildings. By day, hoary bats generally roost 3-5 meters above the ground in trees such as elm, black cherry, plum, box elder, and osage orange, where they are well hidden from above but visible from below.

ELEVATION: Based on unpublished records in the Heritage Data Management System (AGFD, accessed 2004), elevation ranges from 485 to 9,860 ft. (148 – 3,005 m).

PLANT COMMUNITY: Prefers deciduous and coniferous forests and woodlands, including juniper scrub, riparian forest, and desert habitats.

POPULATION TRENDS: Unknown.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: 2 (AZGFD, AWCS 2022)
None (AGFD SWAP 2012)
OTHER STATUS: LC (IUCN, Gonzalez t al. 2016)

MANAGEMENT FACTORS: Accidental impalement on barbed wire fences is a common occurrence.

PROTECTIVE MEASURES TAKEN: Unknown.

SUGGESTED PROJECTS: Restricting the use of fat-soluble pesticides in their grazing area and determining migration routes.

LAND MANAGEMENT/OWNERSHIP: BLM - Arizona Strip, Kingman, Havasu, Phoenix, and Tucson Field Offices; FWS – Bill Williams and Havasu National Wildlife Refuges; NPS - Grand Canyon and Saguaro National Parks, Lake Mead National Recreation Area, Chiricahua, Montezuma Castle, Pipe Springs, and Organ Pipe Cactus National Monuments; USFS - Coconino, Coronado, Apache-Sitgreaves, Kaibab, and Tonto National Forests; BIA - Hualapai and San Carlos Reservations; Hualapai Mountain County Park; AMNH Southwestern Research Station; TNC Hassayampa and Ramsey Canyon Preserves; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: The hoary bat has a relatively high incidence of rabies. In Indiana, 25% of the hoary bats collected from 1965 to 1968 were found to be rabid. They are extremely aggressive when captured in mist nests.

The Hoary bat is Hawaii's only native land mammal.

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