

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

Animal Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Nyctinomops femorosaccus* (Merriam, 1889)

COMMON NAME: Pocketed Free-tailed Bat

SYNONYMS: *Nyctinomus femorosaccus* Merriam, 1889; *Nyctinomops femorosacca*;
Tadarida femorosacca

FAMILY: Molossidae

AUTHOR, PLACE OF PUBLICATION: *Nyctinomus femorosaccus* Merriam, 1889. N. Amer. Fauna 2:23. *Nyctinomops femorosaccus* Miller, 1902. Proc. Acad. Nat. Sci. Phil., 54:393.

TYPE LOCALITY: USA, California, Riverside Co., Palm Springs.

TYPE SPECIMEN:

TAXONOMIC UNIQUENESS: The Western Hemisphere genera *Nyctinomops* contains 4 species, of which 2 are found ranging into North America. Both North American *Nyctinomops* species, *femorosaccus* (Pocketed Free-tailed Bat) and *macrotis* (Big Free-tailed Bat), occur in Arizona. The genus *Nyctinomops* was formerly included in *Tadarida* by Miller (1924), but apparently is distinct; see Hall (1981) and Legendre (1984). A key to the species was presented by Kumirai and Jones (1990). (Wilson and Reeder, 2005).

DESCRIPTION: A small to medium sized bat with deep vertical grooves along its upper lip; smaller in size than *N. macrotis*, another free-tailed bat occurring in Arizona. The total length ranges from 10.0-18.0 cm (3.94-??4.33 in); length of tail 3.4-4.4 cm (1.34-1.73 in); length of hind foot 10-12 mm, length of ear 22-24 mm, length of forearm 4.54-4.92 cm (??), weight 11.5-18.0 g (0.41-0.63 oz), with wingspread length of their long narrow wings 33.0-36.0 cm (12.99-14.17 in). The rostrum is elongate and slender, and the face has many stiff hairs with spoon like tips. A tragus is present and the ears are thick and leathery; horny escresences present on anterior border of ear. The ears are joined basally at the midline on the head, and extend noticeably beyond the nostrils when laid forward. Color is from brown to grayish-brown, occasionally reddish (possibly the result of bleaching prior to annual molt). The ventral surface of the body is slightly paler in color, sometimes with a buffy wash; basal half of its hairs whitish. Long hairs protrude from the toes. The pocket for which this bat is named, is an inconspicuous fold of membrane (membranous sac) near the knee. This sac is often difficult to locate, situated "from inner third of femur to middle of tibia, forming deep pocket between it and the interfemoral membrane" (Merriam, 1889; Kumirai and Jones 1990). Males have chest and throat glands. (Kumirai and Jones, 1990).

AIDS TO IDENTIFICATION: *Tadarida brasiliensis* ears do not join at the midline. All other free-tailed bats in the United States are larger than *N. femorosaccus* with adults having forearm measurements greater than 55mm. Distinguished from *N. macrotis* by shorter forearms, from *N. laticaudatus* in Mexico by longer ears (22-24 m), and from *N. aurispinosa* in Mexico by shorter length of skull (less than 20 mm) and shorter maxillary tooth row (less than 7.5 mm).

ILLUSTRATIONS:

B&W photos (Barbour and Davis 1969:212, 214)

B&W drawing (Hill 1982:243, Fig. 196)

B&W photos (Hoffmeister 1986:118-119, Figs. 5.54, 5.55)

B&W diagram (Ingles 1954:67)

Color photo (Wilson and Ruff, 1999)

Color photo (Harvey 1999)

Color photo (Bat Conservation International, <http://www.batcon.org/> 2011)

Color drawing and photo (Smithsonian Institution, <http://www.mnh.si.edu/mna/> accessed 1/24/2011)

TOTAL RANGE: Southern California to the Big Bend area of Texas south through Baja California and central-western Mexico to central Mexico. In the range reported by Wilson and Reeder (2005), Texas is not mentioned being part of their range. They report “Guerrero (Mexico) to New Mexico, Arizona, California (USA) and Baja California (Mexico).”

RANGE WITHIN ARIZONA: Found in Cochise (1 occurrence), Gila, Graham, La Paz, Maricopa, Mohave, Pima, Pinal, Yavapai, and Yuma counties.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Owls and snakes are documented predator of *N. femorosaccus*. During dry seasons, they utilize water sources with open access and a large available surface area from which to drink. These are audibly vocal bats. When they hit a net, they chirp loudly, and continue to emit squeaks and chirps while being handled. When in their day roost they are very noisy, emitting squeaks and chatter much of the time, which may draw attention to their hiding place. When they first take flight in the evening, they produce a shrill, sharp, high pitched chattering call, which may continue while the bats are in flight. As with other free-tailed bats, the flight is swift and lacks the fluttering characteristics of many other bats.

REPRODUCTION: In Tucson (Arizona), females were found to produce one young in late June and early July. The gestation period is about 70-90 days. When the young are born, they weigh 3-4 grams or about 22% of the adult weight. The young are flying mid to late August; flying young captured as early as early August. Lactation may continue until August or September. Forms small colonies, usually less than 100 individuals.

FOOD HABITS: Insectivorous. *N. femorosaccus* seems to prefer small moths, but eats a variety of insects including beetles, flying ants, flies, leafhoppers, crickets, stinkbugs,

lacewings, and grasshoppers. In the evening, they leave their daytime roosts to forage well after dark. Peak foraging activity occurs at two different times of the nighttime cycle, at the beginning of the night and again at the end. They pursue and catch their food on the wing.

HABITAT: *N. femorosaccus* reaches the northern limits of its distribution in desert scrub and arid lowland habitats in southern Arizona and southern California, roosting in crevices high on cliff faces in rugged canyons. Roosts in rock crevices and caves during the day, may roost in buildings or under roof tiles (NatureServe 2010). Their winter habits poorly known. Types of features where this bat has been netted or observed include large and small water tanks, large and small stock tanks, creek pools, along rivers and washes, ephemeral pools, mountain lake, water trough, gravel pit, irrigation ditch, cave and crevices, concrete house, and 3.5 mi tunnel (unpublished data, HDMS, AZ Game and Fish Department 2011).

ELEVATION: In Arizona, elevation ranges from 190 - 7,520 ft (58-2292 m). (unpublished data, HDMS, AZ Game and Fish Department 2011).

PLANT COMMUNITY: This bat inhabits a variety of plant associations including low deserts, desert scrub to pine-oak forests. In Arizona, generally inhabits desert scrub and arid lowlands. Types of plant associations where they have been netted or observed include: mesquite scrub-grassland; mesquite lined riverbed; fenced off spring fed pond in semi desert grassland with ash, sycamore, willows and oaks; lower Sonoran desert scrub with ironwood, palo verde and mixed cactus; riparian corridor within Sonoran desert; Amphibious test pond with nearby vegetation mainly creosote bush and palo verde, with scattered salt cedar; pools in dense riparian drainage with sycamore, walnut and mesquite; chaparral woodland; and ponderosa pine forest (unpublished data, HDMS, AZ Game and Fish Department 2011).

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

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

MANAGEMENT FACTORS: Potential threats include pesticide use, and human disturbance and destruction of roosting sites.

PROTECTIVE MEASURES ALREADY TAKEN: No occurrences appropriately protected and managed globally.

SUGGESTED PROJECTS: Search suitable habitat for new populations, and periodically census known populations. Information needed on roosting ecology, seasonal movements, breeding colony distribution, and winter distribution.

LAND MANAGEMENT/OWNERSHIP: BIA - San Carlos Apache Tribe (Reservation) and Tohono O'odham Nation; BLM – Lake Havasu and Kingman Field Offices; BOR – Phoenix Office; DOD - Yuma Proving Ground and National Guard Military Reservation; FWS - Buenos Aires, Havasu, and Kofa National Wildlife Refuges; NPS – Montezuma Well and Organ Pipe Cactus National Monuments, and Saguaro National Park; USFS - Coronado and Tonto National Forests; State Land Department; Alamo Lake and Boyce Thompson Southwestern Arboretum State Parks; Hualapai Mountain County Park; AMNH Southwestern Research Station; TNC Hassayampa and San Pedro River Preserves; Private.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

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