

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract

Element Code: AMAFD01031
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Perognathus flavus goodpasteri*
COMMON NAME: Springerville Pocket Mouse
SYNONYMS: None
OTHER COMMON NAMES: Springerville Silky Pocket Mouse
FAMILY: Heteromyidae

AUTHOR, PLACE OF PUBLICATION: Hoffmeister. 1956. Proc. Biol. Soc. Washington, 69:55 195.

TYPE LOCALITY: 2 3/4 miles northwest of Springerville, Apache County, Arizona.

TYPE SPECIMEN: Adult male, skin and skull, no. 6312, Univ. Illinois Mus. Nat. Hist.; collected by Charles A. McLaughlin, August 16, 1953, original no. 476.

TAXONOMIC UNIQUENESS: *Perognathus flavus* is 1 of 9 North American (NA) species in genus *Perognathus*, and 1 of 5 in Arizona. The subspecies *P. f. goodpasteri* is 1 of 14 subspecies in NA, and 1 of 5 in Arizona. The subspecies listed by Hall (1981) were reviewed by Williams et al. (1993). Wilson (1973) considered *merriami* conspecific, but Anderson (1972), and Lee and Engstrom (1991) documented species distinctness of *merriami* from *flavus*. This taxonomy is reflected in Wilson and Reeder's 2005 Third Edition of Mammal Species of the World. The species and subsequent subspecies were reviewed by Best and Skupski in 1994. (Wilson and Reeder, 2005).

DESCRIPTION: "A race of *Perognathus flavus* characterized by upperparts especially dark in color; sides of face and body bright buffy and not overlaid with black; size small. Color of dorsum is light ochraceous-buff, heavily overlaid with black; sides of body and nearly all of cheeks near light ochraceous-buff not overlaid with black; nose only lightly overlaid with black; underparts slightly washed with pinkish buff; postauricular patches conspicuous and light ochraceous-buff or pinkish buff. Size small in both external and cranial features. Measurements (based on 3 adult specimens north of Springerville, AZ) include: total length 107-114 mm; tail 48-54 mm; hind foot 17 mm." (Hoffmeister 1956). Per Hoffmeister (1986), "A large subspecies of *P. flavus* for Arizona with large skull both in length and breadth; hind feet not especially long; color of dorsum dark; underparts lightly washed with buff."

Species: Total length is 10-13.0 cm (3.94-5.12 in); head and body 5.1-6.4 cm (2.0-2.5 in); tail 4.4-6.0 cm (1.73-2.36 in); hind foot 16-17 mm; weight 5-10 g (0.176-0.353 oz). Fur soft; upperparts pale yellow, faintly to heavily sprinkled with black hairs; a clear yellow patch behind each ear; belly white. Cheek pouches lined with fur. Tail usually slightly shorter than head and body, not crested; buffy or dusky dorsally, whitish ventrally. Skull has 20 teeth. There are 6 mammae. (Burt and Grossenheider 1976, Whitaker, Jr. 1996, Wilson and Ruff 1999). Juvenile dull gray.

AIDS TO IDENTIFICATION: Darker than *P. f. hopiensis* and *P. f. flavus*. Most similar to *P. f. fuliginosus* (whose closest locality is about 120 miles), but *goodpasteri* has more extensive buffy color on the cheeks, in the scapular region and above lateral line, and underparts less extensively washed with pinkish buff. Shorter skull.

ILLUSTRATIONS:

Black and White photo figure 5.138 (Hoffmeister 1986: 272).

Color photo of *P. flavus* (Whitaker, Jr. 1996: Plate 67)

Color photo of *P. flavus* (Wilson and Ruff 1999)

TOTAL RANGE: Full species found from southeast Wyoming and western Nebraska south through Oklahoma and Texas on the east, and Utah and Arizona on the west, south to central Mexico (Jalisco and Pueblo). Subspecies endemic to Arizona only.

RANGE WITHIN ARIZONA: Grasslands of eastern end of Mogollon Plateau near Springerville, Snowflake, south of Holbrook, and on the south side of plateau along Nash Creek, south of Fort Apache.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: In a study conducted by Wolff (1973), looking at how *P. flavus* handle low temperatures, he concluded that they go into torpor for up to 48 hours, remain dormant but do not hibernate. When it becomes bitterly cold, they can remain dormant. In addition, they do store some small food caches below ground. They can forage above ground when it is as cold as -10 C, which indicates that these small animals are probably able to withstand cold better than other small, graminivorous mammals (Hoffmeister 1986). This mouse begins foraging at twilight and is active throughout the night to near daybreak, and remains in underground burrows during the day. Sign includes tiny burrow openings as wide as a finger, at the base of plants or in vertical banks. Predators include: great horned owls, shrikes, foxes, snakes, and numerous other carnivorous animals.

Basically a solitary and intraspecifically aggressive mouse, with a home range generally less than 0.3 ha, and home range length averaging around 60 m. Most individuals live only a few months; few live more than 20 months; a very few may live as long as three years. (Best and

Skupski 1994 in NatureServe 2001). In Texas, the age of *P. flavus* attained in the wild, is probably not more than 2 or 3 years (Texas Parks and Wildlife).

The Silky Pocket Mouse enters its small burrow through a mound of dirt. The burrow is usually not more than 4 inches (100 mm) deep, and often has several entrances from different levels on the mound. Inside the mound there is a central chamber from which a single tunnel goes down into a second chamber, larger than the first. The nest is about 2 1/2 inches (65 mm) in diameter, with one opening near the top of the mound. Tunnels radiate from the nest chamber and often contain small caches of seeds. Blind passages near the surface enable the mouse to break through to escape snakes and other underground predators. (Whitaker, Jr. 1996).

REPRODUCTION: Per Smith and Jorgensen (1975, in Hoffmeister 1986), the species appears to have 1 litter per year, with a mean litter size of 4, range 1-6. Gestation period is 22-23 days, with young weaned at 30 days. In New Mexico, breeding activity for *P. flavus* peaks April-July and September-October (Whitaker, Jr. 1996). In Utah, breeding occurs throughout the late spring and summer, with most females giving birth to 1 litter of approximately 4 young (Utah Div. of Wildl. Res.).

FOOD HABITS: The species, *P. flavus*, feeds almost entirely on seeds of grasses, forbs, and woody plants. It stores food in underground burrows. Like many other pocket mice, it drinks no water, metabolizing it from food. They also eat other plant material including, the small seeds of thistle and millet, as well as several grasses, wild sunflowers, amaranth pigweed, and opuntia, along with very few invertebrates.

HABITAT: Found in the plains-like short grassland which is interspersed with volcanic rock just to the north of Springerville, Arizona (Hoffmeister 1956). Near Springerville, mice were present in areas of shortgrass, boulders, and tumbleweeds (Hoffmeister 1986). The presence of grassy cover may be the most important prerequisite in habitat selection for these mice. For the species, habitat consists of prairies of sandy, gravelly, or rocky areas with sparse vegetation of various grasses and forbs (Whitaker, Jr. 1996). It is not restricted to a specific plant association, but rather seems to have broad tolerance for various types of vegetation as long as the understory is sparse.

ELEVATION: Elevation ranges from 5,240 - 7,020 ft. (1598 - 2141 m).

PLANT COMMUNITY: In the north, Wolff (1973) found *P. flavus* inhabited rabbitbrush (*Chrysothamnus*), dropseed (*Sporobolus*), four-winged saltbush (*Atriplex canescens*), long-tailed mutton grass (*Poa longiligula*), and juniper (*Juniperus*).

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 1996)
[C2 USDI, FWS 1985]
STATE STATUS: 2 (AZGFD, AWCS 2022)
[1B (AGFD SWAP 2012)]
OTHER STATUS: Forest Service Sensitive (USDA, FS Region
3, 1999, 2000, 2007, 2013)

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Conduct surveys to document population status, distribution, trends, and threats. Determine nature and severity of any threats to their habitat.

LAND MANAGEMENT/OWNERSHIP: State Land Department, BIA, Private.

SOURCES OF FURTHER INFORMATION**REFERENCES:**

- Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan 2012-2022. Phoenix, AZ.
- Arizona Game and Fish Department. 2022. Arizona Wildlife Conservation Strategy: 2022-2032. Arizona Game and Fish Department, Phoenix, Arizona. 378 pages.
- Best, T.L., and M.P. Skupski. 1994. *Perognathus flavus*. Mammalian Species, No. 471:1-10, 3 figs. By The American Society of Mammalogists.
- Biota Information System of New Mexico. 2000. BISON Species Account 050470: Silky Pocket Mouse, *Perognathus flavus*. New Mexico Game & Fish, http://www.fw.vt.edu/fishex/nmex_main/species/050470.htm.
- Burt, W.H., and R.P. Grossenheider. 1976. Peterson Field Guides: A Field Guide to The Mammals. Houghton Mifflin Company, Boston. pp. 134-135.
- Cockrum, E.L. 1960. The Recent Mammals of Arizona: their taxonomy and distribution. The University of Arizona Press, Tucson. pp. 123-124.
- Hafner, D.J., E. Yensen, and G.L. Kirkland, Jr. 1998. North American Rodents. Status Survey and Conservation Action Plan. IUCN/SSC Rodent Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.
- Hall, E.R. 1981. The Mammals of North America. Second Edition. John Wiley & Sons, New York. pp. 533-535.
- Hoffmeister, D.F. 1956. The Silky Pocket Mouse, *Perognathus flavus*, in Arizona, with a description of a new subspecies. Proc. Biol. Soc. of Wash., Vol 69, pp. 55-58.
- Hoffmeister, D.F. 1986. The Mammals of Arizona. University of Arizona Press, Tucson. pp. 271-273.

- NatureServe. 2001. Comprehensive Report Series: *Perognathus flavus*.
<https://explorer.natureserve.org/>
- Texas Parks and Wildlife. 2001. The Mammals of Texas - Online Edition: Silky Pocket Mouse (*Perognathus flavus*). <http://www.nrsl.ttu.edu/tmot1/perflavu.htm>.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 2000. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 2007. Regional Forester's List of Sensitive Animals.
- USDA, Forest Service Region 3. 2013. Regional Forester's List of Sensitive Animals.
- USDI, Fish and Wildlife Service. 1985. Endangered and Threatened Wildlife and Plants; Review of Vertebrate Wildlife; Notice of Review. Federal Register 50(181):37966.
- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40):7596-7613.
- Utah Division of Wildlife Resources. 2001. Silky Pocket Mouse (*Perognathus flavus*). <http://www.rsgis.usu.edu/rsgis2/Search/Display.asp?F1Nm=peroflav>.
- Whitaker, Jr., J.O. 1996. National Audubon Society: Field Guide to North American Mammals. Alfred A. Knopf, New York. pp. 529-530.
- Wilson, D. E. and D. M. Reeder, eds. 2005. Mammal species of the World: A taxonomic and Geographic Reference, Third edition, Volume 1. The Johns Hopkins University Press, Baltimore, Maryland. 857.
- Wilson, D.E. and S. Ruff. 1999. The Smithsonian Book of North American Mammals. Smithsonian Institution Press, Washington. Pp:129-130.

MAJOR KNOWLEDGEABLE INDIVIDUALS:**ADDITIONAL INFORMATION:**

May integrate with *P. f. fuliginosus*

Revised: 2001-05-11 (SMS)
 2002-11-08 (RHB)
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