

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Animal Abstract

Element Code: AMABA01240

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sorex arizonae*

COMMON NAME: Arizona Shrew

SYNONYMS: *Sorex vagrans* (in part)

FAMILY: Soricidae

AUTHOR, PLACE OF PUBLICATION: Diersing, V.E. and D.F. Hoffmeister. 1977. Jour. Mammal. 58:321-333.

TYPE LOCALITY: Upper end of Miller Canyon, Huachuca Mts., Cochise County, Arizona.

TYPE SPECIMEN: Holotype - Female, skin and skull, no. 3809, Museum of Natural History, University of Illinois, upper end of Miller Canyon, 15 mi S (= 10 mi S, 4 3/4 mi E) Fort Huachuca (near spring at lower edge of Douglas fir zone, Huachuca Mts.), Cochise County, Arizona; obtained by Woodrow Goodpaster, 15 August 1950, original no. 4743.

TAXONOMIC UNIQUENESS: Monotypic species. Possibly closely related to *S. oreopolus emarginatus* or *S. merriami*.

DESCRIPTION: Small: body length 50-73 mm; total length 93-114 mm. Weights reported at 1.9 and 2.9 gm. Five toes on each foot; hind foot 11-13 mm. Color unusually brownish-gray above and slightly lighter below. Snout long and pointed; ears (.5 mm) and eyes small. **Tail relatively long**, 37-46 mm, greater than half (65-95 percent) the body length; indistinctly bicolored. **Five upper unicuspid, without pigmented ridge; tines always present on medial sides of first upper incisors.**

AIDS TO IDENTIFICATION: Five species of *Sorex* occur in Arizona.

Identification usually requires analysis of cranial and dentition characteristics. *S. arizonae* can be especially difficult to distinguish from *S. monticolus* and *S. merriami*. The only *Sorex* which overlaps distribution with *arizonae* is *S. monticolus*. In addition to several other cranial features, *S. arizonae* has a broader rostrum than *monticolus*. See Diersing and Hoffmeister (1977) and Hoffmeister (1986) for detailed discussion of identification techniques.

S. arizonae is sympatric with *Notiosorex*. All *Sorex* can be distinguished from *Notiosorex* by the presence of a longer tail (33 mm or more; *Notiosorex* is less than 30 mm); five upper unicuspids (*Notiosorex* has three); reddish cusps rather than pale orangeish or white cusps on

unworn teeth; ears small rather than conspicuous; and pelage color more brownish than grayish.

ILLUSTRATIONS: Black and white illustration of unicuspid (Diersing and Hoffmeister 1977: 322-323)

TOTAL RANGE: Mountains of southeastern Arizona (Huachuca, Santa Rita and Chiricahua); the Animas Mountains, Hidalgo County, New Mexico; and in Chihuahua, Mexico, 60 km by road west of Tomochoic.

RANGE WITHIN ARIZONA: Huachuca, Santa Rita and Chiricahua mountains of southeastern Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Because of small size often mistaken for mice which are rodents. They are insectivores. Teeth do not grow continuously. Pointed incisors are used like forceps to pick up prey. Pointed cheek-teeth pierce and mince food rather than grind it. They feed mainly on insects, but anything they can catch is fair game. They use echolocation to help detect prey. High clicks are also used to confuse prey allowing for easier capture. Larger prey such as mice may be subdued by the mildly venomous saliva. Except for owls, most predators find shrews undesirable as prey because their musk glands produce an offensive odor.

The shrew has a high metabolic rate, to avoid starvation, daily food intake must be one-to-two times its own body weight. This is the reason shrews are active year round. The fast and nonstop pace causes shrews to seldom live for more than a year (Van Pelt 1996).

REPRODUCTION: Females can breed within three months of birth. Gestation lasts for 20-25 days. 5-7 young are born naked and helpless. Young weaned at 22-25 days of birth and taught to hunt (Van Pelt 1996).

FOOD HABITS: Arthropods, earthworms, slugs etc.

HABITAT: Not clearly known. Usually occurs within mountain canyons in riparian zones with heavy ground cover such as logs, rocks or dense vegetation. Usually in close proximity to surface water. Hoffmeister (1986) reports an animal taken in the Huachuca Mountains in a dense stand of *Equisetum* with thick duff accumulation. Simons et al. (1990), working in the Huachuca Mountains, captured four animals, all in riparian habitat within 10 meters of water.

ELEVATION: 5,168 - 9,187 feet (1,575 - 2,800 m).

PLANT COMMUNITY: Interior Riparian Forest. Includes oak, walnut, maple, sycamore, Douglas fir, quaking aspen and various pines.

POPULATION TRENDS:

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 1996)
[C2 USDI, FWS 1991]

STATE STATUS: 2 (AZGFD, AWCS 2022)
[1B (AGFD SWAP 2012)]
[WSC (AGFD, WSCA 1996 in prep)]
[State Candidate AGFD, TNW 1988]

OTHER STATUS: Forest Service Sensitive (USDA, FS Region
3 1999, 2013
[Forest Service Sensitive USDA, FS Region
3 1988]
P, Determined Endangered in Mexico
(NORMA Oficial Mexicana NOM-
059-SEMARNAT-2010)

MANAGEMENT FACTORS: Maintain mature vegetation in the canyons of mountains of southeast Arizona. Restore lost and degraded habitat. Educate public on importance of the Arizona shrew in the evergreen oak-pine forest ecosystem (Van Pelt 1996).

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Studies on distribution, habitat, population and life history.

LAND MANAGEMENT/OWNERSHIP: DOD Fort Huachuca Military Reservation; USFS Coronado NF.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

- Arizona Game and Fish Department. 1988. Threatened native wildlife in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 32pp.
- Arizona Game and Fish Department. 1996, in prep. Wildlife of special concern in Arizona. Arizona Game and Fish Department Publication. Phoenix, Arizona. 32 pages.
- 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.

- Caire, W. and J.E. Vaughan. 1978. First record of *Sorex arizonae* (Insectivora: Soricidae) from Mexico. *Southwestern Naturalist* 23::532-533.
- Conway, M.C. and C.G. Schmitt. 1978. Record of the Arizona Shrew (*Sorex arizonae*) from New Mexico. *J. Mamm.* 59:631.
- Diersing, V.E. and D.F. Hoffmeister. 1977. Review of the Shrews *Sorex merriami* and a description of a new species of the subgenus *Sorex*. *J. Mamm.* 58:321-333.
- Hall, E.R. 1981. The mammals of North America. Volume II, second edition. John Wiley & Sons, New York. Addenda, p. 1177.
- Hoffmeister, D.F. 1986. Mammals of Arizona. University of Arizona Press, Tucson. pp. 44-45.
- Secretaría de Medio Ambiente y Recursos Naturales. 2010. NORMA Oficial Mexicana NOM-059-SEMARNAT-2010, Protección ambiental-Especies nativas de México de flora y fauna silvestres-Categorías de riesgo y especificaciones para su inclusión, exclusión o cambio-Lista de especies en riesgo.
- Simons, L.H., R.C. Szaro, and S.C. Belfit. 1990. Distribution of *Notiosorex crawfordi* and *Sorex arizonae* along an elevational gradient. *J. Mamm.* 71:634-640.
- USDA, Forest Service Region 3. 1988. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.
- USDA, Forest Service Region 3. 2013. Regional Forester's Sensitive Species List.
- USDI, Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants; Animal Candidate Review for Listing as Endangered or Threatened Species, Proposed Rule. *Federal Register* 56(225):58809.
- 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. *Federal Register* 61(40):7596-7613.
- Van Pelt, William E. 1996. "Nongame Field Notes: Arizona Shrew." *Arizona Wildlife Views*. AGFD. pp 15.
- Whitaker, J.O. 1980. The Audubon Society field guide to North American mammals. A.A. Knopf. New York. p. 290.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

- E.L. Cockrum - University of Arizona, Tucson.
 D.F. Hoffmeister - University of Illinois, Urbana.
 Y. Petryszin - University of Arizona, Tucson.
 L. Simons - University of California, Davis.

ADDITIONAL INFORMATION:

Revised: 1991-12-31 (DBI)
 1991-05-05 (BKP)
 1997-03-04 (SMS)
 1999-06-21(DAS)
 2023-03-13 (MBL)

To the user of this abstract: you may use the entire abstract or any part of it. We do request, however, that if you make use of this abstract in plans, reports, publications, etc. that you credit the Arizona Game and Fish Department. Please use the following citation:

Arizona Game and Fish Department. 19XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.