

California Wildlife Habitat Relationships System
California Department of Fish and Wildlife
California Interagency Wildlife Task Group

SOUTHERN GRASSHOPPER MOUSE

Onychomys torridus

Family: MURIDAE
M122

Order: RODENTIA

Class: MAMMALIA

Written by: P. Brylski
Reviewed by: H. Shellhammer
Edited by: R. Duke

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Common in arid desert habitats of the Mojave Desert and southern Central Valley of California. Alkali desert scrub and desert scrub habitats are preferred, with somewhat lower densities expected in other desert habitats, including succulent shrub, wash, and riparian areas. Also occurs in coastal scrub, mixed chaparral, sagebrush, low sage, and bitterbrush habitats. Uncommon in valley foothill and montane riparian, and in a variety of other habitats.

SPECIFIC HABITAT REQUIREMENTS

Feeding: Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects (Horner et al. 1964). Sperry (1929) found the diet composed of 56% grasshoppers, crickets, caterpillars, and moths, and 21% ground and darkling beetles. Less than 5% was seeds. Vertebrate prey include salamanders, lizards, frogs, and small mammals (McCarty 1975). Both vertebrates and seeds are minor components of the diet (Bailey and Sperry 1929, Horner et al. 1964).

Cover: Low to moderate shrub cover is preferred.

Reproduction: Nests are constructed in burrows abandoned by other rodents (Bailey and Sperry 1929), or may be excavated.

Water: Drinks water in captivity, but probably obtains moisture from food under natural conditions. No specialized physiological adaptations to arid conditions

Pattern: Frequents desert areas, especially scrub habitats with friable soils for digging.

SPECIES LIFE HISTORY

Activity Patterns: Active year-round. Nocturnal.

Seasonal Movements/Migration: None.

Home Range: Occurs in low density. Home ranges of grasshopper mice in New Mexico were 3.2 ha (7.8 ac) for males, and 2.4 ha (5.9 ac) for females (Blair 1943). In southeast Arizona, the average home range of adult mice was 11.45 ha (28 acres) (Chew and Chew 1970). In Nevada desert scrub, density averaged 1.83 mice/ha (0.74 mice/ac).

Territory: Territory size may equal home range (McCarty 1975). May occur in male-female pairs, widely separated from neighbors, and is highly territorial (Horner and Taylor 1968). High-pitched call may serve as territorial advertisement.

Reproduction: Peak breeding is from May to July, but may start in January under ideal

conditions (Pinter 1970), and may continue year-round. Gestation is 27-30 days. Litter size averages 4 young (range 2-6). As many as 6 litters per yr in wild. Both males and females care for the young (Horner 1961). Weaning in the laboratory may occur in 20 days (Horner and Taylor 1968). Young females apparently have significantly greater reproductive potential than old females (McCarty 1975). Males store sperm at 40 days of age. Females can become receptive at 6 wk of age.

Niche: The southern grasshopper mouse overlaps greatly in niche characteristics with the northern grasshopper mouse, though it seems to prey more heavily on arthropods. In potential areas of overlap with *O. leucogaster* (in southern Mono Co.), *O. torridus* may occupy areas of lower elevation (McCarty 1975). No other likely competitors. Predators include raptors, snakes, and predatory mammals. Considered beneficial by farmers and others because eats potentially harmful insects.

REFERENCES

- Bailey, V., and C. C. Sperry. 1929. Life history and habits of the grasshopper mice, genus *Onychomys*. U.S. Dep. Agric. Tech. Bull. No. 145. 19pp.
- Blair, W. F. 1943. Populations of the deer mouse and associated small mammals in the mesquite associations of southern New Mexico. *Contrib. Lab. Vertebr. Biol. Univ. Mich.* No. 21. 40pp.
- Chew, R. M., and A. E. Chew. 1970. Energy relationships of the mammals of a desert shrub (*Larrea tridentata*) community. *Ecol. Mongr.* 40:1-21.
- Horner, B. E. 1961. Paternal care of the young and convulsive seizures in the grasshopper mouse. *Amer. Zool.* 1:360.
- Horner, B. E., and J. M. Taylor. 1968. Growth and reproductive behavior in the southern grasshopper mouse. *J. Mammal.* 49:644-660.
- Horner, B. E., J. M. Taylor, and H. A. Padykula. 1964. Food habits and gastric morphology of the grasshopper mouse. *J. Mammal.* 45:513-535.
- McCarty, R. 1975. *Onychomys torridus*. *Mammal. Species No.* 59. 5pp.
- Pinter, A. J. 1970. Reproduction and growth of two species of grasshopper mice (*Onychomys*) in the laboratory. *J. Mammal.* 51:236-243.
- Sperry, C. C. 1929. Laboratory studies of the food of *Onychomys*. U.S. Dep. Agric. Tech. Bull. 145:15-19,131.
- Sheppe, W. A. 1963. Population structure of the deer mouse, *Peromyscus*, in the Pacific Northwest. *J. Mammal.* 44:180-185.
- Storer, T. I., F. C. Evans, and F. G. Palmer. 1944. Some rodent populations in the Sierra Nevada of California. *Ecol. Monogr.* 14:166-192.
- Svihla, A. 1932. A comparative life history study of the mice of the genus *Peromyscus*. *Univ. Mich. Mus. Zool., Misc. Publ. No.* 24. 39pp.
- Verner, J., and A. S. Boss. 1980. California wildlife and their habitats: Western Sierra Nevada. USDA, For. Serv. Gen. Tech. Rep. PSW-37. 439pp.