

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

MOHAVE GROUND SQUIRREL
Family: SCIURIDAE
M073

Xerospermophilus mohavensis
Order: RODENTIA

Class: MAMMALIA

Written by: V. Johnson
Reviewed by: H. Shellhammer
Edited by: J. Harris, S. Granholm
Updated by: CWHR Staff Aug 2019

DISTRIBUTION, ABUNDANCE, AND SEASONALITY

Restricted to the Mojave Desert in San Bernardino, Los Angeles, Kern, and Inyo counties. This species is rare throughout its range, populations in the western Antelope Valley (west of SR-14) appear to be extirpated. Optimal habitats are open desert scrub, alkali desert scrub, Joshua tree, and annual grasslands. Has been found from 505 - 1,525 m. (1,800 - 5,000 ft.) elevation. Previously described as *Spermophilus mohavensis*, the Mohave ground squirrel underwent taxonomic revision which resulted in splitting the genera (Helgen et al. 2009).

SPECIFIC HABITAT REQUIREMENTS

Feeding: Eats a wide variety of green vegetation, seeds, and fruits (Burt 1936, Recht 1977, Zembal and Gall 1980). Forages on the ground or in shrubs and Joshua trees. Fruiting Joshua trees may attract concentrations of ground squirrels.

Cover: Uses burrows at the base of shrubs for cover.

Reproduction: Nests are built in the burrow system, which may be as long as 6 m. (20 ft.), and as deep as 1 m. (3.3 ft.) (Burt 1936, Bartholomew and Hudson 1961).

Water: Gains water from diet and drinks free water if available.

Pattern: Prefers sandy to gravelly soils; avoids rocky areas. Populations are reduced by urban development, off-road vehicle use, and agriculture.

SPECIES LIFE HISTORY

Activity Patterns: This diurnal ground squirrel is active above ground in the spring and early summer. Emergence dates vary from March to June, depending on elevation. Squirrels begin aestivation in July or August. Stored body fat is the principal source of energy for aestivation, although food is stored, and captive individuals eat during intermittent periods of wakefulness (Bartholomew and Hudson 1960,1961).

Seasonal Movements/Migration: None.

Home Range: Home range can vary both by time of year and seasonal activity (Harris and Leitner 2004). Ranges have an average size of 0.37 ha (0.91 ac), with a variation of 0.10 to 0.83 ha (0.25 to 2 ac). Home range boundaries are at the outer extent of the burrow system (Recht 1977). Burt (1936) estimated density at 15-20 animals per 2.6 km² (1 mi²).

Territory: Defends most of the home range, with little overlap between home ranges (Recht 1977).

Reproduction: Young are born from March to May with a peak in April. Litter size is about 6 (Burt 1936, Recht 1977).

Niche: Occurs sympatrically with the *Xerospermophilus tereticaudus*. The Mohave ground squirrel is competitively superior to the round-tailed antelope squirrel, but it lacks adaptations that allow the antelope squirrel to continue activity at higher temperatures (Bartholomew and Hudson 1961). Predators include badgers, foxes, coyotes, hawks, and eagles (Whitaker 1980).

REFERENCES

- Bartholomew, G. A., and T. J. Cade. 1957. Temperature regulation, hibernation, and estivation in the little pocket mouse, *Perognathus longimembris*. *J. Mammal.* 38:60-72.
- Bartholomew, G. A., and J. W. Hudson. 1960. Mammalian hibernation: aestivation in the Mohave ground squirrel, *Citellus mohavensis*. *Mus. Comp. Zool. Bull.* 124:193-208.
- Burt, W. H. 1936. Notes on the habits of the Mohave ground squirrel. *J. Mammal.* 17:221-224.
- California Department of Fish and Game. 1980a. At the crossroads: a report on the status of California's endangered and rare fish and wildlife. Sacramento. 149pp.
- California Department of Fish and Wildlife. 2019. A Conservation Strategy for the MOHAVE GROUND SQUIRREL *Xerospermophilus mohavensis*. <http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=171301&inline>.
- Grinnell, J., and J. Dixon. 1919. Natural history of the ground squirrels of California. *Calif. State Comm. Horticulture Bull.* 7:597-708.
- Harris, J.H. and P. Leitner. 2004. Home-range size and use of space by adult Mohave ground squirrel, *Spermophilus mohavensis*. *Journal of Mammalogy* 85(3):517-523
- Helgen, K.M., F. Cole, L. Helgen, and D. Wilson. 2009. Generic revision in the Holarctic ground squirrel genus *Spermophilus*. *Journal of Mammalogy* 90(2):270–305. <http://www.webcitation.org/62dP5i1JK>.
- Recht, M. A. 1977. The biology of the Mohave ground squirrel, *Spermophilus mohavensis*: home range, daily activity, foraging, weight gain and thermoregulatory behavior. Ph.D. Thesis. Univ. California, Los Angeles. 117pp.
- Wessman, E. V. 1977. The distribution and habitat preferences of the Mohave ground squirrel in the southeastern portion of its range. *Calif. Dep. Fish and Game Rep., Contract No. S-1559*, Sacramento. 15pp.
- Whitaker, J. O., Jr. 1980. *The Audubon Society field guide to North American mammals*. A. Knopf, New York. 745pp.
- Zemal, R., and C. Gall. 1980. Observations on Mohave ground squirrel, *Spermophilus mohavensis*, in Inyo Co., California. *J. Mammal.* 61:347-350.

M073

Life history accounts for species in the California Wildlife Habitat Relationships (CWHR) System were originally published in: Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1988-1990. *California's Wildlife*. Vol. I-III. California Depart. of Fish and Game, Sacramento, California. Updates are noted in accounts that have been added or edited since original publication.