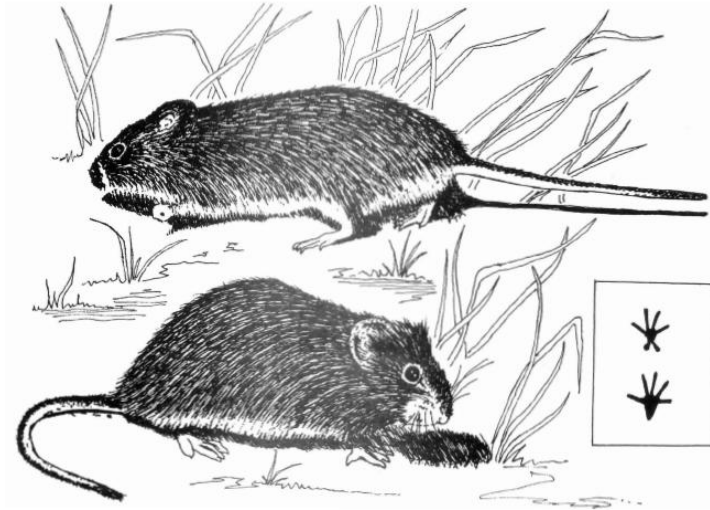


BIOLOGY, LEGAL STATUS, CONTROL MATERIALS, AND DIRECTIONS FOR USE

Cotton Rat

Sigmodon hispidus

Family: Cricetidae

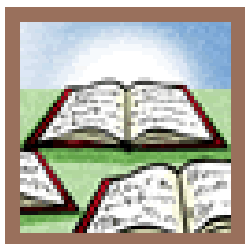


Introduction: The Cotton Rat (*Sigmodon hispidus*), is found in the southeastern United States (and Central and South America), and has a bigger body than the deer mouse. The cotton rat prefers overgrown areas with shrubs and tall grasses. The cotton rat is named for its nest building from cotton type material.



Identification: The cotton rat is a medium size rodent. The tail is scaly, sparsely haired and shorter than the head and body. Cotton rats have relatively large eyes. The ears are large and covered in fur. They have four toes and a small thumb on their front feet and five toes on each hind foot. Their fur has a rough appearance of black, gray fur. Size is about 10 inches. The cotton rat may be distinguished from the Norway rat by its smaller size, shorter tail, and longer grizzled fur. Stem and grass cuttings 2 or 3 inches long, piled at various locations along 3 to 5 inch wide

runways are evidence of cotton rats. Pale greenish or yellow droppings, about 3/8 inch in length and 3/16 inch in diameter, may also be present along the runways.



Legal Status: Cotton rats are classified as nongame mammals by the California

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Fish and game Code. Nongame mammals which are found to be injuring growing crops or other property may be taken at any time or in any manner by the owner or tenant of the premises. They may also be taken by officers or employees of the department of Food and Agriculture or by federal or county officers or employees when acting in their official capacities pursuant to the provisions of the Food and Agricultural Code pertaining to pests.



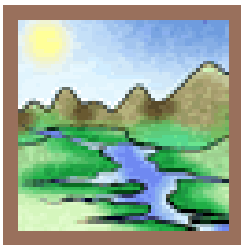
Damage: In California, damage is generally limited to sugar beets and citrus. Elsewhere, damage to cotton, grasses and alfalfa, grains, vegetable and fruit crops, squash, sugar cane, corn, sweet potatoes and melons have been reported. Cotton rat burrows may cause leakage or breaks in canal banks. Cotton rats eat eggs of quail and other ground nesting birds, and they compete with quail for food.



Range: Mexico and southern United States; in California the cotton rat is established in irrigated portions of the Imperial Valley and along the Colorado River.

[Arizona Cotton Rat](#)

[Hispid Cotton Rat](#)



Habitat: Cotton rats are dependent upon dense vegetation for both food and protection from predators. Cotton rats occupy grassy fields and meadows, marshy areas, cactus patches, wastelands, and weedy roadsides and ditch banks. Salt marshes and mixed forests are also reported habitats in southeastern states.



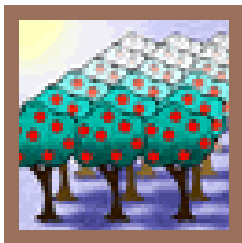
Biology: Cotton rats may be detected by their well-defined runways and connecting burrows. Runways are about three inches across and burrows are somewhat larger. Runways in active areas often have small piles of freshly clipped vegetation, and scattered or small piles of 1/2 inch long droppings.

Their nests are built in shallow burrows under rocks or logs or occasionally in abandoned dens of skunks and ground squirrels. Nest material includes dry grass, fibers stripped from stems of larger plants or other suitable material.

Cotton rats are good swimmers. The home range is estimated to be 1/4 to 3/4 acre for females and 1 to 1-1/4 acre for males. Cotton rats are very excitable and pugnacious and hardly an adult animal lacks battle scars.

Cotton rats are active year-round and do not store food for the winter. Although primarily nocturnal, they are often active in the day. Cotton rats are primarily vegetarians feeding on stems, leaves, roots, and seeds, but insects and animal flesh are readily eaten. Carrion is eaten and cotton rats caught in traps have been partially consumed by other rats overnight.

The reproductive rate of cotton rats is exceedingly high - they are usually the most abundant mammal wherever they occur. Unmated females come into heat every 7 to 9 days and may mate within a few hours after giving birth to a litter. The gestation period is 27 days and several litters are produced annually (average 5.6). The young are weaned at 10 to 15 days but they have been known to survive without their mother after 5 days of age. Most young breed for the first time at 2 to 3 months of age although some breed at 40 days. Several generations may be living in the same nest at one time. The average life span of a cotton rat is six months and they are considered full grown at the age of five months. Cotton rats are prey for coyotes, foxes, weasels, skunks, hawks, and owls.



Damage Prevention and Control Methods

Exclusion: If the area is small or the crop to be protected is of high value, a sheet-metal barrier 18 inches tall may be used to exclude cotton rats. Bury the barrier about 6 inches to prevent cotton rats from burrowing under it.

Habitat Modification: Habitat modification is best used as a preventive measure, since this control method will have little effect on damage once a population reaches its peak. Remove dense cover by burning, mowing, plowing, or the use of herbicides, where permissible, to reduce habitat and prevent large population increases.

Frightening: This is not a practical method for cotton rat control.

Fumigants: Fumigants are not very practical since cotton rats use their burrows and tunnels infrequently.

Repellents: None are registered for control.

Toxic Bait: None registered.

Trapping: Rat-sized snap traps are effective for catching a number of different small rodents including cotton rats. The traps should be baited with a mixture of peanut butter and oatmeal or a piece of fresh carrot or sweet potato. The trap should be set in the runway at a right angle to the direction of travel. Live traps are not recommended. Trapping cotton rats requires a trapping license issued by the Department of Fish and Game (see ground squirrel section for details).

REFERENCES AND ADDITIONAL READING

Doane, Becky, D. Blodget, B. Bonnivier, 1996. How to Control A Pest's Pest—Flea and Rodent Efficacy. Proc. 17th Vertebrate Pest Conf. (R.M. Timm & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 197-198.

Gill, J.E., 1992. A Review of the Results from Laboratory Tests of Some Rodenticides Against Eight Rodent Species. . Proc. 15th Vertebrate Pest Conf. (J.E. Borrecco & R. E. Marsh, Eds.) Published at Univ. of Calif., Davis. Pp. 182-191.

Jackson, Jeffrey J., 1990. Controlling Vertebrate Animal Damage in Southern Pines. Proc. 14th Vertebrate Pest Conf. (L.R. Davis and R.E. Marsh, Eds.) Published at Univ. of Calif., Davis Pp. 199-202.

Silberhorn, Eric M., J.F. Hobson, G.H. Miller, N.J. Condos, 2000. U.S. EPA Reregistration Eligibility Decision (Red) for the Rodenticide Cluster: Overview of the Regulatory Process, Response of Registrants and Stakeholders, and Implications for Agricultural and Urban Rodent Control. Proc. 20th Vertebrate Pest Conf. (R.M. Timm and R.H. Schmidt, Eds.) Published at Univ. of Calif., Davis. Pp. 268-276.

Sorensen, Ronald B., R.C. Nuti, M.C. Lamb, 2006. Rodent Management for Surface Drip Irrigation Tubing in Peanut. Proc. 22nd Vertebrate Pest Conf. (R.M. Timm and J.M. O'Brien, Eds.) Published at Univ. of Calif., Davis. Pp. 201-205.

Valencia, Danilo, D.J. Elias, J.A. Ospina, 1994. Rodent Pests in Columbian Agriculture. Proc. 16th Vertebrate Pest Conf. (W.S. Halverson & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 92-94.

Villa C., Beatriz, W. Lopez-Forment, M. Villa C., C.V. Prescott, 1998. Not All Sigmodontine Rodents in the Sugarcane Fields in Coastal Veracruz, Mexico, Are Pests. Proc. 18th Vertebrate Pest Conf. (R.O. Baker & A.C. Crabb, Eds.) Published at Univ. of Calif., Davis. Pp. 236-241.

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