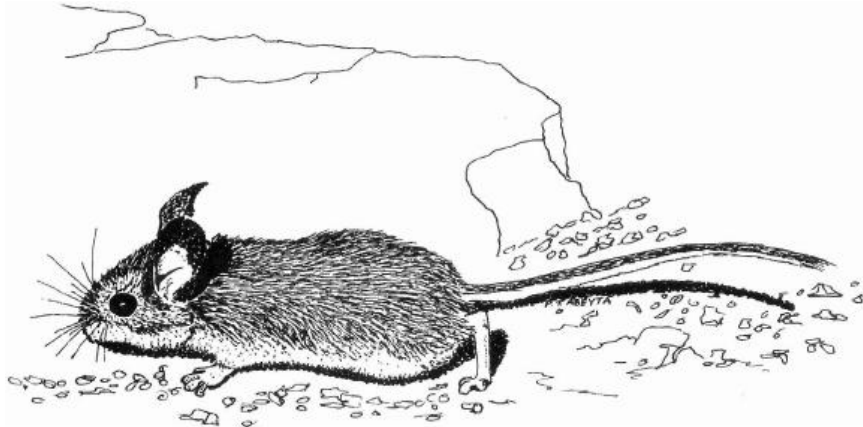


*BIOLOGY, LEGAL STATUS, CONTROL MATERIALS, AND
DIRECTIONS FOR USE*

Deer Mice

Peromyscus spp.

Family: Cricetidae



NOTE: The term "deer mice" is applied to the entire *Peromyscus* genus and to *P. maniculatus* in particular. "White-footed mice" is sometimes used in reference to the genus and it is also the common name of *P. leucopus*. In the discussion below *Peromyscus* refers to the genus unless followed by a specific name, and "deer mice" refers to *P. maniculatus*.



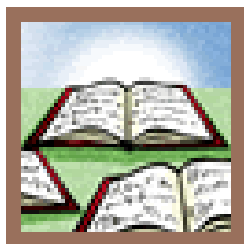
Introduction: Deer mice are one of a very large group of species and subspecies that are widely distributed throughout the United States. They are often referred to as white footed mice. Notably six species thrive in California, and of these the deer mouse is found most widely throughout the state.

Found mostly in rural areas, they are seldom a significant problem in homes and gardens, except in forested and wooded areas where they are more of a health threat than an economic threat. The biggest threat associated with deer mice is their ability to spread disease. Known to spread Rocky Mountain spotted fever they have also been linked to the Hantavirus Pulmonary Syndrome, a disease transmitted through contact with mouse carcasses or urine droplets from infected deer mice. This disease is potentially fatal, so deer mouse control is important in some areas.



Identification: Coloration varies slightly within species, but almost all have white

undersides, legs and feet, and brownish upper areas. Their tails are long, often the length of body and head and bicolored, white on the bottom and dark on the top. Deer mice have large eyes and ears. These easily distinguishable features should help to avoid confusion with the common house mouse. Additionally, there is no characteristic 'mousy odor' which is normally associated with house mice. Droppings, nests and other signs left by these mice are similar to house mice.



Legal Status: Deer mice are classified as nongame mammals by the California 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 officials or employees when acting in their official capacities pursuant to the provisions of the Food and Agricultural Code pertaining to pests.



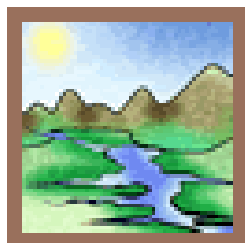
Damage: A major problem associated with deer mice is their propensity to enter homes and other structures that are not rodent proof. Once present their ability to build nests and store food can cause damage. The signs of damage are very similar to house mice. Deer mice are known to dig up and consume newly planted seeds.

Seeds of Douglas fir, ponderosa pine and other conifers are eaten. The deer mouse destroys more Douglas fir seed than any bird or other mammal. This is of primary concern in reforesting logged areas by direct seeding, although harvest of naturally dispersed seed is significant too. Deer mice have been known to dig up planted melon seeds and to eat alfalfa seed. High populations of deer mice have caused damage to almond, avocados, citrus, pomegranate, and sugar beets.



Range: *Peromyscus maniculatus* is found throughout the state. The other five species found in California occupy smaller ranges with substantial overlap. *P. maniculatus* is widespread throughout North America where more than 60 geographical races of varying degrees have been identified.

[Deer Mice](#)



Habitat: *P. maniculatus* can be found in nearly every dry-land habitat from above timberline to desert areas. The other species are more limited, preferring chaparral, oak foothills, pinon-juniper areas, rocky canyons, etc.



Biology: *Peromyscus* spp. are among the most abundant small mammals in many habitats, a fact which stems from their adaptability and mobility as well as high fertility. Hooven (1953) demonstrated that deer mice reinvaded to the center of 500-acre plots within a few weeks following satisfactory reductional control. *Peromyscus*' home range is 1/3 to four acres or more; females may display territorial behavior in the breeding season. A summer population of 15 per acre is high.

Deer mice eat a wide variety of food including seeds, nuts, acorns and insects; but they seldom consume grass, bark, or leaves as do meadow voles. Caged deer mice consumed an average of 115 Douglas fir seeds per day even when lab chow pellets were available (Cone, 1967). Deer mice collect and hoard large numbers of seeds in the fall for winter use. Deer mice are primarily nocturnal and do not hibernate.

Deer mice nest in rotting logs, stumps, buildings, burrows, the ground, trees and among rocks. The nest is lined with fine grass or other soft material. Female deer mice reach maturity at five to six weeks. The gestation period is 22 to 25 days and are one to eight young, usually three to and two to four litters are raised each. The breeding season is normally February through November. Almost bird and mammal predator feeds on mice and they are a principal prey species in North America. Deer mice live more than two years in the wild. Deer mice, in addition to nesting at or just below ground level can also be found in trees. They may utilize abandoned bird or squirrel nests, enclosing them with protective cover i.e. twigs.



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Damage Prevention and Control Methods

Deer mice are seldom a significant pest in homes and gardens, except in forest and wooded areas where the health concern is more of a threat than economic or damage issues. When their population is high, they can cause significant losses to nut crops such as almonds. Control of deer mice in structures is similar to that for [house mice](#). Habit modification and exclusion are emphasized, with trapping, and toxic baits recommended for reduction and control.

Exclusion: Permanent exclusion is the goal through rodent proof construction or subsequent modification. Examine the structure for any cracks or openings. No openings larger than 1/4 inch should be left unsealed. Deer mice will gnaw to enlarge openings to gain entry. Check foundations, water pipes, power/ cable line entry points, sewer pipes, air vents, and door seals. Deer mice are excellent climbers, openings above ground should also be sealed; chimneys and gutter pipes.

A variety of specific commercial items can be purchased to exclude e.g. Chimney screens (spark arrestors). Wire mesh 1/4 inch or smaller is otherwise sufficient. Commercial sealant and steel wool are appropriate in some situations.

Ultimately, making a structure impenetrable is a process involving constant revisiting, and may prove impossible in more remote residences, such as mountain cabins and vacation homes. When leaving residences for an extended period of time (1 month or more), store all foodstuffs including pet foods in rodent proof containers.

Exclusion using fencing is impractical since they are good climbers. Deer mice who seek seedlings in a small area should be excluded using wire mesh (see above) until the seedlings are a few inches tall. Similarly if deer mice are feeding on tree crops i.e. almonds, or other crops, place metal bands around the tree several feet from the to prevent access. This sometimes prevents the deer mice climbing the trunks although with tree canopies often touching, exclusion is nearly impossible. Broadcast and bait stations with anticoagulant baits can be used effectively.



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Habitat Modification: Habit modification is often not practicable as deer mice can range up over 4 acres. Measures can be taken include creating more open space and limiting nesting opportunities which increases their susceptibility to predation. Make the area inhospitable by eliminating weeds, clearing, [mowing](#) (as Meadow Voles). When possible, clear back overgrowth of plants, particularly close to buildings, 2 feet is probably sufficient. Wood piles, fallen trees, brush piles etc should be kept at least 20 feet from buildings to prevent harborage by the deer mice. Additionally clear areas aid in identification of entry holes or damage by the deer mice.

Frightening: This is not an effective method. Some commercial devices exist today which claim to exclude mice and other rodents from a small area. No scientific evidence is available to demonstrate their effectiveness.

Fumigants: Not a practical solution due to deer mice inconspicuousness of burrows.

Repellents: No repellents have proven effective.

Toxic Bait:

CDFA Label baits	0.01% Chlorophacinone grain bait
	0.01% Diphacinone grain bait

Toxic bait is an appropriate solution for controlling deer mice where the population is high, and adequate control in a timely manner is desired. Anticoagulants baits containing chlorophacinone and diphacinone are specifically labeled for deer mice.

The baits can be applied in bait stations or by broadcast baiting. Bait stations can be homemade or purchased in sizes designed for house mice or rats. Either size is suitable for deer mice. The aim is to keep bait dry, confined, and inaccessible to non target animals. To alert people, clearly label with an appropriate warning sign, toxicant name and owner/operator.

Toxic baits should be placed on the exterior of buildings. An exception would be outbuildings. Additionally vacation homeowners in rural areas have been known to apply toxic baits in several places indoors prior to leaving the premises for extended periods. This is an effective long-term solution. The risk is dead mice may not have desiccated prior to your return. The advantage is less chance of significant damage or contamination indoors. Alternatively, multiple snap traps can be set. Remember to fully ventilate the home and clean before inhabiting as deer mice are known vectors for Hantavirus.

Broadcast baiting is an effective solution where high deer mouse populations are sought to be controlled in a relatively short period of time i.e. 2 – 3 weeks: campgrounds, playgrounds, and other recreation areas. Often this method is preferred in agriculture and forestry environments. Ensure bait is registered, broadcasting is permissible, and adhere to rate of application.

Broadcast Baiting: Deer mice are aggressive foragers; their keen sense of smell enables them to locate food readily. Spread bait evenly by mechanical spreader, or aircraft at the rate of 2 to 6 pounds per acre through the infested area. Sufficient bait should be applied to last a minimum of 4 days (preferably without rain). In reforestation programs bait application should precede the sowing of conifer seed by 10-14 days.

Trapping: Deer mice can be trapped with ordinary mouse snap traps. Use peanut butter or peanut butter mixed with sunflower seeds or dry oatmeal breakfast cereal. Multiple traps should be used and may be required to bring population under control. Continue to keep several traps set even after control has been achieved to limit resurgence or reinvasion. Live trapping of deer mice is possible but not recommended.

An alternative trap is the glue trap, identical to those used for house mice. Use only indoors these work on the same principle as sticky fly paper – the mouse becomes stuck while traveling across the surface of the pad. Use the larger size (for rats) if purchasing commercially, and set along walls or where droppings are observed. Note that extreme dust or temperature can reduce the adherence of the board itself.

Whenever setting traps or handling deer mice or their carcasses wear gloves. Double seal the carcasses in plastic bags before disposal. As a precaution against Hantavirus, spray the carcass and trap with a solution of 3 tablespoons of laundry bleach in 1 gallon of water.

Trapping deer mice requires a trapping license issued by the Department of Fish and Game (see ground squirrel section for details).

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