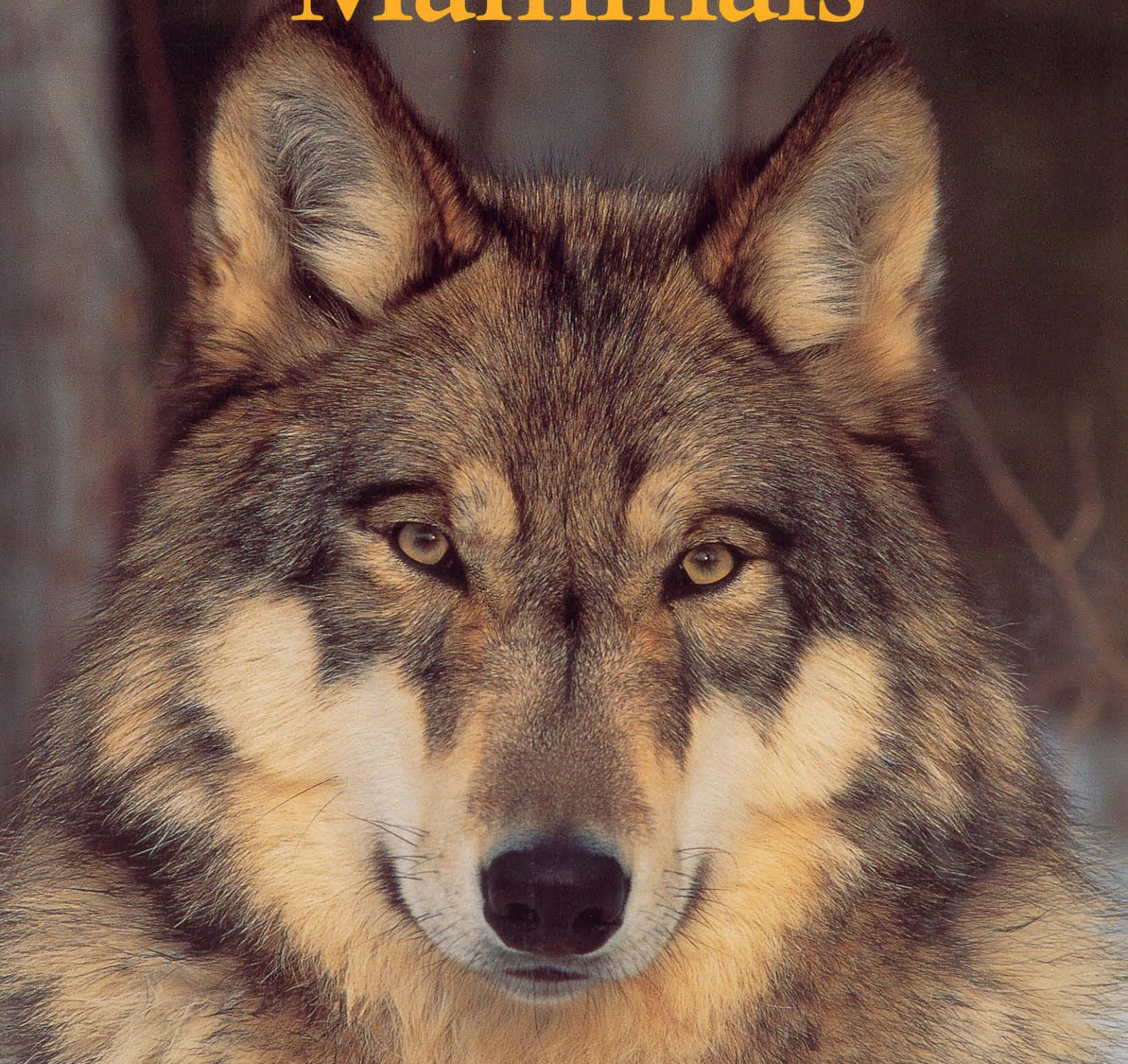


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## Dulzura kangaroo rat | *Dipodomys simulans*

This is the most common kangaroo rat of southern and coastal California. It occupies coastal chaparral and grassland communities from the Los Angeles Basin and San Jacinto Mountains of southern California southward through the mountains and plains of northern Baja California to near Magdalena Bay in southern Baja California, Mexico. It occupies elevations from sea level to more than 2,250 meters. Fossils that may be of this species are known from Newport Bay Mesa and Rancho La Brea in southern California.

The Dulzura kangaroo rat is nocturnal, with a peak of activity near dusk and a second prior to dawn. Occasionally it may also be active during daylight hours. Considerable time is spent grooming, presumably to enhance temperature regulation and reduce the number of ectoparasites. This kangaroo rat is an excellent swimmer. Its large hind feet give it considerable agility in the water. Its gait is a series of short hops, and if hurried it moves rapidly on all four feet. It is quite agile and can make sharp turns to avoid predators.

*Dipodomys simulans* is intermediate in size for the genus. The hind feet are elongated and well adapted for hopping. The front feet are small and are important in manipulation of food and burrowing. The long tail is bicolored, with a blackish crest and tuft, and there are five toes on each hind foot. The upperparts vary from pale grayish-brown to dark reddish-brown, depending on where in its range it occurs. An external fur-lined cheek pouch is located on each side of the mouth. These cheek pouches are used to carry food from where it is gathered to where it is stored in, or near, the burrow. Along the anterior

part of the back, there is a specialized glandular area in the skin; the function of the gland is unknown, but may be related to scent production.

These kangaroo rats generally are larger in the southern part of their geographic range than in the north. In the southern populations, males have longer tails and more fused vertebrae in the pelvic girdle, and females have wider nasal bones, longer forearms, and shorter hind feet.

Breeding may occur during any month of the year, but peaks occur in winter and spring. One litter of two to four young (average is 2.5) is born each year. The young may make squeaking sounds, but adults rarely vocalize. Maternal behavior includes nursing, grooming, and other forms of general maintenance of the young.

The Dulzura kangaroo rat primarily eats seeds, but may eat green vegetation and insects during some months of the year. Its diet varies from season to season, depending upon what seeds and other foods are available. Like most other species of kangaroo rats, Dulzura kangaroo rats probably spend only a few hours outside their burrow each night. Once food items are located, they may be eaten immediately or placed into the cheek pouches and taken back to the burrow. The entrances of burrows often are closed in the daytime.

These kangaroo rats usually occur on gravelly or sandy soils on slopes, washes, and open chaparral areas. In some areas, they are restricted to coarse sand in the dry washes; they burrow within and at the edges of these washes. Burrows have an average of three, 6-cm high openings. The average burrow depth is 32 cm; on average, a burrow has seven side branches and two food caches. The longest burrow measured was 276 cm. The size of burrows is correlated with body size in males. The most complex burrows are in the northern part of the Dulzura kangaroo rat's range, where the generally smaller kangaroo rats occur. This region has the lowest temperatures throughout the year and the greatest winter-spring precipitation. Wider, less complex burrows are found in southern Baja California, where larger individuals occur and where there is greatest summer-autumn precipitation and the warmest July and annual mean temperatures. The tendency to build less complex burrows may be related to the difficulty of digging the burrow: the warmer temperatures and greater summer-autumn precipitation may make the soil difficult to excavate, resulting in the construction of longer tunnels but fewer of them. The soil can be excavated more easily in the moister, cooler, northern regions, and perhaps also the denser vegetation there provides more food for storage, necessitating more tunnels.

Populations are relatively stable throughout the year, but are largest in winter and spring. Maximum densities are 45 per



*Dipodomys simulans*

hectare. Average life span is about 10 months, but Dulzura kangaroo rats may live more than 6 years in captivity.

Species occurring in the same habitat as *D. simulans* include cottontails, black-tailed jackrabbits, California ground squirrels, pocket gophers, California pocket mice, Merriam's and

Stephens's kangaroo rats, dusky-footed woodrats, California mice, bobcats, gray foxes, coyotes, and mule deer. Predators include owls, bobcats, foxes, and coyotes. Parasites include protozoans, mites, ticks, and fleas. *T. L. Best*

### Size

Males are slightly larger than females.

Total length: 277–302 (284) mm (males);

273–291 (282) mm (females)

Length of tail: 163–181 (170) mm (males);

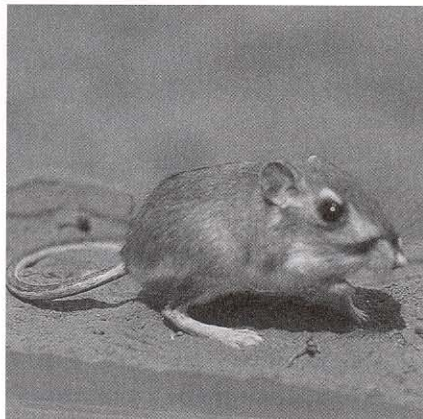
160–180 (168) mm (females)

Weight: 58–70 (59) g (males); 55–67 (56) g (females)

### Identification

The large ears of *D. simulans* distinguish it from all sympatric species except *D. agilis*, which has larger ears. Compared with *D. agilis*, *D. simulans* is smaller in most characters of the body and skull, the ears and hind feet are shorter, and it has two fewer chromosomes.

Compared with *D. merriami*, which has four toes on each hind foot, *D. simulans* has five toes on each hind foot and is larger. Compared with *D. stephensi*, the only other five-toed kangaroo rat that occurs in its range in the United States,



*D. simulans* has much larger ears.

### Recent Synonyms

*Dipodomys antiquarius*

*Dipodomys paralius*

*Perodipus cabezonae*

*Perodipus streatori*

### Other Common Names

San Borja kangaroo rat, Santa Catarina kangaroo rat, Cabezon kangaroo rat

### Status

Common

### Subspecies

*Dipodomys simulans peninsularis*, central and southern Baja California, Mexico

*Dipodomys simulans simulans*, southwestern California and northwestern Baja California, Mexico

### References

Genoways and Brown, 1993