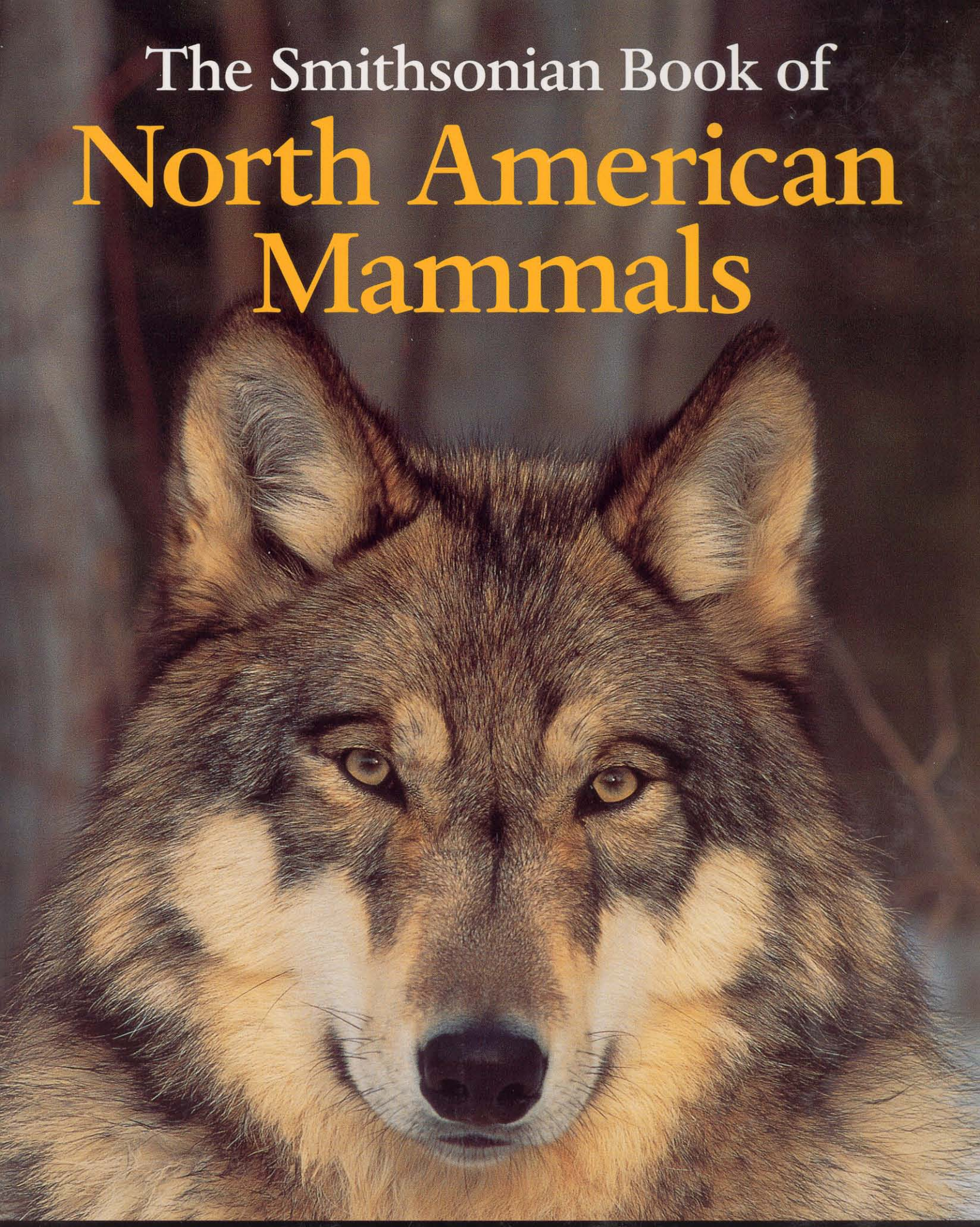
The Smithsonian Book of North American Mammals



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Desert kangaroo rat | *Dipodomys deserti*

The desert kangaroo rat occupies the most arid regions of southwestern North America. It inhabits all of the dunes within its geographic and elevational range. Elevations where it occurs range from –60 meters in Death Valley, California, to 1,710 meters in Huntoon Valley, Nevada. There is no fossil record of this species, but *D. deserti* probably originated in the early Pleistocene in the southwestern United States, most probably in southeastern California and the lower Colorado Desert.

Although desert kangaroo rats are nocturnal, they often are out of their burrows in daytime. They kick sand out of the burrow during the day, plug entrances to the burrow, open up others, and dig new tunnels. No burrow has more than one occupant at a time, except when a female has young. *D. deserti* is extremely solitary and drives away animals that invade its territory.

Desert kangaroo rats frequently traverse open areas at high speeds in their search for large clumps of seeds. The cruising radius in one night may reach hundreds of meters. They also dust bathe in the sand; this activity helps keep their fur clean.

Footdrumming and tooth-chattering are used in communication; desert kangaroo rats drum more than any other species of kangaroo rat. They begin to drum, or stamp their hind feet, as early as 30 days after birth, and communicate this way throughout their lives. They also may squeal, grunt, or give purring growls. Young have soft, squeaking voices and cry like newborn puppies. Desert kangaroo rats are excellent swimmers. Like other kangaroo rats, they do not hibernate.

Dipodomys deserti, like all *Dipodomys,* has externally opening, fur-lined cheek pouches that are used to transport seeds. There are four toes on each hind foot and the feet are covered with relatively long hairs. The upperparts of the body are pale brown to grayish, depending on the subspecies, and the underparts are white. The tail is more than half the total length, is crested with long hairs, and the tip is white. The fur of juveniles is similar in color to that of adults, but is shorter and less dense. Geographic variation among populations is not great. This may be because *D. deserti* inhabits almost uniform terrain (loose sandy soil) and because there are no geographic barriers within the range.

Gestation is 29–32 days. One or two litters are born each year. Females sit on their hind legs during parturition and close their eyes slightly during the abdominal contractions. Young are born head first; the female assists delivery by pulling at the fetal membranes. She continually kicks sand onto the neonates, perhaps to dry them. At birth, newborn desert kangaroo rats are about 52 millimeters long; they are naked, pink, and have transparent skin. While nursing, the mother stands on her hind legs; the young rest on their backs, extending their feet into the air and gently kicking her underside as they nurse. After the eyes of juveniles are fully open, they nurse less each day. Males exhibit paternal behavior and may be gentler with the young than the mother is.

The desert kangaroo rat is well adapted to life in the hottest, driest deserts. It is closely restricted to areas where accumulations of wind-driven sand have reached considerable depths. Mounds used as sites for burrows are sometimes in open spaces, but are usually under vegetation. Burrows are not found in areas of rapidly shifting dunes. The surface above the burrow is a lumpy, uneven area that can measure 3–9 meters across. Numerous entrances, which may be plugged with dirt, slope down from the surface to a labyrinth of passages that wind to a depth of up to 1.2 meters. The underground network includes a number of storerooms and a roughly spherical nest chamber that is filled with dry grasses and other plant material. Desert kangaroo rats feed on a variety of plants, including dried plants from the previous year, leaves of sage, and seeds of creosotebush. They drink water when it is available, but can survive long periods on a dry diet.

Population density is typically about 0.2–1.4 per hectare, but abundance varies considerably at the same locality throughout the year. Desert kangaroo rats occur in the same habitat as Arizona, long-tailed, and desert pocket mice, kangaroo mice, and Merriam's, Ord's, chisel-toothed, and Panamint kangaroo rats. Occasionally they share burrows with the round-tailed ground squirrel and the desert cottontail. Predators include snakes, hawks, owls, bobcats, spotted skunks, coyotes, and foxes. Parasites include a variety of helminths, mites, ticks, lice, and fleas.

T. L. Best

Dipodomys deserti

Size

Males are larger than females.

Total length: 342 mm (males); 331 mm (females)

Length of tail: 201 mm (males); 195 mm (females)

Weight: 91–148 g (males); 83–141 g (females)

Identification

Dipodomys deserti is one of the largest kangaroo rats. Characters of the skull distinguish it from all other *Dipodomys:* the mastoid bones have at most an inconspicuous spicule between them, and the skull is the flattest in the genus. The only other large kangaroo rat to share the range of *D. deserti* is *D. spectabilis.* Where their ranges approach each other in south-central Arizona, *D. deserti* differs from *D. spectabilis* in the maxillary bridge of the orbit, which is broader in *D. spectabilis.*

Status

Common

Subspecies

Dipodomys deserti aquilus, northwestern Nevada and northeastern California

Dipodomys deserti arizonae, south-central Arizona and northern Sonora, Mexico

Dipodomys deserti deserti, southern Nevada, southeastern California, southwestern Arizona, and northwestern Mexico

Dipodomys deserti sonoriensis, western Sonora, Mexico

References

Mammalian Species 339; Hoffmeister, 1986