U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
GIANT KANGAROO RAT
Dipodomys ingens

CLASSIFICATION: Endangered
Federal Register 52:283; January 5, 1987
http://ecos.fws.gov/docs/federal_register/fr1208.pdf
We are currently conducting a 5-year review.
See News Release

CRITICAL HABITAT: None designated

RECOVERY PLAN: Final
Recovery plan for the upland species of the San Joaquin Valley, California, September 30. 1998
http://ecos.fws.gov/docs/recovery_plan/980930a.pdf

DESCRIPTION
The giant kangaroo rat *(Dipodomys ingens)* is the largest of more than 20 species in the genus *Dipodomys*, which is in the family Heteromyidae. This family includes kangaroo rats, kangaroo mice and pocket mice. They are *not* really rats at all. At least, they are not like common nonnative household rats, which are in the Muridae family.

Adult giant kangaroo rats weigh from 131 to 180 grams (4.6 to 6.4 ounces). They are 311 to 348 millimeters (12.2 to 13.7) inches long. Their name is based on the fact that they are adapted for two-footed (bipedal) hopping like a kangaroo. Their hind limbs are large compared to the size of their forelimbs. Their necks are short and their heads are large and flattened. Their tails are longer than their combined head and body length. The tails have a crest of long hairs, terminating in a large tuft. Large, fur-lined cheek pouches open on each side of the mouth. The pouches extend as deep pockets of skin along the sides if the head.

Giant kangaroo rats are distinguished from the similar San Joaquin kangaroo rats (*D. nitratoides*) by the number of toes on their hind feet. Giant kangaroo rats have five toes, San Joaquin kangaroo rats have four. San Joaquin kangaroo rats include 1)the Fresno kangaroo rat (*D.n. exilis*), 2) the Tipton kangaroo rat (*D. n. nitratoides*), and 3) the short-nosed kangaroo rat (*D. n. brevinasus*).

Giant kangaroo rats prefer annual grassland on gentle slopes of generally less than 10°, with friable, sandy-loam soils. However, most remaining populations are on poorer, marginal habitats which include shrub communities on a variety of soil types and on slopes up to about 22°.

Giant kangaroo rats are primarily seed eaters. However, they also eat green plants and insects. They cache ripening seed heads in small surface pits or large stacks on the surface over their burrow system. After curing for several weeks, seeds are transported to underground larders. Giant kangaroo rats forage on the surface from around sunset to near sunrise, with most activity taking place in the first two hours after dark. Foraging activity is greatest in the spring as seeds

of annual plants ripen. Commonly consumed seeds include peppergrass (*Lepidium* spp.), filaree (*Erodium cicutarium*), Arabian grass (*Schismus arabicus*) and brome grasses (*Bromus* spp.) (Williams).

Giant kangaroo rats develop burrow systems with one to five or more separate openings. There are two types of burrow: 1) a vertical shaft with a circular opening and no dirt apron, 2) a larger, more horizontally-opening shaft, usually wider than high with a well-worn path leading from the mouth.

Reproduction is influenced by population density and availability of food. See the Recovery Plan for details.

DISTRIBUTION

The historical distribution of giant kangaroo rats encompassed a narrow band of gently sloping ground along the western edge of the San Joaquin Valley, with occasional colonies on steeper slopes and ridge tops, from the base of the Tehachapi Mountains, Kern County, in the south, to near Los Banos, Merced County, in the north. Historical habitat was estimated to have included over one and a half million acres.

The population is currently fragmented into six major geographic units. The units located in the southern San Joaquin Valley are: the Kettleman Hills in Kings County; and western Kern County in the area of the Lokern, Elk Hills, and other uplands around McKittrick, Taft, and Maricopa. The major units are fragmented into more than 100 smaller populations, many of which are isolated by several miles of barriers such as steep terrain with plant communities unsuitable as habitat, or agricultural, industrial, or urban land without habitat for this species. Extant habitat is estimated to be 27,540 acres, about 2 percent of historical habitat.

Within the area of currently occupied habitat, populations of giant kangaroo rats studied since 1979 have expanded and declined 6 to 10-fold with changing weather patterns. Density estimates range from 2.5 to 275 animals per acre. Changes in density generally coincide with amount of rainfall and herbaceous plant productivity, however, the seed caching behavior of these rats may offset this effect.

THREATS

Completion of Federal and State water projects resulted in rapid cultivation and irrigation of giant kangaroo rat habitat. Urban and industrial developments, petroleum and mineral exploration and extraction, new energy and water conveyance facilities, and construction of communication and transportation infrastructures continue to destroy habitat for giant kangaroo rats and increase the threats to the species by reducing and further fragmenting populations. Use of rodenticide-treated grain to control ground squirrels and kangaroo rats also may have contributed to the decline of giant kangaroo rats.

REFERENCES FOR ADDITIONAL INFORMATION

Thelander, C. ed. 1994. Life on the edge: a guide to California's endangered natural resources. BioSystem Books. Santa Cruz, CA. p 72-73.

U.S. Fish and Wildlife Service. 1998. *Recovery plan for the upland species of the San Joaquin Valley, California, September 30. 1998. (pdf format),* Portland, OR.

Williams, D.F. Endangered Species Recovery Program. Species account.

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