

A Giant Kangaroo Rat (Dipodomys ingens) is shown in profile, facing left. It has a light brown and tan mottled coat, a large black eye, and long, thin whiskers. Its long, thin tail is visible, extending towards the right. The animal is standing on a sandy, dry ground with some sparse, dry vegetation.

# Giant Kangaroo Rat

*Dipodomys ingens*

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<https://mecu.ucdavis.edu/giant-kangaroo-rat/>

# Background

- Heteromyid family
- The largest species in the *Dipodomys* genus
- Keystone species in California grasslands
- State and federally listed endangered species

## Interesting facts

- Can leap over 6 ft. distances when they are escaping predators
- Lifespan of ~9.8 years in the wild, 5 years in captivity
- Solitary and territorial
- Communicate by drumming with their hind feet

# Description

- Bipedal locomotion
- Long legs, short arms
- Short neck, large flat head
- Long tail, tuft at end
- Large fur-lined cheek pouches on each side of mouth
- Distinguished by size and number of toes
  - Total length: 13 in.
  - Tail length: 7 in.
  - Mass: 4 to 5 oz.
  - 5 toes, longer than 1.7 in.



Photo: Harrison, G. USFWS.



Photo: Sacramento Office. USFWS.

# Reproduction

Factors Affecting Available resources	Life Stage	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Low population density and/or high precipitation	Pup		Developing In den										
	Juvenile					Dispersing from natal den							
						Breeding							
							Gestation						
	Adult							Birth					
High Population Density and/or Drought	Pup		Developing in Den										
	Juvenile						Disperse from natal den						
	Adult												
						Breeding							
							Gestation						
								Birth					

# Life History

- Food and Foraging
  - Primarily seeds, also green plants and insects
  - Collect seeds, cure, and store
  - Forage on surface, sunset to sunrise, most active 2 hours after dark, especially in spring
  - Ability to reserve food aids survival during drought
- Historical/Preferred Habitat
  - Annual grasslands with few or no shrubs
  - Well drained sandy loam soil, Gentle slopes
  - ~ 6 inches of annual rainfall or less
- Territory
  - 600 - 4000 sq. ft. around their core area/burrow system (precinct)
  - Multiple individuals may live in a precinct



# Historical Range



Created By: USFWS  
Map Date: 07/24/2019  
Source: IUCN

0 25 50 100 Miles



# Extant Population

Ciervo-Panoche

Kettleman Hills\*

San Juan Creek\*

Western Kern  
County

Carrizo Plain  
Natural Area

Cuyama Valley



Description: Geographical Units and range-wide occurrence data since the time of listing for the giant kangaroo rat. Data were accessed through the California Natural Diversity Database (CNDDDB, 2019) and Humboldt State University (Bean in litt. 2019)

0 12.5 25 50 Miles

GEOGRAPHIC UNITS (ANALYSIS UNITS)  
OCCURENCE DATA



# Significance - a keystone species

- Prey for many species
  - San Joaquin kit foxes
  - American badgers
  - Coyotes
  - Long-tailed weasels
  - Owls (burrowing, barn, great horned, and short-eared)



Photo: Lavin, M. 2011.



Photo: Schechter, G. 2012.



Photo: Shield, M. 2018.



Photo: Weeks, B. 2011.



# Significance - a keystone species

- Burrows also used by
  - Blunt-nosed leopard lizards
  - San Joaquin antelope squirrel



Photo: O'Leary, G., CDFW. 2015.



Photo: Schechter, G. 2012.

# Significance - a keystone species

- Plant interaction
  - Net herbaceous plant productivity increases 2 - 5x on precinct vs. non-precinct areas with sufficient rain
  - *Caulanthus californicus* grows primarily on the burrow systems of the GKR



Photo: Sleuter, W., CDFW.

# Threats

- **Habitat loss**
  - Urbanization
  - Energy development
  - Transportation infrastructure
  - Agriculture
- Small population sizes
- Rodenticides
- Grazing regimes
- Invasive plants
- Wildfire
- Climate change and variability



# Conservation Status

- Endangered
  - 1987 - Endangered Species Act
  - 1980 - CA Endangered Species Act
  - 2008 - IUCN Red List
- 2020 USFWS Five Year Review
  - No change in status - still endangered

# Recovery Plan

- Recovery Plan for Upland Species of the San Joaquin Valley, California (USFW 1998)
- Protect and manage three largest populations
  - Ciervo-Panoche
  - Western Kern County
  - Carrizo Plain Natural Area
- Random catastrophic events pose greatest risk to long-term survival
  - Best to maintain large areas of habitat



# Conservation and Conclusions

- Target habitat protection locations
  - Dispersal corridors and expand northern range in the Panoche area
  - Restore Buena Vista Valley in western Kern County.
- Habitat management plans
  - Adaptable grazing plans to prevent dominance of non-native grasses
- Research and monitoring
  - Continued long-term monitoring in western Kern County and Carrizo Plain
  - Begin long-term monitoring in Panoche area
  - Census and monitor GKR in the satellite populations
- Acquire and protect habitat
  - Expand range, increase connectivity, Co-locate conservation lands acquired for San Joaquin kit fox and blunt-nosed leopard lizard