



U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office
Species Account
SAN JOAQUIN KIT FOX
Vulpes macrotis mutica



CLASSIFICATION: Endangered
Federal Register 32:4001; March 11, 1967
http://ecos.fws.gov/docs/federal_register/fr18.pdf

CRITICAL HABITAT: None Designated

RECOVERY PLAN: Final
[Recovery plan for the upland species of the San Joaquin Valley, California](#), September 30, 1998

5-YEAR REVIEW: Completed February 2010. No change recommended.
http://www.fws.gov/ecos/ajax/docs/five_year_review/doc3222.pdf
(2.7 MB)



San Joaquin Kit Fox
Carley Sweet, USFWS

DESCRIPTION

The San Joaquin kit fox (*Vulpes macrotis mutica*) is the smallest fox in North America, with an average body length of 20 inches and weight of about 5 pounds. It is a member of the Canidae family, which includes dogs, wolves and foxes. San Joaquin kit foxes are lightly built, with long legs and large ears. Their coat ranges from tan to buffy gray in the summer to silvery gray in the winter. Their belly is whitish and their tail is black-tipped.

Diet varies geographically, seasonally and annually, based on abundance of prey. In the southern part of the range, one-third of the kit fox diet consists of kangaroo rats (*Dipodomys* spp.), pocket mice (*Perognathus* spp.), white-footed mice (*Peromyscus* spp.) and other nocturnal rodents. In the northern portion of the range (San Joaquin, Alameda and Contra Costa counties), kit foxes most often prey on California ground squirrels (*Spermophilus beecheyi*). Kit foxes also prey on black-tailed hares (*Lepus californicus*), San Joaquin antelope squirrels (*Ammospermophilus nelsoni*), desert cottontails (*Sylvilagus audubonii*), ground-nesting birds and insects.

Dens are used for temperature regulation, shelter from adverse weather and protection from predators. Kit foxes either dig their own dens, use those constructed by other animals, or use human-made structures (culverts, abandoned pipelines, or banks in sumps or roadbeds). Kit foxes often change dens and many dens may be used throughout the year. However, evidence that a den is being used by kit foxes may be absent.

Kit foxes can breed when one year old. Adult pairs stay together all year. During September and October, females begin to clean and enlarge their pupping dens. Mating occurs between December and March. Litters of two to six pups are born in February or March. Pups emerge from the den after about a month.

DISTRIBUTION

In the San Joaquin Valley before 1930, the range of the San Joaquin kit fox is believed to have extended from southern Kern County north to Contra Costa County on the west side and near La Grange, Stanislaus County, on the east side. Until the 1990s, Tracy was the farthest northwest record. We now have records from the Antioch area of Contra Costa County.

Historically, San Joaquin kit foxes occurred in several San Joaquin Valley native plant communities. In the southernmost portion of the range, these communities included Valley Sink Scrub, Valley Saltbush Scrub, Upper Sonoran Subshrub Scrub, and Annual Grassland.

By 1930, the kit fox range had been reduced by more than half, with the largest portion remaining in the southern and western parts of the Valley. By 1958, an estimated 50% of the Valley's original natural communities had been lost, due to extensive land conversions, intensive land uses, and the use of pesticides. In 1979, only about 6.7% of the San Joaquin Valley's original wildlands south of Stanislaus County remained untilled and undeveloped.

Today many of these communities are represented only by small, degraded remnants. Kit foxes are, however, found in grassland and scrubland communities, which have been extensively modified by humans with oil exploration, wind turbines, agricultural practices and/or grazing. The kit fox population is fragmented, particularly in the northern part of the range.

THREATS

Kit foxes are subject to competitive exclusion or predation by other species, such as the nonnative red fox (*Vulpes vulpes*), coyote (*Canis latrans*), domestic dog (*Canis familiaris*), bobcat (*Felis rufus*), and large raptors.

Loss and degradation of habitat by agricultural, industrial, and urban developments and associated practices continue, decreasing the carrying capacity of remaining habitat and threatening kit fox survival. Such losses contribute to kit fox declines through displacement, direct and indirect mortalities, barriers to movement, and reduction of prey populations. The San Joaquin kit fox was listed as endangered by the State of California in 1971.

REFERENCES FOR ADDITIONAL INFORMATION

We have specific instructions concerning activities in the northern part of the species range and during ground disturbance. Contact our office for more information.

N.L. Brown, C.D. Johnson, P.A. Kelly, and D.F. Williams. [Endangered Species Recovery Program. Species account.](#)

Koopman, M.E., et al. February 2000. Dispersal patterns of San Joaquin kit foxes. *Journal of Mammalogy*. 81(1):213-222.

Thelander, C. ed. 1994. *Life on the edge: a guide to California's endangered natural resources*. BioSystem Books. Santa Cruz, California. p 86-89.

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, Oregon.

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