

USACE Natural Resource Management

Mammals



San Joaquin Kit Fox

FAST FACTS

REASONS FOR CURRENT STATUS: The San Joaquin kit fox was listed as endangered under the Endangered Species Preservation Act in 1967. Critical habitat was not designated.

Listing occurred as a result of increasing threats of habitat loss. The loss, modification, and fragmentation of habitat due to agricultural conversion, infrastructure construction, and urban development remains the largest threat to the kit fox. Pesticides, specifically rodenticides, a risk to kit fox populations through direct or secondary poisoning. (USFWS) Additionally, predation, typically by coyotes, bobcats, and the non-native red fox has been identified as a leading cause of kit fox mortality. The lack of suitable dens and shelter in altered landscapes is thought to have increased the predation threat to the species.

NatureServe Explorer ranks the subspecies as imperiled primarily due to the numerous threats noted above.

T2
Imperiled
Subspecies

MANAGEMENT AND PROTECTION: In 1998, the Service developed a recovery plan for upland species of the San Joaquin Valley, which included the kit fox. As kit foxes require large home ranges, appropriate vegetation, and prey, acquiring lands for conservation has and will continue to be critical for the species survival. It is estimated that land ownership or management for 24% of the species occurrences are recorded from various federal, state, regional, county and city holdings.

HABITAT NEEDS: Highly suitable habitat for the kit fox includes:

- Low slopes (<5%)
- Arid land vegetation with short stature
- Areas free of human disturbance
- Loose-textured soils

Soil type is important as the species requires dens shelter, protection, and reproduction. Therefore, loose-textured soils are preferred, although the species will modify the burrows of other animal in undesirable soils.

Appearance: Typically about 20 inches long and weighing just 5 pounds, the San Joaquin kit fox is the largest subspecies of kit foxes. Overall, kit foxes are the smallest species of foxes in North America. While fur color varies geographically and seasonally, the most common variations are described as buff, tan, grizzled, or yellowish-gray.

Photos: USFWS

Natural Resource
Management (NRM)

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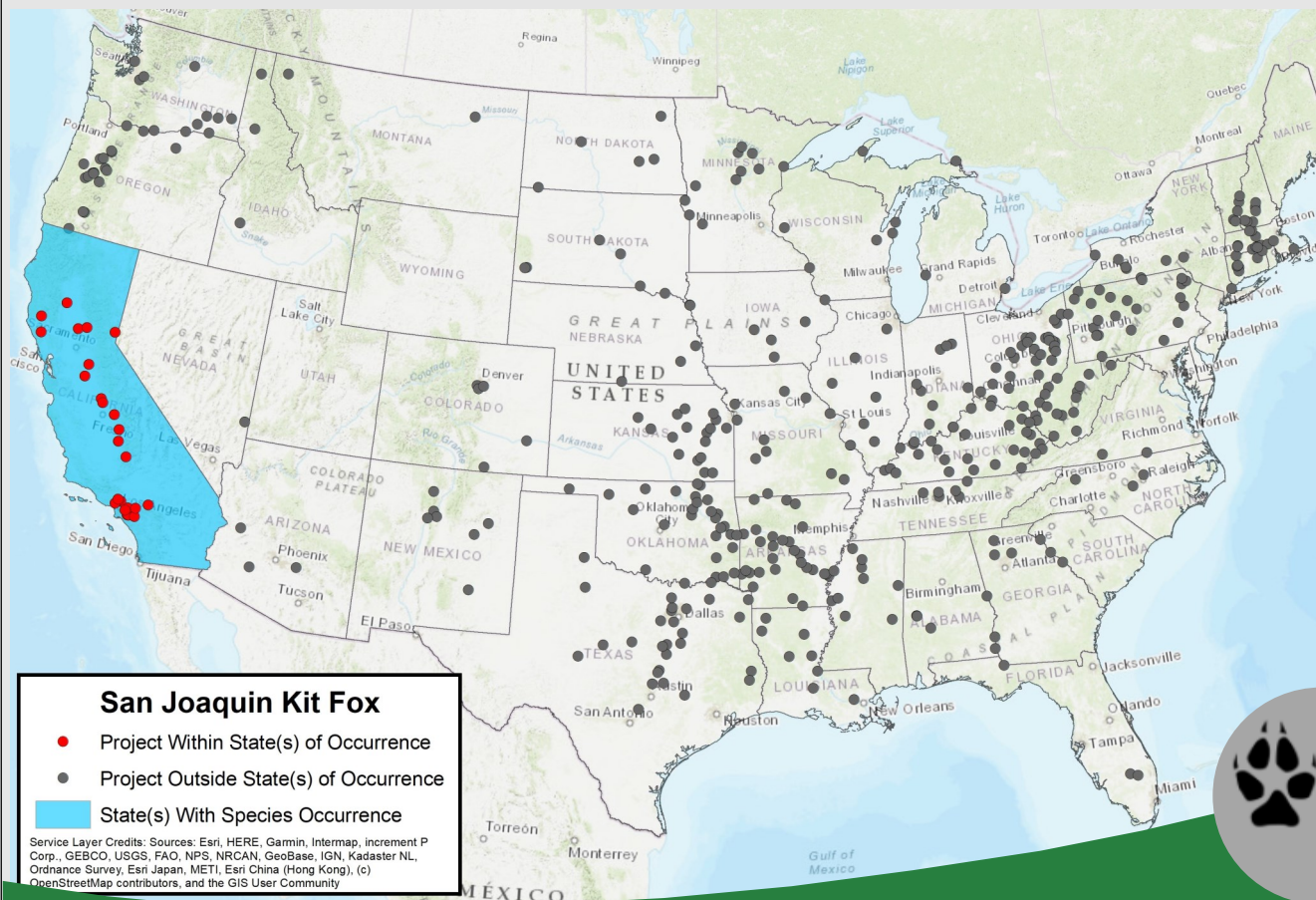
USACE NATURAL RESOURCE MANAGEMENT ROLE: According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has expended over \$353,000 since 2006 on efforts related to the San Joaquin kit fox. Additionally, costs associated with this species have been incurred by the Regulatory, Planning and Program Management, Flood Risk Management, and Environmental Stewardship Business Lines.

WHAT IS USACE NRM DOING: With a geographic range that is limited to the state of California and specifically the San Joaquin Valley, two USACE projects within the Sacramento District report the rare and occasional occurrence of the species. (FY20 NRM Assessment) Buchanan Dam H.V. Eastman Lake and New Melones (Stanislaus River) respectively note the rare and occasional occurrence of the kit fox subspecies.

The 1977 Master Plan for the New Melones Dam (Stanislaus River) noted that San Joaquin kit fox, ranged within five miles of the mouth of the Stanislaus River.



Image Above: Stanislaus River Parks, a brominate butte looks out over the Stanislaus River Valley near Knights Ferry, California. Photo USACE—Luke Burns



Mammals
 Source: Map provided by Ashleigh Boss, ORISE Fellow, Institute for Water Resources

