

## TWO OBSERVATIONS OF TREE CLIMBING BY THE SAN JOAQUIN KIT FOX

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**ABSTRACT**—Tree climbing behavior is rarely observed among the Canidae and has not been observed in kit foxes (*Vulpes macrotis*). While conducting another behavioral study in Bakersfield, California in November 2002, we observed kit foxes climb trees on 2 occasions. Our observations demonstrate that kit foxes are capable of climbing trees and of agile mobility among tree branches. Our observations also provide an example of the behavioral plasticity of kit foxes, a characteristic that might contribute to their ability to successfully inhabit anthropogenically altered environments.

**RESUMEN**—El trepar árboles es una actividad raramente observada en cánidos y no ha sido observado en el zorro de las praderas (*Vulpes macrotis*). Mientras estábamos llevando a cabo otro estudio de comportamiento en Bakersfield, California, en noviembre del 2002, observamos en dos ocasiones al zorro de las praderas trepando árboles. Nuestras observaciones demuestran que los zorros de las praderas son capaces de trepar árboles y además moverse ágilmente entre las ramas. Nuestras observaciones también demuestran la adaptabilidad de los zorros de las praderas, una característica que puede ayudarlos a habitar exitosamente ambientes alterados por el ser humano.

Tree climbing behavior among the Canidae is rare. In North America, the behavior is known only in gray foxes (*Urocyon cinereoargenteus*), island foxes (*U. littoralis*), and occasionally in red foxes (*Vulpes vulpes*) (Grinnell et al., 1937; Laughrin, 1973; Trapp and Hallberg, 1975; Sklepkovych, 1994). Gray foxes and island foxes are adept climbers and ascend trees for several reasons, including to find food, resting areas, and occasionally den sites, as well as to escape predation (Grinnell et al., 1937; Laughrin, 1973; Trapp and Hallberg, 1975; Fritzell and Haroldson, 1982; Cypher, 1993). Tree climbing is much less common in red foxes but does occur. Sklepkovych (1994), for example, described several unusual observations of red foxes on Baccalieu Island, Newfoundland, foraging in trees during a winter food shortage. Kit foxes (*V. macrotis*) were not known to climb trees; however, on 2 occasions we observed kit foxes climb trees while conducting a behavioral study in Bakersfield, California. During the study, we observed kit foxes

using a handheld, generation-3 night-vision monocular (model M944, Litton/Northrop Grumman, Garland, Texas) and an infrared illuminator.

On 3 November 2002, we observed a 2-year-old female fox climb into a chaste tree (*Vitex agnus-castus*) (35°20'51"N, 119°04'13"W; 2045 h) from a distance of approximately 15 m. The tree had several low-hanging branches that merged at the trunk of the tree near ground level. She spent 2 min 11 s walking on 3 of the low hanging branches to a maximum distance of approximately 4 m from the trunk and 2.5 m above ground. She was alone and seemed to be foraging for insects in the bark of the tree.

On 25 November 2002, we observed an adult male kit fox climb into a white mulberry tree (*Morus alba*) (35°20'49"N, 119°04'02"W; 1859 h) also from a distance of approximately 15 m. The fox ascended approximately 2.5 m on a vertical trunk in 2 to 3 quick strides onto a large, heavily pruned branch approximately 3 m above ground. He walked about on several

of the branches for 1 min 35 s before running down the trunk headfirst, again in 2 to 3 strides. He did not appear to be foraging in the tree, but was interacting in a non-aggressive manner with the female fox that we had observed climb the chaste tree. This unmated female sat at the base of the tree while the male fox walked about the branches.

Our observations of tree climbing are unusual, particularly as kit foxes likely evolved in arid grassland or scrub ecosystems largely devoid of trees. However, kit foxes are opportunistic foragers, especially in altered urban environments, where food items occur in a variety of microhabitats. In Bakersfield, for example, kit foxes rely on a wide diversity of food, including California ground squirrels (*Spermophilus beecheyi*), insects (mainly beetles: Coleoptera), pocket gophers (*Thomomys bottae*), small rodents, leporids, birds, and human-derived food (Cypher and Warrick, 1993). Our observation of the female fox apparently foraging for insects in a chaste tree might reflect the opportunistic foraging behavior of kit foxes. We often observed the same fox walking along raised stone walls, jumping fences, and climbing onto human-made objects while foraging.

By contrast, our observation of the male fox in the tree did not involve foraging, but occurred during an interaction with another female fox lasting approximately 9 min. The interaction might have been an attempt at pair formation, particularly as: 1) it involved an unpaired female, 2) occurred in late November just prior to the mating period, and 3) involved behavior known to be associated with pair bonding, including mutual allogrooming and licking (Wachtmeister, 2001). As nocturnal encounters between kit foxes might be important in establishing pair bonds (White et al., 2000), the tree climbing behavior might have played a role in pre-mating courtship.

Our observations demonstrate that kit foxes are capable of climbing trees and of agile mobility among tree branches. Our observations also provide an example of the behavioral plasticity of kit foxes, a characteristic that might contribute to their ability to successfully inhabit

anthropogenically altered landscapes, such as urban environments and highly developed oil fields (Cypher et al., 2000). To our knowledge, tree-climbing behavior has not been described previously in kit foxes. Our observations therefore might help wildlife and habitat managers evaluate reports of foxes in trees. Although most reports of foxes in trees likely involve gray foxes, some might involve kit foxes, especially in urban environments and in the few woodland environments they inhabit. Accurate reports of kit foxes in trees could extend the known range of the kit fox in California and provide new insights into habitat use.

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