Wander Your Watershed

Species Spotlight: Sierra Nevada Red Fox

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The Sierra Nevada red fox (*Vulpes vulpes necator*) received a lot of attention this winter when the U.S. Fish and Wildlife Service proposed to add it to the List of Endangered and Threatened Wildlife under the Endangered Species Act. While it is a subspecies of the more commonly known red fox (*Vulpes vulpes*), the Sierra Nevada red fox (SNRF) is particularly unique, rare, and difficult to study. For those of us who aren't wildlife experts, this may have come as a surprise, as foxes maintain international notoriety and are perhaps one of the most iconic wilderness mammals in the northern hemisphere.

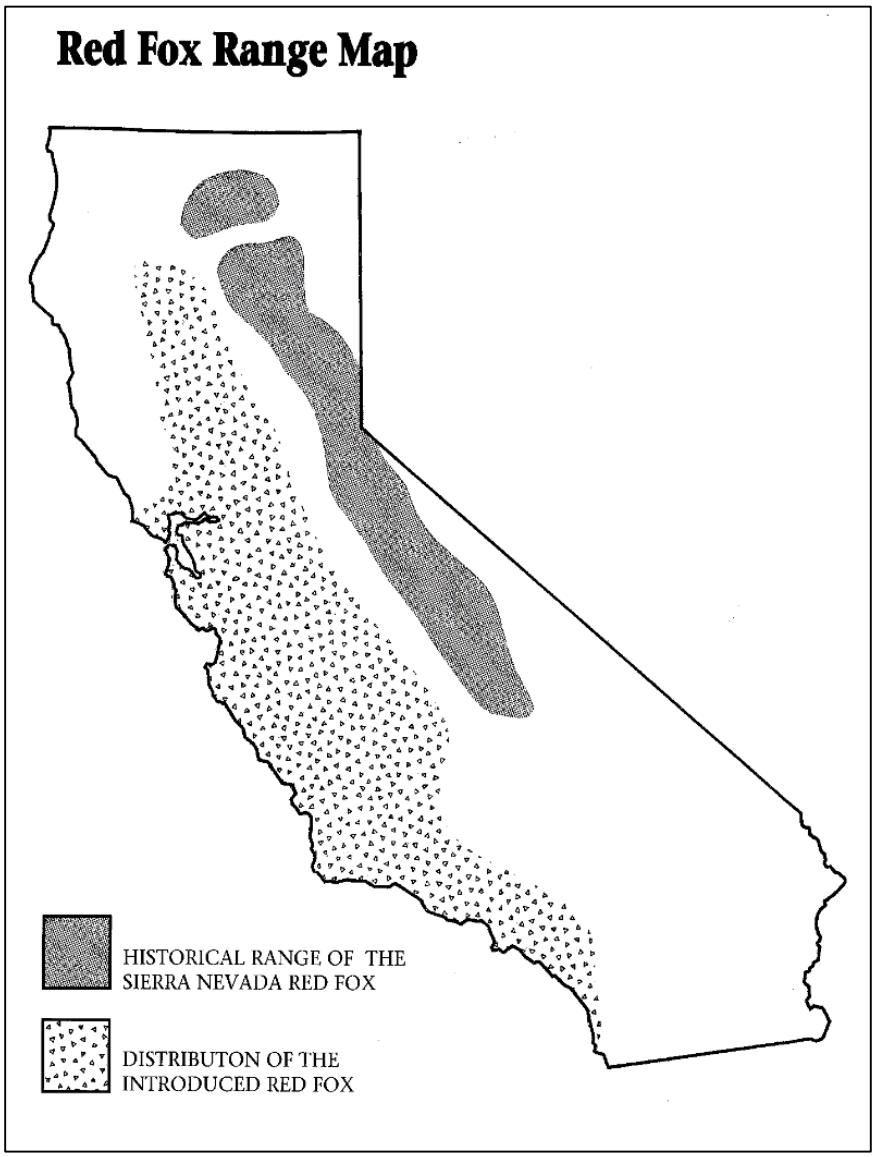
Characteristics and Habitat

SNRF are a small canid species weighing on average between 7 lbs. (females) to 9 lbs. (males). They have long snouts, large ears, and slender legs and bodies. They show a variety of colors based on their genetic makeup, but the white tips of their long bushy tails are evident on all. SNRF are a native montane fox species found in high elevation ecosystems (typically above 5000 ft.). Their summer habitat is thought to be above the treeline, and it includes meadows and open woodlands. In the winter, they move to slightly lower elevations where they occupy open mixed conifer forests. They are a predatory species, and their diets typically consist of small rodents. They roam alone and avoid creating packs, which makes it challenging to track population dynamics. SNRF are distantly related to coyote and gray fox species in California, but genetic evidence suggests they avoid interbreeding with outside species.

Range and Distribution

Historically, the SNRF range included the Sierra Nevada Mountain Range, western Nevada mountain ranges, and the southern Cascade Mountain Range in California. Current population distribution is much smaller but still uncertain. Prior to 2010 when a small population was confirmed near Sonora Pass, SNRF were thought to be extinct in the southern reaches of their historical range. They maintain exceptionally low population densities—estimates suggest one individual per square mile—which makes it particularly challenging to estimate total population. Evidence suggests there are fewer than 50 and as few as 15 adult SNRF in the Sierra Nevada region of their range.

Research and Conservation



Foxes are generally thought to be cunning, elusive, and independent by nature, but SNRF exemplify these characteristics in ways that challenge the ability of wildlife experts to monitor their behavior, population, and distribution. Much of what we know about SNRF are documented interviews of fur trappers in the early 1900s and one multi-year field study on the isolated population near Lassen Peak in northern California (east of Redding). In 2010—prior to the identification of the Sonora Pass SNRF population—the U.S. Forest Service published a conservation assessment outlining a range of threats to the species based on a synthesis of the "woefully little information" on SNRF and other mountain fox species in the western United States. In it, they maintain that additional monitoring and research are needed to develop a more robust conservation strategy for this species.

While SNRF continue to elude even the best wildlife observation equipment, it is important for the public to report any red fox sightings if you are within their historical range. The California Department of Wildlife maintains an online portal for reporting red fox sightings that can be accessed here: https://wildlife.ca.gov/Conservation/Mammals/Sierra-Nevada-Red-Fox

Resources:
Red Fox Range Map: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=83981&inline
Sierra Nevada Red Fox Conservation Assessment: https://www.fwspubs.org/doi/suppl/10.3996/082017-JFWM-067/suppl_file/10.3996082017-jfwm-067.s7.pdf
Sierra Nevada Red Fox Fact Sheet: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5282562.pdf