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Project Title:

Response of San Joaquin Kit Foxes to Road Construction Project Sites: Mitigation Strategies to Minimize Project Delays and Impacts

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Response of San Joaquin Kit Foxes to Road Construction Project Sites: Mitigation Strategies to Minimize

This Task is intended to determine the effects of roads and road construction activities on San Joaquin kit fox population that live close to state highways.

WHAT WAS THE NEED?

Multiple studies have been proposed and/or conducted to determine effects of roads on San Joaquin kit fox, which is Federal and State listed species; however, a data gap has been identified related to the species response to road construction and construction related factors that affect fox presence. Information on construction related factors that affect San Joaquin kit fox presence was needed to inform the development and implementation of mitigation measures and conservation strategies that will reduce delays to the construction schedule and associated increases in construction costs.

WHAT WAS OUR GOAL?

The primary goals of this project were to determine 1) what construction related factors increase the likelihood of San Joaquin kit fox presence and 2) how San Joaquin kit fox use the sites relative to adjacent habitats that are similar in quality but further away from active construction. The secondary goal is to identify measures that might discourage kit fox presence or reduce risk to foxes using construction sites when construction work is ongoing.

WHAT DID WE DO?

This research determined how kit foxes respond to road construction projects, by identifying factors behind the attraction or continued presence, and developed potential mitigation strategies that may reduce likelihood of kit fox presence during active construction without reducing quality of their habitat. We conducted a study to determine how kit foxes respond to road construction project sites in both urban and rural settings. We



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determined whether foxes generally avoid sites once construction begins, use them similarly before and after initiation of construction, or are attracted to the sites by construction-related site changes, with consideration to the level of development around the site. Based on these assessments, we were able to identify potential mitigation strategies that have the potential to reduce the likelihood of kit fox presence during active construction without reducing the quality of habitat or at least reduce the potential for harm to foxes that continue to use the sites.

WHAT WAS THE OUTCOME?

Caltrans routinely implements mitigation measures to avoid or minimize adverse impacts to kit foxes. However, kit foxes have been known to access construction sites despite the associated habitat disturbance and ongoing construction activities. The appearance of kit foxes on the construction sites, and particularly the establishment of dens, can cause delays in construction work. Based on our results, resident kit foxes will continue using a construction site despite extensive disturbance and intensive construction activities occurring on the site. Excluding kit foxes from accessing a construction site is extremely difficult, if not impossible. Thus, we highly recommend site inspections prior to the initiation of work each day to ensure that foxes are not present and that new dens are not being created. Any new dens should be removed using approved methods as soon as possible. Foxes should be discouraged from denning in materials stored on site using fencing or by elevating the materials off the ground. Worker training is also highly crucial.

WHAT IS THE BENEFIT?

Understanding how and why San Joaquin kit foxes use road construction project sites will help to identify mitigation strategies that facilitate preparation and approval of pre-project environmental reviews, avoidance of significant project delays, and come up with new best

management practices to further reduce the likelihood of project-related impact of this endangered species. This information will be useful for other State and federal agencies, as well as local agencies that consult with the State and federal government entities on impacts to kit fox and their habitat.

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