7.6 American Badger (*Taxidea taxus*) – Category SL

Management Units with Known Occurrences

American badgers are mid-sized predators occurring in low densities in grasslands and open shrublands with sandy loamy soils (Brehme et al. 2012). Locations for badger detections are mainly derived from biological reports from preserves and surveys conducted by USGS in 2011 and 2014 using a combination of the USGS Badger Hotline and canines trained in scent detection. American badger has been detected in MUs 3, 4, 5, 6, 9, 10, and 11 since 2009. In 2015, USGS continued studies of spatial and temporal use of badger habitats and discovered live badger activity at 2 sites, one in MU5 at Rancho Guejito and the other in MU4 along the upper San Diego River at El Capitan Grande Reservation (USGS 2015 in draft). Since 2003, American badgers have been detected sporadically in MUs 3, 5, and 6 (see online map: https://arcg.is/1n59mL). Because the badger is a wide-ranging species, a Badger Important Conservation Area has been delineated on the map to focus management across preserve complexes rather than at individual preserves. There are also reports since the year 2000 of badgers in Mission Trails Regional Park in MU4 and Los Peñasquitos Canyon in MU6 (C. Brehme, pers. comm.). There have been no recent detections of American badger in MUs 1, 2, 7, and 8. Suitable habitat appears to be present in MU8 relatively close to locations in MUs 3, 5, and 6 where badgers were detected by USGS in 2011.

Large areas of MU3 were recently surveyed by USGS for American badger and it was only detected at 3 preserves: Crestridge Ecological Reserve, Hollenbeck Canyon Wildlife Area, and Marron Valley Mitigation Bank (see online map). There is an unconfirmed report of a badger burrow on Otay Mesa East (Furby-North; Technology Associates and Environmental Science 2011). Scat at the entrance to the burrow tested negative for badger (C. Brehme, pers. comm.). MU3 contains large contiguous areas of suitable conserved habitat for badgers. The species was also detected at Ramona Grasslands Open Space Preserve in MU5 where there are large blocks of grassland vegetation connected to areas of suitable habitat farther to the north and east. In MU6, American badger was detected at Daley Ranch Open Space Preserve, which contains large blocks of grassland vegetation and is connected to areas of suitable habitat farther to the south and east. All of the preserves where badgers were detected, except for Marron Valley, have high-volume traffic roadways immediately adjacent or very close to them.

Management Categorization Rationale

American badger should be managed as a Species Management Focus Category SL Species due to a high risk of loss from Conserved Lands in the MSPA and because managing grasslands alone will not ensure persistence of the species (see Vol. 1, Table 2-4). American badger is at a high risk of loss from the MSPA as there are limited occurrences, the number of individuals present appears very small, and the habitat for the portion of the occurrence within the MSPA is fragmented by urban and rural development and roads. The species is in decline and faces a high risk of threats. While the American badger would normally be a habitat management species, because of the current status of the occurrence within and adjacent to the MSPA, it was elevated to a species-specific management species to increase management efforts and reduce the potential that it will be extirpated from the MSPA.

Threats to badger include roads with mortality due to vehicular accidents and fragmentation of habitat, and loss of connectivity between occurrences and potentially reduced food supply (ground squirrels and other fossorial species). American badgers may be susceptible to new generation rodenticides obtained indirectly through ingestion of prey. Invasive plant species may reduce suitable habitat and prey (e.g., ground squirrels). Human use of preserves can cause direct mortality, disturbance to burrows, and disruption of daily activities (Adams et al. 2002; Quinn 2008). Although CDFW (previously known as CDFG) has designated badgers as a Species of Special Concern (e.g., its occurrence is declining at a rate that could result in it becoming threatened or endangered if efforts to slow its declines are not successful; CDFG 2011) the California Fish and Game Commission has authorized its take as a furbearer and, during the badger take season, there is no bag limit. The impacts to the MSP badger from the take authorized by the California Fish and Game Commission is unknown (CDFG 2008; CFGC 2013).

Management and Monitoring Approach

The overarching goal for American badger is to protect, enhance, and restore occupied and historically occupied habitat to create resilient, self-sustaining populations that provide for persistence over the long term (>100 years).

Because of the wide-ranging nature and natural low densities of American badger, persistence within the MSPA will require management for badgers both within,

and on, lands to the east and north of the MSPA boundary within the range of the western subspecies of badger (*Taxidea taxus jeffersonii*) in San Diego County. Due to recent studies revealing badger detections across the region, management actions should be prioritized in areas representative of suitable badger vegetation. Suitable habitat appears to be present in MUs 4 and 8 in close to areas in MUs 3, 5, and 6 where badgers were detected by USGS in 2011. Further surveys in MUs 4 and 8 should be conducted and, if badger is detected, these MUs should also be prioritized for management.

For the 2017–2021 planning cycle, the management and monitoring approach for the American badger is to:

(1)   Continue the study begun in 2014 to: determine the locations of American badgers in western San Diego County (see Table of Occurrences); to assess and analyze occurrence status, identify and characterize suitable habitat, and evaluate threats; to record movement patterns to determine the risk of direct mortality from existing and planned future roads; and to examine ways to improve badger connectivity between IMAs and reduce mortality (e.g., culverts, bridges, fencing, etc.). Use the study results to prepare specific recommendations for badger habitat management and for connectivity enhancement within the MSPA.

(2)   Continue the study begun in 2014 to determine the population genetics of American badger in western San Diego County (see Table of Occurrences), within the range of *T. t. Jeffersoni*, to determine the extent of connectivity between badger occurrences and, if possible, the number and relationship of existing individuals, and use this information to determine where to prioritize connectivity enhancements and whether, existing occurrences of American badger are self-sustaining.

(3)   Use data and recommendations from the research and genetic studies to develop a long-term American Badger Monitoring Plan in the MSPA to efficiently and periodically monitor the distribution, abundance, mortality, and connectivity of the badger population using noninvasive and cost-efficient monitoring methods, such as the collection of scat for genetic analysis, tracking, and burrow surveys. The plan should include specific monitoring objectives, sampling frame, sampling design, methods and analytic approach.

(4)   Use results and recommendations from the research and genetic studies to develop a 2022–2026 comprehensive American Badger Management Plan in the MSPA to enhance connectivity within and among IMAs (see Table of Occurrences) and to manage grasslands to improve habitat quality and prey availability. The plan should identify high-priority areas for badger management and provide site-specific management recommendations and guidelines for monitoring the effectiveness of management actions.

For details and the most up-to-date goals, objectives, and actions, go to the MSP Portal American Badger summary page: https://portal.sdmmp.com/view_species.php?taxaid=180565.

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