

Example Summary Descriptions of Four Covered Species Conservation Strategies

Note to Reviewers: This handout provides example descriptions of habitat conservation targets for four covered species and the basis for the targets and other supporting conservation measures in providing for the conservation of the species. Similar descriptions will be prepared for all of the covered wildlife and plant species and expanded into specific conservation measures are prepared.

San Joaquin Kit Fox

Habitat Target#1: Preserve at least 1,000 acres of San Joaquin kit fox breeding habitat. Preservation of San Joaquin kit fox breeding habitat will be achieved through protection, enhancement, and management of grassland and intact vernal pool alkali seasonal wetland complexes that support occupied breeding habitat within Conservation Zone 8 or may be partially or wholly implemented outside of the Planning Area consistent with other conservation plans.

Basis of Providing for Conservation: BDCP actions are expected to affect an estimated 185 acres of kit fox breeding, foraging, and dispersal habitat and 665 acres of agricultural foraging and dispersal habitat. A primary stressor on the kit fox is loss and fragmentation of its grassland habitat through urban and agricultural expansion. Approximately 11 percent of kit fox breeding habitat is currently protected within the Planning Area. If habitats are preserved within the Planning Area, 30 percent of kit fox breeding habitat currently present in the Planning Area will be protected with the preservation and management of an additional 1,000 acres of kit fox grassland and intact vernal pool alkali seasonal wetland complex habitats. Habitat will be located such that movement corridors linking to adjoining kit fox habitats within and adjacent to the Planning Area are maintained. Declines in prey abundance associated with ground squirrel poisoning programs have also been linked to reduced kit fox abundance. Consequently, preserved grassland and vernal pool and alkali seasonal wetland complex will be managed to increase the abundance of San Joaquin kit fox mammalian prey species (e.g., ground squirrels). Based on the level of BDCP habitat effects; the extent of proposed habitat preservation; preserved habitat patch size, enhancement, and management requirements; and maintenance of linkages with other habitat areas, the proposed conservation measures are expected to provide for the conservation of San Joaquin kit fox.

Riparian Brush Rabbit

Habitat Target #1: Restore at least 100 acres of riparian brush rabbit habitat. Restoration of habitat will be achieved through the proposed BDCP restoration of 5,000 acres of riparian habitat. The restoration of riparian brush habitat will be located in Conservation Zone 7 adjacent to or near the existing Tom Paine Slough/Paradise Cut population. The restored habitat will be designed to support the elements of riparian brush rabbit habitat, including flood refugia habitat.

Basis of Providing for Conservation: BDCP actions are not expected to affect riparian brush rabbit habitat or individuals. A total of [] acres of modeled riparian brush rabbit habitat are present in the Planning Area of which approximately 7 percent of modeled species habitat is currently protected. Restoration of 100 acres of habitat will increase the extent of existing habitat by 6 percent, resulting in protection of 13 percent of Planning Area habitat. In addition, a portion of the remaining 4,900 acres of BDCP restored riparian habitat is expected to also support riparian brush habitat over the term of the BDCP. In addition to the species limited distribution and abundance, flooding and predation are primary stressors on this species. The restored riparian brush rabbit habitat will be designed to incorporate flood refugia habitat and will be managed to control non-native predators. In addition, the restored habitat will serve to accommodate the future expansion of the existing population or provide habitat for future introductions of the species. Because BDCP actions are not expected to affect this species and the proposed riparian restoration will specifically restore elements of this species habitat near or within occupied habitats, the proposed conservation measures are expected to provide for the conservation of riparian brush rabbit.

California Black Rail

Habitat Target #1: Restore at least 17,000 acres of tidal marsh plain habitat that supports patches of California black rail habitat. Restoration of habitat will be achieved through the BDCP proposed restoration of 65,000 acres of tidal habitat. Habitat will be restored within designated BDCP Restoration Opportunity Areas (ROAs) in Conservation Zones 1, 2, 4, 7, and 11.

Habitat Target #2: Preserve transitional upland habitat adjacent to restored tidal marsh plain habitat that supports flood refugia for California black rail. Restored tidal marsh plain habitat designs will include preservation of sufficient contiguous transitional upland habitat to provide refuge for California black rails during high water events that flood its marsh habitats.

Basis of Providing for Conservation: BDCP actions to restore tidal habitat are expected to affect approximately 7,130 acres of existing modeled California black rail habitat. The actual impacts on functional black rail habitat are expected to be less since the species habitat model likely overestimates the extent of rail habitat.¹ These restoration actions are designed to reestablish the historical tidal habitats that supported the species. Restoration actions would be implemented over time such that the impacts on temporary loss of rail habitat will be minimized. The proposed restoration will increase the extent of existing tidal marsh habitats supporting patches of rail habitat by an estimated 30 percent relative to current conditions. Approximately 55 percent of modeled rail habitat is currently protected within the Planning Area and Suisun Marsh. Following BDCP restoration of tidal habitats, approximately 81 percent of modeled rail habitat would be protected. Within the Planning Area and Suisun Marsh, existing California black rail habitats are much reduced and highly fragmented relative to historical habitat conditions.

¹ The black rail habitat model is based on vegetation and does not account for other habitat elements, such as water depth, that also governs the suitability of its habitat.

The proposed tidal habitat restoration is intended to restore large patches of tidal marsh plain habitat that will support a mosaic of transitional upland, high and low marsh, tidal channel, and mudflat habitats within which the micro-habitat conditions (e.g., water depth) required by the rail will be supported. Rail habitat in the Suisun Marsh is more extensive than in the Planning Area, much of which is supported by non-tidal managed wetlands. Restoration of brackish tidal marsh plain in Suisun Marsh will substantially increase the extent tidal habitats that historically supported rails. To the extent practicable given the highly modified conditions of the Delta/Suisun Marsh ecosystem, restored tidal habitats will mimic the habitat conditions that historically supported the rail. A major stressor on the reproductive capability of black rail is non-native predators (e.g., feral cats) that prey on nests and juvenile birds. Marshes will be designed to minimize the network of interior dikes that fragment existing Suisun Marsh habitats, thus reducing exposure to non-native predators (e.g., feral cats) and will be managed to control non-native predators.

Based on the level of BDCP habitat effects, the restoration of large tracts of the species' historical tidal habitat, and management to reduce the effects of non-native predators, the proposed conservation measures are expected to provide for the conservation of California black rail.

California Tiger Salamander

Habitat Target #1: Establish at least 2 California tiger salamander preserves totaling at least 6,300 acres. Preservation of habitat will be achieved through protection, enhancement, and management of intact vernal pools that support California tiger salamander breeding habitat and adjacent grassland and alkali seasonal wetland complex that supports upland dispersal and aestivation habitat within Conservation Zones 1 and 8 or may be partially or wholly implemented outside of the Planning Area consistent with other conservation plans.

Target #2: Preserve at least 3 ponds and adjacent upland dispersal and aestivation habitat that support California tiger salamander breeding habitat. Preservation will be achieved through protection, enhancement, and management rangeland ponds (e.g., stock ponds) and surrounding uplands within Conservation Zones 1 and 8 or may be partially or wholly implemented outside of the Planning Area consistent with other conservation plans.

Target #3: Restore 200 acres of vernal pool terrain that supports California tiger salamander breeding habitat. Vernal pools and their micro-watersheds will be restored in historical vernal pool terrain that maintains supporting hydrology within preserved California tiger salamander habitat areas within Conservation Zones 1 and 8 or may be partially or wholly implemented outside of the Planning Area consistent with other conservation plans.

Basis of Providing for Conservation: BDCP actions are not expected to affect California tiger salamander aquatic breeding habitat but could affect an estimated 1,220 acres of California tiger salamander terrestrial cover and aestivation habitat. Over 1,200 acres of habitat effects would result from BDCP tidal habitat restoration actions. Preservation of 6,300 acres of tiger salamander habitat, if implemented within the Planning Area, will preserve approximately 30 percent of the California tiger salamander habitat present in the Planning Area. Preservation of intact vernal pools in occupied habitat within Conservation Zones 1 and 8 or in suitable locations outside of the Planning Area will help ensure the continued viability of existing populations. Preservation of adjoining grassland habitats will provide aestivation and dispersal habitat and protect vernal pool watersheds, and will be located such that movement corridors linking preserved habitats to protected California tiger salamander habitat areas adjacent to the Planning Area are maintained.

Primary stressors on California tiger salamander include fragmentation and conversion of its habitat, presence of non-native predators in breeding habitats, and use of pesticides and rodenticides. Preserved habitat will be managed to eliminate the use of pesticides and rodenticides and increase the abundance of fossorial mammals to provide burrows for aestivation.

Tiger salamanders breed in vernal pools that maintain water through the breeding season. Restoration of 200 acres of vernal pool terrain will be designed to support pools suitable for breeding within grassland preserves. Tiger salamander also breeds in ponds that pond water of sufficient duration to support completion of aquatic life stages but which do not support non-native predators (e.g., bullfrogs). Consequently, preserved ponds will be managed and maintained to provide pond water through the breeding period and to preclude the establishment of non-native predator populations. If needed, pond habitats may be improved (e.g., establishing emergent vegetation to provide cover and prey production for aquatic life stages). Preserve habitats will be located such that movement corridors linking preserved habitats to protected California tiger salamander habitat areas adjacent to the Planning Area are maintained.

Based on the level of BDCP habitat effects, the proposed preservation of occupied breeding and upland movement and aestivation habitat, restoration of vernal pool breeding habitats, management requirements to maintain and enhance protected habitats, and preservation of large patches of habitat patches linked with other habitat areas, the proposed conservation measures are expected to provide for the conservation of California tiger salamander.