

SAIC Draft Work Product Covered Wildlife and Plant Species Biological Goals and Objectives

[Note to Reviewers: the information presented in this handout includes descriptions of the approach to and information supporting the establishment of biological goals and objectives for covered species. This information will be disaggregated and placed into the appropriate corresponding sections of Chapter 3, Conservation Strategy.]

San Joaquin Kit Fox

Conservation Approach

The overall biological goals for the San Joaquin kit fox are designed to protect and enhance sufficient functional habitat to contribute to its recovery. San Joaquin kit fox habitat is distributed along the southwestern margin of the Planning Area in Contra Costa County (see Appendix A, *Covered Species Accounts*). Conservation will be directed toward the acquisition, protection, and enhancement of grassland, alkali seasonal wetland complex, vernal pool complex, and agricultural preserve lands. Protection of these natural communities will maintain breeding, foraging, and dispersal habitat and connectivity with kit fox habitats adjacent to the Planning Area. Approaches for protecting and enhancing San Joaquin kit fox habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The San Joaquin kit fox is a covered species under the East Contra Costa HCP/NCCP and San Joaquin Count Multi-Species HCP. The BDCP approach to conservation of the San Joaquin kit fox is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing San Joaquin kit fox habitat. BDCP implementation could remove approximately 850 acres of San Joaquin kit fox breeding, foraging, and dispersal habitat. To contribute to the conservation of San Joaquin kit fox, the BDCP will protect and enhance acres of grassland, alkali seasonal wetland, vernal pool, and agricultural habitats that support San Joaquin kit fox breeding, foraging, and dispersal habitat in Conservation Zones 7 and 8.

Biological Goals and Objectives

Goal SJKF1: Protect and enhance San Joaquin kit fox habitat to contribute to its recovery.

Problem Statement: Reduction, degradation, and fragmentation of San Joaquin kit fox habitat is hypothesized to have contributed to reduction in species abundance and

distribution. Protecting and enhancing grassland, alkali seasonal wetland, vernal pool, and agricultural habitats in the limited area where this species has potential to occur within the Planning Area is expected to maintain and potential increase its current abundance in the Planning Area and will maintain connectivity with kit fox habitats to the west of the Planning Area.

Objective SJKF1.1: Protect at least [] acres of San Joaquin kit fox breeding, foraging, and dispersal habitat in Conservation Zones 7 and/or 8 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of the protected San Joaquin kit fox habitat may be located outside of the Planning Area in Contra Costa County under the East Contra Costa County HCP/NCCP.

Objective SJKF1.2: Maintain and improve the habitat functions of BDCP protected San Joaquin kit fox breeding, foraging, and dispersal habitats over the term of the BDCP.

Riparian Woodrat

Conservation Approach

The overall biological goals for the riparian woodrat are designed to restore functional riparian woodrat habitat to contribute to its recovery. Riparian woodrat habitat is located in valley oak and willow dominated riparian habitats along the San Joaquin River and Old River. The riparian woodrat is not known to presently occur in the Planning Area, but extant populations occur immediately south of the Planning Area along the Sand Joaquin and Stanislaus Rivers (see Appendix A, *Covered Species Accounts*).

Conservation will be directed towards restoring riparian forest and scrub within the Planning Area to provide habitat that could allow for future reintroduction or expansion of the existing riparian woodrat population into the Planning Area. Approaches for restoring riparian communities that support riparian woodrat habitat are described in the conservation approaches for conserving the Valley/foothill riparian natural community.

The riparian woodrat is a covered species under the San Joaquin HCP. The BDCP approach to conservation of the riparian woodrat is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures are not anticipated to remove or degrade the functions of patches of existing riparian woodrat habitat. To contribute to the conservation and recovery of the riparian woodrat, BDCP will restore 5,000 acres of riparian forest that supports riparian woodrat habitat.

Biological Goals and Objectives

Goal RIWO1: Restore or create riparian woodrat habitat to support future natural expansion of populations into the Planning Area to contribute to its recovery.

Problem Statement: There are no verified occurrences of riparian woodrat from the Planning Area. The nearest verified occurrences are along the Stanislaus River at Caswell Memorial State Park, approximately two miles east of the Planning Area. Reduction and fragmentation of its habitat are hypothesized to have contributed to reduction in species abundance and distribution. Remaining known occupied areas are also susceptible to flooding and fire that could substantially reduce or extirpate the populations. Avoiding impacts on individuals and occupied habitats and increasing the extent of woodrat habitat is expected to help maintain the existing populations, and increasing the extent of available habitat will provide opportunities for the establishment of additional occupied habitat areas, thus reducing the potential for extinction.

Objective RIWO1.1: Restore or create at least [] acres of riparian and scrub that supports riparian woodrat habitat in Conservation Zone 6 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective RIWO1.2: Maintain and improve the habitat functions of BDCP restored riparian woodrat habitats over the term of the BDCP.

Salt Marsh Harvest Mouse

Conservation Approach

The overall biological goals for the salt marsh harvest mouse are designed to restore functional salt marsh harvest mouse habitat to contribute to its recovery. Salt marsh harvest mouse inhabit tidal brackish marsh and managed wetland habitats in Suisun Marsh. Conservation will be directed towards restoring tidal brackish marsh habitats on which the species was historically dependent such that their will be a net increase in salt marsh harvest mouse habitat. Because restoration of tidal brackish marsh will remove and degrade patches of tidal brackish marsh and managed wetland habitats that are currently occupied by salt marsh harvest mouse, brackish tidal marsh restorations will be sequenced and located in a manner that minimizes any temporary loss of habitat extent. Approaches for restoring tidal brackish marsh to support salt marsh harvest mouse habitat are described in the conservation approach for conserving the tidal brackish emergent wetland natural community.

The salt marsh harvest mouse is a proposed covered species under the Solano County HCP currently under development. The BDCP approach to conservation of the salt marsh harvest mouse is consistent with and complementary to achieving the proposed biological goals and objectives of the Solano County HCP.

Effects of BDCP Implementation

Implementation of the BDCP conservation measure to restore brackish tidal marsh in the Suisun Marsh ROA will remove and degrade existing salt marsh harvest mouse habitat in Suisun Marsh. BDCP proposes to restore a combined total 65,000 acres of tidal brackish and freshwater marsh, of which at least 7,000 acres will be restored as brackish tidal marsh in the Suisun Marsh ROA and 15,000 acres as freshwater tidal marsh in the Planning Area. The remaining 22,000 acres of tidal marsh would be restored as tidal brackish marsh in the Suisun Marsh ROA and/or as tidal freshwater marsh in the Planning Area. Consequently, the extent of salt marsh harvest mouse habitat removed or degraded as a result of brackish tidal marsh restoration is a function of how much tidal marsh will be restored in the Suisun Marsh ROA over the term of the BDCP. BDCP proposes to restore sufficient tidal brackish marsh in Suisun marsh to increase the extent of salt marsh harvest mouse habitat by at least █ acres relative to the extent of existing habitat area.

Biological Goals and Objectives

Goal SMHM1: Restore tidal salt marsh harvest mouse habitat to contribute to its recovery.

Problem Statement: Reduction and fragmentation of salt marsh harvest mouse habitat and alteration of hydrological conditions supporting habitat is hypothesized to have contributed to reduction in species abundance and distribution. Avoiding impacts on individuals and increasing the extent of tidal marsh that supports mouse habitat is expected to help maintain and increase the species distribution and abundance. Restoration of tidal marsh in the west Delta would be expected to maintain or increase mouse habitat availability in future years with conversion of freshwater marsh in the west Delta to brackish tidal marsh with sea level rise.

Objective SMHM1.1: Restore or create sufficient tidal brackish marsh that supports salt marsh harvest mouse habitat in the Suisun Marsh ROA such that there is a net increase of at least █ acres of salt marsh harvest mouse habitat within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SMHM1.2: Restore or create at least 2,100 acres of tidal freshwater marsh in the West Delta ROA that could support salt marsh harvest mouse tidal brackish marsh habitat in future years with sea level rise within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SMHM1.3: Maintain and improve the habitat functions of BDCP restored salt marsh harvest mouse habitats over the term of the BDCP.

Riparian Brush Rabbit

Conservation Approach

The overall biological goals for the riparian brush rabbit are designed to restore functional riparian brush rabbit habitat to contribute to its recovery. Riparian brush rabbit habitat is located in valley riparian habitats along the San Joaquin River, Old River, and Grant Line Canal. One of the two known extant population occurs in the Planning Area in the vicinity of Tom Paine Slough and Paradise Cut (see Appendix A, *Covered Species Accounts*). Conservation will be directed towards restoring riparian forest and scrub within the Planning Area to provide habitat that could allow for future reintroduction or expansion of the existing riparian brush rabbit population into the Planning Area. Approaches for restoring riparian communities that support riparian brush rabbit habitat are described in the conservation approaches for conserving the Valley/foothill riparian natural community.

The riparian brush rabbit is a covered species under the San Joaquin HCP. The BDCP approach to conservation of the riparian brush rabbit is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures are not anticipated to remove or degrade the functions of patches of existing riparian brush rabbit habitat. To contribute to the conservation and recovery of the riparian brush rabbit, BDCP will restore 5,000 acres of riparian forest that supports riparian brush rabbit habitat.

Biological Goals and Objectives

Goal RBRA1: Restore or create habitat riparian brush rabbit to support future natural expansion of riparian brush rabbit populations in the Planning Area to contribute to its recovery.

Problem Statement: Riparian brush rabbit is currently known only from two locations, one of which is in the Planning Area. Reduction and fragmentation of its habitat are hypothesized to have contributed to reduction in species abundance and distribution. The two remaining known occupied areas are also susceptible to flooding that could substantially reduce or extirpate the populations. Increasing the extent of riparian brush rabbit habitat will provide opportunities for the establishment of additional occupied habitat areas, thus reducing the potential for extinction.

Objective RBRA1.1: Restore or create at least [] acres of riparian and scrub that supports riparian brush rabbit habitat in Conservation Zone 6 within [] years of BDCP

implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective RBRA1.2: Maintain and improve the habitat functions of BDCP restored riparian brush rabbit habitats over the term of the BDCP.

Townsend's Western Big-Eared Bat

The overall biological goals for the Townsend's western big-eared bat are designed to retain, protect, and restore sufficient functional habitat to contribute to its conservation. Although no occurrences have been documented, the Evaluation Area is within the presumed range of Townsend's western big-eared bat. Riparian forest and woodland habitats support roosting and primary Townsend's western big-eared bat foraging habitat. All other natural communities in the Evaluation Area support secondary foraging habitat. Abandoned farm buildings, bridges, and other structures that support cave-like cavities also provide roosting habitat. Conservation will be primarily directed toward the protection, enhancement, and restoration of natural communities that support roosting and foraging habitat. Approaches for protecting, enhancing, and restoring Townsend's western big-eared bat habitat are described in the conservation approaches for each of the natural communities that support its habitat.

The Townsend's western big-eared bat is a covered species under the East Contra Costa HCP/NCCP and proposed for coverage under the Yolo Natural Heritage Program HCP/NCCP that is under development. The BDCP approach to conservation of the Townsend's western big-eared bat is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing Townsend's western big-eared bat habitat. BDCP implementation could remove approximately 1,000 acres of Townsend's western big-eared bat primary roosting and foraging habitat and 74,000 acres of secondary foraging habitat. To contribute to the conservation of Townsend's western big-eared bat, the BDCP will restore 5,000 acres of riparian forest and scrub supporting primary roosting and foraging habitat, restore 65,000 acres of tidal marsh habitat supporting secondary foraging habitat, protecting █ acres of other natural communities supporting secondary foraging habitat, and contributing towards increasing the abundance of flying insect prey by reducing the application of pesticides with the Planning Area.

Biological Goals and Objectives

Goal TWBB1: Protect, enhance, and restore Townsend's western big-eared bat habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of native Townsend's western big-eared bat nesting and foraging habitats and reduction in prey availability are hypothesized to have contributed to reduction in species abundance and distribution. However, within the Planning Area and surrounding region, the species has adapted well to remaining remnant nesting habitats and agricultural foraging habitats and currently occurs in high breeding densities throughout much of the Planning Area. Increasing the extent of riparian forest that supports Townsend's western big-eared bat nesting habitat and maintaining sufficient high value foraging habitat to support Townsend's western big-eared bat in the Planning Area is expected to help maintain and increase the species distribution and abundance.

Objective TWBB1.1: Protect at least [] acres of Townsend's western big-eared bat foraging habitat distributed such that at least [] percent is in Conservation Zones 2 and/or 3, [] percent is in Conservation Zone 4, [] percent is in the South Conservation Zones 5 and/or 6, and [] percent is in Conservation Zones 1 and/or 10 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of the protected Townsend's western big-eared bat foraging habitat may be located elsewhere within the Planning Area or may be protected outside of the Planning Area in Solano, Yolo, Sacramento, Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve Townsend's western big-eared bat objectives.

Objective TWBB1.2: Restore at least [] acres of Townsend's western big-eared bat roosting habitat within the Planning Area distributed among Conservation Zone 1, 3, 6, 9, and 10 within 40 years of BDCP implementation in accordance with the habitat BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective TWBB1.3: Maintain and improve the habitat functions of BDCP protected Townsend's western big-eared bat roosting and foraging habitats over the term of the BDCP.

Suisun Shrew

Conservation Approach

The overall biological goals for the Suisun shrew are designed to restore functional Suisun shrew habitat to contribute to its conservation. Suisun shrew inhabits tidal brackish marsh and managed wetland habitats in Suisun Marsh. Conservation will be directed towards restoring tidal brackish marsh habitats on which the species was historically dependent such that their will be a net increase in Suisun shrew habitat. Because restoration of tidal brackish marsh will remove and degrade patches of tidal brackish marsh and managed wetland habitats that are currently occupied by Suisun shrew, brackish tidal marsh restorations will be sequenced and located in a manner that

minimizes any temporary loss of habitat extent. Approaches for restoring tidal brackish marsh to support Suisun shrew habitat are described in the conservation approach for conserving the tidal brackish emergent wetland natural community.

The Suisun shrew is not covered or proposed for coverage under any of the approved or planned HCP/NCCPs overlapping or adjacent to the Planning Area.

Effects of BDCP Implementation

Implementation of the BDCP conservation measure to restore brackish tidal marsh in the Suisun Marsh ROA will remove and degrade existing Suisun shrew habitat in Suisun Marsh. BDCP proposes to restore a combined total 65,000 acres of tidal brackish and freshwater marsh, of which at least 7,000 acres will be restored as brackish tidal marsh in the Suisun Marsh ROA and 15,000 acres as freshwater tidal marsh in the Planning Area. The remaining 22,000 acres of tidal marsh would be restored as tidal brackish marsh in the Suisun Marsh ROA and/or as tidal freshwater marsh in the Planning Area. Consequently, the extent of Suisun shrew habitat removed or degraded as a result of brackish tidal marsh restoration is a function of how much tidal marsh will be restored in the Suisun Marsh ROA over the term of the BDCP. BDCP proposes to restore sufficient tidal brackish marsh in Suisun marsh to increase the extent of Suisun shrew habitat by at least [] acres relative to the extent of existing habitat area.

Biological Goals and Objectives

Goal SUSH1: Restore tidal Suisun shrew habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of Suisun shrew habitat and alteration of hydrological conditions supporting habitat is hypothesized to have contributed to reduction in species abundance and distribution. Increasing the extent of tidal marsh that supports shrew habitat is expected to help maintain and increase the species distribution and abundance. Restoration of tidal marsh in the west Delta would be expected to maintain or increase shrew habitat availability in future years with conversion of freshwater marsh in the west Delta to brackish tidal marsh with sea level rise.

Objective SUSH1.1: Restore or create sufficient tidal brackish marsh that supports Suisun shrew habitat in the Suisun Marsh ROA such that there is a net increase of at least [] acres of Suisun shrew habitat within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SUSH1.2: Restore or create at least 2,100 acres of tidal freshwater marsh in the West Delta ROA that could support Suisun shrew tidal brackish marsh habitat in future years with sea level rise within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SUSH1.3: Maintain and improve the habitat functions of BDCP restored Suisun shrew habitats over the term of the BDCP.

Tricolored Blackbird

Conservation Approach

The overall biological goals for the tricolored blackbird are designed to retain, protect, and restore sufficient functional habitat to contribute to its conservation. Tricolored blackbird nesting colonies occur uncommonly throughout the Evaluation Area with the largest concentration of nesting colonies reported from the Central Delta, but the largest individual colonies reported from the Yolo Bypass (see Appendix A, *Covered Species Accounts*). Occurrence and distribution of nesting colonies is a function of the availability of suitable nesting substrates (primarily marshes, but also including blackberry brambles, nettles, and some agricultural habitats) in close proximity to open water and within a grassland, tidal and non-tidal wetland, or agricultural landscape. Conservation of tricolored blackbird breeding and foraging habitats will be directed toward protection and restoration of tidal and non-tidal wetlands and the protection and enhancement of agricultural land and grassland natural communities. Approaches for protecting and enhancing tricolored blackbird habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The tricolored blackbird is a covered species under the East Contra Costa HCP/NCCP and San Joaquin Count Multi-Species HCP and is proposed for coverage under the Solano County HCP, Sacramento County HCP, and Yolo Natural Heritage Program HCP/NCCP that are under development. Tricolored blackbird habitat within the BDCP Planning Area overlaps with all of the neighboring plans. The BDCP approach to conservation of the tricolored blackbird is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing agricultural, grassland, seasonal wetland, and marsh habitat. BDCP implementation could remove approximately 37,000 acres of tricolored blackbird foraging habitat and 4,700 acres of breeding habitat. To contribute to the conservation of tricolored blackbird, the BDCP will restore 65,000 acres of tidal brackish and freshwater marsh and [] acres of non-tidal marsh that supports breeding habitat and protect and enhance [] acres of agricultural land, non-tidal marsh, and grassland communities that support foraging and breeding habitat.

Biological Goals and Objectives

Goal TRBL1: Protect, enhance, and restore tricolored blackbird habitat to contribute to its conservation.

Problem Statement: Reduction and degradation of tricolored blackbird habitat and alteration of hydrological conditions supporting habitat, excessive levels of predation, and human disturbance of nesting colonies are hypothesized to have contributed to reduction in species abundance and distribution. Increasing the extent of tidal marsh and permanent non-tidal emergent marsh, along with increasing the extent of protected grasslands and agricultural lands (including idle lands) that support tricolored blackbird habitat is expected to conserve the species.

Objective TRBL1.1: Protect at least [] acres of tricolored blackbird foraging habitat distributed such that at least [] percent is in Conservation Zones 1 and/or 10, [] percent is in Conservation Zones 2 and/or 3, [] percent is in Conservation Zone 4, [] percent is in Conservation Zones 5 and/or 6, and [] percent is in Conservation Zone 9 within [] years of BDCP implementation in accordance with the restoration schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of tricolored blackbird foraging habitat may be protected elsewhere within the Planning Area or may be protected outside of the Planning Area in Solano, Yolo, Sacramento, Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve tricolored blackbird objectives.

Objective TRBL1.2: Restore at least [] acres of tricolored blackbird nesting habitat distributed such that at least [] percent is in Conservation Zones 1 and/or 10, [] percent is in Conservation Zone 3, [] percent is in Conservation Zone 6, [] percent is in Conservation Zone 9, and [] percent is in Conservation Zone 10 within 40 years of BDCP implementation in accordance with the habitat restoration schedule presented in Chapter 6, *BDCP Implementation*.

Objective TRBL1.3: Maintain and improve the habitat functions of BDCP protected tricolored blackbird foraging and nesting habitats over the term of the BDCP.

Suisun Song Sparrow

Conservation Approach

The overall biological goals for the Suisun song sparrow are designed to restore functional habitat to contribute to its conservation. Suisun song sparrows inhabit tidal brackish marsh habitat in Suisun Marsh. Conservation will be directed towards restoring tidal brackish marsh habitats on which the species was historically dependent such that their will be a net increase in Suisun song sparrow habitat. Because restoration of tidal brackish marsh will remove and degrade patches of tidal brackish marsh that may be currently occupied by Suisun song sparrow, brackish tidal marsh restorations will be sequenced and located in a manner that minimizes any temporary loss of habitat extent. Approaches for restoring tidal brackish marsh to support Suisun song sparrow habitat are described in the conservation approach for conserving the tidal brackish emergent wetland natural community.

The Suisun song sparrow is not covered or proposed for coverage under any of the approved or planned HCP/NCCPs overlapping or adjacent to the Planning Area.

Effects of BDCP Implementation

Implementation of the BDCP conservation measure to restore brackish tidal marsh in the Suisun Marsh ROA will remove and degrade existing Suisun song sparrow habitat in Suisun Marsh. BDCP proposes to restore a combined total 65,000 acres of tidal brackish and freshwater marsh, of which at least 7,000 acres will be restored as brackish tidal marsh in the Suisun Marsh ROA and 15,000 acres as freshwater tidal marsh in the Planning Area. The remaining 22,000 acres of tidal marsh would be restored as tidal brackish marsh in the Suisun Marsh ROA and/or as tidal freshwater marsh in the Planning Area. Consequently, the extent of Suisun song sparrow habitat removed or degraded as a result of brackish tidal marsh restoration is a function of how much tidal marsh will be restored in the Suisun Marsh ROA over the term of the BDCP. BDCP proposes to restore sufficient tidal brackish marsh in Suisun marsh to increase the extent of Suisun song sparrow habitat by at least [] acres relative to the extent of existing habitat area.

Biological Goals and Objectives

Goal SUSP1: Restore tidal Suisun song sparrow habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of Suisun song sparrow habitat and alteration of hydrological conditions supporting habitat is hypothesized to have contributed to reduction in species abundance and distribution. Predation by non-native predators (e.g., red fox, feral cats) is also hypothesized to have reduced population growth. Increasing the extent of tidal marsh that supports song sparrow habitat and reducing effects of non-native predation is expected to help maintain and increase the species distribution and abundance. Restoration of tidal marsh in the west Delta would be expected to maintain or increase song sparrow habitat availability in future years with conversion of freshwater marsh in the west Delta to brackish tidal marsh with sea level rise.

Objective SUSP1.1: Restore or create sufficient tidal brackish marsh that supports Suisun song sparrow habitat in the Suisun Marsh ROA such that there is a net increase of at least [] acres of Suisun song sparrow habitat within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SUSP1.2: Restore or create at least 2,100 acres of tidal freshwater marsh in the West Delta ROA that could support Suisun song sparrow tidal brackish marsh habitat in future years with sea level rise within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SUSP1.3: Maintain and improve the habitat functions of BDCP restored Suisun song sparrow habitats over the term of the BDCP.

Yellow-breasted Chat

Conservation Approach

The overall biological goals for the yellow-breasted chat are designed to restore sufficient functional riparian habitat to contribute to its conservation. Yellow-breasted chat is an uncommon nesting and migratory species in the Planning Area. Potential breeding occurrences have been recently reported from south Yolo Bypass and portions of the western Delta (see Appendix A, *Covered Species Accounts*). Only small patches of suitable riparian habitat remain in the Planning Area. The occurrence and distribution of chats in the Planning Area is mainly a function of the availability and extent of suitable riparian habitat. Thus, through the restoration of riparian habitats that provide the necessary vegetation and structural components for chat nesting, cover, and foraging there is potential to enhance nesting populations in some areas. Approaches for restoration of yellow-breasted chat habitat are described in the conservation approach for conserving the riparian natural community that supports its habitat.

The yellow-breast chat is proposed for coverage under the Yolo County Natural Heritage Program HCP/NCCP that is under development. The BDCP approach to conservation of the yellow-breasted chat is expected to be consistent with and complementary to achieving the biological goals and objectives that may be developed for that plan.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing yellow-breast chat habitat. BDCP implementation could remove approximately 900 acres of primary and secondary yellow-breasted chat nesting and migratory habitat. To contribute to the conservation of yellow-breasted chat, the BDCP will restore 5,000 acres of riparian habitat within the Planning Area.

Biological Goals and Objectives

Goal YBCH1: Restore yellow-breasted chat habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of riparian forest and scrub and nest parasitism is hypothesized to have contributed to a reduction in yellow-breasted chat abundance and distribution. Increasing the extent of riparian forest and scrub that supports chat habitat is expected to help maintain and increase the species' distribution and abundance. Restoration of riparian forest and scrub in large patches that minimize edge would also be expected to reduce the susceptibility of the chat to cowbird nest parasitism.

Objective YBCH1.1: Restore at least █ acres of yellow-breasted chat nesting habitat within the Planning Area and Suisun Marsh within 40 years of BDCP implementation in accordance with the habitat restoration schedule presented in Chapter 6, *BDCP Implementation*.

Objective YBCH1.2: Maintain and improve the habitat functions of BDCP protected yellow-breasted chat foraging and nesting habitats over the term of the BDCP.

Western Burrowing Owl

Conservation Approach

The overall biological goals for the western burrowing owl are designed to retain, protect, and restore sufficient functional habitat to contribute to its conservation. Burrowing owls are distributed throughout the Evaluation Area, with the largest and densest nesting/wintering populations occurring in the Yolo Bypass, in the west Delta in the vicinity of Brentwood, and in the southwest Delta in the vicinity of Clifton Court Forebay and the City of Tracy (see Appendix A, *Covered Species Accounts*). Distribution and nesting/wintering density is largely a function of the availability and distribution of grassland habitats. Protecting grassland and suitable agricultural habitats is important to maintaining populations. Thus, conservation will be directed toward the protection and enhancement of grassland and agricultural land communities to sustain existing nesting/wintering populations and potentially increase local populations in low density areas. Approaches for protecting and enhancing burrowing owl habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The burrowing owl is a covered species under the East Contra Costa HCP/NCCP and San Joaquin Count Multi-Species HCP and is proposed for coverage under the Solano County HCP, Sacramento County HCP, and Yolo Natural Heritage Program HCP/NCCP that are under development. Burrowing owl habitat within the BDCP Planning Area overlaps with all of the neighboring plans. The BDCP approach to conservation of the burrowing owl is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing grassland and agricultural habitats. BDCP implementation could remove approximately 5,100 acres of high value, 7,500 acres of moderate value, and 23,300 acres of low value burrowing owl habitat. To contribute to the conservation of western burrowing owl, the BDCP will protect, enhance, and restore █ acres of high, moderate, and low value grassland and agricultural western burrowing owl habitats.

Biological Goals and Objectives

Goal BUOW1: Protect, enhance, and restore western burrowing owl habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of grassland habitats and reduction in prey availability are hypothesized to have contributed to reduction in species abundance and distribution. Preserving and restoring grassland and agricultural lands that support burrowing owl in the Planning Area is expected to help maintain and increase its distribution and abundance.

Objective BUOW1.1: Protect at least [] acres of high value burrowing owl habitat distributed such that at least [] percent is in Conservation Zone 1, [] percent is in Zone 10, [] percent is within Conservation Zone 6, [] percent is within Conservation Zone 7, and [] percent is within Conservation Zone 8 within [] years of BDCP implementation. Up to [] percent may be protected elsewhere within the Planning Area where suitable conditions for burrowing owls exist or may be protected outside of the Planning Area in Solano, Yolo, Sacramento, Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve burrowing owl objectives.

Objective BUOW1.2: Restore between [] and [] acres of western burrowing owl habitat within the Planning Area and Suisun Marsh within 40 years of BDCP implementation in accordance with the BDCP implementation schedule for restored tidal marshes presented in Chapter 6, *BDCP Implementation*.

Objective BUOW1.3: Protect at least [] acres of moderate value burrowing owl habitat distributed such that at least [] percent is in Conservation Zone 1, [] percent is in Zone 10 and/or the Yolo Bypass ROA, [] percent is within Conservation Zone 6, [] percent is within Conservation Zone 7, and [] percent is within Conservation Zone 8 within [] years of BDCP implementation. Up to [] percent may be protected elsewhere within the Planning Area where suitable conditions for burrowing owls exist or may be protected outside of the Planning Area in Solano, Yolo, Sacramento, Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve burrowing owl objectives.

Objective BUOW1.4: Protect at least [] acres of low value western burrowing owl habitat in the Planning Area and Suisun Marsh within [] years of BDCP implementation in accordance with the restoration schedule presented in Chapter 6, *BDCP Implementation*.

Objective BUOW1.5: Maintain and improve the habitat functions of BDCP protected burrowing owl habitats over the term of the BDCP.

Greater Sandhill Crane

Conservation Approach

The overall biological goals for the greater sandhill crane are designed to retain, protect, and enhance sufficient functional habitat to contribute to its recovery. Greater sandhill cranes occur in the Planning Area only during the winter months where they forage and roost primarily on Central Delta islands (see Appendix A, *Covered Species Accounts*). While the winter range is used traditionally by wintering cranes, annual use and winter distribution are mainly determined by agricultural crop patterns that provide foraging habitat, and the presence and condition of seasonal wetlands or shallowly flooded farmlands that are used as roosting habitat. Thus, through protection and management of agricultural lands and the creation and management of roosting habitat, the winter population can be successfully maintained and provide for existing and increasing wintering populations. Grassland and seasonal wetland protection and enhancement actions may also contribute to increase foraging and roosting opportunities and potentially the expansion of winter use areas. Conservation will be directed toward the protection and enhancement of agricultural land and grassland communities to sustain existing wintering populations and provide for increasing populations in some areas. Approaches for protecting and enhancing greater sandhill crane habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The greater sandhill crane is a covered species under the San Joaquin Count Multi-Species HCP and is proposed for coverage under the Sacramento County HCP that is under development. Greater sandhill crane habitat within the BDCP Planning Area overlaps with both of these neighboring plans. The BDCP approach to conservation of the greater sandhill crane is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing greater sandhill crane habitat. BDCP implementation could remove approximately 8,000 acres of greater sandhill crane habitat within primary and secondary use areas. To contribute to the recovery of greater sandhill crane, the BDCP will protect and enhance ■ acres of agricultural and grassland habitat distributed within or adjacent to greater sandhill crane use areas.

Biological Goals and Objectives

Goal SACR1: Protect and enhance greater sandhill crane habitat to contribute to its recovery.

Problem Statement: The area and quality of greater sandhill crane winter roosting and foraging habitat available to support the abundance of cranes that overwinter in the

Planning Area are hypothesized to be important factors that govern the degree of overwinter mortality, the successful return of breeding pairs and juveniles to summer breeding ranges, and subsequent breeding success. Maintaining sufficient crane foraging and roosting habitat to support successful overwintering of the crane population is expected to contribute to the maintenance and growth of the Central Valley population of greater sandhill cranes.

Objective SACR1.1: Protect at least [] acres of greater sandhill crane foraging and roosting habitat distributed such that at least [] percent is in Conservation Zones 2, [] percent is in Conservation Zone 3, [] percent is in Conservation Zone 4, and [] percent is in Conservation Zone 5 within [] years of BDCP implementation in accordance with the restoration schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of greater sandhill crane habitat may be protected elsewhere within the Planning Area in locations that will achieve greater sandhill crane objectives.

Objective SACR1.2: Maintain and improve the habitat functions of BDCP protected greater sandhill crane foraging and roosting habitats over the term of the BDCP.

California Black Rail

Conservation Approach

The overall biological goals for the California black rail are designed to restore functional black rail habitat to contribute to its recovery. California black rails inhabit tidal brackish marsh in Suisun Marsh and tidal freshwater marsh in the Delta. Conservation will be directed towards restoring tidal marsh habitats on which the species was historically dependent such that their will be a net increase in black rail habitat. Because restoration of tidal marsh will remove and degrade patches of tidal marsh that are currently occupied by California black rail, tidal marsh restorations will be sequenced and located in a manner that minimizes any temporary loss of habitat extent. Approaches for restoring tidal brackish marsh to support California black rail habitat are described in the conservation approach for conserving the tidal brackish emergent wetland and tidal freshwater emergent wetland natural communities.

The California black rail is a covered species under the San Joaquin County HCP and a proposed covered species under the Solano County HCP and Yolo NHP currently under development. The BDCP approach to conservation of the California black rail is consistent with and complementary to achieving the proposed biological goals and objectives of these plans.

Effects of BDCP Implementation

Implementation of the BDCP conservation measures to restore tidal marsh in the Planning Area and Suisun Marsh ROA will remove and degrade existing California black

rail habitat. BDCP implementation could remove approximately 7,150 acres of California black rail habitat. To contribute to the recovery of California black rail, BDCP will restore a combined total 65,000 acres of tidal brackish and freshwater marsh of which an estimated 17,000-26,500 acres of would be marsh plain supporting rail habitat.

Biological Goals and Objectives

Goal BLRA1: Restore California black rail habitat to contribute to its recovery.

Problem Statement: Reduction and fragmentation of California black rail habitat and alteration of hydrological conditions supporting habitat is hypothesized to have contributed to reduction in species abundance and distribution. Avoiding impacts on individuals and increasing the extent of tidal marsh that supports rail habitat is expected to help maintain and increase the species distribution and abundance. Restoration of tidal marsh in the west Delta would be expected to maintain or increase rail habitat availability in future years with conversion of freshwater marsh in the west Delta to brackish tidal marsh with sea level rise.

Objective BLRA1.1: Restore or create at least acres of tidal brackish and freshwater marsh that supports California black rail habitat in the Suisun Marsh ROA and Delta ROAs within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective BLRA1.2: Restore or create at least 2,100 acres of tidal freshwater marsh in the West Delta ROA to support existing populations and that could support California black rail tidal brackish marsh habitat in future years with sea level rise within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective BLRA1.3: Maintain and improve the habitat functions of BDCP restored California black rail habitats over the term of the BDCP.

California Clapper Rail

Conservation Approach

The overall biological goals for the California clapper rail are designed to restore functional clapper rail habitat to contribute to its recovery. California clapper rails inhabit tidal brackish marsh in Suisun Marsh. Conservation will be directed towards restoring tidal brackish marsh habitats on which the species was historically dependent such that their will be a net increase in clapper rail habitat. Because restoration of tidal brackish marsh will remove and degrade patches of tidal brackish marsh that are currently occupied by California clapper rail, brackish tidal marsh restorations will be sequenced and located in a manner that minimizes any temporary loss of habitat extent. Approaches for restoring tidal brackish marsh to support California clapper rail habitat

are described in the conservation approach for conserving the tidal brackish emergent wetland natural community.

The California clapper rail is a proposed covered species under the Solano County HCP currently under development. The BDCP approach to conservation of the California clapper rail is consistent with and complementary to achieving the proposed biological goals and objectives of the Solano County HCP.

Effects of BDCP Implementation

Implementation of the BDCP conservation measure to restore brackish tidal marsh in the Suisun Marsh ROA will remove and degrade existing California clapper rail habitat in Suisun Marsh. BDCP proposes to restore a combined total 65,000 acres of tidal brackish and freshwater marsh, of which at least 7,000 acres will be restored as brackish tidal marsh in the Suisun Marsh ROA and 15,000 acres as freshwater tidal marsh in the Planning Area. The remaining 22,000 acres of tidal marsh would be restored as tidal brackish marsh in the Suisun Marsh ROA and/or as tidal freshwater marsh in the Planning Area. Consequently, the extent of California clapper rail habitat removed or degraded as a result of brackish tidal marsh restoration is a function of how much tidal marsh will be restored in the Suisun Marsh ROA over the term of the BDCP. BDCP proposes to restore sufficient tidal brackish marsh in Suisun marsh to increase the extent of California clapper rail habitat by at least [] acres relative to the extent of existing habitat area.

Biological Goals and Objectives

Goal CLRA1: Restore tidal California clapper rail habitat to contribute to its recovery.

Problem Statement: Reduction and fragmentation of California clapper rail habitat and alteration of hydrological conditions supporting habitat is hypothesized to have contributed to reduction in species abundance and distribution. Predation by non-native predators (e.g., red fox, feral cats) is also hypothesized to have reduced population growth. Increasing the extent of tidal marsh that supports rail habitat, and reducing effects of non-native predation is expected to help maintain and increase the species distribution and abundance. Restoration of tidal marsh in the west Delta would be expected to maintain or increase rail habitat availability in future years with conversion of freshwater marsh in the west Delta to brackish tidal marsh with sea level rise.

Objective CLRA1.1: Restore or create sufficient tidal brackish marsh that supports California clapper rail habitat in the Suisun Marsh ROA such that there is a net increase of at least [] acres of California clapper rail habitat within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective CLRA1.2: Restore or create at least 2,100 acres of tidal freshwater marsh in the West Delta ROA that could support California clapper rail tidal

brackish marsh habitat in future years with sea level rise within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective CLRA1.3: Maintain and improve the habitat functions of BDCP restored California clapper rail habitats over the term of the BDCP.

Swainson's Hawk

Conservation Approach

The overall biological goals for the Swainson's hawk are designed to retain, protect, and restore sufficient functional habitat to contribute to its recovery. Nesting Swainson's hawks are distributed throughout the Planning Area with the largest and densest nesting populations occurring west of the Sacramento River north of Courtland, along the eastern edge of the Planning Area north of State Route 12 and south of State Route 4. Nesting also occurs throughout the Central Delta, although nesting density is less than in the aforementioned areas (see Appendix A, *Covered Species Accounts*). Distribution and nesting density are largely a function of the availability of suitable nest trees (including riparian woodlands, roadside trees, tree rows, and isolated trees) and agricultural crop patterns that provide suitable foraging habitat (generally defined as cover types that provide access to abundant microtine prey). In particular, the occurrence and distribution of alfalfa is important to maintaining or enhancing nesting populations; whereas the expansion of orchards, vineyards, and other unsuitable cover types reduces available habitat and results in local population declines. Thus, through restoration of nesting habitats and manipulation of crop patterns, there is potential to enhance nesting populations in some areas. Grassland enhancement actions may also contribute to increased foraging opportunities and expansion of nesting populations in some areas. Conservation will be directed toward the acquisition, protection, and enhancement of agricultural and grassland preserve lands to sustain existing nesting populations and increase local populations in low nesting density areas. Approaches for protecting and enhancing Swainson's hawk habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The Swainson's hawk is a covered species under the East Contra Costa HCP/NCCP and San Joaquin Count Multi-Species HCP and is proposed for coverage under the Solano County HCP, Sacramento County HCP, and Yolo Natural Heritage Program HCP/NCCP that are under development. Swainson's hawk habitat within the BDCP Planning Area overlaps with all of the neighboring plans. The BDCP approach to conservation of the Swainson's hawk is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing Swainson's hawk habitat. BDCP implementation could remove approximately 46,500 acres of Swainson's hawk foraging habitat and 500 acres of Swainson's hawk nesting habitat. To contribute to the conservation of Swainson's hawk, the BDCP will restore 5,000 acres of riparian habitat and acquire and enhance and protect and enhance [] acres of agricultural and grassland habitat that supports Swainson's hawk foraging habitat distributed throughout the Planning Area.

Biological Goals and Objectives

Goal SWHA1: Protect, enhance, and restore Swainson's hawk habitat to contribute to its recovery.

Problem Statement: Reduction and fragmentation of native Swainson's hawk nesting and foraging habitats and reduction in prey availability are hypothesized to have contributed to reduction in species abundance and distribution. However, within the Planning Area and surrounding region, the species has adapted well to remaining remnant nesting habitats and agricultural foraging habitats and currently occurs in high breeding densities throughout much of the Planning Area. Increasing the extent of riparian forest that supports Swainson's hawk nesting habitat and maintaining sufficient high value foraging habitat to support Swainson's hawk in the Planning Area is expected to help maintain and increase the species distribution and abundance.

Objective SWHA1.1: Protect at least [] acres of Swainson's hawk foraging habitat distributed such that at least [] percent is in Conservation Zones 2 and/or 3, [] percent is in the East Delta ROA and/or Conservation Zone 4, [] percent is in the South Delta ROA and/or Conservation Zones 5 or 6, and [] percent is in the Cache Slough ROA, Yolo Bypass ROA, and/or Conservation Zone 1 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of the protected Swainson's hawk foraging habitat may be located elsewhere within the Planning Area or may be protected outside of the Planning Area in Solano, Yolo, Sacramento, Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve Swainson's hawk objectives.

Objective SWHA1.2: Restore at least [] acres of Swainson's hawk nesting habitat within the Planning Area distributed among the Cosumnes/Mokelumne, East Delta, Yolo Bypass, and South Delta Restoration Opportunity Areas within 40 years of BDCP implementation in accordance with the habitat BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective SWHA1.3: Maintain and improve the habitat functions of BDCP protected Swainson's hawk foraging and nesting habitats over the term of the BDCP.

White-tailed Kite

Conservation Approach

The overall biological goals for the white-tailed kite are designed to retain, protect, and restore sufficient functional habitat to contribute to its conservation. Nesting white-tailed kites are sparsely distributed throughout most of the Planning Area, Yolo Basin, and Suisun Marsh, with the largest reported concentrations north of State Route 12 and Yolo Bypass. Nesting also occurs in the Central and South Delta, although reported nesting density is less than in the aforementioned areas (see Appendix A, *Covered Species Accounts*). Most are associated with riparian nesting habitat and grassland, agricultural, and seasonal wetland foraging habitat. Distribution and nesting density are largely a function of the availability of suitable nest trees (primarily riparian woodlands) and agricultural crop patterns that provide suitable foraging habitat (generally defined as cover types that provide access to abundant microtine prey). In particular, the occurrence and distribution of alfalfa and other hay crops is important to maintaining or enhancing nesting populations; whereas the expansion of orchards, vineyards, and other unsuitable cover types reduces available habitat and results in local population declines. Thus, through restoration of nesting habitats and manipulation of crop patterns, there is potential to enhance nesting populations in some areas. Conservation of grassland habitats may also contribute to increased foraging opportunities and expansion of nesting populations in some areas. Conservation will be directed toward the protection and enhancement of agricultural and grassland preserve lands to sustain existing nesting populations and increase local populations in low nesting density areas. Approaches for protecting and enhancing white-tailed kite habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The white-tailed kite is a covered species under the San Joaquin Count Multi-Species HCP and is proposed for coverage under the Solano County HCP, Sacramento County HCP, and Yolo Natural Heritage Program HCP/NCCP that are under development. White-tailed kite habitat within the BDCP Planning Area overlaps with each of these neighboring plans. The BDCP approach to conservation of the white-tailed kite is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing agricultural, grassland, managed wetland, and riparian habitat. BDCP implementation could remove approximately 53,300 acres of white-tailed kite foraging habitat and 700 acres of white-tailed kite nesting habitat. To contribute to the conservation of white-tailed kite, the BDCP will restore 5,000 acres of riparian habitat and acquire and enhance and protect and enhance acres of agricultural and grassland habitat distributed throughout the Planning Area.

Biological Goals and Objectives

Goal WTKI1: Protect and enhance white-tailed kite habitat to contribute to its conservation.

Problem Statement: Reduction and fragmentation of native white-tailed kite nesting and foraging habitats and reduction in prey availability are hypothesized to have contributed to reduction in species abundance and distribution. Increasing the extent of riparian forest that supports white-tailed kite nesting habitat and maintaining and enhancing sufficient foraging habitat to support white-tailed kites is expected to help maintain and increase the species' distribution and abundance.

Objective WTKI1.1: Protect at least [] acres of white-tailed kite foraging habitat distributed such that at least [] percent is in Conservation Zones 2 and/or 3, [] percent is in Conservation Zone 4, [] percent is in Conservation Zones 5 or 6, and [] percent is in Conservation Zones 1 and/or 10 within [] years of BDCP implementation in accordance with the restoration schedule presented in Chapter 6, *BDCP Implementation*. Up to [] percent of white-tailed kite foraging habitat may be protected elsewhere within the Planning Area or may be protected outside of the Planning Area in Solano, Yolo, Sacramento Contra Costa, and/or San Joaquin Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve white-tailed kite objectives.

Objective WTKI1.2: Restore at least [] acres of white-tailed kite nesting habitat within the Planning Area and Suisun Marsh within 40 years of BDCP implementation in accordance with the habitat restoration schedule presented in Chapter 6, *BDCP Implementation*.

Objective WTKI1.3: Maintain and improve the habitat functions of BDCP protected white-tailed kite foraging and nesting habitats over the term of the BDCP.

Giant Garter Snake

Conservation Approach

The overall biological goals for the giant garter snake are designed to protect, enhance, and restore functional giant garter snake habitat to contribute to its recovery. Giant garter snake habitat is located in grassland, freshwater wetland (tidal and non-tidal), open water (tidal and non-tidal), and agricultural habitats, including drains and canals, throughout the Planning Area. Primary habitat use areas are located in the Yolo Bypass and Cache Slough ROAs and in the east Delta (see Appendix A, *Covered Species Accounts*). Conservation will be directed towards restoring tidal freshwater marsh and shallow subtidal habitats that support giant garter snake habitat and protecting and enhancing giant garter snake habitat areas within conserved agricultural lands. Approaches for

protecting, enhancing, and restoring giant garter snake habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The giant garter snake is a covered species under the East Contra Costa HCP/NCCP, San Joaquin HCP, and Natomas Basin HCP and is propose for coverage under the Solano County HCP, South Sacramento HCP, and Yolo Natural Heritage Program HCP/NCCP that are under development. The BDCP approach to conservation of the giant garter snake is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove or degrade the functions of patches of existing giant garter snake habitat. BDCP implementation could remove approximately 19,000 acres of giant garter snake aquatic breeding, foraging, and movement habitat, including ■ miles of agricultural drains and canals, and upland aestivation habitat. To contribute to the conservation of giant garter snake and contribute to its recovery, the BDCP will restore and estimated 45,000-58,000 acres of tidal freshwater marsh, shallow subtidal aquatic habitat, and transitional uplands habitat that will support habitat for the giant garter snake and will protect and enhance at least ■ acres of existing giant garter snake habitat.

Biological Goals and Objectives

Goal GGSN1: Protect, enhance, and restore giant garter snake habitat to contribute to its recovery.

Problem Statement: Loss and fragmentation of wetland habitats that historically supported giant garter snake is hypothesized to be the primary cause for reductions in the abundance and distribution of giant garter snake. Restoration of non-rice agricultural lands in the Planning Area that currently support limited giant garter snake habitat to tidal marsh and protection and restoration of non-tidal giant garter snake habitat is expected to help maintain and provide the basis for potentially increasing the distribution and abundance of giant garter snake in the Planning Area.

Objective GGSN1.1: Restore or create at least ■ acres of tidal freshwater marsh that supports giant garter snake habitat in the Cosumnes/Mokelumne, East Delta, Cache Slough, and South Delta ROAs within 40 years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective GGSN1.2: Restore or create at least ■ acres of non-tidal freshwater emergent wetland and open water habitat that supports giant garter snake in Conservation Zones 1- 6, and/or 10 within ■ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to ■ percent of the restored giant garter snake habitat

may be located outside of the Planning Area in Sacramento County and/or San Joaquin County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve giant garter snake habitat objectives.

Objective GGSN1.3: Protect █ acres of giant garter snake habitat that is connected by giant garter snake movement habitat to other existing habitat areas snake in Conservation Zones 1, 3, 6, and/or 10 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective GGSN1.4: Maintain and improve the habitat functions of BDCP protected giant garter snake habitats over the term of the BDCP.

Western Pond Turtle

[To come.]

California Red-Legged Frog

Conservation Approach

The overall biological goals for the California red-legged frog are designed to protect, enhance, and restore functional California red-legged frog habitat to contribute to its recovery. Red-legged frog habitat is located in grassland and agricultural habitats along and adjacent to the southwest margin of the Planning Area (see Appendix A, *Covered Species Accounts*). Red-legged frog aquatic breeding habitats are typically comprised of stock ponds and intermittent streams that retain water for sufficient periods during the breeding season for larvae to metamorphose, but that dry during summer/fall such that they do not support non-native predators (e.g., bullfrogs). Upland habitats are generally comprised of grasslands that support aestivation and movement habitat to and from aquatic breeding habitats. Conservation will be directed towards protecting and enhancing artificial water bodies that support red-legged frog breeding habitat in conjunction with protection and enhancement of its adjoining terrestrial cover and aestivation habitats. Approaches for protecting and enhancing California red-legged frog habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The California red-legged frog is a covered species under the East Contra Costa HCP/NCCP and is proposed for coverage under the Solano County HCP that is under development. The BDCP approach to conservation of the California red-legged frog is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove or degrade the functions of patches of existing California red-legged frog habitat. BDCP implementation could remove approximately 850 acres of California red-legged frog upland and breeding habitat. To contribute to the conservation of California red-legged frog, the BDCP will protect and enhance █ ponds that support breeding habitat and will protect at least █ acres of upland cover and dispersal habitat.

Biological Goals and Objectives

Goal RLFR1: Protect and enhance California red-legged frog habitat to contribute to its recovery.

Problem Statement: Reduction and fragmentation of California red-legged frog habitat and the introduction of non-native species are hypothesized to have contributed to reduction in species abundance and distribution. Avoidance or replacement of habitat values in the limited area where this species has potential to occur within the Planning Area is expected to avoid or minimize impacts. Preserving or increasing the extent of non-tidal perennial aquatic and non-tidal perennial permanent emergent marsh habitat is expected to maintain and potentially could increase the species distribution and abundance.

Objective RLFR1.1: Protect at least █ ponds that support California red-legged frog breeding habitat located in Conservation Zones 7 and/or 8 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to █ of the ponds may be protected in locations outside of the Planning Area in Solano County and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve California red-legged frog objectives.

Objective RLFR1.2: Protect at least █ acres of California red-legged frog upland cover and dispersal habitat in Conservation Zones 7 and/or 8 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to █ acres of California red-legged frog upland cover and dispersal habitat may be protected in locations outside of the Planning Area in Solano County and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve California red-legged frog objectives.

Objective RLFR1.4: Maintain and improve the habitat functions of BDCP protected California red-legged frog habitats over the term of the BDCP.

Western Spadefoot Toad

Conservation Approach

The overall biological goals for the western spadefoot toad are designed to protect, enhance, and restore functional western spadefoot toad habitat to contribute to its conservation. Western spadefoot toad habitat is located in grassland, alkali seasonal wetland, and vernal pool habitats along and adjacent to the northern and southwestern margins of the Planning Area and along and adjacent to the north and east margins of Suisun Marsh (see Appendix A, *Covered Species Accounts*). Western spadefoot toad aquatic breeding habitats are typically comprised of vernal pools, playa pools, intermittent streams, and stock ponds that retain water for sufficient periods during the breeding season for larvae to metamorphose, but that dry during summer/fall such that they do not support non-native predators (e.g., bullfrogs, mosquito fish). Upland habitats are generally comprised of grasslands that support terrestrial cover and aestivation and that serve as movement corridors to and from aquatic breeding habitats. Conservation will be directed towards protecting and enhancing vernal pool, playa pool, and artificial water bodies that support western spadefoot toad breeding habitat in conjunction with protection and enhancement of its adjoining terrestrial cover and aestivation habitats. Approaches for protecting and enhancing western spadefoot toad habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The western spadefoot toad is a covered species under the East Contra Costa HCP/NCCP and is proposed for coverage under the Solano County HCP and Yolo Natural Heritage Program HCP/NCCP that are under development. The BDCP approach to conservation of the western spadefoot toad is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove or degrade the functions of patches of existing western spadefoot toad habitat. BDCP implementation could remove approximately 1,200 acres of western spadefoot toad upland and breeding habitat. To contribute to the conservation of western spadefoot toad, the BDCP will protect and enhance [] ponds and [] acres of vernal pool complex that support breeding habitat and will protect at least [] acres of terrestrial cover and aestivation habitat.

Biological Goals and Objectives

Goal WSTO1: Protect and enhance western spadefoot toad habitat to contribute to its conservation.

Problem Statement: Loss, degradation, and fragmentation of wetland and upland habitats that historically supported western spadefoot toad (foraging, breeding, and hibernation habitat) is hypothesized to be the primary cause for reductions in the abundance and distribution of western spadefoot toad. Preservation and restoration of seasonal wetlands and grasslands is expected to help maintain and provide the basis for

potentially increasing the distribution and abundance of western spadefoot toad in the Planning Area and Suisun Marsh.

Objective WSTO1.1: Protect at least [] ponds that support western spadefoot toad breeding habitat located in Conservation Zones 1 and/or 10 and [] ponds in Conservation Zone 7 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] of the ponds may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve western spadefoot toad objectives.

Objective WSTO1.2: Protect at least [] acres of vernal pool complex that support western spadefoot toad breeding and terrestrial cover and aestivation habitat in Conservation Zones 1 and/or 10 and [] acres in Conservation Zone 7 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] acres of vernal pool complex may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve western spadefoot toad objectives.

Objective WSTO1.3: Protect at least [] acres of western spadefoot toad terrestrial cover and aestivation habitat in Conservation Zones 1 and/or 10 and [] acres in Conservation Zone 7 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] acres of western spadefoot toad terrestrial cover and aestivation habitat may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve western spadefoot toad objectives.

Objective WSTO1.4: Maintain and improve the habitat functions of BDCP protected western spadefoot toad habitats over the term of the BDCP.

California Tiger Salamander

Conservation Approach

The overall biological goals for the California tiger salamander are designed to protect, enhance, and restore functional California tiger salamander habitat to contribute to its recovery. Tiger salamander habitat is located in grassland and agricultural habitats along and adjacent to the northwest and southwest margins of the Planning Area and along and adjacent to the north and east margins of Suisun Marsh (see Appendix A, *Covered Species Accounts*). Tiger salamander aquatic breeding habitats are typically comprised of vernal pools, playa pools, and stock ponds that retain water for sufficient periods during the breeding season for larvae to metamorphose, but that dry during summer/fall such

that they do not support non-native predators (e.g., bullfrogs, mosquito fish). Upland habitats are generally comprised of grasslands that support gopher and ground squirrel burrows for aestivation and that serve as movement corridors to and from aquatic breeding habitats. Conservation will be directed towards protecting and enhancing vernal pool, playa pool, and artificial water bodies that support tiger salamander breeding habitat in conjunction with protection and enhancement of its adjoining terrestrial cover and aestivation habitats. Approaches for protecting and enhancing California tiger salamander habitat are described in the conservation approaches for conserving the natural communities that support its habitat.

The California tiger salamander is a covered species under the East Contra Costa HCP/NCCP and is proposed for coverage under the Solano County HCP and Yolo Natural Heritage Program HCP/NCCP that are under development. The BDCP approach to conservation of the California tiger salamander is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove or degrade the functions of patches of existing California tiger salamander habitat. BDCP implementation could remove approximately 1,200 acres of California tiger salamander upland and breeding habitat. To contribute to the conservation of California tiger salamander, the BDCP will protect and enhance █ ponds and █ acres of vernal pool complex that support breeding habitat and will protect at least █ acres of terrestrial cover and aestivation habitat.

Biological Goals and Objectives

Goal TISA1: Protect and enhance California tiger salamander habitat to contribute to its recovery.

Problem Statement: Loss, degradation, and fragmentation of wetland and upland habitats that historically supported California tiger salamander (foraging, breeding, and hibernation habitat) is hypothesized to be the primary cause for reductions in the abundance and distribution of this species. Preserving and restoring seasonal wetlands and grasslands is expected to help maintain and provide the basis for potentially increasing the distribution and abundance of California tiger salamander in the Planning Area.

Objective TISA1.1: Protect at least █ ponds that support California tiger salamander breeding habitat located in Conservation Zones 1 and/or 10 and █ ponds in Conservation Zone 7 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to █ of the ponds may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa

County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve California tiger salamander objectives.

Objective TISA1.2: Protect at least [] acres of vernal pool complex that support California tiger salamander breeding and terrestrial cover and aestivation habitat in Conservation Zones 1 and/or 10 and [] acres in Conservation Zone 7 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] acres of vernal pool complex may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve California tiger salamander objectives.

Objective TISA1.3: Protect at least [] acres of California tiger salamander terrestrial cover and aestivation habitat in Conservation Zones 1 and/or 10 and [] acres in Conservation Zone 7 within [] years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to [] acres of California tiger salamander terrestrial cover and aestivation habitat may be protected in locations outside of the Planning Area in Yolo County, Solano County, and/or Contra Costa County under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve California tiger salamander objectives.

Objective TISA1.4: Maintain and improve the habitat functions of BDCP protected California tiger salamander habitats over the term of the BDCP.

Valley Elderberry Longhorn Beetle

[To come.]

Vernal Pool Tadpole Shrimp

[To come.]

Conservancy Fairy Shrimp

[To come.]

Longhorn Fairy Shrimp

[To come.]

Vernal Pool Fairy Shrimp

[To come.]

Mid Valley Fairy Shrimp

[To come.]

Vernal Pool Plant Species (Alkali Milk-Vetch, Boggs Lake Hedge-Hyssop, Heckard's Peppergrass, and Legenere)

Conservation Approach

The overall biological goals for the vernal pool plant species (alkali milk-vetch, Boggs Lake hedge-hyssop, Heckard's peppergrass, and legenere) are designed to protect, restore, and improve sufficient functional habitat to contribute to their conservation. The vernal pool complex community that provides the habitat for these species is distributed in Conservation Zones 1, 3, 7, 8, 9, and 10 as four geographically distinct types: annual grassland vernal pool complexes in the Stone Lakes area; clay alluvium vernal pools and playa pools occurring from Putah Creek south to Cache Slough; Montezuma Block vernal pools and playa pools in the Jepson Prairie/Montezuma Hills area; and alkaline sink/meadow vernal pools near the Byron/Clifton Court Forebay area. Enhancement actions directed at controlling non-native invasive species such as waxy manna grass, Italian ryegrass, and perennial pepperweed will contribute to increasing the numbers of individuals in existing populations and in establishing new populations. Conservation will be directed toward the protection and enhancement of vernal pool complexes in the six Conservation Zones. Approaches for protecting and enhancing vernal pool plant species habitat are described in the conservation approaches for conserving the vernal pool complex natural community.

Alkali milk-vetch has been proposed for coverage under the Solano County Multi-species HCP and the Yolo County Natural Heritage Program Plan. Boggs Lake hedge-hyssop is a covered species under the Natomas Basin HCP and the San Joaquin County Multi-species HCP and has been proposed for coverage under the Solano County HCP and the South Sacramento HCP. Legenere is a covered species under the San Joaquin County Multi-Species HCP and the Natomas Basin HCP, and it is proposed for coverage under the Solano County HCP and the South Sacramento County HCP. Heckard's pepper-grass is proposed for coverage under the Solano County HCP and the Yolo County Natural Heritage Program HCP/NCCP. The BDCP approach to conservation of the vernal pool plant species is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of the plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing vernal pool habitat. BDCP implementation could remove approximately 100 acres of vernal pool plant species habitat. To contribute to the conservation of covered vernal pool plant species, the BDCP will protect and enhance at least acres of vernal pool complex.

Goal VPPS1: Protect and enhance vernal pool plant habitats to contribute to the conservation of alkali milk-vetch, Boggs Lake hedge-hyssop, Heckard's peppergrass, and legenera.

Problem Statement: Reduction and fragmentation of vernal pool plant species habitat has contributed to the reduction in the species' abundances and distributions. Additionally, non-native invasive species, specifically, waxy mangrass, Italian ryegrass, and perennial pepperweed have further contributed to population reductions. Protecting and enhancing vernal pool complex that supports vernal pool plant species is expected to help maintain and potentially increase the species' distributions and abundances.

Objective VPPS1.1: Protect at least █ acres of vernal pool complex within Conservation Zones 1 and/or 10, █ acres in Conservation Zone 7 and/or 8, and █ acres in Conservation Zone 9 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to █ percent of the protected vernal pool plant species habitat may be protected outside of the Planning Area in Solano, Yolo, Sacramento and/or Contra Costa Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve vernal pool plant species objectives.

Objective VPPS1.2: Maintain and improve the habitat functions of BDCP protected vernal pool plant species habitat over the term of the BDCP.

Alkali Soil Plant Species (Heartscale, Brittscale, San Joaquin Spearscale, Lesser Saltscale, and Carquinez Goldenbush)

Conservation Approach

The overall biological goals for the alkali soil plant species (heartscale, brittscale, San Joaquin spearscale, lesser saltscale, and Carquinez goldenbush) are designed to protect and improve sufficient functional habitat to contribute to their conservation and recovery. The alkali seasonal wetland complex, vernal pool complex, and grassland (alkaline soil scalds and alkaline intermittent drainages in grassland) communities that provide habitat for these species are interspersed with each other in Conservation Zones 1, 7, 8, 9, and 10. The vernal pool complex community occurs as three geographically distinct types: clay alluvium vernal pools and playa pools occurring from Putah Creek south to Cache Slough; Montezuma Block vernal pools and playa pools in the Jepson Prairie/Montezuma Hills area; and alkaline sink/meadow vernal pools near the Byron/Clifton Court Forebay area. Conservation will be directed toward the protection and enhancement of alkali seasonal wetland complex, vernal pool complex, and grassland communities in the six Conservation Zones. Enhancement actions directed at controlling non-native invasive species such as Italian ryegrass, and perennial pepperweed will contribute to increasing the numbers of individuals in existing populations and in establishing new populations. Approaches for protecting and enhancing alkali soil plant species habitat are described in the conservation approaches for conserving the vernal pool complex natural community.

Heartscale is a covered species under the San Joaquin County Multi-Species HCP and is proposed for coverage under the Solano County HCP. Britblescale is a covered species in the San Joaquin County Multi-Species HCP and the East Contra Costa County HCP/NCP, and is proposed for coverage under the Yolo County Natural Heritage Program HCP/NCCP and the Solano County HCP. San Joaquin spearscale is a covered species under the East Contra Costa County HCP/NCP and is proposed for coverage under the Solano County HCP and the Yolo County Natural Heritage Program HCP/NCCP. Carquinez goldenbush is proposed for coverage under the Solano County HCP. The BDCP approach to conservation of the alkali soil plant species is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of the plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove existing alkali soils species habitat. BDCP implementation could remove approximately 20 acres of heartscale, britblescale, and lesser saltscale habitat; 100 acres of San Joaquin saltscale habitat, and 60 acres of Carquinez goldenbush habitat. To contribute to the conservation and recovery of alkali soil plant species, the BDCP will protect and enhance at least █ acres of alkali soil plant species habitat.

Goal ASPS1: Protect and enhance alkali soil plant habitats to contribute to the conservation and recovery of heartscale, britblescale, San Joaquin spearscale, lesser saltscale, and Carquinez goldenbush.

Problem Statement: Reduction and fragmentation of alkali soil plant species habitat has contributed to the reduction in the species' abundances and distributions. Additionally, non-native invasive species, specifically, Italian ryegrass, and perennial pepperweed have further contributed to population reductions. Protecting and enhancing alkali soil plant species habitat is expected to help maintain and potentially increase the species' distributions and abundances.

Objective ASPS 1.1: Protect at least █ acres of alkali soil plant species habitat within Conservation Zones 1 and/or 10, █ acres in Conservation Zone 7 and/or 8, and █ acres in Conservation Zone 9 within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*. Up to █ percent of the protected alkali soil plant species habitat may be protected outside of the Planning Area in Solano, Yolo, Sacramento and/or Contra Costa Counties under an approved HCP/NCCP or under agreement with the Counties in locations that will achieve alkali soil plant species objectives.

Objective ASP1.2: Maintain and improve the habitat functions of BDCP protected alkali soil plant species habitat over the term of the BDCP.

Slough Thistle

[To come.]

Suisun Thistle

[To come.]

Soft Bird's-Beak

[To come.]

Delta Button Celery

[To come.]

Mason's Lilaepsis

Conservation Approach

The overall biological goals for Mason's lilaepsis are designed to restore sufficient functional habitat to contribute to its conservation. Most occurrences of Mason's lilaepsis are known from Conservation Zones 1, 5, 6, and 9 and the west Delta. It is primarily found growing on tidal mudflat habitat that is interspersed as small patches among tidal brackish emergent wetland and tidal freshwater emergent wetland natural communities. Its habitat is also ephemeral in nature as periodic site disturbance and deposition of sediment are required to provide relatively vegetation-free patches within the emergent wetland vegetation. For these reasons the extent of existing tidal mudflat communities has not been mapped. Conservation will be directed toward restoration of tidal communities that are expected to support tidal mudflats as a component of those communities.

Mason's lilaepsis is a covered species under the approved San Joaquin County Multi-species Habitat Conservation and Open Space Plan. It is also proposed for coverage under the Solano County Multispecies Habitat Conservation Plan and the Yolo County Natural Heritage Program Plan. The BDCP approach to conservation of Mason's lilaepsis is consistent with and complementary to achieving the adopted and proposed biological goals and objectives of those plans.

Effects of BDCP Implementation

Implementation of the BDCP covered activities and conservation measures will remove or degrade the functions of Mason's lilaepsis habitat. BDCP implementation could

remove approximately 150 acres of Mason's lilaepsis habitat. To contribute to the conservation of Mason's lilaepsis, the BDCP will restore or create 3,675-4,825 acres of tidal brackish marsh and 13,295-21,645 acres of tidal freshwater marsh that are expected to support tidal mudflats that are proportionately similar in extent and patchiness as existing tidal marshes in the Evaluation Area.

Biological Goals and Objectives

Goal MALI1: Restore Mason's lilaepsis habitat to contribute to its conservation.

Problem Statement: Loss and degradation of mud bank habitat and the hydrology and disturbance factors that created mud bank habitat that historically supported Mason's lilaepsis is hypothesized to be the primary cause for reductions in the abundance and distribution of Mason's lilaepsis. Preservation and restoration of fresh tidal marsh, brackish tidal marsh, and channel bank habitat is expected to help maintain and provide the basis for potentially increasing the distribution and abundance of Mason's lilaepsis in the Planning Area and Suisun Marsh.

Objective MALI1.1: Restore or create tidal mudflats as a component of BDCP restored or created tidal marshes for Mason's lilaepsis habitat within █ years of BDCP implementation in accordance with the BDCP implementation schedule presented in Chapter 6, *BDCP Implementation*.

Objective MALI 1.2: Maintain and improve the habitat functions of BDCP restored Mason's lilaepsis over the term of the BDCP.

Delta Mudwort

[To come.]

Suisun Marsh Aster

[To come.]

Caper-Fruited Tropicocarpum

[To come.]