

1 **Appendix 10A**

2 **Special-Status Terrestrial Species**

3 Tables 10A.1 and 10A.2 list special-status wildlife and plant species that occur
4 within the study area and could be affected by changes under Alternatives 1
5 through 5 as compared to the No Action Alternative and Second Basis of
6 Comparison. These changes could occur with the Central Valley Project and
7 State Water Project operations or ecosystem restoration activities, and the
8 potential for impacts is based on the likelihood of operational changes or
9 restoration actions affecting suitable habitat for the listed species in the defined
10 area of analysis.

11 The area of analysis for operational changes includes open water areas of
12 reservoirs, rivers, and creeks; adjacent riparian vegetation; wetlands supported by
13 these water bodies; potential restoration areas in Yolo Bypass and Suisun Marsh.

14 Species are presented in alphabetical order based on scientific name.

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1 Table 10A.1 Special-Status Wildlife Species

Common Name	Scientific Name	Status Federal/State/ CDFW*	Habitat/Distribution	Areas with Potential for Occurrence	Impact Potential
Burrowing Owl (nesting and wintering sites)	<i>Athene cunicularia</i>	--/--/SSC	Nests and forages in grasslands, shrub lands, deserts, and agricultural fields, especially where ground squirrel burrows are present. Occurs near New Melones Reservoir. Unlikely to occur along the Sacramento River corridor due to a lack of suitable nesting habitat. Known to occur in suitable habitat in the Yolo Bypass, in the Chowchilla Bypass, on the San Luis NWR complex, and at Mendota Pool.	Sacramento, Feather, American, Yolo, Stanislaus, San Joaquin, Delta, San Luis	Low potential to be affected by restoration in Yolo Bypass.
Swainson's Hawk (nesting)	<i>Buteo swainsoni</i>	BCC/T/--	Nests in riparian woodlands, roadside trees, tree rows, isolated trees, woodlots, and trees in farmyards and rural residences. Forages in grasslands and agricultural fields in Central Valley. Occurs near New Melones Reservoir. Known to nest in suitable habitat on the San Luis NWR complex and Great Valley Grasslands State Park and other areas along the San Joaquin River. Suitable nesting and foraging habitat is present along Sacramento River.	Sacramento, Feather, American, Yolo, San Joaquin, Stanislaus, Delta, San Luis	Low potential to be affected by changes in foraging habitat in agricultural areas influenced by operations; low potential for nesting habitat to be affected by operational changes in flow.
Western Yellow-billed Cuckoo (nesting)	<i>Coccyzus americanus occidentalis</i>	T/E/--	Densely foliated, deciduous trees and shrubs, especially willows, required for roosting sites. An uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. Breeding pairs known from Sacramento Valley. Reclamation (2010) concluded this species could potentially occur near New Melones Reservoir. Detected by BDCP surveys in 2009 near Walnut Grove. Likely to nest and forage in the upper Sacramento River area.	Trinity, Clear Creek, Sacramento, Feather, Delta, New Melones, San Joaquin	Low potential for operations to affect riparian vegetation used for nesting by this species.
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	T/--/--	Found only in association with its host plant, blue elderberry (<i>Sambucus mexicana</i>). In the Central Valley, the elderberry shrub is found primarily in riparian vegetation. Known to occur in elderberry shrubs present in the riparian woodland and expected to occur in suitable habitat in other locations along the San Joaquin River. Recorded at Caswell Memorial State Park and other locations along the Stanislaus River.	Trinity, Sacramento, Feather, American, San Joaquin, Stanislaus, Delta, San Luis	Low potential to be affected by changes in flow that influence riparian vegetation.
Greater Sandhill Crane (nesting and wintering)	<i>Grus canadensis tabida</i>	FS/T/FP	Eight distinct wintering locations in the Central Valley from Chico/Butte Sink on the north to Pixley National Wildlife Refuge near Delano on the south, with more than 95 percent occurring within the Sacramento Valley between Butte Sink and the Delta. Unlikely to breed in the upper Sacramento River area. Known to occur during winter in suitable habitat on the San Luis NWR complex, along the San Joaquin River, and in the Delta.	Sacramento, Feather, Yolo, San Joaquin	Low potential to be affected by restoration in the Yolo Bypass and changes in operations that influence crop patterns.
Bald Eagle (nesting and wintering)	<i>Haliaeetus leucocephalus</i>	--/E/FP	Requires large bodies of water or free-flowing rivers with abundant fish and adjacent snags or other perches for foraging. Occurs near New Melones Reservoir, Whiskeytown Lake, Trinity Lake, and Lewiston Reservoir. Known to nest in suitable habitat around Lake Millerton and in the Chowchilla Bypass.	Trinity, Clear Creek, Shasta, Sacramento, Feather, American, Yolo, Stanislaus, San Joaquin, Delta, San Luis	Low potential to be affected by changes in elevation at reservoirs.
California Black Rail	<i>Laterallus jamaicensis coturniculus</i>	BCC/T/FP	Tidal marshes in the northern San Francisco Bay estuary, Tomales Bay, Bolinas Lagoon, the Delta, Morro Bay, the Salton Sea, and the lower Colorado River. Found recently at several inland freshwater sites in the Sierra Nevada foothills in Butte, Yuba, and Nevada counties, the Cosumnes River Preserve in south Sacramento County, and Bidwell Park in Chico, Butte County.	Delta	Low potential to be affected by tidal marsh restoration.
California Ridgeway's Rail	<i>Rallus longirostris obsoletus</i>	E/E/FP	Dense marshy areas of the Bay-Delta region and Suisun Marsh.	Delta, Suisun	Low potential to be affected by tidal marsh restoration.
Salt Marsh Harvest Mouse	<i>Reithrodontomys raviventris</i>	E/E/FP	Found only in saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed saline emergent wetland is preferred habitat, where it may be locally common. Grasslands adjacent to pickleweed marsh are used, but only when new grass growth affords suitable cover in spring and summer. Reported occurrences of the salt marsh harvest mouse from within the Delta are restricted to salt and brackish tidal marshes along the northern edge of the Sacramento River and the southern edge of the San Joaquin River as far east as the vicinity of Collinsville and Antioch, west of Sherman Island	Delta, Suisun	Low potential to be affected by tidal marsh restoration and changes in water quality that influence habitat suitability.

Common Name	Scientific Name	Status Federal/State/ CDFW*	Habitat/Distribution	Areas with Potential for Occurrence	Impact Potential
Bank Swallow (nesting)	<i>Riparia riparia</i>	--/T/--	Neotropical migrant found primarily in riparian and other lowland habitats in California west of the deserts during the spring-fall period. In summer, restricted to riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with fine-textured or sandy soils, into which it digs nesting holes. Approx. 75% of the current breeding population in California occurs along banks of the Sacramento and Feather rivers in the northern Central Valley.	Trinity, Clear Creek, Sacramento, Feather, American, Yolo, New Melones, San Joaquin, Delta	Low potential to be affected by operational changes that influence flows adjacent to nesting sites.
Giant Garter Snake	<i>Thamnophis gigas</i>	T/T/--	Marshes, ponds, sloughs, small lakes, low-gradient streams, and other waterways, and in agricultural wetlands, including irrigation and drainage canals, rice fields, and adjacent uplands. Current distribution extends from near Chico in Butte County south to the Mendota Wildlife Area in Fresno County. Known from White Slough/Caldoni Marsh and Yolo Basin/Willow Slough. Known to occur in suitable habitat on the San Luis NWR complex and in the Mendota Wildlife Area; reported from Mendota Pool.	Sacramento, Feather, American, Yolo, Delta, San Joaquin	Low potential to be affected by restoration in Yolo Bypass and operational changes that influence the acreage in rice production.
Tricolored Blackbird (nesting colony)	<i>Agelaius tricolor</i>	BCC/--/SSC	Nests colonially in tules, cattails, willows, thistles, blackberries, and other dense vegetation. Forages in grasslands and agricultural fields. Reclamation (2010) concluded this species occurs near New Melones Reservoir. Suitable nesting and foraging habitat is present in the upper Sacramento River area. Known to occur in suitable habitat on the San Luis NWR complex and other sites in the Yolo Bypass.	Sacramento, Feather, Yolo, American, Delta, Stanislaus.	Low potential to be affected by restoration activities in the Yolo Bypass.
Tule Greater White-fronted Goose (wintering)	<i>Anser albifrons elgasi</i>	--/--/SSC	Winters in California. Associates with dense tule-cattail marsh habitat. Has been documented near Sherman Island and at various locations in the Suisun Marsh. Winters at Sacramento Valley wildlife refuges and surrounding rice fields, Suisun Marsh, and Grizzly Island Wildlife Area.	Sacramento, Delta, Suisun	Low potential to be affected by restoration activities that increase inundated floodplain or flooded agricultural fields (e.g., winter flooding of rice fields).
Short-eared Owl (nesting)	<i>Asio flammeus</i>	--/--/SSC	Widespread winter migrant, found primarily in the Central Valley, in the western Sierra Nevada foothills, and along the coastline. Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Occasionally still breeds in northern California. Known to occur in suitable habitat on the San Luis NWR complex, where it possibly also nests. Breeding range includes coastal areas in Del Norte and Humboldt counties, the San Francisco Bay Delta, northeastern Modoc plateau, the east side of the Sierra from Lake Tahoe south to Inyo County, and the San Joaquin Valley	Sacramento, Feather, Yolo, Delta, Suisun, San Joaquin	Low potential for changes in acreage of agricultural land and cropping patterns to affect this species.
Ringtail	<i>Bassariscus astutus</i>	--/--/FP	Wooded and brushy areas, especially near water courses. Species distribution not well known. Potentially suitable habitat is present along the Sacramento River corridor.	Shasta, Sacramento, Feather, Delta, San Joaquin	Low potential for operational changes to affect riparian vegetation used for habitat by this species.
Conservancy Fairy Shrimp	<i>Branchinecta conservatio</i>	E/--/--	Large vernal pools and seasonal wetlands, ~ 1 acre in size. Known to occur in suitable habitat on the San Luis NWR complex, Eastside Bypass, and along the San Joaquin River. Currently found in disjunct and fragmented habitats across the Central Valley of California from Tehama County to Merced County and at two Southern California locations on the Los Padres National Forest in Ventura County.	Sacramento, Feather, Yolo, San Joaquin, Delta	Low potential to be affected by restoration activities that influence vernal pools.
Longhorn Fairy Shrimp	<i>Branchinecta longiantenna</i>	E/--/--	Vernal pool/seasonal wetlands. Known distribution extends from Contra Costa and Alameda counties to San Luis Obispo County and also includes Merced County. Within this geographic range, it is extremely rare in vernal pools and swales. Known to occur in suitable habitat on the San Luis NWR complex.	Delta, San Joaquin	Low potential to be affected by restoration activities that influence vernal pools.
Vernal Pool Fairy Shrimp	<i>Branchinecta lynchi</i>	T/--/--	Typically inhabits vernal pools and seasonal wetlands less than 200 m ² and less than 5 cm deep; may also occur in larger, deeper pools. Known to occur in suitable habitat on the San Luis NWR.	Sacramento, Feather, Yolo, American, Delta, San Joaquin	Low potential to be affected by restoration activities that influence vernal pools.
Black Tern	<i>Chilodnius niger</i>	--/--/SSC	Nests in freshwater marsh, forages for fish and insects in open water, rice fields, and marsh. Uncommon visitor in suitable habitat in the area of analysis; expected during the nonbreeding season along the San Joaquin River.	Sacramento, Feather, Yolo, San Joaquin, Delta	Low potential to be affected by restoration or changes in acreage of irrigated agriculture and cropping patterns.

Common Name	Scientific Name	Status Federal/State/ CDFW*	Habitat/Distribution	Areas with Potential for Occurrence	Impact Potential
Yellow Warbler (nesting)	<i>Dendroica petechia brewsteri</i>	BCC/--/SSC	Nests in riparian woodland and riparian scrub habitats. Forages in a variety of wooded and shrub habitats during migration. Reclamation (2010) concluded this species occurs near New Melones Reservoir. No recent nesting records, but potential nesting habitat present; known to occur during migration in suitable habitat on the San Luis NWR. Could nest and forage in the upper Sacramento River area. Likely to use riparian woodlands during migration.	Trinity, Clear Creek, Shasta, Sacramento, Feather, New Melones, San Joaquin	Low potential to be affected by operational flow changes that influence riparian vegetation.
White-tailed Kite (nesting)	<i>Elanus leucurus</i>	--/--/FP	Nests in woodlands and isolated trees; forages in grasslands, shrub lands and agricultural fields. Common to uncommon and a year-round resident in the Central Valley, in other lowland valleys, and along the entire length of the coast. Recent surveys in Yolo and Sacramento counties have documented active nest sites in riparian habitats in the Yolo Bypass and along Steamboat and Georgiana sloughs and along the Sacramento River. Suitable nesting and foraging habitat is present along the upper Sacramento River. Expected to occur in suitable habitat along San Joaquin River and in Yolo Bypass.	Shasta, Sacramento, Feather, Yolo, American, San Joaquin, Delta, San Luis	Low potential to be impacted by restoration actions in Yolo Bypass or operational changes that influence riparian vegetation.
Delta Green Ground Beetle	<i>Elaphrus viridis</i>	T/--/--	Associated with vernal pool habitats, seasonally wet pools that accumulate in low areas with poor drainage, which occur throughout the Central Valley. Presently known to occur only in Solano County northeast of the San Francisco Bay Area.	Delta	Low potential to be affected by restoration activities that influence vernal pools.
Western Pond Turtle	<i>Emmys marmorata</i>	--/--/SSC	Inhabits slow-moving streams, sloughs, ponds, irrigation and drainage ditches, and adjacent upland areas. Potentially occurs near New Melones Reservoir. Recorded within Whiskeytown Lake and Clear Creek and near Lewiston Reservoir. Known to occur in suitable habitat on the San Luis NWR complex, in the Mendota Wildlife Area, and at Mendota Pool; expected to occur in suitable habitat in other locations in the San Joaquin River Restoration Area.	Trinity, Shasta, Sacramento, Feather, American, San Joaquin, Stanislaus, Delta, San Luis	Low potential to be affected by operational changes at reservoirs or irrigation canals and storage facilities.
Saltmarsh Common Yellowthroat	<i>Geothlypis trichas sinuosa</i>	BCC/--/SSC	Primarily brackish marsh, but also brackish and fresh woody swamps and riparian areas. Ranges generally in the San Francisco Bay area.	Delta, Suisun	Low potential to be affected by tidal marsh restoration.
Least Bittern (nesting)	<i>Ixobrychus exilis</i>	BCC/--/SSC	Rare to uncommon April to September nester in large, fresh emergent wetlands of cattails and tules in the Sacramento and San Joaquin valleys. Occurs in fresh water marsh habitats in the Yolo Bypass, east of the Sacramento River, and in the western Delta. Uncommon but regular breeder in suitable habitat in the San Joaquin Valley.	Sacramento, Feather, Yolo, Delta, San Joaquin	Low potential to be affected by restoration.
Vernal Pool Tadpole Shrimp	<i>Lepidurus packardii</i>	E/--/--	Vernal pool/seasonal wetlands. Endemic to the Central Valley, with most populations located in the Sacramento Valley. This species has also been reported from the Delta to the east side of San Francisco Bay. Known to occur in suitable habitat on the San Luis NWR complex and at the Great Valley Grasslands State Park.	Sacramento, Feather, Yolo, Delta, San Joaquin	Low potential to be affected by restoration activities that influence vernal pools.
Suisun Song Sparrow	<i>Melospiza melodia maxillaris</i>	BCC/--/SSC	Brackish marshes around Suisun Bay.	Suisun, Delta	Low potential to be affected by tidal marsh restoration activities.
Riparian (= San Joaquin Valley) Woodrat	<i>Neotoma fuscipes riparia</i>	E/--/SSC	Historically found in riparian habitat along the San Joaquin, Stanislaus, and Tuolumne rivers. Now known only from Caswell Memorial State Park on the Stanislaus River near its confluence with the San Joaquin River in very low gradient portion of river. No actions proposed that could affect this species in this area. Last reported at Caswell Memorial State Park in 2002. Likely still extant.	Delta, Stanislaus, San Joaquin	Low potential to be affected by changes in operation that influence riparian vegetation.
Osprey (nesting)	<i>Pandion haliaetus</i>	--/--/WL	Nests on platform of sticks at the top of large snags, dead-topped trees, on cliffs, or on human-made structures. Requires open, clear waters for foraging. Uses rivers, lakes, reservoirs, bays, estuaries, and surf zones. Reclamation (2010) concluded this species occurs near New Melones Reservoir. Known to nest along the Sacramento River.	Trinity, Clear Creek, Shasta, Sacramento, Feather, Yolo, American, New Melones	Low potential for foraging behavior to be affected by changes in reservoir levels.
White-faced Ibis (nesting colony)	<i>Plegadis chihi</i>	--/--/WL	Forages in wetlands and irrigated or flooded croplands and pastures. Breeds colonially in dense freshwater marsh. Known to occur in suitable habitat on the San Luis NWR complex and other sites in the Restoration Area and Yolo Bypass.	Feather, Yolo, American, San Joaquin	Low potential for restoration actions to affect nesting colonies in the Yolo Bypass.

Appendix 10A: Special-Status Terrestrial Species

Common Name	Scientific Name	Status Federal/State/ CDFW*	Habitat/Distribution	Areas with Potential for Occurrence	Impact Potential
Suisun Shrew	<i>Sorex ornatus sinuosus</i>	--/--/SSC	Historically known from tidal wetlands of Solano, Napa, and eastern Sonoma counties. Currently limited to the northern borders of San Pablo and Suisun bays.	Suisun	Low potential to be affected by tidal wetland restoration activities.
Riparian Brush Rabbit	<i>Sylvilagus bachmani riparius</i>	E/E/--	Historical distribution may have extended along portions of the San Joaquin River and its tributaries on the valley floor from at least Stanislaus County to the Delta. Currently restricted to several populations at Caswell Memorial State Park, near Manteca in San Joaquin County, along the Stanislaus River, along Paradise Cut (a channel of the San Joaquin River in the southern part of the Delta), and a recent reintroduction on private lands adjacent to the San Joaquin River NWR.	Delta, Stanislaus, San Joaquin	Low potential to be affected by changes in flows that inundate suitable habitat along the San Joaquin River.
Least Bell's Vireo (nesting)	<i>Vireo bellii pusillus</i>	E/E/--	Nests in dense, low, shrubby vegetation, generally early successional stages in riparian areas, particularly cottonwood-willow forest, but also brushy fields, young second-growth forest or woodland, scrub oak, coastal chaparral, and mesquite brush lands, often near water in arid regions. Observed in Yolo Bypass Wildlife Area. Successfully nested at the San Joaquin River NWR in 2005 and 2006.	Sacramento, Yolo, Delta, San Joaquin	Low potential to be affected by changes in flow that influence adjacent riparian vegetation.

- 1 Notes:
- 2 ***Status Codes:**
- 3 BCC = Bird Species of Conservation Concern
- 4 BLM = Bureau of Land Management Sensitive Species
- 5 C = Candidate
- 6 E = Endangered
- 7 FP = California Fully Protected
- 8 FS = Forest Service Sensitive Species
- 9 PT = Proposed Threatened
- 10 SSC = California Species of Special Concern
- 11 T = Threatened
- 12 WL = CDFW Watch List
- 13 BDCP = Bay Delta Conservation Plan
- 14 CDFW = California Department of Fish and Wildlife
- 15 cm = centimeters
- 16 m² = square meters
- 17 NWR = National Wildlife Refuge

1 **Table 10A.2 Special-Status Plant Species**

Common Name	Scientific Name	Status Federal/State/CRPR*	Habitat/Distribution	Areas with Potential for Occurrence	Impact Potential
Bogg's Lake Hedge-hyssop	<i>Gratiola heterosepala</i>	--/E/1B.2	Marshy and swampy lake margins, vernal pools. Known from north Delta and from the Sacramento and San Joaquin valleys. CNDDDB documents occurrences at Jepson Prairie, the Rio Linda area, and Mather County Park.	Sacramento, Yolo, Delta, San Joaquin	Low potential to be affected by restoration actions that influence vernal pools.
Bolander's Water Hemlock	<i>Cicuta maculata</i> var. <i>bolanderi</i>	--/--/2.1	Coastal fresh or brackish marshes and swamps in Contra Costa, Sacramento, Marin, and Solano counties. Present at north and central Delta and Suisun Marsh.	Sacramento, Delta, Suisun Marsh	Low potential to be affected by tidal marsh restoration actions.
Delta Button-celery	<i>Eryngium racemosum</i>	--/E/1B.1	Vernally mesic clay depressions in riparian scrub. Extant occurrences recorded along San Joaquin River in Merced County, and in south Delta. Reclamation (2010) concluded this species could potentially occur near New Melones Reservoir.	Delta, Stanislaus, New Melones, San Joaquin	Low potential to be affected by changes in flood inundation and reservoir elevation.
Delta Tule Pea	<i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	--/--/1B.2	Freshwater and brackish marshes and swamps in the Delta region. Known from north, central, and west Delta, and Suisun Marsh. CNDDDB documents occurrences at Snodgrass, Barker, Lindsey, Hass, and Cache sloughs, Delta Meadows Park, and Calhoun Cut.	Yolo, Delta	Low potential to be affected by restoration of tidal marsh.
Mason's Lilaeopsis	<i>Lilaeopsis masonii</i>	--/R/1B.1	Brackish or freshwater marshes and swamps, riparian scrub in Delta region. Known and locally common in certain regions of Delta and in Suisun Marsh. CNDDDB documents occurrences of this species in Barker, Lindsey, Cache, and Snodgrass sloughs as well as in Calhoun Cut.	Delta, Suisun Marsh	Low potential to be affected by tidal restoration.
Suisun Marsh Aster	<i>Symphotrichum lentum</i>	--/--/1B.2	Endemic to Delta, generally occurs in marshes and swamps, often along sloughs, from 0 to 3 meters in elevation. Brackish and freshwater marshes and swamps in Bay-Delta region. Known from many areas of Delta and from Suisun Marsh	Yolo, Delta, Suisun Marsh	Low potential to be affected by tidal marsh restoration.
Suisun Thistle	<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i>	E/--/1B.1	Salt marshes and swamps. Two known occurrences in Grizzly Island Wildlife Area and Peytonia Slough Ecological Reserve. Present at Suisun Marsh.	Delta, Suisun Marsh	Low potential to be affected by tidal marsh restoration.
Soft Bird's-beak	<i>Chloropyron molle</i> ssp. <i>molle</i>	E/R/1B.2	Coastal salt marshes and swamps in Contra Costa, Napa, and Solano counties.	Delta	Low potential to be affected by tidal marsh restoration.

2 Notes:

3 *** Status Codes:**

4 E = Endangered

5 R = Rare

6 SC = Species of Concern

7 T = Threatened

8 **CRPR Codes:**

9 1A = Plants presumed to be extinct in California

10 1B = Plants that are rare, threatened, or endangered in California and elsewhere

11 2 = Plants that are rare, threatened, or endangered in California but more common elsewhere

12 **CRPR Threat Ranks:**

13 1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

14 2 = Fairly threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)

15 3 = Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

16 CNDDDB= California Natural Diversity Database

17 CRPR = California Rare Plant Ranks

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