Appendix 9A Special-Status Plant Species

Appendix 9A Special-Status Plant Species

Special-status species may be naturally rare or may have become reduced in numbers due to environmental changes and loss of habitat. Special-status species contribute to the biodiversity and stability of ecosystems. Individuals and populations of these species are important for the genetic diversity and survival of the species.

This appendix contains the species database lists used to determine the special-status plant species with the potential to occur in the study area, special-status plant table, and special-status plant species accounts. The approximately 26,766-acre study area for special-status species consists of the combined areas of disturbance under Alternatives 1, 2, and 3, plus a 300-foot buffer zone around this combined area. Project locations not included in the study area are the existing offsite quarries and construction access routes on existing roads, which would not have additional effects due to the Project.

9A.1 Species Lists

The species lists were obtained from queries of the California Natural Diversity Database (CNDDB), California Native Plant Society's (CNPS's) online Inventory of Rare and Endangered Plants of California, and the U.S. Fish and Wildlife Service's Information, Planning, and Consultation (IPaC) website (California Department of Fish and Wildlife 2021; California Native Plant Society 2020; U.S. Fish and Wildlife Service 2021). Tables 9A-1a and 9A-1b below summarize the CNDDB results from querying the parts of U.S. Geological Survey (USGS) 7.5-minute quadrangles within the 5-mile radius for Alternatives 1 and 3 and Alternative 2, respectively. The species lists from the CNPS inventory and IPaC website follow the tables.

The CNDDB search area included the study area and a 5-mile radius around the study area, and the IPaC list is automatically generated based on the study area. However, the CNPS Inventory results are based on entire USGS 7.5-minute quadrangles and, therefore, include a larger search area beyond the 5-mile radius. The CNPS inventory results include many California Rare Plant Rank (CRPR) 4 species, which are of limited distribution, but are generally considered in environmental effects analyses when they are of local concern. Because of their relatively lower sensitivity, only those CRPR 4 species that also appear in the CNDDB search of the 5-mile radius or that were included in the Draft 2017 EIR/EIS (Sites Project Authority and U.S. Bureau of Reclamation) are included in Table 9A-2 below.

Table 9A-1a. CNDDB Results for Plant Species in Alternatives 1 and 3[a]

Common Name	Scientific Name	Status Federal/State/ California Rare Plant Rank[b]
adobe-lily	*Fritillaria pluriflora*	–/–/1B.2
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	–/–/1B.2
Ahart's paronychia	*Paronychia ahartii*	–/–/1B.1
Baker's navarretia	*Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1
bent-flowered fiddleneck	*Amsinckia lunaris*	–/–/1B.2
Bolander's horkelia	*Horkelia bolanderi*	–/–/1B.2
brittlescale	*Atriplex depressa*	–/–/1B.2
California alkali grass	*Puccinellia simplex*	–/–/1B.2
caper-fruited tropidocarpum	*Tropidocarpum capparideum*	–/–/1B.1
Colusa grass	*Neostapfia colusana*	T/E/1B.1
Colusa layia	*Layia septentrionalis*	–/–/1B.2
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	–/–/1B.2
deep-scarred cryptantha	*Cryptantha excavata*	–/–/1B.2
diamond-petaled California poppy	*Eschscholzia rhombipetala*	–/–/1B.2
dimorphic snapdragon	*Antirrhinum subcordatum*	–/–/4.3
dwarf downingia	*Downingia pusilla*	–/–/2B.2
Ferris' milk-vetch	*Astragalus tener* var. *ferrisiae*	–/–/1B.1
Greene's tuctoria	*Tuctoria greenei*	E/R/1B.1
hairy Orcutt grass	*Orcuttia pilosa*	E/E/1B.1
heartscale	*Atriplex cordulata* var. *cordulata*	–/–/1B.2
Heckard's pepper-grass	*Lepidium latipes* var. *heckardii*	–/–/1B.2
Hoover's spurge	*Euphorbia hooveri*	T/–/1B.2
Keck's checkerbloom	*Sidalcea keckii*	E/–/1B.1
legenere	*Legenere limosa*	–/–/1B.1
palmate-bracted bird's-beak	*Chloropyron palmatum*	E/E/1B.1
pink creamsacs	*Castilleja rubicundula* var. *rubicundula*	–/–/1B.2
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	–/–/1B.1
red-flowered bird's-foot trefoil	*Acmispon rubriflorus*	–/–/1B.1
San Joaquin spearscale	*Extriplex joaquinana*	–/–/1B.2
shining navarretia	*Navarretia nigelliformis* ssp. *radians*	–/–/1B.2
silky cryptantha	*Cryptantha crinita*	–/–/1B.2
vernal pool smallscale	*Atriplex persistens*	–/–/1B.2
water star-grass	*Heteranthera dubia*	–/–/2B.2
woolly rose-mallow	*Hibiscus lasiocarpos* var. *occidentalis*	–/–/1B.2

[a] Portions of these quadrangles occur within the 5-mile radius of the study area and were included in the query: Balls Ferry, Bend, Bird Valley, Dunnigan, Eldorado Bend, Foster Island, Gerber, Glenn, Hamilton City, Kirkville, Knights Landing, Leesville, Lodoga, Logandale, Los Molinos, Manor Slough, Maxwell, Moulton Weir, Nord, Ord Ferry, Panther Spring, Princeton, Rail Canyon, Red Bank, Red Bluff East, Red Bluff West, Sites, Stone Valley, Tuscan Springs, West of Gerber, Wildwood School, Williams, Willows, and Zamora.

[b] Status Explanations:
Federal:
– = not listed under the federal Endangered Species Act
E = listed as endangered under the federal Endangered Species Act
T = listed as threatened under the federal Endangered Species Act
State:
– = not listed under the California Endangered Species Act
R = listed as rare under the Native Plant Protection Act
E = listed as endangered under the California Endangered Species Act
California Rare Plant Rank:
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California, but more common elsewhere

4 = plants of limited distribution that are on a watch list
0.1 = seriously endangered in California
0.2 = fairly endangered in California
0.3 = not very endangered in California

Table 9A-1b. CNDDB Results for Plant Species in Alternative 2[a]

Common Name	Scientific Name	Status Federal/State/ California Rare Plant Rank[b]
adobe-lily	*Fritillaria pluriflora*	–/–/1B.2
Ahart's dwarf rush	*Juncus leiospermus* var. *ahartii*	–/–/1B.2
Ahart's paronychia	*Paronychia ahartii*	–/–/1B.1
Baker's navarretia	*Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1
bent-flowered fiddleneck	*Amsinckia lunaris*	–/–/1B.2
Bolander's horkelia	*Horkelia bolanderi*	–/–/1B.2
brittlescale	*Atriplex depressa*	–/–/1B.2
California alkali grass	*Puccinellia simplex*	–/–/1B.2
caper-fruited tropidocarpum	*Tropidocarpum capparideum*	–/–/1B.1
Colusa grass	*Neostapfia colusana*	T/E/1B.1
Colusa layia	*Layia septentrionalis*	–/–/1B.2
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	–/–/1B.2
deep-scarred cryptantha	*Cryptantha excavata*	–/–/1B.2
diamond-petaled California poppy	*Eschscholzia rhombipetala*	–/–/1B.2
dimorphic snapdragon	*Antirrhinum subcordatum*	–/–/4.3
drymaria-like western flax	*Hesperolinon drymarioides*	–/–/1B.2
dwarf downingia	*Downingia pusilla*	–/–/2B.2
dwarf soaproot	*Chlorogalum pomeridianum* var. *minus*	–/–/1B.2
Ferris' milk-vetch	*Astragalus tener* var. *ferrisiae*	–/–/1B.1
Greene's tuctoria	*Tuctoria greenei*	E/R/1B.1
hairy Orcutt grass	*Orcuttia pilosa*	E/E/1B.1
heartscale	*Atriplex cordulata* var. *cordulata*	–/–/1B.2
Heckard's pepper-grass	*Lepidium latipes* var. *heckardii*	–/–/1B.2
Hoover's spurge	*Euphorbia hooveri*	T/–/1B.2
Indian Valley brodiaea	*Brodiaea rosea*	–/E/3.1
Jepson's milk-vetch	*Astragalus rattanii* var. *jepsonianus*	–/–/1B.2
Keck's checkerbloom	*Sidalcea keckii*	E/–/1B.1
Konocti manzanita	*Arctostaphylos manzanita* ssp. *elegans*	–/–/1B.3
legenere	*Legenere limosa*	–/–/1B.1
palmate-bracted bird's-beak	*Chloropyron palmatum*	E/E/1B.1
pink creamsacs	*Castilleja rubicundula* var. *rubicundula*	–/–/1B.2
Red Bluff dwarf rush	*Juncus leiospermus* var. *leiospermus*	–/–/1B.1
red-flowered bird's-foot trefoil	*Acmispon rubriflorus*	–/–/1B.1
San Joaquin spearscale	*Extriplex joaquinana*	–/–/1B.2
shining navarretia	*Navarretia nigelliformis* ssp. *radians*	–/–/1B.2

Common Name	Scientific Name	Status Federal/State/ California Rare Plant Rank[b]
silky cryptantha	*Cryptantha crinita*	–/–/1B.2
Snow Mountain buckwheat	*Eriogonum nervulosum*	–/–/1B.2
Tracy's eriastrum	*Eriastrum tracyi*	–/–/3.2
vernal pool smallscale	*Atriplex persistens*	–/–/1B.2
water star-grass	*Heteranthera dubia*	–/–/2B.2
woolly rose-mallow	*Hibiscus lasiocarpos* var. *occidentalis*	–/–/1B.2

[a] Portions of these quadrangles occur within the 5-mile radius of the study area and were included in the query: Balls Ferry, Bend, Bird Valley, Dunnigan, Eldorado Bend, Foster Island, Gerber, Gilmore Peak, Glenn, Hamilton City, Hough Springs, Kirkville, Knights Landing, Leesville, Lodoga, Logandale, Los Molinos, Manor Slough, Maxwell, Moulton Weir, Nord, Ord Ferry, Panther Spring, Princeton, Rail Canyon, Red Bank, Red Bluff East, Red Bluff West, Sites, Stone Valley, Sutter Causeway, Taylor Monument, Tuscan Springs, West of Gerber, Wildwood School, Williams, Willows, and Zamora.

[b] Status Explanations:
Federal:
– = not listed under the federal Endangered Species Act
E = listed as endangered under the federal Endangered Species Act
T = listed as threatened under the federal Endangered Species Act
State:
– = not listed under the California Endangered Species Act
R = listed as rare under the Native Plant Protection Act
E = listed as endangered under the California Endangered Species Act
California Rare Plant Rank:
1B = rare, threatened, or endangered in California and elsewhere
2B = rare, threatened, or endangered in California, but more common elsewhere
3 = more information is needed to determine whether assigning a rank is appropriate
4 = plants of limited distribution that are on a watch list
0.1 = seriously endangered in California
0.2 = fairly endangered in California
0.3 = not very endangered in California

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

84 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 4012242, 4012232, 4012222, 4012212, 4012223, 4012213, 4012214, 4012221, 4012211, 4012127, 3812271, 3812188, 3812177, 3812178, 3812281, 3812187, 3912117, 3912127, 3912128, 3912126, 3912273, 3912271, 3912272, 3912263, 3912262, 3912261, 3912252, 3912251, 3912242, 3912253, 3912241, 3912231, 3912232, 3912233, 3912244, 3912234, 3912224, 3912223, 3912222, 3912168, 3912178 3912116 and 3812176;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acmispon rubriflorus	red-flowered bird's-foot trefoil	Fabaceae	annual herb	Apr-Jun	1B.1	S2	G2
Agrostis hendersonii	Henderson's bent grass	Poaceae	annual herb	Apr-Jun	3.2	S2	G2Q
Allium sanbornii var. sanbornii	Sanborn's onion	Alliaceae	perennial bulbiferous herb	May-Sep	4.2	S3S4	G4T3T4
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Antirrhinum subcordatum	dimorphic snapdragon	Plantaginaceae	annual herb	Apr-Jul	4.3	S3	G3
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	4.2	S3	G3
Astragalus clevelandii	Cleveland's milk-vetch	Fabaceae	perennial herb	Jun-Sep	4.3	S4	G4
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	4.3	S4	G4
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S3	G4T3
	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1

Astragalus tener var. ferrisiae							
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	1B.2	S2	G2
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	Aug	4.2	S4	G5
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Brodiaea rosea ssp. rosea	Indian Valley brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	3.1	S2	G2
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.2	S3	G4T3
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	1B.2	S1	G4T1
Castilleja rubicundula var. rubicundula	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	1B.2	S2	G5T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Chorizanthe spinosa	Mojave spineflower	Polygonaceae	annual herb	Mar-Jul	4.2	S4	G4
Clarkia gracilis ssp. tracyi	Tracy's clarkia	Onagraceae	annual herb	Apr-Jul	4.2	S3	G5T3
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	May-Jun	4.3	S4	G4
Cryptantha crinita	silky cryptantha	Boraginaceae	annual herb	Apr-May	1B.2	S2	G2
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	Apr-Jun	1B.2	S2	G2
Cryptantha excavata	deep-scarred cryptantha	Boraginaceae	annual herb	Apr-May	1B.1	S1	G1
Cryptantha rostellata	red-stemmed cryptantha	Boraginaceae	annual herb	Apr-Jun	4.2	S3	G4
Cymopterus deserticola	desert cymopterus	Apiaceae	perennial herb	Mar-May	1B.2	S2	G2
Cypripedium montanum	mountain lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	4.2	S4	G4

Delphinium uliginosum	swamp larkspur	Ranunculaceae	perennial herb	May-Jun	4.2	S3	G3
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eriastrum tracyi	Tracy's eriastrum	Polemoniaceae	annual herb	May-Jul	3.2	S3	G3Q
Eriogonum nervulosum	Snow Mountain buckwheat	Polygonaceae	perennial rhizomatous herb	Jun-Sep	1B.2	S2	G2
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	4.3	S3S4	G3G4
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Euphorbia hooveri	Hoover's spurge	Euphorbiaceae	annual herb	Jul-Sep(Oct)	1B.2	S1	G1
Euphorbia ocellata ssp. rattanii	Stony Creek spurge	Euphorbiaceae	annual herb	May-Oct	1B.2	S2?	G4T2?
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	3.2	S3	G3Q
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2S3	G2G3
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Harmonia hallii	Hall's harmonia	Asteraceae	annual herb	Apr-Jun	1B.2	S2?	G2?
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hesperolinon drymarioides	drymaria-like western flax	Linaceae	annual herb	May-Aug	1B.2	S2	G2
Heteranthera dubia	water star-grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	2B.2	S2	G5
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	1B.1	S2	G2T2
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Limnanthes floccosa ssp. californica	Butte County meadowfoam	Limnanthaceae	annual herb	Mar-May	1B.1	S1	G4T1

Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	4.2	S3	G4T4
Lupinus milo-bakeri	Milo Baker's lupine	Fabaceae	annual herb	Jun-Sep	1B.1	S1	G1Q
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Malacothamnus helleri	Heller's bush-mallow	Malvaceae	perennial deciduous shrub	May-Jul	3.3	S3	G3Q
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Navarretia paradoxinota	Porter's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	1B.3	S2	G2
Navarretia subuligera	awl-leaved navarretia	Polemoniaceae	annual herb	Apr-Aug	4.3	S4	G4
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Orcuttia pilosa	hairy Orcutt grass	Poaceae	annual herb	May-Sep	1B.1	S1	G1
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	1B.1	S2	G2
Paronychia ahartii	Ahart's paronychia	Caryophyllaceae	annual herb	Feb-Jun	1B.1	S3	G3
Polygonum bidwelliae	Bidwell's knotweed	Polygonaceae	annual herb	Apr-Jul	4.3	S4	G4
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Senecio clevelandii var. clevelandii	Cleveland's ragwort	Asteraceae	perennial herb	Jun-Jul	4.3	S3	G4?T3Q
Sidalcea celata	Redding checkerbloom	Malvaceae	perennial herb	Apr-Aug	3	S2S3	G2G3
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	1B.1	S2	G2
		Brassicaceae	annual herb	Apr-Jun	4.3	S4	G4

Streptanthus drepanoides	sickle-fruit jewelflower						
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trichocoronis wrightii var. wrightii	Wright's trichocoronis	Asteraceae	annual herb	May-Sep	2B.1	S1	G4T3
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr,Dec	2B.3	S2	G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 16 December 2020].

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

California

Local offices

Red Bluff Fish And Wildlife Office

(530) 527-3043
(530) 529-0292

10950 Tyler Road
Red Bluff, CA 96080-7762

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The Red Bluff Fish And Wildlife Office has not enabled species list delivery through IPaC. Please contact them directly to determine which endangered species need to be considered as part of your project.

Red Bluff Fish And Wildlife Office

(530) 527-3043
(530) 529-0292

10950 Tyler Road
Red Bluff, CA 96080-7762

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1123	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Colusa Grass *Neostapfia colusana* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5690	Threatened
Greene's Tuctoria *Tuctoria greenei* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1573	Endangered
Hairy Orcutt Grass *Orcuttia pilosa* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2262	Endangered
Hoover's Spurge *Chamaesyce hooveri* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3019	Threatened
Keck's Checker-mallow *Sidalcea keckii* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5704	Endangered
Palmate-bracted Bird's Beak *Cordylanthus palmatus* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1616	Endangered
Slender Orcutt Grass *Orcuttia tenuis* Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1063	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

Lawrence's Goldfinch Carduelis lawrencei This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Mountain Plover Charadrius montanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3638	Breeds elsewhere
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Song Sparrow Melospiza melodia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5

Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird Agelaius tricolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For

example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects,

and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

9A.2 Special-Status Plant Table

Table 9A-2 lists the status, distribution, habitat requirements, blooming period, and likelihood of occurrence for the special-status plant species identified as potentially present in the study area. Species included in this table are based on the species lists in Section 9A.1 and species in the 2017 Draft EIR/EIS (Sites Project Authority and U.S. Bureau of Reclamation 2017) that did not appear in the database searches.

Table 9A-2. Special-Status Plant Species Identified as Having the Potential to Occur in the Study Area

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Adobe lily *Fritillaria pluriflora*	–/–/1B.2	Inner North Coast Ranges, northern Sierra Nevada foothills, and adjacent margins of the Sacramento Valley, from Butte County to Solano County	Adobe clay soil, sometimes serpentine; foothill and valley grasslands, oak woodlands, chaparral; from 195–2,315 feet; blooms February–April	High—oak woodland, grassland, clay soils present; two occurrences within 5 miles of the Alternatives 1, 2, and 3 inundation area and 14 occurrences within 5 miles of the Alternative 2 South Road
Adobe navarretia *Navarretia nigelliformis* ssp. *nigelliformis*	–/–/4.2	Great Valley and adjacent foothills	Vernal pools and clay flats; below 3,280 feet; blooms April–June	Moderate —seasonal wetlands present; occurrences of most CRPR 4 species not tracked in CNDDB
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	–/–/1B.2	East edge of Sacramento Valley from Butte County to Sacramento County	Vernal pools; from 100–330 feet; blooms March–May	Low—seasonal wetlands present, but most of study area is outside of species' range; one occurrence within 1 mile of Alternatives 1, 2, and 3 at Red Bluff Pumping Plant where there is no suitable habitat present

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Ahart's paronychia *Paronychia ahartii*	–/–/1B.1	Northern Central Valley	Vernal swales and margins of vernal pools, on rocky soils; from 95–1,675 feet; blooms April–June	Moderate—seasonal wetlands present, but unlikely to include suitable soils; two occurrences within 3 miles of Alternatives 1, 2, and 3 at Red Bluff Pumping Plant where there is no suitable habitat present
Awl-leaved navarretia *Navarretia subuligera*	–/–/4.3	Interior North Coast Ranges, northern Sierra Nevada foothills, Sacramento Valley	Rocky, mesic areas in chaparral, cismontane woodland, lower montane coniferous forest; 490–3,610 feet; blooms April–August	Moderate—chaparral, oak woodland, and foothill pine woodland present; occurrences of most CRPR 4 species not tracked in CNDDB
Baker's navarretia *Navarretia leucocephala* ssp. *bakeri*	–/–/1B.1	Inner Coast Ranges, southwestern Sacramento Valley from Mendocino County to Solano County	Vernal pools and swales on clay or alkaline soils; from 15–5,710 feet; blooms May–July	High—seasonal wetlands and clay or alkaline soils present; one occurrence within the conveyance to regulating reservoirs and one occurrence within 2 of Alternatives 1, 2, and 3 roads and new roads
Bent-flowered fiddleneck *Amsinckia lunaris*	–/–/1B.2	Inner North Coast Ranges, San Francisco Bay area, west-central Central Valley	Coastal bluff scrub, valley and foothill grasslands, cismontane woodlands; from 10–1,645 feet; blooms March–June	High—grassland present; two occurrences in Alternatives 1, 2, and 3 inundation area and new road; two additional occurrences within 1 mile of the inundation area and Alternative 2 South Road

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Big-scale balsamroot *Balsamorhiza macrolepis* var. *macrolepis*	–/–/1B.2	Scattered occurrences in the Coast Ranges and Sierra Nevada foothills	Fields and rocky hillsides, grassland, foothill woodland; 150–5,100 feet; blooms March–June	Low—grassland, oak woodland, and foothill pine woodland present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Boggs Lake hedge-hyssop *Gratiola heterosepala*	–/E/1B.2	Inner North Coast Ranges, Central Sierra Nevada Foothills, Sacramento Valley and Modoc Plateau: Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Sonoma, and Tehama Counties; also Oregon	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 30–7,790 feet; blooms April–August	Low—seasonal wetland and freshwater marsh present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Bolander's horkelia *Horkelia bolanderi*	–/–/1B.2	Inner North Coast Ranges in Lake and Colusa Counties	Edges of vernally moist areas in pine forest and oak woodland; from 1,490–2,800 feet; blooms June–August	High—oak woodland and seasonal wetlands present; one occurrence within 2.5 miles of Alternatives 1, 2, and 3 inundation area and less than 1 mile from the Alternative 2 South Road
Brandegee's eriastrum *Eriastrum brandegeeae*	–/–/1B.1	Inner North Coast Ranges, disjunct to Mount Hamilton	Chaparral, oak woodland; 1,395–2,755 feet; blooms May–August	Moderate—chaparral and oak woodland present; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Brazilian watermeal *Wolffia brasiliensis*	–/–/2B.3	Known in California from a few occurrences along the Sacramento River in Butte, Glenn, Sutter, and Yuba Counties; widespread elsewhere in the U.S.	Shallow freshwater in marshes and swamps; 65–330 feet; blooms April–December	Low—freshwater marsh present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Brewer's milk-vetch *Astragalus breweri*	–/–/4.2	Central and southern North Coast Ranges, northern San Francisco Bay Area	Grasslands, on open slopes, below 2,970 feet; blooms March–June	Moderate—grassland present; occurrences of most CRPR 4 species not tracked in CNDDB
Broad-lobed linanthus *Leptosiphon latisectus*	–/–/4.3	North Coast Ranges	Open grassy areas in broadleaved evergreen forest, on slopes and roadcuts, below 4,920 feet; blooms March–June.	Low—no broadleaved evergreen forest present; occurrences of most CRPR 4 species not tracked in CNDDB
Brittlescale *Atriplex depressa*	–/–/1B.2	Western and eastern Central Valley and adjacent foothills on west side of Central Valley	Alkali grassland, alkali meadow, alkali vernal pools, and alkali scrub; below 1,050 feet; blooms April–August	High—alkali seasonal wetlands present; two occurrences within 0.5 and 2.6 miles of Alternatives 1, 2, and 3 roads and conveyances
Butte County fritillary *Fritillaria eastwoodiae*	–/–/3.2	Sierra Nevada Foothills, from Shasta to El Dorado Counties; also Oregon	Chaparral, cismontane woodland, openings in lower montane coniferous forest, sometimes on serpentine; 165–4,920 feet; blooms March–June	Low—chaparral, oak woodland, and foothill pine forest present, no serpentine, study area is outside of species' range; no occurrences within 5 miles of Alternatives 1, 2, and 3

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Butte County meadowfoam *Limnanthes floccosa* ssp. *californica*	E/E/1B.2	Endemic to Butte County	Vernal pools and swales; 150–3,050 feet; blooms March–May	Low—seasonal wetlands present, but study area is outside of species' range; no occurrences within 5 miles of Alternatives 1, 2, and 3
California alkali grass *Puccinellia simplex*	–/–/1B.2	Scattered locations in the San Francisco Bay area, Central Valley, Tehachapi Mountains, western Mojave Desert	Seasonally wet alkali wetlands, sinks, flats, vernal pools, and lake margins; below 3,000 feet; blooms March–May	High—alkali seasonal wetlands present; two occurrences within 5 miles of Alternatives 1, 2, and 3 roads and one additional occurrence within 5 miles of Dunnigan Pipeline
Caper-fruited tropidocarpum *Tropidocarpum capparideum*	–/–/1B.1	Historically known from the northwest San Joaquin Valley and adjacent Coast Range foothills	Grasslands in alkali hills; below 500 feet; blooms March–April	Moderate—grassland present, alkali hills unlikely; no occurrences within 5 miles of Alternatives 1, 2, and 3
Cleveland's milk-vetch *Astragalus clevelandii*	–/–/4.3	Interior North Coast Ranges, High North Coast Ranges	Meadows, seeps, and streambanks, on serpentinite, at 328–4,920 feet; blooms June–September	Low—streams present, but no serpentinite; occurrences of most CRPR 4 species not tracked in CNDDB
Cobb Mountain lupine *Lupinus sericatus*	–/–/1B.2	Inner North Coast Ranges; Colusa, Lake, Napa, and Sonoma Counties	Knobcone pine-oak woodland, on open wooded slopes, in gravelly soils; 900–5,005 feet; blooms March–June	Low—no suitable knobcone pine habitat present; no occurrences within 5 miles of the Alternatives 1, 2, and 3

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Colusa grass *Neostapfia colusana*	T/E/1B.1	Merced, Solano, and Yolo Counties	Deep vernal pools; from 15–655 feet; blooms May–September	Low—no deep vernal pools identified during land cover mapping; one occurrence within 3 miles of Alternatives 1, 2, and 3 roads and conveyance components
Colusa layia *Layia septentrionalis*	–/–/1B.2	Inner North Coast Ranges	Sandy or serpentine soils, in grasslands and openings in chaparral and foothill woodlands; from 50–3,610 feet; blooms April–May	Moderate—grassland, oak woodland, and chaparral present, suitable soils may not be present; two occurrences within 4 to 5 miles of the Alternatives 1, 2, and 3 inundation area and five additional occurrences within 2 to 4 miles of the Alternative 2 South Road
Cotula navarretia *Navarretia cotulifolia*	–/–/4.2	Interior North Coast Ranges, Sacramento Valley, San Francisco Bay Area, Interior South Coast Ranges	Chaparral, woodlands, grasslands, on heavy clay soils; 15–6,000 feet; blooms May–June	Moderate—grassland, chaparral, oak woodland present, some clay soils; occurrences of most CRPR 4 species not tracked in CNDDB
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	–/–/1B.1	Tehachapi Mountains, southern Outer South Coast Ranges, South Coast, northern Channel Islands, Peninsular Ranges, western Mojave Desert	Grassland, vernal pools; alkaline soils; below 4,590 feet; blooms February–June	Moderate—seasonal wetland and alkaline soils present; one occurrence within 2 miles of Alternatives 1, 2, and 3 at Dunnigan Pipeline alignment

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Crownscale *Atriplex coronata* var. *cotonata*	–/–/4.2	Southern Sacramento Valley, San Joaquin Valley, Inner South Coast Ranges	Alkali grassland, alkali meadow, alkali scrub; 5–1,940 feet; blooms March–October	Moderate—alkali grassland present; occurrences of most CRPR 4 species not tracked in CNDDB
Deep-scarred cryptantha *Cryptantha excavata*	–/–/1B.1	Southern Inner North Coast Ranges	Steep sandy or gravelly slopes, streambanks, in oak woodland; from 325–1,970 feet; April–May	Moderate—oak woodland present; one historical occurrence within 4 miles of the Alternatives 1, 2, and 3 inundation area and adjacent to the Alternative 2 South Road
Diamond-petaled California poppy *Eschscholzia rhombipetala*	–/–/1B.1	Interior foothills of South Coast Ranges from Contra Costa County to Stanislaus County; Carrizo Plain in San Luis Obispo County; historically in Inner North Coast Range	Grassland, chenopod scrub, on clay soils, where grass cover is sparse enough to allow growth of low annuals; below 3,200 feet; blooms March–May	Moderate—grassland present and suitable soils; one historical occurrence within 4 miles of the Alternatives 1, 2, and 3 inundation area and adjacent to the Alternative 2 South Road
Dimorphic snapdragon *Antirrhinum subcordatum*	–/–/4.3	Inner North Coast Ranges: Colusa, Glenn, Lake, and Tehama Counties	Chaparral and lower montane coniferous forest, sometimes on serpentinite; from 605–2,625 feet; blooms April–July	High—chaparral present; one occurrence at edge of Alternatives 1, 2, and 3 inundation area; one additional occurrence in Alternative 2 at South Road; and two additional occurrences within 4 miles of Alternative 2 at South Road

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Drymaria-like western flax *Hesperolinon drymarioides*	–/–/1B.2	Interior and high North Coast Ranges	Chaparral, McNab cypress forest, on serpentinite, from 1,300–6,560 feet; blooms May–August	Low—chaparral present, but no serpentine soils; six occurrences within 5 miles of the Alternatives 1, 2, and 3 inundation area and 5 miles of the Alternative 2 South Road
Dwarf downingia *Downingia pusilla*	–/–/2B.2	Central Valley from Tehama County to Fresno County, northern San Francisco Bay area, southern South Coast Ranges	Vernal pools; from 45–3,640 feet; blooms March–May	Moderate—seasonal wetlands present; two occurrences within 4 miles of Alternatives 1, 2, and 3 at Red Bluff Pumping Plant where there is no suitable habitat present
Dwarf soaproot *Chlorogalum pomeridianum* var. *minus*	–/–/1B.2	Widely disjunct populations in Tehama, Colusa, Lake, Sonoma, and San Luis Obispo Counties	Openings in chaparral, valley and foothill grasslands; on serpentine outcrops; from 1,000–3,300 feet; blooms May–August	Low—chaparral and grassland present, but no serpentine soils; one occurrence within 4 miles of the Alternative 2 South Road
Fairy candelabra *Androsace elongata* ssp. *acuta*	–/–/4.2	Scattered locations throughout California, but primarily in east San Francisco Bay, interior South Coast Ranges, San Joaquin Valley, and southwest California	Moss-covered rock outcrops and open areas in adjacent grassland; 490–4,280 feet; blooms March–June	Moderate—grassland and some areas of rock outcrop present; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Ferris' goldfields *Lasthenia ferrisiae*	–/–/4.2	Sacramento Valley, San Joaquin Valley	Vernal pools or wet saline flats; < 2,300 feet; blooms February–May	Moderate—seasonal wetland and potential alkali seasonal wetland present; occurrences of most CRPR 4 species not tracked in CNDDB
Ferris' milk-vetch *Astragalus tener* var. *ferrisiae*	–/–/1B.1	Sacramento Valley	Subalkali flats and flood lands, usually on adobe soil; from 5–245 feet; blooms March–June	Moderate—alkali seasonal wetlands present; one occurrence within 2 miles of Alternatives 1, 2, and 3 at the Dunnigan Pipeline
Greene's tuctoria *Tuctoria greenei*	E/R/1B.1	Eastern Central Valley and foothills	Large, deep vernal pools; from 95–3,510 feet; blooms May–June	Low—no large, deep pools identified during land cover mapping; one occurrence within 3 miles of Alternatives 1, 2, and 3 roads and conveyance components
Hairy Orcutt grass *Orcuttia pilosa*	E/E/1B.1	Scattered locations along east edge of the Central Valley and adjacent foothills, from Tehama County to Merced County	Deep vernal pools; from 150–655 feet; blooms May–August	Low—no large, deep pools identified during land cover mapping; six occurrences within 1 to 4 miles of Alternatives 1, 2, and 3 roads and conveyance components
Hall's harmonia *Harmonia hallii*	–/–/1B.2	Southern Interior North Coast Ranges	Open areas in serpentine chaparral, at 1,100–3,050 feet; blooms April–June	Low—chaparral present, but no serpentine; no occurrences within 5 miles of Alternatives 1, 2, and 3

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Heartscale *Atriplex cordulata* var. *cordulata*	–/–/1B.2	Central Valley from Colusa County to Kern County	Alkali grassland, alkali meadow, alkali scrub; below 1,835 feet; blooms May–October	Moderate—alkali seasonal wetlands present; five occurrences within 5 miles of Alternatives 1, 2, and 3
Heckard's peppergrass *Lepidium latipes* var. *heckardii*	–/–/1B.2	Yolo and Solano Counties	Annual grassland, on margins of alkali scalds; from 5–655 feet; blooms April–May	Moderate—alkali seasonal wetlands present; one occurrence within 4 miles of Alternatives 1, 2, and 3 at the Dunnigan Pipeline and three additional occurrences within 1 to 3 miles of roads and conveyance components
Heller's bush mallow *Malacothamnus helleri*	–/–/4.3	Interior North Coast Ranges	Foothill woodlands, along stream banks and on gravel bars; 1,000–2,090 feet; blooms May–June	Moderate —perennial and intermittent stream and riparian woodland present; occurrences of most CRPR 4 species not tracked in CNDDB
Henderson's bent grass *Agrostis hendersonii*	–/–/3.2	Scattered locations in Central Valley and adjacent foothills	Moist places in grasslands, vernal pools; 230–1,000 feet; blooms April–May	Low —seasonal wetlands present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Hoary navarretia *Navarretia eriocephala*	–/–/4.3	Sacramento Valley, northern Sierra Nevada Foothills	Seasonally wet clay flats in grassland, oak woodland; below 1,310 feet; blooms May–June	Moderate —seasonal wetlands and oak woodland present; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Hogwallow evax *Hesperevax caulescens*	–/–/4.2	Interior North Coast Ranges, Cascade Range Foothills, Sierra Nevada Foothills, Great Valley, Outer South Coast Ranges	Vernal pools and flats, on clay soils; below 1,660 feet; blooms March–June	Moderate—seasonal wetlands and areas of clay soils present; occurrences of most CRPR 4 species not tracked in CNDDB
Hoover's lomatium *Lomatium hooveri*	–/–/4.3	Interior North Coast Ranges	Serpentine chaparral and woodlands, at 980–1,970 feet; blooms April–May	Low—chaparral and woodlands present, but no serpentine; occurrences of most CRPR 4 species not tracked in CNDDB
Hoover's spurge *Euphorbia hooveri*	T/–/1B.2	Central Valley from Tehama County to Tulare County	Large, deep vernal pools; from 80–820 feet; blooms July–August	Low—no large, deep pools identified during land cover mapping; four occurrences within 2 to48 miles of Alternatives 1, 2, and 3 roads and conveyance components
Howell's broomrape *Aphyllon valida* ssp. *howellii*	–/–/4.3	Southern High North Coast Ranges, central and southern Interior North Coast Ranges	Chaparral, on volcanic and serpentine substrates, parasitic on *Garrya*, at 660–5,580 feet; blooms June–September	Low—chaparral present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Indian Valley brodiaea *Brodiaea rosea* ssp. *rosea*	–/E/3.1	Colusa, Glenn, Lake, and Tehama Counties	Meadows and other vernally moist areas in serpentine chaparral; from 1,100–4,760 feet; blooms May–June	Low—chaparral present, but no serpentine soils; one occurrence within 4 miles of the Alternative 2 South Road and no occurrences within 5 miles of Alternatives 1, 2, and 3 inundation area

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Jepson's milk-vetch *Astragalus rattanii* var. *jepsonianus*	–/–/1B.2	Scattered occurrences in the Inner North Coast Ranges, from Tehama County to Napa County	Grasslands and open grassy areas in chaparral, on serpentinite soils, from 970–2,300 feet; blooms April–June	Low—grasslands and chaparral present, but no serpentine soils; one occurrence within 4 miles of the Alternative 2 South Road and no occurrences within 5 miles of Alternatives 1, 2, and 3 inundation area
Jepson's navarretia *Navarretia jepsonii*	–/–/4.3	Inner North Coast Ranges	Serpentine grasslands, clay flats, at 490–2,620 feet; blooms April–June	Low—grasslands present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Keck's checkerbloom *Sidalcea keckii*	E/–/1B.1	Southern Inner North Coast Ranges, southern Sierra Nevada foothills	Grasslands, grassy areas within blue oak woodland, on clay soils, sometimes derived from serpentinite; below 2,200 feet; blooms April–May	High—grassland and oak woodland present; one occurrence adjacent to, and one additional occurrence within 4 miles of the Alternatives 1, 2, and 3 inundation area; one of the occurrences is less than 1 mile from and three additional occurrences are within 1 to 4 miles of the Alternative 2 South Road
Konocti manzanita *Arctostaphylos manzanita* ssp. *elegans*	–/–/1B.3	Klamath Ranges, North Coast Ranges	Chaparral, oak woodland, lower montane coniferous forest, on volcanic soils; from 225–6,000 feet; blooms February–May	Moderate—chaparral and blue oak woodland present; one occurrence within 3 miles of the Alternative 2 South Road and none within 5 miles of the Alternatives 1, 2, and 3 inundation area

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Legenere *Legenere limosa*	–/–/1B.1	Southern North Coast Ranges, southern Sacramento Valley, northern San Joaquin Valley, San Francisco Bay area	Vernal pools; below 2,885 feet; blooms May–June	Moderate—seasonal wetlands present; three occurrences within 2 to 3 miles of the Alternatives 1, 2, and 3 at Red Bluff Pumping Plant where there is no suitable habitat
Little mousetail *Myosurus minimus* ssp. *apus*	–/–/3.1	Central Valley and South Coast from Butte County south to San Diego County; Baja California, Oregon	Valley and foothill grassland, alkaline vernal pools; 65–2,100 feet; blooms March–June	Low—alkali seasonal wetlands present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Milo Baker's lupine *Lupinus milo-bakeri*	–/T/1B	North Coast Ranges: Colusa and Mendocino County	Along streams, ditches, and roads, in foothill woodlands and grasslands; 1,300–1,410 feet; blooms June–September	Low—streams and roads in woodlands and grasslands present; no occurrences within 5 miles of Alternatives 1, 2, or 3
Palmate-bracted bird's-beak *Chloropyron palmatum*	E/E/1B.1	Livermore Valley and scattered locations in the Central Valley from Colusa to Fresno County	Alkali grasslands, chenopod scrub; from 15–510 feet; blooms May–October	Moderate—alkali seasonal wetlands present; three occurrences within 1 to 4 miles of Alternatives 1, 2, and 3 roads and conveyance components
Pappose tarplant *Centromadia parryi* ssp. *parryi*	–/–/1B.2	Northern San Francisco Bay Area, North Coast Ranges, Sacramento Valley	Coastal prairie, meadows, seeps, coastal salt marsh, annual grassland, below 1,380 feet; blooms July–October.	Low—grassland and alkaline conditions present; no occurrences within 5 miles of Alternatives 1, 2, or 3
Parry's red tarplant *Centromadia parryi* ssp. *rudis*	–/–/4.2	Inner North Coast Ranges, Sacramento Valley, northern San Joaquin Valley	Alkali meadow and grasslands; 0–330 feet; blooms June–October	Moderate — grasslands present; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Pink creamsacs *Castilleja rubicundula* ssp. *rubicundula*	–/–/1B.2	Foothills of northern Sacramento Valley	Grassland and grassy areas in chaparral and oak woodland, often on serpentinite, from 65–2,985 feet; blooms April–June	Moderate—chaparral, oak woodland, and grasslands present, but no serpentine soils present; two occurrences within 1 to 4 miles of the Alternative 2 South Road and none within 5 miles of the Alternatives 1, 2, and 3 inundation area
Porter's navarretia *Navarretia paradoxinota*	–/–/1B.3	Interior North Coast Ranges	Swales and dry streambeds, in serpentine chaparral; 570–2,870 feet; blooms May–July	Low—ephemeral and intermittent streams and chaparral present, but no serpentine soils present; no occurrences within 5 miles of Alternatives 1, 2, or 3
Purdy's fritillary *Fritillaria purdyi*	–/–/4.3	Northwestern California	Open areas in serpentine chaparral, woodlands, at 1,310–6,890 feet; blooms March–June	Low —chaparral and woodlands present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Purdy's onion *Allium fimbriatum* var. *purdyi*	–/–/4.3	Central Interior North Coast Ranges	Serpentine outcrops, at 980–1,970 feet; blooms April–June	Low —some outcrops present, but no serpentine; occurrences of most CRPR 4 species not tracked in CNDDB
Rattan's milk-vetch *Astragalus rattanii* var. *rattanii*	–/–/4.3	Northern and central North Coast Ranges	Riverbanks, sandbars, at 160–4,920 feet; blooms April–July	Moderate—streams with sandbars present; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Recurved larkspur *Delphinium recurvatum*	–/–/1B.2	San Joaquin Valley and interior valleys of the South Coast Ranges, from Contra Costa County to Kern County	Subalkaline soils in annual grassland, saltbush scrub; 10–2,590 feet; blooms March–May	Low—alkaline grassland present; no occurrences within 5 miles of Alternatives 1, 2, or 3
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	–/–/1B.1	Inner North Coast Ranges, Cascade Range foothills, Modoc Plateau, Sacramento Valley, northern Sierra Nevada foothills	Vernally mesic sites in chaparral, valley and foothill grassland, cismontane woodlands; from 110–3,315 feet; blooms April–June	Moderate—seasonal wetlands present in parts of the study area, two occurrences within 1 to 2 miles of Alternatives 1, 2, and 3 at Red Bluff Pumping Plant where there is no suitable habitat
Red-flowered bird's-foot trefoil *Acmispon rubriflorus*	–/–/1B.1	Inner North Coast Ranges (Colusa, Tehama Counties), Inner South Coast Ranges (Stanislaus County)	Open, grassy areas in oak woodland; from 640–1,605 feet; blooms April–May	High—oak savanna and oak woodland present; one occurrence adjacent to and one occurrence less than 1 mile from the Alternatives 1, 2, and 3 inundation area; two additional occurrences in and one occurrence within 4 miles of the Alternative 2 South Road alignment
Red Mountain catchfly *Silene campanula* ssp. *campanula*	C/E/1B	North Coast Ranges: Mendocino and Colusa County	On rocky slopes in Jeffrey pine forest and mixed chaparral; soils derived from ultramafic substrates; 1,400–6,840 feet; blooms April–July	Low—chaparral is present, but suitable soils are not likely present; no occurrences within 5 miles of Alternatives 1, 2, or 3

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Redding checkbloom *Sidalcea celata*	–/–/3	Shasta, Siskiyou, and Tehama Counties	Cismontane woodland, sometimes on serpentinite; 445–5,005 feet; blooms April–August	Low—oak woodland present, but study area is outside of species' range; no occurrences within 5 miles of Alternatives 1, 2, or 3
San Joaquin spearscale *Extriplex joaquinana*	–/–/1B.2	Eastern San Francisco Bay area, west edge of Central Valley from Glenn County to Fresno County	Alkali meadow, alkali grassland, saltbush scrub; from 3–2,740 feet; blooms April–September	Moderate—alkali seasonal wetland present; one occurrence in the Alternatives 1, 2, and 3 conveyance pipeline; three occurrences in and three occurrences within 2 to 3 miles of Alternatives 1, 2, and 3 roads and conveyance components; and one occurrence within 2 miles of the Alternatives 1, 2, and 3 Dunnigan Pipeline
Sanford's arrowhead *Sagittaria sanfordii*	–/–/1B.2	Scattered locations in Central Valley and Coast Ranges	Freshwater marsh, sloughs, canals, and other slow-moving water habitats; 0–2,135 feet; blooms May–October (November)	Low—freshwater marsh, canals, and ditches present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Serpentine collomia *Collomia diversifolia*	–/–/4.3	Inner and High North Coast Ranges, northeastern San Francisco Bay Area	Open, rocky to gravelly areas in serpentine chaparral, at 200–2,950 feet; blooms April–July	Low—chaparral present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Serpentine cryptantha *Cryptantha dissita*	–/–/1B.2	Colusa, Lake, Mendocino, Napa, Shasta, Siskiyou, and Sonoma Counties	Chaparral, on serpentinite; 1,295–1,905 feet; blooms April–June	Low—chaparral present, but no serpentine soils; no occurrences within 5 miles of Alternatives 1, 2, or 3
Serpentine milkweed *Asclepias solanoana*	–/–/4.2	Klamath Ranges, North Coast Ranges	Serpentine outcrops, at 2,300–5,250 feet; blooms June	Low—outcrops present, but no serpentine; occurrences of most CRPR 4 species not tracked in CNDDB
Serpentine sunflower *Helianthus exilus*	–/–/4.2	Klamath Ranges, North Coast Ranges	On streambanks, in gravelly serpentine soils, at 980–4,270 feet; blooms June–October	Low—streams present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Shield-bracted monkeyflower *Erythranthe glaucescens*	–/–/4.3	Southern Cascade Range foothills, northern Sierra Nevada foothills	Serpentine seeps in valley and foothill grassland, chaparral, cismontane woodland, lower montane coniferous forest; 200–4,070 feet; blooms February–August	Low—grassland, chaparral, oak woodland, and foothill pine forest present, potentially with seeps, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Shining navarretia *Navarretia nigelliformis* ssp. *radians*	–/–/1B.2	Foothills of the Inner South Coast Ranges from Merced County to San Luis Obispo County	Mesic areas with heavy clay soils, in swales and clay flats; in oak woodland, grassland; from 650–3,300 feet; blooms May–June	High—grassland and oak woodland with clay soils present; one occurrence in the Alternatives 1, 2, and 3 inundation and recreation areas

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Sickle-fruited jewelflower *Streptanthus drepanoides*	–/–/4.3	Southernmost Klamath Ranges, high North Coast Ranges, northern interior North Coast Ranges, northern Sierra Nevada Foothills	Chaparral, cismontane woodland, lower montane coniferous forest, on serpentine; 900–5,450 feet; blooms April–June	Low—chaparral, oak woodland, and foothill pine forest present, but no serpentine soils; occurrences of most CRPR 4 species not tracked in CNDDB
Silky cryptantha *Cryptantha crinita*	–/–/1B.2	Cascade Range: Shasta, Tehama and Glenn Counties	Gravel bars and streambanks, within foothill woodlands; from 295–3,675 feet; blooms March–June	Low—gravelly streams present, but most of study area is outside of the species' range; one occurrence within 3 miles of Alternatives 1, 2, and 3 at Red Bluff Pumping Plant
Slender Orcutt grass *Orcuttia tenuis*	T/E/1B.1	Sierra Nevada and Cascade Range foothills, from Siskiyou County to Sacramento County	Vernal pools, from 100–5,690 m; blooms May–July	Low—seasonal wetlands present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Small spikerush *Elocharis parvula*	–/–/4.3	North Coast, San Francisco Bay Area, South Coast	Coastal brackish wetlands, below 160 feet; blooms late winter–fall	Low—seasonal wetlands present, some alkaline, but suitable brackish wetland habitat is unlikely; occurrences of most CRPR 4 species not tracked in CNDDB
Snow Mountain buckwheat *Eriogonum nervulosum*	–/–/1B.2	North Coast Ranges, from Colusa to Napa County	Chaparral, serpentine outcrops and barrens; from 1,460–6,900 feet; blooms June–September	Low—chaparral and some rock outcrops present, but no serpentine habitat present; one occurrence within 5 miles of the Alternative 2 South Road

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Stony Creek spurge *Euphorbia ocellata* ssp. *rattanii*	–/–/1B.2	Inner North Coast Ranges in Glenn and Tehama Counties	Sandy or rocky soils, along streambeds or on shale slopes, in chaparral, riparian scrub, or grasslands; from 260–1,900 feet; blooms May–September	Low—grassland, chaparral, and riparian habitat present; no occurrences within 5 miles of Alternatives 1, 2, or 3
Sylvan microseris *Microseris sylvatica*	–/–/4.2	Scattered locations in California, primarily in the Interior North Coast Ranges, eastern San Francisco Bay, Interior South Coast Ranges, Sierra Nevada Foothills, and Tehachapi mountains	Grassland, oak woodland, open grassy areas in chaparral; below 5,580 feet; blooms April–May	Moderate—chaparral, oak savanna, and oak woodland present; occurrences of most List 4 species not tracked in CNDDB
Tehama navarretia *Navarretia heterandra*	–/–/4.3	Interior North Coast Ranges, Cascade Range foothills, western Sacramento Valley, east San Francisco Bay Area, interior South Coast Ranges, Modoc Plateau	Mesic areas in valley and foothill grasslands, vernal pools; 100–3,320 feet; blooms April–June	Moderate—grasslands and seasonal wetlands present; occurrences of most CRPR 4 species not tracked in CNDDB
Three-fingered morning-glory *Calystegia collina* ssp. *tridactylosa*	–/–/1B.2	Colusa, Lake, and Mendocino Counties	Chaparral and cismontane woodland on serpentinite, rocky, gravelly openings; 0–1,970 feet; blooms April–June	Low—chaparral and oak woodland present, but no serpentinite; no occurrences within 5 miles of Alternatives 1, 2, or 3

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Tracy's clarkia *Clarkia gracilis* ssp. *tracyi*	–/–/4.2	Interior North Coast Ranges	Serpentine chaparral, McNab cypress forest, open areas of meadow or streambanks, at 330–1,640 feet; blooms May–July	Low—grassland and streams present, but no serpentine; occurrences of most CRPR 4 species not tracked in CNDDB
Tracy's eriastrum *Eriastrum tracyi*	–/–/3.2	Inner North Coast Ranges, disjunct to Mount Hamilton	Grassland, open areas in chaparral or oak woodland, on gravelly shale or clay; from 1,030–7,880 feet; blooms June–July	Moderate—grassland, chaparral, and oak woodland, clay soils present; six occurrences within 3 to 5 miles of the Alternative 2 South Road and no occurrences within 5 miles of Alternatives 1 and 3
Tripod eriogonum *Eriogonum tripodum*	–/–/4.2	Interior North Coast Ranges, northern and central Sierra Nevada foothills	Gravelly slopes and flats, often on serpentine, in chaparral, cismontane woodland; 655–5,250 feet	Low—chaparral and oak woodland present, but no serpentine; occurrences of most CRPR 4 species not tracked in CNDDB
Vernal pool smallscale *Atriplex persistens*	–/–/1B.2	Central Valley, from Glenn County to Tulare County	Dry beds of vernal pools, on alkaline soils; from 30–375 feet; blooms June–October	Moderate—alkali seasonal wetlands present; 12 occurrences within 1 to 4 miles of the Alternatives 1, 2, and 3 roads and conveyances
Water star-grass *Heteranthera dubia*	–/–/2B.2	Scattered locations in northern California	Slow-moving water; below 4,920 feet; blooms July–August	Moderate—streams and ponds present; one occurrence within 5 miles of Alternatives 1, 2, and 3 road

Common and Scientific Names	Status[a] Federal/State/ California Rare Plant Rank	Distribution	Habitat Requirements and Blooming Period	Potential for Occurrence[b, c]
Watershield *Brasenia schreberi*	–/–/2B.3	Scattered occurrences in north and central California	Ponds, lake margins, freshwater marshes; 0–7,220 feet; blooms June–September	Low—freshwater marsh and ponds present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Woolly meadowfoam *Limnanthes floccosa* ssp. *floccosa*	–/–/4.2	Klamath Ranges, Interior North Coast Ranges, Cascade Ranges	Vernal pools and swales; 200–4,380 feet; blooms March–May (June)	Low—vernal pools likely present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Woolly rose-mallow *Hibiscus lasiocarpos* var. *occidentalis*	–/–/1B.2	Cascade Range Foothills, Sacramento Valley, Sacramento–San Joaquin Delta, from Butte County to San Joaquin County	Freshwater marsh along rivers and sloughs; below 395 feet; blooms August–September	Low—freshwater marsh habitat present; no occurrences within 5 miles of Alternatives 1, 2, and 3
Wright's trichocoronis *Trichocoronis wrightii* var. *wrightii*	–/–/2B.1	Scattered locations in the Central Valley and Southern Coast; Texas	On alkaline soils in floodplains, meadows and seeps, marshes and swamps, riparian forest, vernal pools; 15–1,425 feet; blooms May–September	Low—alkali seasonal wetlands and riparian forest present; no occurrences within 5 miles of Alternatives 1, 2, and 3

Table sources: Unless otherwise referenced above, information was found online from the California Department of Fish and Wildlife 2021 and California Native Plant Society 2020

[a] Status Explanations:

Federal:

– = not listed under the federal Endangered Species Act

C = candidate for listing under the federal Endangered Species Act

E = listed as endangered under the federal Endangered Species Act

T = listed as threatened under the federal Endangered Species Act

State:

– = not listed under the California Endangered Species Act

R = listed as rare under the Native Plant Protection Act

E = listed as endangered under the California Endangered Species Act

T = listed as threatened under the California Endangered Species Act

California Rare Plant Rank:

1A = presumed extinct in California

1B = rare, threatened, or endangered in California and elsewhere

2B = rare, threatened, or endangered in California, but more common elsewhere

3 = more information is needed to determine whether assigning a rank is appropriate
4 = plants of limited distribution that are on a watch list
0.1 = seriously endangered in California
0.2 = fairly endangered in California
0.3 = not very endangered in California

[b] Includes all California Natural Diversity Database occurrences within 5 miles of the study area.

[c] Potential for Occurrence in Study Area

High: Known occurrence in the project region or in project area from CNDDB or other documents; suitable habitat and microhabitat conditions are present.

Moderate: Known occurrence in the project region from CNDDB or other documents; suitable habitat is present but suitable microhabitat conditions (generally soil type and/or hydrology) are not present.

Low: Known occurrence or not in the project region from CNDDB or other documents; suitable habitat and microhabitat conditions are unlikely to be present.

9A.3 Species Accounts

The following species accounts provide information on the status, range, distribution, and associated habitat types for species listed in Table 9A-2 that are listed species or that have moderate to high potential to occur in the study area or that are recorded within 5 miles of the study area. Recorded locations for CRPR 4 species are not generally included in the CNDDB, and species accounts are not included below with the exception of dimorphic snapdragon, which is tracked on the CNDDB. Unless specified otherwise, species occurrence information was obtained from the CNDDB (California Department of Fish and Wildlife 2021) and the CNPS online Inventory of Rare and Endangered Plants (California Native Plant Society 2020). The accounts also include an assessment of the species' potential to occur in the study area and indicate whether the species was observed during botanical surveys conducted between 1998 and 2003 in the Sites Reservoir inundation area and along various road and conveyance routes as indicated in the Draft 2017 EIR/EIS (Sites Project Authority and U.S. Bureau of Reclamation 2017). The survey areas for the previous botanical surveys included approximately 75% of the current study area; however, a botanical survey of the entire study area has not been done.

9A.3.1. Adobe lily

Adobe lily (*Fritillaria pluriflora*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 114 occurrences in the inner North Coast Ranges, the northern Sierra Nevada foothills, and the adjacent margins of the Sacramento Valley. Twenty-two occurrences are within 7 miles of the study area. The species grows in clay soils in grasslands, oak woodlands, and chaparral, sometimes on serpentine. Oak woodlands and grassland in the study area are potential habitat for this species. Adobe lily was found at five locations along the west side of the study area during the botanical surveys of the Sites Reservoir area.

9A.3.2. Ahart's dwarf rush

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 13 occurrences, mostly along the eastern margin of the Sacramento Valley. One occurrence is within 1 mile of the RBPP, but most of the study area is outside of the species' range. Ahart's dwarf rush grows on the margins of vernal pools, and vernal pools, if found in mapped seasonal wetland habitat in the study area, are potential habitat

for this species. Ahart's dwarf rush was not found during the botanical surveys of the Sites Reservoir area.

9A.3.3. Ahart's paronychia

Ahart's paronychia (*Paronychia ahartii*) has no federal or state listing status but has a CRPR of 1B.1. The species is known from 59 occurrences along the northern margins of the Sacramento Valley. It grows in seasonal swales and in grassland adjacent to vernal pools in both oak woodland and grassland plant communities, on gravelly or rocky soils of alluvial origin. Two occurrences are located with 3 miles of the facilities at the RBDD. The soil types in the study area are not likely to support potential habitat for this species. Ahart's paronychia was not found during the botanical surveys of the Sites Reservoir area.

9A.3.4. Baker's navarretia

Baker's navarretia (*Navarretia leucocephala* subsp. *bakeri*) has no federal or state listing status but has a CRPR of 1B.1. The species is known from 64 occurrences, mostly in the North Coast Ranges and Sacramento Valley. Two occurrences are within 9 miles of the study area. Habitat for the species includes vernal pools, typically on clay or alkaline soils. There is low potential for suitable vernal pool habitat in the study area. Baker's navarretia was not found during the botanical surveys of the Sites Reservoir area.

9A.3.5. Bent-flowered fiddleneck

Bent-flowered fiddleneck (*Amsinckia lunaris*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 93 occurrences in the North Coast Ranges and San Francisco Bay area. Habitat for the species includes grasslands and grassy areas in oak woodlands and coastal bluff scrub. Grasslands and open, grassy areas in oak woodland and savanna in the study area are potential habitat for this species. Bent-flowered fiddleneck was observed during the Sites Reservoir botanical surveys, in the study area near the community of Sites, in the hills north of Sites Lodoga Road, in the Antelope Valley, near Stone Corral Creek, and near Grapevine Creek. Two occurrences are in the current study area, and two occurrences are within 1 mile of the study area.

9A.3.6. Bolander's horkelia

Bolander's horkelia (*Horkelia bolanderi*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 13 occurrences in the inner North Coast Ranges. One occurrence is within 2.5 miles of Alternatives 1 and 3 and less than 1 mile of Alternative 2. Habitat for this species consists of vernally moist areas in pine forest and oak woodland. Potential habitat for this species is present in oak woodlands and seasonal wetlands in the study area. Bolander's horkelia was not found during the botanical surveys of the Sites Reservoir area.

9A.3.7. Brazilian watermeal

Brazilian watermeal (*Wolffia brasiliensis*) has no federal or state listing status but has a CRPR of 2B.3. The species is known from six occurrences in Butte, Glenn, Sutter, and Yuba Counties, all presumed extant, and the nearest occurrence to the study area is 11 miles northwest of Willows. Brazilian watermeal is an aquatic herb that grows in shallow freshwater marsh. Freshwater marshes in the study area are potential habitat for this species. Brazilian watermeal was not found during botanical surveys of the Sites Reservoir area.

9A.3.8. Brittlescale

Brittlescale (*Atriplex depressa*) has no federal or state listing status but has a CRPR of 1B.2. Brittlescale is endemic to California. Its range extends from Glenn and Colusa Counties in the north to Merced County in the south. There are 59 occurrences for this species, all presumed extant. Brittlescale is found in meadows, seeps, and vernal pools, with alkaline clay soils. The study area crosses one occurrence at Road 68, and 13 other occurrences are within 10 miles of the study area. Alkali seasonal wetlands in the study area are potential habitat for this species. Brittlescale was not found during the botanical surveys of the Sites Reservoir area.

9A.3.9. California alkali grass

California alkali grass (*Puccinellia simplex*) has no state or federal listing status but has a CRPR of 1B.2. It occurs at scattered locations in the San Francisco Bay area, Central Valley, Tehachapi Mountains, and the western Mojave Desert. The plants grow in seasonally wet alkali wetlands, sinks, flats, vernal pools, and playa margins. There are 80 known occurrences, three of which are within 5 miles of the study area. Alkali seasonal wetlands in the study area are potential habitat for this species. California alkali grass was not found during the botanical surveys of the Sites Reservoir area.

9A.3.10. Caper-fruited tropidocarpum

Caper-fruited tropidocarpum (*Tropidocarpum capparideum*) has no state or federal listing status but has a CRPR of 1B.1. It is primarily known from the Mount Diablo foothills, although it has been reported from a few other scattered locations, including one occurrence within 8 miles of the study area, near Willows. Little is known about the habitat, but it was likely to have occurred in grasslands, on alkaline or clay soils. The grasslands in the study area are potential habitat for this species. Caper-fruited tropidocarpum was not found during the botanical surveys of the Sites Reservoir area.

9A.3.11. Colusa grass

Colusa grass (*Neostapfia colusana*) is federally listed as threatened (62 Federal Register [FR] 14338, March 26, 1997). It is also state-listed as endangered. Critical habitat for the species was designated in 2006 (71 FR 7248–7257, February 10, 2006). The species is known from 64 occurrences in the Central Valley, ranging from Glenn County to Merced County. Habitat for the species consists of large, deep vernal pools. Colusa grass was not found in the Sites Reservoir area, and no habitat for the species was observed. There was one occurrence within 7 miles of the study area, but this occurrence is regarded as extirpated. Potential habitat for this species has low potential to be present in the study area.

9A.3.12. Colusa layia

Colusa layia (*Layia septentrionalis*) has no state or federal listing status but has a CRPR of 1B.2. The species is known from 69 occurrences, mostly in the inner North Coast Ranges. The species occurs in chaparral openings, grasslands, and woodlands, often on serpentine or sandy soils, but also on shale outcrops. Colusa layia was not found during the botanical surveys in the Sites Reservoir area, but potential habitat for the species is present in the current study area. Seven occurrences are within 7 miles of the study area.

9A.3.13. Coulter's goldfields

Coulter's goldfields (*Lasthenia glabrata* subsp. *coulteri*) has no state or federal listing status but has a CRPR of 1B.1. It is known from 111 occurrences, mostly in the southern San Joaquin Valley and South Coast region. It grows in grasslands and vernal pools, typically on alkaline soils. Counter's goldfields was not found during the botanical surveys in the Sites Reservoir area, but potential habitat for the species is present in the study area in seasonal wetlands and vernal pools, if found in mapped seasonal wetland habitat in the study area, with alkaline soils. One historical occurrence is within 2 miles of the study area.

9A.3.14. Deep-scarred cryptantha

Deep-scarred cryptantha (*Cryptantha excavata*) has no state or federal listing status but has a CRPR of 1B.1. It is a very rare species known from only five occurrences in the interior North Coast Ranges. It grows on gravelly slopes adjacent to streambanks in blue oak woodlands. Deep-scarred cryptantha was not found in the Sites Reservoir area, but potential habitat for the species is present in the current study area. One occurrence is within 1 mile of Alternative 2 and about 4 miles from Alternatives 1 and 3.

9A.3.15. Diamond-petaled California poppy

Diamond-petaled California poppy (*Eschscholzia rhombipetala*) has no state or federal listing status but has a CRPR of 1B.1. It ranges from the southeastern San Francisco Bay area south into the South Coast Ranges and adjacent San Joaquin Valley, from Alameda County to San Luis Obispo County. Diamond-petaled California poppy grows on clay soils in grasslands and chenopod scrub. There are 12 known occurrences, one of which is within 4 miles of Alternatives 1, 2, and 3. Potential habitat is present in the study area. Diamond-petaled California poppy was not found during the botanical surveys of the Sites Reservoir area.

9A.3.16. Dimorphic snapdragon

Dimorphic snapdragon (*Antirrhinum subcordatum*) has no state or federal listing status but has a CRPR of 4.3. It is endemic to the inner North Coast Ranges, where it is known from 49 occurrences. There are two occurrences within 8 miles of Alternatives 1, 2, and 3; one occurrence adjacent to Alternatives 1, 2, and 3; and one occurrence in Alternatives 1, 2, and 3. Habitat for the species consists of chaparral and lower montane coniferous forest, sometimes on serpentine soils. Potential habitat for dimorphic snapdragon is present in the study area. Dimorphic snapdragon was not found during the botanical surveys of the Sites Reservoir area.

9A.3.17. Drymaria-like western flax

Drymaria-like western flax (*Hesperolinon drymarioides*) has no federal or state listing status but has a CRPR of 1B.2. It occurs in the interior and high North Coast Ranges, where it is known from 24 occurrences. There are three occurrences within 9 miles of Alternatives 1 and 3 and within 5 miles of Alternative 2. Habitat for the species consists of serpentine chaparral and McNab cypress forest. No potential habitat for the species is present in the study area. Drymaria-like western flax was not found during the botanical surveys of the Sites Reservoir area.

9A.3.18. Dwarf downingia

Dwarf downingia (*Downingia pusilla*) has no federal or state listing status but has a CRPR of 2B.2. In California, dwarf downingia is known from 122 occurrences, of which 114 are

presumed extant, in a range that extends from southern Tehama County to Fresno County and from Sonoma County to Placer County; it is also found in Chile. It occurs in vernal pools on alluvial terraces and floodplains in the Sacramento Valley. There are five occurrences within 4 miles of the RBPP. In the study area, vernal pools, if found in mapped seasonal wetland habitat in the study area, are potential habitat for the species. Dwarf downingia was not found during the botanical surveys of the Sites Reservoir area.

9A.3.19. Dwarf soaproot

Dwarf soaproot (*Chlorogalum pomeridianum* var. *minus*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 31 occurrences from widely disjunct populations in the North Coast Ranges and South Coast Ranges. One occurrence is within 4 miles of Alternative 2. Habitat for dwarf soaproot consists openings in chaparral and grasslands, on serpentine outcrops. No serpentine habitat for dwarf soaproot is present in the study area. Dwarf soaproot was not found during the botanical surveys of the Sites Reservoir area.

9A.3.20. Ferris' milk-vetch

Ferris' milk-vetch (*Astragalus tener* var. *ferrisiae*) has no federal or state listing status but has a CRPR of 1B.2. It is endemic to the Sacramento Valley, where it is known from 18 occurrences. Three occurrences are within 8 miles of the study area. Habitat for Ferris' milk-vetch consists of subalkali flats and flood lands, usually on adobe soil. In the study area, seasonal wetlands with alkaline soils may be potential habitat. Ferris' milk-vetch was not found during the botanical surveys of the Sites Reservoir area.

9A.3.21. Greene's tuctoria

Greene's tuctoria (*Tuctoria greenei*) is federally listed as endangered (62 FR 14338, March 26, 1997). It is also state-listed as rare. Critical habitat for the species was designated in 2006 (71 FR 7301–7313, February 10, 2006). The species is known from 50 occurrences on the Modoc Plateau and in the Central Valley, ranging from Modoc County to Tulare County. Habitat for the species consists of large, deep vernal pools. Greene's tuctoria was not found in the Sites Reservoir area, and no habitat for the species was observed. One occurrence in the Project vicinity is within 7 miles of the study area, but this occurrence is regarded as possibly extirpated (California Department of Fish and Wildlife 2021). There is low potential for the presence of large, deep vernal pools in the study area. Greene's tuctoria was not found during the botanical surveys of the Sites Reservoir area.

9A.3.22. Hairy Orcutt grass

Hairy Orcutt grass (*Orcuttia pilosa*) is federally listed as endangered (62 FR 14338, March 26, 1997). It is also state-listed as endangered. Critical habitat for the species was designated in 2006 (71 FR 7269–7278, February 10, 2006). The species is known from 35 occurrences in the Central Valley, ranging from Tehama County to Madera County. Six occurrences are within 8 miles of the study area. Habitat for the species consists of large, deep vernal pools, which have low potential to be present in the study area. Hairy Orcutt grass was not found during the botanical surveys in the Sites Reservoir area, and no potential habitat for the species was observed.

9A.3.23. Heartscale

Heartscale (*Atriplex cordulata* var. *cordulata*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 66 occurrences in the Central Valley, ranging from Colusa County to Kern County. Five occurrences are within 5 miles of the study area. Habitat for heartscale consists of alkali grassland, alkali meadow, and alkali scrub. In the study area, seasonal wetlands on alkaline soils are potential habitat for heartscale. Heartscale was not found during the botanical surveys of the Sites Reservoir area.

9A.3.24. Heckard's peppergrass

Heckard's peppergrass (*Lepidium latipes* var. *heckardii*) has no federal or state listing status but has a CRPR of 1B.2. Heckard's peppergrass is endemic to California and is known from 15 occurrences. The reported range of Heckard's peppergrass extends from Glenn and Colusa Counties to Merced County. Three occurrences are within 6 miles of the study area. Habitat for Heckard's peppergrass consists of alkali flats and mesic alkali grasslands and around the margins of alkali vernal pools. In the study area, seasonal wetlands on alkaline soils are potential habitat for Heckard's peppergrass. Heckard's peppergrass was not found during the botanical surveys of the Sites Reservoir study area, although dwarf peppergrass (*Lepidium latipes* var. *latipes*) was observed.

9A.3.25. Hoover's spurge

Hoover's spurge (*Euphorbia hooveri*) is federally listed as endangered (62 FR 14338, March 26, 1997). It is not state-listed, but it has a CRPR of 1B.2. The species is endemic to California's Central Valley, ranging from Tehama County to Tulare County. Hoover's spurge is known from 29 occurrences, four of which are within 5 miles of the study area. Habitat for the species consists of large, deep vernal pools, which have low potential to be present in the study area. Hoover's spurge was not found during the botanical surveys of the Sites Reservoir area.

9A.3.26. Indian Valley brodiaea

Indian Valley brodiaea (*Brodiaea rosea* subsp. *rosea*) is state-listed as endangered. It has no federal listing status and has a CRPR of 3.1. Indian Valley brodiaea currently consists of two ecotypes, with one group of populations that occurs on serpentine substrates and a second form that occurs on volcanic substrates. Only the ecotype occurring on serpentine substrates is considered endangered. Indian Valley brodiaea occurs in the eastern Klamath Ranges and inner North Coast Ranges, ranging from Trinity and Shasta Counties south to Lake and Colusa Counties. There are 21 occurrences, 1 of which is within 4 miles of the study area. Habitat for Indian Valley brodiaea consists of meadows and other vernally moist areas in serpentine chaparral. No serpentine habitat for Indian Valley brodiaea is present in the study area. Indian Valley brodiaea was not found during the botanical surveys of the Sites Reservoir area.

9A.3.27. Jepson's milk-vetch

Jepson's milk-vetch (*Astragalus rattanii* var. *jepsonianus*) has no federal or state listing status but has a CRPR of 1B.2. There are 53 occurrences at scattered locations in the inner North Coast Ranges from Tehama County to Napa County. One occurrence is within 4 miles of the study area. Habitat for Jepson's milk-vetch consists of grasslands and open grassy areas in chaparral, on serpentine soils. There is low potential for Jepson's milk-vetch to occur in the study area,

because serpentine soils are absent. Jepson's milk-vetch was not found during the botanical surveys of the Sites Reservoir area.

9A.3.28. Keck's checkerbloom

Keck's checkerbloom (*Sidalcea keckii*), also referred to as Keck's checkermallow, is federally listed as endangered (65 FR 7764, February 16, 2000). It has no state listing status and has a CRPR of 1B.1. The species was thought to be restricted to three sites in Fresno and Tulare Counties at the time of its listing, and critical habitat for the species is designated in those counties (68 FR 12875–12880, March 18, 2003). Subsequent taxonomic studies have concluded that the species also occurs in the southern inner North Coast Ranges in Colusa, Napa, Solano, and Yolo Counties (Hill 2015). Currently, there are 50 occurrences, five of which are within 8 miles of the study area. Two of the five occurrences are less than 1 mile from the study area. Keck's checkerbloom grows in grasslands and on grassy slopes in blue oak woodland, generally on clay soils, and sometimes on soils derived from serpentinite. Grasslands, blue oak woodland, and oak savanna in the study area are potential habitat for this species.

The botanical surveys of the Sites Reservoir area were conducted before Keck's checkerbloom was listed and before it was identified in northern California. Consequently, these surveys identified all checkerbloom plants in the area as fringed checkerbloom (*Sidalcea diploscypha*) (California Department of Water Resources 2000a), a common species that is similar in appearance to Keck's checkerbloom. Consequently, any potential occurrences of Keck's checkerbloom in the survey area were not mapped.

In support of permitting for the Project, a species habitat model developed for Keck's checkerbloom (checkermallow) can be used to predict locations of suitable habitat within the study area. The model presently considers annual grassland, blue oak woodland, and oak savanna communities where the soil map unit Cibo-Ayar-Altamont also occurs. This map unit includes soils with high clay content that represent potentially suitable microhabitat for Keck's checkerbloom.

9A.3.29. Konocti manzanita

Konocti manzanita (*Arctostaphylos manzanita* subsp. *elegans*) has no federal or state listing status but has a CRPR of 1B.3. It is known from 69 occurrences in the Klamath Ranges and North Coast Ranges, one of which is within 3 miles of the study area. Habitat for Konocti manzanita consists of chaparral, oak woodland, lower montane coniferous forest, generally on volcanic soils. Konocti manzanita was not found during the botanical surveys of the Sites Reservoir area, although big manzanita (*Arctostaphylos manzanita* ssp. *manzanita*) was observed. In the study area, chaparral and oak woodland are potential habitat for Konocti manzanita.

9A.3.30. Legenere

Legenere (*Legenere limosa*) has no federal or state listing status but has a CRPR of 1B.1. Legenere is mostly found in southern Sacramento County but occurs at scattered locations from southwestern Shasta County to Monterey County. Three occurrences area within 3 miles of the RBPP. Throughout its distribution, legenere occurs in vernal pools, vernal swales, pools in seasonal streambeds, vernal marshes, and stock ponds. Legenere was not found in during the

botanical surveys of the Sites Reservoir area. In the study area, potential habitat is present in stock ponds and seasonal wetlands.

9A.3.31. Palmate-bracted bird's-beak

Palmate-bracted bird's-beak (*Chloropyron palmatum*; formerly *Cordylanthus palmatus*) is federally listed as endangered (51 FR 23769, July 1, 1986). It is also state-listed as endangered and has a CRPR of 1B.1. No critical habitat has been designated for this species. Palmate-bracted bird's-beak is known from 25 occurrences, eight of which are extirpated or possibly extirpated (California Department of Fish and Wildlife 2021). These occurrences are present at widely separated locations in the Central Valley, ranging from Glenn County to Fresno County. Three occurrences are within 8 miles of the study area. Habitat for the species is chenopod scrub and alkali grassland, and this species requires a host plant, most commonly salt grass (*Distichlis spicata*) or alkali heath (*Frankenia salina*) (California Native Plant Society 2021; Yolo Habitat Conservancy 2018). Palmate-bracted bird's-beak was not found during the botanical surveys in the Sites Reservoir area (California Department of Water Resources 2000a). However, there is moderate potential for this species to occur in alkali seasonal wetlands in the current study area.

As described for Keck's checkerbloom, a species habitat model is also being developed for palmate-bracted bird's-beak that will be used to predict where suitable habitat is present in the study area. The model considers seasonal wetlands and intermittent streams where Capay soils are present. Capay soils are generally alkaline.

9A.3.32. Pink creamsacs

Pink creamsacs (*Castilleja rubicundula* subsp. *rubicundula*) has no federal or state listing status but has a CRPR of 1B.2. The species is known from 42 occurrences, mostly in the foothills of northern Sacramento Valley. Two occurrences are within 7 miles of the study area. Habitat for the species includes grassland and grassy areas in chaparral and oak woodland, sometimes in serpentine soils. Pink creamsacs was not found during the Sites Reservoir area botanical surveys. In the study area, potential habitat is present in grasslands and grassy areas in chaparral and oak woodland.

9A.3.33. Red Bluff dwarf rush

Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*) has no federal or state listing status but has a CRPR of 1B.1. The species is known from 62 occurrences along the eastern margin and northern end of the Sacramento Valley. Although two occurrences are located west of the facilities at the RBDD, most of the study area is outside of the species' range. Habitat for Red Bluff dwarf rush consists of vernally mesic sites in chaparral, grasslands, and oak woodlands. Seasonal wetlands in the study area are potential habitat for the species. Red Bluff dwarf rush was not found during the Sites Reservoir area botanical surveys.

9A.3.34. Red-flowered bird's-foot trefoil

Red-flowered bird's-foot trefoil (*Acmispon rubriflorus*) has no federal or state listing status but has a CRPR of 1B.1. It is known from only eight scattered occurrences in the Cascade Range foothills, inner North Coast Ranges, and the south San Francisco Bay area. Four occurrences are in or within 7 miles of the study area. Habitat for the species consists of grasslands and grassy areas in oak woodlands. In the study area, grasslands and blue oak woodland are potential habitat

for this species. Red-flowered bird's-foot trefoil was found at five locations in the Sites Reservoir area botanical surveys in Antelope Valley and along Grapevine Creek. One other occurrence is present just west of the study area along Sites Lodoga Road.

9A.3.35. San Joaquin spearscale

San Joaquin spearscale (*Extriplex joaquinana*) has no federal or state listing status but has a CRPR of 1B.2. San Joaquin spearscale is endemic to California, including the Sacramento and San Joaquin Valleys and the San Francisco Bay area. There are 129 occurrences, seven of which are within 8 miles of the study area. The species was not observed during the botanical surveys in the Sites Reservoir area, although one occurrence is within the current study area along the Funks/TRR East pipeline alignment. Habitat for San Joaquin spearscale consists of alkali grassland, alkali meadows, and other seasonal wetlands with alkaline soils. In the study area, seasonal wetlands with alkaline soils are potential habitat for San Joaquin spearscale.

9A.3.36. Shining navarretia

Shining navarretia (*Navarretia nigelliformis* subsp. *radians*) has no federal or state listing status but has a CRPR of 1B.2. It occurs primarily in the South Coast Ranges but has been reported from other widely scattered locations in the San Joaquin Valley, San Francisco Bay area, and inner North Coast Ranges. The species grows in moist areas with heavy clay soils, including wetland swales and clay flats in grasslands and oak woodlands. There are 102 known occurrences. Shining navarretia was not observed during the botanical surveys in the Sites Reservoir area, although adobe navarretia (*Navarretia nigelliformis* ssp. *nigelliformis*) was reported from the recreational access road area in 2008 along Sites Lodoga Road. Grasslands in the study area on clay soils are potential habitat for this species.

9A.3.37. Silky cryptantha

Silky cryptantha (*Cryptantha crinita*) has no federal or state listing status but has a CRPR of 1B.2. It is endemic to the Cascade Range foothills in Shasta County, although one occurrence is reported along the Sacramento River on the Butte/Glenn County border. One occurrence is within 3 miles of the RBPP, but the remainder of the study area is outside of the species' range. The species grows on gravel bars and along streambanks in foothill woodlands. Silky cryptantha was not observed during the botanical surveys of the Sites Reservoir area. Although intermittent streams in the study area contain potential habitat for silky cryptantha, the study area is primarily outside of the known species range, and therefore there is low potential for it to occur.

9A.3.38. Slender Orcutt Grass

Slender Orcutt grass (*Orcuttia tenuis*) is federally listed as threatened (58 FR 14338, March 26, 1997). It is also state-listed as endangered and has a CRPR of 1B.1. Critical habitat for slender Orcutt grass was originally designated in 2003 and revised in 2006 (71 FR 7117, February 10, 2006). Slender Orcutt grass is known from 100 occurrences, seven of which are extirpated or possibly extirpated (California Department of Fish and Wildlife 2021). Occurrences are located in the North Coast Ranges, Cascade Range, Warner Mountains, Modoc Plateau, and Sacramento Valley. The nearest occurrence is approximately 28 miles southwest of the study area. This species grows in vernal pools on remnant alluvial fans, high stream terraces, and recent basalt flows (U.S. Fish and Wildlife Service 2009). The species is typically associated with larger or deeper vernal pools (typically deeper than 11.8 inches) that have relatively long periods of

inundation (U.S. Fish and Wildlife Service 2009). Slender Orcutt grass was not found during the botanical surveys in the Sites Reservoir area (California Department of Water Resources 2000a), and there is low potential for large or deep vernal pools with sufficiently long periods of inundation to occur in the study area.

9A.3.39. Snow Mountain buckwheat

Snow Mountain buckwheat (*Eriogonum nervulosum*) has no federal or state listing status but has a CRPR of 1B.2. It occurs in the inner North Coast Ranges from Glenn County to Napa County. One occurrence is within 5 miles of the study area. The species occurs in serpentine chaparral on outcrops and barrens. Snow Mountain buckwheat was not observed during the botanical surveys of the Sites Reservoir area, and no potential habitat for the species is present in the study area.

9A.3.40. Tracy's eriastrum

Tracy's eriastrum (*Eriastrum tracyi*) has no federal or state listing status but has a CRPR of 3.2. It has four centers of distribution, in the inner North Coast Ranges, Cascade Range foothills, Diablo Range, and southern Sierra Nevada. The disjunct nature of the species' distribution suggests that it may actually consist of several cryptic species. There are 119 occurrences, six of which are within 8 miles of the study area. Habitat for the species consists of grassland and open areas in chaparral or oak woodland, on gravelly shale or clay. Tracy's eriastrum was not observed during the Sites Reservoir area botanical surveys. Potential habitat for the species is present in the study area on clay soils in annual grassland, chaparral, oak woodland, and oak savanna.

9A.3.41. Vernal pool smallscale

Vernal pool smallscale (*Atriplex persistens*) has no federal or state listing status but has a CRPR of 1B.2. It is endemic to the Central Valley, ranging from Glenn County to Tulare County. There are 41 occurrences, 11 of which are within 8 miles of the study area. Habitat for the species consists of alkali vernal pools. Vernal pool smallscale was not observed during the Sites Reservoir area botanical surveys. Vernal pools, if found in mapped seasonal wetland habitat in the study area, would be potential habitat for vernal pool smallscale.

9A.3.42. Water star-grass

Water star-grass (*Heteranthera dubia*) has no federal or state listing status but has a CRPR of 2B.2. The species ranges across the United States and into Canada and Mexico, but it only occurs in scattered locations in northern California. There are nine occurrences in California, one of which is within 6 miles of the study area. Habitat for the species consists of lakes, ponds, and slow-moving streams. Water star-grass was not observed during the Sites Reservoir area botanical surveys. Ponds and stream pools are potential habitat for the species.

9A.3.43. Woolly rose-mallow

Woolly rose-mallow (*Hibiscus lasiocarpos* var. *occidentalis*) has no federal or state listing status but has a CRPR of 1B.2. It occurs in the Cascade Range Foothills, Sacramento Valley, and Sacramento–San Joaquin Delta, ranging from Butte County to San Joaquin County. There are 173 occurrences, one of which is within 6 miles of the study area. Habitat for the species consists of freshwater marsh along rivers and sloughs. Woolly rose-mallow was not observed during the

Sites Reservoir area botanical surveys. Potential habitat for woolly rose-mallow occurs in freshwater marsh in the study area.

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