APPENDIX D
FEDERAL AND STATE LISTED SPECIES

INTRODUCTION

Table D-1 documents the evaluation of the proposed action for potentially significant impacts on each of the species or critical habitats identified by the USFWS as federal or state species of concern, and it provides a brief rationale for the evaluation. These species were identified from USFWS records for each of the USGS quadrangles that are crossed by the San Joaquin River (as far upstream as Mendota Pool, and as far downstream as Vernalis), or crossed by the Merced, Stanislaus, and Tuolumne rivers (up to and including the reservoir areas) (Table D-2).

Table D-1: THREATENED OR ENDANGERED SPECIES IDENTIFIED BY THE USFWS OR STATE AGENCIES AS POTENTIALLY OCCURRING IN THE PROJECT AREA[1]

Class	Species (common name)	Listing Status Federal/ State[2]	Potentially Significant Impacts?	Comments
Fish	delta smelt	FT/ST	No	Delta Smelt are not found in the project area, but are present in the Delta downstream of Vernalis and are potentially affected by the project in the April-May period at the beginning of the smelt spawning season. Flows from the San Joaquin River will be increased during this period, resulting in higher flows through the Delta. Since the primary mortality factors of concern for delta smelt are reduced through-Delta flows and entrainment at the pumps, the proposed action of increased flows during April-May and October are not expected to have any significant impact on delta smelt. Operation of the pumping plants will continue in compliance with the 1995 Biological Opinion for operation of the CVP and SWP.
	Central Valley fall-run chinook salmon	FPT/SSC	No	The primary purpose of the project is to enhance survival of fall-run chinook salmon in the San Joaquin River basin using spring and fall pulse flows. Sudden decreses in flow may strand juveniles and large magnitude changes may dewater redds. Mitigation would be to implement ramping rates to ensxure that adverse impacts are avoided. With mitigation, the impact to this species is less than significant.
	Central Valley steelhead	FT/--	No	There is no conclusive evidence that steelhead are present in the Merced and Tuolumne rivers. However, proposed actions that benefit fall-run chinook salmon could benefit, to a lessor degree, Central Valley steelhead due to their similar life history and habitat requirements

Table D-1: THREATENED OR ENDANGERED SPECIES IDENTIFIED BY THE USFWS OR STATE AGENCIES AS POTENTIALLY OCCURRING IN THE PROJECT AREA (CONT.)

Class	Species (common name)	Listing Status Federal/ State[2]	Potentially Significant Impacts?	Comments
Fish (cont)	Sacramento splittail	FPT/SSC	No	Splittail utilize areas of flooded vegetation for spawning in the spring. To the extent that the additional flows provided by the project contribute to greater wetted area and floodplain inundation, there will be benefits to splittail. Ramping rates included in the proposed action will minimize the potential for stranding of fish. No significant negative impacts of the project are anticipated.
	Delta smelt critical habitat	--/--	No	The proposed actions will not adversely affect any critical habitat features that are of importance to delta smelt.
Mammals	Fresno kangaroo ratt	FE/SE	No	To date, the only known occurrence of this subspecies is at the Alkali Sink Ecological Reserve (1988) and at the Kerman Ecological Reserve (1992), both in Fresno County. These areas will not be affected by the project, and therefore this species will not be impacted.
	giant kangaroo rat	FE/SE	No	This species utilizes flat, sparsely vegetated areas with native annual grassland and shrubland habitats. It is not dependent on riparian habitats that are potentially affected by the project, and therefore will not be impacted by the project.
	riparian (San Joaquin Valley) woodrat	FPE/SSC	No	Habitat includes riparian areas with a mixture of trees and shrubs with moderate canopy and a brushy understory. Impacts on this species are not expected to be significant because of measures that are incorporated to reduce impacts to riparian vegetation used by this species.
	riparian brush rabbit	FPE/SSC	No	This species occupies dense thickets of riparian shrubs and weedy fields adjacent to shrubs. Impacts on this species are not expected to be signficant because of measures that are incorporated to reduce impacts to riparian vegetation used by this species.
	San Joaquin kit fox	FE/ST	No	Although San Joaquin kit fox are found in the project area, they are not a riparian species that could be potentially affected by the project.

Table D-1: THREATENED OR ENDANGERED SPECIES IDENTIFIED BY THE USFWS OR STATE AGENCIES AS POTENTIALLY OCCURRING IN

THE PROJECT AREA (CONT.)

Class	Species (common name)	Listing Status Federal/ State[2]	Potentially Significant Impacts?	Comments
Mammals (cont)	Tipton kangaroo rat	FE/SE	No	The current range of this subspecies is limited to small unconnected alkali habitat patches in Kings and Tulare counties, and scattered areas of Kern County between the Kern National Wildlife Refuge and the town of Delano. The alkali habitat used by this species will not be affected by the project, and therefore this species will not be impacted. In addition, the known occurrences of the species are located approximatly 50 miles south of the project.
Reptiles	blunt-nosed leopard lizard	FE/SE	No	Although blunt-nosed leopard lizards are found in the project area, they are not a riparian species that could be potentially affected by the project.
	giant garter snake	FT/ST	No	The habitat for this species includes sloughs, canals, and other small waterways. Giant garter snakes would not be adversely affected by increased flows, or minor flow alterations, in the mainstem San Joaquin River or its major tributaries.
Birds	Aleutian Canada goose	FT/--	No	Winters in the San Joaquin Valley, and forages on pastures, harvested fielsd, and wetlands. Does not heavily utilize riparian zones that could be affected by the project.
	American peregrine falcon	FE/SE	No	Although peregrine falcons may be found in the project area, they are not a riparian species that could be potentially affected by the project.
	bald eagle	FT/SE	No	Utilizes portions of the San Joaquin Valley as overwintering habitat. Flow alterations associated with the project are not expected to adversely affect foraging opportunites for this species, and therefore no significant impacts are anticipated.
	bank swallow	--/ST	No	Nests in bluffs or banks adjacent to water where the soil consists of sand or sandy loam to allow digging. Proposed flows are not likely to result in loss or alteration of the bluffs and banks used for nesting by this species.
	greater sandhill crane	--/ST	No	The open terrain near shallow lakes and freshwater marshes used by this species will not be affected by this project, and therefore no significant impacts are anticipated.

Table D-1: THREATENED OR ENDANGERED SPECIES IDENTIFIED BY THE USFWS OR STATE AGENCIES AS POTENTIALLY OCCURRING IN THE PROJECT AREA (CONT.)

Class	Species (common name)	Listing Status Federal/ State[2]	Potentially Significant Impacts?	Comments
Birds (cont)	Swainson's hawk	--/ST	No	This species nests in oaks or cottonwoods in or near riparian habitats. Impacts on this species are not expected to be significant because of measures that are incorporated to reduce impacts to riparian vegetation used by this species.
	willow flycatcher	--/SE	No	Nests in willows and other dense vegetation in riparian areas and wet meadows. Impacts on this species are not expected to be significant because of measures that are incorporated to reduce impacts to riparian vegetation used by this species.
Amphibians	California red-legged frog	FT/SSC	No	Uses permanent and ephemeral aquatic habitats such as creeks and ponds for breeding. The large river systems involved with this project do not provide suitable breeding habitat. If the rivers are used as dispersal habitat for this species, increased flows are not likely to result in impacts.
Invertebrates	Conservancy fairy shrimp	FE/--	No	The vernal pool habitat of this species will not be affected by increased flows in the San Joaquin River; therefore, no effects on this species are expected.
	longhorn fairy shrimp	FE/--	No	The vernal pool habitat of this species will not be affected by increased flows in the San Joaquin River; therefore, no effects on this species are expected.
	valley elderberry longhorn beetle	FT/--	No	Uses elderberry shrubs in riparian and oak savanna habitats. Impacts on this species are not expected to be significant because of measures that are incorporated to reduce impacts to riparian vegetation used by this species.
	Vernal pool fairy shrimp	FT/--	No	The vernal pool habitat of this species will not be affected by increased flows in the San Joaquin River; therefore, no effects on this species are expected.
	Vernal pool tadpole shrimp	FE/--	No	The vernal pool habitat of this species will not be affected by increased flows in the San Joaquin River; therefore, no effects on this species are expected.
Plants	Chinese Camp brodiaea	FPE/SE	No	Highly localized serpentine endemic growning in foothils upstream of project area which will not be impacted by the project,

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	Species (common	Listing Status Federal/	Potentially Significant	

Class	name)	State[2]	Impacts?	Comments
Plants (cont)	Colusa grass	FT/SE	No	Vernal pool endemic which will not be affected by instream flows.
	Fleshy owl's clover	FT/SE	No	Vernal pool endemic which will not be affected by instream flows.
	Greene's tuctoria	FE/--	No	Vernal pool endemic which will not be affected by instream flows.
	Hairy Orcutt grass	FE/SE	No	Vernal pool endemic which will not be affected by instream flows.
	Hartweg's golden sunburst	FE/SE	No	Highly localized species growing in foothills upstream of project area which will not be impacted by the project.
	Hoover's spurge	FT/--	No	Highly localized species growing in foothills upstream of project area which willl not be impacted by the project.
	Hoover's woolly-star	FT/--	No	Grassland species; its habitat will not be affected by instream flows.
	Layne's butterweed	FT/--	No	Serpantine endemic growing in foothills upstream of project area which will not be impacted by the project.
	Rawhide Hill onion	FPT/--	No	Highly localized serpantine endemic growing in foothills upstream of project area which will not be impacted by the project.
	Red Hills vervain	FPT/--	No	Highly localized serpantine endemic growing in foothills upstream of project area which will not be impacted by the project.
	San Joaquin woolly-threads	FE/--	No	Vernal pool endemic which will not be affected by instream flows.
	San Joaquin Valley Orcutt grass	FT/SE	No	Vernal pool endemic which will not be affected by instream flows.

[1] Letter of June 11, 1998 from USFWS (David Harlow) to USBR Mid-Pacific Region Fresno Office

[2] FE=Federally listed as endangered
FT=Federally listed as threatened
FPE=Federally proposed for listing as endangered
FPT=Federally proposed for listing as threatened
SE=State listed as endangered
ST=State listed as threatened
SSC=State species of special concern