

Chapter 20

1 Indian Trust Assets

2 20.1 Introduction

3 This chapter describes Indian Trust Assets (ITAs) in the study area and potential
 4 changes that could occur as a result of implementing the alternatives evaluated in
 5 this Environmental Impact Statement (EIS). Implementation of the alternatives
 6 could affect ITAs through potential changes to the operation of the Central Valley
 7 Project (CVP) and State Water Project (SWP) and ecosystem restoration.

8 20.2 Regulatory Environment and Compliance 9 Requirements

10 Potential actions that could be implemented under the alternatives evaluated in
 11 this EIS could affect ITAs in the areas along the rivers and reservoirs directly
 12 impacted by changes in the operation of CVP or SWP reservoirs and in the
 13 vicinity of lands served by CVP and SWP water supplies. Actions located on
 14 public agency lands, or implemented, funded, or approved by Federal and state
 15 agencies, would need to be compliant with appropriate Federal and state agency
 16 policies and regulations, as summarized in Chapter 4, Approach to Environmental
 17 Analyses.

18 The Federal Indian Trust Asset policies, summarized below and in Chapter 4,
 19 have been used to identify potential areas of change to ITAs that could occur due
 20 to changes in long-term operation of the CVP and/or SWP facilities.

21 The ITAs are legal interests in property held in trust by the U.S. for federally-
 22 recognized Indian tribes or individual Indians. An Indian trust has three
 23 components: (1) the trustee, (2) the beneficiary, and (3) the trust asset. ITAs can
 24 include land, minerals, federally-reserved hunting and fishing rights, federally-
 25 reserved water rights, and in-stream flows associated with trust land.
 26 Beneficiaries of the Indian trust relationship are federally-recognized Indian tribes
 27 with trust land; the U.S. is the trustee. By definition, ITAs cannot be sold, leased,
 28 or otherwise encumbered without approval of the U.S. The characterization and
 29 application of the U.S. trust relationship have been defined by case law that
 30 interprets Congressional acts, executive orders, and historic treaty provisions.

31 The federal government, through treaty, statute or regulation, may take on
 32 specific, enforceable fiduciary obligations that give rise to a trust responsibility to
 33 federally recognized tribes and individual Indians possessing trust assets. Courts
 34 have recognized an enforceable federal fiduciary duty with respect to federal
 35 supervision of Indian money or natural resources, held in trust by the federal
 36 government, where specific treaties, statutes or regulations create such a
 37 fiduciary duty.

1 Consistent with President William J. Clinton’s 1994 memorandum, “Government-
 2 to-Government Relations with Native American Tribal Governments,” Bureau of
 3 Reclamation (Reclamation) assesses the effect of its programs on tribal trust
 4 resources and federally-recognized tribal governments. Reclamation is tasked to
 5 actively engage federally-recognized tribal governments and consult with such
 6 tribes on government-to-government level when its actions affect ITAs (Federal
 7 Register, Vol. 59, No. 85, May 4, 1994, pages 22951-22952). The U.S.
 8 Department of the Interior (DOI) Departmental Manual Part 512.2 ascribes the
 9 responsibility for ensuring protection of ITAs to the heads of bureaus and offices.
 10 DOI is required to carry out activities in a manner that protects ITAs and avoids
 11 adverse effects whenever possible.

12 **20.3 Affected Environment**

13 The U.S. Government's trust responsibility for Indian resources requires
 14 Reclamation and other agencies to take measures to protect and maintain trust
 15 resources. These responsibilities include taking reasonable actions to preserve
 16 and restore tribal resources.

17 In compliance with 36 Code of Federal Register 800.4(a) (4), Reclamation sent
 18 letters to the federally-recognized Indian tribes in the study area, including most
 19 of the tribes listed in Table 20.1, to request their input regarding the identification
 20 of any properties to which they might attach religious and cultural significance to
 21 within the area of potential effect.

22 **Table 20.1 Federally Recognized Tribes in the Vicinity of the Study Area**

Federally Recognized Tribe	EIS Geographical Region	County	In the Vicinity of this Community
Hoopa Valley Tribal Council	Trinity River	Trinity and Humboldt	Hoopa
Resighini Rancheria Tribe	Trinity River	Del Norte	Klamath
Yurok Tribe of the Yurok Reservation	Trinity River	Trinity, Humboldt, and Del Norte	Klamath
Pit River Tribe	Central Valley	Shasta	Burney
Redding Rancheria Tribe	Central Valley	Shasta	Redding
Paskenta Band of Nomlaki Indians of California	Central Valley	Tehama and Glenn	Corning and Orland
Grindstone Indian Rancheria of Wintun-Wailaki Indians of California	Central Valley	Glenn	Elk Creek

Federally Recognized Tribe	EIS Geographical Region	County	In the Vicinity of this Community
Cachil Dehe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria	Central Valley	Colusa	Colusa
Cortina Indian Rancheria of Wintun Indians of California	Central Valley	Colusa	Williams
Tyme Maidu of Berry Creek Rancheria	Central Valley	Butte	Oroville
Konkow Maidu of Mooretown Rancheria	Central Valley	Butte	Oroville
Enterprise Rancheria of Maidu Indians of California	Central Valley	Butte	Oroville
Mechoopda Indian Tribe of Chico Rancheria	Central Valley	Butte	Chico
Miwok Maidu United Auburn Indian Community of the Auburn Rancheria	Central Valley	Placer	Placer
United Auburn Indian Community of the Auburn Rancheria of California	Central Valley	Placer	Rocklin
Shingle Springs Band of Miwok Indians, including Shingle Springs Rancheria	Central Valley	El Dorado and Nevada County	Shingle Springs
Buena Vista Rancheria of Me-Wuk	Central Valley	Sacramento	Sacramento
Wilton Miwok Indians of the Wilton Rancheria	Central Valley	Sacramento	Elk Grove
Yocha Dehe Wintun Nation	Central Valley	Yolo	Brooks
Northfork Rancheria of Mono Indians of California	Central Valley	Madera	North Fork
Picayune Rancheria of Chukchansi Indians of California	Central Valley	Madera	Coarsegold
California Valley Miwok Tribe	Central Valley	San Joaquin	Stockton
Big Sandy Rancheria of Mono Indians of California	Central Valley	Fresno	Auberry

Federally Recognized Tribe	EIS Geographical Region	County	In the Vicinity of this Community
Table Mountain Rancheria	Central Valley	Fresno	Friant
Santa Rosa Indian Community of Santa Rosa Rancheria	Central Valley	Kings	Lemoore
Tule River Indian Tribe of the Tule River Reservation of the Yokut Indians	Central Valley	Tulare	Porterville
Santa Ynez Band of Chumash Mission Indians of Santa Ynez Reservation	Central Coast	Santa Barbara	Santa Ynez
Cahuilla Band of Mission Indians of the Cahuilla Reservation	Southern California	San Diego	Anza
Campo Band of Diegueno Mission Indians of the Campo Indian Reservation	Southern California	San Diego	Campo
Capitan Grande Band of Diegueno Mission Indians of California (Barona Reservation and Viejas Reservation)	Southern California	San Diego	Alpine
Ewiiapaayp Band of Kumeyaay Indians	Southern California	San Diego	Alpine
Iipay Nation of Santa Ysabel	Southern California	San Diego	Santa Ysabel
Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation	Southern California	San Diego	Escondido
Jamul Indian Village of California	Southern California	San Diego	Jamul
La Jolla Band of Luiseño Indians	Southern California	San Diego	Pauma Valley
La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation	Southern California	San Diego	Boulevard
Los Coyotes Band of Cahuilla and Cupeno Indians	Southern California	San Diego	Warner Springs

Federally Recognized Tribe	EIS Geographical Region	County	In the Vicinity of this Community
Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation	Southern California	San Diego	Boulevard
Mesa Grande Band of Diegueno Mission Indians of the Mesa Grande Reservation	Southern California	San Diego	Santa Ysabel
Pala Band of Luiseño Mission Indians of the Pala Reservation	Southern California	San Diego	Pala
Pauma Band of Luiseño Mission Indians of the Pauma & Yuima Reservation	Southern California	San Diego	Pauma Valley
Rincon Band of Luiseño Mission Indians of the Rincon Reservation	Southern California	San Diego	Valley Center
San Pasqual Band of Diegueno Mission Indians of California	Southern California	San Diego	Valley Center
Sycuan Band of the Kumeyaay Nation	Southern California	San Diego	El Cajon
Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation	Southern California	Riverside	Palm Springs
Augustine Band of Cahuilla Indians	Southern California	Riverside	Coachella
Cabazon Band of Mission Indians	Southern California	Riverside	Indio
Morongo Band of Mission Indians	Southern California	Riverside	Banning
Pechanga Band of Luiseño Mission Indians of the Pechanga Reservation	Southern California	Riverside	Temecula
Ramona Band of Cahuilla	Southern California	Riverside	Anza
Santa Rosa Band of Cahuilla Indians	Southern California	Riverside	Mountain Center
Soboba Band of Luiseño Indians	Southern California	Riverside	San Jacinto

Federally Recognized Tribe	EIS Geographical Region	County	In the Vicinity of this Community
Torres-Martinez Desert Cahuilla Indians	Southern California	Riverside	Thermal
Twenty-Nine Palms Band of Mission Indians of California	Southern California	Riverside and San Bernardino	Coachella
Chemehuevi Indian Tribe of the Chemehuevi Reservation	Southern California	San Bernardino	Needles
San Manuel Band of Mission Indians	Southern California	San Bernardino	Highland
Big Lagoon Rancheria	Not within study area	Humboldt	Arcata
Blue Lake Rancheria	Not within study area	Humboldt	Blue Lake
Karuk Tribe	Not within study area	Siskiyou	Happy Camp
Greenville Rancheria of Maidu Indians	Not within study area	Plumas and Tehama	Greenville
Susanville Indian Rancheria	Not within study area	Lassen	Susanville
Lytton Rancheria	Not within study area	Sonoma	Santa Rosa
Chicken Ranch Rancheria of Me-Wuk Indians of California	Not within study area	Tuolumne	Jamestown
Cold Springs Rancheria of Mono Indians	Not within study area	Fresno	Tollhouse
Colorado River Indian Tribes of the Colorado River Indian Reservation	Not within study area	Riverside	Parker, Arizona

1 **20.4 Impact Analysis**

2 This section describes the potential mechanisms for change to ITAs, quantitative
 3 and qualitative analytical methods, effects of the analyses, potential mitigation
 4 measures, and cumulative effects.

1 **20.4.1 Potential Mechanisms for Change and Analytical Tools**

2 As described in Chapter 4, Approach to Environmental Analysis, the
3 environmental consequences assessment considers changes in conditions related
4 to changes in CVP and SWP operation under the alternatives as compared to the
5 No Action Alternative and Second Basis of Comparison.

6 Changes in CVP and SWP operation under the alternatives as compared to the No
7 Action Alternative and Second Basis of Comparison could change water
8 elevations within the CVP and SWP reservoirs, flow patterns in the rivers
9 downstream of CVP and SWP reservoirs, and CVP and SWP water deliveries.
10 Impacts to existing ITAs would be considered adverse if the action:

- 11 • Interfered with the exercise of a federally reserved water right, or degrade
12 water quality where there is a federally reserved water right
- 13 • Interfered with the use, value, occupancy, character or enjoyment of an ITA
- 14 • Failed to protect ITAs from loss, damage, waste, depletion, or other negative
15 effects

16 **20.4.1.1 Changes in CVP and SWP Reservoir Elevation**

17 There are no ITAs within any of the reservoir inundation areas (DWR 2005;
18 Reclamation 2010, 2012, 2013a, 2014a; Reclamation et al. 2011; USACE et al.
19 2012). Therefore, the changes in reservoir elevations would not affect ITAs and
20 are not analyzed in this EIS.

21 **20.4.1.2 Changes in Rivers Downstream of CVP and SWP Reservoirs**

22 There are no ITAs within the rivers (DWR 2005; Reclamation 2010, 2012, 2013a,
23 2014a; Reclamation et al. 2011; USACE et al. 2012). Therefore, changes in river
24 flow patterns would not directly affect any ITAs. However, changes in river flow
25 patterns in the Trinity River could indirectly affect several ITAs, including the
26 Hoopa Valley Tribe, Resighini Rancheria Tribe, and Yurok Tribe of the Yurok
27 Reservation. Changes in the river flow patterns could affect use of the Trinity
28 River for boats, access to adjacent lands, and fish in the Trinity River that are
29 important to the tribes.

30 As described in Chapter 5, Surface Water Resources and Water Supplies,
31 implementation of Alternatives 1 through 5 as compared to the No Action
32 Alternative and the Second Basis of Comparison, and the No Action Alternative
33 as compared to the Second Basis of Comparison could affect change river flow
34 patterns in the Trinity River.

35 **20.4.1.3 Changes due to CVP and SWP Water Deliveries**

36 There are no ITAs that directly receive CVP or SWP water. As described in
37 Chapter 19, Socioeconomics, municipalities that use CVP or SWP water supplies,
38 including agencies that serve ITAs, would continue to meet water demands in
39 2030 if CVP and SWP water supplies are reduced through the increased use of
40 non-CVP and SWP water supplies. Therefore, changes in CVP and SWP water

1 deliveries would not affect water supplies to ITAs and are not analyzed in this
2 EIS.

3 **20.4.1.4 Effects Related to Cross Delta Water Transfers**

4 Cross Delta water transfers involving the CVP and SWP facilities or water
5 supplies would be required to be implemented in accordance with all existing
6 regulations and requirements, including not causing adverse impacts to other
7 water users in accordance with the requirements of Reclamation, California
8 Department of Water Resources (DWR), and the State Water Resources Control
9 Board (SWRCB).

10 Reclamation recently prepared a long-term regional water transfer environmental
11 document which evaluated potential changes in surface water conditions related to
12 water transfer actions (Reclamation 2014d). Results from this analysis were used
13 to inform the impact assessment of potential effects of water transfers under the
14 alternatives as compared to the No Action Alternative and the Second Basis of
15 Comparison.

16 The transfers could change flow patterns in rivers downstream of CVP and SWP
17 reservoirs. Surface water elevations in CVP and SWP reservoirs due to transfer
18 programs under the alternatives and Second Basis of Comparison could be
19 affected for a short-time during a water year; however, because the transferred
20 water would have been released for the seller's use, the end of September storage
21 elevations would be similar with or without the transfer.

22 **20.4.2 Conditions in Year 2030 without Implementation of**
23 **Alternatives 1 through 5**

24 The impact analysis in this EIS is based upon the comparison of the alternatives to
25 the No Action Alternative and the Second Basis of Comparison in the Year 2030.
26 Many of the changed conditions would occur in the same manner under both the
27 No Action Alternative and the Second Basis of Comparison (e.g., climate change,
28 sea-level rise, general plan development, and implementation of reasonable and
29 foreseeable projects). Due to these changes, especially climate change and sea-
30 level rise, it is anticipated that reservoir elevations at the end of September would
31 be lower and flows patterns in the rivers downstream of the reservoirs would be
32 different than under recent condition, as described in Chapter 5, Surface Water
33 Resources and Water Supplies.

34 **20.4.3 Evaluation of Alternatives**

35 As described in Chapter 4, Approach to Environmental Analysis, Alternatives 1
36 through 5 have been compared to the No Action Alternative, and the No Action
37 Alternative and Alternatives 1 through 5 have been compared to the Second Basis
38 of Comparison. The evaluation of alternatives is focused on the Trinity River
39 Region because, as discussed above, potential changes that could affect ITAs are
40 located along the Trinity River.

41 During review of the numerical modeling analyses used in this EIS, an error was
42 determined in the CalSim II model assumptions related to the Stanislaus River

1 operation for the Second Basis of Comparison, Alternative 1, and Alternative 4
 2 model runs. Appendix 5C includes a comparison of the CalSim II model run
 3 results presented in this chapter and CalSim II model run results with the error
 4 corrected. Appendix 5C also includes a discussion of changes in the comparison
 5 of four alternative analyses:

- 6 • No Action Alternative compared to the Second Basis of Comparison
- 7 • Alternative 1 compared to the No Action Alternative
- 8 • Alternative 3 compared to the Second Basis of Comparison
- 9 • Alternative 5 compared to the Second Basis of Comparison

10 **20.4.3.1 No Action Alternative**

11 As described in Chapter 4, Approach to Environmental Analysis, the No Action
 12 Alternative is compared to the Second Basis of Comparison.

13 **20.4.3.1.1 Potential Changes in Trinity River downstream of Lewiston Dam**

14 As described in Chapter 5, Surface Water Resources and Water Supplies, the
 15 following changes would occur on the Trinity River under the No Action
 16 Alternative as compared to the Second Basis of Comparison.

- 17 • Over long-term conditions (over the 82-year analysis period), flows would be
 18 similar (within 5 percent) from March through November, and reduced from
 19 December through February (up to 9.5 percent; 70 cubic feet per second
 20 [cfs]).
- 21 • In wet years, flows would be similar from April through November, and
 22 reduced from December through March (up to 11.2 percent; 160 cfs).
- 23 • In above normal years, flows would be similar from March through
 24 November, and reduced in January and February (up to 19.9 percent; 74 cfs).
- 25 • In below normal years, flows would be similar from March through January,
 26 and reduced in February (30.4 percent, 192 cfs).
- 27 • In dry and Critical dry years, flows would be similar all months.

28 The changes in river flows would occur in the winter months of wetter years when
 29 potential use of the rivers would be less for transportation and ceremonies
 30 (USFWS et al. 1999). As described in Chapter 9, Fish and Aquatic Resources,
 31 these changes in river flows would result in similar conditions for salmonids using
 32 Trinity River. Therefore, there would be no effect the ITAs.

33 **20.4.3.1.2 Effects Related to Cross Delta Water Transfers**

34 As described in Chapter 5, Surface Water Resources and Water Supplies, and
 35 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
 36 surface water resources could be similar to those identified in a recent
 37 environmental analysis conducted by Reclamation for long-term water transfers
 38 from the Sacramento Valley to San Joaquin Valley (Reclamation 2014d).
 39 Potential effects were identified as reduced surface water storage in upstream
 40 reservoirs; changes in flow patterns in rivers downstream of the reservoirs if water

1 was released from the reservoirs in patterns that were different than would have
2 been used by the sellers; and groundwater elevation reductions if groundwater
3 substitution was used to provide the water for the transfers. All water transfers
4 would be required to avoid adverse impacts on other water users and biological
5 resources; and water transfer programs would include groundwater mitigation and
6 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
7 programs would need to be implemented in a manner that would avoid impacts
8 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
9 groundwater elevation reductions in the Central Valley that could affect ITAs.
10 For the purposes of this EIS, it is anticipated that similar conditions would occur
11 due to cross Delta water transfers under the No Action Alternative as compared to
12 the Second Basis of Comparison, and there would be no effect on the ITAs due to
13 cross Delta water transfers.

14 **20.4.3.2 Alternative 1**

15 Alternative 1 is identical to the Second Basis of Comparison. Alternative 1 is
16 compared to the No Action Alternative and the Second Basis of Comparison.
17 However, because conditions under Alternative 1 are identical to conditions under
18 the Second Basis of Comparison, Alternative 1 is only compared to the No Action
19 Alternative.

20 **20.4.3.2.1 Alternative 1 Compared to the No Action Alternative**

21 *Potential Changes in Trinity River downstream of Lewiston Dam*

22 As described in Chapter 5, Surface Water Resources and Water Supplies, the
23 following changes would occur on the Trinity River under Alternative 1 and the
24 No Action Alternative.

- 25 • Over long-term conditions, flows would be similar from March through
26 November, and increased from December through February (up to
27 10.5 percent, 86 cfs).
- 28 • In wet years, flows would be similar from April through November, and
29 increased from December through March (up to 12.6 percent, 160 cfs).
- 30 • In above normal years, flows would be similar from March through
31 November, and increased in January and February (up to 24.8 percent; 74 cfs).
- 32 • In below normal years, flows would be similar from March through January,
33 and increased in February (30.4 percent, 192 cfs).
- 34 • In dry and critical dry years, flows would be similar all months.

35 The changes in river flows would increase flows in the Trinity River under
36 Alternative 1 as compared to the No Action Alternative. As described in
37 Chapter 9, Fish and Aquatic Resources, these changes in river flows would result
38 in similar conditions for salmonids using Trinity River. Therefore, there would be
39 no effect on the ITAs.

1 *Effects Related to Cross Delta Water Transfers*
 2 As described in Chapter 5, Surface Water Resources and Water Supplies, and
 3 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
 4 surface water resources could be similar to those identified in a recent
 5 environmental analysis conducted by Reclamation for long-term water transfers
 6 from the Sacramento to San Joaquin valleys (Reclamation 2014d). Potential
 7 effects were identified as reduced surface water storage in upstream reservoirs;
 8 changes in flow patterns in rivers downstream of the reservoirs if water was
 9 released from the reservoirs in patterns that were different than would have been
 10 used by the seller; and groundwater elevation reductions if groundwater
 11 substitution was used to provide the water for the transfers. All water transfers
 12 would be required to avoid adverse impacts on other water users and biological
 13 resources; and water transfer programs would include groundwater mitigation and
 14 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
 15 programs would need to be implemented in a manner that would avoid impacts
 16 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
 17 groundwater elevation reductions in the Central Valley that could affect ITAs.
 18 For the purposes of this EIS, it is anticipated that similar conditions would occur
 19 due to cross Delta water transfers under Alternative 1 as compared to the No
 20 Action Alternative, and there would be no effect on the ITAs due to cross Delta
 21 water transfers.

22 **20.4.3.2.2 Alternative 1 Compared to the Second Basis of Comparison**

23 Alternative 1 is identical to the Second Basis of Comparison.

24 **20.4.3.3 Alternative 2**

25 The ITA conditions under Alternative 2 would be identical to the conditions under
 26 the No Action Alternative; therefore, Alternative 2 is only compared to the
 27 Second Basis of Comparison.

28 **20.4.3.3.1 Alternative 2 Compared to the Second Basis of Comparison**

29 Changes to ITAs under Alternative 2 as compared to the Second Basis of
 30 Comparison would be the same as the impacts described in Section 20.4.3.1,
 31 No Action Alternative.

32 **20.4.3.4 Alternative 3**

33 CVP and SWP operation under Alternative 3 are similar to the Second Basis of
 34 Comparison with modified Old and Middle River flow criteria and New Melones
 35 Reservoir operation.

36 Alternative 3 would include changed water demands for American River water
 37 supplies as compared to the No Action Alternative and Second Basis of
 38 Comparison. Alternative 3 would provide water supplies of up to 17 thousand
 39 acre feet (TAF)/year under a Warren Act Contract for El Dorado Irrigation
 40 District and 15 TAF/year under a Warren Act Contract for El Dorado County
 41 Water Agency. These demands are not included in the analysis presented in this

1 section of the EIS. A sensitivity analysis comparing the results of the analysis
2 with and without these demands is presented in Appendix 5B of this EIS.

3 **20.4.3.4.1 Alternative 3 Compared to the No Action Alternative**

4 *Potential Changes in Trinity River downstream of Lewiston Dam*

5 As described in Chapter 5, Surface Water Resources and Water Supplies, the
6 following changes would occur on the Trinity River under Alternative 3 as
7 compared to the No Action Alternative.

- 8 • Over long-term conditions, flows would be similar from March through
9 November, and increased from December through February (up to
10 11.8 percent, 79 cfs).
- 11 • In wet years, flows would be similar from April through October, reduced in
12 November (7.0 percent, 36 cfs), and increased from December through March
13 (up to 15.0 percent, 193 cfs).
- 14 • In above normal years, flows would be similar from March through
15 November, and increased in January and February (up to 24.8 percent; 74 cfs).
- 16 • In dry years, flows would be similar in all months.

17 However, as described in Chapter 9, Fish and Aquatic Resources, these changes
18 in river flows would result in similar conditions for salmonids using Trinity River,
19 and there would be no effect on the ITAs.

- 20 • In above normal years, flows would be similar from March through
21 December, and increased in January and February (up to 22.5 percent; 67 cfs).
- 22 • In below normal years, flows would be similar from March through January,
23 and increased in February (43.3 percent, 192 cfs).
- 24 • In dry years, flows would be similar all months.
- 25 • In Critical dry years, flows would be similar from December through October,
26 and increased in November (20.0 percent, 50 cfs).

27 The changes in river flows would increase flows in the Trinity River under
28 Alternative 3 as compared to the No Action Alternative. As described in
29 Chapter 9, Fish and Aquatic Resources, these changes in river flows would result
30 in similar conditions for salmonids using Trinity River. Therefore, there would be
31 no effect on the ITAs.

32 *Effects Related to Cross Delta Water Transfers*

33 As described in Chapter 5, Surface Water Resources and Water Supplies, and
34 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
35 surface water resources could be similar to those identified in a recent
36 environmental analysis conducted by Reclamation for long-term water transfers
37 from the Sacramento to San Joaquin valleys (Reclamation 2014d). Potential
38 effects were identified as: reduced surface water storage in upstream reservoirs;
39 changes in flow patterns in river downstream of the reservoirs if water was
40 released from the reservoirs in patterns that were different than would have been

1 used by the sellers; and groundwater elevation reductions if groundwater
 2 substitution was used to provide the water for the transfers. All water transfers
 3 would be required to avoid adverse impacts on other water users and biological
 4 resources; and water transfer programs would include groundwater mitigation and
 5 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
 6 programs would need to be implemented in a manner that would avoid impacts
 7 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
 8 groundwater elevation reductions in the Central Valley that could affect ITAs.
 9 For the purposes of this EIS, it is anticipated that similar conditions would occur
 10 due to cross Delta water transfers under Alternative 3 as compared to the No
 11 Action Alternative, and there would be no effect on the ITAs due to cross Delta
 12 water transfers.

13 **20.4.3.4.2 Alternative 3 Compared to the Second Basis of Comparison**

14 *Potential Changes in Trinity River downstream of Lewiston Dam*

15 As described in Chapter 5, Surface Water Resources and Water Supplies, under
 16 Alternative 3 as compared to the Second Basis of Comparison, flows would be
 17 similar under long-term conditions and all water year types. As described in
 18 Chapter 9, Fish and Aquatic Resources, there would be similar conditions for
 19 salmonids using Trinity River. Therefore, there would be no effect on the ITAs.

20 *Effects Related to Cross Delta Water Transfers*

21 As described in Chapter 5, Surface Water Resources and Water Supplies, and
 22 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
 23 surface water resources could be similar to those identified in a recent
 24 environmental analysis conducted by Reclamation for long-term water transfers
 25 from the Sacramento to San Joaquin valleys (Reclamation 2014d). Potential
 26 effects were identified as: reduced surface water storage in upstream reservoirs;
 27 changes in flow patterns in river downstream of the reservoirs if water was
 28 released from the reservoirs in patterns that were different than would have been
 29 used by the sellers; and groundwater elevation reductions if groundwater
 30 substitution was used to provide the water for the transfers. All water transfers
 31 would be required to avoid adverse impacts on other water users and biological
 32 resources; and water transfer programs would include groundwater mitigation and
 33 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
 34 programs would need to be implemented in a manner that would avoid impacts
 35 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
 36 groundwater elevation reductions in the Central Valley that could affect ITAs.
 37 For the purposes of this EIS, it is anticipated that similar conditions would occur
 38 due to cross Delta water transfers under Alternative 3 as compared to the Second
 39 Basis of Comparison, and there would be no effect on the ITAs due to cross Delta
 40 water transfers.

41 **20.4.3.5 Alternative 4**

42 The ITA conditions under Alternative 4 would be identical to the ITA conditions
 43 under the Second Basis of Comparison; therefore, Alternative 4 is only compared
 44 to the No Action Alternative.

1 **20.4.3.5.1 Alternative 4 Compared to the No Action Alternative**

2 Changes in ITA conditions under Alternative 4 as compared to the No Action
3 Alternative would be the same as the impacts described in Section 20.4.3.2.1,
4 Alternative 1 Compared to the No Action Alternative.

5 **20.4.3.6 Alternative 5**

6 The CVP and SWP operation under Alternative 5 are similar to the No Action
7 Alternative with modified Old and Middle River flow criteria and New Melones
8 Reservoir operation. Alternative 5 would include changed water demands for
9 American River water supplies as compared to the No Action Alternative or
10 Second Basis of Comparison. Alternative 5 would provide water supplies of up to
11 17 TAF/year under a Warren Act Contract for El Dorado Irrigation District and
12 15 TAF/year under a Warren Act Contract for El Dorado County Water Agency.
13 These demands are not included in the analysis presented in this section of the
14 EIS. A sensitivity analysis comparing the results of the analysis with and without
15 these demands is presented in Appendix 5B of this EIS.

16 **20.4.3.6.1 Alternative 5 Compared to the No Action Alternative**

17 *Potential Changes in Trinity River downstream of Lewiston Dam*

18 As described in Chapter 5, Surface Water Resources and Water Supplies, flows
19 under Alternative 5 and the No Action Alternative would be similar under
20 long-term conditions and all water year types. As described in Chapter 9, Fish
21 and Aquatic Resources, there would be similar conditions for salmonids using
22 Trinity River. Therefore, there would be no effect on the ITAs.

23 *Effects Related to Cross Delta Water Transfers*

24 As described in Chapter 5, Surface Water Resources and Water Supplies, and
25 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
26 surface water resources could be similar to those identified in a recent
27 environmental analysis conducted by Reclamation for long-term water transfers
28 from the Sacramento to San Joaquin valleys (Reclamation 2014d). Potential
29 effects were identified as: reduced surface water storage in upstream reservoirs;
30 changes in flow patterns in river downstream of the reservoirs if water was
31 released from the reservoirs in patterns that were different than would have been
32 used by the sellers; and groundwater elevation reductions if groundwater
33 substitution was used to provide the water for the transfers. All water transfers
34 would be required to avoid adverse impacts on other water users and biological
35 resources; and water transfer programs would include groundwater mitigation and
36 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
37 programs would need to be implemented in a manner that would avoid impacts
38 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
39 groundwater elevation reductions in the Central Valley that could affect ITAs.
40 For the purposes of this EIS, it is anticipated that similar conditions would occur
41 due to cross Delta water transfers under Alternative 5 as compared to the No
42 Action Alternative, and there would be no effect on the ITAs due to cross Delta
43 water transfers.

1 **20.4.3.6.2 Alternative 5 Compared to the Second Basis of Comparison**

2 *Potential Changes in Trinity River downstream of Lewiston Dam*

3 As described in Chapter 5, Surface Water Resources and Water Supplies, the
4 following changes would occur on the Trinity River flows under Alternative 5 and
5 Second Basis of Comparison

- 6 • Over long-term conditions, flows would be similar from March through
7 November and January, and reduced in December and February (up to
8 9.6 percent, 200 cfs).
- 9 • In wet years, flows would be similar from April through November, and
10 reduced in December through March (up to 13.9 percent).
- 11 • In above normal years, flows would be similar from April through December,
12 and reduced in January and February (up to 19.9 percent, 74 cfs).
- 13 • In below normal years, flows would be similar from March through January,
14 and reduced in February (up to 21.5 percent, 135 cfs).
- 15 • In dry and critical dry years, flows would be similar in all months.

16 However, as described in Chapter 9, Fish and Aquatic Resources, these changes
17 in river flows would result in similar conditions for salmonids using Trinity River;
18 and there would be no effect the ITAs.

19 *Effects Related to Cross Delta Water Transfers*

20 As described in Chapter 5, Surface Water Resources and Water Supplies, and
21 Chapter 7, Groundwater Resources and Groundwater Quality, potential effects on
22 surface water resources could be similar to those identified in a recent
23 environmental analysis conducted by Reclamation for long-term water transfers
24 from the Sacramento to San Joaquin valleys (Reclamation 2014d). Potential
25 effects were identified as reduced surface water storage in upstream reservoirs
26 and changes in flow patterns in river downstream of the reservoirs if water was
27 released from the reservoirs in patterns that were different than would have been
28 used by the water seller's; and groundwater elevation reductions if groundwater
29 substitution was used to provide the water for the transfers. All water transfers
30 would be required to avoid adverse impacts on other water users and biological
31 resources; and water transfer programs would include groundwater mitigation and
32 monitoring plans (see Section 3.A.6.3, Transfers). Therefore, water transfer
33 programs would need to be implemented in a manner that would avoid impacts
34 associated with changes in Trinity Lake storage, Trinity River flow patterns, and
35 groundwater elevation reductions in the Central Valley that could affect ITAs.
36 For the purposes of this EIS, it is anticipated that similar conditions would occur
37 due to cross Delta water transfers under Alternative 5 as compared to the Second
38 Basis of Comparison, and there would be no effect on the ITAs due to cross Delta
39 water transfers.

1 **20.4.3.7 Summary of Impact Analysis**

2 The results of the impact analysis of implementation of Alternatives 1 through 5
 3 as compared to the No Action Alternative and the Second Basis of Comparison
 4 are presented in Tables 20.2 and 20.3.

5 **Table 20.2 Comparison of Alternatives 1 through 5 to No Action Alternative**

Alternative	Potential Change	Consideration for Mitigation Measures
Alternative 1	No effects to ITAs	None needed
Alternative 2	No effects to ITAs	None needed
Alternative 3	No effects to ITAs	None needed
Alternative 4	No effects to ITAs	None needed
Alternative 5	No effects to ITAs	None needed

6 **Table 20.3 Comparison of No Action Alternative and Alternatives 1 through 5 to**
 7 **Second Basis of Comparison**

Alternative	Potential Change	Consideration for Mitigation Measures
No Action Alternative	No effects to ITAs	None needed
Alternative 1	No effects to ITAs	None needed
Alternative 2	No effects to ITAs	None needed
Alternative 3	No effects to ITAs	None needed
Alternative 4	No effects to ITAs	None needed
Alternative 5	No effects to ITAs	None needed

8 **20.4.3.8 Potential Mitigation Measures**

9 Changes under Alternatives 1 through 5 as compared to the No Action Alternative
 10 would result in similar or increased flows in the Trinity River, and
 11 implementation of cross Delta water transfers would not result in adverse impacts
 12 to ITAs. Therefore, there would be no adverse impacts to ITAs, and no
 13 mitigation measures are needed.

14 **20.4.3.9 Cumulative Effects Analysis**

15 As described in Chapter 3, the cumulative effects analysis considers projects,
 16 programs, and policies that are not speculative, and are based upon known or
 17 reasonably foreseeable long-range plans, regulations, operating agreements, or
 18 other information that establishes them as reasonably foreseeable.

19 The No Action Alternative, Alternatives 1 through 5, and Second Basis of
 20 Comparison include climate change and sea-level rise, implementation of general
 21 plans, and completion of ongoing projects and programs (see Chapter 3,
 22 Description of Alternatives). The effects of these items were analyzed
 23 quantitatively and qualitatively, as described earlier. The discussion below

1 focuses on the qualitative effects of the alternatives and other past, present, and
 2 reasonably foreseeable future projects identified for consideration of cumulative
 3 effects (see Chapter 3, Description of Alternatives).

4 **20.4.3.9.1 No Action Alternative and Alternatives 1 through 5**

5 Continued coordinated long-term operation of the CVP and SWP under the No
 6 Action Alternative would result in changed reservoir storage and stream flows as
 7 compared to recent conditions due to climate change and sea-level rise. These
 8 changes would probably result in higher stream flows in the winter as snowfall
 9 declines and rainfall increases, and lower flows in the spring and summer when
 10 the reservoirs are not refilled with melting snow. These conditions are included in
 11 the analysis presented above.

12 Future water resource management projects considered in cumulative effects
 13 analysis (see Chapter 3, Description of Alternatives), could increase reservoir
 14 storage and change stream flows through the development or expansion of major
 15 surface water storage projects, such as the Shasta Lake Water Resources
 16 Investigation, Upper San Joaquin River Basin Storage Investigation, North-of-the-
 17 Delta Offstream Storage, Los Vaqueros Reservoir Expansion Project, and Delta
 18 Wetlands. Environmental analyses prepared for these projects have indicated that
 19 there would be no impacts to ITAs (Reclamation 2013a, 2014a; DWR 2013d;
 20 Reclamation et al. 2010; SWSD 2011).

21 There would be no adverse impacts associated with implementation of the
 22 alternatives as compared to the No Action Alternative or the Second Basis of
 23 Comparison. Therefore, the alternatives would not contribute cumulative impacts
 24 to the ITAs.

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