

## 3.18 Recreation

This section describes the lands and waters (both reservoirs and rivers) used for recreation and the recreational access and facilities that support those uses in the study area. In addition, this section identifies the types of recreation opportunities with the potential to be affected by implementation of the proposed program. The types of recreation that could be affected by the program are primarily water-based activities such as motorized and nonmotorized boating, angling from a boat, river floating, and swimming; however, land-based activities such as hunting, wildlife viewing, and hiking could also be affected. This section is composed of the following subsections:

- Section 3.18.1, “Environmental Setting,” describes the physical conditions in the program study area as they apply to recreation.
- Section 3.18.2, “Regulatory Setting,” summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program’s impacts on recreation.
- Section 3.18.3, “Analysis Methodology and Thresholds of Significance,” describes the methods used to assess the environmental effects of the proposed program and lists the thresholds used to determine the significance of those effects.
- Section 3.18.4, “Environmental Impacts and Mitigation Measures for NTMAs,” discusses the environmental effects of the near-term management activities (NTMAs) and provides mitigation measures for significant environmental effects.
- Section 3.18.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMA’s,” discusses the environmental effects of the long-term management activities (LTMA’s), provides mitigation measures for significant environmental effects, and addresses conditions in which any impacts would be too speculative for evaluation (CEQA Guidelines, Section 15145).

NTMAs and LTMA’s are described in detail in Section 2.4, “Proposed Management Activities.”

1           **3.18.1    Environmental Setting**

2           ***Information Sources Consulted***

3           Sources of information used to prepare this section include the following:

- 4           • Online descriptions and maps of multiple public and private  
5           recreational facilities on reservoirs and rivers within the study area
- 6           • Recreation studies and plans prepared by or for federal, State, regional,  
7           and local agencies (e.g., the U.S. Forest Service (USFS), California  
8           Department of Parks and Recreation (State Parks), Yuba County, and  
9           local water districts)
- 10          • Recreation inventories and assessments conducted in the Sacramento–  
11          San Joaquin Delta (Delta), such as the *Sacramento–San Joaquin Delta*  
12          *Boating Needs Assessment 2000–2020* published by the California  
13          Department of Boating and Waterways (DBW 2003)
- 14          • Online flow data for river segments below reservoirs in the study area

15          Figures 3.13-1 and 3.13-2 in Section 3.13, “Hydrology,” show the locations  
16          of the reservoirs and rivers mentioned in this section. Also, see Figure 3.6-3  
17          in Section 3.6, “Biological Resources—Terrestrial,” for the locations of  
18          national wildlife refuges, State wildlife areas, ecological reserves, and State  
19          parks and recreation areas.

20          ***Geographic Areas Discussed***

21          Recreation resources are discussed separately for the following geographic  
22          areas within the study area:

- 23          • Extended systemwide planning area (Extended SPA) divided into the  
24          Sacramento and San Joaquin Valley and foothills, and the Delta and  
25          Suisun Marsh
- 26          • Sacramento and San Joaquin Valley watersheds
- 27          • SoCal/coastal Central Valley Project/State Water Project (CVP/SWP)  
28          service areas

29          None of the management activities included in the proposed program  
30          would be implemented in the SoCal/coastal CVP/SWP service areas. In  
31          addition, implementation of the proposed program would not result in long-  
32          term reductions in water deliveries to the SoCal/coastal CVP/SWP service  
33          areas (see Section 2.6, “No Near- or Long-Term Reduction in Water or  
34          Renewable Electricity Deliveries”). Given these conditions, little to no

1 effect is expected on recreational facilities and activities in the  
2 SoCal/coastal CVP/SWP service areas located outside of the Sacramento  
3 and San Joaquin Valley and foothills and the Sacramento and San Joaquin  
4 Valley watersheds (including SWP reservoirs in this area); therefore, that  
5 geographic area is not discussed in detail in this section.

6 ***Extended Systemwide Planning Area***

7 **Sacramento and San Joaquin Valley and Foothills**

8 *Lakes and Multipurpose Reservoirs* Federal, State, regional, and local  
9 agencies have built large multipurpose reservoirs on the Sacramento and  
10 San Joaquin rivers and on major and minor tributaries to those rivers.  
11 Recreation opportunities and facilities are provided in the Sacramento and  
12 San Joaquin Valley and foothills by 17 such reservoirs—six within the  
13 Sacramento River Basin and 11 within the San Joaquin River Basin. Each  
14 of the reservoirs described below was constructed to provide flood control  
15 and for other purposes such as water storage and hydroelectric power  
16 generation. Recreation is not among the original purposes of most of the  
17 reservoirs; however, all these reservoirs provide water-based, water-related,  
18 or water-enhanced (e.g., camping, picnicking, hiking, and boating)  
19 recreation opportunities and recreational facilities accessible by the public.  
20 One natural lake, Clear Lake, also provides these types of recreation  
21 opportunities and facilities.

22 The largest of the reservoirs in the Sacramento River Basin, Shasta Lake, is  
23 located at the confluence of the Sacramento, Pit, and McCloud rivers.  
24 Three of the other five reservoirs in the Sacramento River Basin are on  
25 major tributaries of the Sacramento River (the Feather, Yuba, and  
26 American rivers) on the east side of the basin; the remaining two are on  
27 minor Sacramento River tributaries (Stony and Cache creeks) on the  
28 basin's west side. The eight largest San Joaquin River Basin reservoirs are  
29 located in the foothills on the east side of the San Joaquin Valley. These  
30 reservoirs were constructed on the major tributaries to the San Joaquin  
31 River (from north to south, the Mokelumne, Calaveras, Stanislaus,  
32 Tuolumne, and Merced rivers) and on the San Joaquin River itself. Also  
33 within the San Joaquin River Basin are two multipurpose reservoirs located  
34 on two minor eastside tributaries to the San Joaquin, the Chowchilla and  
35 Fresno rivers; and Los Banos Creek Reservoir, a multipurpose reservoir in  
36 the foothills on the west side of the San Joaquin Valley.

37 Table 3.18-1 lists reservoirs in the Sacramento and San Joaquin Valley and  
38 foothills and their recreation resources. The reservoirs are described below.

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1 **Table 3.18-1. Multipurpose Reservoirs and Associated Recreation**  
2 **Amenities in the Sacramento and San Joaquin Valley and Foothills**

<b>Reservoir</b>	<b>Location (County or Counties)</b>	<b>Owner</b>	<b>Surface Acres<sup>1</sup></b>	<b>Designated Recreation Areas<sup>2</sup></b>	<b>Recreational Facilities<sup>3</sup></b>
<b>Sacramento River Basin</b>					
Shasta	Shasta	Reclamation	29,740	NRA	R, M, C, D, T
Black Butte	Tehama	USACE	4,460	RA	R, C, D, T
Oroville	Butte	DWR	15,805	SRA	R, M, C, D, T
New Bullards Bar	Yuba	YCWA	4,810	Three recreation areas	R, M, C, D, T
Indian Valley	Lake	YCFCWCD	4,000	Two recreation areas	R, C, D
Folsom	Sacramento, Placer, and El Dorado	Reclamation	11,450	SRA	R, M, C, D, T
<b>San Joaquin River Basin</b>					
Camanche	San Joaquin, Calaveras, and Amador	EBMUD	7,700	Two recreation areas	R, M, C, D, T
Pardee	Amador and Calaveras	EBMUD	2,134	One recreation area	R, M, C, D, T
New Hogan	Calaveras	USACE	4,410	RA	R, C, D, T
New Melones	Calaveras and Tuolumne	Reclamation	12,500	Two recreation areas	R, M, C, D, T
Tulloch	Calaveras and Tuolumne	OID and SSJID	1,260	Three recreation areas	R, M, C, D, T
Don Pedro	Tuolumne	TID	12,960	Three recreation areas	R, M, C, D, T
McClure & McSwain	Mariposa	MID	7,147	Four recreation areas	R, M, C, D
Eastman	Madera	USACE	1,780	RA	R, C, D, T
Hensley	Madera	USACE	1,500	RA	R, C, D, T
Millerton	Fresno and Madera	Reclamation	4,900	SRA	R, M, C, D, T
Los Banos Creek	Merced	Reclamation	619	SRA	R, C, D, T

3

1 **Table 3.18-1. Multipurpose Reservoirs and Associated Recreation**  
2 **Amenities in the Sacramento and San Joaquin Valley and Foothills**  
3 **(contd.)**

Sources: BLM 2010a; Don Pedro Recreation Agency 2010a; DWR 2010a, 2010b; EBMUD 2010a, 2010b; Emerald Cove Marina 2010; MID 2010; Reclamation 2010a; State Parks 2010a, 2010b, 2010c; Tri-Dam Project 2010; USACE 2010a, 2010b, 2010c

Notes:

<sup>1</sup> Full-pool acreage; most of these reservoirs are drawn down substantially during summer, reducing the surface acreage.

<sup>2</sup> The federal and State reservoirs are surrounded by designated recreation areas (NRA, SRA, or RA) that encompass the entire reservoir and a substantial amount of shoreline lands. These recreation areas typically include both fee and nonfee sites. Designated recreation areas at reservoirs owned by local agencies or districts are generally more limited in area and most feature commercial recreational facilities, open to the public for a fee.

<sup>3</sup> Letter codes used for recreational facilities: R = boat ramps, M = marinas/resorts, C = campgrounds, D = day-use areas, T = trails.

Key:

DWR = California Department of Water Resources

EBMUD = East Bay Municipal Utility District

MID = Merced Irrigation District

NRA = National Recreation Area

OID = Oakdale Irrigation District

RA = Recreation Area (U.S. Army Corps of Engineers)

Reclamation = U.S. Department of the Interior, Bureau of Reclamation

SRA = State Recreation Area (California Department of Parks and Recreation)

SSJID = South San Joaquin Irrigation District

TID = Turlock Irrigation District

USACE = U.S. Army Corps of Engineers

YCFCWCD = Yolo County Flood Control and Water Conservation District

YCWA = Yuba County Water Agency

4 *Sacramento River Basin* The following multipurpose reservoirs and  
5 natural lake in the Sacramento River Basin are discussed individually  
6 below:

- 7 • Shasta Lake
- 8 • Black Butte Lake
- 9 • Lake Oroville
- 10 • New Bullards Bar Reservoir
- 11 • Indian Valley Reservoir
- 12 • Clear Lake (natural lake)
- 13 • Folsom Lake

14 Shasta Lake

15 Shasta Lake is the largest reservoir in California, with 29,740 surface acres  
16 when full. USFS manages the lake and surrounding lands as the centerpiece  
17 of the Shasta Unit of the Whiskeytown-Shasta-Trinity National Recreation  
18 Area. The lake is used year-round for a wide variety of boating and related  
19 activities and for both warmwater and coldwater fishing. Shasta Lake has  
20 gained a reputation as a premier houseboating destination. Six USFS public  
21 boat ramps and 10 commercial marinas and marina resorts (all of which

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1 operate under USFS special-use permits) are distributed around the lake.  
2 Campers may choose from among more than a dozen public campgrounds  
3 and designated shoreline camping areas, and from a similar number of  
4 campgrounds and recreational vehicle (RV) parks offered at several resorts  
5 and marinas on or near the lake (USFS 1996). Shasta Lake is bisected by  
6 Interstate 5 (I-5), which provides lake access in 4 hours or less for residents  
7 of southern Oregon and northern California, including the major urban  
8 populations of Sacramento and the San Francisco Bay Area. Single-day  
9 boating-use levels as high as 1,400 boats have been recorded during the  
10 peak season (Graefe et al. 2005).

11 Black Butte Lake

12 Black Butte Lake is a 4,460-acre reservoir owned and operated by the U.S.  
13 Army Corps of Engineers (USACE). Located off I-5 about 100 miles north  
14 of Sacramento and 60 miles south of Redding, the lake is situated among  
15 volcanic buttes and grasslands in the foothills of the west side of the  
16 Sacramento Valley, on Stony Creek. The lake and the USACE-managed  
17 recreation area surrounding the lake provide opportunities for boating,  
18 fishing, camping, and hiking along 40 miles of shoreline. The recreation  
19 area contains two campgrounds, three boat ramps, and three picnic areas.  
20 Three self-guided nature trails offer hikes through the rolling oak foothills.  
21 Two undeveloped equestrian areas and equestrian trails are also available  
22 for horseback riders. The lake is known as an excellent warmwater fishery  
23 (USACE 2010a, 2010d).

24 Lake Oroville

25 Lake Oroville is located at the confluence of the North, South, and Middle  
26 forks of the Feather River, about 70 miles north of Sacramento, and covers  
27 15,500 surface acres at full pool. With 167 miles of shoreline, the lake is  
28 the focus of Lake Oroville State Recreation Area (SRA), managed by State  
29 Parks (2010a). Major recreational facilities operating around the lake  
30 consist of two full-service marinas, five major and several smaller (car-top)  
31 boat ramps, three family campgrounds and several boat-in camps, and 10  
32 floating campsites (State Parks 2010a). Lake Oroville SRA also includes  
33 Thermalito Diversion Pool and Thermalito Forebay. These instream and  
34 offstream regulating reservoirs, respectively, are downstream from Lake  
35 Oroville and do not provide substantial flood storage. The facilities at Lake  
36 Oroville SRA support a wide variety of recreational opportunities: powered  
37 and nonpowered boating, warmwater and coldwater fishing, limited  
38 seasonal hunting, developed and primitive camping, picnicking, swimming,  
39 horseback riding, hiking, and mountain biking. Visitor information sites  
40 offer cultural and informational displays about the developed facilities and  
41 the natural environment (State Parks 2010a). Lake Oroville SRA received  
42 nearly 1 million visits in fiscal year 2008–2009 (State Parks 2009).

1 *New Bullards Bar Reservoir*

2 New Bullards Bar Reservoir is a 4,810-acre reservoir owned and operated  
3 by Yuba County Water Agency (DWR 2010a). The reservoir is situated on  
4 the North Fork of the Yuba River in the forested foothills of the Sierra  
5 Nevada, about 30 miles northeast of Marysville. Developed recreation  
6 areas, all on USFS lands that surround most of the lake, include a full-  
7 service marina with a boat ramp and general store, operated by a  
8 concessionaire (Emerald Cove Marina 2010). There are also three RV/tent  
9 campgrounds, one with a boat ramp, and two boat-in camps; camping  
10 permits are issued through the marina concessionaire. All types of boating  
11 are permitted on the lake, which has more than 56 miles of shoreline and  
12 provides both a coldwater and warmwater fishery (Nevada County  
13 Commerce 2010). Trails for hiking and mountain biking are available.

14 *Indian Valley Reservoir*

15 Indian Valley Reservoir is a relatively remote reservoir on the North Fork  
16 of Cache Creek, surrounded by chaparral-covered hills and reached via an  
17 unpaved road (BLM 2010a). The community of Clear Lake is about a 16-  
18 mile drive from the reservoir. The 4,000-acre reservoir is owned and  
19 operated by the Yolo County Flood Control and Water Conservation  
20 District (YCFCWCD) (DWR 2010a), but is surrounded primarily by  
21 federal lands managed by the U.S. Bureau of Land Management (BLM) as  
22 the Indian Valley/Walker Ridge Recreation Area (BLM 2010a). The lands  
23 immediately surrounding the reservoir are managed by the California  
24 Department of Fish and Game (DFG) as the Indian Valley Wildlife Area  
25 (DFG 2010a). The reservoir provides opportunities for boating and fishing,  
26 but boats are limited to a speed limit of 10 miles per hour (mph)—5 mph  
27 within 200 yards of shore. As a result, Indian Valley Reservoir is primarily  
28 a fishing lake, with both a coldwater and warmwater fishery. A small and  
29 minimally developed campground is available near the dam, as is a  
30 primitive hike-in or boat-in camp. A 2.5-mile hiking trail follows the  
31 reservoir's west shoreline (BLM 2010a).

32 *Clear Lake*

33 Clear Lake is the largest natural lake entirely within the state of California,  
34 with 68 square miles of surface area (AnglerNet 2010). Numerous hotels,  
35 resorts, RV parks, and campgrounds are located around the lakeshore  
36 (Clear Lake Chamber of Commerce 2010), and 11 public boat ramps are  
37 available for public use free of charge (AnglerNet 2010). Clear Lake State  
38 Park (SP), on the south shore, provides a visitor center, developed  
39 campgrounds and cabins, a boat ramp and marina, picnic sites, swim beach,  
40 and hiking trails (State Parks 2010d). The lake's warm and shallow waters  
41 support large populations of warmwater game fish, such as largemouth bass  
42 and catfish, and bass fishing tournaments are frequently held on the lake  
43 (Konocti Harbor 2010).

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1     Folsom Lake  
2     Folsom Lake is located 25 miles east of Sacramento, at the confluence of  
3     the North and South forks of the American River, and is owned and  
4     operated by the U.S. Department of the Interior, Bureau of Reclamation  
5     (Reclamation). With 75 miles of shoreline and 11,450 surface acres of  
6     water at full pool, it is the focus of the Folsom Lake SRA, which is  
7     operated by State Parks (State Parks 2010b; Wallace Roberts & Todd LLC  
8     2003). The SRA provides several recreational facilities, primarily around  
9     the main basin of the lake. Folsom Lake SRA provides two swimming  
10    areas, seven boat ramps, two small-boat launches, four picnic areas, and  
11    one marina on the shoreline, in addition to two campgrounds and 80 miles  
12    of trails on adjacent lands (State Parks 2010b). (The SRA also includes  
13    Lake Natoma, a 500-acre reservoir immediately downstream from Folsom  
14    Lake that serves as a regulating afterbay for Folsom Lake but does not  
15    provide substantial flood storage.) Folsom Lake has both a warmwater and  
16    coldwater fishery, and DFG regularly stocks trout and salmon in the lake  
17    (LSA Associates 2003). Folsom Lake SRA is the most visited of the 32  
18    SRA units in the State Park system (State Parks 2008), with nearly 1.4  
19    million visitors in fiscal year 2007–2008 (State Parks 2009).

20         *San Joaquin River Basin* The following multipurpose reservoirs in the  
21     San Joaquin River Basin are discussed individually below:

- 22     • Camanche Reservoir
- 23     • Pardee Reservoir
- 24     • New Hogan Lake
- 25     • New Melones Lake
- 26     • Tulloch Reservoir
- 27     • Don Pedro Lake
- 28     • Lake McClure
- 29     • Eastman Lake
- 30     • Hensley Lake
- 31     • Millerton Lake
- 32     • Los Banos Creek Reservoir

33     Camanche Reservoir  
34     Camanche Reservoir is a 7,700-acre reservoir owned and operated by the  
35     East Bay Municipal Utility District (EBMUD) (DWR 2010a), situated on  
36     the Mokelumne River 15 miles east of Lodi. The concessionaire-operated  
37     Camanche Recreation Area offers two developed recreation areas, one on

1 the reservoir's north shore and one on the south shore (EBMUD 2008).  
2 These areas include marinas, RV and tent camping, cottages, and hiking  
3 trails (EBMUD 2010a; Camanche Recreation Company 2010). Both  
4 coldwater and warmwater fish are planted in the reservoir during winter  
5 and spring, providing fisheries and plentiful fishing opportunities  
6 (Camanche Recreation Company 2010).

7 Pardee Reservoir

8 Just upstream from Camanche Reservoir is Pardee Reservoir, a 2,134-acre  
9 reservoir also owned and operated by EBMUD (DWR 2010a). The  
10 reservoir offers boating, fishing, and camping opportunities. One  
11 concessionaire-operated recreation area on the north shore of Pardee  
12 Reservoir provides a full-service marina, store, launch ramp, campgrounds,  
13 picnic areas, and fishing docks (EBMUD 2008, 2010b). Unlike Camanche  
14 Reservoir, Pardee Reservoir is closed from late October until early  
15 February as part of EBMUD's wildlife enhancement program (EBMUD  
16 2010b). Also, swimming, wading, and other body contact activities  
17 (activities during which the participant is partially or entirely immersed in  
18 the water) are prohibited to protect drinking water supplies. However, the  
19 recreation area provides two swimming pools to campers and other visitors  
20 (EBMUD 2010b). Weekly plants of rainbow trout provide an excellent  
21 coldwater fishery, and warmwater fish are also available to anglers (Pardee  
22 Lake Recreation 2010).

23 New Hogan Lake

24 New Hogan Lake is a 4,410-acre reservoir owned and operated by USACE  
25 (DWR 2010a). The reservoir is on the Calaveras River about 30 miles east  
26 of Stockton. The 50 miles of shoreline in the USACE-operated recreation  
27 area surrounding the reservoir provides five campgrounds, including a  
28 group campground and boat-in campground; four boat ramps; and three  
29 picnic areas. Several hiking and mountain biking trails and one equestrian  
30 trail link recreation sites. Warmwater fishing predominates on New Hogan  
31 Lake, but trout are available in the Calaveras River during the designated  
32 season (USACE 2010e, 2010f).

33 New Melones Lake

34 New Melones Lake provides 100 miles of shoreline and 12,500 surface  
35 acres of water (Reclamation 2010a). The reservoir is on the Stanislaus  
36 River, about 6 miles south of Angels Camp. Two developed recreation  
37 areas at the reservoir provide three boat launches, five campgrounds, two  
38 group camps, six day-use areas, and a marina (Reclamation 2010a). Also  
39 located at the reservoir are several hiking and biking trails, as well as a  
40 visitor center and museum that provide information on prehistoric and  
41 historic use of the Stanislaus River area. Horseback riding is permitted in

1 the Peoria Wildlife Management Area, which covers 2,500 acres on the  
2 southwest side of the lake (Reclamation 2010a).

3 *Tulloch Reservoir*

4 Tulloch Reservoir is a relatively small reservoir owned and operated by  
5 Oakdale and South San Joaquin irrigation districts as a component of the  
6 Tri-Dam Project (Tri-Dam Project 2010). The narrow, cross-shaped  
7 reservoir covers 1,260 acres just downstream from New Melones Lake  
8 (DWR 2010a). The reservoir is situated on mostly private land, and much  
9 of the recreation activity comes from boaters using privately owned docks  
10 in shoreline residential areas. However, at two areas on the lakeshore,  
11 privately owned recreational facilities offer services to the public for a fee  
12 (Tri-Dam Project 2010). On the south shore, South Lake Tulloch RV  
13 Campground and Marina offers RV and tent campsites, as well as cabins,  
14 along with a small marina with a store and restaurant (South Lake Tulloch  
15 RV Campground & Marina 2010). On the north shore, Lake Tulloch Resort  
16 offers overnight accommodations with its own boat ramp and marina (Lake  
17 Tulloch Resort 2010).

18 *Don Pedro Lake*

19 Don Pedro Lake is a 12,960-acre reservoir owned and operated by Turlock  
20 Irrigation District (DWR 2010a). The reservoir is about 30 miles east of  
21 Modesto on the Tuolumne River. There are 160 miles of shoreline around  
22 the winding reservoir, which has three main developed recreation areas.  
23 Two recreation areas at the lower end of the lake, near the dam, provide a  
24 marina, two boat ramps, and two picnic areas. A recreation area on the  
25 upper end of the reservoir provides a marina, boat ramp, and campground.  
26 Boat-in camping is also permitted in designated undeveloped shoreline  
27 areas (Don Pedro Recreation Agency 2010a).

28 *Lake McClure*

29 Lake McClure is a 7,147-acre reservoir on the Merced River, owned and  
30 operated by Merced Irrigation District (DWR 2010a). The lower end of the  
31 winding, narrow reservoir is about 35 miles northeast of Merced. The  
32 reservoir has more than 80 miles of shoreline, along which are four major  
33 developed recreation areas. Each of the recreation areas offers a  
34 campground, picnic area, and boat ramp and two of the recreation areas  
35 offer a marina. The lake offers fishing for both coldwater and warmwater  
36 species, with trout, salmon, and bass stocking programs (MID 2010).  
37 (Merced Irrigation District also owns Lake McSwain, a small (300-acre)  
38 reservoir immediately downstream from Lake McClure that serves as a  
39 regulating afterbay for Lake McClure but does not provide substantial  
40 flood storage.)

1 Eastman Lake

2 Eastman Lake is a small USACE reservoir, covering 1,780 acres at full  
3 pool (DWR 2010a). The lake is on the Chowchilla River, 23 miles  
4 northeast of Chowchilla. The USACE-operated recreation area surrounding  
5 the reservoir offers a family campground, a group campground, two boat  
6 ramps, and two day-use areas. The lake has been designated a Trophy Bass  
7 Fishery by DFG, and rainbow trout are planted during winter. Trails are  
8 available for hikers, mountain bike riders, and equestrians (USACE 2010b,  
9 2010g).

10 Hensley Lake

11 Eight miles southeast of Eastman Lake is Hensley Lake, also a small  
12 USACE reservoir, covering 1,500 acres at full pool (DWR 2010a). The  
13 lake is on the Fresno River, 17 miles northeast of Madera. The USACE-  
14 operated recreation area surrounding the reservoir offers family and group  
15 camping areas, two boat ramps, and a day-use area with picnic sites and a  
16 swim beach. The lake contains warmwater game fish such as bass and  
17 catfish, and rainbow trout are planted during winter. Trails are available for  
18 hikers, mountain bike riders, and equestrians, and hunting is permitted in a  
19 500-acre wildlife area (USACE 2010c, 2010h).

20 Millerton Lake

21 Millerton Lake is owned and operated by Reclamation and has a surface  
22 area of approximately 4,900 acres at full pool (DWR 2010a). Located  
23 approximately 20 miles northeast of Fresno, this lake is the centerpiece of  
24 the Millerton Lake SRA, managed by State Parks. The SRA encompasses  
25 nearly 2,000 acres of land around the lake (State Parks 2009).  
26 Motorboating, sailing, water-skiing, use of personal watercraft, swimming,  
27 and fishing are the primary water-based recreation activities. Shoreline  
28 activities are picnicking, hiking, biking, horseback riding, seasonal hunting,  
29 camping, and wildlife viewing. The SRA has several recreational facilities  
30 to support these activities: five boat ramps, several picnic areas, drive-in  
31 and walk-in campgrounds, and a marina (State Parks 2010c). There are also  
32 22 miles of trails within the Millerton Lake SRA for hiking, mountain  
33 biking, and equestrian use (State Parks 2009, 2010c).

34 Los Banos Creek Reservoir

35 Reclamation's Los Banos Creek Reservoir is a 619-acre reservoir on Los  
36 Banos Creek, about 8 miles from the city of Los Banos. The reservoir is  
37 managed as part of the San Luis Reservoir SRA, operated by State Parks  
38 (San Luis Reservoir lies about 10 miles to the northwest). The SRA  
39 provides a minimally developed campground and picnic area, a primitive  
40 equestrian campground, and a boat ramp. Boat speeds are limited to 5 mph;  
41 therefore, fishing is the primary boat-based activity. Warmwater game fish

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1 such as bass and catfish, as well as planted trout, are available in this  
2 reservoir (State Parks 2010e).

3 *River Reaches Downstream from Multipurpose Reservoirs* The river  
4 reaches downstream from the multipurpose reservoirs described above  
5 provide various water-based recreation options. The predominant options  
6 are powered and nonpowered boating and fishing, both from a boat and  
7 from shore or by wading. Many of these river reaches contain salmon,  
8 steelhead, and other anadromous fish species, which benefit from releases  
9 of cold water from the reservoirs. Other water-enhanced activities that may  
10 be pursued along the rivers are camping, picnicking, and hiking. A variety  
11 of federal, State, regional, and local agencies and private entities provide  
12 recreation lands and facilities along the rivers. The Sacramento and Feather  
13 rivers also provide access to numerous islands, oxbow lakes, and gravel  
14 bars managed by federal and State wildlife agencies for wildlife and  
15 wildlife-dependent activities such as hunting and wildlife watching.

16 *Sacramento River Downstream from Shasta Lake* Recreation  
17 opportunities available along the Sacramento River downstream from  
18 Shasta Lake are discussed below by geographic area, as follows:

- 19 • Keswick Reservoir
- 20 • Keswick Dam to Red Bluff Diversion Dam
- 21 • Red Bluff Diversion Dam to the Delta

22 *Keswick Reservoir*

23 Keswick Reservoir occupies nearly the full length of the narrow  
24 Sacramento River gorge that stretches 9 miles from Shasta Dam to  
25 Keswick Dam. The reservoir has a healthy population of wild trout,  
26 including browns and rainbows. The 8.4-mile Sacramento River Rail Trail,  
27 a nonmotorized-use National Recreation Trail, follows an old railroad line  
28 that closely follows the west side of both the river and the shoreline of  
29 Keswick Reservoir. The wide and generally flat trail is open to equestrians,  
30 hikers, and bicyclists year-round.

31 *Keswick Dam to Red Bluff Diversion Dam*

32 The area between Keswick Dam and Red Bluff Diversion Dam (RBDD)  
33 encompasses about 60 miles of the Sacramento River. This area contains  
34 the majority of recreation resources and public-access sites on the river,  
35 with more than 40 recreation/public-access sites: day-use sites, boat  
36 launches, trail accesses, fishing accesses, RV parks, wildlife areas, and  
37 undeveloped open-space areas.

1 The river flows past cities and towns and both private and public lands. The  
2 riparian forests along the river, oak woodlands and grasslands on higher  
3 ground, and riverside bluffs provide a scenic setting for users of riverside  
4 recreational facilities and for boaters and anglers on the river. The riparian  
5 landscape between Redding and Red Bluff is described as the most  
6 unspoiled of the entire 375-mile river. BLM owns and manages much of  
7 the riverside lands between Balls Ferry and Red Bluff (approximately  
8 River Mile (RM) 250 to RM 276).

9 River use and recreation opportunities vary throughout the year with the  
10 highly variable flow of the river. During winter and spring, the Sacramento  
11 River is usually flowing above 20,000–30,000 cubic feet per second (cfs)  
12 and may have short-term peak flows of 80,000–90,000 cfs. Flows are less  
13 variable during summer and fall, with typical flows of 10,000–15,000 cfs  
14 and 5,000–10,000 cfs, respectively. The temperature of the river is cold  
15 year-round because water is released from the deep cold-water strata of  
16 Keswick Reservoir and Shasta Lake upstream. Winter water temperatures  
17 are in the 40s Fahrenheit, and summer water temperatures do not rise above  
18 the mid-50s.

19 The Sacramento River is known for good fishing. Species such as salmon,  
20 steelhead, rainbow trout, sunfish, largemouth bass, and striped bass can be  
21 found within the river. Fly fishing is popular, especially when flows are  
22 5,000–8,000 cfs, which is typical during fall and early winter.

23 Boating opportunities are abundant along the Sacramento River from  
24 Keswick Dam to Red Bluff. Eight sites along the river provide public boat  
25 ramps, and two additional sites permit car-top launching and retrieval.

26 Trail activities such as walking, jogging, bicycling, and horseback riding  
27 occur along this stretch of the river. There are numerous sites with trails or  
28 trail access. The most notable trails along this section of river are the  
29 Sacramento River Trail and the trails that connect BLM lands below Balls  
30 Ferry (BLM 2010b).

31 Hunting occurs primarily on BLM land along the Sacramento River. The  
32 main hunting areas along the river are Inks Creek, Massacre Flat, Perry  
33 Riffle, Paynes Creek, Bald Hill, and Iron Canyon. Hunting is permitted on  
34 BLM land unless posted as closed (e.g., along some hiking trails and at  
35 developed recreation areas). Game species found on BLM lands include  
36 quail, dove, waterfowl, deer, pig, bear, and turkey (BLM 2010b).

37 Developed camping along or near the river occurs mainly at privately  
38 operated RV parks and fishing resorts, and at the public Lake Red Bluff  
39 Recreation Area. Most camping opportunities are for RVs, but a few tent

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1 and group camping sites are available. Primitive camping is available at  
2 several sites within the BLM Sacramento River Area, between about Battle  
3 Creek and Paynes Creek, about 10 miles upstream from RBDD. River  
4 visitors may also camp on undeveloped BLM land within the area. The  
5 mouth of Inks Creek and the areas 0.75 mile above and below the mouth  
6 are closed to camping (BLM 2010b).

7 The Sacramento River corridor provides an attractive setting for picnickers.  
8 Many sites along this river reach provide picnicking facilities: municipal  
9 parks, RV parks and fishing resorts (private facilities), William B. Ide  
10 Adobe State Historic Park, boat ramps, and fishing access sites. Generally,  
11 these facilities feature picnic tables, shade structures (or trees), and  
12 barbeque pits.

13 *Red Bluff Diversion Dam to the Delta*

14 Recreation opportunities on the Sacramento River downstream from  
15 RBDD include hunting, fishing, boating, RV/tent/group camping, birding,  
16 wildlife viewing, picnicking, and hiking. The 100-mile stretch of river  
17 down to Colusa includes many parcels of public conservation and  
18 recreation lands, as well as a few privately owned commercial recreation  
19 sites. Primary landowners on the river are the U.S. Fish and Wildlife  
20 Service (USFWS), with more than two dozen units of the Sacramento  
21 River National Wildlife Refuge (NWR) totaling more than 9,000 acres  
22 (many of which are closed to the public); and DFG, with more than 15  
23 units of the Sacramento River Wildlife Area totaling more than 3,700 acres  
24 (most open to the public but accessible only by boat). Table 3.18-2 lists  
25 recreational facilities at these Sacramento River wildlife areas.

1 **Table 3.18-2. Locations and Recreational Facilities of Wildlife**  
2 **Refuges and Wildlife Areas on the Sacramento River**

<b>Wildlife Refuge/Area</b>	<b>Managing Agency</b>	<b>Acres</b>	<b>Recreational Facilities</b>	<b>Location and Access Information</b>
Mouth of Cottonwood Creek Wildlife Area	DFG	571 (two units)	None	Both units are at the confluence of Cottonwood Creek and the Sacramento River, and are accessible by road.
Sacramento River National Wildlife Refuge	USFWS	10,146 (27 units)	Most of the units have no facilities; however, several units provide boat ramps and trails.	The units extend along 77 miles of the river between Red Bluff and Princeton. All but five units are entirely or partially open to the public. Some are accessible only by boat.
Sacramento River Wildlife Area	DFG	4,014 (21 units)	No facilities are provided; several public boat launch sites on the river outside the wildlife area provide access to the river.	The units extend along 50 miles of the river between the northwest corner of Butte County near Corning, and Colusa. All are open to the public, but most are accessible only by boat.

Sources: DFG 2010b, 2010c; USFWS 2010a

Key:

DFG = California Department of Fish and Game

USFWS = U.S. Fish and Wildlife Service

3 Recreational facilities are located primarily between Red Bluff and the  
4 Bidwell–Sacramento River SP near Hamilton City, about 50 river miles  
5 downstream. These facilities are located at the State Park and at privately  
6 owned RV parks and resorts. Downstream from Bidwell–Sacramento River  
7 SP, the number and variety of facilities decrease. Facilities vary from boat  
8 ramps and marinas to campgrounds, picnic sites, and trails. In addition to  
9 the park mentioned above, State Parks operates two other park units on the  
10 river between Red Bluff and Colusa: Woodson Bridge SRA near Corning  
11 (RM 218) and Colusa–Sacramento River SRA near Colusa (RM 145).

12 *Feather River Downstream from Lake Oroville* Below Lake Oroville,  
13 the Feather River runs through Oroville, Gridley, Live Oak, Yuba City, and  
14 Marysville before joining the Sacramento River approximately 70 miles  
15 below Lake Oroville at Verona. The river flows primarily through private  
16 farmland. However, two State wildlife areas and a few riverside  
17 recreational facilities operated by local agencies provide recreation  
18 opportunities and river access.

19 Directly downstream from Lake Oroville, the City of Oroville and the  
20 Feather River Recreation and Park District (FRRPD) provide three  
21 riverside parks that offer river access for fishing, swimming, boating, and

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1 picnicking. The parks are linked by a bike and pedestrian trail. One park  
2 has a small swim lagoon on the river and the largest of the parks provides a  
3 recently renovated boat ramp (FRRPD 2010).

4 Large portions of the lands contained within the 11,869-acre Oroville  
5 Wildlife Area, managed by DFG, are on each bank of the Feather River a  
6 few miles downstream from Oroville. The wildlife area provides access via  
7 gravel levee roads to several miles of the river's banks, as well as two  
8 gravel ramps suitable for launching small boats (DFG 2010d). The portion  
9 of the Oroville Wildlife Area beginning 1,000 feet downstream from the  
10 Thermalito Afterbay outlet to the river is very popular with anglers during  
11 salmon fishing season.

12 There are few places to access the Feather River between the Oroville  
13 Wildlife Area and Marysville, about 20 miles to the south. The Riverfront  
14 Park Complex in Marysville is devoted primarily to nonriver-related  
15 activities such as motorsports and team sports but provides a boat ramp  
16 (City of Marysville 2010). A few miles upstream (north) from Marysville,  
17 the City of Gridley offers public permit-based access to its Feather River  
18 boat ramp, which is located near Gridley's water treatment plant and  
19 provides access to a stretch of the river that is otherwise inaccessible (City  
20 of Gridley 2010). A few miles south of Marysville, Yuba County provides  
21 a boat ramp on the river at Star Bend (Yuba County 2008).

22 The Feather River Wildlife Area, managed by DFG, provides more than  
23 2,500 acres of riparian forestlands along the river between Marysville and  
24 the point where the Feather River meets the Sutter Bypass. Access to the  
25 wildlife area's five units is available by boat, from the Star Bend ramp area,  
26 or by walk-in access from levee roads. No facilities are provided (DFG  
27 2010e). Table 3.18-3 lists the locations and recreational facilities of the  
28 wildlife areas on the Feather River.

29 *American River Downstream from Folsom Lake* Most of the first 6  
30 miles of the American River below Folsom Lake is occupied by Lake  
31 Natoma, a downstream regulating reservoir for Folsom Lake (see "Folsom  
32 Lake" discussion above). Below Lake Natoma, the 23-mile American River  
33 Parkway follows the entire stretch of the American River to the Sacramento  
34 River confluence. The river is designated as both a National and State Wild  
35 and Scenic River. The parkway is administered by the Sacramento County  
36 Department of Parks and Recreation (Sacramento County Regional Parks  
37 2010). More than 8 million people visit the parkway each year,  
38 participating in activities such as fishing, boating, rafting, picnicking,  
39 walking, biking, swimming, horseback riding, and wildlife viewing.  
40 Several parks and access points are located along the parkway. The  
41 Jedediah Smith Memorial Trail, a 32-mile paved trail that extends the

1 length of the parkway and Lake Natoma, links many of the parkway's  
2 facilities and access points (Sacramento County Regional Parks 2010).

3 **Table 3.18-3. Locations and Recreational Facilities of Wildlife Areas**  
4 **on the Feather River**

Wildlife Area	Managing Agency	Acres	Recreational Facilities	Location and Access Information
Oroville Wildlife Area	DFG	11,869	Primitive camping designated area and gravel boat ramps	Two main areas of the refuge bracket the river a few miles downstream from Oroville. Area is accessible from several highways and county roads. Gravel roads within the wildlife area provide ample river access.
Feather River Wildlife Area	DFG	2,522	None (adjacent Yuba County boat ramp provides boat access)	Wildlife area consists of five nearly contiguous units along 12 miles of the Feather River, upstream from the Sutter Bypass. Some units are accessible only by boat.

Sources: DFG 2010d, 2010e

Key:

DFG = California Department of Fish and Game

5 *Stony Creek Downstream from Black Butte Lake* Stony Creek flows  
6 southeast from Black Butte Lake to the confluence of the Sacramento  
7 River, approximately 24 miles. Although USACE releases 150–300 cfs to  
8 the creek during summer (USACE 2010i), there are no public recreation  
9 areas on the creek. The incised creek flows through broad gravel beds  
10 deposited by the creek's former braided channels. Large gravel-mining  
11 operations, severe streambank erosion, and increasing infestations of the  
12 invasive nonnative plant species giant reed (*Arundo donax*) and salt cedar  
13 (*Tamarix* spp.) are ongoing characteristics of Stony Creek (Glenn County  
14 RCD 2010); these factors and the lack of public access likely limit  
15 recreation use. A unit of the Sacramento River NWR (described above  
16 under "Red Bluff Diversion Dam to the Delta") is located at the confluence  
17 of the creek with the Sacramento River.

18 *North Fork of Cache Creek and Cache Creek Downstream from Indian*  
19 *Valley Reservoir* The North Fork of Cache Creek flows west then south  
20 several miles, primarily through rugged BLM land and rural residential  
21 areas, before joining the South Fork to form the main-stem Cache Creek,  
22 which flows east into the Sacramento Valley. The flow of the North Fork  
23 of Cache Creek is regulated by Indian Valley Dam; the flow of the main

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1 stem is also regulated by Cache Creek Dam, 5 miles downstream from  
2 Clear Lake. (The South Fork of Cache Creek flows out of Clear Lake,  
3 several miles to the west of the junction of the two forks. See the following  
4 discussion of the South Fork of Cache Creek.) For much of its route to the  
5 valley, the creek flows through Cache Creek Natural Area, a combination  
6 of more than 70,000 acres of BLM-managed lands and several thousand  
7 acres of State and county lands (BLM 2010c). The Cache Creek Natural  
8 Area is primarily primitive with no developed facilities; much of the area  
9 through which the creek flows is a federally designated Wilderness Area.  
10 However, creek access is available at a trailhead on DFG land (DFG 2010f)  
11 and at Yolo County's Cache Creek Regional Park (Yolo County 2010a). At  
12 this regional park, whitewater rafting concessionaires offer rafting outings  
13 on Cache Creek (Whitewater Adventures 2010), the nearest such  
14 whitewater opportunity to the San Francisco Bay Area. The sections of the  
15 creek upstream and downstream from Cache Creek Regional Park are also  
16 popular with whitewater kayakers (California Creeks 2010).

17 Downstream from the regional park, in the Capay Valley, are two  
18 additional Yolo County parks, Camp Haswell and Vernon Nichols, which  
19 provide creek access to boaters, anglers, and swimmers, and day-use  
20 facilities (Yolo County 2010b, 2010c). Thirty-one miles of Cache Creek  
21 are designated as a State Wild and Scenic River. At the south end of the  
22 Capay Valley, where the creek enters the Sacramento Valley, much of the  
23 flow is diverted for agricultural use at the Capay Diversion Dam. Cache  
24 Creek flows into Cache Creek Settling Basin and except for summer  
25 months has flow for most of the year. During high flow, Cache Creek flows  
26 reach the Yolo Bypass.

27 *South Fork of Cache Creek Downstream from Clear Lake* The South  
28 Fork of Cache Creek flows southeast out of Clear Lake for several miles  
29 before joining with the North Fork to form the main stem of Cache Creek.  
30 Near the mouth of the South Fork of Cache Creek, State Parks operates  
31 Anderson Marsh State Historic Park, which provides access to the creek for  
32 fishing and several trails on the adjacent marshes and uplands (State Parks  
33 2010f). The flow of the South Fork is regulated by Cache Creek Dam, 5  
34 miles downstream from Clear Lake (YCFCWCD 2010). Boaters can  
35 paddle or motor from the marshes of Clear Lake to Cache Creek Dam,  
36 providing a scenic 10-mile round trip (Konocti Trails 2010). Cache Creek  
37 Dam, owned by YCFCWCD, releases flows of 100–700 cfs or more to the  
38 creek during much of the summer peak-boating period, depending on  
39 hydrologic conditions and downstream water needs (YCFCWCD 2010;  
40 USGS 2010). These flows join with those of the North Fork to provide  
41 commercial and private boaters with whitewater boating opportunities, as  
42 discussed above. Downstream from Cache Creek Dam, the South Fork

1 flows primarily through BLM lands before joining with the North Fork,  
2 with little public access or use in that reach.

3 *San Joaquin River Downstream from Millerton Lake* The San Joaquin  
4 River has relatively few developed recreational facilities or access sites,  
5 with the exception of the San Joaquin River Parkway, which begins just  
6 below Friant Dam. The lands near the river downstream from the parkway  
7 are managed primarily for agricultural land uses; however, several federal  
8 wildlife refuges and State wildlife management areas are located on or near  
9 the river, along with several State Park units. Some of these are directly  
10 adjacent to the San Joaquin River, while others are some distance away  
11 from the river, but within the San Joaquin Valley.

12 Recreation opportunities available along the San Joaquin River  
13 downstream from Millerton Lake are discussed below by geographic area,  
14 as follows:

- 15 • Friant Dam to Merced River
- 16 • Merced River to the Delta

17 *Friant Dam to Merced River*

18 The San Joaquin River Parkway is a mosaic of parks, trails, and ecological  
19 reserves located along the San Joaquin River between Friant Dam  
20 (Millerton Lake) and State Route 145, managed by the San Joaquin River  
21 Parkway and Conservation Trust. The parkway is undergoing development  
22 under the management of the San Joaquin River Conservancy, with a  
23 planning area extending along 23 miles of the river below Friant Dam.  
24 Approximately a dozen developed and undeveloped park units operate in  
25 the parkway, owned and managed by several public and private entities.

26 The largest of the federal refuges on the San Joaquin River is the San Luis  
27 NWR, a mixture of managed seasonal and permanent wetlands, riparian  
28 habitat associated with the river and two tributary sloughs, and native  
29 grasslands, alkali sinks, and vernal pools. The 26,000-acre refuge, divided  
30 into six contiguous units on both the east and west sides of the river, is  
31 managed primarily to provide habitat for migratory and wintering birds  
32 (USFWS 2010b).

33 DFG administers several wildlife areas in the San Joaquin Valley near the  
34 San Joaquin River. Mendota Wildlife Area, located in Fresno County a few  
35 miles south of the river and the city of Mendota, consists of nearly 12,000  
36 acres of managed impoundments and wetland and upland habitat, providing  
37 opportunities for bird-watching and waterfowl hunting. Three wildlife areas  
38 are located west of the San Joaquin River, in Merced County: the 6,000-

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1 acre Los Banos Wildlife Area, 2,800-acre Volta Wildlife Area, and  
2 7,000-acre North Grasslands Wildlife Area. These wildlife areas provide  
3 opportunities for wildlife viewing, and for hunting, fishing, boating, and  
4 camping in designated areas; they receive 30,000–50,000 visits annually  
5 (Thomas Reid Associates 2001).

6 Major public uses within these federal refuges and State wildlife areas  
7 include interpretive wildlife observation programs, hunting (primarily for  
8 waterfowl), and self-led wildlife observation auto tour routes, and walking  
9 trails. Fishing is also permitted in some areas (USFWS 2010b; Thomas  
10 Reid Associates 2001).

11 *Merced River to the Delta*

12 Two Stanislaus County parks provide the only developed recreation access  
13 to the San Joaquin River between the Merced River confluence and the  
14 Delta. The Las Palmas Fishing Access, a few miles east of the town of  
15 Patterson, is a 3-acre park providing a concrete boat ramp and day-use  
16 facilities (Stanislaus County 2010a). Laird Park, 2 miles east of the town of  
17 Grayson, is a 97-acre “community park” (as designated by Stanislaus  
18 County) providing river access and day-use facilities (Stanislaus County  
19 2010b).

20 The San Joaquin River NWR is located along the San Joaquin River  
21 between the Tuolumne and Stanislaus rivers, two major tributaries to the  
22 San Joaquin River. The refuge boundaries encompass more than 7,000  
23 acres of riparian woodlands, wetlands, and grasslands. Although the refuge  
24 is primarily undeveloped, a wildlife viewing platform has been constructed  
25 at one location favored for viewing geese and other waterbirds (USFWS  
26 2010c).

27 The West Hilmar Wildlife Area, on the west bank of the San Joaquin River  
28 a few miles downstream from the Merced River confluence, is a 340-acre  
29 State wildlife area with no facilities and accessible only by boat (DFG  
30 2010g).

31 *Mokelumne River Below Camanche Reservoir* The lower Mokelumne  
32 River runs approximately 30 miles from the base of Camanche Dam to the  
33 Delta. EBMUD offers river visitors a day-use area at the base of Camanche  
34 Dam, which provides access to a nearly mile-long stretch of the river. The  
35 park has picnic sites and trails, and is used by rafters, kayakers, and other  
36 floaters to begin their runs downstream, as well as by anglers and  
37 swimmers (EBMUD 2010c). Cold water released from Camanche Dam  
38 supports the salmon and trout that migrate up the river from the Delta.  
39 Fishing season in the day-use area runs from January 1 to March 31 and  
40 from the fourth Saturday in May to October 15. Guided float trips are

1 available to anglers on this segment of the river (Costello 2010). About 4  
2 miles downstream, San Joaquin County’s Stillman McGee Regional Park  
3 provides access to the riverbank for anglers and a convenient take-out  
4 location for rafters and paddlers, as well as picnic sites (San Joaquin  
5 County 2010).

6 There are no public-access locations on the river between McGee Park and  
7 Lodi. However, the City of Lodi operates Lodi Lake Park on the river at the  
8 north edge of the city, with several picnic areas, a beach, a nature trail, and  
9 nonpowered boat access to the river. The city also operates a boathouse at  
10 the park, offering kayak rentals and lessons, and tours of the river via  
11 pontoon boat for small groups (City of Lodi 2010a, 2010b). A local  
12 outfitter also leads paddling outings on the river from Lodi Lake Park (San  
13 Joaquin Magazine 2009). A short distance downstream from the park,  
14 downstream boat passage is blocked by Woodbridge Diversion Dam,  
15 which backs up the river to form Lodi Lake. Just beyond the dam, San  
16 Joaquin County operates the Woodbridge Wilderness Area, a regional park  
17 with a natural riparian setting and one-quarter mile of Mokelumne River  
18 frontage (San Joaquin County 2010).

19 *Calaveras River Below New Hogan Lake* The Calaveras River flows  
20 40 miles from New Hogan Lake to the Delta, passing through the city of  
21 Stockton before joining with the San Joaquin River. USACE releases flows  
22 of about 100–200 cfs to the river during summer (USACE 2010i). USACE  
23 operates the Monte Vista Recreation Area on the river just below New  
24 Hogan Dam as part of the New Hogan Recreation Area. The recreation area  
25 provides river access for anglers and hand-launching of boats. The river  
26 below the dam is known for its population of resident rainbow trout  
27 (Bacher 2008). When flows are high, anadromous fish (salmon and  
28 steelhead) can migrate from the Delta into the reach of the river below the  
29 dam (San Joaquin Basin 2010). The Monte Vista Recreation Area is also  
30 the trailhead for the “River of Skulls” hiking trail, a 1-mile loop trail that  
31 closely follows the river, and a staging area for an 8-mile equestrian trail  
32 that winds along the lake above the dam (USACE 2010f).

33 About 17 miles below New Hogan Dam, much of the river’s flow is  
34 diverted by the Bellota Weir into the Mormon Slough Flood Control  
35 Channel. Remaining flows pass through the natural channel, which is now  
36 referred to as the Old Calaveras River. Flows in the natural channel are  
37 often very low or nonexistent, and there is no public access to the river  
38 along the remaining miles of its course to Stockton, although anglers have  
39 access to portions of Mormon Slough from the channel’s levees (Bacher  
40 2008). As it crosses through the urban area of Stockton, the natural river  
41 channel is rewatered, mainly by tidal flow from the Delta. The Calaveras

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1 River bike path follows the river for several miles within Stockton (City of  
2 Stockton 2010).

3 *Stanislaus River Below Tulloch Reservoir* Approximately 2 miles  
4 south of Tulloch Reservoir is Goodwin Dam, which marks the beginning of  
5 the lower Stanislaus River, the 58-mile reach of the Stanislaus River  
6 between the dam and the confluence with the San Joaquin River. River  
7 access is limited along the 4-mile stretch of river below Goodwin Dam and  
8 Knights Ferry, which flows through a scenic volcanic gorge; however, this  
9 segment is used by whitewater boaters (intermediate to expert level) and  
10 anglers. Public river access can be found just below Goodwin Dam, 2 miles  
11 downstream at Two Mile Bar, and at Knights Ferry (The Ecological Angler  
12 2010; USACE 2010j), a historic gold mining-era town. Class I–II rafting  
13 (suitable for novice paddlers) is available below Knights Ferry, with  
14 floaters taking out at the Orange Blossom covered bridge 7 miles  
15 downstream, or at Oakdale 6 miles farther downstream (American  
16 Whitewater 2010a). Commercial guided rafting trips are offered on the runs  
17 downstream from Knights Ferry (River Journey 2010; Sunshine Rafting  
18 2010).

19 In addition to the river access sites mentioned above, USACE operates  
20 several small riverside recreation areas between Knights Ferry and Oakdale  
21 and a free visitor center at Knights Ferry. These parks provide campsites,  
22 picnic areas, and hiking trails (USACE 2010j). Downstream from Oakdale,  
23 river access is limited to small USACE access sites adjacent to the  
24 communities of Riverbank and Myers, and a municipal park in the  
25 community of Ripon. A few miles upstream from the confluence with the  
26 San Joaquin River is Caswell Memorial State Park, a 258-acre park that  
27 offers activities such as camping, picnicking, swimming, fishing, tubing  
28 from the campground to the day-use area, bird-watching, and hiking (State  
29 Parks 2010g).

30 *Tuolumne River Below Don Pedro Lake* About 2 miles below Don  
31 Pedro Lake is La Grange Dam, which diverts a portion of the Tuolumne  
32 River flow released from the reservoir into canals for agricultural use.  
33 Below this diversion, the river flows past the small cities and towns of La  
34 Grange, Waterford, and Empire before flowing through the larger city of  
35 Modesto and then through the agricultural lands of the central San Joaquin  
36 Valley before joining with the San Joaquin River. Anglers can fish for  
37 coldwater and warmwater fish in the river, which also has a fall salmon  
38 run. The open season for trout and steelhead is from January 1 to October  
39 15; the river is closed to salmon fishing (DFG 2010h). Restoration efforts  
40 are under way to improve conditions for salmon (Tuolumne River Trust  
41 2010).

1 One mile downstream from La Grange Dam at La Grange Regional Park,  
2 operated by Stanislaus County, the Tuolumne River becomes accessible to  
3 boaters and anglers. The regional park extends along several miles of the  
4 river and provides carry-in boat access at the Old La Grange Bridge; about  
5 2½ miles downstream at Basso Bridge, parking and an informal boat  
6 launch, gravel beach area, trails and pathways, and picnic sites are  
7 available (Stanislaus County 2010c). These are recommended put-ins for  
8 river paddlers seeking an easy and scenic river run (American Whitewater  
9 2010b). Approximately 8.5 miles downstream from La Grange, the Turlock  
10 Lake SRA campground provides river access and 63 developed campsites  
11 (State Parks 2010h).

12 There are no developed recreation areas and river access is limited  
13 downstream from the Turlock Lake SRA until the river reaches Fox Grove  
14 Fishing Access, a 64-acre Stanislaus County park with 1 mile of river  
15 frontage, located about midway between the cities of Waterford and  
16 Modesto. The park provides parking, a boat ramp, a swimming area, and  
17 picnic sites (Stanislaus County 2010a). Where the river passes through the  
18 urban areas of Modesto and the neighboring city of Ceres, development is  
19 under way to enhance the five main riverside park areas that compose the  
20 Tuolumne River Regional Park. This park, a joint project of the Cities of  
21 Modesto and Ceres and Stanislaus County, consists of more than 500 acres  
22 of parkland that runs along 7 miles of the Tuolumne River (City of  
23 Modesto 2010). A short distance downstream, at the western edge of the  
24 urban area, Stanislaus County's Riverdale Park provides launching for  
25 nonmotorized or car-top boats. A few miles upstream from the confluence  
26 with the San Joaquin River, Stanislaus County's Shiloh Road Fishing  
27 Access provides river access to anglers (Stanislaus County 2010a).

28 The Basso Bridge and Shiloh Road facilities are closed from mid-October  
29 through December, during the salmon run. An effort is under way to  
30 establish the Lower Tuolumne River Parkway, which would enhance  
31 habitat and public-use opportunities at several potential sites on the river  
32 (Tuolumne River Trust 2010).

33 *Merced River Below Lake McSwain* Located immediately downstream  
34 from Lake McSwain is Merced Falls Reservoir, a small reservoir owned by  
35 Pacific Gas & Electric Company and created by Merced Falls Dam.  
36 Merced Falls Reservoir is operated in run-of-the-river mode, passing  
37 through the outflow from Lake McSwain. Approximately 3 miles  
38 downstream from Merced Falls Dam is Merced Irrigation District's  
39 Crocker-Huffman Diversion Dam, which diverts a portion of the river's  
40 flow into a canal for agricultural use. There are two minimally developed  
41 fishing accesses on the north side of the river upstream from Crocker-  
42 Huffman Diversion Dam and Merced Falls Dam (Merced County Events

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1 2010). Carry-in access for nonpowered boats is available near a bridge  
2 crossing Merced Falls Reservoir. The 3.4-mile paddle between the two  
3 dams is an easy and scenic trip for beginning paddlers (American  
4 Whitewater 2010c).

5 Below Crocker-Huffman Diversion Dam, the river flows through  
6 agricultural lands, passing near only a few small communities. In this  
7 stretch of river there are four minimally developed fishing accesses on the  
8 north side of the river, in the first few miles below the dam (Merced  
9 County Events 2010). Two county parks and two State Park units also  
10 provide river access and recreational facilities. A short distance  
11 downstream from Crocker-Huffman Diversion Dam, Merced County  
12 provides river access and picnicking facilities at Henderson Park (Merced  
13 County 2010). Twenty-six miles downstream, McConnell SRA, operated  
14 by State Parks, is a 74-acre recreation area providing shady camping and  
15 picnic areas, sandy beaches, and fishing access (State Parks 2010i). Eleven  
16 miles farther downstream, Hagaman Park, operated by Merced County,  
17 provides picnic sites and river access (Merced County 2010). Lastly,  
18 George Hatfield SRA, located just above the confluence with the San  
19 Joaquin River and operated by State Parks, provides more than a mile of  
20 river frontage, camping and picnic sites, and a loop trail (State Parks  
21 2010i).

22 *Chowchilla River Below Eastman Lake* Below Eastman Lake, the  
23 Chowchilla River provides water for agricultural users. Few if any apparent  
24 recreational uses are apparent and no recreational facilities are available on  
25 the river. Flows released from Eastman Reservoir are typically 100–300 cfs  
26 during summer (USACE 2010i), but most of this flow is diverted for  
27 agricultural use. Seven miles downstream from Eastman Lake, the  
28 Chowchilla River is diverted into both Berenda and Ash sloughs, with  
29 excess water continuing down the main river channel.

30 The last 2 miles of the river doubles as an irrigation canal for farms located  
31 along the riverbanks. The main river channel ends abruptly about 3 miles  
32 east of the San Joaquin River. (The river does not have a defined natural  
33 outlet to the San Joaquin because the river has only a seasonal flow, and  
34 natural water flow would normally dry up before it had a chance to reach  
35 the San Joaquin.) As part of the Lower San Joaquin River Flood Control  
36 Project, a diversion canal was built to connect the end of the riverbed with  
37 the Eastside Bypass, providing a controlled outlet to the San Joaquin River  
38 during years of heavy rains. The Chowchilla River also serves as the outlet  
39 of the Madera Canal, which receives water diverted from the San Joaquin  
40 River at Friant Dam.

1 The Chowchilla River downstream from the agricultural diversions (as well  
2 as Berenda and Ash sloughs) consists primarily of sandy washes that  
3 remain dry much of the year. The river is subject to substantial flows only  
4 for short time periods during winter storm events or in very wet winters. As  
5 a result, recreational use of the Chowchilla River is minimal to nonexistent.

6 *Fresno River Below Hensley Lake* Below Hidden Dam, which creates  
7 Hensley Lake, the Fresno River (like the nearby Chowchilla River)  
8 provides water for agricultural users; few if any recreational uses are  
9 apparent and no recreational facilities are available on the river. Summer  
10 outflow at Hidden Dam is generally 200–300 cfs (USACE 2010i), but this  
11 flow is diverted for agricultural use. The John Franchi Diversion Dam,  
12 about 12 miles downstream on the northeast edge of Madera, is used to  
13 divert water into the Madera Canal. The dam is operated by the Madera  
14 Irrigation District. From this point, the river is normally dry. Water is  
15 released past the diversion only when water levels are high enough to spill  
16 over the dam.

17 As the Fresno River channel continues its course west of Madera, the  
18 natural riverbed has been greatly modified and has several gaps, which are  
19 now connected by human-made canals. Eventually, the natural riverbed  
20 diverts most flows into a canal, which leads to the Eastside Bypass. The  
21 Fresno River downstream from the agricultural diversions consists  
22 primarily of sandy washes that remain dry much of the year, and the river is  
23 subject to substantial flows only for short time periods during winter storm  
24 events or in very wet winters. As a result, recreational use of the Fresno  
25 River is minimal to nonexistent.

#### 26 *Flood Bypasses*

27 *Sacramento Valley* This section describes the recreation resources  
28 provided by the two major flood bypasses in the Sacramento Valley—the  
29 Sutter and Yolo bypasses—and by two smaller bypasses (Colusa and  
30 Tisdale) connecting the main bypasses to the Sacramento River. Much of  
31 the land within these bypasses and on their levees is managed by federal  
32 and State wildlife management agencies as wildlife refuges and wildlife  
33 areas. The bypasses are primarily dry most of the year, carrying flood flows  
34 only during winter and spring periods when Sacramento River flows are  
35 high enough to overtop the weirs at the head of the bypasses.

36 Hunting is permitted seasonally on the refuges and wildlife lands. When  
37 the bypasses are dry, designated areas are open for hunting upland game  
38 birds such as pheasant, quail, and mourning dove and small mammals such  
39 as rabbits. Deer are also hunted in some areas. When the bypasses are  
40 flooded, designated areas are open to waterfowl hunting. Fishing, bird-  
41 watching, and other types of wildlife viewing are also popular in these

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1 areas. The Yolo Bypass Wildlife Area, managed by DFG, is particularly  
2 well known for the large number of waterfowl of several species that  
3 congregate in the area during fall and winter (DFG 2010i). This wildlife  
4 area is easily accessible to the urban areas of Sacramento and Davis; in  
5 collaboration with the Yolo Basin Foundation, DFG offers extensive  
6 wildlife education programs to schoolchildren and the general public (DFG  
7 2010j).

8 Table 3.18-4 lists the locations and recreational facilities of the five  
9 wildlife refuges and wildlife areas within the Sacramento River Basin flood  
10 bypasses (also see Figure 3.6-3 in Section 3.6, “Biological Resources—  
11 Terrestrial”).

12 **Table 3.18-4. Locations and Recreational Facilities of Wildlife**  
13 **Refuges and Wildlife Areas on Sacramento River Flood Bypasses**

<b>Wildlife Refuge/Area</b>	<b>Managing Agency</b>	<b>Acres</b>	<b>Recreational Facilities</b>	<b>Location Information</b>
Sutter National Wildlife Refuge	USFWS	2,591	Trails for wildlife viewing	Lands are between the levees of the Sutter Bypass.
Colusa Bypass Wildlife Area	DFG	1,248	None	Lands are within the Colusa Bypass, which is east of the Colusa Weir and passes flood flows eastward from the Sacramento River.
Sutter Bypass Wildlife Area	DFG	3,204	None	Lands are on the levees of the Sutter Bypass and within the Tisdale Bypass, which carries flood flows to the Sutter Bypass from the Sacramento River. The lands between the Sutter Bypass levees are within the Sutter National Wildlife Refuge, or are private croplands not open to the public.
Fremont Weir Wildlife Area	DFG	1,461	None	Lands are located at the entrance to the Yolo Bypass on the south side of the Sacramento River, just upstream from the confluence with the Feather River.
Sacramento Bypass Wildlife Area	DFG	360	None	Lands are adjacent to West Sacramento; the bypass links the Sacramento River and the Yolo Bypass.

14

1 **Table 3.18-4. Locations and Recreational Facilities of Wildlife**  
2 **Refuges and Wildlife Areas on Sacramento River Flood Bypasses**  
3 **(contd.)**

Wildlife Refuge/Area	Managing Agency	Acres	Recreational Facilities	Location Information
Yolo Bypass Wildlife Area	DFG	15,830	Trails/auto tour routes	Lands are primarily within the portion of the Yolo Bypass south of Interstate 80.

Sources: DFG 2010k, 2010l, 2010m, 2010n; USFWS 2010d

Key:

DFG = California Department of Fish and Game

USFWS = U.S. Fish and Wildlife Service

4 *San Joaquin Valley* This section describes the recreation resources  
5 provided by the major flood bypasses in the San Joaquin River Basin  
6 portion of the Extended SPA—the Chowchilla Canal and the Eastside and  
7 Mariposa bypasses. The bypasses are dry most of the year, carrying flood  
8 flows only during winter and spring periods when San Joaquin River flows  
9 are diverted into the Chowchilla Canal, and then routed to the Eastside and  
10 Mariposa bypasses.

11 Unlike the Sacramento River Basin bypasses, the lands within these  
12 bypasses are mainly in private hands and do not provide recreation  
13 opportunities to the general public. However, the Merced NWR sits astride  
14 a 5-mile segment of the Eastside Bypass, which forms the southern  
15 boundary of much of the refuge. This refuge encompasses more than  
16 10,000 acres of wetlands, grasslands, and riparian areas and is known for  
17 hosting large populations of wintering sandhill cranes and various species  
18 of geese. The refuge also provides habitat for several species of waterfowl  
19 and numerous other birds during the breeding season. During the  
20 designated season, waterfowl hunting is permitted in two areas of the  
21 refuge that include portions of the Eastside Bypass channel and adjacent  
22 seasonal wetlands within the bypass levees. Another portion of the refuge  
23 provides an auto tour route popular with bird-watchers and other visitors  
24 (USFWS 2010e).

25 *Land-Based Recreation Opportunities and Facilities* The floor of the  
26 Sacramento and San Joaquin valleys and their foothills, like the broader  
27 watershed areas discussed above, include numerous federal, State, regional,  
28 and local lands and recreational facilities providing land-based recreation  
29 opportunities. Recreational facilities are less extensive than at higher  
30 elevations; however, the valley floor and foothills portion of the study area  
31 also includes federal lands—managed by USFS, BLM, and USFWS—that  
32 provide primarily dispersed recreation opportunities such as hiking,  
33 wildlife viewing, and hunting. As described above, these federal lands

1 often encompass large areas of undeveloped wildlands, but they may also  
2 provide developed facilities.

3 ***Delta and Suisun Marsh***

4 Numerous recreation opportunities are available in the Delta. The Delta  
5 provides more than 630 miles of rivers and sloughs for boating and fishing  
6 (DBW 2003). Visitors have a choice of many private recreational facilities,  
7 primarily small marinas and resorts. Given these extensive waterways, and  
8 because most of the land in the Delta is used for agriculture, recreation in  
9 the Delta is focused primarily on water-based activities, particularly  
10 pleasure boating and fishing (from boats and from riverbanks and levees).  
11 Windsurfing is popular on the lower Sacramento River within the Delta.

12 More than 100 marinas and marina resorts operate within and on the  
13 margins of the Delta. These range from small facilities with fewer than  
14 50 long-term berths to large facilities with more than 500 berths and  
15 additional amenities such as boat ramps, RV campgrounds, cabins,  
16 restaurants and bars, convenience stores, and picnic areas. Numerous yacht  
17 clubs are based at commercial marinas in the Delta, and more than 20 yacht  
18 clubs operate Delta facilities for their members that are separate from  
19 marinas (DPC 1997).

20 Publicly owned facilities in the Delta comprise several large city-operated  
21 marinas situated on Delta waterways; several county parks that offer boat  
22 ramps, fishing access, camping, and picnic sites; and two State Park units  
23 (DPC 1997). Brannan Island SRA, in the central Delta on the Sacramento  
24 River and Threemile Slough, offers a multilane boat ramp, numerous  
25 campsites, a swim beach, and day-use facilities. Franks Tract SRA consists  
26 of a large flooded island that was formerly farmland, surrounded by  
27 remnant levees; there are no developed facilities in this SRA (State Parks  
28 2010j).

29 In the Delta, wildlife refuges, wildlife areas, and nature preserves are also  
30 used for recreation. Stone Lakes NWR, situated on the eastern edge of the  
31 Delta, offers wildlife-dependent recreation such as waterfowl hunting and  
32 wildlife viewing. The Cosumnes River Preserve is also situated on the east  
33 edge of the Delta, offering a visitor center, trails, and wildlife viewing  
34 opportunities. Lower Sherman Island Wildlife Area, located at the  
35 confluence of the Sacramento and San Joaquin rivers, consists of more than  
36 3,000 acres of open water, marshland, and remnant islands; this wildlife  
37 area is accessible only by boat (DFG 2010o). Several additional small State  
38 wildlife areas, operated by DFG and accessible only by boat, are located on  
39 islands within Delta waterways. Yolo Bypass Wildlife Area (discussed  
40 above, in relation to Sacramento River flood bypasses) occupies a large  
41 portion of the north Delta to the west of the Sacramento River. The portion

1 of the Yolo Bypass downstream from the wildlife area hosts more than 20  
2 private hunting clubs (DPC 1997).

3 **Sacramento and San Joaquin Valley Watersheds**

4 **Reservoirs and Streams Providing Water-Based or Water-Enhanced**  
5 **Recreation**

6 *Lake Berryessa and Putah Creek Downstream from Lake Berryessa* Lake  
7 Berryessa, created by Monticello Dam on Putah Creek, is operated by  
8 Reclamation and covers 20,700 acres at full pool (DWR 2010b). The lake  
9 is 23 miles long and 3 miles wide, with 165 miles of shoreline.  
10 Reclamation provides two large day-use areas, a boat ramp, and many  
11 smaller dispersed day-use areas. The seven resorts around the lake are  
12 managed by concessionaires under contract with Reclamation and provide  
13 camping, day use, and boating facilities. The lake provides both a  
14 coldwater and warmwater fishery. Reclamation and DFG jointly manage a  
15 2,000-acre wildlife area along the east side of the lake (Reclamation  
16 2010b). Bird-watching and wildlife viewing are excellent in the wildlife  
17 area, which is accessed primarily by boat, but hunting is not allowed (DFG  
18 2010p).

19 Downstream from Lake Berryessa, the 6-mile reach of Putah Creek  
20 between Monticello Dam and Putah Diversion Dam is well known for trout  
21 fishing. Both wild and hatchery-reared rainbow trout can be caught in the  
22 creek. On the north side of the creek in this reach, five fishing access sites  
23 owned by DFG and managed by the Yolo County Parks and Resources  
24 Department are available to anglers (EDAW 2005). Putah Diversion Dam  
25 diverts water into the Putah South Canal, about 6 miles downstream from  
26 Monticello Dam. The dam creates a narrow 1.5-mile pool named Lake  
27 Solano. A county park on the south side of the pool provides campsites,  
28 picnic areas, a playground, paddleboat rentals, a fishing pond managed by  
29 DFG, fishing access to the lake, and hiking trails (Solano County 2010).

30 Below Putah Diversion Dam, Putah Creek flows through a levee-controlled  
31 channel past Winters, before most flow enters the artificial south fork of the  
32 creek, south of Davis, which terminates in the Yolo Bypass. The City of  
33 Winters provides a community park on the creek. The only public-access  
34 site on the creek between Davis and Winters is at Stevenson's Bridge,  
35 within the Putah Creek Riparian Reserve. The University of California,  
36 Davis (UC Davis) manages two natural reserves that are open to the public:  
37 Stebbins Cold Canyon Reserve, just below Lake Berryessa, and Putah  
38 Creek Riparian Reserve, close to the UC Davis campus. Most of the  
39 northern levee of Putah Creek is open to the public for walking, running,  
40 bird watching, or bicycling. Closer to the creek, trails within the Putah

1 Creek Riparian Reserve are used by hikers, walkers, birders, and joggers  
2 (EDAW 2005).

3 *San Luis Reservoir* San Luis Reservoir is located on the western edge of  
4 the San Joaquin Valley, in Merced County. State Parks provides camping,  
5 boating, and day-use facilities in the San Luis Reservoir SRA, which  
6 surrounds much of the 12,700-acre reservoir and adjacent O’Neill Forebay  
7 (State Parks 2010e). Pacheco SP, located on the west side of San Luis  
8 Reservoir, is primarily undeveloped but provides 28 miles of hiking,  
9 equestrian, and biking trails on several thousand acres of foothill lands  
10 (State Parks 2010k). The San Luis Reservoir and Cottonwood Creek  
11 wildlife areas and the O’Neill Forebay Wildlife Area are located on the  
12 north shorelines of San Luis Reservoir and O’Neill Forebay, respectively.  
13 These areas, managed by DFG, encompass nearly 8,000 acres that support  
14 opportunities for wildlife and wildflower viewing, and hunting (DFG  
15 2010q, 2010r, 2010s).

16 **Land-Based Recreational Facilities and Opportunities** The watersheds  
17 of the Sacramento and San Joaquin valleys include numerous federal, State,  
18 regional, and local lands and recreational facilities providing land-based  
19 recreation opportunities. These include federal lands providing primarily  
20 dispersed recreation opportunities, such as hiking, camping, and hunting  
21 and managed by USFS, BLM, USFWS, and USACE. These federal lands  
22 often encompass large areas of undeveloped wildlands, but may also  
23 provide developed campgrounds, picnic areas, and trails. The watershed  
24 also includes State lands managed by State Parks as State parks, SRAs,  
25 State vehicular recreation areas, State historic parks, or other types of  
26 designated State Park units. These lands often contain a range of developed  
27 recreational facilities such as campgrounds, picnic areas, visitor centers,  
28 boat ramps, and trails. State lands within the Sacramento and San Joaquin  
29 Valley watersheds also include areas managed by DFG as State wildlife  
30 areas, which are managed to provide wildlife-based recreation  
31 opportunities such as wildlife viewing, bird-watching, and hunting,  
32 typically with few developed facilities. Lastly, regional and local agencies  
33 within the Sacramento and San Joaquin Valley such as counties, cities, park  
34 and recreation districts, school districts, and water districts provide a range  
35 of city neighborhood and community parks and other types of developed  
36 and often urban or sports-oriented recreational facilities.

37 ***SoCal/Coastal CVP/SWP Service Areas***

38 In general, the SoCal/coastal CVP/SWP service areas cover several large,  
39 noncontiguous portions of California between the cities of Napa and San  
40 Diego. As stated previously, because the proposed program is expected to  
41 have little to no impact on recreation within the SoCal/coastal CVP/SWP

1 service areas, recreation resources in these service areas are not discussed  
2 in detail.

3 In northern California, the service areas include the cities of Napa,  
4 Fairfield, Vacaville, and San Jose, along with a large area around San Jose  
5 and south of the city along U.S. Highway 101. In the Central Valley, the  
6 service areas cover an area along and mostly east of I-5 from Tracy to  
7 Bakersfield. On the coast, the service areas include the San Luis Obispo  
8 and Santa Barbara areas. In Southern California, the service areas include  
9 the greater Los Angeles, San Bernardino, and San Diego areas, along with  
10 most of the areas between these three cities. The service areas also include  
11 an area around the northern part of the Salton Sea, in the greater Palm  
12 Springs area.

13 Because the SoCal/coastal CVP/SWP service areas cover such a large part  
14 of Southern California and parts of the Central Valley and San Francisco  
15 Bay Area, a wide range of recreation lands and facilities is available in the  
16 service areas: State wildlife areas and ecological preserves, State parks and  
17 State beaches, lands within national forests, a national recreation area, and  
18 many regional, county, and local recreation sites. Recreation opportunities  
19 available in the service areas are commensurately plentiful and include  
20 activities such as wildlife viewing, bird-watching, hiking, biking, hunting,  
21 fishing, a variety of boating and water-related activities (on reservoirs,  
22 natural lakes, and rivers), horseback riding, picnicking, camping, sports  
23 activities, and sightseeing at museums, historic sites, and other locations.

### 24 **3.18.2 Regulatory Setting**

25 The following text summarizes federal, State, and regional and local laws  
26 and regulations pertinent to evaluation of the proposed program's impacts  
27 on recreation.

#### 28 ***Federal***

29 As discussed above, nine federally owned and operated multipurpose  
30 reservoirs operate in the Sacramento and San Joaquin River basins (i.e.,  
31 within the Sacramento and San Joaquin Valley and foothills portion of the  
32 study area). For each of these reservoirs, the agency that owns or manages  
33 recreation at the reservoir has developed a master plan, resource  
34 management plan, or forest plan guiding recreation development,  
35 management, and use. At three of the reservoirs that are operated by  
36 Reclamation but surrounded by SRAs (Folsom and Millerton lakes and Los  
37 Banos Creek Reservoir), the relevant plans are joint State/federal  
38 documents. Two of the reservoirs owned by local water districts are also  
39 addressed in federal plans, because those reservoirs occupy mostly federal  
40 land. Table 3.18-5 lists the relevant federal plans and other regulatory  
41 documents that address each reservoir.

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1 **Table 3.18-5. Management Plans and Related Documents for Federal**  
2 **Reservoirs in the Sacramento and San Joaquin River Basins**

<b>Reservoir</b>	<b>Owner<sup>1</sup></b>	<b>Plan or Other Document</b>
<b>Federally Owned and Operated Reservoirs</b>		
Black Butte	USACE	<i>Black Butte Lake Master Plan (1977)</i>
Eastman	USACE	<i>Eastman Lake Master Plan</i>
Folsom	Reclamation	<i>Folsom Lake State Recreation Area &amp; Folsom Powerhouse State Historic Park Preliminary General Plan and Resource Management Plan (2007)</i>
Hensley	USACE	<i>Hensley Lake Master Plan</i>
Los Banos Creek	Reclamation	<i>San Luis State Recreation Area Resource Management Plan/Preliminary General Plan (2005)</i>
Millerton	Reclamation	<i>Millerton State Recreation Area Resource Management Plan/General Plan (2008)</i>
New Hogan	USACE	<i>New Hogan Lake Master Plan (1976)</i>
New Melones	Reclamation	<i>New Melones Lake Area Resource Management Plan (2010)</i>
Shasta	USFS <sup>2</sup>	<i>Shasta-Trinity National Forest Land and Resource Management Plan (1995)</i> <i>Shasta-Trinity National Recreation Area Management Guide (1996)</i>
<b>Locally Owned and Operated Reservoirs Addressed by Federal Plans</b>		
New Bullards Bar	YCWA/ USFS <sup>3</sup>	<i>Plumas National Forest Land and Resource Management Plan (1988)</i> <i>Tahoe National Forest Land and Resource Management Plan (1990)</i>
Indian Valley	YCFCWCD <sup>4</sup>	<i>Ukiah Resource Management Plan (2006)</i>

Source: Data compiled by AECOM in 2011

Notes:

<sup>1</sup> Except where noted, the agencies listed both own and operate the reservoirs listed and are fully responsible for managing reservoir recreation.

<sup>2</sup> At Shasta Lake, the lake surface and surrounding lands are administered by USFS, except lands needed to operate the Central Valley Project area in the immediate vicinity of the dam, which are retained by Reclamation. Reclamation also controls operation of Shasta Dam and reservoir pool levels.

<sup>3</sup> New Bullards Bar Reservoir is operated by YCWA but straddles the Tahoe and Plumas national forests, administered by USFS. Thus, recreation management responsibilities for the reservoir are shared by YCWA and Tahoe and Plumas national forests.

<sup>4</sup> Indian Valley Reservoir is owned and operated by YCFCWCD, but is located on State and federal lands. The reservoir is at the center of the U.S. Bureau of Land Management's Indian Valley Management Area, managed by the Ukiah Field Office.

Key:

LRMP = Land and Resource Management Plan

NRA = National Recreation Area

Reclamation = U.S. Department of the Interior, Bureau of Reclamation

RMP = Resource Management Plan

SRA = State Recreation Area

USACE = U.S. Army Corps of Engineers

USFS = U.S. Forest Service

YCFCWCD = Yolo County Flood Control and Water Conservation District

YCWA = Yuba County Water Agency

1 **U.S. Army Corps of Engineers (Black Butte, Eastman, and Hensley**  
2 **Lakes and New Hogan Reservoir)** Master plans have been prepared by  
3 USACE for Black Butte Lake, Eastman Lake, Hensley Lake, and New  
4 Hogan Reservoir (USACE 1976). The *New Hogan Lake Master Plan* is  
5 currently being updated (USACE 2010k). These master plans set forth  
6 policies, objectives, and programs for project development and use and  
7 promote the protection, conservation, and enhancement of natural, cultural,  
8 and human-made resources. The master plans are the basic documents that  
9 guide USACE in meeting the responsibilities it assumed under federal laws  
10 to preserve, conserve, restore, maintain, manage, and develop the project  
11 lands, waters, and associated resources (USACE 1996).

12 **U.S. Department of the Interior, Bureau of Reclamation (Folsom,**  
13 **Millerton, and New Melones Lakes and Los Banos Creek Reservoir)**  
14 The Reclamation Recreation Management Act of 1992 (Public Law 102-  
15 575, Title 28, Section 2805(s)(1)(A)) directs Reclamation to “provide for  
16 the development, use, conservation, enhancement, and management of  
17 resources on Reclamation lands.” In response to this law, Reclamation has  
18 developed several management plans addressing recreation and other  
19 resources.

20 Reclamation has recently updated the resource management plan (RMP)  
21 for New Melones Lake. The RMP establishes a conceptual plan detailing  
22 the management framework for the conservation, protection, enhancement,  
23 development, and use of the physical and biological resources in the New  
24 Melones Lake area. More specifically, the RMP provides for recreation  
25 management/development activities that are intended to ensure the  
26 continued quality of facilities and opportunities and be compatible with  
27 other environmental resources, and that are based on expressed public need  
28 (Reclamation 2010c).

29 Reclamation has entered into agreements with State Parks to develop,  
30 administer, and maintain the public lands around Folsom and Millerton  
31 lakes and Los Banos Creek Reservoir as part of the California State Parks  
32 system (i.e., Folsom and Millerton SRAs and part of San Luis SRA).  
33 Management of each of these reservoirs is guided by a joint RMP and  
34 general plan, developed cooperatively by Reclamation and State Parks with  
35 the primary purpose of managing each area consistently and as one entity,  
36 under both federal and State guidelines. The RMP (federal) and general  
37 plan (State) are both long-term planning documents designed to guide  
38 future management actions. Each of these plans has a planning horizon of  
39 approximately 20–25 years.

40 The joint plans establish management objectives, guidelines, and actions to  
41 meet the following goals: (a) protect the reservoirs’ water supply and water

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1 quality functions; (b) protect and enhance natural and cultural resources in  
2 the SRAs, consistent with federal law and Reclamation policies; and  
3 (c) provide recreational opportunities and facilities consistent with CVP  
4 purposes and State Parks and Reclamation policies. Management  
5 guidelines are followed and actions implemented by Reclamation either  
6 directly or through its recreation contract with State Parks.

7 In addition, the general plans are the primary management guidelines for  
8 defining a framework for resource stewardship, interpretation, facilities,  
9 visitor use, and services. General plans define an ultimate purpose, vision,  
10 and intent for management through goal statements, guidelines, and broad  
11 objectives. However, they stop short of defining specific objectives,  
12 methodologies, and designs for how to accomplish these goals.

13 The final RMP and general plan for Millerton Lake SRA was completed in  
14 April 2010 (Reclamation and State Parks 2010). The preliminary general  
15 plan/RMP for Folsom Lake SRA (and the adjoining Folsom Powerhouse  
16 State Historic Park) was completed in November 2007 (Reclamation and  
17 State Parks 2007). (The California State Park and Recreation Commission  
18 approved the general plan in October 2009. Reclamation will make a  
19 decision regarding the approval of the RMP and final environmental impact  
20 statement separately (State Parks 2011).) The San Luis Reservoir SRA  
21 RMP/preliminary general plan was completed in April 2005 (Reclamation  
22 and State Parks 2005). Each of the RMP/general plans also serve as a  
23 programmatic environmental impact statement/environmental impact  
24 report.

25 **U.S. Forest Service (Shasta Lake and New Bullards Bar Reservoir)** At  
26 Shasta Lake, the lake surface and surrounding lands are administered by  
27 USFS, except the lands needed to operate the CVP area in the immediate  
28 vicinity of the dam, which have been retained by Reclamation.  
29 Reclamation also controls operation of Shasta Dam and reservoir pool  
30 levels. Shasta Lake and the surrounding federal lands compose the Shasta  
31 Unit of the Shasta-Trinity National Recreation Area (STNRA), established  
32 by Congress in November 1965 to provide for public outdoor recreation  
33 use and enjoyment, among other purposes. The Shasta Unit is within the  
34 Shasta-Trinity National Forest. The act establishing the STNRA specified  
35 that it was to be administered in a manner coordinated with other purposes  
36 of the CVP.

37 USFS manages recreation within the STNRA's Shasta Unit under the  
38 authority of a 1987 master interagency agreement between Reclamation  
39 and USFS. Administration of the Shasta Unit is coordinated with the  
40 administration and purposes of the CVP through a memorandum of  
41 agreement between Reclamation and USFS established December 31,

1 1986. Management of Shasta Lake is guided by the 1995 *Shasta-Trinity*  
2 *National Forest Land and Resource Management Plan* (Shasta-Trinity  
3 LRMP) and the 1996 *Shasta-Trinity NRA Management Guide*.

4 The Shasta-Trinity LRMP (USFS 1995) guides management of Shasta-  
5 Trinity National Forest with the goals of integrating a mixture of  
6 management activities that protect forest resources and allow use, fulfill  
7 guiding legislation, and address local, regional, and national issues. The  
8 Shasta Unit is managed according to the current NRA management plan,  
9 which is incorporated as part of the Shasta-Trinity LRMP and is updated  
10 periodically. The Shasta-Trinity LRMP provides relevant recreation-related  
11 standards and guidelines to ensure that road, trail, and facility development  
12 and management activities are consistent with a Roaded Natural setting.

13 The *Shasta-Trinity National Recreation Area Management Guide* (USFS  
14 1996) integrates management of Shasta-Trinity NRA with, and implements  
15 the direction in, the Shasta-Trinity LRMP. The guide addresses key  
16 concerns related to recreation and other resource management issues, such  
17 as the types and amounts of commercial and USFS recreational facilities to  
18 be provided. It also describes desired future conditions for Shasta Lake.  
19 The guide then offers detailed recommendations for implementing the  
20 Shasta-Trinity LRMP and achieving desired future conditions, both for  
21 lake- and land-based recreation and for commercial recreation operations in  
22 the Shasta-Trinity NRA.

23 New Bullards Bar Reservoir is operated by Yuba County Water Agency  
24 (YCWA) but abuts both Tahoe and Plumas national forests, administered  
25 by USFS. Thus, recreation management responsibilities for the reservoir  
26 are shared by YCWA and Tahoe and Plumas national forests. *The Tahoe*  
27 *National Forest Land and Resource Management Plan* (Tahoe National  
28 Forest LRMP) (USFS 1990) addresses recreation management at the new  
29 Bullards Bar Reservoir, the eastern half of which is within the Bullards  
30 Management Area. The management-area direction within the Tahoe  
31 National Forest LRMP emphasizes maintaining and improving recreation  
32 sites around the reservoir, among other emphases. The *Plumas National*  
33 *Forest Land and Resource Management Plan* (USFS 1988) also addresses  
34 New Bullards Bar Reservoir, the western half of which is within the  
35 Challenge Management Area. However, this plan states that USFS will rely  
36 on Tahoe National Forest to administer the reservoir and its shoreline.

37 **U.S. Bureau of Land Management (Indian Valley Reservoir,**  
38 **Sacramento River Corridor)** Indian Valley Reservoir is owned and  
39 operated by YCFCWCD, but is located on State and federal lands. The  
40 reservoir is at the center of the BLM Indian Valley Management Area,  
41 managed by the Ukiah Field Office. The *Ukiah Resource Management*

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1 *Plan* (BLM 2006) provides management guidance for recreation common  
2 to all areas within the field office’s jurisdiction, as well as management  
3 zoning and associated allowable uses specific to the Indian Valley  
4 Management Area. BLM recreation management for the essentially  
5 undeveloped federal lands surrounding the reservoir focuses on providing  
6 trails and trailhead facilities, as well as a primitive hike-in camp. The  
7 jurisdictions of State and local government agencies and their regulations  
8 relevant to Indian Valley Reservoir are discussed in the “State” and  
9 “Regional and Local” sections below.

10 BLM administers most of the public lands along the Sacramento River  
11 between Shasta Dam and Keswick Dam, and additional lands between  
12 Keswick Dam and the city of Redding, as part of the Interlakes Special  
13 Recreation Management Area (SRMA), which is part of the Shasta  
14 Management Area. BLM also administers more than 17,000 acres of public  
15 lands on both sides of the river within the Sacramento River Management  
16 Area, which extends from just downstream from Redding farther  
17 downstream to the Tehama County/Glenn County boundary, about 25  
18 miles south of Red Bluff. Most of the BLM lands are concentrated above  
19 Red Bluff, between Jellys Ferry and Iron Canyon. A few hundred  
20 additional acres of BLM lands are at two island parcels downstream from  
21 Red Bluff. The proposed RMP for the Redding Resource Area identifies  
22 proposed management direction for these BLM-administered public lands  
23 (BLM 1992).

24 The 25 miles of the Sacramento River between Balls Ferry and Iron  
25 Canyon have been determined to be eligible for inclusion in the federal  
26 Wild and Scenic Rivers system, with recreational, scenic, and wild  
27 classifications for various segments. All public land within one-quarter  
28 mile of normal high water are managed to protect the outstandingly  
29 remarkable values and free-flowing character that led to their determination  
30 of eligibility. The RMP was followed by a plan for the Interlakes SRMA,  
31 which refined recreation actions for the Keswick Reservoir area of the  
32 Sacramento River corridor (among other areas of the SRMA) (BLM 1997).

33 **U.S. Coast Guard** Title 14, Title 33, and other portions of the Code of  
34 Federal Regulations (CFR) authorize the U.S. Coast Guard to conduct  
35 maritime law enforcement on the navigable waters of the United States.  
36 The Coast Guard is also responsible for conducting search-and-rescue  
37 operations, protecting the marine environment, and maintaining river aids  
38 to navigation, including recreational navigation. Specific to the Delta, the  
39 Inland Waterways Navigation Regulations (33 CFR 162) govern navigation  
40 by both commercial and noncommercial vessels on the San Joaquin River  
41 Deep Water Channel (between Suisun Bay and Stockton) and the

1 Sacramento Deep Water Ship Channel (between Suisun Bay and West  
2 Sacramento).

3 **State**

4 **California Department of Water Resources (Lake Oroville)** DWR-  
5 owned Lake Oroville is the centerpiece of the Feather River Project,  
6 regulated by the Federal Energy Regulatory Commission (FERC), which  
7 issues licenses to nonfederal agencies for the operation of hydropower  
8 projects. FERC requires licensees to provide for reasonable recreation  
9 access and development, consistent with the primary purposes of the  
10 project, and to develop a recreation plan. A multiyear relicensing process  
11 for the Feather River Project (FERC Project No. 2100), of which Lake  
12 Oroville is a major component, concluded in a settlement agreement in  
13 2006. DWR is currently awaiting issuance of a new license by FERC. Lake  
14 Oroville and the surrounding lands compose the majority of the Lake  
15 Oroville State Recreation Area (LOSRA), operated by State Parks. Several  
16 existing plans address recreation at Lake Oroville (Table 3.18-6).

17 **Table 3.18-6. Management Plans and Other Related Documents for**  
18 **State and Local Reservoirs in the Sacramento and San Joaquin River**  
19 **Basins**

<b>Reservoir</b>	<b>Owner</b>	<b>FERC Project</b>	<b>Current Plans and Other Regulatory Documents</b>
<b>State-Owned and Operated Reservoir</b>			
Oroville	DWR	Feather River Project (No. 2100)	<i>Proposed Amended Recreation Plan for Lake Oroville State Recreation Area (1993)</i> <i>Lake Oroville State Recreation Area Resource Management and General Development Plan (1973)</i> <i>Draft Settlement Agreement Recreation Management Plan (2006)</i> <sup>1</sup> <i>Draft Lake Oroville State Recreation Area General Plan (2004)</i> <sup>2</sup>
<b>Locally Owned and Operated Reservoirs</b>			
New Bullards Bar	YCWA	Yuba River Project (No. 2246)	<i>Revised Recreation Plan (1993)</i> Yuba County Ordinances No. 435, 541, 534, 1082, and 1315 (no date): multiple regulations <sup>3</sup>
Camanche and Pardee	EBMUD	Lower Mokelumne River Project (No. 2916)	<i>Amended Proposed Recreation Plan (1993)</i> <i>Mokelumne Watershed Master Plan (2008)</i>
Don Pedro	MID and TID	Don Pedro Project (No. 2299)	<i>Don Pedro Recreation Agency Rules and Regulations, as amended (2010)</i>

20

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1 **Table 3.18-6. Management Plans and Other Related Documents for**  
 2 **State and Local Reservoirs in the Sacramento and San Joaquin River**  
 3 **Basins (contd.)**

Reservoir	Owner	FERC Project	Current Plans and Other Regulatory Documents
Indian Valley	YCFCWCD	NA	Lake County Ordinance No. 1068: established 5- to 10-mph speed limit (depending on area of the reservoir) (1979) <sup>4</sup>
McClure and McSwain	MID	Merced River Project (No. 2179)	<i>Recreation Use Plan</i> (1992) <sup>5</sup> Mariposa County Ordinances 502 (1979), 599 (1983), and 747 (1989): multiple regulations <sup>6</sup>
Tulloch	OID and SSJID	Tri-Dam Project (No. 2067)	<i>Tulloch Reservoir Shoreline Management Plan</i> (2007) <sup>7</sup>

Source: Data compiled by AECOM in 2011

Notes:

<sup>1</sup> DWR plan to be implemented at issuance of a new license by FERC.

<sup>2</sup> State Parks general plan to be finalized in parallel with DWR recreation management plan.

<sup>3</sup> Ordinances contained in Title VIII, "Public Peace and Safety," Chapter 8.50, "Bullards Bar Recreation Area."

<sup>4</sup> Ordinance contained in Chapter 15, "Recreation," Article I, "Boats and Boating," Section 15-5, "Restricted Areas."

<sup>5</sup> A new recreation plan will be developed as part of ongoing project relicensing.

<sup>6</sup> Ordinances contained in Title 12, Chapter 12.16, "Public Use of Lake McClure and Lake McSwain Recreation Areas."

<sup>7</sup> Replaces the recreation plan that is normally required by FERC, because the shoreline is primarily private land.

Key:

DWR = California Department of Water Resources

EBMUD = East Bay Municipal Utility District

FERC = Federal Energy Regulatory Commission

LOSRA = Lake Oroville State Recreation Area

MID = Modesto Irrigation District

NA = not applicable

OID = Oakdale Irrigation District

SSJID = South San Joaquin Irrigation District

State Parks = California Department of Parks and Recreation

TID = Turlock Irrigation District

YCWA = Yuba County Water Agency

YCFCWCD = Flood Control and Water Conservation District

4 The relevant plan currently in effect for Lake Oroville is the FERC-  
 5 approved *Proposed Amended Recreation Plan for the Oroville Facilities*,  
 6 *FERC Project No. 2100* (DWR 1993). That recreation plan put forth  
 7 recommendations for facility expansion and modification, all of which  
 8 have since been implemented (DWR 2003). As part of FERC's relicensing  
 9 requirements, the licensee must state in its license application how it  
 10 intends to create, preserve, or enhance recreation opportunities at the  
 11 project site and in its vicinity (18 CFR 4.51). To meet this requirement,  
 12 DWR prepared the *Settlement Agreement Recreation Management Plan* in  
 13 2006 as an amended component of the license application it submitted to  
 14 FERC in 2005. This plan provides a vision of the desired future conditions  
 15 for recreation resources in the project area, establishes long-term goals and

1 objectives, and identifies recreation measures to be implemented over the  
2 term of the anticipated new license (DWR 2006). The recreation  
3 opportunities at Lake Oroville will be enhanced and expanded through  
4 implementation of the plan, which involves upgrading existing facilities,  
5 constructing new facilities, and monitoring recreation use.

6 **California Department of Parks and Recreation** State Parks manages  
7 the State park and recreation areas within the study area under Title 14 of  
8 the California Code of Regulations and the California Public Resources  
9 Code. Specific management direction and guidance is provided by the  
10 general plans for individual parks.

11 Concurrent with the FERC Project No. 2100 relicensing process described  
12 above, State Parks began developing an update to the *Lake Oroville State*  
13 *Recreation Area General Plan*, which would serve as a long-range  
14 management tool for LOSRA and provide input to DWR's relicensing  
15 process and recreation management plan. The public review draft of the  
16 *Lake Oroville State Recreation Area General Plan* was released in  
17 November 2004 (State Parks 2004). Presumably, this general plan will be  
18 finalized concurrently with the recreation management plan for Project No.  
19 2100, after the new license is issued. Until then, State Parks's existing  
20 general plan, adopted in 1973 and subsequently amended, continues to  
21 apply.

22 **California Department of Fish and Game** DFG manages ecological  
23 reserves and wildlife areas in the study area under Title 14 of the California  
24 Code of Regulations and the California Fish and Game Code. The  
25 regulations provide for various types of public uses in the wildlife areas.  
26 However, protection and enhancement of fish and wildlife habitat is the  
27 primary management purpose of the wildlife areas; recreation and public  
28 use is secondary to habitat preservation. Ecological reserves are established  
29 to protect rare, threatened, or endangered plants and wildlife and special  
30 habitat types; public entry may be restricted to protect wildlife or habitat.

31 DFG-administered wildlife areas on the Sacramento and San Joaquin rivers  
32 and adjacent to some reservoirs in the study area are designated by the  
33 California Fish and Game Code as "Type C" areas, which generally have  
34 no or minimal developed facilities. Hunters are not required to have a  
35 permit or a pass (other than a valid California hunting license and any  
36 required stamps) to use most Type C areas. General regulations for Type C  
37 areas apply to all wildlife areas in the study area; special regulations for  
38 each area may prohibit camping and establish other restrictions on hunting  
39 and other uses (DFG 2010t).

1 DFG interacts with other management agencies to ensure that hunting and  
2 fishing regulations are enforced on both public and private lands, and  
3 maintains authority over activities that could affect wildlife or wildlife  
4 habitat. DFG also administers the waterfowl hunting program on several  
5 federal wildlife refuges, including the Sacramento River NWR.

6 **Delta Protection Act and Land and Resource Management Plan for the**  
7 **Primary Zone of the Delta** The Delta Protection Act of 1992 (California  
8 Public Resources Code, Section 29700 et seq.) established the Delta  
9 Protection Commission (DPC) and required preparation of the *Land and*  
10 *Resource Management Plan for the Primary Zone of the Delta* (Delta  
11 LRMP). The Delta Protection Act includes the following sections related to  
12 recreation:

- 13 • *Section 29702* indicates that the State's basic goals for the Delta are to  
14 protect, maintain, and where possible, enhance and restore the overall  
15 quality of the Delta environment, including agriculture, wildlife habitat,  
16 and recreational activities.
- 17 • *Section 29705* states that the Delta's wildlife and wildlife habitats are  
18 valuable, unique, and irreplaceable resources of critical statewide  
19 significance and should be preserved and protected for the enjoyment  
20 of current and future generations.
- 21 • *Section 29710* declares that agricultural, recreational, and other uses of  
22 the Delta can best be protected by implementing projects that protect  
23 wildlife habitat before conflicts arise.
- 24 • *Section 29712* acknowledges that the Delta's waterways and marinas  
25 offer recreational opportunities of statewide and local significance and  
26 are a source of economic benefit to the region, and because of increased  
27 demand and usage, public safety requirements will increase.

28 The Delta LRMP, which was originally adopted by DPC in 1995, provides  
29 guidance to State agencies undertaking activities in the Primary Zone of the  
30 Delta. In February 2010, DPC adopted an updated Delta LRMP that  
31 contains a revised and expanded list of recreation policies promoting  
32 recreation goals similar to those set forth in the 1995 plan; however, the  
33 updated plan contains no new recreation recommendations. The recreation  
34 and access section of the Delta LRMP includes several recreation policies  
35 intended to encourage development of recreational facilities and  
36 improvements in recreation access and safety, while minimizing effects on  
37 other resources (DPC 2010).

1 **Boating Laws** California boating laws are contained in the California  
2 Harbors and Navigation Code, Vehicle Code, and Penal Code and the  
3 California Code of Regulations, among other statutes. California boating  
4 laws and regulations apply uniformly on all waters of the State. California  
5 law does not replace the regulations of the U.S. Coast Guard and other  
6 federal regulations in force on federally navigable waters, but is in general  
7 conformity with these laws (DBW 2010). In California, boating laws are  
8 enforced at the local level, by agencies such as the county sheriff's  
9 department and municipal marine patrol units. A program conducted by the  
10 California Department of Boating and Waterways (DBW) funds local law  
11 enforcement agencies and trains their personnel to adequately enforce  
12 boating law and ensure that California boating laws are enforced uniformly  
13 statewide (DBW 2007).

14 **Regional and Local**

15 Most of the locally owned reservoirs within the study area are hydropower  
16 projects regulated by FERC (Table 3.18-6). As a result, the primary  
17 recreation plan document for each reservoir is the FERC-required and  
18 approved recreation plan. All of these reservoirs are operated by water  
19 agencies that serve municipal and agricultural water supply needs.

20 **Yuba County Water Agency (New Bullards Bar Reservoir)** New  
21 Bullards Bar Reservoir is part of the Yuba River Project (FERC Project No.  
22 2246), operated by YCWA. Recreation at New Bullards Bar Reservoir is  
23 guided by the *Revised Recreation Plan*, approved by FERC in 1993  
24 (YCWA 1993). The plan analyzes recreation uses and capacities at the  
25 lake, and makes proposals for management and development of  
26 recreational facilities. Road and parking improvements and a boat ramp  
27 extension have been completed in recent years, in coordination with USFS  
28 and as directed by this plan. The Yuba River Project is currently engaged in  
29 relicensing, with the application for a new license due in 2014. This  
30 process will result in updated plans for recreation at New Bullards Bar  
31 Reservoir.

32 **East Bay Municipal Utility District (Camanche and Pardee Reservoirs)**  
33 Camanche and Pardee Reservoirs, operated by EBMUD, are both features  
34 of the Lower Mokelumne River Project (FERC Project No. 2916).  
35 EBMUD maintains and operates three recreation areas and manages  
36 recreation use on the two reservoirs in accordance with the *Amended*  
37 *Proposed Recreation Plan* filed with FERC in 1993 and approved by  
38 FERC in 1997 (EBMUD 2009).

39 EBMUD also prepared the *Mokelumne Watershed Master Plan*, which  
40 provides long-term policies and guidance for future use and management of  
41 the lands and waters owned by EBMUD within the Mokelumne River

1 watershed. A guiding principle of this master plan was to anticipate  
2 regional growth and recreational demand and the develop guidelines to  
3 respond to that growth; the plan identifies shoreline lands designated for  
4 future recreation area development (EBMUD 2008).

5 **Modesto Irrigation District and Turlock Irrigation District (Don Pedro**  
6 **Lake, Lake McClure)** Don Pedro Lake, the centerpiece of the Don Pedro  
7 Project (FERC Project No. 2299), is operated jointly by Modesto Irrigation  
8 District (MID) and Turlock Irrigation District (TID). Recreation at Don  
9 Pedro Lake is regulated by the Don Pedro Recreation Agency Rules and  
10 Regulations, adopted in 1999 and last amended in 2010 (Don Pedro  
11 Recreation Agency 2010b). Like the Yuba River Project, the Don Pedro  
12 Project is currently engaged in relicensing, with the application for a new  
13 license due in 2014 (MID and TID 2011). This process will result in  
14 updated plans for recreation at Don Pedro Lake; to date, however, FERC  
15 has not required a formal recreation plan for Don Pedro Lake (Devine,  
16 pers. comm., 2011).

17 Lake McClure, operated by MID, is a feature of the Merced River Project  
18 (FERC Project No. 2179). MID maintains and operates the four recreation  
19 areas on Lake McClure (and the one developed recreation area on Lake  
20 McSwain, the small regulating reservoir downstream) in accordance with  
21 an *Amended Recreation Plan* approved by FERC in 1992 (MID 2005).  
22 Like the Yuba River and Don Pedro projects, the Merced River Project is  
23 currently engaged in relicensing, with the application for a new license due  
24 in 2012 (MID 2008). This process will result in updated plans for  
25 recreation at Lake McClure (and Lake McSwain). Several Mariposa  
26 County ordinances establish regulations for vehicle use, lake use, and  
27 camping and picnicking at the reservoirs (see portions of Title 12, Chapter  
28 12.16 of the Mariposa County Code of Ordinances, regarding public use of  
29 Lake McClure and Lake McSwain recreation areas).

30 **Yolo County Flood Control and Water Conservation District (Indian**  
31 **Valley Reservoir)** Indian Valley Reservoir is not a hydropower project,  
32 and thus is not licensed or regulated by FERC. YCFCWCD owns the land  
33 near the dam and provides primitive camping, a boat ramp, and a small  
34 concession-operated store and marina at that location, under the authority  
35 of the YCFCWCD Board of Directors. However, the primary regulation  
36 controlling recreation activity on the reservoir is a Lake County ordinance  
37 that prohibits operation of motorized boats in excess of 10 mph on any part  
38 of Indian Valley Reservoir and in excess of 5 mph in portions of the  
39 reservoir (this county ordinance is discussed in more detail below under  
40 “Counties and Cities”). As discussed above in discussions of the federal  
41 and State regulatory setting, BLM and DFG own and collaboratively  
42 administer the majority of shoreline lands around Indian Valley Reservoir.

1 **Oakdale and South San Joaquin Irrigation Districts (Tulloch**  
2 **Reservoir)** Tulloch Reservoir, cooperatively operated by Oakdale and  
3 South San Joaquin irrigation districts as a component of the Tri-Dam  
4 Project (FERC Project No. 2067), is located mostly on private land. These  
5 private lands, which include one of the two recreation developments on the  
6 lake, are managed according to the general plans of Calaveras and  
7 Tuolumne counties. The other recreation development is on State land  
8 leased to Tuolumne County, which leases the land to a marina and  
9 campground concessionaire. A new license for the project was issued by  
10 FERC in 2006, with a requirement for an updated *Tulloch Reservoir*  
11 *Shoreline Management Plan* (SMP). The SMP, completed in 2007,  
12 provides a comprehensive policy for managing the reservoir's shoreline  
13 and water surface (SSJID and OID 2007). The plan contains criteria for  
14 development of commercial and private recreational facilities.

15 **Counties and Cities** The counties in the study area have developed  
16 general plans that address recreation, commonly within an open space and  
17 recreation element or some equivalent. These elements set forth goals and  
18 policies intended to preserve open space and provide outdoor recreation  
19 opportunities at the countywide level. They may also include elements that  
20 focus on community-level recreation services and facilities. Examples of  
21 such plans include the Open Space and Recreation Element of the *Shasta*  
22 *County General Plan* (Shasta County 2004) and the Open Space and  
23 Conservation Element of the *Tehama County General Plan* (Tehama  
24 County 2009).

25 Some counties in the study area have enacted ordinances that are intended  
26 to guide and control recreation activity at reservoirs. An example is the  
27 Yuba County Code of Ordinances, which contains several regulations  
28 pertaining to recreation at New Bullards Bar Reservoir. These regulations,  
29 included in Title VII, Chapter 8.50 (Ordinances No. 435, 541, 534, 1082,  
30 and 1315), specify which vehicle uses and camping, swimming, fishing,  
31 and boating behaviors and uses are allowable or prohibited. Another  
32 example is Lake County Ordinance No. 1068, the primary regulation  
33 controlling recreation activity on Indian Valley Reservoir. This ordinance  
34 prohibits operation of motorized boats in excess of 10 mph on any part of  
35 the reservoir and in excess of 5 mph in some portions of the reservoir (Lake  
36 County Code of Ordinances, Section 15-5). These restrictions have the  
37 effect of limiting use of Indian Valley Reservoir primarily to small fishing  
38 boats and nonpowered boats.

39 The cities in the study area have also prepared general plans, which  
40 typically include a recreation element, with goals and policies that address  
41 natural and scenic open areas, trail systems, and regional recreation  
42 opportunities, among other topics. An example relevant to the Sacramento

1 River corridor is the *City of Redding 2000–2020 General Plan*. Specifically  
2 recognizing the Sacramento River’s centrality to the city’s park system, this  
3 general plan established policies calling for a regional river parkway and  
4 trails along the river, including continued development of the Sacramento  
5 River Trail (City of Redding 2000). The *City of Redding Parks, Trails, and*  
6 *Open Space Master Plan* establishes additional goals as part of its Park  
7 Strategy and Trails and Bikeway Strategy, which focuses on development  
8 of parks and trails in the Sacramento River corridor (City of Redding  
9 2004). An additional example is the Recreation Element of the *City of*  
10 *Anderson General Plan*, which describes existing parks, park  
11 classifications and standards, park issues, and the city’s recreation trails  
12 network. An identified park need is to extend, enlarge, and protect  
13 Anderson River Park, which is located on the Sacramento River (City of  
14 Anderson 2007).

15 Should a place-based project be defined and pursued as part of the  
16 proposed program, and should the CEQA lead agency be subject to the  
17 authority of local jurisdictions, the applicable county and city policies and  
18 ordinances would be addressed in a project-level CEQA document as  
19 necessary.

### 20 **3.18.3 Analysis Methodology and Thresholds of** 21 **Significance**

22 This section provides a program-level evaluation of the direct and indirect  
23 effects on recreation of implementing management actions included in the  
24 proposed program, expressed as NTMAs and LTMAAs. The methods used  
25 to assess how different categories of NTMAs and LTMAAs could affect  
26 recreational facilities and uses are summarized in “Analysis Methodology”;  
27 thresholds for evaluating the significance of potential impacts are listed in  
28 “Thresholds of Significance.” Potential effects related to each significance  
29 threshold are discussed in Section 3.18.4, “Environmental Impacts and  
30 Mitigation Measures for NTMAs,” and Section 3.18.5, “Environmental  
31 Impacts, Mitigation Measures, and Mitigation Strategies for LTMAAs.”

#### 32 ***Analysis Methodology***

33 Impact evaluations were based on a review of the management actions  
34 proposed under the CVFPP, expressed as NTMAs and LTMAAs in this  
35 PEIR, to determine whether these actions could result in impacts on  
36 recreation. NTMAs and LTMAAs are described in more detail in Section  
37 2.4, “Proposed Management Activities.” The overall approach to analyzing  
38 the impacts of NTMAs and LTMAAs and providing mitigation is  
39 summarized below and described in detail in Section 3.1, “Approach to  
40 Environmental Analysis.” NTMAs are evaluated at a greater level of  
41 specificity than LTMAAs for the following reasons:

- 1 • NTMAs are better defined and less conceptual than the LTMAAs, are  
2 more likely to be implemented in the short term (within the first 5 years  
3 after approval of the CVFPP), and are generally less complex.
- 4 • NTMAs have more secure funding sources than LTMAAs.
- 5 • Environmental impacts of NTMAs can generally be evaluated more  
6 accurately than impacts of LTMAAs.

7 NTMAs can consist of any of the following types of activities:

- 8 • Improvement, remediation, repair, reconstruction, and operation and  
9 maintenance of existing facilities
- 10 • Construction, operation, and maintenance of small setback levees
- 11 • Purchase of easements and/or other interests in land
- 12 • Operational criteria changes to existing reservoirs that stay within  
13 existing storage allocations
- 14 • Implementation of the vegetation management strategy (VMS) included  
15 in the CVFPP
- 16 • Initiation of conservation easements included in the proposed program
- 17 • Implementation of various changes to DWR and Statewide policies that  
18 could result in alteration of the physical environment

19 All other types of CVFPP activities fall within the LTMA category.  
20 However, NTMA-type activities (e.g., remediation of existing levees)  
21 would continue to be implemented in the CVFPP study area into the longer  
22 term time frame of the LTMAAs.

23 NTMAAs are evaluated using a typical “impact/mitigation” approach. Where  
24 impact descriptions and mitigation measures identified for NTMAAs also  
25 apply to LTMAAs, they are also attributed to the LTMAAs, with modifications  
26 or expansions as needed. However, because many LTMAAs are more  
27 general and conceptual, additional impacts are described in a broader  
28 narrative format. Impacts of LTMAAs that are addressed in this narrative  
29 format are those considered too speculative for detailed evaluation,  
30 consistent with Section 15145 of the CEQA Guidelines. Following the  
31 narrative description of these additional LTMA impacts is a list of  
32 suggested mitigation strategies that could be employed, indicating the  
33 character and scope of mitigation actions that might be implemented if a

1 future project-specific CEQA analysis were to find these impacts to be  
2 significant.

3 Implementation of the proposed program would result in construction-  
4 related, operational, and maintenance-related impacts on recreation  
5 resources. Those activities that could result in effects on recreation that are  
6 inconsistent with recreation-related plans and policies for the public lands  
7 and waters are also evaluated in this section.

8 As mentioned previously, little to no effect on recreational facilities and  
9 activities would occur in the portion of the SoCal/coastal CVP/SWP  
10 service areas located outside of the Sacramento and San Joaquin Valley and  
11 foothills and the Sacramento and San Joaquin Valley watersheds because  
12 no program management activities are proposed in this portion of the study  
13 area; therefore, that geographic area is not discussed in detail in this  
14 section.

#### 15 ***Thresholds of Significance***

16 The following applicable thresholds of significance have been used to  
17 determine whether implementing the proposed program would result in a  
18 significant impact. These thresholds of significance are based on Appendix  
19 G of the CEQA Guidelines, as amended, and on reasonable expectations of  
20 substantial effects on recreational facilities, access, and activities that could  
21 occur on reservoirs, rivers, bypasses, and floodplains where proposed  
22 management activities could be implemented.

23 The thresholds of significance also account for the policy/regulatory  
24 environment of affected jurisdictions, as well as the regulatory performance  
25 standards of federal, State, regional, or local agencies relevant to the impact  
26 analysis. An impact on recreation is considered significant if  
27 implementation of the proposed program would do any of the following  
28 when compared against existing conditions:

- 29 • Increase the use of existing neighborhood and regional parks or other  
30 recreational facilities such that substantial physical deterioration of the  
31 facility would occur or be accelerated
- 32 • Result in substantial temporary restrictions to boat navigation or  
33 substantial delays to boat traffic passage on rivers
- 34 • Include recreational facilities or require the construction or expansion  
35 of recreational facilities that might have an adverse physical effect on  
36 the environment

1 The following are indications that a project may require the construction or  
2 expansion of recreational facilities:

- 3 • The permanent displacement of existing recreational facilities or  
4 substantial permanent decrease in access to existing recreational  
5 facilities or opportunities
- 6 • A substantial decrease in the quality of recreation in an area

7 ***Significance Thresholds Not Evaluated Further***

8 The proposed program does not include development of homes or other  
9 land uses that would generate demand for neighborhood and regional parks.  
10 Therefore, the proposed program would not be expected to increase the use  
11 of existing neighborhood and regional parks or other recreational facilities  
12 such that substantial physical deterioration of the facility would occur or be  
13 accelerated. This issue is not evaluated further.

14 **3.18.4 Environmental Impacts and Mitigation Measures**  
15 **for NTMAs**

16 This section describes the physical effects of NTMAs on recreation. For  
17 each impact discussion, the environmental effect is determined to be either  
18 less than significant, significant, potentially significant, or beneficial  
19 compared to existing conditions and relative to the thresholds of  
20 significance described above. These significance categories are described  
21 in more detail in Section 3.1, “Approach to Environmental Analysis.”

22 Feasible mitigation measures are identified to address impacts identified as  
23 significant or potentially significant. The specificity of the mitigation  
24 measures is consistent with the broad, program-level nature of the CVFPP  
25 and the parallel program-level analysis in this PEIR. Mitigation measures  
26 identified in this PEIR would be applied as appropriate to specific future  
27 projects implemented under the CVFPP. Actual implementation,  
28 monitoring, and reporting of the PEIR mitigation measures would be the  
29 responsibility of the project proponent for each site-specific project. For  
30 those projects not undertaken by, or otherwise subject to the jurisdiction of,  
31 DWR or the Central Valley Flood Protection Board (Board), the project  
32 proponent generally can and should implement all applicable and  
33 appropriate mitigation measures. The project proponent is the entity with  
34 primary responsibility for implementing specific future projects and may  
35 include DWR; the Board; reclamation districts; local flood control  
36 agencies; and other federal, State, or local agencies. Because various  
37 agencies may ultimately be responsible for implementing (or ensuring  
38 implementation of) mitigation measures identified in this PEIR, the text  
39 describing mitigation measures below does not refer directly to DWR but  
40 instead refers to the “project proponent.” This term is used to represent all

1 potential future entities responsible for implementing, or ensuring  
2 implementation of, mitigation measures.

3 **Impact REC-1 (NTMA): *Substantial Permanent Displacement of or***  
4 ***Decreased Access to Recreational Facilities Caused by Levee***  
5 ***Reconstruction, Improvements, or Setbacks***

6 Reconstructing and improving levees and constructing setback levees may  
7 displace existing recreational facilities or reduce existing access to  
8 recreation. For example, repairing, improving, or reconstructing levees  
9 could require removing boat ramps integrated into the level of the levee. If  
10 a project were to be completed on the levees of a bypass that is managed as  
11 a wildlife area and used for hunting and wildlife viewing, the work could  
12 displace the existing access roads, trails, or parking areas on or near the  
13 levees. Alternative facilities and access to the recreation opportunities  
14 within an affected area may not be available or may be inadequate for the  
15 level of demand. Therefore, these management activities may result in a  
16 substantial reduction in recreation opportunities that could require  
17 construction of replacement facilities elsewhere. This impact would be  
18 **potentially significant.**

19 **Mitigation Measure REC-1 (NTMA): *Replace Displaced Recreational***  
20 ***Facilities and Access***

21 Where recreational facilities or access must be displaced by levee  
22 reconstruction or improvements, facilities and access will be restored on  
23 site as part of the project design. If the facilities or access cannot be  
24 replaced at the project site, they will be replaced as close as possible to the  
25 original project site. Alternatively, existing facilities could be expanded to  
26 meet the demand for recreational opportunities lost with the removal of the  
27 facility at the project site, or to compensate for the loss of access resulting  
28 from project implementation. Where new facilities must be constructed or  
29 existing facilities are expanded, these actions will undergo necessary  
30 environmental review and mitigation will be implemented as appropriate.  
31 Please also see Impact Rec-6 (NTMA) below regarding environmental  
32 effects of new facilities.

33 Implementing this mitigation measure would reduce Impact REC-1  
34 (NTMA) to a **less-than-significant** level.

35 **Impact REC-2 (NTMA): *Temporary Decrease in Opportunities for***  
36 ***Recreation or Access to Recreational Facilities during Construction of***  
37 ***Conveyance Related Management Activities***

1 Activities such as using temporary construction staging areas for equipment  
2 and worker parking and establishing borrow sites for fill material may  
3 conflict with the ability of recreationists to use or access recreational  
4 facilities or engage in recreation activities during the construction period.  
5 For example, creating a staging area or borrow pit near a popular wildlife  
6 viewing site or a pond used by hunters may make those areas unattractive  
7 or unusable for wildlife viewing or hunting.

8 Establishing new off-road haul routes for construction materials near  
9 recreation sites may similarly conflict with use of or access to recreational  
10 facilities. Noise, dust, wildlife disturbance, and visual effects associated  
11 with these construction activities may all adversely affect recreation  
12 activities.

13 If public roads that currently provide recreation access would be used for  
14 construction access and haul routes, a conflict with recreation access may  
15 result. The level of conflict would increase if construction traffic would be  
16 substantial and few other routes would be available to the recreating public.

17 The timing of construction activities is an important determinant of  
18 potential effects on recreation. The spring and fall months are more often  
19 the peak-use periods for bypasses and similar areas used primarily for  
20 hunting and wildlife viewing, and for some rivers used for floating and  
21 fishing.

22 In general, the potential effects of construction on recreation would be of  
23 limited duration (i.e., lasting from a few weeks to a few months at any one  
24 site). The effects would also be localized, with similar unaffected  
25 recreational facilities and opportunities available in the region. There are  
26 foreseeable circumstances under which existing access to a recreation  
27 opportunity may be limited in an area and construction could restrict access  
28 to those limited facilities or resources for a construction season or more.  
29 (For example, a boat ramp could require removal and replacement as part  
30 of a levee project.) However, these circumstances would be rare and  
31 potential impacts would be temporary and localized. Therefore, this impact  
32 would be **less than significant**. No mitigation is required.

33 **Mitigation Measure REC-2 (NTMA): *Minimize Construction Activities***  
34 ***and Staging near Recreational Facilities and Time Such Activities to***  
35 ***Avoid the High-Use Recreation Season***

36 Where feasible, the project proponent will avoid placing construction  
37 staging areas or borrow areas near recreational facilities or popular use  
38 areas, and will avoid using key recreation access routes as access and haul  
39 routes for construction. Where avoiding facilities is not possible,

1 construction will be scheduled to minimize temporary closure or access  
2 restrictions or other temporary adverse effects on recreation facilities.  
3 Numerous factors must be considered in the siting and timing of  
4 construction activities and selection of access and haul routes; for some  
5 projects, however, opportunities may exist to select from among several  
6 options those that would have the smallest effect on recreation.

7 Where feasible, the project proponent will schedule construction activities  
8 to avoid the high-use recreation season for the potentially affected areas.  
9 This frequently will not be possible for major repairs or upgrades because  
10 those major construction activities typically occur during the dry season  
11 (May through October). However, in some cases it may be possible to  
12 focus construction activity during the months when recreational activity  
13 would be least affected. In addition, the project proponent will avoid  
14 scheduling construction activities on weekend days, where feasible, to help  
15 minimize effects on recreational activities.

16 Although some temporary limitations on access to recreational facilities  
17 would likely still occur with implementation of this mitigation measure, the  
18 limitations would not be substantial. Thus, implementing this mitigation  
19 measure would further reduce Impact REC-2 (NTMA) and it would remain  
20 **less than significant**.

21 **Impact REC-3 (NTMA): *Reduced Functionality of Recreational***  
22 ***Facilities and Decreased Opportunities for Recreation at Reservoirs as a***  
23 ***Result of Changes in Reservoir Operational Criteria***

24 Changing the operations of existing reservoirs may alter the amount and  
25 timing of the annual reservoir drawdown, which may increase or reduce  
26 access to recreational facilities and opportunities for recreation.  
27 Specifically, increasing reservoir drawdown may affect the functionality  
28 and capacity of recreational facilities such as boat ramps or marinas, and  
29 may reduce the length of time that these facilities are available to the public  
30 each year.

31 Generally, recreational facilities at reservoirs, such as boat ramps and  
32 marinas, are fully functional only within a certain range of pool elevations  
33 and above a certain minimum pool elevation. Lowering pool levels may  
34 reduce the capacity of boat ramps and marinas. Similarly, opportunities for  
35 recreation such as shoreline swimming and fishing are more readily  
36 available when pool elevations are within a particular range deemed most  
37 acceptable by visitors. Typically, lower pool elevations make using the  
38 shoreline for recreation less desirable because of the increasing distance of  
39 the water from shade trees, parking, restrooms, and other developed  
40 facilities. Adverse effects would occur when the program's proposed

1 management activities would reduce the frequency and length of time that  
2 reservoir levels are above these minimum levels or within desirable ranges.

3 Changing reservoir operations could also affect the amount of shoreline  
4 and surface area of the reservoir available for recreation. Increased  
5 drawdown may entirely dewater portions of a reservoir or cause areas  
6 where water is insufficiently deep to become inaccessible to boats. It also  
7 exposes more of the bare inundation zone, reducing the visual quality of the  
8 recreational setting. Increased or more rapid drawdown may thus displace  
9 recreation in some areas where dewatering occurs and shoreline uses are  
10 adversely affected. As a result, the remaining sites for shoreline recreation  
11 and the surface of the reservoir may become increasingly congested and  
12 crowded.

13 Conversely, reduced drawdown may enhance recreational access and use  
14 by maximizing the amount of reservoir shoreline and surface area available  
15 for recreation, maximizing boat access to shallow bays and coves, and  
16 minimizing the adverse visual effects of the exposed inundation zone. In  
17 this way, change in reservoir operations may have beneficial effects on  
18 recreation.

19 The proposed alterations to reservoir operations under the NTMAs (e.g.,  
20 enhanced coordination with other reservoirs) would result in only minimal  
21 changes to reservoir water levels. They could also result in beneficial  
22 effects under some circumstances because drawdown could be reduced as  
23 creation or maintenance of flood capacity is more accurately managed.  
24 Therefore, this impact would be **less than significant**. No mitigation is  
25 required.

26 **Impact REC-4 (NTMA): *Boat Navigation Hazards and Passage***  
27 ***Restrictions for Recreational Boat Traffic Resulting from Construction***  
28 ***Activities Conducted from Barges in Waterways***

29 Reconstructing or improving levees may affect boat passage and waterway  
30 navigability if some construction work (such as transferring materials and  
31 equipment) would be conducted from barges in a waterway used by  
32 recreational boats. Moored construction barges may present hazards to  
33 recreational boat traffic because of the obstructions they would create and  
34 the potential for changes in currents near the barges. Construction  
35 equipment may occupy a substantial portion of a waterway's width,  
36 restricting the portion of the waterway available to recreational boat traffic.  
37 Boats may also be required to slow in the vicinity of moored barges if no-  
38 wake zones are established to protect the barges, thus limiting the area to  
39 uses such as water-skiing and wakeboarding. Adverse effects on boat

1 traffic movement, including substantial delays, may occur in areas with  
2 heavy boat traffic.

3 In general, the potential effects of levee construction on recreational boat  
4 navigation would be of limited duration (i.e., lasting from a few weeks to a  
5 few months at any one site) and would be localized, with boat navigation  
6 unaffected on the great majority of the waterway. However, there are  
7 foreseeable (although rare) circumstances under which recreational boating  
8 traffic might be substantially restricted—such as if barges were moored for  
9 an extended period on a relatively narrow waterway frequently used by  
10 recreational boaters. Such circumstances would cause a substantial  
11 decrease in the quality of recreation in that area. Therefore, this impact  
12 would be **potentially significant**.

13 **Mitigation Measure REC-4 (NTMA): *Maintain Safe Boat Passage and***  
14 ***Provide Appropriate Safety Measures to Minimize Navigation Hazards***  
15 ***Associated with Construction Equipment and Activity in Waterways***

16 The project proponent will establish construction exclusion zones around  
17 barges and other equipment in waterways to keep boats from approaching  
18 too closely. The project proponent will follow all standard U.S. Coast  
19 Guard practices for navigation safety and communications, and will ensure  
20 that barges and other construction equipment are lit at night to avoid  
21 potential boat collisions. The objectives of this mitigation measure are to  
22 maintain safe boat passage in affected waterways to the maximum extent  
23 possible, and to minimize boat traffic delays, particularly in high-traffic  
24 areas. Stopping boat traffic may be necessary for brief periods (for  
25 example, while material or equipment is being transferred to or from a  
26 barge); however, the expectation is that with appropriate caution, boat  
27 traffic will be able to navigate past construction sites at most times. Boats  
28 may be required to reduce speeds in the vicinity of the barge for safe  
29 passage. The period of time when boat traffic must be restricted will be  
30 minimized to the extent feasible.

31 Implementing this mitigation measure would reduce Impact REC-4  
32 (NTMA) to a **less-than-significant** level.

33 **Impact REC-5 (NTMA): *Decrease in Quality of Terrestrial and Water-***  
34 ***Based Recreation as a Result of Removal of Woody Vegetation from***  
35 ***Levees***

36 In certain cases, implementing aspects of the VMS may cause woody  
37 vegetation, including shade trees, to be eliminated from levees within the  
38 identified vegetation management zone (i.e., 20 feet below the waterside  
39 levee crown to 15 feet beyond the landside levee toe). Other vegetation

1 may be removed if an engineering evaluation determines that it poses an  
2 unacceptable risk to levee integrity, or if required for a levee repair or  
3 replacement project. Shade trees may also be lost to age or disease over  
4 time and not replaced through implementation of the life-cycle  
5 management (LCM) element of the VMS. (For more information on the  
6 VMS, see Section 2.4.3, “Other Near-Term Management Activities,” and  
7 Appendix E, “2012 Central Valley Flood Protection Plan Conservation  
8 Framework”).

9 Where woody vegetation would be removed from levees and adjacent levee  
10 toes, the area’s attractiveness for terrestrial recreational activities such as  
11 bank fishing and wildlife viewing could decline for several reasons: the  
12 amount of shade would decrease, habitat would be lost for birds and other  
13 wildlife whose presence generally enhances recreation, and visual quality  
14 would decrease. Removing woody vegetation from levees would also  
15 reduce the attractiveness of the adjacent waterways for some boaters,  
16 because the loss of this vegetation would reduce the scenic quality of the  
17 riparian corridor.

18 However, because of the biological importance of waterside vegetation  
19 (particularly shaded riverine aquatic habitat) along riparian corridors, it is  
20 anticipated that the vast majority of trees and other woody vegetation on  
21 levees would be retained, particularly on the lower waterside levee slope,  
22 with implementation of the VMS. On preexisting levees, vegetation below  
23 the top 20 feet of the waterside levee slope would remain in place unless an  
24 engineering evaluation determines that it would pose an unacceptable risk  
25 to levee integrity. Newly constructed levees and setback levees would be  
26 designed and constructed to accommodate trees and other woody  
27 vegetation. In many locations where levees are repaired, waterside trees  
28 and other woody vegetation would remain in place, particularly on the  
29 lower waterside slope and channel bank, because of environmental  
30 benefits. If removed to accommodate the repair, waterside woody  
31 vegetation generally would be restored to the repaired levee outside the  
32 vegetation management zone. Where vegetation could not be replaced on  
33 site, off-site in-kind mitigation would likely be required.

34 Also, implementing the CVFPP Conservation Strategy would result in  
35 increased distribution and quality of riparian habitat in some areas. If  
36 recreation activities were to continue in these areas, then the recreation  
37 opportunities would presumably be enhanced.

38 Overall, although changes in vegetation conditions resulting from the  
39 proposed program could adversely affect the quality of some recreation  
40 activities in some areas, these effects would not be substantial because  
41 lower levee slopes and waterside vegetation would be unaffected in a vast

1 majority of cases. Where this vegetation of most importance to recreation  
2 quality would be affected, on-site mitigation to restore waterside woody  
3 vegetation for habitat purposes would minimize the potential effects on  
4 recreation. In addition, adverse effects of removing vegetation in some  
5 areas would be offset, in many cases, by planting of riparian vegetation  
6 elsewhere. This impact would be **less than significant**. No mitigation is  
7 required.

8 **Impact REC-6 (NTMA): *Environmental Effects Associated with***  
9 ***Construction of Recreational Facilities and Access to Replace Facilities***  
10 ***Displaced by Management Activities***

11 As described above in Impact REC-1 (NTMA) and Mitigation Measure  
12 REC-1 (NTMA), some NTMAs may permanently displace recreational  
13 facilities and access on or near levees, which would need to be replaced  
14 with new facilities and access constructed in the same general area.  
15 Constructing recreational facilities could have adverse effects on the  
16 environment. The facilities needing replacement would vary in type (e.g.,  
17 boat ramps, picnic areas, parking areas, campgrounds, roadways) and  
18 capacity, and thus would have varied site footprints. However, the  
19 potentially affected recreational facilities are typically small with limited  
20 infrastructure (in contrast to the often large and intensively developed  
21 recreational facilities on the reservoirs in the study area). Given the low  
22 number of recreational facilities in the potentially affected area, it is likely  
23 that only limited new facilities would be required.

24 Constructing each new recreational facility would require ground  
25 disturbance, and infrastructure such as utilities and sanitary facilities may  
26 be included. These projects would be subject to the applicable federal,  
27 State, and local statutes, including those described in the various  
28 “Regulatory Setting” sections of this PEIR, and would undergo  
29 environmental review. Because these projects must undergo an  
30 environmental review and permitting process, any new facilities most  
31 likely would be constructed in areas comparable to the existing locations in  
32 terms of habitat sensitivity, and they would not be located in  
33 environmentally sensitive areas.

34 Because the environmental effects of constructing replacement facilities are  
35 unlikely to be substantial and would be mitigated as part of the permitting  
36 process for those facilities, this impact would be **less than significant**. No  
37 mitigation is required.

1       **3.18.5 Environmental Impacts, Mitigation Measures, and**  
2       **Mitigation Strategies for LTMA**

3 This section describes the physical effects of LTMA on recreation.  
4 LTMA include a continuation of activities described as part of the  
5 NTMA and all other actions included in the proposed program, and  
6 consist of all of the following types of activities:

- 7 • Widening floodways (through setback levees and/or purchase of  
8 easements)
- 9 • Constructing weirs and bypasses
- 10 • Constructing new levees
- 11 • Changing operation of existing reservoirs
- 12 • Achieving protection of urban areas from a flood event with 0.5 percent  
13 risk of occurrence
- 14 • Changing policies, guidance, standards, and institutional structures
- 15 • Implementing additional and ongoing conservation elements

16 Actions included in the LTMA are described in more detail in Section 2.4,  
17 “Proposed Management Activities.”

18 Impacts and mitigation measures identified above for NTMA would also  
19 be applicable to many of the LTMA and are identified below. The NTMA  
20 impact discussions and mitigation measures are modified or expanded  
21 where appropriate to address conditions unique to LTMA. The same  
22 approach to future implementation of mitigation measures described above  
23 for NTMA and the use of the term “project proponent” to identify the  
24 entity responsible for implementing mitigation measures also apply to  
25 LTMA.

26 In addition, in some cases, LTMA could have impacts and require  
27 mitigation measures not previously addressed in the discussion of NTMA,  
28 and sufficient information is available for these LTMA to use the same  
29 impact/mitigation discussion approach used for the NTMA. In these cases,  
30 additional impacts and mitigation measures specific to LTMA are  
31 provided. However, as described previously and in Section 3.1.2, “Analysis  
32 Methodology,” because many LTMA are more general and conceptual,  
33 additional impacts of those LTMA are also described below in a broader  
34 narrative format, along with a list of suggested mitigation strategies that  
35 could be applied to these impacts. This more general analysis is provided in

1 the subsection titled “LTMA Impact Discussions and Mitigation  
2 Strategies.”

3 **Impact REC-1 (LTMA): *Substantial Permanent Displacement of or***  
4 ***Decreased Access to Recreational Facilities Caused by Levee***  
5 ***Construction or Reconstruction***

6 This impact would be similar to Impact REC-1 (NTMA), as described  
7 above. With LTMA projects of a potentially larger scale and  
8 footprint (e.g., new flood bypasses), the potential for activities to conflict  
9 with existing recreational facilities is greater. This impact would be  
10 **potentially significant.**

11 **Mitigation Measure REC-1 (LTMA): *Implement Mitigation Measure***  
12 ***REC-1 (NTMA)***

13 Implementing this mitigation measure would reduce Impact REC-1  
14 (LTMA) to a **less-than-significant** level.

15 **Impact REC-2 (LTMA): *Temporary Decrease in Opportunities for***  
16 ***Recreation or Access to Recreational Facilities during Construction of***  
17 ***Conveyance Improvements***

18 This impact would be similar to Impact REC-2 (NTMA), as described  
19 above. In addition, improving conveyance with new levees, setback levees,  
20 or weirs and bypasses may generate additional conflicts with the ability of  
21 recreationists to use or access recreational facilities or engage in recreation  
22 activities during the construction period. However, potential impacts are  
23 expected to be temporary and localized.

24 This impact would be **less than significant**. No mitigation is required.

25 **Mitigation Measure REC-2 (LTMA): *Implement Mitigation Measure***  
26 ***REC-2 (NTMA)***

27 Implementing this mitigation measure would further reduce Impact REC-2  
28 (LTMA) and it would remain **less than significant**.

29 **Impact REC-3 (LTMA): *Reduced Functionality of Recreational***  
30 ***Facilities and Decreased Opportunities for Recreation at Reservoirs as a***  
31 ***Result of Changes in Reservoir Operational Criteria***

32 This impact would be similar to Impact REC-3 (NTMA), described above.  
33 Although changes in the operations of existing reservoirs may occur at a  
34 larger number of facilities under the LTMA, changes in operations would

1 remain minimal at each reservoir. Under the LTMA, this impact would be  
2 **less than significant**. No mitigation is required.

3 **Impact REC-4 (LTMA): *Boat Navigation Hazards and Passage***  
4 ***Restrictions for Recreational Boat Traffic Resulting from Construction***  
5 ***Activities Conducted from Barges in Waterways***

6 This impact would be similar to Impact REC-4 (NTMA), described above.  
7 Widening floodways, constructing weirs and bypasses, or constructing new  
8 levees to develop floodplain storage or improve flood conveyance could  
9 affect boat passage, recreational boating activities, and waterway  
10 navigability during construction. Such effects may occur if construction  
11 activities would be conducted from barges in a waterway used by  
12 recreational boats.

13 This impact would be **potentially significant**.

14 **Mitigation Measure REC-4 (LTMA): *Implement Mitigation Measure***  
15 ***REC-4 (NTMA)***

16 Implementing this mitigation measure would reduce Impact REC-4  
17 (LTMA) to a **less-than-significant** level.

18 **Impact REC-5 (LTMA): *Substantial Decrease in Quality of Terrestrial***  
19 ***and Water-Based Recreation as a Result of Removal of Woody***  
20 ***Vegetation from Levees***

21 This impact would be similar to Impact REC-5 (NTMA). Removing woody  
22 vegetation from levees would reduce the area's attractiveness for terrestrial  
23 recreational activities such as bank fishing and wildlife viewing for several  
24 reasons: the amount of shade would decrease, habitat would be lost for  
25 birds and other wildlife whose presence generally enhances recreation, and  
26 visual quality would decrease. Although removal of woody vegetation  
27 could occur over a larger area under the LTMA, the same program  
28 requirements identified for NTMA for the replacement of riparian  
29 vegetation would apply. This impact would be **less than significant**. No  
30 mitigation is required.

31 **Impact REC-6 (LTMA): *Environmental Effects Associated with***  
32 ***Construction of Recreational Facilities and Access to Replace Facilities***  
33 ***Displaced by Management Activities***

34 This impact would be similar to Impact REC-6 (NTMA), described  
35 previously. The LTMA include larger projects over a greater geographic  
36 area with greater potential to result in the need to construct replacement  
37 recreational facilities. However, for the same reasons described above for

1 the NTMAs, this impact would be **less than significant**. No mitigation is  
2 required.

3 **Impact REC-7 (LTMA): *Substantial Displacement of or Decreased***  
4 ***Access to Recreational Facilities Caused by Conveyance-Related and***  
5 ***Other Management Activities***

6 Some of the conveyance-related and other management activities included  
7 in the LTMAs may permanently displace existing recreational facilities or  
8 reduce existing access to recreation. For example, widening floodways or  
9 creating new flood bypasses may displace recreational facilities or access.  
10 To cite a typical potential case, widening a bypass managed as a wildlife  
11 area and used for hunting and wildlife viewing may displace existing  
12 access roads, parking areas, and trails. Constructing setback levees, new  
13 levees, and floodwalls may similarly displace existing recreational  
14 facilities.

15 These management activities may also have beneficial effects that may  
16 compensate in part for displacement of recreational facilities and access.  
17 For example, widening floodways and constructing new bypasses could  
18 increase recreational opportunities by providing more space for recreational  
19 uses that typically occur in existing bypasses, such as hunting and wildlife  
20 viewing. However, mitigation for displacement of facilities and access may  
21 still be necessary, even in cases where there are also beneficial effects.

22 This impact would be **potentially significant**.

23 **Mitigation Measure REC-7 (LTMA): *Replace Displaced Recreational***  
24 ***Facilities***

25 This mitigation measure would be similar to Measure REC-1 (NTMA) as  
26 described above, but mitigation would be required at a broader range of  
27 recreational facilities and sites, beyond those associated with levees.  
28 Specifically, mitigation would be required at reservoirs, within bypasses,  
29 and at areas outside the present flood control system (for example, where a  
30 new bypass is constructed).

31 Implementing this mitigation measure would reduce Impact REC-7  
32 (LTMA) to a **less-than-significant** level.

33 ***LTMA Impact Discussions and Mitigation Strategies***

34 Because of the more general and conceptual nature of many LTMAs, a  
35 great deal of uncertainty exists about how some LTMAs may be  
36 implemented and what environmental effects might result from their  
37 implementation. This uncertainty is to be expected for a broad, multiyear,  
38 and in some areas, conceptual program such as the CVFPP. Although these

1 uncertainties exist, sufficient information exists to at least disclose  
2 additional potential impacts of LTMA's besides those discussed in the  
3 impact/mitigation pairings provided above. The following additional  
4 LTMA impacts are described in a broad narrative format; because of the  
5 uncertainty surrounding these impacts, no determination regarding their  
6 significance is provided. Consistent with Section 15145 of the CEQA  
7 Guidelines, these impacts are too speculative for evaluation beyond the  
8 narrative disclosure provided here.

9 Future project-specific CEQA evaluations for individual LTMA's will be  
10 used to determine the potential for the impacts described below to occur,  
11 determine their level of significance, and identify project-specific  
12 mitigation measures for significant impacts. Examples of potential  
13 mitigation strategies are provided after the following narrative impact  
14 discussions to disclose the nature and extent of mitigation actions that  
15 might be necessary to address these impacts.

16 For more information on this approach to evaluating LTMA impacts and  
17 providing mitigation strategies, see Section 3.1.2, "Analysis Methodology."

18 Impact discussions are divided among the geographic areas in the program  
19 study area (i.e., Extended SPA, Sacramento and San Joaquin Valley  
20 watersheds, and SoCal/coastal CVP/SWP service areas). They are further  
21 subdivided according to the type of action (i.e., construction of conveyance  
22 facilities, facilities operations and maintenance from conveyance actions,  
23 and other management actions).

#### 24 **LTMA Impact Discussions**

##### 25 *Extended Systemwide Planning Area*

26 *Construction of Conveyance Facilities* Construction-related impacts of  
27 LTMA's on recreational resources are thoroughly described and evaluated  
28 above in the analysis of NTMA's and LTMA's. A general narrative  
29 description of additional construction-related LTMA impacts in the  
30 Extended SPA is not required.

31 *Facilities Operations and Maintenance from Conveyance Actions* The  
32 LTMA's include activities that could alter downstream flows more  
33 substantially than the NTMA's. These activities could include reoperating a  
34 larger number of existing water storage facilities, and operating new flood  
35 bypasses and other large-scale conveyance facilities.

36 In addition to the effects described above (Impacts REC-1 through REC-7  
37 (LTMA)), it is reasonable to assume that effects on river recreation  
38 activities could result from increased or decreased river flows. The

1 locations, timing, and magnitude of the many potential management  
2 activities that could be implemented as part of the proposed program are  
3 not yet known, and various activities can have additive or opposing effects  
4 on river flows. Therefore, the impacts of these activities on recreation are  
5 necessarily speculative. For example, altering reservoir storage (via  
6 changes to operational criteria) and increasing floodplain “transitory”  
7 storage capacity by widening floodways or constructing new bypasses may  
8 reduce river flows on certain river reaches at certain times. Alternatively,  
9 changing operational criteria for reservoirs may increase river flows on  
10 certain river reaches at certain times. Reducing flows may make boating  
11 more difficult or hazardous in shallow river reaches, or may make wading  
12 in a river easier for anglers. Increasing flows may also make boating more  
13 hazardous on certain river reaches, or may make wading in a river to fish  
14 more difficult above certain flow thresholds. Changing flows may also  
15 affect riverside recreational facilities such as boat ramps and marinas, and  
16 may affect fisheries and thus fishing success.

17 *Other Management Actions* Impacts on recreational resources  
18 resulting from “other management actions” included in LTMAAs are  
19 thoroughly described and evaluated above in the analysis of NTMAAs and  
20 LTMAAs. A general narrative description of additional LTMAA impacts  
21 related to other management actions in the Extended SPA is not required.

#### 22 *Sacramento and San Joaquin Valley Watersheds*

23 *Construction of Conveyance Facilities* Construction-related impacts  
24 on recreational resources resulting from LTMAAs are thoroughly described  
25 and evaluated above in the analysis of NTMAAs and LTMAAs. A more  
26 general narrative description of additional construction-related LTMAA  
27 impacts in the Sacramento and San Joaquin Valley watersheds is not  
28 required.

29 *Facilities Operations and Maintenance from Conveyance Actions*  
30 Direct and indirect impacts on recreation in the Sacramento and San  
31 Joaquin Valley watersheds could result from conveyance-related  
32 management actions implemented in the Extended SPA.

33 These impacts are necessarily somewhat speculative, given that the  
34 management actions would be implemented generally downstream rather  
35 than in the watershed portion of the study area. However, some potential  
36 impacts can be reasonably anticipated. For example, if conveyance-related  
37 improvements in the Extended SPA were to allow a greater volume of  
38 flood flows to be conveyed, greater flood flows may be released from  
39 reservoirs within the watershed, which may benefit or adversely affect  
40 boating on the river reaches below those reservoirs. For example, greater  
41 flows may enhance whitewater conditions on rivers used for rafting and

1 kayaking. At the same time, nonwhitewater boating and angling may be  
2 adversely affected by substantially increased flows. Generally, flows above  
3 a certain minimum threshold are desired for a quality whitewater  
4 experience, while flows below a certain maximum threshold are desired for  
5 nonwhitewater boating, angling, and other nonwhitewater activities. With  
6 regard to a particular river or river reach, these desired flow ranges may  
7 overlap to some degree, but nonwhitewater boating activities generally  
8 require lower flows.

9 *Other Management Actions* Impacts on recreational resources  
10 resulting from “other management actions” included in LTMAAs are  
11 thoroughly described and evaluated above in the analysis of NTMAAs and  
12 LTMAAs. A general narrative description of additional LTMA impacts  
13 related to other management actions in the Sacramento and San Joaquin  
14 Valley watersheds is not required.

15 *SoCal/Coastal CVP/SWP Service Areas*

16 *Construction of Conveyance Facilities* None of the program’s  
17 management actions would be implemented in the SoCal/coastal  
18 CVP/SWP service areas. Therefore, no construction-related impacts on  
19 recreational resources resulting from LTMAAs would occur.

20 *Facilities Operations and Maintenance from Storage or Conveyance*  
21 *Actions* None of the program’s storage or conveyance management  
22 actions would be implemented in the SoCal/coastal CVP/SWP service  
23 areas. In addition, implementation of the proposed program would not  
24 result in long-term reductions in water deliveries to the SoCal/coastal  
25 CVP/SWP service areas (see Section 2.6, “No Near- or Long-Term  
26 Reduction in Water or Renewable Electricity Deliveries”). Given these  
27 conditions, little to no effect on recreational facilities and activities would  
28 occur in the SoCal/coastal CVP/SWP service areas.

29 **LTMA Mitigation Strategies** The following mitigation strategies are  
30 examples of approaches that may be considered to address significant  
31 impacts via the mechanisms described above. These mitigation strategies  
32 may be considered, as applicable, during project-level evaluation of  
33 specific LTMAAs. For more information on LTMA mitigation strategies, see  
34 Section 3.1.2, “Analysis Methodology.”

35 Specific mitigation measures identified above in the NTMA and LTMA  
36 impact/mitigation pairings are not identified again in the mitigation  
37 strategies. It is assumed that mitigation measures described in the  
38 impact/mitigation pairings above would already be required, as applicable,  
39 as part of the project-level evaluation of specific LTMAAs. Not all  
40 mitigation strategies will apply to all LTMAAs; the applicability of

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1 mitigation strategies will vary based on the location, timing, and nature of  
2 each management action. In addition, some mitigation strategies on their  
3 own may not constitute sufficient mitigation under CEQA but must be  
4 coupled with other mitigation strategies to fully address the impacts of  
5 LTMA.s.

6 The following potential mitigation strategies have been identified for  
7 recreation:

- 8 • Modify existing river recreational facilities that are subject to  
9 substantial adverse effects from downstream changes in flows to  
10 maintain facility usability.
- 11 • Where modifying facilities is not feasible, expand existing river  
12 recreational facilities or construct new facilities to replace facilities that  
13 are subject to substantial adverse effects from downstream changes in  
14 flows.
- 15 • Enhance recreation access on unaffected rivers or river reaches in the  
16 vicinity of river reaches that are subject to substantial adverse effects.