

3. Affected Environment

3.8 RECREATION

Lakes and rivers have always been a primary focus for outdoor recreation activities in California. Recreational opportunities in the Central Valley have been shaped by the construction of large reservoirs and the alteration of major rivers in addition to the opportunities provided at natural water bodies, streams, and rivers. Many outdoor recreation activities are water dependent or water enhanced. Such activities include boating, fishing, swimming, camping, picnicking, hunting, and wildlife observation. Recreation facilities, such as beaches, boat ramps, trails, restrooms, access roads, picnic areas, and camping facilities, add to the quality of the recreation experience.

The way that a reservoir is operated and water levels are managed directly affects the quality and economic value of recreational activities. Changes in a reservoir's water levels, due to drought or excessive demands, can reduce recreational opportunities and the associated benefits. Receding water levels and reduced water surface area make boat ramps less accessible and leave recreation facilities farther from the shorelines. However, decreased recreation benefits at drawn-down reservoirs may be offset to some extent by increases in river recreation benefits downstream from the affected reservoirs. Whether the reservoir is operated as a water supply or a hydroelectric generating facility can affect recreational opportunities. Hydroelectric generating facilities can have varying impacts on both reservoir and river recreation depending on whether the operation is constant or subject to peaking.

Rivers also provide recreation opportunities, such as boating, fishing, swimming, and white-water sports. Many rivers are unimpaired by water impoundment facilities and provide seasonal recreation opportunities. Other streams, with flows controlled by reservoir releases, offer opportunities to enhance downstream flows that can benefit recreation values. Streams that would run only intermittently, for example, can have year-round flows following reservoir construction and operation. This kind of conversion can develop new fisheries, add to recreational-area attractiveness, and enhance wildlife habitat.

Many wildlife refuges in California have benefitted from the existence of imported water. Seasonal wetland habitat at refuges and at private hunting clubs is integral to the maintenance of waterfowl populations along the Pacific Flyway. Historically, recreation values associated with such wildlife have focused primarily on hunting, but more recently, bird watching has become increasingly popular as a recreation opportunity.

Descriptions of the environmental setting for recreation opportunities at both reservoirs and rivers follow. The primary region that would be affected by the proposed project and other alternative is the San Joaquin River Basin; the Sacramento-San Joaquin Delta could be affected indirectly.

3. Affected Environment

3.8.1 San Joaquin River Basin

Reservoirs with recreation use in the project area and vicinity are described in Table 3.8-1 and in the paragraphs below.

Table 3.8-1: RESERVOIRS WITH RECREATION USE

	New Melones Reservoir (CVP)	New Don Pedro Reservoir (MID/TID)	Lake McClure (Merced ID)	San Luis Reservoir (CVP/SWP)
Maximum Storage (AF)	2,420,000	2,030,000	1,024,600	2,039,000
Maximum Pool Elevation (Ft above msl)	1,088	830	867	544
Maximum Surface Area (Acres)	3,600	13,000	7,100	12,700

3.8.1.1 Reservoirs

Recreation opportunities have been shaped substantially by the construction of reservoirs on the San Joaquin River and its tributaries. The reservoirs include San Luis Reservoir, New Melones Reservoir, Lake McClure, and New Don Pedro Reservoir.

San Luis Reservoir

The San Luis Reservoir State Recreation Area (SRA), owned by Reclamation and operated by the Department of Parks and Recreation (DPR), covers approximately 12,700 surface acres when full. San Luis Reservoir has approximately 65 miles of shoreline and a maximum pool elevation of 544 feet above msl (SWCRB 1997). The capacity of San Luis Reservoir is 2,039,000 acre-feet. It is not directly affected by the proposed project but is described here because it is located in the vicinity of the project area and provides recreation opportunities.

Water dependent opportunities at San Luis Reservoir include boating, waterskiing, and fishing. Boat access is provided in the southeastern portion of the reservoir at the Basalt area by a two-lane concrete boat ramp and boarding dock, and at the northwestern Dinosaur Point use area with a four-lane concrete boat ramp and boarding dock. There are no designated swimming areas at the reservoir. Water enhanced opportunities include picnicking, camping, hunting, and trail use activities. There are no designated lakeside beach areas at the reservoir.

3. Affected Environment

Both boat and shore fishing occur at San Luis Reservoir with striped bass the primary game species. Fishing is usually of high quality from February through summer, with striped bass fishing best during winter and spring. San Luis Reservoir also supports black bass and catfish. Migratory waterfowl hunting is permitted on most of the reservoir approximately 300 feet from established reservoir and recreation facilities. Hunting for deer and wild pig is also allowed on the northwestern reservoir shoreline.

Use at San Luis Reservoir was an estimated 210,000 12-hour recreation visitor days (RVDs) in 1992. Recreation activities and number of users varies with the season, with approximately 77 percent of annual use between April and September. Most visitors come from the Bay/Delta region, followed by the San Joaquin Valley (USBR 1997h).

Recreation use is optimized at San Luis Reservoir at a maximum pool elevation of 544 feet above msl. Use of the Basalt area boat ramp becomes inconvenient at approximately 340 feet above msl but can be used on a limited basis. The boat ramp at Dinosaur Point can be used at the minimum reservoir pool but is difficult to access below 360 feet above msl. Swimming is not affected by the water level fluctuations because there are no designated swimming areas.

New Melones Reservoir

New Melones Reservoir is owned and operated by Reclamation and covers approximately 3,600 surface acres when full, has approximately 105 miles of shoreline, and a maximum pool elevation of 1,088 feet above msl (SWRCB 1997). The capacity of New Melones Reservoir is 2,420,000 acre-feet.

Water dependent opportunities at New Melones Reservoir include boating, waterskiing, swimming, and fishing. Boat access is provided on the north and east shores of the reservoir. There are three boat ramps (seven-lane) used for high, medium, and low reservoir levels at Glory Hole recreation area in the northwestern portion of the reservoir. In addition to the ramps, there is a concession-operated marina with berthing slips and three courtesy docks. The Tuttle town recreation area on the eastern shore features three seven-lane boat ramps used for variable reservoir levels and three courtesy docks. The Mark Twain, Parrot's Ferry, Camp Nine, and Old Town recreation areas are undeveloped and offer minimal facilities.

A developed beach area provides swimming opportunities at the Glory Hole recreation area. The designated beach and swimming area at Angels Arm recreation area is closed. Boating and waterskiing are popular throughout the main reservoir area.

Water-enhanced activities include picnicking and camping. Camping facilities are available at the Glory Hole and Tuttle town recreation areas.

3. Affected Environment

Use at New Melones Reservoir totaled approximately 498,000 12-hour RVDs in 1992. The majority of the use is related to water-dependent activities, such as boating, waterskiing, and fishing. Camping is the most popular water-enhanced activity. Annual recreation use at New Melones Reservoir occurs mainly from April to late September. An estimated 95 percent of the visitors come from local counties in the San Joaquin Valley (USBR 1997h).

The optimal reservoir level for recreation use is at an elevation of approximately 950 to 980 feet above msl. All of the boat ramps except one at Glory Hole are inoperable at reservoir levels of 950 feet above msl. There is one boat ramp at Glory Hole which was designed to access the reservoir at elevations as low as 860 feet above msl. The marina at Glory Hole can be moved at different lake levels, but the marina closes when the elevation reaches 880 feet above msl. Other ramps at Mark Twain, Parrot's Ferry, and Old Town undeveloped recreation areas are old roads that can be used on a limited basis to an elevation of 850 feet above msl.

New Don Pedro Reservoir

New Don Pedro Reservoir is owned by MID and TID. Recreational activities are managed by the Lake Don Pedro Recreation Agency (USBR 1997h). New Don Pedro Reservoir covers approximately 13,000 surface acres when full, has approximately 160 miles of shoreline, and a maximum pool elevation of 830 feet above msl (SWRCB 1997). The capacity of New Don Pedro Reservoir is 2,030,000 acre-feet (TID 1998).

Water dependent opportunities at New Don Pedro Reservoir include boating, swimming, waterskiing, jet skiing, windsurfing, sailing, houseboating, fishing, and boat-in camping. There are boat launch facilities at Fleming Meadows recreation area on the southern shoreline, Blue Oaks recreation area on the southwestern shoreline, and Moccasin Point recreation area on the northeastern arm of Moccasin Bay. In addition, there are two full service marinas with docks, boat slips, mooring areas and provisions located at Fleming Meadows and Moccasin Point recreation areas. In addition, there are 257 privately-owned house boats and 20 rental house boats based on New Don Pedro Reservoir under permit (Cornell 1997).

Boating and waterskiing occur throughout the reservoir. Swimming occurs mainly at the Fleming Meadows swimming lagoon, which is a 2-acre pool separated from the main reservoir. The lagoon has a maximum depth of 6 feet, picnic facilities, and a sandy beach area. Shore and boat fishing is mainly for bass, trout, salmon, crappie, bluegill, and catfish.

Water-enhanced activities include picnicking, camping, and sightseeing. There are a total of 550 camping sites at Fleming Meadows, Blue Oaks, and Moccasin Point recreation areas.

3. Affected Environment

Use at New Don Pedro Reservoir totaled approximately 280,000 RVDs in 1992. The majority of the use is related to water-dependent activities, such as boating, waterskiing, and fishing. Camping is the most popular water-enhanced activity. Recreation use occurs mainly from May through September (84 percent) with some use from November to February (4 percent). The majority of visitors (38 percent) come from Santa Clara, Alameda, and San Joaquin counties, with other visitors (27 percent) coming locally from Stanislaus and Tuolumne counties (USBR 1997h).

Historical data shows a strong correlation between water levels measured in feet above msl and recreation use measured in visitor days at New Don Pedro Reservoir. The peak recreation period during the year is from May through August, and June 30 was selected as representative for the season for correlating trends. For the period 1975 through 1996, the mean reservoir elevation on June 30 annually was approximately 780 feet above msl. When the reservoir level exceeds the mean level, recreation use in visitor days exceeds the average for the 1975-1996 period, which is 368,900 RVDs (Cornell 1997).

The maximum reservoir level for recreation use is at an elevation of 830 feet above msl. The Fleming Meadows boat ramp ceases operation when the elevation drops to 600 feet above msl. Between 710 and 600 feet above msl, five ramps become unusable. The Moccasin Point boat ramp cannot be used below an elevation of 722 feet above msl, and the Blue Oaks ramp cannot be used at 726 feet above msl. The Fleming Meadows and Moccasin Point marina operations are limited at 600 and 630 feet above msl, respectively (SWRCB 1997).

In addition to losing boat ramp operations at lower reservoir levels, other changes occur which affect recreation use. Lower levels reduce the aesthetic appeal of the reservoir surroundings, may cause conflicts between water users as surface area of the reservoir declines, reduce the shoreline accessibility due to steeper banks, and expose hazards. An economic consideration related to recreation use of New Don Pedro Reservoir is the increased cost of maintenance of the hazard warning devices with lowered reservoir levels (Cornell 1997).

Lake McClure

Lake McClure is owned and operated by the Merced ID. Lake McClure covers approximately 7,100 surface acres when full, has approximately 80 miles of shoreline, and a maximum pool elevation of 867 feet above msl (SWRCB 1997). The capacity of Lake McClure is 1,024,600 acre-feet (<http://www.mercedid.org/irrifac.htm>).

Water dependent opportunities at Lake McClure include boating, sailing, waterskiing, jet skiing, swimming, and fishing. Boat access is provided at ramps located around the shoreline. There are three boat launch lanes at McClure Point, two boat ramps with a total of five lanes at Barrett Cove, a two-lane boat ramp at Horseshoe Bend, and a one-lane boat ramp at Bagby recreation area.

3. Affected Environment

There are swimming lagoons at McClure Point, Barrett Cove, and Horseshoe Bend and marinas at McClure Point and Barrett Cove. Rainbow trout fishing occurs either on the shoreline or in boats and is enhanced by year-round fish planting. Bass fishing has also improved since the Florida largemouth bass was introduced. There are also black bass and bluegill in Lake McClure.

Water-enhanced activities include picnicking and camping. Camping facilities are available at McClure Point, Barrett Cove, Horseshoe Bend, and Bagby recreation areas.

Use at Lake McClure totaled approximately 606,000 12-hour RVDs in 1992. Day use activities accounted for most of the visitor days. Annual recreation use occurs largely between May and September. Most of the visitors originate from the following counties, listed from highest to least attendance: Santa Clara, Stanislaus, San Joaquin, Merced, Mariposa, Sacramento, Fresno, Madera, Tuolumne, and Calaveras (USBR 1997h).

Lake McClure boat ramps cease operation between 590 and 793 feet above msl. The ramp at Bagby is the first to close when the reservoir reaches an elevation of 793 feet above msl, followed by Horseshoe Bend at 758 feet above msl, McClure Point at 650 feet above msl, southern Barrett Cove ramp at 630 feet above msl, and northern Barrett Cove and Piney Creek, both at 590 feet above msl (SWRCB 1997).

3.8.1.2 Rivers

Construction and operation of the dams and reservoirs have substantially affected instream recreation uses below these structures. Sport fisheries in rivers below major lakes and reservoirs have declined. The rivers in the San Joaquin River Basin include the San Joaquin, Merced, Tuolumne, and Stanislaus rivers.

San Joaquin River

The San Joaquin River runs more than 250 miles from Millerton Lake to the Sacramento-San Joaquin Delta (Fults 1998, personal communication). Although there are no major public recreation features along this stretch, public access is available at several road and highway crossings. The river borders the San Luis National Wildlife Refuge and crosses the Fremont Ford State Recreation Area in Merced County. Stanislaus County recreation facilities include the Las Palmas fishing access site, Laird County Park, and numerous public access points. Recreation facilities in San Joaquin County include Durham Ferry SRA, Mossdale Landing County Park, Dos Reis County Park, and numerous public road crossings. Stockton has three recreational facilities on the Stockton Deep Water Channel, and the Buckley Cove Marina is located on the San Joaquin River east of Stockton.

3. Affected Environment

Summer flows in the San Joaquin River below Millerton Lake average from 480 cfs in critically dry years to over 2,600 cfs in wet years (using Reclamation's model). Water dependent activities include fishing and boating. Fish species in this stretch of the San Joaquin River include catfish and smallmouth bass. Water enhanced activities include a minor amount of picnicking.

Recreation use estimates for the entire lower San Joaquin River are not available from a single source because the use is dispersed across 250 miles and five counties. Based on information from recreation sites on the river, boating and fishing activities on the river are estimated to total 157,000 6-hour RVDs. Most of the use is assumed to come from the local counties (USBR 1997h).

Stanislaus River

The Stanislaus River runs 60 miles from New Melones Reservoir to its confluence with the San Joaquin River and crosses primarily private agricultural and grazing lands in Tuolumne, Stanislaus, and San Joaquin counties. There are a number of developed and undeveloped public parks along the lower Stanislaus River, including Caswell Memorial State Park, located approximately three miles upstream from the Stanislaus/San Joaquin confluence. There is also public access to the river at numerous road crossings. Below Goodwin Dam is access for a whitewater boating run that is rated advanced for the four-mile stretch from the Dam to Knights Ferry (SWRCB 1997).

Summer flows in the Stanislaus River below New Melones Reservoir average from 400 cfs in critically dry years to over 800 cfs in wet years (using Reclamation's model). Water dependent activities include fishing, swimming, and whitewater boating. Fish species in this stretch of the Stanislaus River include catfish, crappie, largemouth bass, and smallmouth bass. Water enhanced activities include picnicking and camping.

In 1992 the Corps of Engineers estimated that the use of the lower Stanislaus River below Goodwin Dam at 122,000 6-hour RVDs. Use of the recreational facilities on or near the Stanislaus River has increased substantially since 1980 because of increased park development along the river. Most of the parks attract local residents, but Caswell Memorial State Park is capable of attracting nonlocal visitors (USBR 1997h).

Tuolumne River

The Tuolumne River, from New Don Pedro Reservoir to its confluence with the San Joaquin River, is approximately 52 miles long. This reach traverses mainly private open space and grazing lands, City of Modesto property, and several public parks. Major recreational facilities include the La Grange County Regional Park on Yosemite Boulevard near La Grange, Turlock Lake SRA located on Lake Road between Turlock Lake and the river, Fox Grove Regional County Park near the Greer

3. Affected Environment

Road/Albers Road crossing, two golf courses adjacent to the river near the SR 99 crossing, and the Shiloh fishing access site at the Shiloh Road crossing upstream of the confluence (SWRCB 1997).

Summer flows in the Tuolumne River below New Don Pedro Reservoir average from 120 cfs in critically dry years to over 1,300 cfs in wet years (using Reclamation's model). Water dependent activities include fishing, swimming, and rafting. The primary game fish in this stretch of the Tuolumne River is the chinook salmon. Water enhanced activities include picnicking and camping. Water-related recreation activities and wildlife viewing accounted for an estimated 150,000 6-hour RVDs in 1992. Most of the use is assumed to come from Stanislaus County (USBR 1997h).

Merced River

The reach of the Merced River below McSwain Dam is 50 miles long to its confluence with the San Joaquin River and crosses private agricultural and grazing land in Merced County. Major public recreation facilities include Henderson County Park on Merced Falls Road east of Snelling, McConnell SRA northeast of Livingston on SR 99, Hagaman County Park at the SR 165 river crossing, and George J. Hatfield SRA on Kelley Road near the San Joaquin River confluence. The county parks are primarily day-use facilities, while the State recreation areas provide both day-use and camping units (SWRCB 1997).

Summer flows in the Merced River below McSwain Dam average from 130 cfs in critically dry years to over 900 cfs in wet years (using Reclamation's model). Water dependent activities include some canoeing and rafting in the lower portion of the river. There is no swimming or other water contact activities allowed at either county park because there are no lifeguards. No boat ramps are provided at the county parks because the river is shallow due to the upstream diversions. Fish species in this stretch of the Merced River include catfish and smallmouth bass. Water enhanced activities include picnicking, camping, and softball.

Because recreation is dispersed along the 50-mile stretch of the Merced River, no formal recreation surveys have been conducted. Based on information from recreation sites on the river, water-related recreation activity on the river is estimated to total 73,000 6-hour RVDs. Most of the use is assumed to come from Merced County (USBR 1997h).

3.8.1.3 Conveyance Facilities

Fishing is popular along many of the canals in the area. Public access is provided on the California Aqueduct and the Delta-Mendota Canal.

3. Affected Environment

California Aqueduct

The California Aqueduct is owned and operated by DWR. Fishing access is provided along much of the California Aqueduct. Most of the portion of the aqueduct that passes through the San Joaquin River region has walk-in access for fishing. There are 12 fishing access sites which provide parking and toilet facilities. In addition, there are 170 miles of bikeways along the aqueduct.

Several fish species exist in the aqueduct, including striped bass, largemouth bass, catfish, crappie, green sunfish, bluegill, and starry flounder. An estimated 61,000 visitor days were reported at the aqueduct for fishing purposes in 1991.

Delta-Mendota Canal

The Delta-Mendota Canal is owned by Reclamation and operated by the Fresno and Stanislaus County Parks and Recreation Department. Fishing access to the Delta-Mendota Canal is provided at Delta-Mendota Canal Site 2A in Stanislaus County and Delta-Mendota Canal Site 5 in Fresno County. There are parking areas and restrooms at both the Canal Site 2A and Canal Site 5, but there are no picnicking or camping facilities.

Fishing access to the Delta-Mendota Canal is limited to the developed access points. Fish species include both striped bass and catfish. An estimated 23,000 visitor days were recorded for the two fishing sites in 1992. The more popular site was Canal Site 5, which accounted for approximately 99 percent of the use in 1991. Most of the visitors to the canal originate in the local area (USBR 1997h).

3.8.1.4 Wildlife Refuges

Wildlife refuges in the San Joaquin River region include the San Luis and Merced National Wildlife Refuges (owned and operated by the U.S. Fish and Wildlife Service) and Los Banos Wildlife Management Area (owned and operated by the California Department of Fish and Game). Most recreation activities associated with wildlife refuges is associated with the presence of waterfowl and upland game birds.

All activities associated with wildlife refuges are water-enhanced. Activities include hunting, hiking, and wildlife observation. Hunting of ducks, geese, and pheasants are permitted between October in January in portions of each refuge. Fishing is permitted at San Luis National Wildlife Refuge only.

Both national wildlife refuges provide self-guided tours, and camping is permitted at the staging areas during hunting season. Camping is not permitted at Los Banos Wildlife Management Area.

3. Affected Environment

In 1992, combined recreation use at the refuges totaled approximately 56,000 5-hour RVDs. The most popular activities have been nonconsumptive uses, such as wildlife viewing. An estimated 15 percent of the visitors to the refuges originate in the local area.

3.8.1.5 Private Hunting Clubs

There are approximately 176 private hunting clubs in the San Joaquin River Basin. These private clubs provide opportunities for hunting ducks, geese, and pheasants and encompass approximately 96,800 acres. Waterfowl hunting activity was estimated at 241,000 hunter days in 1992.

3.8.2 Sacramento-San Joaquin Delta

The Delta environment has been extensively altered over the past 125 years by construction of levees, land reclamation, and development. The Delta remains, however, a valuable and unique recreational asset due to the natural and aesthetic values still present. Waterfowl and wildlife are still abundant, sport fishing is still popular, and the vegetation and beaches lining the channels and islands are still attractive (SWRCB 1995b).

Water dependent activities in the Delta include motor boating, fishing, swimming, waterskiing, and sailing with motor boating and fishing leading in popularity. There are approximately 20 public and more than 100 commercial recreational facilities in the Delta that provide rentals, services, camping guest docks, fuel, supplies, and food. Sport fishing in the Delta occurs year-round and may take place on private vessels or from shore. Popular sport fishing species include striped bass, white sturgeon, salmon, American shad, catfish, and largemouth bass (SWRCB 1997).

Recent trends in the striped bass fishery indicate a substantial decline in harvest rates between 1983 and 1990. Although exact sport catch data for white sturgeon are not available, the estimated catch rate for sturgeon has increased 40 percent over the last two decades. Fishing for sturgeon has become more popular, especially with the decline in other game fish, such as striped bass. Few salmon are harvested in the sport fishery in the Bay/Delta Region. Angler effort was estimated at 0.8 percent of total sport fishing effort for the period between July 1990 and June 1991 when an estimated 34 fish were caught. The estimated effort was 4.9 percent of total sport fishing effort for the period between July 1991 and June 1992 when an estimated 1,860 salmon were caught. A comparison of recent catch data and data collected in the 1970s suggests that the American shad sport fishery in the Bay/Delta Region has remained stable (USBR 1997h).

Water enhanced activities in the Delta include overnight camping, picnicking, photography, bicycling, hunting, and wildlife observation. There are numerous private waterfowl and pheasant hunting clubs in the Delta region.

3. Affected Environment

Overall recreation use in the Bay/Delta region has increased substantially since 1963 when it was estimated at approximately 2.4 million visitor days. By 1987, annual recreation use had reached an estimated 7 million visitor days (USBR 1997h). Visitor use in the Delta was estimated by DWR to be 12 million visitor days in 1993 (SWRCB 1997). The most important activity in the region is boating (not including fishing), followed by fishing, relaxing, sightseeing, and camping. An estimated 77 percent of recreationists in the Bay/Delta region originate from the local area (USBR 1997h).

3. Affected Environment

3.8 RECREATION..... 114

3.8.1 San Joaquin River Basin 115

3.8.1.1 Reservoirs 115

3.8.1.2 Rivers 119

3.8.1.3 Conveyance Facilities 121

3.8.1.4 Wildlife Refuges 122

3.8.1.5 Private Hunting Clubs 123

3.8.2 Sacramento-San Joaquin Delta 123