

Long-Term Operation – Final Environmental Impact Statement

Chapter 16 – Recreation

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Chapter 16 Recreation

This chapter is based on the background information and technical analysis documented in Appendix S, *Recreation Technical Appendix*, which includes additional information on recreation conditions and technical analysis of the effects of each alternative.

16.1 Affected Environment

16.1.1 Trinity River

The Trinity River Region includes Trinity Reservoir, the Lewiston Reservoir, and the area along the Trinity River connecting the two. Many recreational opportunities occur in the Trinity River Region, including motorized and non-motorized boating, camping, and day use activities such as wildlife viewing, hiking, swimming, picnicking, and fishing.

16.1.2 Sacramento River

Recreational opportunities in the Sacramento Valley upstream of the Sacramento-San Joaquin Delta (Delta) that are influenced by the long-term operation of CVP and SWP occur at Shasta Reservoir; Keswick Reservoir; Whiskeytown Reservoir; Sacramento River, between Keswick Dam and the Delta; Folsom Reservoir and Lake Natoma; American River, between Nimbus Dam and the Sacramento River; and wildlife refuges that use CVP water supplies. Boating, waterskiing, other water sports, and fishing occur, as well as camping, hiking and wildlife viewing some locations.

16.1.3 Clear Creek

The initial reaches of Clear Creek downstream of Whiskeytown Dam are located within the Whiskeytown-Shasta-Trinity NRA. The remaining portions of Clear Creek flow to the Sacramento River through lands owned by BLM and private owners. All these reaches are located within Shasta County and the easternmost reaches are within Redding. Hiking, picnicking, kayaking, swimming, fishing, and gold panning occur along lower Clear Creek (Sacramento River Watershed Project 2023a). The Clear Creek Greenway includes 10 trails and eight picnic areas (Bureau of Land Management n.d.). Hunting is allowed in the Swasey and Muletown Road areas of the Clear Creek Greenway. Fishing opportunities include steelhead, Chinook salmon, carp, suckers, bluegill, bass, and Sacramento pikeminnow (Sacramento River Watershed Project 2023b).

16.1.4 Stanislaus River

New Melones Reservoir and Tulloch Reservoir on the Stanislaus River and the lower Stanislaus River are located within areas in the Stanislaus River watershed that could be affected by changes in CVP operations. Water-related recreational activities include boating, waterskiing, camping, picnicking, wildlife viewing, spelunking, rock climbing, gold panning, and fishing (Bureau of Reclamation 2010).

16.1.5 San Joaquin River

Recreational opportunities along the San Joaquin River are located at Millerton Reservoir, which include boating, sailing, waterskiing, jet skiing, swimming, tournament and recreational fishing, camping, and picnicking. Along portions of the San Joaquin River from Friant Dam to the Delta, water-related recreational activities include boating, canoeing, kayaking, whitewater rafting, and fishing (Bureau of Reclamation and California Department of Water Resources 2011). Camping, picnicking, and hunting are also available. Access and facilities for these activities are available at several locations along and adjacent to the San Joaquin River. Between Friant Dam and the confluence with the Merced River, beginner-level whitewater rafting occurs between Friant Dam and Skaggs Bridge Park at State Route 145 (American Whitewater 2023). Refuges in the San Joaquin Valley that rely on CVP water supplies offer activities including wildlife viewing and hunting. Hunting opportunities include waterfowl and pheasant. Wildlife viewing opportunities include waterfowl, shorebirds, upland birds and songbirds, birds of prey, and aquatic and terrestrial mammals (Bureau of Reclamation and California Department of Water Resources 2011).

16.1.6 Bay-Delta Operations

The Delta is located at the terminus of the Sacramento River and the San Joaquin River. The primary recreational activities in the Delta are related to boating, wildlife viewing, hunting, and fishing. Recreational opportunities in the Bay-Delta region vary depending on CVP and SWP water facility operations (Delta Protection Commission 2012a). Public recreation facilities are limited within the Delta. Most recreational opportunities are provided by private enterprises, including marinas, restaurants, hunting venues, and wineries and farm visits.

16.1.7 Nearshore Pacific Ocean on the California Coast

Recreational fishing along California's coast is included in the analysis because changes in CVP and SWP operations could affect fish populations. Chinook salmon, coho salmon (*Oncorhynchus kisutch*), and steelhead are the primary recreational fish species found along the Pacific Coast of Northern California that could be affected by changes in CVP and SWP operations. Pacific salmon fisheries are managed by the Pacific Fishery Management Council (PFMC) from 3 to 200 nautical miles offshore (Pacific Fishery Management Council 2023). Along the California coast, salmon fisheries are managed by the CDFW from 0 to 3 nautical miles offshore with regulations that are generally similar to those applied by the PFMC. The PFMC analyzes the status of the fisheries each year and defines the length of the fishing season and minimum fish sizes allowed to be caught for commercial, recreational, and tribal salmon fishing activities.

16.2 Effects of the Alternatives

The impact analysis considers changes in recreation related to changes in CVP and SWP operation under the alternatives as compared with the No Action Alternative.

The No Action Alternative is based on 2040 conditions. The changes to recreational resources that are assumed to occur by 2040 under the No Action Alternative conditions would be different than existing conditions because of the following factors:

- Climate change and sea-level rise
- General plan development throughout California, including increased water demands in portions of the Sacramento Valley

Under the No Action Alternative, Reclamation would continue with the current operation of the Central Valley Project (CVP), as described in the 2020 Record of Decision and subject to the 2019 Biological Opinions. The 2020 Record of Decision for the CVP and the 2020 Incidental Take Permit for the State Water Project represent current management direction or intensity pursuant to 43 Code of Federal Regulations Section 46.30.

Although the No Action Alternative included habitat restoration projects at a programmatic level, the 2020 ROD did not provide environmental coverage for these projects, and all of the habitat projects considered under the No Action required or will require additional environmental documentation. Thus, ground disturbance for habitat restoration projects did not materialize as a result of implementing the No Action Alternative. For the purpose of the analysis, these habitat restoration projects are considered independent projects that will be considered under cumulative effects.

Under the No Action Alternative, land uses in 2040 would occur in accordance with adopted general plans, which could also result in impacts on water quality. In terms of CVP operations, under the No Action Alternative, by the end of September, the surface water elevations at CVP reservoirs generally decline, which could reduce recreation opportunities. It is anticipated that climate change would result in more short-duration high-rainfall events and less snowpack in the winter and early spring months. As water is released in the spring, there would be less snowpack to refill the reservoirs. This condition would reduce flow within streams, potentially resulting in less recreation opportunities.

The No Action Alternative, thus, is expected to result in potential changes to recreational resources caused by changes in average water elevations, river flows, and seasonal fluctuations. These changes were described and considered in the 2020 Record of Decision.

16.2.1 Potential changes in recreational resources

For the purposes of this analysis, the changes in operations and flows are linked to changes in recreational resources. The evaluation of impacts on recreational activities (boating, camping, day use, and fishing access and opportunities) caused by changes in average water elevations, river flows, and seasonal fluctuations is based on the potential for each alternative to affect recreational resources.

The action alternatives would change river flows and reservoir levels. If river flows have substantive declines or increases in areas with recreational opportunities, those changes could limit available opportunities (including potential impacts on boating, camping, and day use activities). For example, higher flows could inundate beach areas or lower flows could reduce boating or rafting opportunities. Additionally, lower reservoir levels during the summer recreation season could reduce boating opportunities because boat ramps may no longer be inundated and the areas for recreation would be smaller. This in turn could reduce desirability of other associated recreational opportunities, such as use of camping sites and day use areas.

Changes in water deliveries to wildlife refuges could impact the availability of wildlife viewing and hunting, including the duration when public access is allowed, and the scale of public access.

Currently, seasonal low water levels affect campgrounds located near shorelines by increasing the distance between the shoreline and the campsites. Whitewater rafting on the Sacramento, Stanislaus, San Joaquin Rivers would continue to be affected by seasonal fluctuations caused by current CVP and SWP operations.

Alternatives 1 through 4 are anticipated to change the water levels in reservoirs. Figure 16-1, *Shasta Reservoir Long-Term Average Water Level Elevation* shows changes in Shasta Reservoir water elevations as an example; other reservoirs show similar patterns of elevations compared to the No Action Alternative. In most cases, reservoirs have only small changes and alternatives would not substantively affect recreation in these facilities. River flows would generally have only small changes during the recreation season (for example, see Figure 16-2, Sacramento Long-Term Average Flow Downstream of Keswick Reservoir). The flow changes are relatively small during each year type and would not result in substantive changes to the available recreational opportunities.

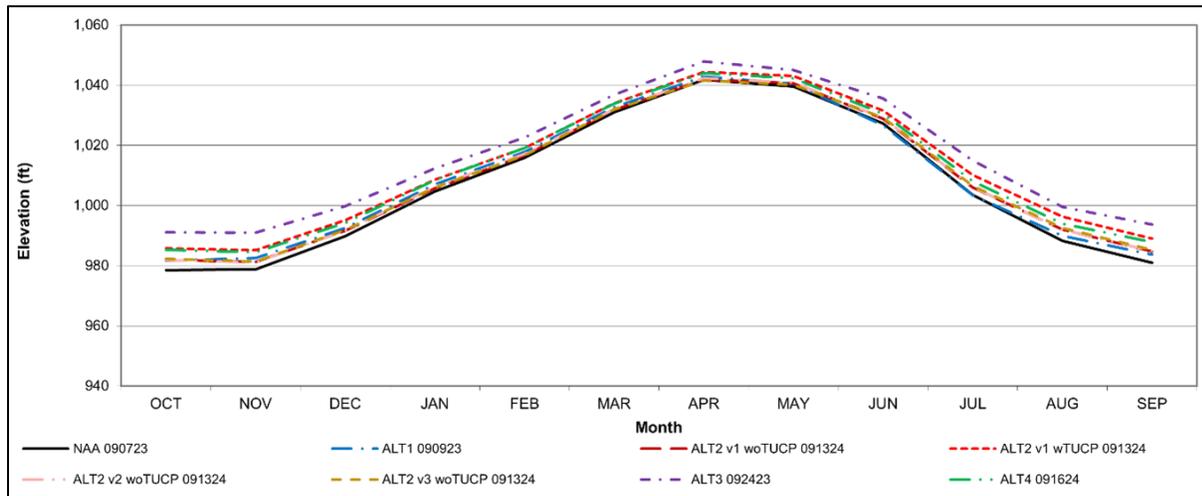


Figure 16-1. Shasta Reservoir Long-Term Average Water Level Elevation

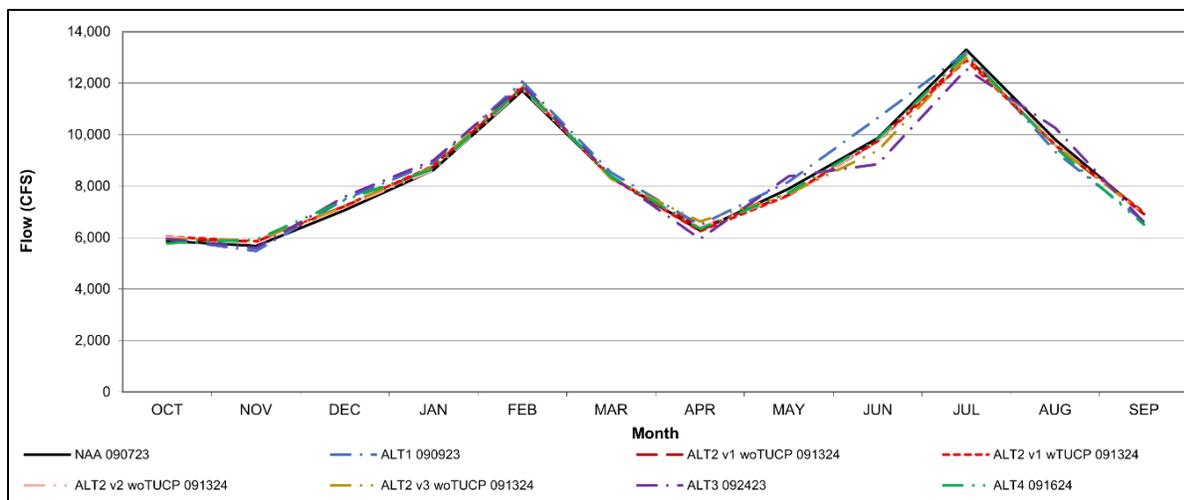


Figure 16-2. Sacramento River Long-Term Average Flow Downstream of Keswick Reservoir

Each alternative has the potential to cause effects on boating, camping, day use, and/or fishing on several recreational locations within the CVP and SWP project areas when compared to the No Action Alternative. The effects can be beneficial or adverse, depending on the time of year and water year type. There may be several locations where there is no effect from the alternatives.

Under Alternative 1 potential benefits on boating, camping, day use, and/or fishing could occur at Sacramento River (in the spring and summer), Folsom Reservoir, the American River Parkway (in the spring and summer, particularly for water activities), Stanislaus River (in the spring, for fishing), San Luis Reservoir, and recreational fishing in the Nearshore Pacific Ocean on the California Coast. Under Alternative 1 potential minor adverse impacts on boating, camping, day use, and/or fishing could occur at the Sacramento River (in the fall), Clear Creek (year-round), and Lake Del Valle (November).

Under Alternative 2 potential benefits on boating, camping, day use, and/or fishing could occur at Shasta Reservoir, Clear Creek (winter through spring), Lake Natoma, the Bay-Delta Area, and San Luis Reservoir. Under Alternative 2 potential minor adverse impacts on boating, camping, day use, and/or fishing could occur at Clear Creek (spring through fall), and the lower Stanislaus River (spring). None of the Alternative 2 phases differ greatly from the No Action Alternative but the Alternative 2 without TUCP with systemwide VAs is the only alternative that is modeled to increase Chinook salmon, potentially benefiting recreational fisheries, of all the Alternative 2 phases. The other three phases decrease salmon abundance available relative to the No Action Alternative, but the decrease is likely negligible.

Under Alternative 3 potential minor benefits to boating, camping, day use, and/or fishing would occur at Shasta Reservoir, Clear Creek (winter through spring), American River (spring), and the Bay-Delta Area. Alternative 3 would benefit recreational fishing in the Nearshore Pacific Ocean on the California Coast. Under Alternative 3 potential minor, adverse impacts boating, camping, day use, and/or fishing would occur at Sacramento River; Clear Creek (summer through fall);

Folsom Reservoir, Lake Natoma and the American River Parkway (summer); and San Luis Reservoir.

Under Alternative 4 potential minor benefits to boating, camping, day use, and/or fishing would occur at Shasta Reservoir, Clear Creek (winter through spring), and San Luis Reservoir. There would be negligible change to recreational fishing in the Nearshore Pacific Ocean on the California Coast. Under Alternative 4 potential minor adverse effects on boating, camping, day use, and/or fishing would occur at Clear Creek (summer through fall), and lower Stanislaus River (spring).

16.3 Mitigation Measures

Appendix D includes a detailed description of mitigation measures identified for recreation resources per alternative. These mitigation measures include avoidance and minimization measures that are part of each alternative and, where appropriate, additional mitigation to lessen impacts of the alternatives. For recreation resources, no avoidance and minimization measures have been identified. Additional mitigation measures have been identified for recreation resources.

16.3.1 Avoidance and Minimization Measures

16.3.1.1 Alternatives 1-4

No avoidance and minimization measures have been identified.

16.3.2 Additional Mitigation

16.3.2.1 Alternatives 1-4

Alternatives 1 through 4 could affect recreational opportunities compared with the No Action Alternative

- *Mitigation Measure REC-1: Update Public Information on Changing Recreation Conditions* – could be implemented to reduce impacts

16.4 Cumulative Impacts

The No Action Alternative would continue with the current operation of the CVP and may result in potential changes in recreational opportunities at reservoirs that store CVP water and fluctuating flows in rivers and tributaries in the action area. The action alternatives will result in changes to recreational opportunities at reservoirs that store CVP water and fluctuating river and tributary flows. The magnitude of the changes is dependent on alternative and water year type. Therefore, the No Action Alternative and action alternatives may potentially contribute to cumulative changes to recreational resources as described in Appendix S, *Recreation* and Appendix Y, *Cumulative Impacts Technical Appendix*.