

RECLAMATION

Managing Water in the West

Final Environmental Assessment

**Release of Oakdale Irrigation District's and
South San Joaquin Irrigation District's Pre-
1914 Water Rights Water from New Melones
Reservoir**

April 2013

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitment to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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List of Acronyms and Abbreviations

2009 BO	National Marine Fisheries Service 2009 Biological Opinion
AF	Acre-Feet
cfs	cubic feet per second
CNDDDB	California Natural Diversity Data Base
CTS	California Tiger Salamander
CVP	Central Valley Project
CV Steelhead	Central Valley Steelhead
ESA	Endangered Species Act
ID	Irrigation District
NMFS	National Marine Fisheries Services
OID	Oakdale Irrigation District
Reclamation	Bureau of Reclamation
SSJID	South San Joaquin Irrigation District
VAMP	Vernalis Adaptive Management Plan

Section 1 Introduction

1.1 Background

In 1988, Oakdale Irrigation District (OID) and South San Joaquin Irrigation District (SSJID) entered into an Agreement and Stipulation that committed the Bureau of Reclamation (Reclamation) to deliver water to the districts in recognition of the districts' prior water rights. Under an operations agreement between Reclamation and the districts, the districts operate Goodwin Dam under Reclamation's direction. Historically, Reclamation has released water from Goodwin Dam to the Stanislaus River to meet Reclamation's instream flow commitments and water quality and flow objectives at Vernalis. Reclamation delivers water to the districts for diversion at Goodwin Dam. The districts have a maximum annual entitlement of up to 600,000 acre-feet.

1.2 Purpose and Need

The Proposed Action would allow OID to make their collective water rights water with SSJID available for release to the Stanislaus River to the San Joaquin River. The increased flows during April and May down the Stanislaus River would provide improved environmental conditions for the Stanislaus River.

This environmental assessment will analyze the affected environment of the Proposed Action and No Action Alternative in order to determine the potential impacts and cumulative effects to the following environmental resources:

- Water Resources
- Biological Resources
- Recreation

Section 2 Alternatives Including Proposed Action

2.1 No Action Alternative

Reclamation would not approve OID's request made on behalf of the two districts to release their collective water down the Stanislaus River to improve conditions for downstream fisheries.

2.2 Proposed Action Alternative

OID has requested, on behalf of the districts, the release of up to 80,000 acre-feet (AF) of their collective water rights 2013 water year for the purpose of fish and wildlife preservation and enhancement in the Stanislaus and San Joaquin Rivers. The districts' anticipated 2013 allocation per the 1988 Agreement and Stipulation will likely be between 570,000 to 600,000 AF. The release of up to 80,000 AF of 2013 allocation would be within this quantity. Total daily releases to the Stanislaus River would be for up to 3,250 cubic feet per second (cfs) (which includes augmentation of the 2009 National Marine Fisheries Service Biological Opinion for the Long-Term Operations of the Central Valley Project and State Water Project, Appendix 2E flows) and may occur any time between April 8 through May 31, 2013. These additional releases would be variable (likely varying from 500 cfs to greater than 2,300 cfs). Based on information provided by OID/SSJID, Reclamation considers this one-time request to be a reasonable "In Basin Use" of water as the term Stanislaus River Basin Area is identified in the Record of Decision for the *Stanislaus River Basin Alternatives and Water Allocation - New Melones Unit, Central Valley Project* (Reclamation 1981). Reclamation, therefore, is recognizing this proposal as a one-time event and will direct the release of a portion of OID/SSJID's allocated water rights water from Goodwin to be released down the Stanislaus River (Figure 1). This water would then be considered abandoned in the San Joaquin River.

On behalf of the two districts, OID would monitor the affect from the increased flows on habitat and fish and provide this information to Reclamation.

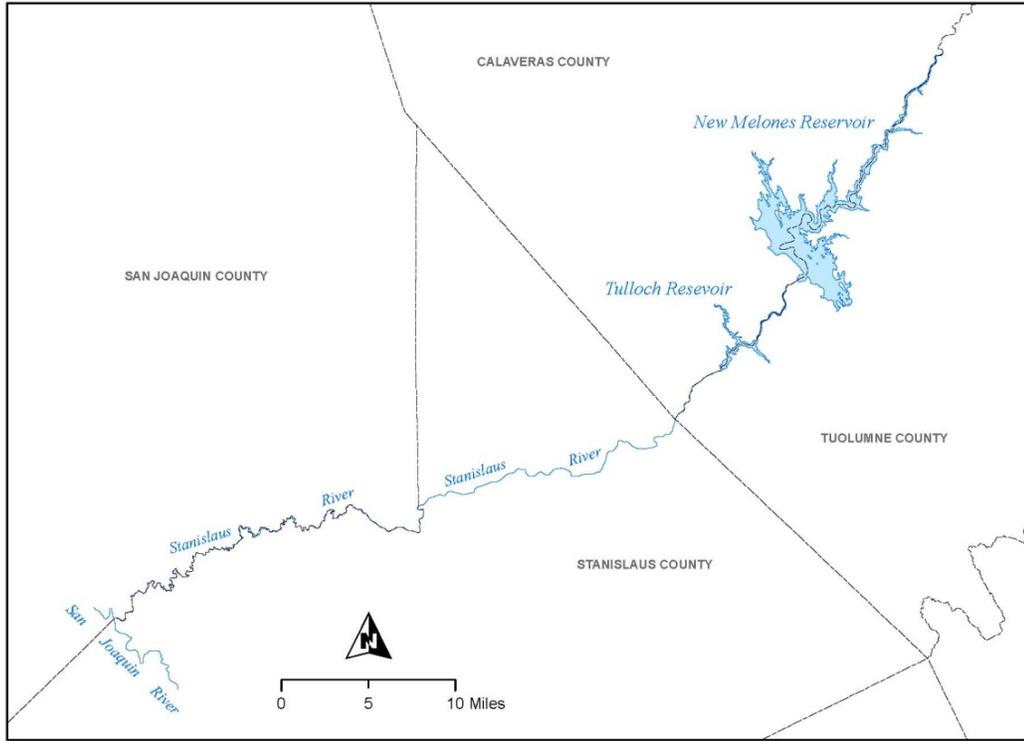


Figure 1 Area Map

Section 3 Affected Environment & Environmental Consequences

This section identifies the potentially affected environmental resources and the environmental consequences that could result from the Proposed Action and the No Action Alternative.

Cultural Resources - The Proposed Action would allow OID to make their collective water rights water with SSJID available for release down the Stanislaus River to the San Joaquin River; temporarily increasing flows down the Stanislaus River has no potential to cause effects to historic properties pursuant to the Section 106 implementing regulations at 36 Code of Federal Regulations Part 800.3(a)(1).

Indian Trust Assets - The Proposed Action does not have a potential to affect Indian Trust Assets.

Indian Sacred Sites – The Proposed Action does not have the potential to affect Indian Sacred Sites.

Environmental Justice- No changes in agricultural communities or practices would result from the Proposed Action. The Proposed Action would not have any disproportionately negative impact on low-income or minority individuals within the Proposed Action area.

Air Quality- New Melones (releases from Goodwin Diversion Dam on the Stanislaus River) resides within the Mountain Counties Air Basin. There would be no emission of criteria pollutants that would cause detectable changes to the baseline conditions or exceed Federal, State, and local thresholds for the Mountain Counties Air Basin as the releases are part of normal operations and do not require new construction.

Global Climate Change - The Proposed Action would not emit green house gasses that would exceed the 25,000 metric ton/year threshold. Trends in climate change would not be affected. In addition climate change would not have an impact to the Proposed Action.

3.1 Water Resources

3.1.1 Affected Environment

New Melones Reservoir

The operating criteria for New Melones Reservoir area is governed by Stanislaus River water rights, instream fish and wildlife flow requirements, temperature and dissolved oxygen requirements, Vernalis water quality and flow requirements from the State Water Resources Control Board Water Right Decision 1641, CVP contracts, and flood control requirements. New Melones Reservoir serves Calaveras, Tuolumne, Stanislaus and San Joaquin Counties. Water released from New Melones Reservoir and through the power

plant is re-regulated at Tulloch Reservoir, and is either diverted at Goodwin Dam or released from Goodwin Reservoir to the lower Stanislaus River. Releases into the lower Stanislaus River provide water for riparian water rights, instream fishery flow objectives [Central Valley Project Improvement Act 3406(b)(2) or (b)(3) fishery flows], water temperature, and instream dissolved oxygen. Upon entering the San Joaquin River, the water contributes to flow and water quality conditions at Vernalis (Reclamation 2013).

Groundwater

In 1982, Reclamation concluded that there was a potential for damage downstream from Goodwin Diversion Dam on the Stanislaus River when flows at the Ripon Gaging Station exceeded 1,250 cfs. This conclusion was based on various investigations by subject matter researchers and Reclamation geologists. Investigations showed that flows in excess of 1,250 cfs at Ripon cause water table beneath a sugar beet field to rise into the root zone of beets, resulting in rotting beets. However, following harvest of sugar beet crop, a non-damaging flow at Ripon would be approximately 1,500 cfs. Flows above 1,500 cfs would create water tables high enough to potentially damage almond and walnut orchards adjacent to the river (Reclamation 1982). Reclamation, except in flood years, has typically operated Goodwin Dam releases up to 1,500 cfs. There have been some short term releases above 1,500 cfs in April and May to achieve the flow requirements of Appendix 2E.

In an attempt to further investigate and understand how discharge (flow) of the Stanislaus River affects groundwater levels, Reclamation discovered that there was data available from an active groundwater monitoring and remediation site located in Ripon, California. That information allowed a comparison of river discharge to groundwater elevation under various conditions experienced since 2006. More recently, installation of continuously logging data transducers in multiple monitoring wells at the study site allowed a more detailed look at the relationship of river discharge to groundwater levels at the site. As a result, fluctuating groundwater levels in response to the minimum fish flow schedule for below normal water years per the NMFS 2009 Biological Opinion, Appendix 2E schedule was followed during April 2012. From January 1, 2006 through May 2, 2012, the Stanislaus River discharge ranged from below 200 cfs to above 5,000 cfs, at times. During this time, it was determined that depths to groundwater at the study site do fluctuate in response to changing river stages. However, at the piezometer W-1 site, in order for groundwater to reach less than 10 feet below ground surface, river flow rates needed to be sustained at 4,000 cfs (winter/spring 2006 information) but the impact was only experienced within about 300 feet of the river. A piezometer (W-2) located approximately 700 feet from the river showed that the groundwater was never shallower than 10 feet below ground surface. In general, average groundwater level response to increased river flow is estimated at 1.5-2.0 feet/500 cfs for areas within 1,500 feet of the river (Reclamation 2012).

3.1.2 Environmental Consequences

No Action

Under the No Action Alternative, none of the two districts (OID/SSJID) collective water rights water would be released from New Melones Reservoir and ultimately down the Stanislaus River, to improve fish habitat during April and May 2013. Existing conditions would not change in New Melones Reservoir and OID/SSJID's water allocation would remain the same without the proposed release for fish.

Proposed Action

The Proposed Action would allow up to 80,000 AF of the two districts (OID/SSJID) 2013 water year allocation water stored in New Melones to be released down the Stanislaus River for the purpose of fish and wildlife preservation and enhancement in the Stanislaus River and the San Joaquin River. The proposed releases would augment the 2009 National Marine Fisheries Service Biological Opinion reasonable and prudent measures Appendix 2E schedule for below normal and above normal water years. The Proposed Action would not change 2013 water allocations. It is assumed that the additional water released down the Stanislaus River is water that the districts would have used under their 2013 water allocation or would have added to their Conservation Account consistent with the 1988 Agreement and Stipulation.

Given current forecasts of projected inflows to New Melones, reasonable assumptions about irrigation demands by OID and SSJID, information about the proposed action by the districts, and the one-time nature of the action, it is anticipated that there would be a net reduction of zero to 80,000 AF in New Melones storage at the end of September 2013 with the likely effect to be about 30,000 to 40,000 AF. Any adverse effect or change to the cold water pool management due to this potential reduction in storage at the end of September may be minimal unless a prolonged period of extended drought is entered, and the effect may be balanced by the more immediate benefit of augmented fishery flows this fall.

3.2 Biological Resources

3.2.1 Affected Environment

Species that could be affected by Proposed Action include aquatic or semiaquatic species. Aquatic and semiaquatic species include fall-run Chinook salmon (*Oncorhynchus tshawytscha*), delta smelt (*Hypomesus transpacificus*), Central Valley steelhead (*Oncorhynchus mykiss*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), and giant garter snake (*Thamnophis gigas*).

A review of the California Natural Diversity Data Base (CNDDDB) for the counties of Calaveras, Tuloumne, San Joaquin, and Stanislaus was utilized to compare to the U.S. Fish and Wildlife Service species list (Document Number 130408114357).

There were no CNDDDB occurrences for delta smelt, California red-legged frog, or giant garter snake near the Stanislaus River.

Fish

Central Valley steelhead (CV Steelhead) [*Oncorhynchus mykiss*] is the only anadromous Endangered Species Act (ESA) listed species that occurs in the Stanislaus River. Fall-run Chinook salmon is a species of concern that occurs in this river. Documented returns suggest that existing populations of CV steelhead on the Stanislaus River are severely depressed. Data from rotary screw trapping show *O. mykiss* in a smolted stage being trapped in late May at both the Oakdale and Caswell Memorial State Park trap locations. These fish are physiologically prepared to leave the river at a time well after scheduled Vernalis Adaptive Management Plan (VAMP)¹ pulse flows, not later than when historical unimpaired rain-on-snow events would have provided outmigration flows (NMFS 2009).

Amphibians

The California tiger salamander (CTS) (*Ambystoma californiense*) is listed as threatened under federal and state ESA.

CTS occur in grasslands and open oak woodland that provide suitable upland refugial habitat and/or breeding habitats. CTS spend the majority of their lives underground in rodent burrows and other subterranean refugia. CTS emerge from upland refugial sites for only a few nights each year during the rainy season to migrate to breeding ponds. Seasonal playa pools or fishless artificial impoundments such as stock ponds provide suitable breeding habitat. Eggs hatch within a few weeks and larvae develop over a period of weeks and typically transform to become juveniles in late spring or early summer. Larvae feed on aquatic invertebrates. Juveniles usually migrate to rodent burrows and sometimes emerge on suitable nights to feed (In Reclamation 2013b). CNDDDB records for CTS show occurrence within a mile of the Stanislaus River.

Riparian brush rabbit (*Sylvilagus bachmani riparius*), California red-legged frog (*Rana aurora draytonii*) and riparian woodrat (*Neotoma fuscipes riparia*) have the potential to reside in the Proposed Action area. In 2008, Reclamation consulted with the U.S. Fish and Wildlife Service on the Proposed Coordinated Operations of the Central Valley and State Water Projects and requested consultation on the effects of operations on these species.

3.2.2 Environmental Consequences

No Action

Under the No Action Alternative, no portion of the two districts' water would be released from New Melones and ultimately down the Stanislaus River to improve downstream fisheries. Federal facilities would continue to deliver CVP water. Potential effects on listed species have been addressed in the 2009 National Marine Fisheries Service *Biological opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project* (2009 NMFS BO) and Reclamation would

¹ VAMP expired in 2011 but a VAMP-like condition continues.

continue to implement this B.O. Potential effects on listed species have been address in the U.S. Fish and Wildlife Service the *Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley and State Water Project* (FWS 2008), and FWS provided consultation.

Proposed Action

This water would be in addition to NMFS Biological Opinion Appendix 2E schedule down the Stanislaus River. Reclamation would continue to operate to all the other Delta actions related to the NMFS 2009 Biological Opinion Reasonable and Prudent Alternative. Under the Proposed Action, additional flows may provide cooler water temperatures and outmigration cues to salmonids during the pulse flow period, providing a beneficial effect on listed fish species.

3.3 Facility Operations

3.3.1 Affected Environment

Historically SSJID/OID has annually used for irrigation approximately 484,000 AF of their allocated water rights based on records from 1989-2012, with a maximum use for irrigation in this period of 535,000 AF. Current storage within New Melones Reservoir is about 1,554,000 AF and the estimated inflow is about 1,000 cfs. The 90% exceedance forecast projected for end of September storage is 998,000 AF and the 50% exceedance forecast projected for end of September storage is 1,135,000 AF. The conditions this year constitute a ‘Critically Dry Year’ type for the San Joaquin River Basin.

3.3.2 Environmental Consequences

No Action

Implementation of the No Action alternative would mean no additional water would be released from New Melones and ultimately down the Stanislaus River, to improve downstream fisheries, during April and May 2013. Reclamation would continue to meet the flows prescribed in Appendix 2E of the 2009 NMFS BO. Under the No Action alternative, there would not be an incremental improvement to fish habitat within the Stanislaus River and San Joaquin River.

Proposed Action

The increase of OID/SSJID’s water rights water during April and May is consistent with the flows in the 2009 BO and would augment Reclamation’s release of 2009 NMFS B.O. Appendix 2E flows. This action would not materially change the agreement between Reclamation and Merced ID to augment flows on the Merced and San Joaquin Rivers.

Given current forecasts of projected inflows to New Melones, reasonable assumptions about irrigation demands by OID and SSJID, information about the proposed action by the districts, and the one-time nature of the action, it is anticipated that there would be a net reduction of zero to 80,000 AF in New Melones storage at the end of September 2013 with the likely effect to be about 30,000 to 40,000 AF. Using the 90% and 50% exceedance forecast projected for end of September, end of September storage could

range between a low of 918,000 AF (reduction of 80,000 AF to 90% exceedance) to a high of 1,135,000 AF (no net reduction in storage to 50% exceedance). This may impact Reclamation's ability to meet certain temperature criteria in the fall, and may lead to a reduction in water available to the CVP in future years, but would depend on the subsequent year's hydrology. The improvement to anadromous fish habitat in the Stanislaus and San Joaquin Rivers would balance this possible effect.

3.4 Recreation

3.4.1 Affected Environment

Rafting trips from the town of Knights Ferry to Orange Blossom Park outside of Oakdale, California have heavily desired Class I and II rapids. Rafting trips on this section occur from April through October (Stanislaus River 2013). Optimum flow for rafting is between 800 cfs and 2,500 cfs (Armstrong 2012).

Caswell Memorial State Park is located along the Stanislaus River near the town of Ripon, California. It offers swimming areas, day use, campground facilities, and nature trails. Caswell Memorial State Park is open year-round; temperatures in the winter range from 45-50° F; summer temperatures range from 85-100° F (California Department of Parks and Recreation 2013).

Per discussions in 1982, the Army Corps of Engineers summarized impacts to recreational use at Caswell Memorial State Park (Reclamation 1982b):

- Boating – River flows between 1,200 cfs and 1,750 cfs would be hazardous year round, especially in winter and spring months when water temperatures are low.
- Fishing – Preferred fishing flows are between 500 and 1,000 cfs.
- Swimming – Enjoyment and safety, 400-600 cfs is most desirable.
- Hiking – Flows above 1,500 cfs inundate and erode portions of hiking trails.

Boating at New Melones Reservoir is dependent on water surface elevation. At elevation 975 feet (1,250,000 AF storage), the Angels Creek Boat Ramp becomes unusable, and below elevation 900 feet (720,000 AF storage), most of the boat ramps become unusable.

3.4.2 Environmental Consequences

No Action

Under the No Action Alternative, additional water would not be released from New Melones and ultimately down the Stanislaus River for the benefit of fish and wildlife between April and May. Conditions for river rafting or boating at New Melones would be unchanged.

Proposed Action

The Proposed Action would allow additional water to be released down the Stanislaus River beginning in April. Rafting companies would be able to schedule trips as early as April and customers may have enhanced recreation experiences on the Stanislaus River earlier in the recreation season.

There would be temporary impacts to swimmers and boaters at Caswell Memorial State Park at flows greater than 1,500 cfs. However the park offers alternate trails and picnic areas that are available to visitors during trail inundation periods.

Because of the critically dry conditions for this water year, the boat ramp at Angels Creek is anticipated to become unusable sometime late in the season. Additional releases may cause this boat ramp to become unusable earlier. Additional releases may make additional boat ramps inaccessible later in the season causing boaters to either launch their boats at a different ramp, move to another lake or reservoir for boating, or forgo boating altogether. Because of the critically dry conditions at the reservoir, this is already anticipated to occur to some degree, and this action may cause reduced boating sooner or exacerbate these conditions.

3.5 Cumulative Effects

According to the Council on Environmental Quality regulations for implementing the procedural provisions of National Environmental Policy Act, a cumulative impact is defined as *the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions*. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.

Reclamation's action is to accommodate the request by OID/SSJID to release a portion of the water allocated to the districts pursuant to the 1988 Agreement and Stipulation down the Stanislaus River to Vernalis for the purpose of fish and wildlife preservation and enhancement. Release of additional water into the Stanislaus River may result in declines in reservoir storage, and a decline in the benefits associated with carryover storage. There are no additional projects identified for this water year (or subsequent years). The NMFS 2009 BO includes actions that affect carryover storage, and combined with the current request, there could be cumulative impacts from the action. Given that this is a critically dry year, reductions in storage could be exacerbated if the dry hydrologic pattern continues. Because fisheries flows prescribed in appendix 2E of the NMFS 2009 BO were developed to avoid jeopardy, these additional flows could also have a temporary beneficial effect on salmonids because of the already dry conditions in the Stanislaus River. Benefits to salmonids would be for the April May timeframe, and these benefits would be immediate. Any potential cumulative impacts to storage depend on the recurrence of dry conditions into the future.

Section 4 Consultation and Coordination

4.1 Public Review Period

Reclamation intends to sign a Finding of No Significant Impact on April 8, 2013 for this project, and will make the environmental assessment available April 3 through April 7, 2013. All comments will be addressed in the Finding of No Significant Impact.

Additional analysis will be prepared if substantive comments identify impacts that were not previously analyzed or considered.

4.2 Endangered Species Act (16 USC § 1531 et seq.)

Section 7 of the Endangered Species Act requires Federal agencies to ensure that discretionary federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Potential effects on listed species have been addressed in the 2009 National Marine Fisheries Service *Biological opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project* and 2005 U.S. Fish and Wildlife Service *Biological Opinion for Formal and Early Section 7 Endangered Species Consultation on the Coordinated Operations of the Central Valley Project and State Water Project and the Operational Criteria and Plan to Address Potential Critical Habitat Issues*. No further consultation is sought.

4.3 Persons and agencies consulted during preparation of this EA

- Oakdale Irrigation District
- Stockton East Water District
- Merced Irrigation District
- California Department of Water Resources
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- California Department of Fish and Wildlife
- Caswell Memorial State Park

Section 5 References

- Armstrong, Gregg. 2012. Email from Gregg Armstrong (from Stanislaus River rafting company) September 17, 2012 regarding optimum flows on the Stanislaus River. California Department of Parks and Recreation. 2013.
http://www.parks.ca.gov/?page_id=557. Accessed: 2013
- Clinton, Patricia. 2013. Natural Resources Specialist, Bureau of Reclamation. Personal communication with Liz Steller, Caswell Memorial State Park. March 28, 2013.
- FWS. (U.S. Fish and Wildlife Service). 2008. *Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP)*. 396 pgs.
- NMFS (National Marine Fisheries Service). 2009. *Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project*. National Marine Fisheries Service, Southwest Region. June 4, 2009. 844 pgs
- Reclamation. 1981. *Record of Decision—Stanislaus River Basin Alternatives and Water Allocation—New Melones Unit, Central Valley Project, California*.
- Reclamation. 1982. *Operating Plan for New Melones Reservoir as Required by the February 2, 1982 Order of the United States Court of Appeals for the Ninth Circuit*. February 11, 1982.
- Reclamation. 1982b. *Cursory Review of Impacts to Recreation use and Facilities During Flow Regimes of 1,000 cfs to 1,750 cfs – Lower Stanislaus River – Central Valley Project*. February 10, 1982.
- Reclamation. 2012. *The Affect of Stanislaus River Discharge on Groundwater Depth Adjacent to the River*. June 2012. Central California Area Office.
- Reclamation. 2013. *Bureau of Reclamation Plan of Action, New Melones Revised Plan of Operations, October 25, 2005*. Available:
<http://www.usbr.gov/mp/cca/nmrpo/docs/index.html> Accessed: 2013.
- Reclamation. 2013b. *Water Transfer Program for the San Joaquin River Exchange Contractors Water authority, 2014-2038 Final Environmental Impact Statement/Environmental Impact Report*. January 2013.
- Stanislaus River. 2013. <http://www.stanislausriver.com/rafting.html>. Accessed: 2013