

**Updated Operations Plan  
New Melones Lake  
Water Year 2015  
May 2015**

**Introduction**

Prolonged drought conditions in the San Joaquin River Basin and in the Stanislaus River sub-basin have led to projections of very low reservoir storage levels in New Melones Lake by the fall of 2015. These lake levels have not been observed since the early 1990s. In order to maintain reasonable protection of fish in the Stanislaus River this summer and into the coming water year, and to protect local water supplies, Reclamation has been working with Oakdale Irrigation District and South San Joaquin Irrigation Districts (local Districts) to prepare this Operations Plan for New Melones Lake for the remainder of water year 2015. The real-time implementation of this plan will be coordinated by Reclamation through the Stanislaus Operations Group (SOG).

**Estimated Releases and Projected New Melones Storage**

The current evaluation of the projected basin runoff (California Department of Water Resources May 90% exceedance forecast) and operation of upstream water projects as provided by the local Districts continues to project an end-of-September storage at New Melones Lake of 147 taf. The estimated system releases and lake storage levels are summarized in Table 1 below.

**Table 1**

12-May-15	Stanislaus River - 278,000 Acre-feet Unimpaired and 286,000 Inflow (May Composite Forecast)											All values in 1,000 acre-feet unless otherwise noted				
	Stanislaus Unimpaired	Upstr Storage	Upstr Regulation	NM Inflow	Goodwin OID/SSJID	Info 2E (cfs)	Fish Require	Fish Req - CFS	WQ Rel	Vernalis Rel	DO Rel	Minimum River	NM Net Evap	NM Storage	Target/FC Release	River Release
Beginning		161												520		
Oct 2014	7	140	20	28	8.7		26	423		0	0	0	26.0	2	513	26
Nov	9	128	12	22	0.0		21	354		Actual releases for water quality included in fishery releases		0	21.1	1	513	21
Dec	35	112	16	48	0.0		13	206				0	12.7	1	547	13
Jan 2015	13	92	20	32	0.0		16	261				0	16.1	1	563	16
Feb	91	113	-21	55	0.0		17	309	0	0	0	17.2	1	606		17
Mar	38	126	-13	19	40.7	200	29	464	0	0	0	28.5	2	553		29
Apr - 1	15	131	-5	8	19.9	200	14	514	0	0	0	14.3	1	528		14
Apr - 2	22	141	-10	9	23.7	709	14	454	0	0	0	14.4	1	491		14
May - 1	26	159	-18	7	22.2	677	5	153	0	0	0	4.5	1	452		5
May - 2	15	166	-7	8	38.0	150	5	150	0	0	0	4.8	2	414		5
Jun	7	163	3	10	78.0	150	9	150	0	0	0	8.9	4	332		9
Jul	0	150	14	14	78.0	150	9	150	0	0	0	9.2	4	254		9
Aug	0	135	14	14	70.0	150	9	150	0	0	0	9.2	3	186		9
Sep	0	122	13	13	44.0	150	9	150	0	0	0	8.9	2	147		9
Oct	2	122	0	2	0	577	35	577	0	0	0	35.5	1	117		35
Nov	2	122	0	2	0	200	12	200	0	0	0	11.9	1	109		12
Dec	2	122	0	2	0	200	12	200	0	0	0	12.3	0	98		12
WY 2015	Approx 278			Approx 286	Approx 423		Approx 196		Approx 0	Approx 0	Approx 0	Approx 196	Approx 24			Approx 196
April - Sept	85			83	374		74					74	Formula = 390 + 60 Conservation Account (450)			

### **Ripon Dissolved Oxygen Compliance Point**

State Water Board D-1422 requires that water be released from New Melones Reservoir to maintain a dissolved oxygen (DO) concentration in the Stanislaus River as specified in the Water Quality Control Plan (WQCP) for the Sacramento and San Joaquin river basins. The 1995 revision to the WQCP established a minimum DO concentration of 7 milligrams per liter (mg/l), as measured on the Stanislaus River near Ripon. Reclamation is finalizing a petition to the State Water Board to modify this requirement to maintain a minimum DO concentration of 5 mg/l for the remainder of this year. This petition will be sent to State Water Board in early June.

The current temperature analyses indicate that water temperature may be very warm at Ripon this year. This modification of the DO objective will allow Reclamation to further conserve water through the summer and will better align more favorable DO levels (closer to 7 mg/l) upstream with the cooler water temperatures targeted between Knights Ferry and Goodwin Dam.

### **Operation of the New Melones Low Level Outlet**

The U.S. Army Corps of Engineers (USACE) designed and constructed New Melones Dam. The original design intended the low-level outlet to be operated only for release purposes during the initial filling of the lake, and if later draw down of the reservoir was ever required. The low-level outlets would not normally be operated when the pool was above elevation 808 feet (Feb. 1979 Report). The low level outlet is intended to provide irrigation and fishery releases only when the reservoir is below elevation 808 ft.

The low level outlet is comprised of two conduits each fitted with a fixed-cone valve with a mechanical stop to limit the valve opening to a maximum of 25 inches. The purpose of this stop is to avoid excessive vibration. In 2001, short-term high flow tests were conducted. The low level outlet was also used in the fall of 2013 for several weeks to allow inspection of the power penstock.

Discussions with USACE over the years have confirmed that the low level outlets should not be used when the lake level is above elevation 808 ft. Based on current projections, the lake level would not be below this elevation until July of this year.

### **River Temperature Management**

An updated temperature modeling report is attached (AD Consultants - Stanislaus Temperature Modeling). The current temperature analyses indicate that August temperatures could be reduced significantly through blending of releases through the low level outlet and the penstock intake, but with a resulting higher release temperature in the fall of 2015. Such an operation is untested, but Reclamation is willing to conduct blending operations this summer (consistent with the above operating

constraints on the low level outlets) to improve water temperatures this August. Reclamation proposes to work closely through the SOG this summer to evaluate the real-time trade-offs of summer and fall temperatures.

### **End-of-year documentation**

Reclamation will work through the SOG and the local Districts to document operations for this summer and fall. Reclamation proposes to address the effectiveness of operation of the low level outlet, temperature operations through potential blending of releases through the low level outlet and the penstock intake, downstream temperature effects, and observed fishery conditions. This documentation will be especially useful in development of a revised long-term operations plan for New Melones Lake. Reclamation plans to complete this documentation report in January 2016.