



United States Department of the Interior

BUREAU OF RECLAMATION
Central Valley Operations Office
3310 El Camino Avenue, Suite 300
Sacramento, California 95821

IN REPLY
REFER TO:

CVO-100
WTR-4.00

JUL 05 2016

VIA ELECTRONIC MAIL

Mr. Thomas Howard
Executive Director
State Water Resources Control Board
PO Box 2000
Sacramento, California 95812

Subject: Sacramento River Temperature Management Plan for 2016

Dear Mr. Howard:

Please find enclosed the Bureau of Reclamation's (Reclamation) Sacramento River Temperature Management Plan (Plan) for 2016. The Plan represents our intended operations this year pursuant to Water Rights Order 90-5. For the remainder of 2016, the temperature compliance point and metric would be not to exceed 56.0° Fahrenheit daily average temperature at Balls Ferry.

The Plan was formulated with considerable technical input from Federal and State biologists and from stakeholders. The Plan represents Reclamation's best effort to balance numerous system-wide water demands and the seasonal river temperatures to be protective of winter-run Chinook salmon in their early life stages. The Plan helps maintain water supplies and provides a foundation to improve summer outflow to benefit delta smelt. The Plan is also consistent with implementation of the Trinity River Restoration Program and management later this year for river temperatures on the Trinity River.

Reclamation will continue to work through the Sacramento River Temperature Task Group, and with the various stakeholders, in the implementation of the Plan this summer and fall. If you have any questions regarding this report, please call Mr. Jeff Rieker, at 916-979-2179.

Sincerely,

Ronald Milligan
Operations Manager

Enclosure

EXHIBIT BKS-6

cc: Ms. Maria Rea

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(w/encl to each)

2016 Sacramento River Temperature Management Plan

Bureau of Reclamation

June 7, 2016 (updated June 24, 2016)

This document represents the Bureau of Reclamation's (Reclamation) Sacramento River Temperature Management Plan for Water Year 2016 (2016 Plan) pursuant to the Reasonable and Prudent Alternative (RPA) Action I.2.4 of the 2009 National Marine Fisheries Service (NMFS) Biological Opinion (2009 BiOp) for the Coordinated Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP), as well as State Water Resources Control Board (SWRCB) Order 90-5. The 2016 Plan was formulated with considerable technical input from Federal and State biologists and from stakeholders. The Plan represents Reclamation's best effort to balance numerous system-wide water demands and the seasonal river temperatures to be protective of winter-run Chinook salmon in their early life stages. The Plan helps maintain water supplies and provides a foundation to improve summer outflow to benefit delta smelt.

Plan Description

Base Operations

After several severe drought years, storage conditions at Shasta Lake are much better than in water year (WY) 2014 and WY 2015 in terms of both total storage and volume of cold water. The 2016 Plan consists of Keswick releases through the summer ranging from average monthly flows of 9,000 cfs in June and 10,500 cfs in July to 5,500 cfs by November. These flows are consistent with the operations outlined by Reclamation in March of this year. The temperature compliance point and metric would be not to exceed 56.0° Fahrenheit (F) daily average temperature (DAT) at Balls Ferry, in compliance with RPA Action I.2.4 of the 2009 BiOp. To achieve compliance at this location, an average release temperature of 52.5°F is planned from Keswick Dam. Anticipated temperature performance of the 2016 Plan is reflected in Table 1, as well as the projected temperatures at various locations in the Sacramento River (Attachment A). Average flows by month are shown in Table 1 below, and would be subject to adjustment for real-time conditions based on performance of the plan. The timing for reductions in flows in September and October would be scheduled in coordination with the fishery agencies to reduce risk of redd dewatering. Fall flow reductions would occur once all winter-run Chinook salmon fry are estimated to have emerged from their redds, but as early as possible to reduce stranding of fall-run Chinook redds in the upper Sacramento reach. Under the 2016 Plan, full side gate operation of the Shasta Dam Temperature Control Device (TCD) is not projected to occur until October 9, 2016.

**2016 Sacramento River Temperature Plan
Attachment C**

Storages

End of the Month Storage/Elevation (TAF/Feet)

		Jun	Jul	Aug	Sep	Oct	Nov	Dec
Trinity		1392	1233	1110	1002	900	887	878
	Elev.	2279	2267	2255	2244	2242	2240	2241
Whiskeytown		232	238	238	238	230	206	206
	Elev.	1209	1209	1209	1207	1199	1199	1199
Sheets		4167	3876	3405	2968	2599	2426	2351
	Elev.	1043	1025	1004	989	980	977	978
Folsom		826	699	474	349	328	269	233
	Elev.	439	413	395	392	382	374	371
New Melones		624	617	565	515	470	460	477
	Elev.	881	871	861	851	849	853	856
Total San Luis (TAF)		677	467	584	671	656	785	955
							955	1190

Monthly River Releases (TAF/cfs)

Trinity	TAF	150	88	45	44	23	18	18
	cfs	2,526	1,102	734	744	373	300	300
Clear Creek	TAF	9	7	5	9	14	10	11
	cfs	150	120	85	150	225	175	175
Sacramento	TAF	535	645	615	535	400	327	307
	cfs	9000	10500	10000	9000	6500	5500	5000
American	TAF	268	306	203	96	95	76	77
	cfs	4505	4984	3301	1612	1543	1283	1250
Stanislaus	TAF	15	12	12	12	35	12	12
	cfs	250	200	200	200	577	200	200

Trinity Diversions (TAF)

	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Carr PP	73	68	67	62	0	14	19
Spring Crk. PP	60	60	60	60	12	5	12

Delta Summary (TAF)

	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Tracy	79	150	165	272	282	270	225
USBR Banks	0	0	0	0	0	0	0
Contra Costa	9.8	11.1	12.7	14.0	16.8	18.4	18.3
Total USBR	89	161	178	286	299	288	243
COA Balance	-54	-63	-63	-6	40	0	0
Old/Middle River Std.							
Old/Middle R. calc.	-3,478	-7,617	-7,684	-5,772	-6,334	-6,081	-5,905
Computed DOI	7094	6507	5401	4656	4002	4505	7678
Excess Outflow	0	0	0	0	0	0	3172
% Export/Inflow	28%	46%	49%	47%	59%	58%	48%
% Export/Inflow std.	35%	65%	65%	65%	65%	65%	65%

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions. CVP operational forecasts or outlooks represent general system-wide dynamics and do not necessarily address specific watershed/tributary details. CVP releases or export values represent monthly averages. CVP Operations are updated monthly as new hydrology information is made available December through May.