

National Marine Fisheries Service (NMFS) Determination re: Action III.1.3, Action IV.2.1, & Action IV.2.2 of the Biological Opinion on the Long-Term Operations of the Central Valley Project and State Water Project (Opinion)

March 29, 2010

Summary of Actions:

Action III.1.3, Minimum instream flows on the Stanislaus River for April 1 through May 31, 2010 (p. 622-625 of the Opinion)

Reclamation proposes to release flows from Goodwin Dam under the DRY yeartype¹ schedule (Table 2 of 5 from Appendix 2-E). That flow schedule requires a minimum base flow of 200 cfs, and a minimum pulse flow of at least 1,000 cfs on the Stanislaus River from April 11 through May 15, with several days of ramping before and after the peak flow.

Action IV.2.1, San Joaquin Inflow to Export Ratio for April 1 through May 31, 2010 (p. 641-645 of the Opinion)

1. The most recent estimate of the New Melones Index, based on the March 1st 50% exceedance forecast, is 1,779 thousand acre feet (TAF), which means that the minimum flow required at Vernalis is “D-1641 requirements or 3000, whichever is greater” (see chart on p. 642 of the NMFS Opinion). For the periods April 1-24 and May 26-31, flows at Vernalis will be managed to target 3,000 cfs (the D-1641 requirement for Vernalis flows during these periods is expected to range from 1,420 to 2,280 cfs). For April 25-May 25, the test period of this year’s Vernalis Adaptive Management Plan (VAMP) experiment², flows at Vernalis will be managed to target the expected VAMP target flow of 3,200 cfs³. Flows on the Stanislaus River may be considerably higher than required under Action III.1.3, above, when Stanislaus flows are needed to meet the Vernalis flow requirement under Action IV.2.1 (see attachment 1).
2. Exports: At Vernalis flows below 6,000 cfs, daily combined Central Valley Project (CVP) and State Water Project (SWP) export rates will be managed⁴ to no more than 1,500 cfs from April 1 through May 31.

The operations outlook for Stanislaus flows (measured at Goodwin Dam) and Vernalis flows provided by Reclamation (Attachment 1) details expected operations during April & May. As noted by Reclamation:

- (1) The April inflow forecast could cause the Vernalis Adaptive Management Plan (VAMP) target flow to change.

¹ Action III.1.3, was developed using a yeartype designation process that differs from the yeartype designation process traditionally used by Reclamation to determine yeartype in the Stanislaus basin. NMFS has discussed this issue with Reclamation and with the Stanislaus Operations Group and will issue a clarification to this action. Until this clarification is issued, Action III.1.3 will be implemented according to the Reclamation yeartype designation process. Based on the March forecast (which is used to designate the yeartype for April minimum flows), both the Reclamation process and the NMFS process designate the current yeartype as “DRY”.

² Initiated in 2000 as part of D-1641.

³ The final target VAMP flow will not be confirmed until mid-April, once the April forecast is released.

⁴ NMFS expects that exports would be managed as traditionally done during VAMP in recent years (*i.e.*, $\pm 2.5\%$ of the target export rate on a daily average, as described on page 11 of San Joaquin River Group Authority 2008)

- (2) Stanislaus flows are likely to be somewhat variable during April and May (though always above the minimum flow required under Action III.1.3) because for most of this period, flows on the Stanislaus will be managed in a way that stabilizes the flows at Vernalis (required under Action IV.2.1) in response to variation in flows on the mainstem San Joaquin River.

Action IV.2.2, Six-Year Acoustic Tag Experiment (p. 645-648 of the Opinion)

NMFS understands that because this study is not ready for implementation this year, Reclamation and DWR will be using the exception procedure provided under this action and are continuing the VAMP study design for this year. Under this year's VAMP agreement, and given current hydrologic conditions, the Vernalis flow requirement is expected to be 3,200 cfs³ and exports are limited to no more than 1,500 cfs⁴ during the "VAMP period" which, for this year, is expected to run from April 25 to May 25.

Reference Cited

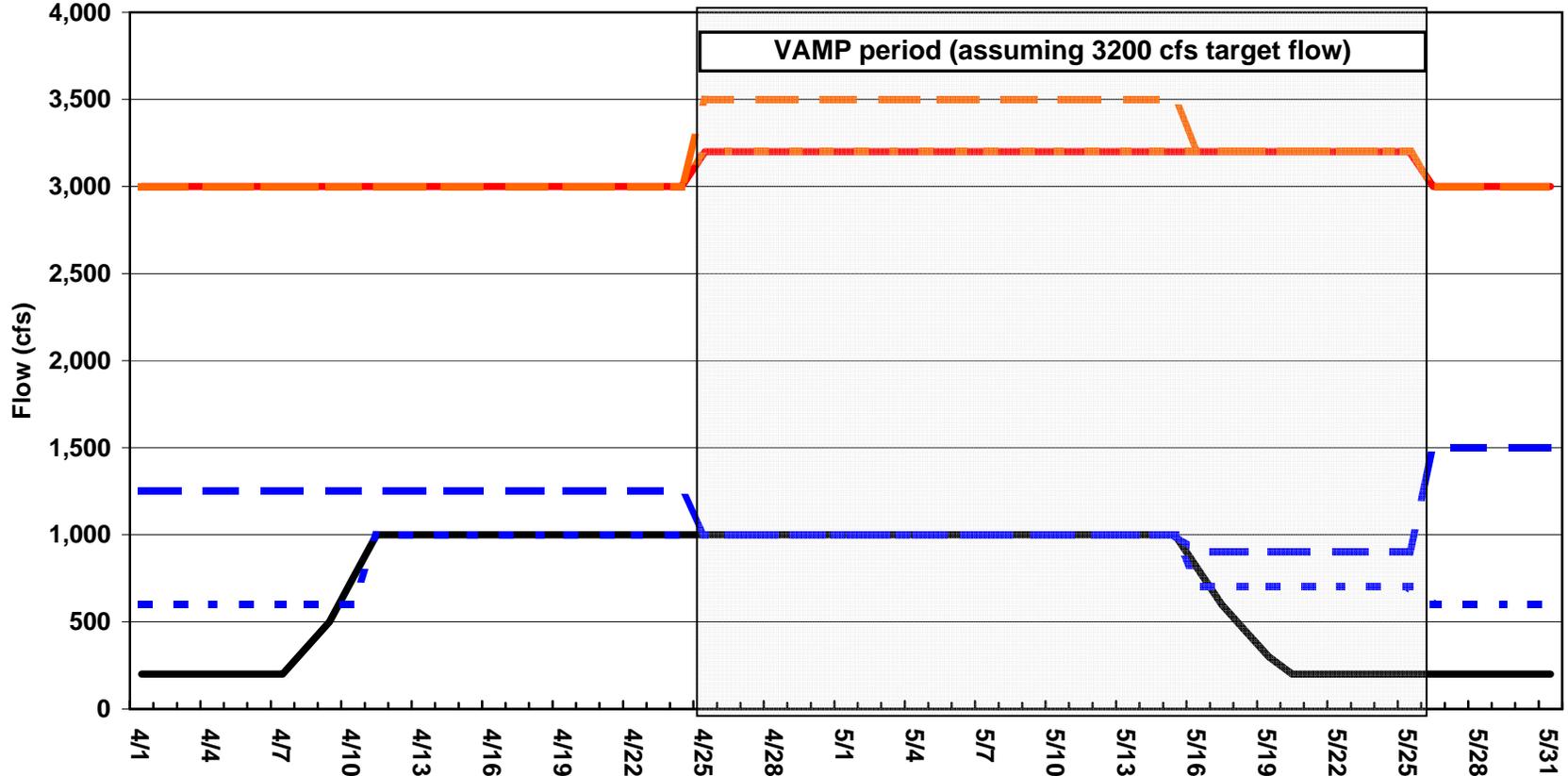
San Joaquin River Group Authority. 2008. 2007 Annual technical report on implementation and monitoring of the San Joaquin River Agreement and the Vernalis Adaptive Management Plan. Prepared for the California Water Resources Control Board in compliance with D-1641. 128 pages.

Determination

NMFS determines that the flows schedule, as shown in the figure and table, below, and provided by Reclamation on March 25, 2010 (Attachment 1) is consistent with the Vernalis flows and Stanislaus flows required under Actions III.1.3, IV.2.1 & Action IV.2.2 of the Reasonable and Prudent Alternative of the Opinion. In accordance with Action IV.2.1, daily combined CVP and SWP export rates must not exceed 1,500 cfs (unless Vernalis flows exceed 6,000 cfs), from April 1 through May 31, in order to provide protections necessary to avoid jeopardy to Central Valley steelhead, as described in the RPA action.

Stanislaus & Vernalis Flows expected April-May, 2010

Prepared by NMFS based on Reclamation's 3/25/2010 draft flow schedule(see Attachment 1)



- Stanislaus Minimum Flows required by Action III.1.3
- Minimum expected Stanislaus actual flows
- Maximum expected Stanislaus actual flows
- Vernalis Minimum Flows required by Action IV.2.1
- Minimum expected Vernalis actual flows
- Maximum expected Vernalis actual flows

Schedule of Stanislaus and Vernalis flows from 4/1 /2010 - 5/31/2010

Version: 3/29/2010, prepared by NMFS

Date	Stanislaus Minimum Flows required by Action III.1.3	Vernalis Minimum Flows required by Action IV.2.1	Minimum expected Stanislaus actual flows	Minimum expected Vernalis actual flows	Maximum expected Stanislaus actual flows	Maximum expected Vernalis actual flows
4/1	200	3,000	600	3,000	1,250	3,000
4/2	200	3,000	600	3,000	1,250	3,000
4/3	200	3,000	600	3,000	1,250	3,000
4/4	200	3,000	600	3,000	1,250	3,000
4/5	200	3,000	600	3,000	1,250	3,000
4/6	200	3,000	600	3,000	1,250	3,000
4/7	200	3,000	600	3,000	1,250	3,000
4/8	350	3,000	600	3,000	1,250	3,000
4/9	500	3,000	600	3,000	1,250	3,000
4/10	750	3,000	600	3,000	1,250	3,000
4/11	1,000	3,000	1,000	3,000	1,250	3,000
4/12	1,000	3,000	1,000	3,000	1,250	3,000
4/13	1,000	3,000	1,000	3,000	1,250	3,000
4/14	1,000	3,000	1,000	3,000	1,250	3,000
4/15	1,000	3,000	1,000	3,000	1,250	3,000
4/16	1,000	3,000	1,000	3,000	1,250	3,000
4/17	1,000	3,000	1,000	3,000	1,250	3,000
4/18	1,000	3,000	1,000	3,000	1,250	3,000
4/19	1,000	3,000	1,000	3,000	1,250	3,000
4/20	1,000	3,000	1,000	3,000	1,250	3,000
4/21	1,000	3,000	1,000	3,000	1,250	3,000
4/22	1,000	3,000	1,000	3,000	1,250	3,000
4/23	1,000	3,000	1,000	3,000	1,250	3,000
4/24	1,000	3,000	1,000	3,000	1,250	3,000
4/25	1,000	3,200	1,000	3,200	1,000	3,500
4/26	1,000	3,200	1,000	3,200	1,000	3,500
4/27	1,000	3,200	1,000	3,200	1,000	3,500
4/28	1,000	3,200	1,000	3,200	1,000	3,500
4/29	1,000	3,200	1,000	3,200	1,000	3,500
4/30	1,000	3,200	1,000	3,200	1,000	3,500
5/1	1,000	3,200	1,000	3,200	1,000	3,500
5/2	1,000	3,200	1,000	3,200	1,000	3,500
5/3	1,000	3,200	1,000	3,200	1,000	3,500
5/4	1,000	3,200	1,000	3,200	1,000	3,500
5/5	1,000	3,200	1,000	3,200	1,000	3,500
5/6	1,000	3,200	1,000	3,200	1,000	3,500
5/7	1,000	3,200	1,000	3,200	1,000	3,500
5/8	1,000	3,200	1,000	3,200	1,000	3,500
5/9	1,000	3,200	1,000	3,200	1,000	3,500
5/10	1,000	3,200	1,000	3,200	1,000	3,500
5/11	1,000	3,200	1,000	3,200	1,000	3,500
5/12	1,000	3,200	1,000	3,200	1,000	3,500
5/13	1,000	3,200	1,000	3,200	1,000	3,500
5/14	1,000	3,200	1,000	3,200	1,000	3,500
5/15	1,000	3,200	1,000	3,200	1,000	3,500
5/16	800	3,200	700	3,200	900	3,200
5/17	600	3,200	700	3,200	900	3,200
5/18	450	3,200	700	3,200	900	3,200
5/19	300	3,200	700	3,200	900	3,200
5/20	200	3,200	700	3,200	900	3,200
5/21	200	3,200	700	3,200	900	3,200
5/22	200	3,200	700	3,200	900	3,200
5/23	200	3,200	700	3,200	900	3,200
5/24	200	3,200	700	3,200	900	3,200
5/25	200	3,200	700	3,200	900	3,200
5/26	200	3,000	600	3,000	1,500	3,000
5/27	200	3,000	600	3,000	1,500	3,000
5/28	200	3,000	600	3,000	1,500	3,000
5/29	200	3,000	600	3,000	1,500	3,000
5/30	200	3,000	600	3,000	1,500	3,000
5/31	200	3,000	600	3,000	1,500	3,000

ATTACHMENT 1

March 25, 2010, draft operations outlook
from Reclamation

Implementation of the NMFS 2009 BiOp RPA Actions Summary
March 25, 2010

The following information is based on the DWR March 2010 runoff exceedence forecast.

RPA Action III.1.3 – Minimum Flows at Goodwin Dam

90% WSP^a : 1644 TAF

RPA Designation: Dry^b (for use in Appendix 2E – Stanislaus River Minimum Fish Flow Schedule)

RPA IV.1.2 – San Joaquin River Inflow to Export Ratio Phase I

New Melones Index: 1779 TAF

RPA Designation: Minimum flow required at Vernalis is D1641 requirements or 3,000 cfs, whichever is greater

Expected Range of Flows

The following flows at Goodwin Dam and Vernalis are estimates of expected releases. These flows or ranges may change at any time to accommodate downstream requirements and dynamic conditions outside of Reclamation's control.

During April 1 – May 31, the D-1641 requirement during the VAMP period is expected to be greater than 3,000 cfs. However the specific VAMP target flow will not be determined until early April. For discussion purposes it is assumed the VAMP target will be 3,200 cfs, but the actual target flow may be different. The VAMP period is scheduled to begin on April 25, 2010.

Date	Vernalis Flow Target (cfs)	Estimated Goodwin Dam Release (cfs)	Estimated Actual Vernalis Flow (cfs)
April 1 – April 10	3,000	600 – 1,250	3,000
April 11 - 24	3,000	1,000 – 1,250	3,000
April 25 – May 15	3,200	1,000	3,200 – 3,500
May 15 – May 25	3,200	700 – 900	3,200
May 26 – May 31	3,000	600 - 1500	3,000

^a The New Melones Water Supply Parameter (WSP) is defined as the end of February New Melones storage condition plus the forecasted March through September inflows.

^b Reclamation is currently operating per the IPO water year categories (per SOG and footnote 20, p.624 in the NMFS BiOp)