Memorandum

Date: May 11, 2011

To: Ali Forsythe – SJRRP Program Manager

cc. Michael Jackson, Ed Salazar, Doug DeFlitch, Dave Mooney, the TAC

From: Rod Meade – Restoration Administrator

Subject: Updated RA Interim Flow Release Recommendations – May 19, 2011 through February 29, 2012

I am submitting an updated Interim Flow Release Recommendation for your consideration and action. This updated recommendation complements the Real Time Management Recommendations that I submitted to on April 23, 2011, and also is intended to update my March 7, 2011, Interim Flow Release Recommendation. As provided for in the Draft Restoration Flow Guidelines (Draft RFG), my recommendation covers the period from May 19, 2011, through February 29, 2012.

Background

This Interim Flow Release Recommendation reflects both the May 1 Allocation and Default Flow Report (May 1 Allocation) released by Reclamation and recent conference calls with your staff, my Technical Advisory Committee (TAC) and the Flow Scheduling Subgroup (FSS). These discussions also addressed opportunities for practicing implementation of riparian recruitment flows during a "Wet" water year and potential opportunities for shaping the later portions of the Friant Dam flood release recession limb during a Wet water year. The point of discussion among FSS participants was not to achieve vegetation recruitment this year but to evaluate downstream responses during the flood release recession limb and Interim Flow releases to see how well our release management actions contribute to efforts to achieve river inundation level ramp downs of about 0.10 feet per day.

My understanding is that the current flood releases from Friant Dam are expected to continue well into May and, perhaps, into early June. At the point in time where flood releases from Friant Dam approach a maximum sustained release of about 1,630 cubic feet per second (cfs), I recommend that Interim Flow releases from Friant Dam be re-initiated. This updated Recommendation is based on consultation with members of the TAC, Reclamation staff, and the FSS.

My Recommendation is intended to complement my March 7, 2011 Interim Flow Recommendation and my April 23 Real-Time Management Recommendation for Interim Flows. Both Recommendations were designed to achieve modeled temperature targets in Reaches 1 and 2 of the San Joaquin River. These target temperatures were formulated by the TAC and RA in collaboration with the Implementing Agencies and the Fish Management Work Group as measures that would support successful reintroduction and survival of Chinook salmon into the San Joaquin River. My Recommendation below also reflects the best available information, but also acknowledges ongoing uncertainties with respect to future:

- San Joaquin River conditions below Friant Dam and above the Mendota Pool Dam;

1221 Torrey Pines Road La Jolla, California 92037
Tel: 858.531.1705 Email: rodmeade@gmail.com

- Groundwater monitoring data;
- Weather conditions and Sierra snow-melt rates; and
- Other factors considered important to restoration efforts, including biological and physical monitoring activities.

RA RECOMMENDATIONS

My recommended Interim Flow releases from Friant Dam are based on the information provided by Reclamation's May 1 Allocation and identified in Figure 1 below (*Recommended Interim Flow Releases from Friant Dam)*. The May 1 Allocation identifies the current water year as a "Wet Year" with a 90% probability of unimpaired runoff at of at least 2,880 thousand acre feet. Figure 1 identifies an available "capped" Restoration Allocation of 535,370 acre feet. Implementation of my Recommendation would result in a total volume of Interim Flow releases from Friant Dam totaling 529,610 acre feet. Thus, at the conclusion of the Water Year (February 29, 2012) the SJRRP would have a 5,760 acre feet balance in the Interim Flow account. As a caveat to this quantitative summary of the Interim Flow allocation and release volumes, please note my discussion later in this Recommendation regarding the need to drain the Mendota Pool in late November to conduct a safety inspection of the Mendota Pool Dam and complete necessary Dam maintenance and repairs of damages that may have occurred during the two years since the last Dam safety inspection.

In response to the Wet Year that we are experiencing my Recommendation calls for the Secretary of the Interior to implement riparian recruitment flows consistent with the provisions set forth in Exhibit B of the Settlement. Exhibit B discusses Riparian Recruitment Flows as follows (see item 6, top of page 3, Settlement Exhibit B):

> *In Wet Years, in coordination with the peak Flushing Flow releases, Restoration Flows should be gradually ramped down over a 60-90 day period to promote the establishment of riparian vegetation at appropriate elevation in the channel. The precise timing and magnitude of the riparian recruitment release shall be based on monitoring of meteorological conditions, channel conveyance capacity, salmonid distribution and other physical/ecological factors with the primary goal to establish native riparian vegetation working within the constraints of the flood control system, so long as the total volume of Restoration Flows allocated for Riparian Recruitment for that year is not exceeded.*

For purposes of implementing riparian recruitment flows, I use May 1 as the starting date for applying a ramp down period of 60 to 90 days as identified in Exhibit B. By starting the ramp down period on May 1, it means that the ramp down period will be completed before the end of July. Accordingly, I recommend that Friant Dam Interim Flow Releases be implemented as described below.

Specific Friant Dam Interim Flow Release Recommendations

1. My March 7 Flow Schedule and Hydrograph Recommendation is recommended to continue to be implemented through May 18, 2011, as identified in Table 1, provided that such release rates do not exceed groundwater well thresholds established by the SJRRP for Reaches 2A and 2B.

1221 Torrey Pines Road La Jolla, California 92037
Tel: 858.531.1705 Email: rodmeade@gmail.com

2. Commencing May 19, 2011, Interim Flow releases from Friant Dam are recommended to continue at a rate of 1630 cubic feet per second (cfs) through July 2, 2011, as identified in Table 2 and Figure 1 below, provided that such release rates do not exceed groundwater well thresholds established by the SJRRP for Reaches 2A and 2B.

3. Commencing July 3, 2011, and continuing through July 27, 2011, Interim Flow releases from Friant Dam are recommended to be reduced on a daily basis to achieve the Friant Dam release rates shown in Table 2 and Figure 1, provided that such release rates do not exceed groundwater well thresholds established by the SJRRP for Reaches 2A and 2B. Interim Flows entering the Mendota Pool in excess of conveyance capacities in Reaches 3 and 4 would be available for recapture and transfer to the San Luis Reservoir for storage and future recirculation for the benefit of Friant water users. [Note format correction]

4. On July 30, 2011, Interim Flow releases from Friant Dam are recommended to be reduced to 350 cfs and maintained at the 350 cfs level until October 31, 2011 (see Table 2 and Figure 1).

5. On November 1, 2011, and continuing through November 10, 2011, Interim Flow Releases from Friant Dam are recommended to be increased to 700 cfs for ten days (see Table 2 and Figure 1).

6. Commencing November 11, 2011, Interim Flow releases from Friant Dam are recommended to be reduced to 350 cfs and to continue at 350 cfs through February 29, 2012 (see Table 2 and Figure 1).

Addressing the Impact of the Scheduled Draining of the Mendota Pool on Interim Flow Releases

My Interim Flow release Recommendations do not reflect the potential quantitative impacts associated with the need to drain the Mendota Pool on the timing and volume of Interim Flow releases from Friant Dam. This is because several timing considerations related to draining Mendota Pool are not known at this time. For instance, we do not know:

- The specific date when the Pool will begin to be drained and Interim Flows could no longer be released from Friant Dam and allowed to enter the Pool;

- The length of time the Pool would need to remain dry so that necessary safety inspections and Dam repairs could be completed; and

- The date when Interim Flow releases could re-commence and safely be allowed to enter the Mendota Pool.

In view of these unknown timing considerations, my Recommended Interim Flow releases (*i.e.,* totaling 529,610) will be reduced by an undetermined amount to enable the Pool to be drained, the Dam to be inspected and necessary maintenance and repairs to be completed. For example, if Interim Flow releases need to be terminated on November 15, 2011 to accommodate inspection and maintenance activities at the Mendota Pool Dam it is possible that Interim Flow releases might needed to be halted until January 2, 2012. Under this scenario, Interim Flow releases from Friant Dam would be interrupted for a total of 49 days. The Default/Recommended release rate for this 49-day period is 350 cfs (see

1221 Torrey Pines Road La Jolla, California 92037
Tel: 858.531.1705 Email: rodmeade@gmail.com

Table 2) and such an interruption in Interim Flow releases from Friant Dam would result in a total reduction of Interim Flow releases of about 33,960 acre feet that would need to be added to the 5,760 acre-feet balance shown in Figure 1.

Given the potential impact of Mendota Pool Dam safety inspection and maintenance activities on the total volume of Interim Flow releases, I request that Reclamation provide guidance concerning the potential to permit temporary storage of Interim Flows in Millerton Reservoir for later release, assuming that delayed release would not result in an additional reduction in the amount of water available to Friant water users. I am assuming that the delayed releases would be available for recapture for Friant's benefit at the Mendota Pool.

Managing the Recession Limb of 2011 Flood Releases from Friant Dam

I understand that Reclamation's responsibilities are focused on the safe operation of Friant Dam and management of the Millerton Reservoir pool to protect public safety and downstream properties. To the extent that it would be consistent with these priority obligations, and based on the recent conversations involving me, TAC members, Reclamation staff and the participants in the weekly FSS meetings, I recommend that Reclamation consider managing (shaping) the later portions of the flood release recession limb to provide for a stepped recession limb that could assist the SJRRP in developing important data relating to the response of Reaches 1 and 2 downstream of Friant Dam to receding flow releases.

As part of this general request, I also ask that Reclamation:

- Provide at least one week notice to me and the TAC of your intent to reduce flood releases to about 2,000 cfs so that we can consider final adjustments that might be necessary to Interim Flow releases from Friant Dam;

- Implement a steady recession rate for flood releases as your confidence in the ability to manage the Millerton Reservoir pool improves; and

- Provide ongoing information updates through the FSS and as needed outside the FSS venue.

If you have questions concerning my Recommendation or relating to the request to Reclamation concerning flood releases, please contact me at your earliest convenience. By the way, I have not received a response to the Real-Time Management Interim Flow Program Recommendations that I submitted to you on April 23, 2011. Please let me know if you have questions or concerns regarding my April 23 Recommendations at your early convenience.

Thank you for your prompt consideration of these recommendations and requests.

1221 Torrey Pines Road La Jolla, California 92037
Tel: 858.531.1705 Email: rodmeade@gmail.com

Table 1: March 7, 2011 RA Recommended Interim Flow Releases from Friant Dam

Begin Date	End Date	Recommended Friant Dam Release Necessary to Achieve Gravelly Ford Target Flows (cfs)	Exhibit B Riparian Release (cfs)	Gravelly Ford Flow Target (cfs)	Gravelly Ford Flow Allocation (cfs)
Tuesday, February 01, 2011	Monday, February 07, 2011	200	100	105	100
Tuesday, February 08, 2011	Saturday, February 19, 2011	350	100	255	250
Sunday, February 20, 2011	Monday, February 28, 2011	460	100	365	360
Tuesday, March 01, 2011	Monday, March 07, 2011	550	130	425	420
Tuesday, March 08, 2011	Wednesday, March 16, 2011	900	130	775	770
Thursday, March 17, 2011	Saturday, March 19, 2011	1200	130	1075	1070
Sunday, March 20, 2011	Thursday, March 31, 2011	1450	130	1325	1320
Friday, April 01, 2011	Sunday, April 10, 2011	1000	150	855	850
Monday, April 11, 2011	Friday, April 22, 2011	1100	150	955	950
Saturday, April 23, 2011	Saturday, April 30, 2011	1450	150	1305	1300
Sunday, May 01, 2011	Wednesday, May 18, 2011	1630	190	1445	1440
Thursday, May 19, 2011	Tuesday, May 31, 2011	350	190	165	160
Wednesday, June 01, 2011	Thursday, June 30, 2011	350	190	165	160
Friday, July 01, 2011	Wednesday, August 31, 2011	350	230	125	120
Thursday, September 01, 2011	Friday, September 30, 2011	350	210	145	140
Saturday, October 01, 2011	Monday, October 31, 2011	350	160	195	190
Tuesday, November 01, 2011	Thursday, November 10, 2011	700	130	575	570
Friday, November 11, 2011	Saturday, December 31, 2011	350	120	235	230
Sunday, January 01, 2012	Wednesday, February 29, 2012	350	100	255	250

Table 2: May 11, 2011 RA Recommended Interim Flow Releases from Friant Dam

Begin Date	End Date	Recommended Friant Dam Release Necessary to Achieve Gravelly Ford Target Flows (cfs)	Exhibit B Riparian Release (cfs)	Gravelly Ford Flow Target (cfs)	Gravelly Ford Flow Allocation (cfs)
Tuesday, February 01, 2011	Monday, February 07, 2011	200	100	105	100
Tuesday, February 08, 2011	Saturday, February 19, 2011	350	100	255	250
Sunday, February 20, 2011	Monday, February 28, 2011	460	100	365	360
Tuesday, March 01, 2011	Monday, March 07, 2011	550	130	425	420
Tuesday, March 08, 2011	Saturday, March 19, 2011	1,050	130	925	920
Sunday, March 20, 2011	Thursday, March 31, 2011	1,450	130	1,325	1,320
Friday, April 01, 2011	Sunday, April 10, 2011	1,000	150	855	850
Monday, April 11, 2011	Friday, April 22, 2011	1,100	150	955	950
Saturday, April 23, 2011	Saturday, April 30, 2011	1,450	150	1,305	1,300
Sunday, May 01, 2011	Tuesday, May 31, 2011	1,630	190	1,445	1,440
Wednesday, June 01, 2011	Thursday, June 30, 2011	1,630	190	1,445	1,440
Friday, July 01, 2011	Saturday, July 02, 2011	1,630	230	1,405	1,400
Sunday, July 03, 2011	Tuesday, July 05, 2011	1,550	230	1,325	1,320
Wednesday, July 06, 2011	Friday, July 08, 2011	1,300	230	1,075	1,070
Saturday, July 09, 2011	Monday, July 11, 2011	1,100	230	875	870
Tuesday, July 12, 2011	Thursday, July 14, 2011	900	230	675	670
Friday, July 15, 2011	Sunday, July 17, 2011	790	230	565	560
Monday, July 18, 2011	Wednesday, July 20, 2011	660	230	435	430
Thursday, July 21, 2011	Saturday, July 23, 2011	550	230	325	320
Sunday, July 24, 2011	Tuesday, July 26, 2011	455	230	230	225
Wednesday, July 27, 2011	Friday, July 29, 2011	370	230	145	140
Saturday, July 30, 2011	Wednesday, August 31, 2011	350	230	125	120
Thursday, September 01, 2011	Friday, September 30, 2011	350	210	145	140
Saturday, October 01, 2011	Monday, October 31, 2011	350	160	195	190
Tuesday, November 01, 2011	Thursday, November 10, 2011	700	130	575	570
Friday, November 11, 2011	Saturday, December 31, 2011	350	120	235	230
Sunday, January 01, 2012	Wednesday, February 29, 2012	350	100	255	250

1221 Torrey Pines Road La Jolla, California 92037
Tel: 858.531.1705 Email: rodmeade@gmail.com

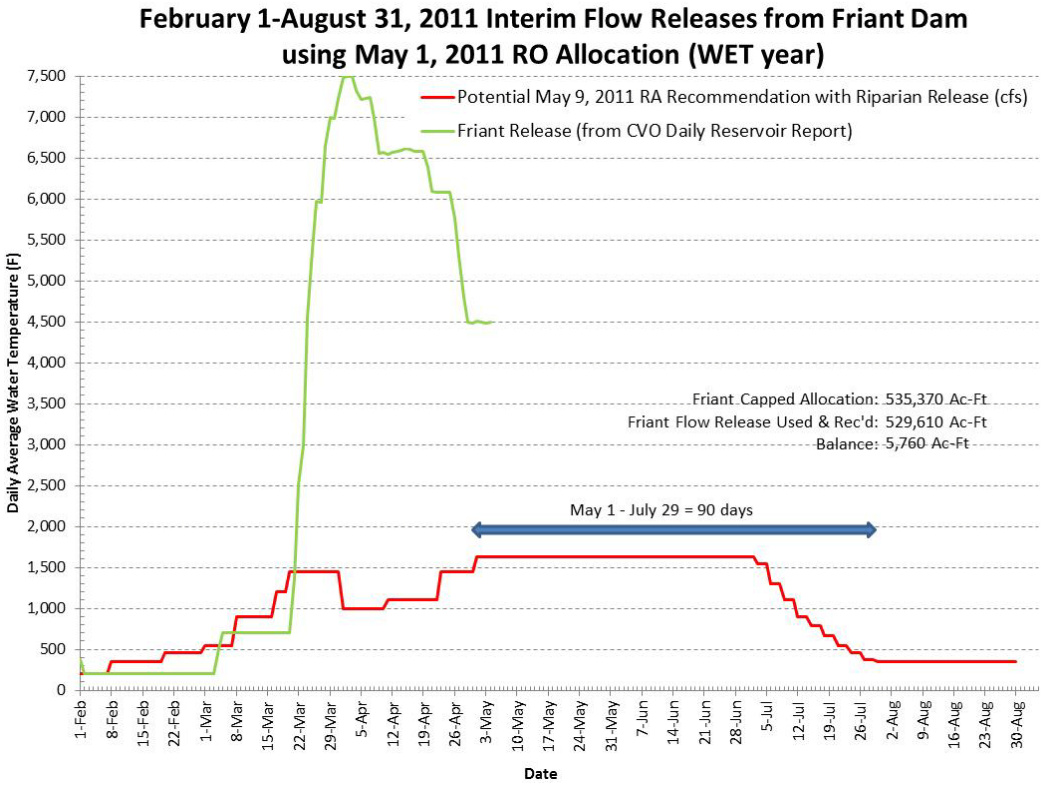

Figure 1: Recommended Interim Flow Releases through August 2011

1221 Torrey Pines Road ▯ La Jolla, California 92037
Tel: 858.531.1705 ▯ Email: rodmeade@gmail.com