Restoration Administrator Flow Recommendation

To: Don Portz, Chad Moore, David van Rijn, Regina Story
CC: Michael Jackson, Rufino Gonzalez, Dan Cavanaugh, Doug Obegi, Steve Ottemoeller, Ian Buck-Macleod, TAC
Date: March 21, 2023
From: Tom Johnson, Restoration Administrator
Subject: Recommendation for 2023 Restoration Flows

The following is a Restoration Flow Recommendation by the Restoration Administrator (RA) for the 2023 Restoration Year Flows pursuant to the Restoration Flow Guidelines (RFG) Ver. 2.1, as amended, and Exhibit B of the Settlement.

Background

The SJRRP has issued an Updated Restoration Allocation Update (Allocation) dated March 14, 2023, which designates 2023 as a **Wet** Water Year Type with an Unimpaired Inflow hybrid forecast of 4,537 thousand acre-feet (TAF) and provides an allocation of Restoration Flows of 556.542 TAF as measured at Gravelly Ford (GRF) based on the 50% exceedance forecast. The Allocation also specified certain contractual and operational constraints on Restoration Flow releases for 2023.

Additional Considerations

The South-Central California Area Office (SCCAO) has declared 'Uncontrolled Season' and is currently making flood control releases to the San Joaquin River (SJR). Both Uncontrolled Season and flood control releases to the river are expected to continue through June, although duration will be adjusted depending on weather and hydrological conditions.

Recommendation for 2023 Restoration Year

At this time, I am recommending a flow schedule for the 2023 Restoration Year as shown in Table 1. This Recommendation:

1. Provides maximum flow to the river (limited by seepage constraints below Sack Dam) through May 28,
2. Then utilizes Riparian Recruitment flows to maintain a connected river (targeting at least 50 cfs at EBM) through July 29,
3. Then utilizes URF exchange water to maintain a connected river through September, and
4. Then generally returns to Exhibit B flows for the balance of the 2023 Restoration Year.

This Recommendation is intended to a) release the maximum possible volume of Restoration Flows down the river, as limited by seepage considerations, and b) keep the river connected for the entirety of the year, although with reduced summertime flows to preserve cold water pool to the extent possible.

No recapture other than de-minimus amounts are planned in the Restoration Area. All Restoration Flow releases are to flow through the entirety of the Restoration Area. If there are operational or other

constraints that preclude Restoration Flows traveling the entire length of the Restoration Area, the Restoration Recommendation will be adjusted to reduce Restoration Flow releases to the level of the controlling operational constraint.

Table 1. Summary of Restoration Flow Recommendations for March 1, 2023, through February 29, 2024.

Restoration Flow Period	***Date Range***	***Friant Release***	***URF Exchange Release***	***Restoration Flows at Gravelly Ford***	***Total Flow at Gravelly Ford[1]***	***Target Restoration Flow at Sack Dam (est.)***
2023 Spring Flex. Flow Period	March 1 – March 31, 2023[3]	As necessary, but not less than 505 cfs[6]	0 cfs	375 cfs	380 cfs	290 cfs
	April 1 – April 30, 2023[3]	As necessary, but not less than 525 cfs[6]	0 cfs	385 cfs	390 cfs	300 cfs
	May 1 – May 21, 2023[3]	As necessary, but not less than 585 cfs[6]	0 cfs	395 cfs	400 cfs	305 cfs
	May 22 – May 31, 2023[3]	Ramp down flows from Friant Dam at Operator's discretion, to achieve a <u>total</u> flow target of 180 cfs at Gravelly Ford by June 1, 2023	0 cfs	As occur, down to 175 cfs	As occur, down to 180 cfs	As occur
2023 Riparian Recruitment	June 1 – June 30, 2023[4]	As necessary, but not less than 365 cfs[6]	0 cfs	175 cfs	180 cfs	100 cfs
2023 Riparian Recruitment	July 1 – July 29, 2023[4]	As necessary, but not less than 405 cfs[6]	0 cfs	175 cfs	180 cfs	100 cfs
Base Flow + Exchanges	July 30 – August 31, 2023	As necessary, 350 cfs minimum	95 cfs	195 cfs[7]	200 cfs[8]	120 to 65 cfs[9]

Restoration Flow Period	*Date Range*	*Friant Release*	*URF Exchange Release*	*Restoration Flows at Gravelly Ford*	*Total Flow at Gravelly Ford[1]*	*Target Restoration Flow at Sack Dam (est.)*
Base Flow + Exchanges	September 1 – September 30, 2023	As necessary	70 cfs	125 cfs	200 cfs[7]	120 to 60 cfs[9]
Base Flows	October 1 – October 31, 2023	As necessary	0 cfs	195 cfs	200 cfs	60 cfs
	November 1 – December 31, 2023	As necessary	0 cfs	235 cfs	240 cfs	95 to 115 cfs
	January 1, 2024 – February 6, 2023	As necessary	0 cfs	235 cfs	240 cfs	95 to 115 cfs
Base Flows + Shifted Fall Pulse	February 7 – February 29, 2024[5]	As necessary	0 cfs	305 cfs	310 cfs	190 cfs

[1]Total Flow includes the minimum Holding Contract flows of 5 cfs required at Gravelly Ford

[3]March 1 through May 28 flows are as per Flexible Flow period rules, see RFG 2.1, Sec 4.1.2

[4]May 29 – July 29 flows are as per Riparian Recruitment period rules, see RFG 2.1, Sec 4.1.4

[5]Shift of Fall Pulse is per Exhibit B, 4(d), see RFG 2.1, Sec 4.1.5

[6]Friant Dam targets reflect the GRF targets plus the Exhibit B Riparian Release amounts for that time period

[7]95 cfs Exchange Flow + 100 cfs Base Flow

[8]GRF flows when Exchanges are present are as follows: GRF flow= Exchange flow + Restoration Flow + 5 cfs

[9]120 cfs using Exhibit B losses (during flood flows), down to 65 cfs with no flood flows

Additional Elements of this Recommendation

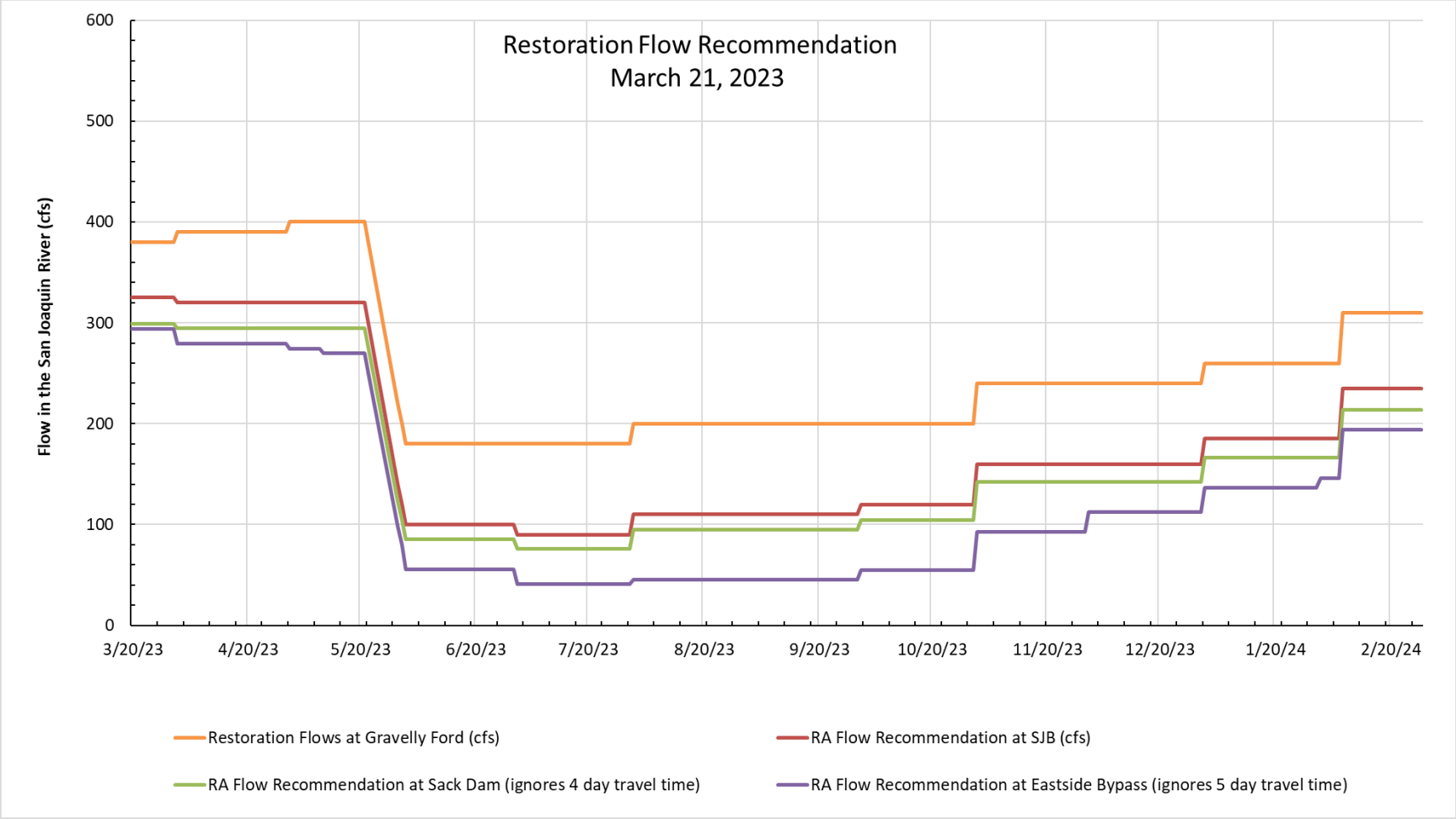
This Recommendation anticipates the release of 186.567 TAF of Restoration Flows and 10.167 TAF of URF Exchanges to the SJR, leaving approximately 380 TAF as Unreleased Restoration Flows (URF's). *Note that these volumes may change, depending on hydrologic and fishery conditions, future Allocations, and future Recommendations.*

An initial block of 165 TAF of URF's was released in February. A second block of 80 TAF of URF's are immediately released with this Recommendation. A third block of 100 TAF is to be released as of April 20, 2023, and the final block of URF's are planned to be released in early June, once the duration of flood control releases to the SJR is more accurately understood.

Depending on changing hydrologic conditions, I will adjust or revise this Recommendation as necessary.

Additional Consultation

I will continue to coordinate with the TAC, Program Office, and Implementing Agencies to monitor hydrologic conditions, fish population conditions, uncontrolled season releases, operational conditions, and other factors, and will update the Restoration Flow Recommendation as conditions change.


Restoration Flow Recommendation
March 21, 2023
Flow in the San Joaquin River (cfs)
600
500
400
300
200
100
0
3/20/23
4/20/23
5/20/23
6/20/23
7/20/23
8/20/23
9/20/23
10/20/23
11/20/23
12/20/23
1/20/24
2/20/24
Restoration Flows at Gravelly Ford (cfs)
RA Flow Recommendation at SJB (cfs)
RA Flow Recommendation at Sack Dam (ignores 4 day travel time)
RA Flow Recommendation at Eastside Bypass (ignores 5 day travel time)

GRAVELLY FORD FLOWS AVAILABLE VERSUS RA RECOMMENDATION				
		Available	**Used**	**Balance**
Total GRF River Flow Target without 5 cfs (March 1, 2021 - Feb 28, 2022):		567.205 TAF	186.567 TAF	380.638 TAF
Allocation Flow		**557.038 TAF**	**177.285 TAF**	**379.754 TAF**
Exchange Flow		10.167 TAF	10.165 TAF	**0.002 TAF**
Buffer Flows		0.000 TAF	0.000 TAF	**0.000 TAF**
		URF's Disposed of as of	**3/21/2022**	165.263
Use Buffer Flows?	**no**		**Net Alloc Remainder**	**214.491 TAF**

ACCOUNTS SUMMARY at Gravelly Ford, this Restoration Year			
	Available	**Used**	**Balance**
Continuity (Baseflows):	136.939 TAF	134.350 TAF	2.588 TAF
Spring Flexible Flows:	213.521 TAF	37.565 TAF	175.956 TAF
Fall Flexible Flows:	6.942 TAF	3.570 TAF	3.372 TAF
Riparian Recruitment Flows:	199.636 TAF	1.190 TAF	198.446 TAF
Extra Summer Flow (Water Supply Test):	0.000 TAF	-0.139 TAF	-0.139 TAF
Total:	**557.038 TAF**	**176.537 TAF**	**380.501 TAF**