Stanislaus Watershed Team

December 20, 2023

Members Attending

- USBR: Amanda Snow, Bradley Hubbard, Claire Hsu, Elizabeth Kiteck, Peggy Manza
- USFWS: J.D. Wikert
- CDFW: Crystal Rigby, Gretchen Murphey, Travis Apgar, Steve Tsao
- NMFS: Barb Byrne, Evan Sawyer
- DWR: N/A
- SWRCB: Yongxuan Gao, Chris Carr
- PSMFC: Logan Day, Hunter Morris
- SSJID: Brandon Nakagawa
- Fishbio: N/A
- Stockton East Water District (SEWD): Justin Hopkins
- WAPA: N/A
- Herum/Crabtree/Suntag Attorneys: Liliana Selke
- Kearns & West: Mia Schiappi, Bethany Taylor

Action Items

1. Peggy Manza, USBR
    a. Draft a proposal that provides guidance for a combined pulse flow in February [by 12/22]
        i. Check with Reclamation management on how a February pulse flow would be affected if there are flood releases in January.
        ii. Include a mention that the proposal will be discussed at the 1/18/24 SWT meeting, which should allow sufficient time to schedule the potential revised flow.
        iii. Circulate the draft proposal to SWT members to collect feedback and request a due date for comments.
2. All
    a. Provide comments and feedback to the draft flow proposal once available.
3. Brandon Nakagawa, SSJID
    a. Provide an update on the funding status of the Oakdale RST.

4. Kearns & West
    a. November meeting draft summary to be distributed along with December's draft summary

Announcements

- Travis Apgar, CDFW, joined the SWT team as an additional CDFW Water Branch representative.

Operations Update and Forecasts/ Hydrology

New Melones Reservoir Update

- Precipitation events are expected for this week and the week of 12/24/23. To date, Water Year 2024 is classified as Critically Dry using the 90% exceedance of the San Joaquin Index, but current conditions are not considered unusual as it is still early in the water year.
- Storage is currently at 400 TAF below TOC, which is slightly under flood control levels at this time.
- Peak flow from the fall pulse flow in October is shown in the graph, as well as a spike in inflow from a November precipitation event.

Daily CVP Water Supply

- Reservoir releases at Goodwin Dam are 200 cfs.
- As of 12/20/23, storage in New Melones is 1.968 MAF.
- Accumulated inflow totals 137 TAF, and measures 125% of the 15-year average. Much of this is due to the rain received earlier in the week (12/17 – 12/19).

New Melones

- Accumulated precipitation at New Melones totals 2.47 inches for Water Year 2024, or 36% of the average amount.
- New Melones was shut down for approximately 6 weeks (November through mid-December) for maintenance work, with approximately no releases during November. During this time, Tulloch storage was being used to provide Stanislaus River flow.

Tulloch

- Tulloch storage was used to provide river flow while maintenance was conducted at New Melones. This led to lower-than-anticipated levels at Tulloch, but Tulloch was stabilized with a few days of releases from an alternate outlet at New Melones.
- Inflow levels to Tulloch for November were essentially zero, although calculations in the tables show negative figures.

Goodwin

- No deliveries are happening to water rights holders or contractors at this time.

Other Operations

- Forecasting
    - The operations forecast is not finalized or available at this time.
    - The December forecast indicates a Critical water year type based on the 60-20-20 Index at the 90% exceedance level. It is typical for the water year type to be Critical this early in the water year.
    - January forecasts should be more informative about what the El Niño pattern will bring to the San Joaquin Valley.

Questions

- Has Tulloch completed their needs related to the drawdown?
    - No, they will be down through the end of January and will start refilling then.
        - Is there concern about refilling Tulloch earlier due to the possibility of side flows from storms?
            - We will have to be cautious about side flows and start making increased releases as more water comes in. However, this is a known risk during the winter months. Clearances should be in place to allow for safe water release.
- Regarding the current Critical water year type based on the 60-20-20 Index, is it mostly about projected water inflow this early in the season using the 90% exceedance forecast, [where the remaining 10% indicates] we'll be in the driest 10% of years?
    - That's correct.
        - Related to those statistics, for implementation of the Winter Instability Flow (WIF) in January/February, the available budget depends on the water year type. Typically, the first WIF is scheduled for late January to allow for more efficient fry mobilization. In some years, we've had to rely on the previous May's water year type for the January WIF because the official bulletin is not published until February. We've then used the bulletin to inform the February WIF. We do have a water supply index forecast for December 2023, but the numbers are somewhat conservative, and if we use December data, it will nearly always be categorized as a critical year. What are your thoughts on which hydrology forecast to use to determine the water year type for WIF implementation?
            - Reclamation will discuss whether to use the May (or June) forecast from the current water year.
            - Noting that any flow augmentation that gives us flow variability and doesn't scour or dewater redds is a positive action to take.

Flow variability also encourages juvenile *O. mykiss* to move downstream.

Water Temperature Updates

- Stanislaus River water temperatures have been in the low 50s (Fahrenheit) since early November.
- Egg development is likely happening slowly this year as a result of the cooler water.
- Temperatures are suitable for salmonids and egg incubation.

Flow Planning

- Ultimately, Reclamation will decide whether to implement two separate or one combined WIF. February may be the optimal timeline for helping to disperse fish.
- Questions / Comments
    - If SWT is in agreement to do the combined WIF in February, but we receive high levels of precipitation in January that result in increased releases from Goodwin Dam, will the combined WIF plan change?
        - Peggy Manza, USBR, to explore this scenario with Reclamation management and BDO.
        - Reclamation to take on drafting a proposal on behalf of SWT and collect comments. Will discuss in detail at the SWT January meeting. Any proposed plan will require thorough evaluation of impacts.
        - USFWS noted that flows over 1,000 cfs are more likely to mobilize the newly emerged fry, and the optimal time is late February.
    - SWT discussed that the flow schedule recently proposed by Reclamation for the reinitiation of consultation of long-term CVP and SWP operations includes a single, larger winter storm pulse in February. However, the Stepped Release Plan (SRP) proposed in the 2019 BA is currently the minimum flow requirement in effect and is what wil be implemented by Reclamation (within existing flexibilities which could include implementing a combined pulse in February).
    - For consideration, there are multiple benefits of a WIF. Steelhead juveniles are present to see those benefits in both January and February: more Chinook fry will be present to experience those benefits in February compared to January.
    - Caswell Rotary Screw Trap (RST) installation is on 1/4 – 1/5/24 and should be considered when implementing the WIF.
    - If precipitation is extreme one way or another (i.e., very dry or very wet conditions), what is the path forward?
        - Contingency plans will need to be worked into the proposal.

- NMFS reminded SWT that the current ESA regulatory documents set the minimum flows, however, USBR can implement flows higher than the minimum.

Stanislaus River Forum (SRF) Call Review

- The December SRF meeting went smoothly overall aside from weather-related technical issues. There were no comments received from members of the public.

Fish Monitoring

CDFW Fish Monitoring

- Adult Chinook Carcass Survey numbers are starting to decline, indicating that the run is now past-peak.
- 379 and 348 adult Chinook salmon have been tagged on the Stanislaus and Tuolumne Rivers, respectively.
- 677 adult Chinook salmon have been tagged in the Merced River.
- Merced Hatchery spawning completed last week with 394 females having spawned.
- Expecting to start *O. mykiss* redd surveys in January.
- The Mossdale Trawl is still active, but salmonids have not been caught since August.
- Questions
    - When will the Oakdale RSTs be installed?
        - There is a meeting scheduled for 12/21/23 to determine whether to fund the traps. Brandon Nakagawa, SSJID, will update the group after.

Stanislaus Weir Update

- The weir is installed.
- As of 12/14/23, 2,295 adult Chinook salmon have passed through.
    - 612 (27%) were adipose-clipped/of hatchery origin.
- As of 12/14/23, 28 *O. mykiss* were observed passing the weir.
    - 21 (75%) *O. mykiss* were adipose-clipped/of hatchery origin.

Rotary Screw Trap Updates

- PSMFC expects to install RSTs at Caswell Memorial State Park on 1/4/24 – 1/5/24 with daily sampling expected to begin on 1/7/24.

Other Comments

- Noted that data on acoustic-tagged Steelhead in the Stanislaus River is available on the CalFish track page: https://oceanview.pfeg.noaa.gov/CalFishTrack/pageStan_STH_2024.html
    - Data is from Reclamation, Cramer Fish Sciences, and USFWS under a current monitoring commitment for life-cycle modeling.

Restoration Project Updates

- Stanley Wakefield Wilderness Project was completed.
    - Non-native species were removed and revegetation work is happening.
    - Anyone can take a self-guided walkthrough at the location.
- CVPIA Year 3 is now available on Grants.gov, and will likely close in March 2024. Up to $10M in funding is available. A meeting is scheduled for 1/11/24 to plan the proposal and divide up tasks.
- Questions / Comments
    - SSJID shared that the tours have inspired lots of discussion amongst locals and leaders appreciate the opportunity to see the sites
    - Contact J.D. Wikert, USFWS, to organize a site visit or float for any interested groups.

Progress Update on Proposed Action Elements

- N/A

Other Discussion Items

Curtailments

- N/A

Annual Reporting

- Reclamation is still waiting for one section of the report to be drafted; this is expected to arrive soon.

Items to elevate to WOMT

- No items for WOMT.

Next Meeting

Wednesday, January 17, 10:00 am –12:00 pm.

BUREAU OF RECLAMATION

Stanislaus Watershed Team

10:00 AM – 12:00 PM
Conference Line: 1 (321) 209-6143; Meeting ID: 901 988 581#
Webinar: Join Microsoft Teams Meeting

Wednesday, December 20, 2023

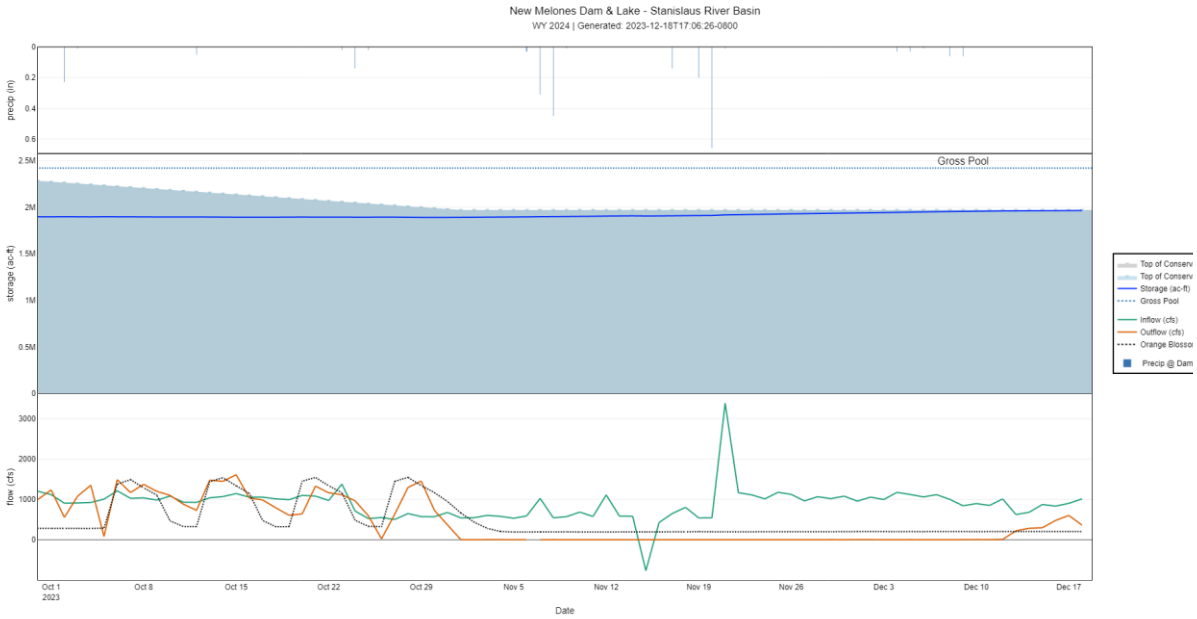
Agenda

1. Introductions
2. Ground Rules[1]
3. Announcements
    a. Meeting will be recorded for notetaking purposes – Mia Schiappi, Kearns & West
    b. Notes from last month were delayed due to contracting timelines, thank you for your patience - Mia Schiappi, Kearns & West
    c. Karis is traveling for the holidays; she will be back with SWT next month - Mia Schiappi, Kearns & West
    d. Please copy Bethany Taylor btaylor@kearnswest.com and Karis Johnston kjohnston@kearnswest.com on all packet materials and communications for SWT.
4. Operations Update and Forecasts/Hydrology - Peggy Manza, USBR

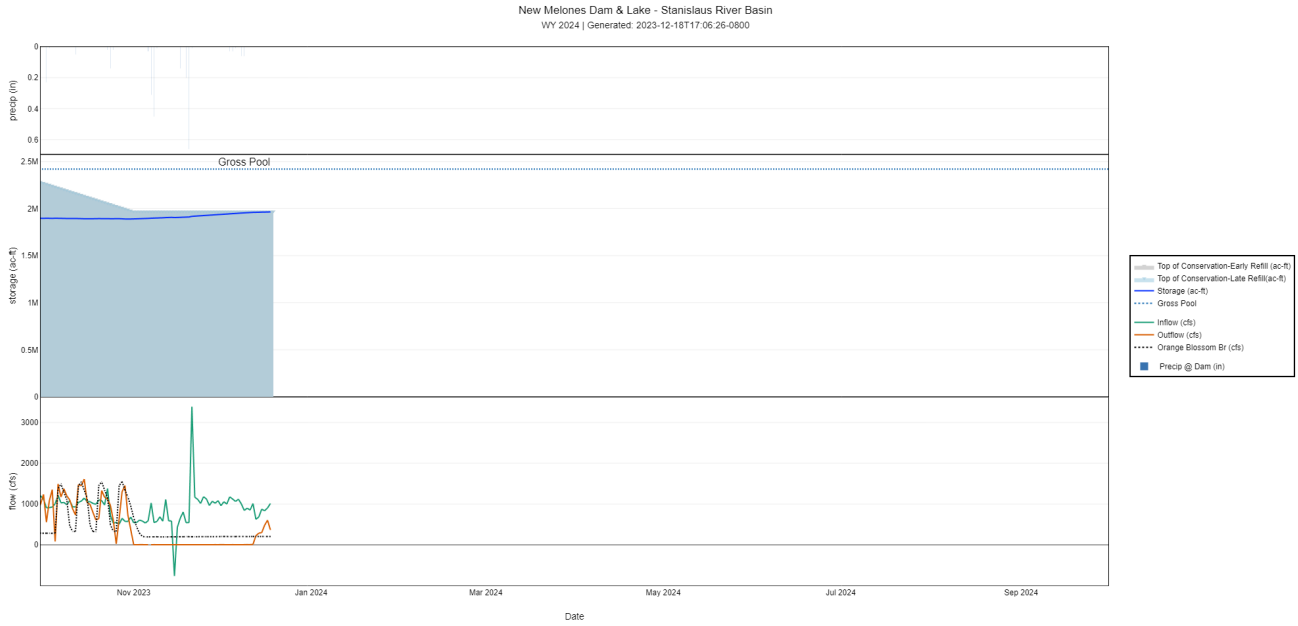
[1] [1]The Stanislaus Watershed Team's Ground Rules are as follows:

1. Seek to understand and respect opposing views and suggestions for change (w/in the parameters of the Guidance Document).
2. Seek to leverage collective expertise (including from agencies' & stakeholders' consultants).
3. Hold questions/discussion at the discretion of the presenter.
4. Honor time limits - keep comments and discussion succinct and focused on meeting objectives as needed.
5. Make constructive proposals and suggestions to seek mutually agreeable solutions for all parties.
6. Keep a record of discussion and dialogue.
7. One speaker at a time
8. Take space/make space

5. Temperature Updates – Barbara Byrne, NMFS
6. Flow Planning – JD (John) Wikert, USFWS
7. Stanislaus River Forum (SRF) Call Review - Amanda Snow, USBR
8. Fish Monitoring and Studies - CDFW, FISHBIO, NMFS, PSMFC
9. Restoration Project Updates
    a. Restoration Tracker – JD (John) Wikert, USFWS
    b. Caterina Pien, USBR
10. Other Discussion Items
    a. WY23 Summary of Activities Report Update - Amanda Snow, USBR
    b. SWRCB Updates - Erin Foreman, Resa, Yongxuan Gao, Michael Macon, SWRCB
11. Review Action Items – Mia Schiappi, Kearns & West
12. Next Meeting: Wednesday, January 17, 2023 (10am-12pm)



New Melones Dam & Lake – Stanislaus River Basin 2023-12-18T17:06 26-0800



New Melones Dam & Lake – Stanislaus River Basin 2023-12-18T17:06 26-0800

BUREAU OF RECLAMATION

Tables for BDO

United States Department of the Interior
Bureau of Reclamation, Central Valley Project-
California Daily CVP Water Supply Report

December 17, 2023
Run Date: December 18, 2023

Table 4. Reservoir Releases in Cubic Feet Per Second

Reservoir	Dam	WY 2023	WY 2024	15-Year Median
Trinity	Lewiston	295	300	305
Sacramento	Keswick	3,367	5,088	4,171
Feather	Oroville (SWP)	950	1,750	1,750
American	Nimbus	1,326	2,075	1,801
Stanislaus	Goodwin	202	204	223
San Joaquin	Friant	584	424	375

Table 5. Storage in Major Reservoirs in Thousands of Acre-Feet

Reservoir	Capacity	15-Yr Avg	WY 2023	WY 2024	% O 15 Yr Avg
Trinity	2,448	1,259	523	1,216	97
Shasta	4,552	2,363	1,439	3,024	128
Folsom	977	398	282	456	115
New Melones	2,420	1,281	613	1,965	153
Fed. San Luis	966	453	219	736	163
Total North CVP	11,363	5,753	3,076	7,397	129
Millerton	521	264	327	204	77
Oroville (SWP)	3,538	1,543	1,035	2,324	151

Table 6. Accumulated Inflow for water Year to Date in Thousands of Acre-Feet

Reservoir	Current WY 2024	WY 1977	WY 1983	15-Yr Avg	% O 15 Yr Avg
Trinity	51	23	183	100	51
Shasta	508	593	1,010	685	74
Folsom	160	100	679	252	63
New Melones	137	---	285	110	125
Millerton	264	63	368	136	194

Table 7. Accumulated Precipitation for Water Year to Date in Inches

Reservoir	Current WY 2024	WY 1977	WY 1983	Avg (N Yrs)	% of Avg	Last 24 Hours
Trinity at Fish Hatchery	4.49	1.25	15.67	9.43 (63	48	0.00
Sacramento at Shasta Dam	6.44	1.63	24.18	16.61 (68)	39	0.00
American at Blue Canyon	0.27	3.27	29.29	17.47 (49)	2	0.00
Stanislaus at New Melones	2.47	---	11.63	6.77 (46)	36	0.00
San Joaquin at Huntington LK	1.64	1.80	20.00	8.95 (50)	18	0.00

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
New Melones Lake Daily Operations, November 2023, Run Date: 12/18/2023

Day	Elev	Storage 1000-Acre-Feet in Lake	Storage 1000-Acre-Feet Change	Computed Inflow C.F.S.	Release C.F.S. Power	Release C.F.S. Spill	Release C.F.S. Outlet	Evap. C.F.S.	Evap. Inches	Precip Inches
N/A	N/A	1,937.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	1,046.79	1,939.9	2.1	1,058	4	0	0	14	0.04	0.00
2	1,046.97	1,941.9	2.0	999	3	0	0	11	0.03	0.00
3	1,047.18	1,944.2	2.3	1,176	2	0	0	21	0.06	0.03
4	1,047.38	1,946.4	2.2	1,123	4	0	0	21	0.06	0.03
5	1,047.57	1,948.4	2.1	1,064	3	0	0	18	0.05	0.01
6	1,047.77	1,950.6	2.2	1,119	3	0	0	18	0.05	0.00
7	1,047.95	1,952.6	2.0	1,002	3	0	0	11	0.03	0.06
8	1,048.10	1,954.2	1.6	843	4	0	0	14	0.04	0.06
9	1,048.26	1,955.9	1.7	898	6	0	0	11	0.03	0.00
10	1,048.41	1,957.6	1.6	852	5	0	0	21	0.06	0.00
11	1,048.59	1,959.5	2.0	1,013	9	0	2	11	0.03	0.00
12	1,048.66	1,960.3	0.8	626	10	0	212	18	0.05	0.00
13	1,048.73	1,961.1	0.8	683	4	0	282	11	0.03	0.00
14	1,048.83	1,962.2	1.1	875	3	0	296	25	0.07	0.00
15	1,048.89	1,962.8	0.7	835	480	0	0	25	0.07	0.00
16	1,048.94	1,963.4	0.5	904	604	0	0	25	0.07	0.00
17	1,049.05	1,964.6	1.2	1,014	365	0	0	42	0.12	0.00
Totals	N/A	N/A	26.9	16,084	1,512	0	792	317	0.89	0.19
Acre-Feet	N/A	N/A	26,900	31,903	2,999	0	1,571	629	N/A	N/A

Comments:
* Computed inflow is the sum of change in storage, releases, and evaporation.

Summary Precipitation

This Month	0.19
October 1, 2023 to Date	2.47

Summary: Release (acre- feet)

Power	2,999
Spill	0
Outlet	1,572
Total	**4,570**

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
New Melones Lake Daily Operations, November 2023, Run Date: 12/10/2023

Day	Elev	Storage 1000-Acre-Feet in Lake	Storage 1000-Acre-Feet Change	Computed Inflow C.F.S.	Release C.F.S. Power	Release C.F.S. Spill	Release C.F.S. Outlet	Evap. C.F.S.	Evap. Inches	Precip. Inches
N/A	N/A	1,890.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	1,042.30	1,891.5	1.0	548	3	0	0	59	0.17	0.00
2	1,042.40	1,892.6	1.1	606	4	0	0	62	0.18	0.00
3	1,042.50	1,893.7	1.1	582	4	0	0	38	0.11	0.00
4	1,042.59	1,894.6	1.0	534	3	0	0	45	0.13	0.00
5	1,042.69	1,895.7	1.1	591	2	0	0	49	0.14	0.03
6	1,042.88	1,897.7	2.0	1,027	2	0	0	0	0.00	0.31
7	1,042.98	1,898.8	1.1	544	4	0	0	0	0.00	0.45
8	1,043.08	1,899.9	1.1	575	3	0	0	31	0.09	0.01
9	1,043.20	1,901.2	1.3	687	2	0	0	35	0.10	0.00
10	1,043.30	1,902.2	1.1	578	2	0	0	35	0.10	0.00
11	1,043.50	1,904.4	2.1	1,113	2	0	0	28	0.08	0.00
12	1,043.60	1,905.5	1.1	588	2	0	0	45	0.13	0.00
13	1,043.70	1,906.5	1.1	585	2	0	0	42	0.12	0.00
14	1,043.55	1,904.9	-1.6	-765	2	0	0	45	0.13	0.00
15	1,043.62	1,905.7	0.8	430	2	0	0	49	0.14	0.00
16	1,043.74	1,907.0	1.3	652	2	0	0	0	0.00	0.14
17	1,043.88	1,908.5	1.5	805	2	0	0	45	0.13	0.00
18	1,043.98	1,909.6	1.1	543	2	0	0	0	0.00	0.20
19	1,044.08	1,910.6	1.1	545	2	0	0	0	0.00	0.66
20	1,044.70	1,917.3	6.7	3,388	2	0	0	17	0.05	0.01
21	1,044.91	1,919.6	2.3	1,167	2	0	0	24	0.07	0.00
22	1,045.11	1,921.7	2.2	1,115	2	0	0	24	0.07	0.00
23	1,045.29	1,923.7	1.9	1,015	2	0	0	31	0.09	0.00
24	1,045.50	1,926.0	2.3	1,179	3	0	0	31	0.09	0.00
25	1,045.70	1,928.1	2.2	1,125	3	0	0	32	0.09	0.00
26	1,045.87	1,930.0	1.8	965	3	0	0	35	0.10	0.00
27	1,046.06	1,932.0	2.1	1,068	3	0	0	28	0.08	0.00
28	1,046.24	1,934.0	2.0	1,021	4	0	0	32	0.09	0.00
29	1,046.43	1,936.0	2.1	1,082	3	0	0	39	0.11	0.00
30	1,046.60	1,937.9	1.8	960	5	0	0	25	0.07	0.00
Totals	N/A	N/A	47.8	24,853	79	0	0	926	2.66	1.81
Acre-Feet	N/A	N/A	47,800	49,296	157	0	0	1,837	N/A	N/A

Comments:
* Computed inflow is the sum of change in storage, releases, and evaporation.

Summary Precipitation

This Month	1.81
October 1, 2023 to Date	2.28

Summary: Release (acre-feet)

Power	157
Spill	0
Outlet	0
Total	**157**

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
Tulloch Reservoir Daily Operations, December 2023, Run Date: 12/18/2023

Day	Elev	Storage (Acre Feet) Reservoir	Storage (Acre-Feet) Change	Computed Inflow C.F.S.	New Melones Release	Release C.F.S. Power	Release C.F.S. Spill	Release C.F.S. Outlet	Evap. C.F.S. (1)
N/A	N/A	35,667	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	477.91	35,224	-443	-11	4	211	0	0	1
2	477.32	34,781	-443	-11	3	211	0	0	1
3	476.74	34,348	-433	-7	2	210	0	0	1
4	476.11	33,881	-467	-23	4	211	0	0	1
5	475.51	33,443	-438	-9	3	211	0	0	1
6	474.90	33,001	-442	-10	3	212	0	0	1
7	474.28	32,557	-444	-11	3	212	0	0	1
8	473.66	32,118	-439	-9	4	211	0	0	1
9	473.03	31,675	-443	-12	6	210	0	0	1
10	472.39	31,232	-443	-12	5	210	0	0	1
11	475.75	33,618	2,386	1,415	11	211	0	0	1
12	472.35	31,204	-2,414	-1,005	222	211	0	0	1
13	472.98	31,640	436	432	286	211	0	0	1
14	473.49	31,998	358	393	299	211	0	0	2
15	474.45	32,679	681	557	480	212	0	0	2
16	475.53	33,458	779	606	604	211	0	0	2
17	475.95	33,764	306	369	365	212	0	0	3
Totals	N/A	N/A	-1,903	2,652	2,304	3,588	0	0	22
Acre-Feet	N/A	N/A	-1,903	5,260	4,570	7,117	0	0	44

Comments:
* Computed inflow is the sum of change in storage, releases, and evaporation.
(1) Evaporation records taken from New Melones Pan.

Summary: Release (acre-feet)

Power	7,117
Spill	0
Outlet	0
Total	7,117

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
Tulloch Reservoir Daily Operations, November 2023, Run Date: 12/10/2023

Day	Elev	Storage (Acre Feet) Res.	Storage (Acre-Feet) Change	Computed Inflow C.F.S.	New Melones Release	Release C.F.S. Power	Release C.F.S. Spill	Release C.F.S. Outlet	Evap. C.F.S. (1)
N/A	N/A	49,245	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	493.35	48,504	-741	-12	3	357	0	0	5
2	492.87	48,039	-465	-9	4	219	0	0	6
3	492.40	47,589	-450	-11	4	213	0	0	3
4	491.93	47,140	-449	-8	3	214	0	0	4
5	491.43	46,669	-471	-19	2	214	0	0	4
6	490.97	46,236	-433	-3	2	215	0	0	0
7	490.50	45,801	-435	-5	4	214	0	0	0
8	490.01	45,347	-454	-11	3	215	0	0	3
9	489.53	44,911	-436	-6	2	211	0	0	3
10	489.04	44,465	-446	-11	2	211	0	0	3
11	488.56	44,034	-431	-5	2	210	0	0	2
12	488.07	43,594	-440	-6	2	212	0	0	4
13	487.57	43,150	-444	-9	2	212	0	0	3
14	487.06	42,699	-451	-12	2	211	0	0	4
15	486.56	42,263	-436	-4	2	212	0	0	4
16	486.07	41,837	-426	-4	2	211	0	0	0
17	485.55	41,390	-447	-10	2	211	0	0	4
18	485.08	40,987	-403	8	2	211	0	0	0
19	484.57	40,555	-432	-7	2	211	0	0	0
20	484.06	40,125	-430	-6	2	210	0	0	1
21	483.52	39,676	-449	-14	2	210	0	0	2
22	482.98	39,228	-448	-13	2	211	0	0	2
23	482.44	38,786	-442	-9	2	212	0	0	2
24	481.90	38,346	-440	-8	3	212	0	0	2
25	481.34	37,896	-450	-13	3	212	0	0	2
26	480.78	37,449	-447	-10	3	212	0	0	3
27	480.22	37,007	-442	-10	3	211	0	0	2
28	479.65	36,561	-446	-12	4	211	0	0	2
29	479.07	36,111	-450	-12	3	212	0	0	3
30	478.49	35,667	-444	-18	5	204	0	0	2
Totals	NA	NA	-13,578	-269	79	6,501	0	0	75

Day	Elev	Storage (Acre Feet) Res.	Storage (Acre-Feet) Change	Computed Inflow C.F.S.	New Melones Release	Release C.F.S. Power	Release C.F.S. Spill	Release C.F.S. Outlet	Evap. C.F.S. (1)
Acre-Feet	NA	NA	-13,578	-534	157	12,895	0	0	149

Comments:
* Computed inflow is the sum of change in storage, releases, and evaporation.
(1) Evaporation records taken from New Melones Pan.

Summary: Release (acre-feet)

Power	12,895
Spill	0
Outlet	0
Total	12,895

Oakdale Irrigation District
South San Joaquin Irrigation
District Tri Dams Project-California
Goodwin Reservoir Daily Operations, December 2023, Run Date: 12/18/2023

Day	Elev	Storage (1000 Acre-Feet) in Lake	Storage (1000 Acre-Feet) Change	Tulloch Release	Release C.F.S. - River Outlet	Release C.F.S. – Spill	Canals-Joint Main	Canals-South Main
N/A	N/A	523	N/A	N/A	N/A	N/A	N/A	N/A
1	359.80	523	0	211	0	203	0	0
2	359.80	523	0	211	0	202	0	0
3	359.80	523	0	210	0	202	0	0
4	359.80	523	0	211	0	203	0	0
5	359.80	523	0	211	0	202	0	0
6	359.80	523	0	212	0	203	0	0
7	359.80	523	0	212	0	204	0	0
8	359.79	522	-1	211	0	202	0	0
9	359.79	522	0	210	0	202	0	0
10	359.79	522	0	210	0	202	0	0
11	359.79	522	0	211	0	204	0	0
12	359.79	522	0	211	0	203	0	0
13	359.79	522	0	211	0	203	0	0
14	359.79	522	0	211	0	202	0	0
15	359.79	522	0	212	0	203	0	0
16	359.79	522	0	211	0	203	0	0
17	359.79	522	0	212	0	204	0	0
Totals	N/A	N/A	**-1**	**3,588**	**0**	**3,447**	**0**	**0**
Acre-Feet	N/A	N/A	**-1**	**7,117**	**0**	**6,837**	**0**	**0**

Joint Main Operated by SSJID and OID.

Summary: Release (acre-feet)

Joint Main Canal	0
South Main Canal	0
Outlet	0
Spill	6,837
Total	**6837.1245**

Oakdale Irrigation District
South San Joaquin Irrigation
District Tri Dams Project-California
Goodwin Reservoir Daily Operations, November 2023, Run Date: 12/10/2023

Day	Elev	Storage (1000 Acre-Feet) in Lake	Storage (1000 Acre-Feet) Change	Tulloch Release	Release C.F.S. - River Outlet	Release C.F.S. – Spill	Canals - Joint Main	Canals - South Main
N/A	N/A	538	N/A	N/A	N/A	N/A	N/A	N/A
1	359.92	531	-7	357	0	364	0	0
2	359.86	527	-4	219	0	219	0	0
3	359.80	523	-4	213	0	202	0	0
4	359.80	523	0	214	0	202	0	0
5	359.80	523	0	214	0	202	0	0
6	359.82	524	1	215	0	204	0	0
7	359.82	524	0	214	0	203	0	0
8	359.80	523	-1	215	0	205	0	0
9	359.80	523	0	211	0	209	0	0
10	359.80	523	0	211	0	207	0	0
11	359.80	523	0	210	0	206	0	0
12	359.80	523	0	212	0	209	0	0
13	359.80	523	0	212	0	207	0	0
14	359.80	523	0	211	0	206	0	0
15	359.80	523	0	212	0	208	0	0
16	359.80	523	0	211	0	210	0	0
17	359.80	523	0	211	0	209	0	0
18	359.80	523	0	211	0	211	0	0
19	359.80	523	0	211	0	209	0	0
20	359.80	523	0	210	0	208	0	0
21	359.80	523	0	210	0	208	0	0
22	359.80	523	0	211	0	209	0	0
23	359.80	523	0	212	0	209	0	0
24	359.80	523	0	212	0	209	0	0
25	359.80	523	0	212	0	209	0	0
26	359.80	523	0	212	0	209	0	0
27	359.80	523	0	211	0	209	0	0
28	359.80	523	0	211	0	205	0	0
29	359.80	523	0	212	0	201	0	0
30	359.80	523	0	204	0	203	0	0
Totals	N/A	N/A	-15	6,501	0	6,371	0	0

Day	Elev	Storage (1000 Acre-Feet) in Lake	Storage (1000 Acre-Feet) Change	Tulloch Release	Release C.F.S. - River Outlet	Release C.F.S. – Spill	Canals - Joint Main	Canals - South Main
Acre-Feet	N/A	N/A	-15	12,895	0	12,637	0	0

Joint Main Operated by SSJID and OID.

Summary: Release (acre-feet)

Joint Main Canal	0
South Main Canal	0
Outlet	0
Spill	12,637
Total	**12636.8785**

December 2023 Water Temperature and Fish Monitoring Update

Year-to-Date Flows

Goodwin releases since October 1, 2023, are shown in Figure 1.

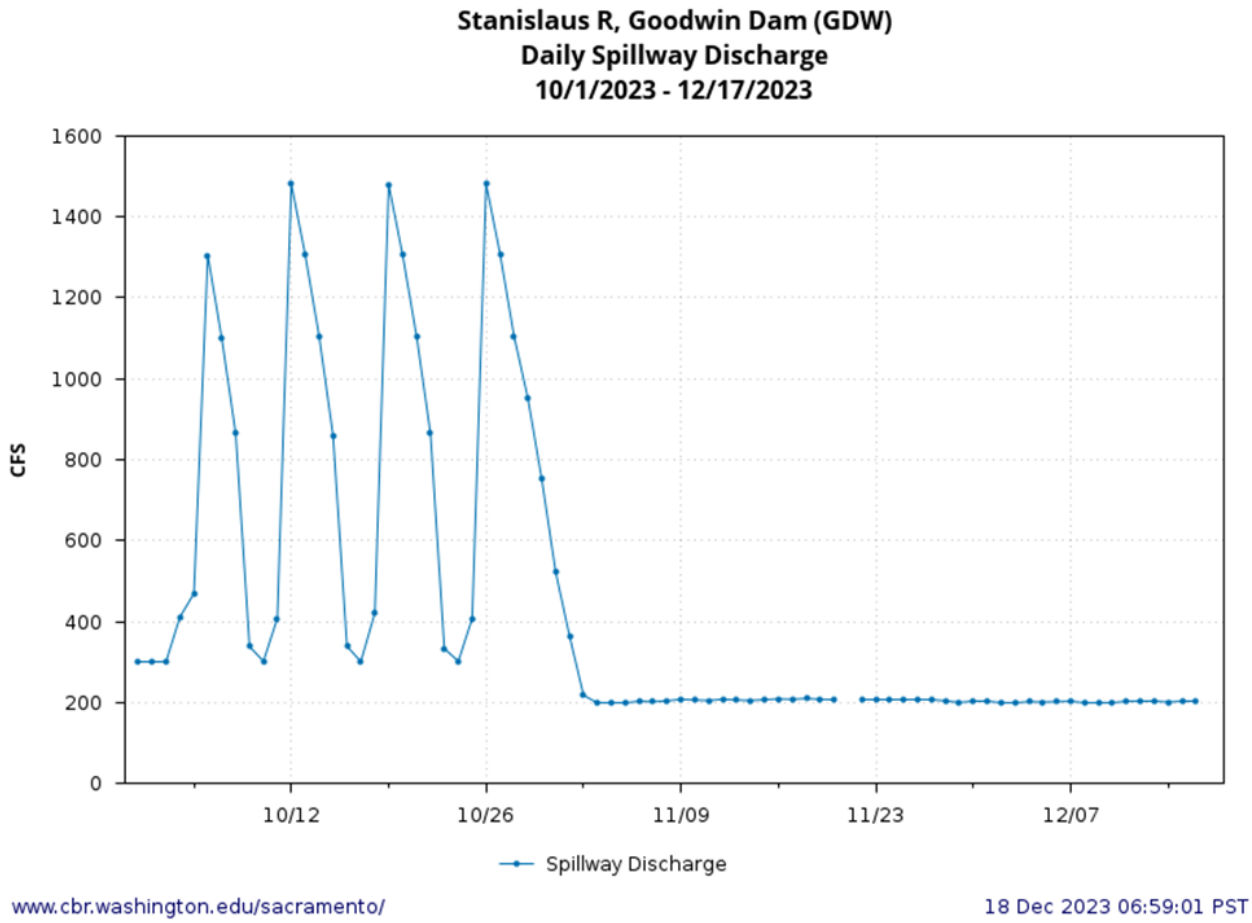


Figure 1. Goodwin (daily) releases to the Stanislaus River since October 1, 2023. Data from GDW station on CDEC.

Figure 1 is a line graph showing Goodwin Dam daily spillway discharge. The graph shows weekly peaks of releases 1,300 – 1,500 cfs starting October 6 with discharges staying at 200 cfs November 1 – December 17.

Water Temperature

The temperature thresholds included in Figures 2-9, below, are the thresholds used in the 2019 NMFS LTO BiOp[1] (see Incidental Take Statement on p. 807) to define the extent of take anticipated from water temperature effects in the Stanislaus River. *It is important to note that many of the temperature figures provide subdaily information or information at locations other than Orange Blossom Bridge and thus don't reflect the specific metrics for take in the 2019*

NMFS LTO BiOp. Temperature thresholds have been added to these figures at the request of Stanislaus Watershed Team members to provide a general reference of water temperature suitability.

Water temperatures in the Stanislaus River since October 2023 are shown below at Goodwin Canyon (Figure 2), Orange Blossom Bridge (Figure 3), and at Ripon (Figure 4). Water temperatures in the San Joaquin River since October 2023 are shown below at Vernalis (Figure 5). Current-year water temperatures are plotted along with historical temperatures for Orange Blossom Bridge (Figure 6), Ripon (Figure 7), and Vernalis (Figure 8). A compilation of Stanislaus River water temperatures and Goodwin releases for water year 2024 is provided in Figure 9.

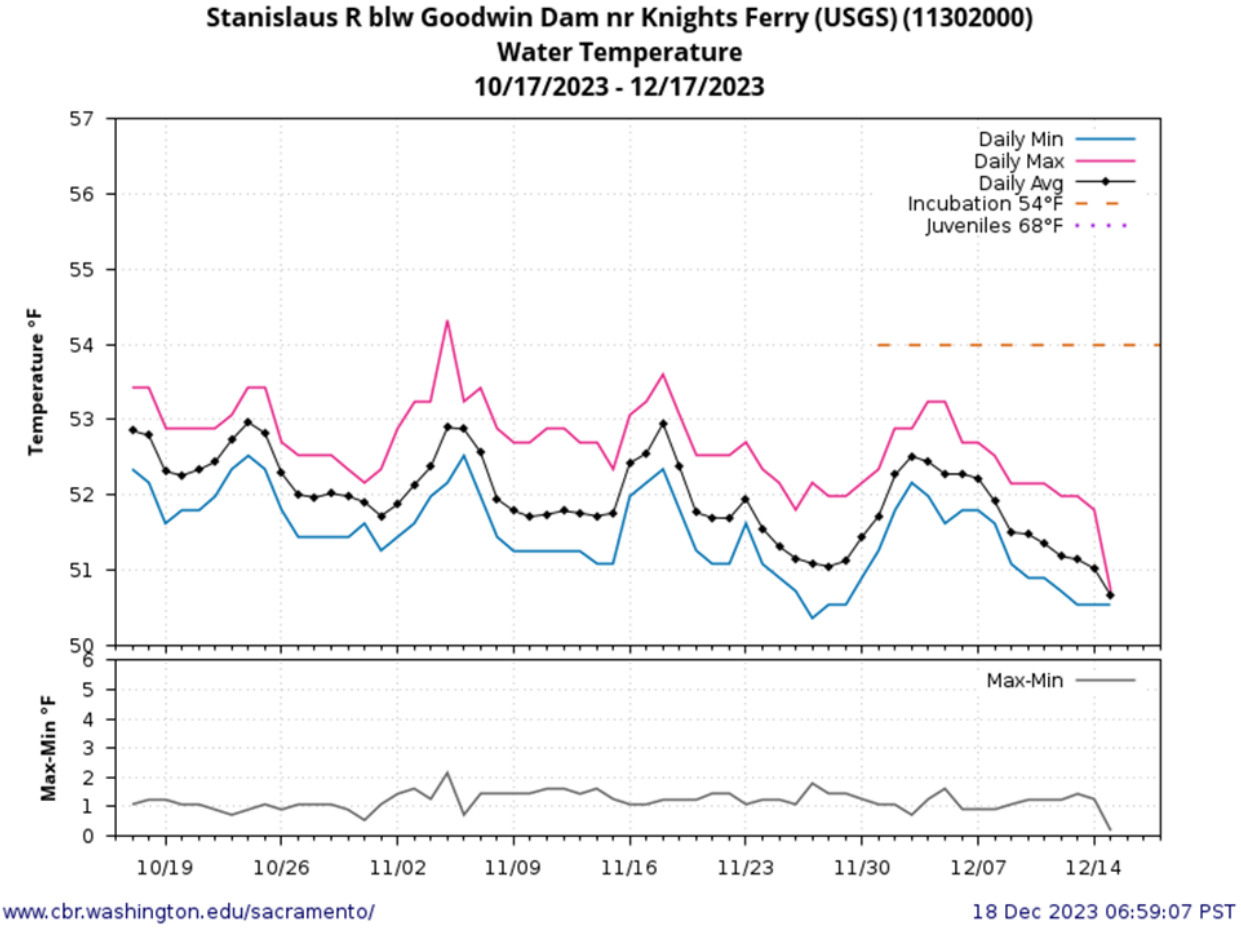


Figure 2. Daily water temperatures on the Stanislaus River upstream of Knights Ferry since October 17, 2023. Data from USGS gage 11302000 on NWIS; temperature threshold reference line added by SWT.

Figure 2 is a line graph showing Goodwin Dam daily minimum, maximum and average water temperature. The graph shows maximum peak in temperature of 54 degrees Fahrenheit on November 5 with steady decrease to 51 degrees Fahrenheit up to December 15.

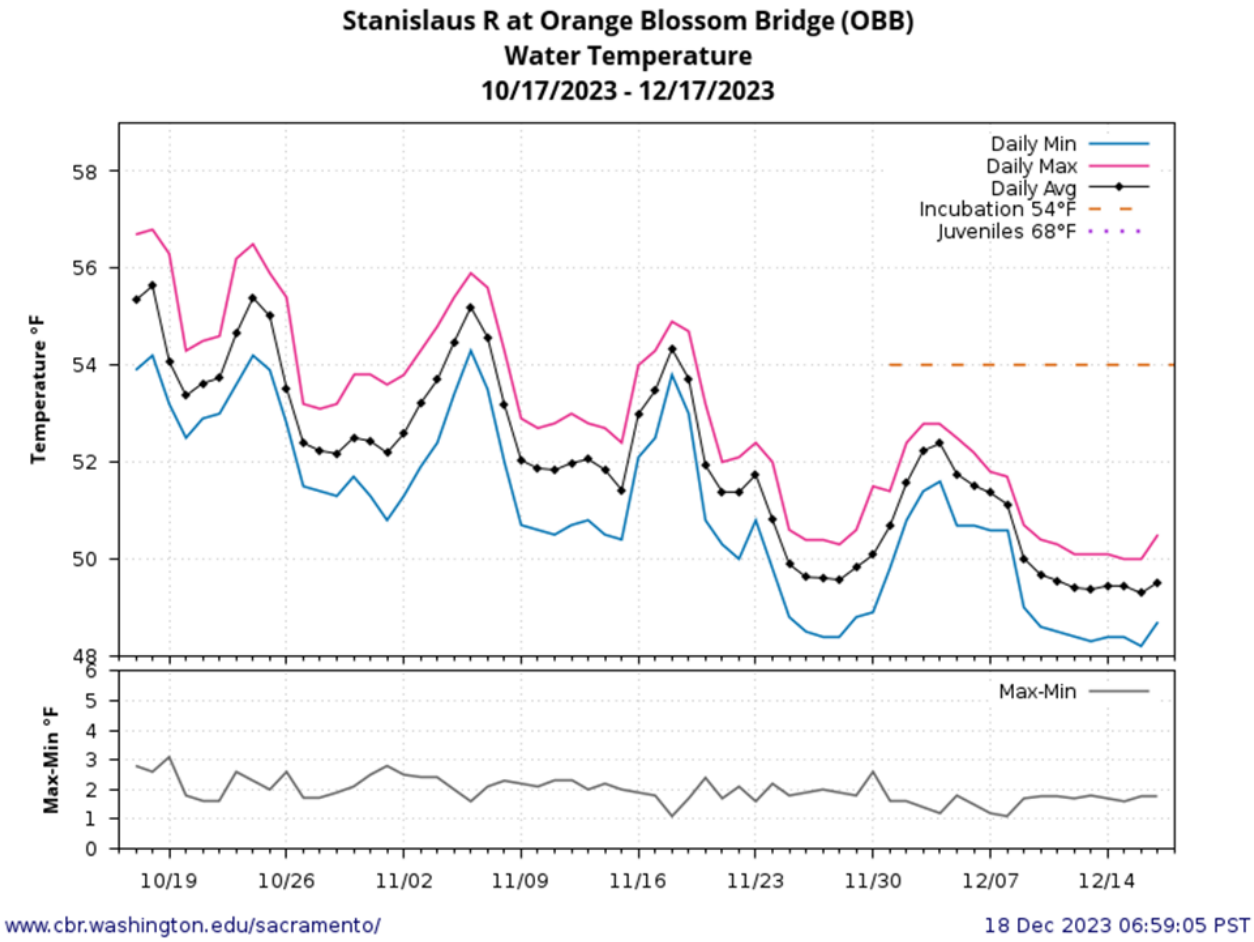


Figure 3. Stanislaus (hourly) water temperatures at Orange Blossom Bridge since October 17, 2023. Data from OBB station on CDEC.

Chart: Stacked chart for daily water temperatures Stanislaus River at Orange Blossom Bridge for current 60 days period. Top chart: Daily Min, Max and average water temperatures (in degrees Fahrenheit). Bottom chart: Daily difference between Max and Min measured water temperature in degrees Fahrenheit. Data from OBB station retrieved from CDEC; figure generated by SacPAS (including date-based water temperature threshold reference lines). For more information, please call (916) 414-2400.

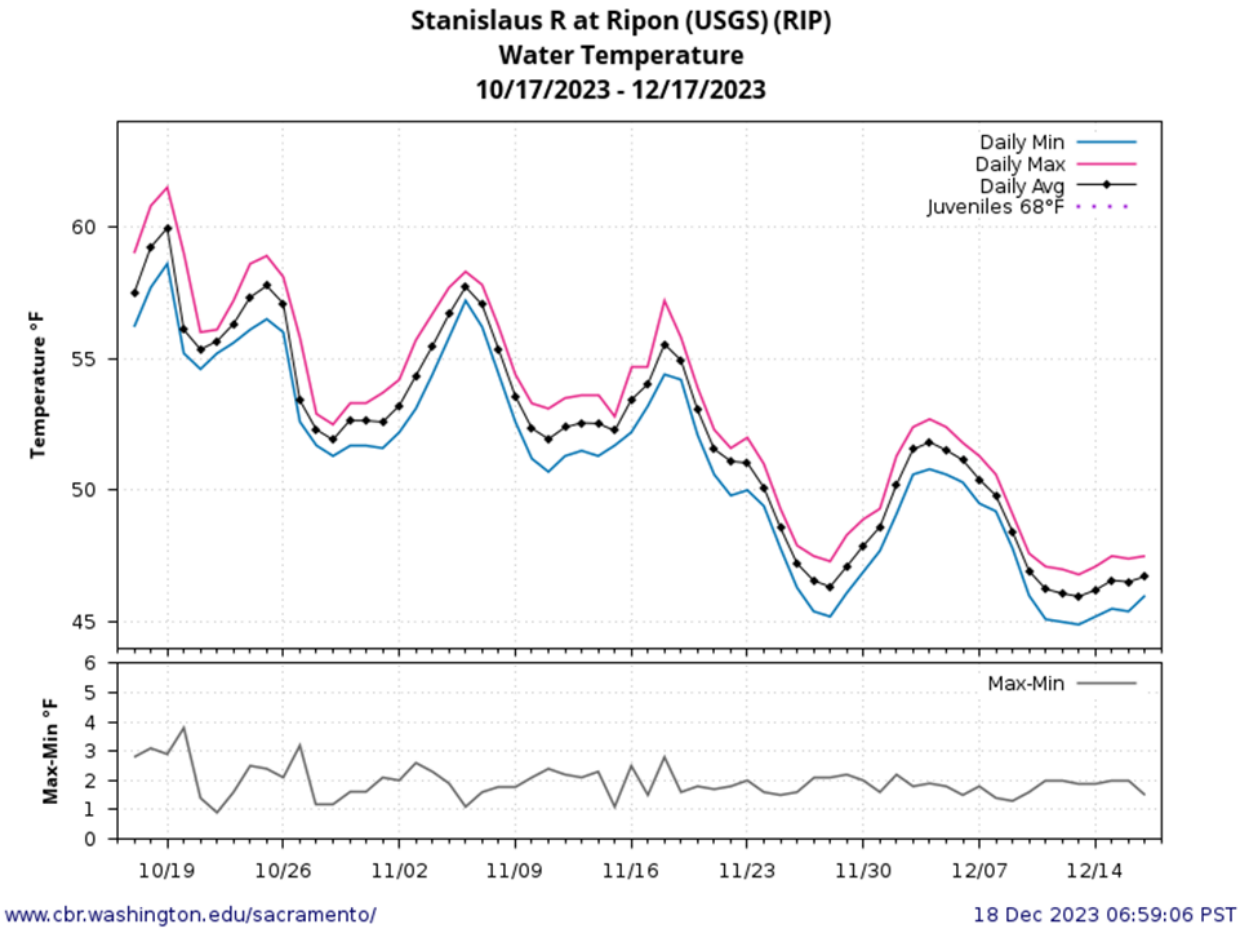


Figure 4. Stanislaus water temperatures at Ripon since October 17, 2023. Data from RIP station on CDEC.

Figure 4 is a line graph showing Ripton daily minimum, maximum and average water temperature. The graph shows maximum peak in temperature over 60 degrees Fahrenheit on October 18 with a decrease under 50 degrees Fahrenheit up to December 17.

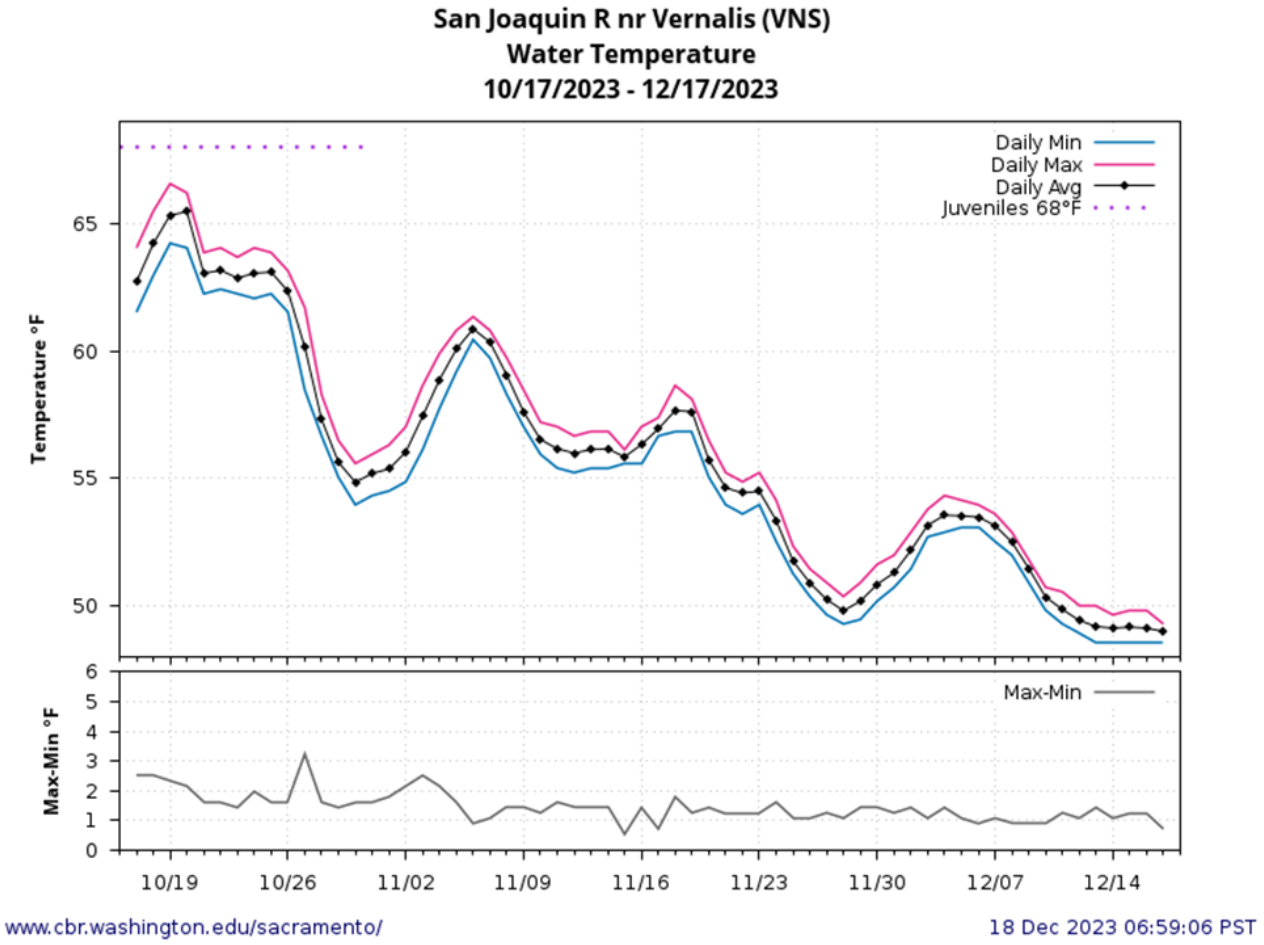


Figure 5. San Joaquin River (15-minute) water temperatures at Vernalis since October 17, 2023. Data from VNS station on CDEC. Note that, unlike in the previous figures, temperature is reported in degrees Celsius. 8°C=46.4°F; 10°C=50°F; 12°C=53.6°F; 14°C=57.2°F; 16°C=60.8°F; 18°C=64.4°F; 20°C=68.0°F; 22°C=71.6°F; 24°C=75.2°F; 26°C=78.8°F; 28°C=82.4°F.

Figure 5 is a line graph showing Vernalis daily minimum, maximum and average water temperature. The graph shows maximum peak in temperature over 60 degrees Fahrenheit on October 18 with a decrease under 50 degrees Fahrenheit up to December 17.

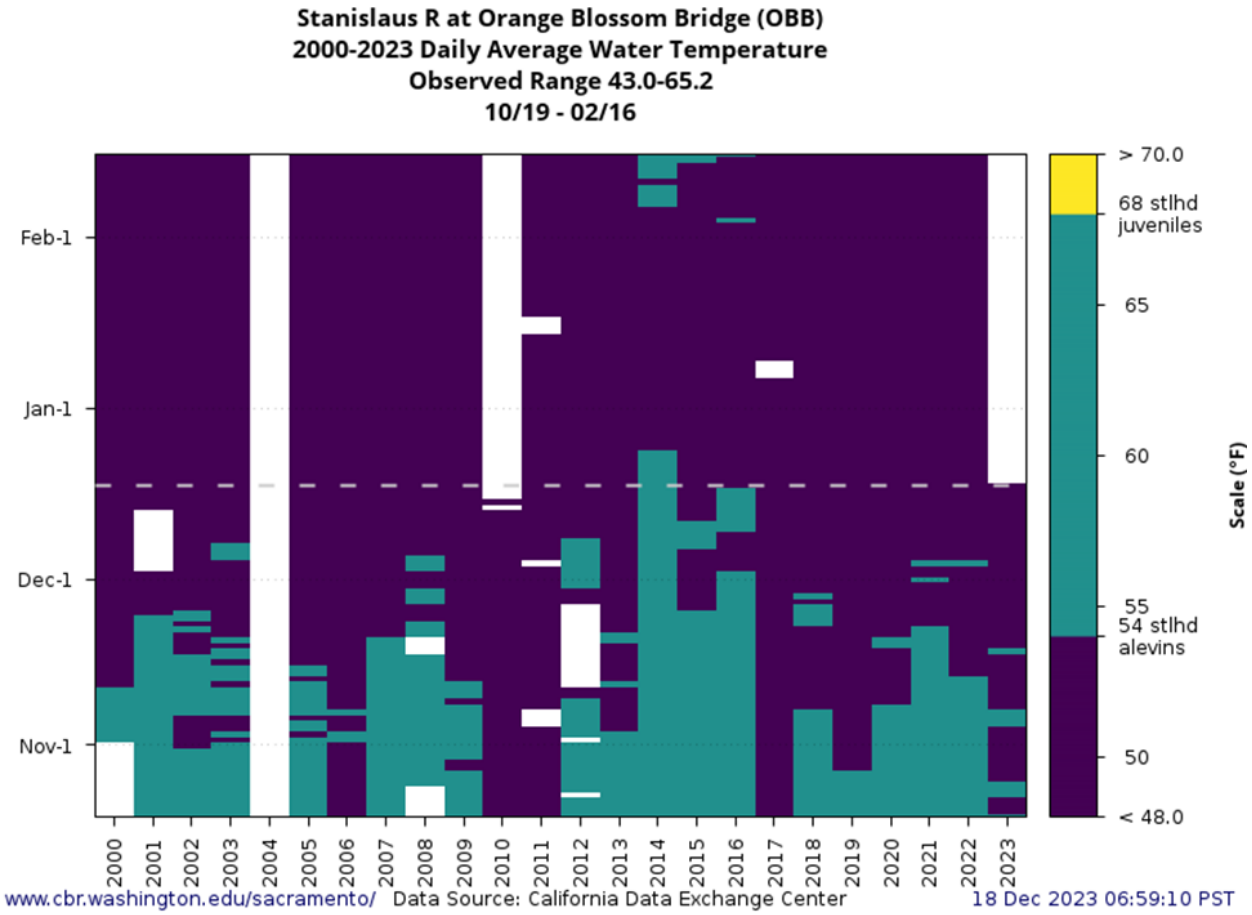


Figure 6. Stanislaus River water temperatures at Orange Blossom Bridge for WY 2000 to present. Data from SacPAS; temperature threshold reference lines added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

Figure 6 is a bar chart showing water temperatures at Orange Blossom Bridge for WY 2000 to present for October to February. The chart shows during this time, temperature remained below 60 degrees Fahrenheit outside of a brief period in September and October of 2015.

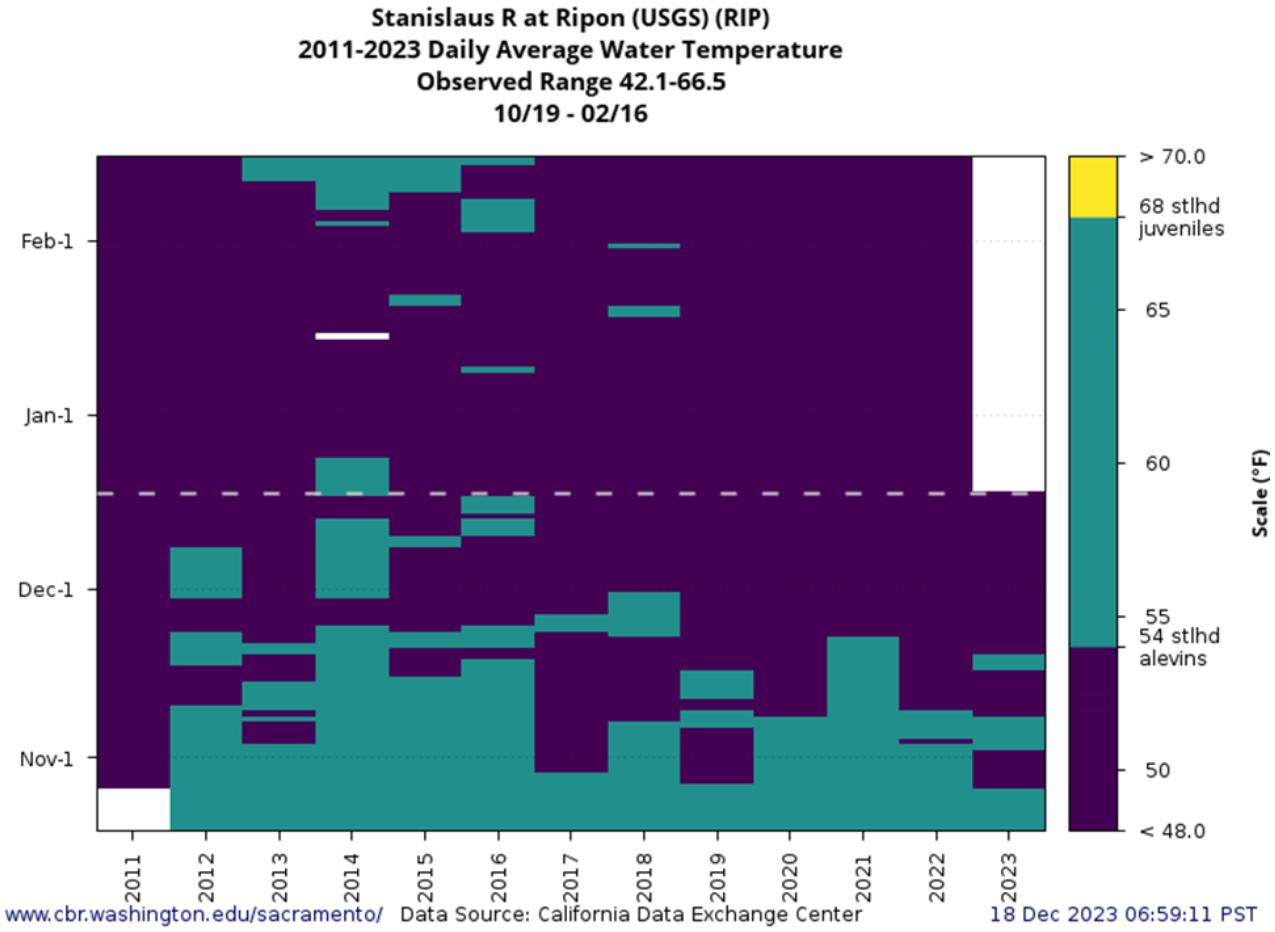


Figure 7. Stanislaus River water temperatures at Ripon for WY 2011 to present. Figure from SacPAS using RIP station data from CDEC; temperature threshold reference line added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

Figure 7 is a bar chart showing water temperatures at Ripon for WY 2011 to present for November to February. The chart shows that during this time, the daily average water temperature was mostly below 68 degrees mid-October to mid-December.

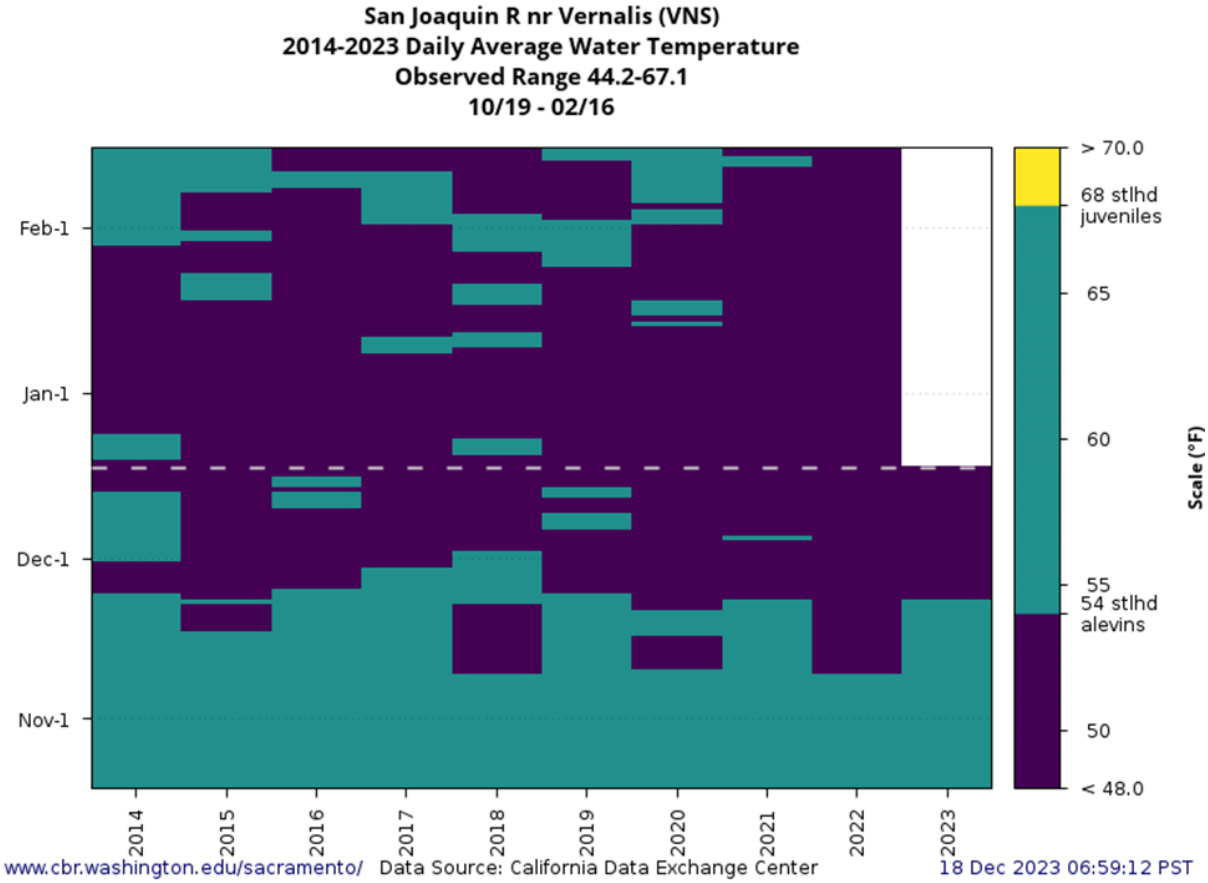


Figure 8. San Joaquin River water temperatures at Vernalis for WY 2014 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

Figure 8 is a bar chart showing water temperatures at Vernalis for WY 2014 to present. The chart shows that during this time, the daily average water temperature was mostly below 68 degrees Fahrenheit for mid-November and early February.

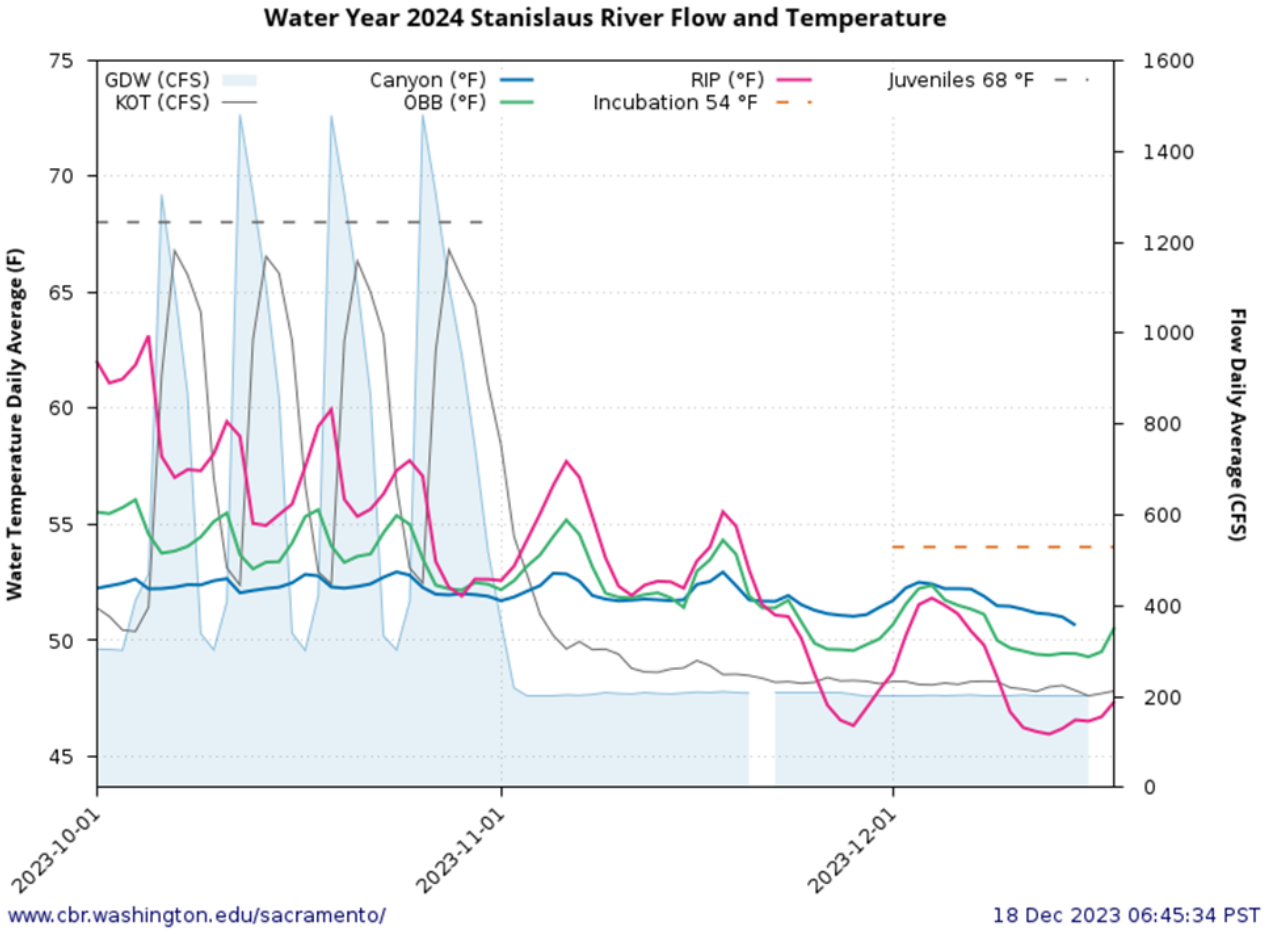


Figure 9. Stanislaus River flow and water temperatures from October 1, 2023 to December 18, 2023. Data (including temperature threshold reference lines) from SacPAS: http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html

Figure 9 is a line chart showing river flow and water temperatures on the Stanislaus River. The graph shows oscillating peaks of daily flow and water temperature.

Flow Planning

USFWS Updates: Currently, there are no flow planning issues until we reach the January/February winter instability flow (WIF) or have to make flood control releases.

NMFS Updates:

Suggestion to review the WIF options today (12/20):

- Plan to run an alternative flow schedule that likely will *not* occur in early January 2024, in contrast to the Stepped Release Plan (SRP).
- SWT members should have received with the circulated meeting packet:
    - A master WIF spreadsheet

- SRP spreadsheet showing the default schedule by date

Forum (SRF) Call Review

USBR Updates: Receive live update from Amanda Snow on the 12/19/23 call.

Fish Monitoring and Studies

CDFW Update on Fish Monitoring

Adults:

Chinook Carcass and redd surveys: The California Department of Fish and Wildlife (CDFW) began conducting fall-run Chinook salmon carcass and redd surveys the week of October 2, 2023 for the Stanislaus River and Merced River. The Tuolumne carcass survey started on September 18. Carcass survey data for all three San Joaquin River tributaries through the week of November 6, 2023 are reported in Table 1. Spawning at the Merced Hatchery is complete for 2023, a total of 394 females were spawned.

Table 1. Data from the fall 2023 CDFW carcass survey for the San Joaquin tributaries.

River	Wk.	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recover-ed	Avg Flow (cfs)
Stanislaus	1	10/2/2023	1	0	0	0	0	0	0	695
Stanislaus	2	10/9/2023	0	0	0	0	0	0	0	763
Stanislaus	3	10/16/2023	4	0	0	0	0	0	0	320
Stanislaus	4	10/23/2023	39	2	0	0	0	0	0	320
Stanislaus	5	10/30/2023	185	64	2	0	0	0	0	367
Stanislaus	6	11/6/2023	314	177	9	16	1	16	0	200
Stanislaus	7	11/13/2023	387	362	24	52	14	52	2	200
Stanislaus	8	11/20/2023	433	477	39	84	22	83	22	200
Stanislaus	9	11/27/2023	423	459	59	95	28	95	37	203
Stanislaus	10	12/4/2023	254	369	73	96	28	96	38	200
Stanislaus	11	12/11/2023	114	187	34	36	12	36	33	200
Tuolumne	1	9/18/2023	0	0	1	0	0	0	0	550
Tuolumne	2	9/25/2023	0	0	0	0	0	0	0	560
Tuolumne	3	10/2/2023	2	0	0	1	0	0	0	550
Tuolumne	4	10/9/2023	4	2	0	2	1	2	0	350
Tuolumne	5	10/16/2023	5	1	1	3	3	3	0	350

River	Wk.	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recover-ed	Avg Flow (cfs)
Tuolumne	6	10/23/2023	20	8	1	0	0	0	1	347.5
Tuolumne	7	10/30/2023	31	10	2	4	2	4	2	352.5
Tuolumne	8	11/6/2023	75	42	2	6	4	6	0	345
Tuolumne	9	11/13/2023	122	80	0	18	4	18	0	350
Tuolumne	10	11/20/2023	238	212	10	38	8	38	5	354
Tuolumne	11	11/27/2023	297	272	27	61	23	61	17	350
Tuolumne	12	12/4/2023	250	453	46	122	32	122	24	350
Tuolumne	13	12/11/2023	160	331	52	93	34	93	67	356
Merced	1	10/2/2023	3	1	0	0	0	0	0	262
Merced	2	10/9/2023	5	0	0	0	0	0	0	324.5
Merced	3	10/16/2023	28	0	0	1	1	1	0	244.5
Merced	4	10/23/2023	57	6	0	0	0	0	0	250
Merced	5	10/30/2023	253	96	3	1	0	1	0	185
Merced	6	11/6/2023	473	292	17	33	6	33	0	136
Merced	7	11/13/2023	527	567	81	118	39	118	8	178.25
Merced	8	11/20/2023	555	584	83	106	29	106	47	182.75
Merced	9	11/27/2023	442	597	226	221	57	221	61	196
Merced	10	12/4/2023	331	472	146	135	44	135	112	180
Merced	11	12/11/2023	151	463	78	62	16	62	112	159

* Section 3 and 4 not surveyed
** Section 4 not surveyed

Steelhead redd surveys: CDFW expects to start the steelhead redd surveys to start in January 2024.

Juveniles:

Mossdale Trawl: no salmonids have been caught in the Mossdale trawl sampling since August 18, 2023. While Mossdale trawl sampling is ongoing, catch is rare outside of the spring months, so reporting on the Mossdale Trawl will not resume until March 2024 or when salmonids are caught.

FishBio Updates

Weir Updates

Stanislaus River Weir: As of December 14, 2,295 adult Chinook salmon have passed upstream of the Stanislaus River weir (Table 2). Six-hundred and twelve (27%) of the adults were adipose fin

clipped (indicating hatchery origin). A total of 28 *O. mykiss* have been observed passing the Stanislaus River weir as of December 14, with all except four being over 16 inches. Twenty one out of 28 (75%) of the *O. mykiss* were adipose fin clipped.

Table 2. Chinook passage at the Stanislaus River Weir as of December 14 of each year and the season totals. Updated through December 14, 2023.

Year	Monitoring Start Date	Net Passage to Date	Season Total
2023	9/6/23	2,295	**2,295**
2022	9/15/22	3,692	3,798
2021	9/8/21	5,937	6,032
2020	9/10/20	1,873	1,906
2019	8/29/19	2,594	2,594
2018	9/5/18	4,729	4,777
2017	9/15/17	8,333	8,500
2016	9/8/16	14,045	14,399
2015	9/15/15	11,764	12,707
2014	9/5/14	5,427	5,527
2013	9/3/13	5,389	5,452
2012	9/11/12	7,109	7,248
2011	11/8/11	714	776
2010	9/7/10	1,334	1,364
2009	9/9/09	1,243	1,303
2008	9/9/08	880	928
2007	9/22/07	429	439
2006	9/8/06	2,902	3,074
2005	9/8/05	4,066	4,124
2004	9/10/04	4,424	4,448
2003	9/5/03	4,720	4,848

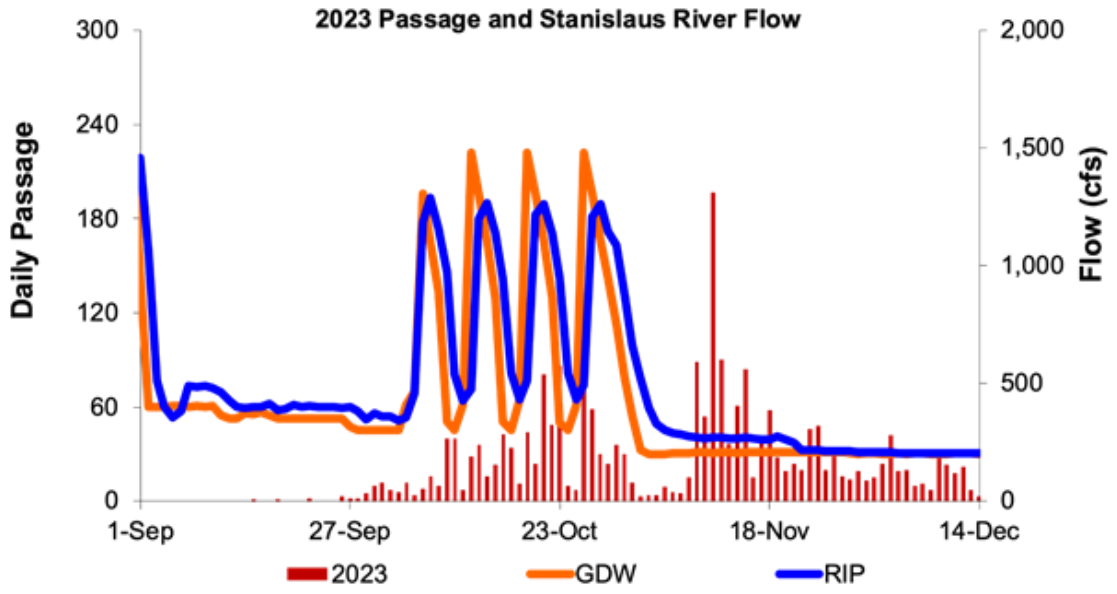


Figure 10. Daily Chinook passage at the Stanislaus River weir and river flow at Goodwin (GDW) and Ripon (RIP), 2023.

Figure 10 is a line graph depicting daily passage and flow (cfs) on the Stanislaus River at Goodwin and Ripon. The graph shows receding flows in early September, holding near 500 cfs September 5 to October 5. Flow October 5 to October 29 shows 4 peaks over 1,000 cfs. Passage on the graph begins in late September and mimics the peaks of flow in October.

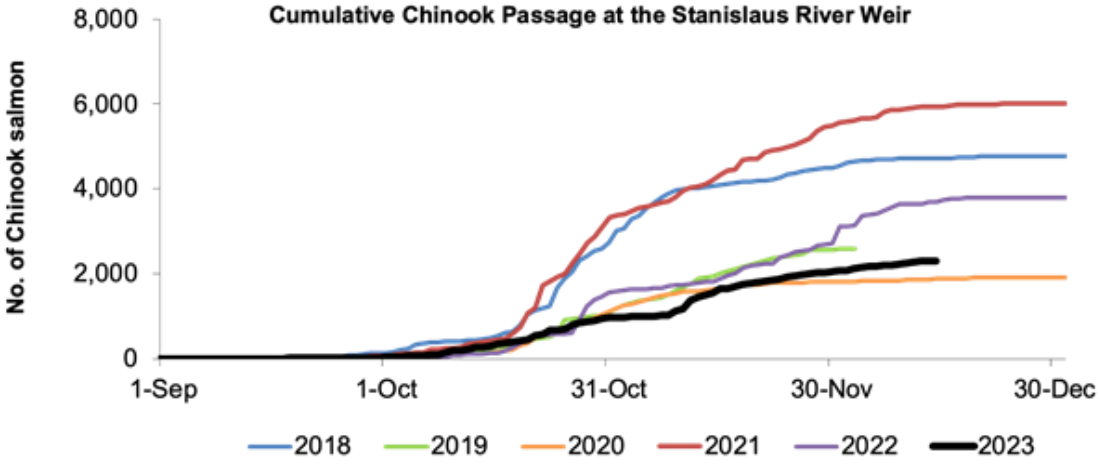


Figure 11. Cumulative Chinook passage at the Stanislaus River weir during 2018-2023.

Figure 11 is a line graph Chinook passage at the Stanislaus River Weir September - December 2018-2023. The graph shows passage for all years beginning in late September or early October. The most cumulative passage occurred during 2021. The current year, 2020, has the lowest passage to-date from previous years.

Rotary Screw Traps Update:

Caswell Rotary Screw Trap: Rotary screw trapping at Caswell Memorial State Park by PSMFC for the 2023/2024 outmigration season is expected to begin in January 2024. The RSTs are expected to be installed between Thursday, January 4 and Friday, January 5 with daily sampling expected to begin Sunday, January 7.

Restoration Project Updates

USBR: (No new updates) We are still ahead of schedule in meeting our goals for spawning habitat restoration targets. We are interested in continuing gravel injection projects in Goodwin Canyon and planning for a project in 2024. We are getting behind schedule for meeting the rearing habitat goals. The Mohler and Tortuga rearing habitat restoration projects are conducting pre-project monitoring. Implementation of the construction phase is anticipated to begin in 2025.