Stanislaus Watershed Team

November 15, 2023

Members Attending

- USBR: Amanda Snow, Bradley Hubbard, Claire Hsu, Elizabeth Kiteck, Peggy Manza, Spencer Marshall, Zarela Guerrero
- USFWS: Craig Anderson, Ryan Kok
- CDFW: Erica Meyers, Gretchen Murphey, Steve Tsao
- NMFS: Barb Byrne
- DWR: Will McLaughlin
- SWRCB: Yongxuan Gao
- PSMFC: Logan Day, Hunter Morris
- SSJID: N/A
- Fishbio: N/A
- Stockton East Water District (SEWD): Justin Hopkins
- WAPA: N/A
- Herum/Crabtree/Suntag Attorneys: Liliana Selke
- Kearns & West: Karis Johnston, Bethany Taylor

Action Items

- Barb Byrne, NMFS
    - Contact CBR to request edits to the Goodwin flow figure on the SWT page on SacPAS so that the y-axis begins at zero. [Complete]
    - Share photos from the Stanislaus River Salmon Festival.
    - Discuss combining January and February pulse flows with Garwin Yip.
    - Coordinate with J.D. Wikert on a revised pulse flow schedule and release a draft flow schedule before the December meeting.
- Peggy Manza, USBR, to consult with Reclamation management about the possibility of combining the Jan/Feb pulse flows.

Announcements

- The Stanislaus River Salmon Festival was held on 11/11/2023 at Knights Ferry. SWT members reported good attendance, over 40 vendors participated, and booths remained busy throughout the day. The available information was educational and geared towards all ages. Members noted that J.D. Wikert will be looking to recruit for the planning committee for upcoming festivals.

Operations Update and Forecasts/ Hydrology

New Melones Reservoir

- New Melones storage is nearly at maximum flood control reservation of 1.97 MAF, with storage at 1.90 MAF.
- It will be necessary to maintain 1.97 MAF or lower storage to allow for flood control operations.
- There has been no precipitation during the first half of November, however a small amount precipitation is anticipated by 11/18/23.
- At the time of the 11/15/23 meeting, the New Melones tunnel was closed for maintenance and therefore, just a few cfs is being released from New Melones through the power plant. The tunnel is scheduled to be back online by early December 2023. As a result, all releases to the lower Stanislaus River are coming from the Tulloch Reservoir. Operators are making use of the draw-down phase at Tulloch to maintain in-stream flows. A deep draw-down has been scheduled for the current year.
- Daily inflows are approximately 500 cfs.
- It was noted that the bubbler that measured storage was producing lower-than-accurate measurements and is slated to be repaired. It had incorrectly appeared that there was a significant drop in storage.
- Questions
    - How full are the reservoirs upstream of New Melones?
        - They should have also been drawing down in anticipation of the winter. Usually, the water begins a draw-down in late summer for power generation. However, I haven't recently seen their storage level.

Tulloch

- The aforementioned drawdown at the Tulloch Reservoir is seen in the daily operations table. 11/01/23 saw a drawdown of over 700 AF; all sequential dates in November had a drawdown ranging from 433 AF to 471 AF.

Goodwin

- Releases are approximately 200 cfs, the minimum winter base flow requirement in the Stepped Release Plan (SRP) and are expected to remain at this level unless a flood control release is required, or until the winter instability flow (WIF) in the early months of calendar year 2024.
- Agricultural diversions from Goodwin Dam have been completed for the season.
- The November forecast is not expected to vary much from October. Bulletin 120s are not distributed this early in the season.

Water Temperature Updates

- Water temperatures spiked the first week of November before decreasing again (52-53°F at Ripon). Cooler nights have helped bring the water temperatures back down.
- Conditions are suitable for all salmonids rearing in the Stanislaus River.
- Questions
    - The y-axis on the Goodwin Dam chart from SacPAS starts at 200 cfs; it should begin at 0 cfs. Can this be edited?
        - Barb Byrne will contact CBR at the University of Washington to ask for this graph to be edited.

Flow Planning

- SWT discussed preliminary options for shaping the January and February WIFs. Some SWT members prefer to use the January volume and add it to the February pulse flow to create one larger winter instability pulse flow. The winter instability flow serves a number of functions, including inundating the floodplains. The following drawdown of the water brings in litter and nutrients to the river which helps to boost the food chain. Another benefit involves triggering movement and helping to distribute juvenile salmonids along the river. Part of the reasoning for the preference for a single WIF in February is because there are not many Chinook fry that have emerged by January, and the distribution of juveniles could be more effective with a larger pulse in February.
    - Barb Byrne to check with Garwin Yip, NMFS, on whether or not combining the Jan/Feb pulse flows was within the assumed range of implementation analyzed in the 2019 Biological Opinion.
        - Reclamation typically approves this type of action if the result is volume neutral. However, if winter conditions prove to be very wet, there is risk of having to conduct flood control releases in which case Goodwin releases may override any shaped, managed, release.
    - By December, the SWT should have a better idea of whether the winter conditions will lean wetter or drier with the current El Niño pattern.

- Concern that there is no spare storage room to hold any major amounts of storm precipitation increases the likelihood that reservoir management might override any managed release schedule.
- Noting there was some stranding that resulted from the fall pulse flow.
- Can discuss further in December before an operations plan is developed.

Stanislaus River Forum (SRF) Call Review

- The November SRF meeting went smoothly overall. There were no comments received from members of the public.

Fish Monitoring

CDFW Fish Monitoring

- Numbers of observed fish have increased over the previous week on the San Joaquin tributaries.
    - 314 live fish were observed on the Stanislaus River.
    - 75 live fish were observed on the Tuolumne River.
    - 473 live fish were observed on the Merced River.
- The Merced Hatchery spawned 250 females. There are more eggs being harvested this year compared to last year, and full production is expected this year.
- Mossdale Trawl caught a splittail last week, but no salmonids have been caught since August.
- Staff rescued the following fish from isolated pools at Honolulu Bar: 208 *O. mykiss*, 2 adult salmon, 12 juvenile salmon.
- Questions
    - What size were the 12 juveniles?
        - They were not fry; more like yearlings. They were about the size of the *O. mykiss*.

Weir Update

- The previous week saw an increase in cumulative Chinook salmon passage at the Stanislaus River Weir; however, numbers are still trending on the lower side in comparison to recent years.
- The Tuolumne River is seeing especially low numbers, with approximately 200 Chinook salmon observed.

Rotary Screw Trap Updates

- Rotary screw trapping at Caswell for the 2023/2024 outmigration season is expected to begin in December or January.
- Trap installation will be dependent on both weather conditions and the level of debris in the river.

Restoration Project Updates

- USBR is still ahead of schedule in meeting goals for spawning habitat restoration targets.
- They are interested in continuing gravel injection projects in Goodwin Canyon and planning for a project in 2024.
- USBR reports they are 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.
- The Kerr Park project has wrapped up and is conducting a tour on 12/1/23. Those interested should contact J.D. Wikert to attend.

Progress Update on Proposed Action Elements

- N/A

Other Discussion Items

Curtailments

- N/A

Annual Reporting

- The compilation process is slightly behind schedule, but still working at assembling all the report components.

Items to elevate to WOMT

- No items for WOMT.

Next Meeting

Wednesday, December 20, 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, November 15, 2023

Agenda

1. Introductions
2. Ground Rules[1]
3. Announcements
    a. Meeting will be recorded for notetaking purposes
    b. Salmon Festival Recap
    c. Reminder: SacPAS workshop on December 6, 2023
4. Operations Update and Forecasts/Hydrology
5. Temperature Updates
6. Flow Planning
7. Stanislaus River Forum (SRF) Call Review
8. Fish Monitoring and Studies

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

9. Restoration Project Updates
    a. Restoration Tracker
10. Other Discussion Items
    a. WY23 Summary of Activities Report Update
    b. SWRCB Updates
    c. Items to elevate to WOMT
11. Review Action Items
12. Next Meeting: Wednesday, December 20, 2023 (10am-12pm)

BUREAU OF RECLAMATION

Tables for BDO

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

November 8, 2023
Run Date: November 9, 2023

Table 4. Reservoir Releases in Cubic Feet Per Second

Reservoir	Dam	WY 2023	WY 2024	15-Year Median
Trinity	Lewiston	306	292	305
Sacramento	Keswick	3,920	5,005	4,840
Feather	Oroville (SWP)	2,400	1,750	2,000
American	Nimbus	1,433	2,043	1,850
Stanislaus	Goodwin	209	205	255
San Joaquin	Friant	480	425	394

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

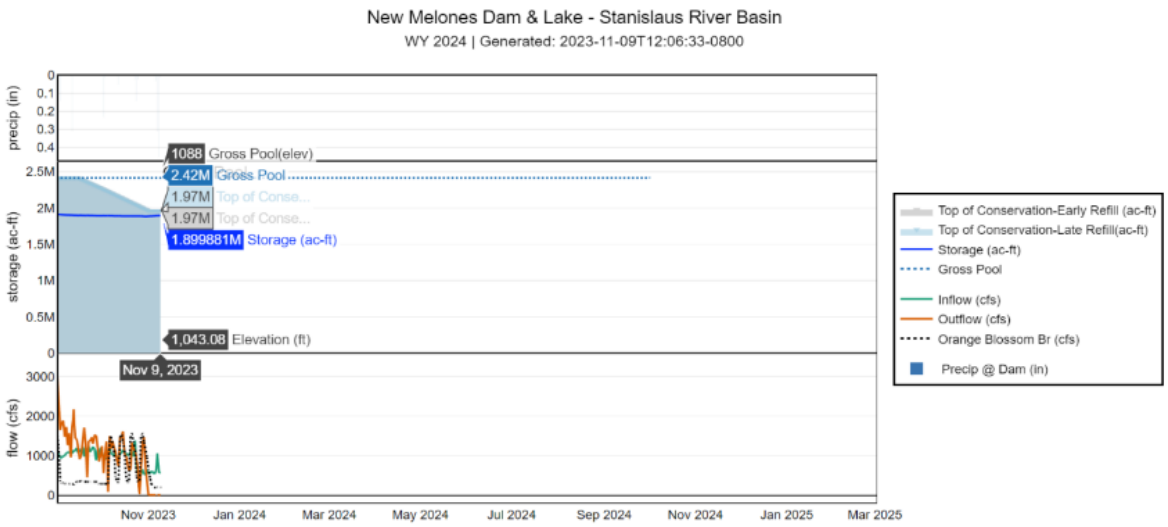
Reservoir	Capacity	15-Yr Avg	WY 2023	WY 2024	% O 15 Yr Avg
Trinity	2,448	1,227	534	1,215	99
Shasta	4,552	2,250	1,401	3,125	139
Folsom	977	391	274	531	136
New Melones	2,420	1,244	585	1,900	153
Fed. San Luis	966	376	174	716	190
Total North CVP	11,363	5,488	2,968	7,487	136
Millerton	521	245	317	138	56
Oroville (SWP)	3,538	1,517	1,056	2,392	158

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	19	9	54	26	71
Shasta	234	295	364	262	89
Folsom	75	59	213	79	95
New Melones	66	N/A	112	45	145
Millerton	149	32	134	71	208

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	1.62	0.20	4.48	2.63 (63	62	0.01
Sacramento at Shasta Dam	1.14	0.07	6.31	4.36 (68)	26	0.00
American at Blue Canyon	0.00	0.87	10.54	4.96 (49)	0	0.00
Stanislaus at New Melones	1.27	N/A	4.26	1.90 (46)	67	0.01
San Joaquin at Huntington LK	0.12	1.20	7.20	3.02 (50)	4	0.00



New Melones Dam & Lake – Stanislaus River Basin 2023-11-09T12:06:33-0800

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
New Melones Lake Daily Operations, November 2023, Run Date: 11/9/2023

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	601	2	0	0	59	0.17	0.03
6	1,042.88	1,897.7	2.0	1,055	2	0	0	28	0.08	0.31
7	1,042.98	1,898.8	1.1	561	4	0	0	17	0.05	0.45
8	1,043.08	1,899.9	1.1	579	3	0	0	35	0.10	0.01
Totals	N/A	N/A	9.5	5,066	25	0	0	343	0.99	0.80
Acre-Feet	N/A	N/A	9,500	10,048	50	0	0	680	N/A	N/A

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

Summary Precipitation

This Month	0.80
October 1, 2023 to Date	1.27

Summary: Release (acre- feet)

Power	50
Spill	0
Outlet	0
Total	**50**

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
New Melones Lake Daily Operations, October 2023, Run Date: 11/5/2023

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	1,896.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	1,042.82	1,897.1	0.6	908	556	0	0	28	0.08	0.23
2	1,042.72	1,896.7	-0.4	913	1,080	0	0	49	0.14	0.01
3	1,042.69	1,895.7	-1.0	926	1,353	0	0	59	0.17	0.00
4	1,042.85	1,897.4	1.7	1,008	82	0	0	62	0.18	0.00
5	1,042.78	1,896.7	-0.8	1,215	1,492	0	0	101	0.29	0.00
6	1,042.74	1,896.2	-0.4	1,057	1,172	0	0	101	0.29	0.00
7	1,042.66	1,895.4	-0.9	1,040	1,375	0	0	97	0.28	0.00
8	1,042.60	1,894.7	-0.6	984	1,201	0	0	107	0.31	0.00
9	1,042.58	1,894.5	-0.2	1,084	1,102	0	0	90	0.26	0.00
10	1,042.58	1,894.5	0.0	933	884	0	0	49	0.14	0.00
11	1,042.61	1,894.8	0.3	929	729	0	0	38	0.11	0.05
12	1,042.52	1,893.9	-1.0	1,041	1,479	0	0	48	0.14	0.00
13	1,042.44	1,893.0	-0.9	1,072	1,449	0	0	55	0.16	0.00
14	1,042.34	1,892.0	-1.1	1,146	1,613	0	0	73	0.21	0.00
15	1,042.33	1,891.8	-0.1	1,057	1,035	0	0	76	0.22	0.00
16	1,042.33	1,891.8	0.0	1,058	989	0	0	69	0.20	0.00
17	1,042.36	1,892.2	0.3	1,015	794	0	0	59	0.17	0.00
18	1,042.42	1,892.8	0.6	994	608	0	0	62	0.18	0.00
19	1,042.49	1,893.6	0.7	1,101	643	0	0	80	0.23	0.00
20	1,042.43	1,892.9	-0.6	1,083	1,331	0	0	76	0.22	0.00
21	1,042.38	1,892.4	-0.5	976	1,166	0	0	80	0.23	0.00
22	1,042.42	1,892.8	0.4	1,381	1,117	0	0	48	0.14	0.02
23	1,042.37	1,892.3	-0.5	713	966	0	0	17	0.05	0.14
24	1,042.35	1,892.1	-0.2	527	597	0	0	38	0.11	0.02
25	1,042.44	1,893.0	1.0	552	24	0	0	42	0.12	0.00
26	1,042.41	1,892.7	-0.3	504	635	0	0	31	0.09	0.00
27	1,042.28	1,891.3	-1.4	651	1,298	0	0	55	0.16	0.00
28	1,042.11	1,889.5	-1.8	540	1,455	0	0	3	0.01	0.00
29	1,042.07	1,889.1	-0.4	517	730	0	0	3	0.01	0.00
30	1,042.12	1,889.6	0.5	640	367	0	0	3	0.01	0.00
31	1,042.21	1,890.6	1.0	542	4	0	0	52	0.15	0.00
Totals	N/A	N/A	-6.0	28,107	29,326	0	0	1,751	5.06	0.47

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
Acre-Feet	N/A	N/A	-6,000	55,750	58,168	0	0	3,473	N/A	N/A

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

Summary Precipitation

This Month	0.47
October 1, 2023 to Date	0.47

Summary: Release (acre-feet)

Power	58,163
Spill	0
Outlet	0
Total	**58,168**

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
Tulloch Reservoir Daily Operations, November 2023, Run Date: 11/9/2023

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	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	-18	2	214	0	0	5
6	490.97	46,236	-433	-1	2	215	0	0	2
7	490.50	45,801	-435	-4	4	214	0	0	1
8	490.01	45,347	-454	-11	3	215	0	0	3
Totals	N/A	N/A	-3,898	-74	25	1,861	0	0	29
Acre-Feet	N/A	N/A	-3,898	-174	50	3,691	0	0	58

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	3,691
Spill	0
Outlet	0
Total	3,691

United States Department of the Interior
Bureau of Reclamation-Central Valley Project- California
Tulloch Reservoir Daily Operations, October 2023, Run Date: 11/5/2023

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	63,241	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	506.20	62,322	-919	569	556	1,029	0	0	3
2	506.35	62,501	179	1,074	1,080	979	0	0	5
3	506.92	63,181	680	1,339	1,353	989	0	0	7
4	505.13	61,060	-2,121	57	82	1,119	0	0	7
5	504.19	59,970	-1,090	1,450	1,492	1,989	0	0	22
6	503.08	58,701	-1,269	1,145	1,172	1,774	0	0	22
7	502.65	58,218	-483	1,353	1,375	1,587	0	0	20
8	502.34	57,871	-347	1,197	1,201	1,361	0	0	22
9	502.52	58,072	201	1,088	1,102	978	0	0	9
10	502.42	57,960	-112	873	884	924	0	0	5
11	501.92	57,402	-558	712	729	989	0	0	4
12	501.10	56,497	-905	1,459	1,479	1,910	0	0	5
13	500.68	56,040	-457	1,423	1,449	1,647	0	0	6
14	500.92	56,300	260	1,576	1,613	1,438	0	0	7
15	500.75	56,116	-184	1,050	1,035	1,135	0	0	8
16	501.49	56,927	811	1,009	989	593	0	0	7
17	501.76	57,225	298	790	794	634	0	0	6
18	501.47	56,905	-320	613	608	768	0	0	6
19	499.39	54,652	-2,253	610	643	1,738	0	0	8
20	498.97	54,204	-448	1,323	1,331	1,541	0	0	8
21	498.55	53,763	-441	1,141	1,166	1,355	0	0	8
22	498.72	53,942	179	1,124	1,117	1,029	0	0	5
23	499.60	54,876	934	981	966	508	0	0	2
24	499.86	55,154	278	607	597	463	0	0	4
25	498.76	53,984	-1,170	14	24	600	0	0	4
26	496.83	51,976	-2,008	622	635	1,631	0	0	3
27	496.35	51,486	-490	1,225	1,298	1,467	0	0	5
28	496.67	51,812	326	1,444	1,455	1,280	0	0	0
29	496.08	51,211	-601	756	730	1,059	0	0	0
30	495.20	50,325	-886	970	367	604	0	813	0
31	494.11	49,245	-1,080	-27	4	512	0	0	5

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)
Totals	NA	NA	-13,996	29,567	29,326	35,630	0	813	180
Acre-Feet	NA	NA	-13,996	58,646	58,168	70,672	0	1,613	357

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	70,672
Spill	0
Outlet	1,613
Total	72,285

Oakdale Irrigation District
South San Joaquin Irrigation
District Tri Dams Project-California
Goodwin Reservoir Daily Operations, November 2023, Run Date: 11/9/2023

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
Totals	N/A	N/A	**-15**	**1,861**	**0**	**1,801**	**0**	**0**
Acre-Feet	N/A	N/A	**-15**	**3,691**	**0**	**3,572**	**0**	**0**

Joint Main Operated by SSJID and OID.

Summary: Release (acre-feet)

Joint Main Canal	0
South Main Canal	0
Outlet	0
Spill	3,572
Total	**3572.2835**

Oakdale Irrigation District
South San Joaquin Irrigation
District Tri Dams Project-California
Goodwin Reservoir Daily Operations, October 2023, Run Date: 11/5/2023

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	529	N/A	N/A	N/A	N/A	N/A	N/A
1	359.89	529	0	1,029	0	303	617	180
2	359.89	529	0	979	0	303	597	143
3	359.89	529	0	989	0	302	597	152
4	360.32	559	30	1,119	0	412	598	162
5	360.58	578	19	1,989	0	470	473	140
6	360.45	569	-9	1,774	0	1,305	391	193
7	360.35	562	-7	1,587	0	1,101	393	201
8	360.04	540	-22	1,361	0	866	396	215
9	359.86	527	-13	978	0	339	477	241
10	359.86	527	0	924	0	303	467	227
11	360.32	559	32	989	0	409	449	189
12	360.55	576	17	1,910	0	1,481	322	212
13	360.45	569	-7	1,647	0	1,306	250	204
14	360.36	562	-7	1,438	0	1,106	237	204
15	360.04	540	-22	1,135	0	860	222	159
16	359.89	529	-11	593	0	340	213	121
17	359.89	529	0	634	0	302	237	178
18	360.33	560	31	768	0	422	237	174
19	359.57	507	-53	1,738	0	1,479	177	175
20	360.48	571	64	1,541	0	1,306	145	191
21	360.36	562	-9	1,355	0	1,105	144	201
22	360.05	541	-21	1,029	0	865	124	141
23	359.89	529	-12	508	0	334	94	152
24	359.89	529	0	463	0	303	105	111
25	360.33	560	31	600	0	409	140	93
26	360.55	576	16	1,631	0	1,481	133	82
27	360.46	569	-7	1,467	0	1,308	133	105
28	360.36	562	-7	1,280	0	1,106	105	153
29	360.27	556	-6	1,059	0	952	67	101
30	360.17	549	-7	1,417	0	752	70	35
31	360.01	538	-11	512	0	522	9	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
Totals	N/A	N/A	9	36,443	0	23,852	8,619	4,835
Acre-Feet	N/A	N/A	9	72,285	0	47,310	17,096	9,590

Joint Main Operated by SSJID and OID.

Summary: Release (acre-feet)

Joint Main Canal	17,096
South Main Canal	9,590
Outlet	0
Spill	47,310
Total	**73996.451**

November 2023 Water Temperature and Fish Monitoring Update

Year-to-Date Flows

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

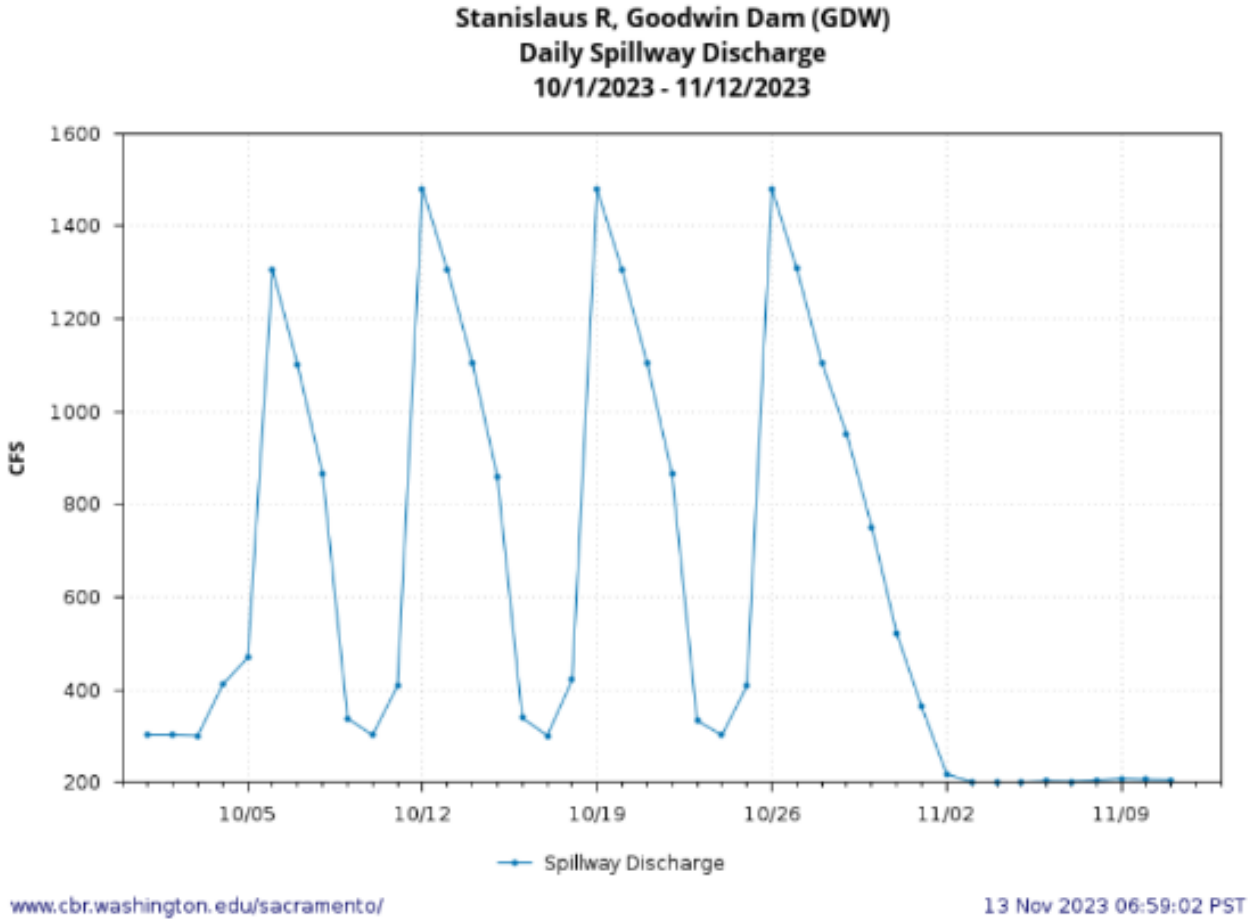


Figure 1. Goodwin (daily) releases to the Stanislaus River since October 1, 2023. Data from GDW station on CDEC.

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 6th with discharges staying at 200 cfs November 3rd – 11th.

Water Temperature

The temperature thresholds included in Figures 2-9, below, are the thresholds used in the 2019 NMFS LTO BiOp (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 August 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 July 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.

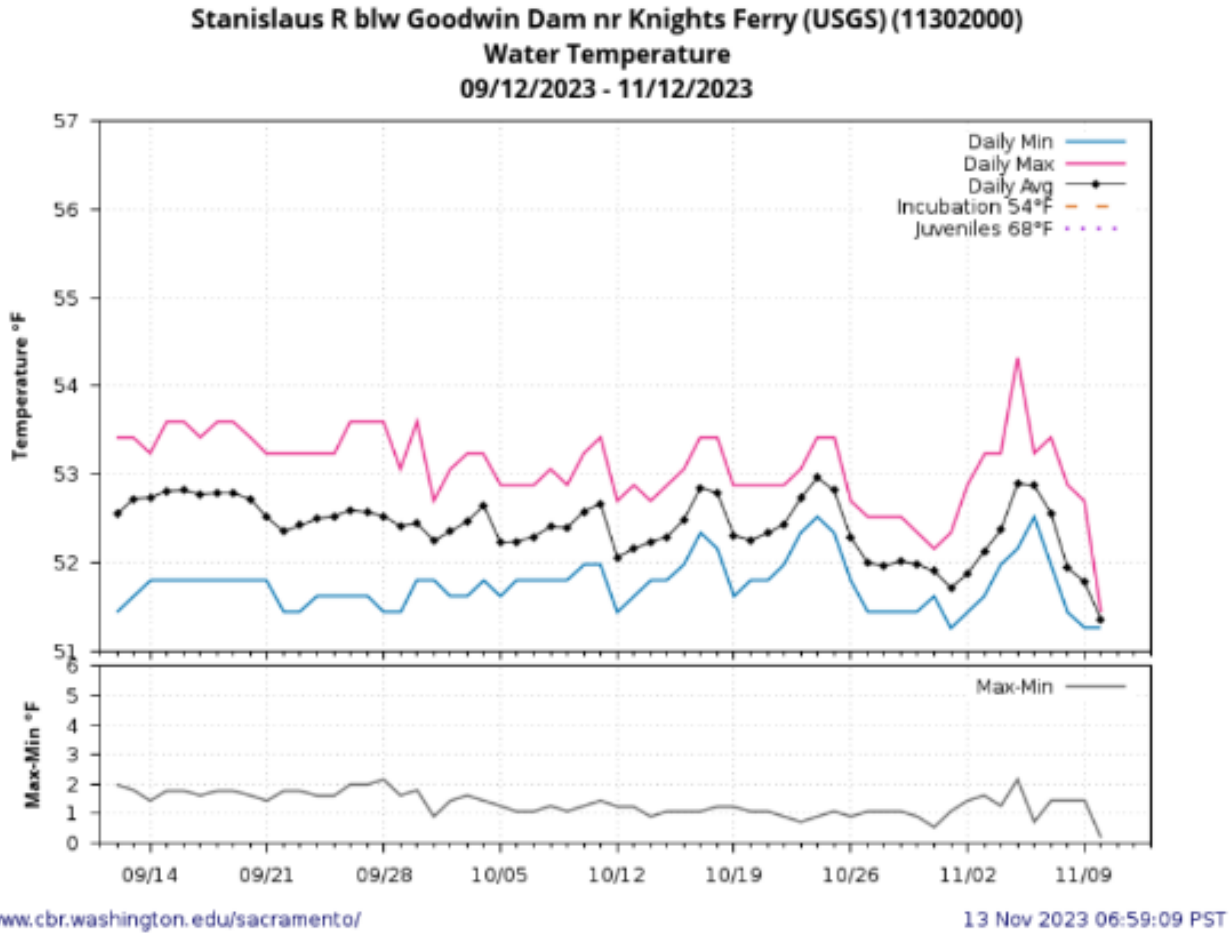


Figure 2. Daily water temperatures on the Stanislaus River upstream of Knights Ferry since July18, 2023. Data from USGS gage 11302000 on NWIS; temperature threshold reference line added by SWT.

Chart: Stacked chart for daily water temperatures Stanislaus River upstream of Knights Ferry 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

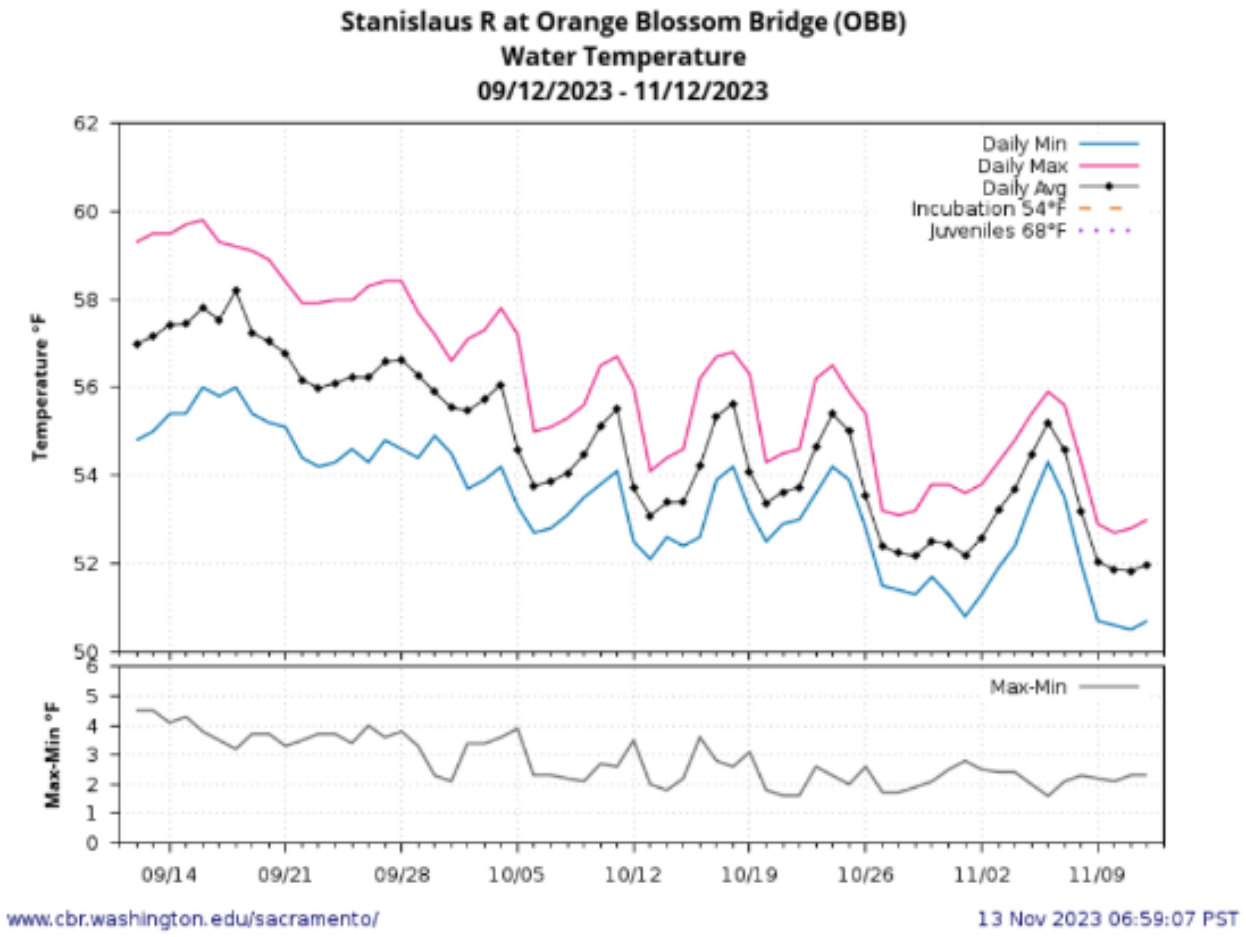


Figure 3. Stanislaus (hourly) water temperatures at Orange Blossom Bridge since July 18, 2023.

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.

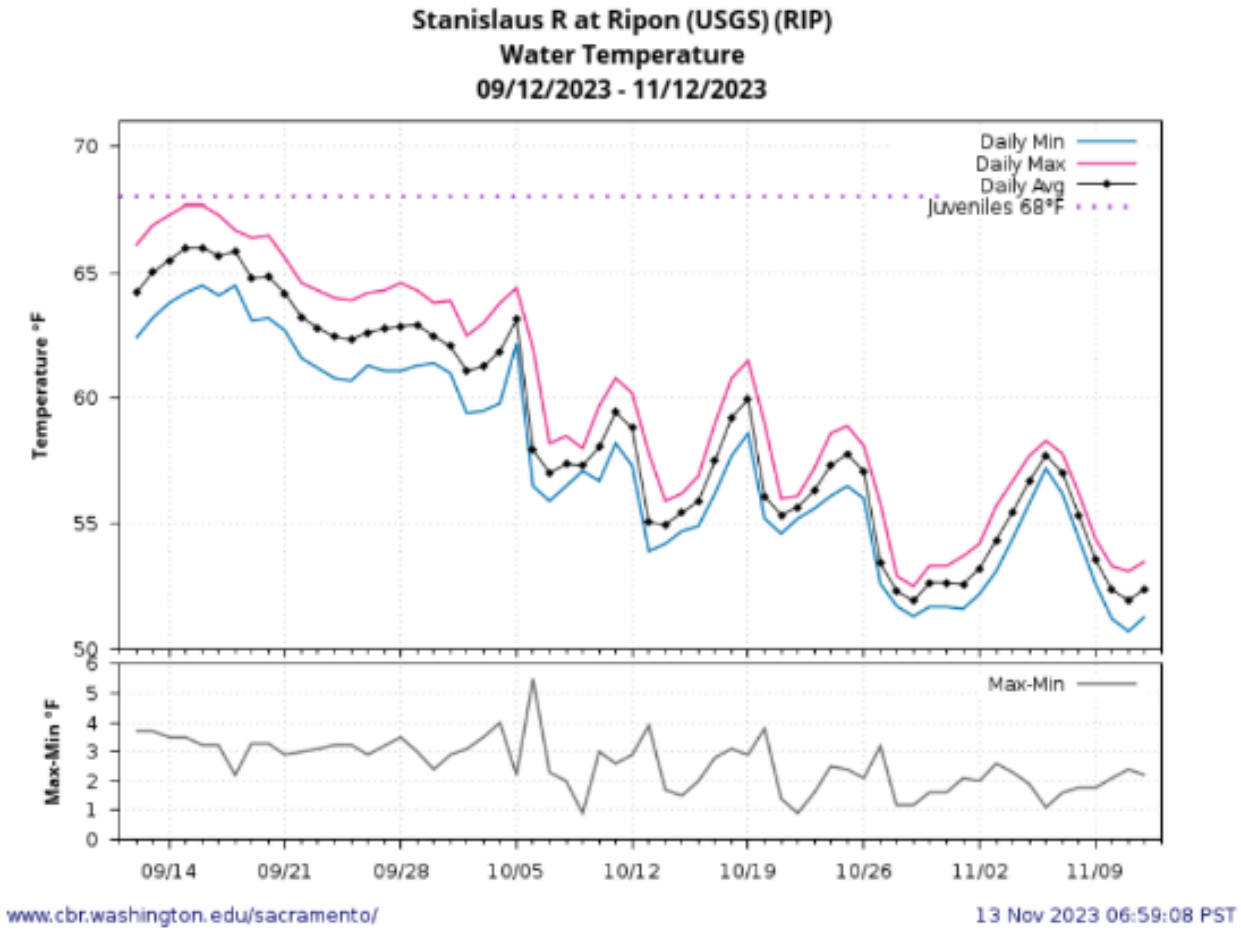


Figure 4. Stanislaus water temperatures at Ripon since July 18, 2023. Data from RIP station on CDEC.

Chart: Stacked chart for daily water temperatures Stanislaus River at Ripon 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

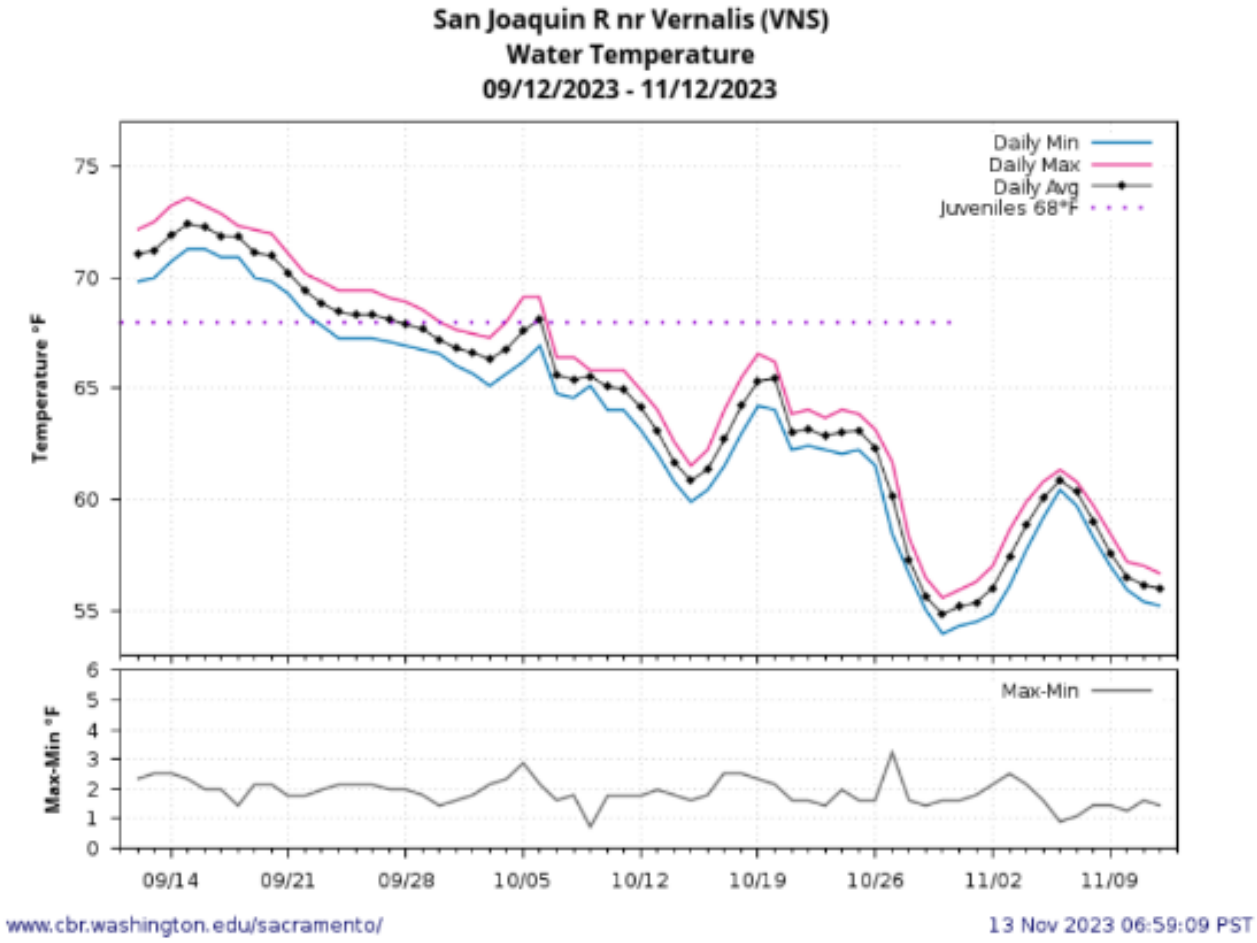


Figure 5. San Joaquin River (15-minute) water temperatures at Vernalis since July 18, 2023. Data from VNS station on CDEC. Note that, unlike in the previous figures, temperature is reported in degrees Celsius. 8°C=46.4°F; 10°C=50°F; 12°C=53.6°F; 14°C=57.2°F; 16°C=60.8°F; 18°C=64.4°F; 20°C=68.0°F; 22°C=71.6°F;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

Chart: Stacked chart for daily water temperatures Stanislaus River at Vernalis 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

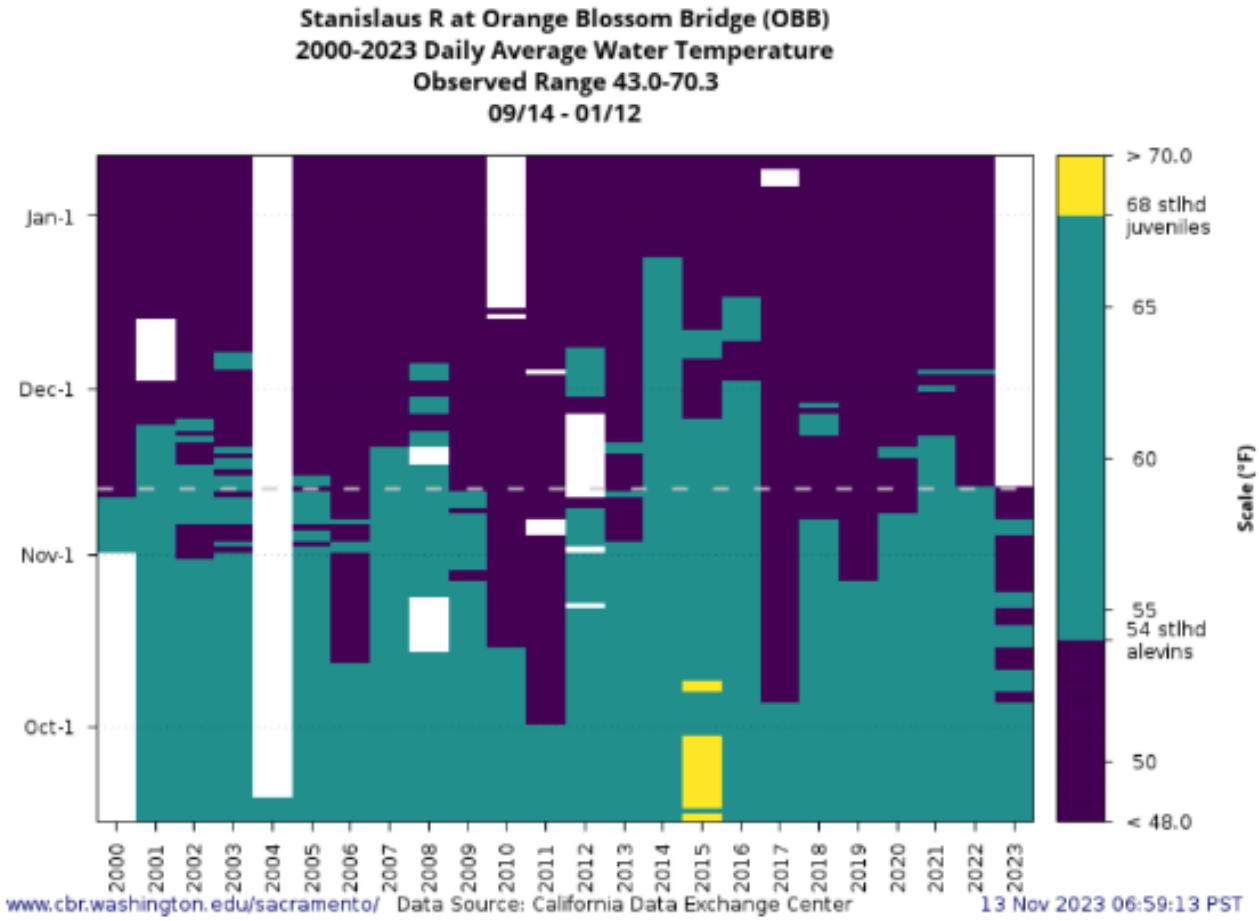


Figure 6. Stanislaus River water temperatures at Orange Blossom Bridge for WY 2000 to present. Data from SacPAS; temperature threshold reference lines added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

Figure 6 is a bar chart showing water temperatures at Orange Blossom Bridge for WY 2000 to present for August to November. The chart shows during this time, temperature remained below 68° Fahrenheit outside of a brief period in September and October of 2015.

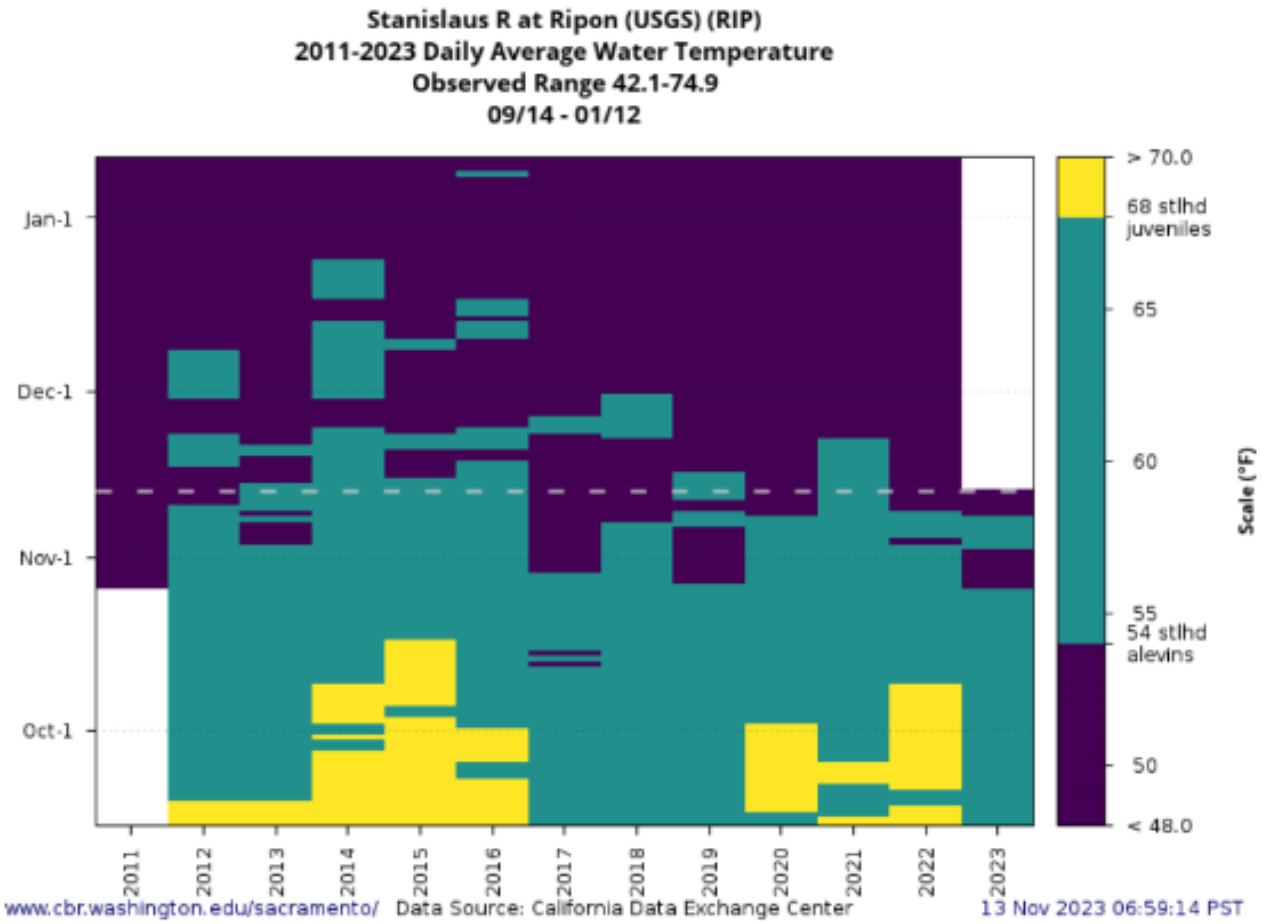


Figure 7. Stanislaus River water temperatures at Ripon for WY 2011 to present. Figure from SacPAS using RIP station data from CDEC; temperature threshold reference line added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

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

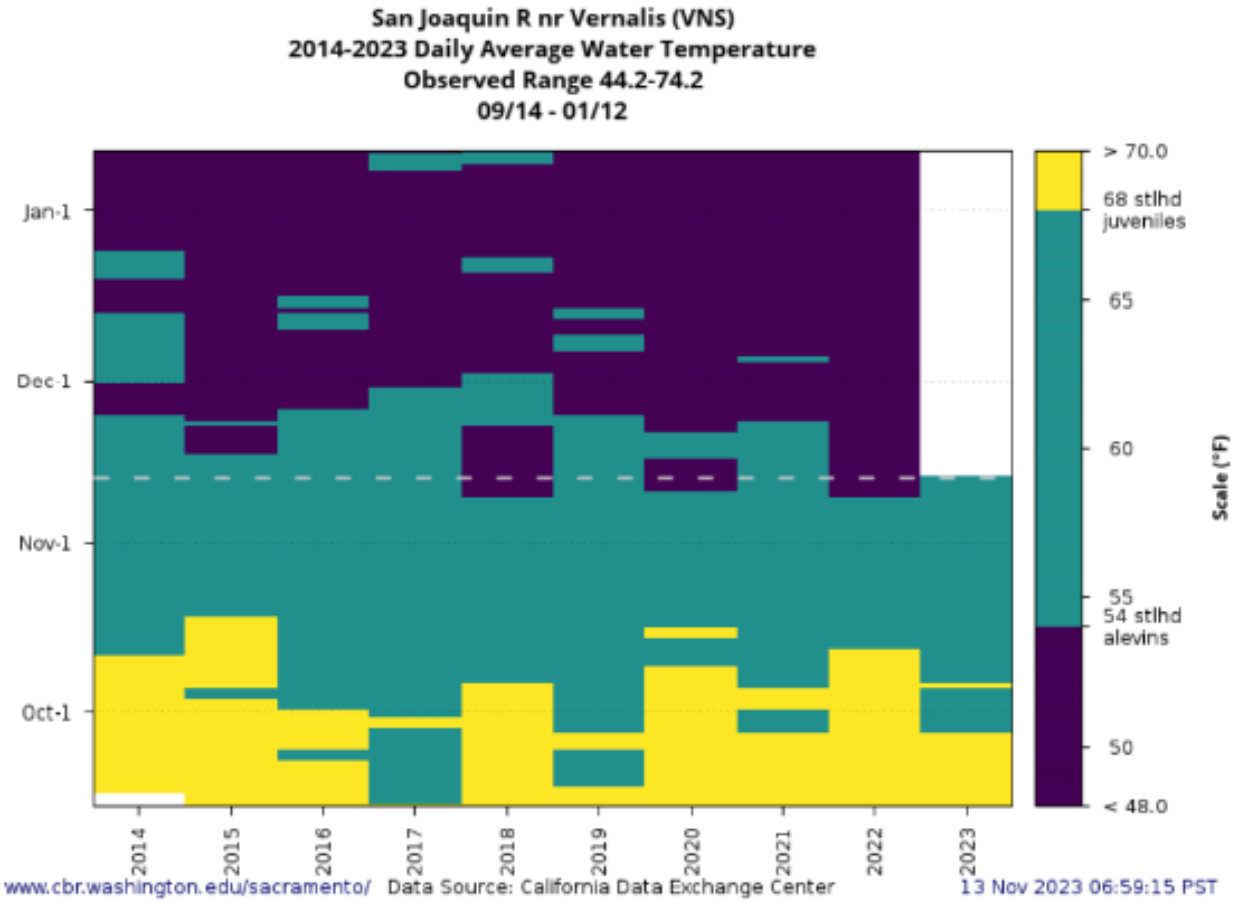


Figure 8. San Joaquin River water temperatures at Vernalis for WY 2014 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT. http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html

Figure 8 is a bar chart showing water temperatures at Vernalis for WY 2018 to present for September to January. The chart shows that during this time, the daily average water temperature was mostly below 68° Fahrenheit for mid-September to October.

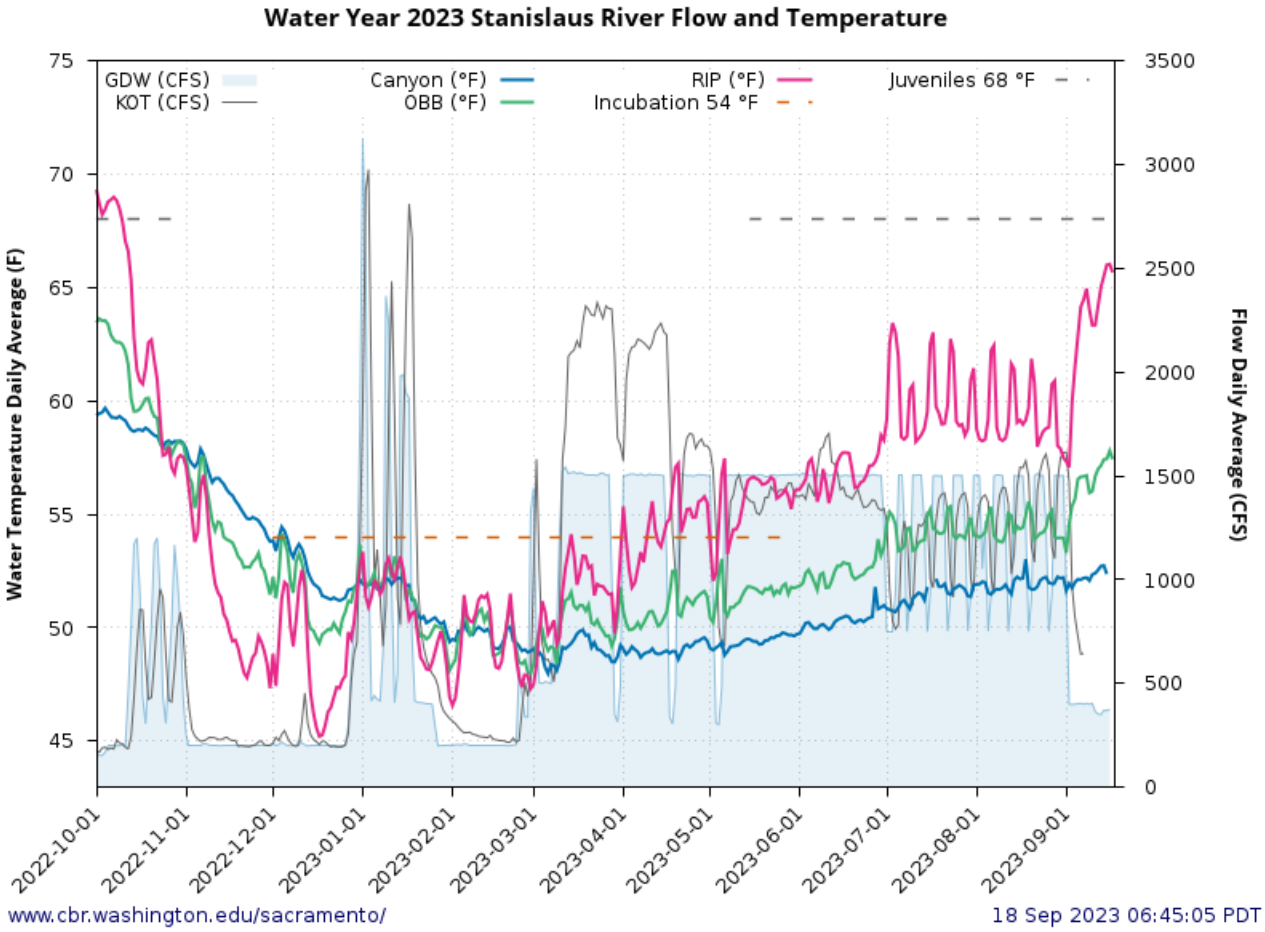


Figure 9. Stanislaus River flow and water temperatures from October 1, 2023 to November 13, 2023. Data (including temperature threshold reference lines) from SacPAS: http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html

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 pulse planning, with the caveat that significant precipitation would require conducting flood control releases.

Fish Monitoring and Studies

CDFW Updates

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 2.

Table 2. Data from the fall 2022 CDFW carcass survey for the San Joaquin tributaries.

River	Wk.	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recovered	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
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
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
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
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

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.

Fire Rescue at Honolulu Bar: On November 2, 2023, CDFW staff successfully rescued (208)

juvenile *O. mykiss*, (2) adult salmon, and (12) juvenile salmon from isolated pools at Honolulu Bar. Flow at Goodwin Dam on November 2 was an average of 219 cfs, while the day before the daily average was 364 cfs.

Figure 10. Photographs of the upstream end of Honolulu Bar and the first disconnected pool.

Figure 11. Photographs of the disconnected pools at Honolulu Bar.

Figure 12. Photograph of the disconnected pool at the downstream end of Honolulu Bar.

FishBio Updates

Weir Updates

Stanislaus River Weir: As of November 10, 1,095 adult Chinook salmon have passed upstream of the Stanislaus River weir (Table 1). Two-hundred and sixty (24%) of the adults were adipose fin clipped (indicating hatchery origin). A total of 25 *O. mykiss* have been observed passing the Stanislaus River weir as of November 10, with all except four being over 16 inches. Nineteen out of 25 (76%) of the *O. mykiss* were adipose fin clipped.

Table 1. Chinook passage at the Stanislaus River Weir as of November 10 of each year and the season totals. Updated through November 10, 2023.

Year	Monitoring Start Date	Net Passage to Date	Season Total
2023	9/6/23	1,095	1,095
2022	9/15/22	1,744	3,798
2021	9/8/21	3,952	6,032
2020	9/10/20	1,581	1,906

Year	Monitoring Start Date	Net Passage to Date	Season Total
2019	8/29/19	1,672	2,594
2018	9/5/18	3,995	4,777
2017	9/15/17	5,141	8,500
2016	9/8/16	9,985	14,399
2015	9/15/15	7,062	12,707
2014	9/5/14	2,694	5,527
2013	9/3/13	4,311	5,452
2012	9/11/12	5,882	7,248
2011	11/8/11	97	776
2010	9/7/10	1,136	1,364
2009	9/9/09	880	1,303
2008	9/9/08	751	928
2007	9/22/07	294	439
2006	9/8/06	1,666	3,074
2005	9/8/05	2,982	4,124
2004	9/10/04	2,954	4,448
2003	9/5/03	3,415	4,848

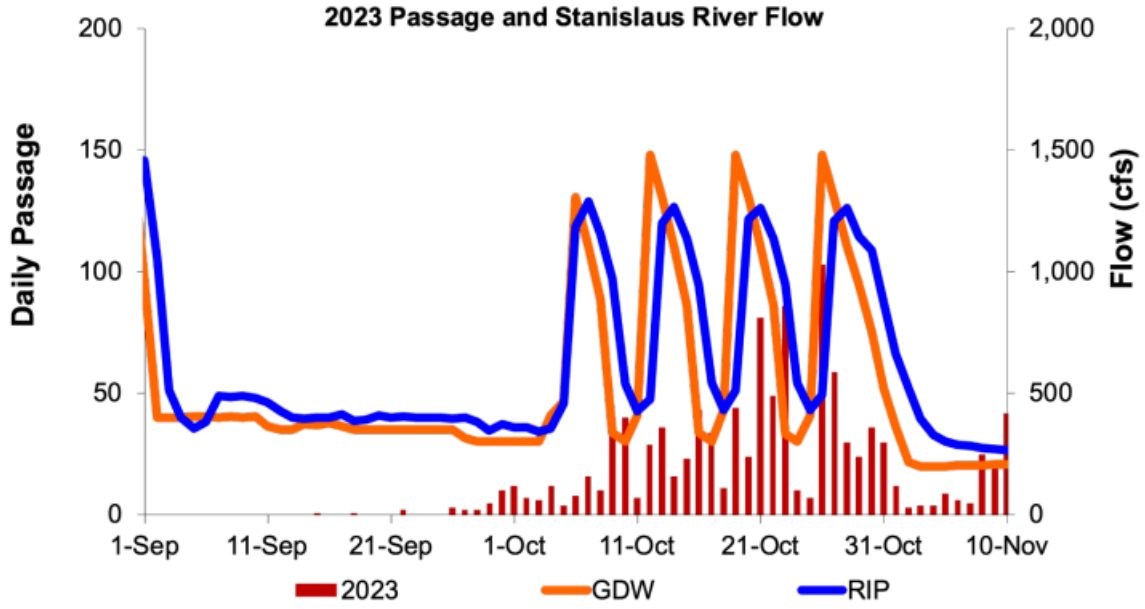


Figure 13. Daily Chinook passage at the Stanislaus River weir and river flow at Goodwin (GDW) and Ripon (RIP), 2023.

Figure 13 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 November 5 shows 4 peaks over 1,000 cfs. Passage on the graph begins in late September and mimics the peaks of flow in October.

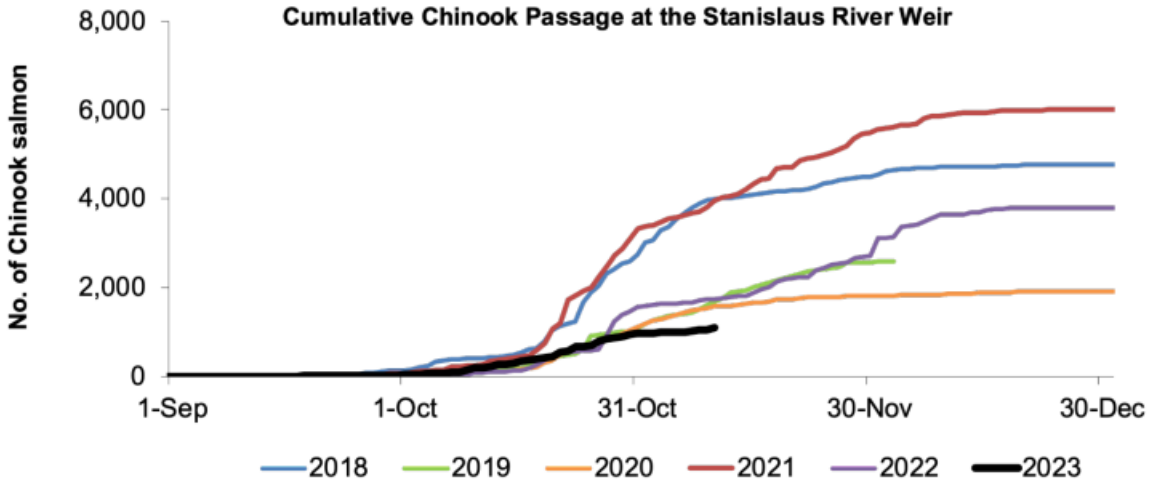


Figure 14. Cumulative Chinook passage at the Stanislaus River weir during 2018-2023.

Figure 14 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, 2023, has the lowest passage to-date from previous years.

Rotary Screw Traps Update:

Caswell Rotary Screw Trap: Rotary screw trapping at Caswell for the 2023/2024 outmigration season (for monitoring of outmigrating juvenile salmonids) is expected to begin in December 2023 or January 2024.

Restoration Project Updates

USBR: 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.