



## Stanislaus Watershed Team

10:00 a.m.–12:00 p.m.

Conference Line: 1 (321) 209-6143; Meeting ID: 901 988 581#

Webinar: Join [Microsoft Teams Meeting](#)

Wednesday, October 19, 2022

### Agenda

1. Introductions
2. Ground Rules<sup>1</sup>
3. Announcements
4. Operations Update and Forecasts/Hydrology
5. Temperature Updates
6. Flow Planning
7. Stanislaus River Forum (SRF) Call Review
8. Fish Monitoring and Studies
9. Restoration Project Updates
10. Progress Update on Proposed Action Elements
  - a. Spawning and rearing habitat restoration
  - b. Temperature management study
  - c. Yellow-bellied cuckoo survey

<sup>1</sup> 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

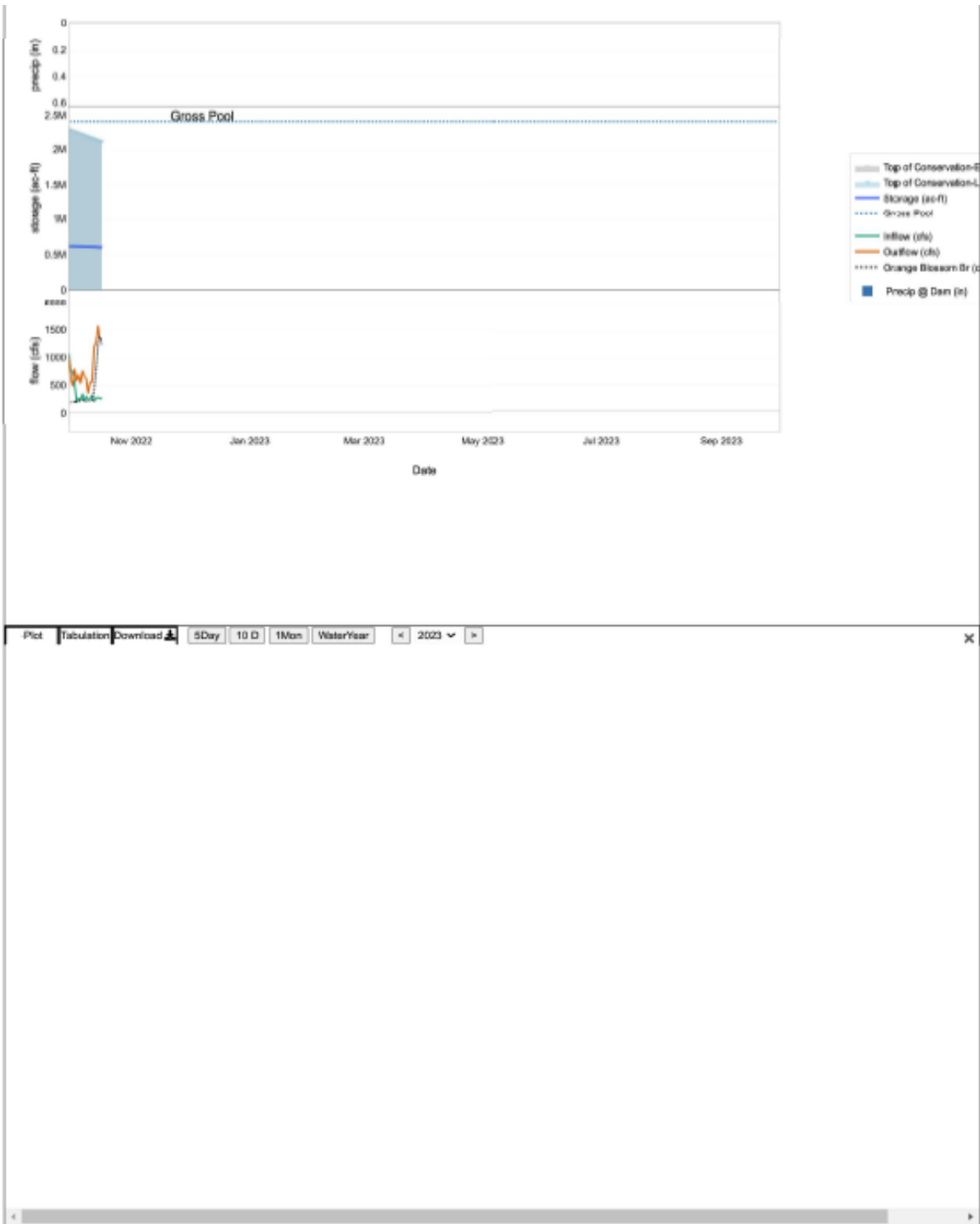
11. Other Discussion Items

- a. Curtailments
- b. Annual reporting check-in
- c. Items to elevate to WOMT

12. Review Action Items

13. Next Meeting: Wednesday, October 19, 2022 (10 a.m.–12 p.m.)

New Melones Dam and Lake - Stanislaus River Basin  
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### Reservoir Releases in Cubic Feet/Second

Reservoir	Dam	WY 2022	WY 2023	15-Year Median
Trinity	Lewiston	330	382	347
Sacramento	Keswick	6,802	3,942	6,498
Feather	Oroville (SWP)	1,250	2,400	2,400
American	Nimbus	549	1,410	1,446
Stanislaus	Goodwin	647	949	730
San Joaquin	Friant	230	450	365

### Storage in Major Reservoirs in Thousands of Acre-Feet

Reservoir	Capacity	15-Year Avg	WY 2022	WY 2023	% O 15 Yr Avg
Trinity	2,448	1,228	649	542	44
Shasta	4,552	2,186	996	1,458	67
Folsom	977	403	218	320	79
New Melones	2,420	1,209	832	604	50
Fed. San Luis	966	298	23	214	72
Total North CVP	11,363	5,324	2,718	3,138	59
Millerton	521	268	305	332	124
Oroville (SWP)	3,538	1,486	792	1,174	79

### Accumulated Inflow for Water Year to Date in Thousands of Acre-Feet

Reservoir	Current WY 2023	WY 1977	WY 1983	15 Yr Avg	% O 15 Yr Avg
<b>Trinity</b>	0	6	11	4	7
<b>Shasta</b>	61	122	148	95	64
<b>Folsom</b>	29	9	77	30	95
<b>New Melones</b>	11	N/A	26	21	51
<b>Millerton</b>	26	4	54	32	81

### Accumulated Precipitation for Water Year To Date in Inches

Reservoir	Current WY 2023	WY 1977	WY 1983	Avg (N Yrs)	% of Avg	Last 24 Hours
Trinity at Fish Hatchery	0.00	0.00	0.09	31.77 (60)	0	0.00
Sacramento at Shasta Dam	0.00	0.00	0.06	61.63 (65)	0	0.00
American at Blue Canyon	0.00	N/A	N/A	67.76 (46)	0	0.00
Stanislaus at New Melones	0.00	N/A	0.24	27.89 (43)	0	0.00
San Joaquin at Huntington Lk	0.00	0.30	0.20	40.20 (47)	0	0.00

New Melones Lake Daily Operations, October 2022, Run Date: 10/17/2022

Day	Elev	Storage in Lake (1000 Acre-Feet)	Storage Change (1000 Acre-Feet)	Computed Inflow C.F.S.*	Release C.F.S. – River Power	Release – C.F.S. River Spill	Release C.F.S. – River Outlet	EVAP – C.F.S.	EVAP – Inches	Precip Inches
1	881.47	619.3	0.2	751	603	0	0	41	0.24	0.00
2	881.55	619.7	0.4	747	484	0	0	48	0.28	0.00
3	881.44	619.1	-0.6	526	789	0	0	33	0.19	0.00
4	881.29	618.3	-0.8	195	564	0	0	34	0.20	0.00
5	881.12	617.4	-0.9	261	682	0	0	36	0.21	0.00
6	880.99	616.7	-0.7	230	527	0	0	52	0.30	0.00
7	880.81	615.7	-1.0	333	759	0	0	55	0.32	0.00
8	880.63	614.8	-1.0	207	642	0	0	46	0.27	0.00
9	880.49	614.1	-0.7	296	620	0	0	51	0.30	0.00
10	880.43	613.7	-0.3	233	347	0	0	46	0.27	0.00
11	880.30	613.0	-0.7	258	555	0	0	50	0.29	0.00
12	880.19	612.5	-0.6	309	552	0	0	51	0.30	0.00
13	879.81	610.5	-2.0	208	1,187	0	0	34	0.20	0.00
14	879.42	608.4	-2.1	266	1,252	0	0	51	0.30	0.00
15	878.92	605.8	-2.6	273	1,570	0	0	31	0.18	0.00
16	878.50	603.6	-2.2	258	1,337	0	0	32	0.19	0.00
<b>Totals</b>	N/A	N/A	-15.6	5,351	12,470	0	0	691	4.04	0.00
<b>Acre-Feet</b>	N/A	N/A	-15,600	10,614	24,734	0	0	1,371	N/A	N/A

\* Computed inflow is the sum of change in storage, releases, pumping and evaporation

**Summary: Release (acre-feet)**

Power 24,734  
 Spill 0  
 Outlet 0  
 Total Releases 24,734

**Summary: Precipitation (Month/Inches)**

This Month 0.00  
 July 1, 2022 1.34  
 October 1, 2022 0.00

New Melones Lake Daily Operations, September 2022, Run Date: 10/1/2022

Day	Elev	Storage in Lake (1000 Acre-Feet)	Storage Change (1000 Acre-Feet)	Computed Inflow C.F.S.*	Release C.F.S. – River Power	Release – C.F.S. River Spill	Release C.F.S. – River Outlet	EVAP – C.F.S.	EVAP – Inches	Precip Inches
1	885.17	639.2	-1.5	694	1,396	0	0	67	0.48	0.00
2	885.05	638.5	-0.7	757	1,011	0	0	76	0.43	0.00
3	884.76	637.0	-1.6	773	1,480	0	0	86	0.49	0.00
4	884.64	636.3	-0.7	814	1,067	0	0	75	0.43	0.00
5	884.53	635.7	-0.6	907	1,132	0	0	75	0.43	0.00
6	884.39	635.0	-0.8	1,149	1,456	0	0	75	0.43	0.00
7	884.37	634.8	-0.1	818	789	0	0	84	0.48	0.00
8	884.33	634.6	-0.2	1,004	1,032	0	0	81	0.46	0.00
9	883.84	632.0	-2.7	852	2,108	0	0	80	0.46	0.00
10	883.60	630.7	-1.3	529	1,116	0	0	65	0.37	0.00
11	883.05	627.7	-3.0	506	1,953	0	0	47	0.27	0.01
12	882.81	626.4	-1.3	582	1,177	0	0	54	0.31	0.00
13	882.73	626.0	-0.4	509	676	0	0	49	0.28	0.00
14	882.38	624.1	-1.9	492	1,393	0	0	45	0.26	0.00
15	882.21	623.2	-0.9	493	910	0	0	42	0.24	0.00
16	881.93	621.7	-1.5	628	1,351	0	0	33	0.19	0.00
17	881.61	620.0	-1.7	467	1,284	0	0	43	0.25	0.00
18	881.48	619.3	-0.7	573	876	0	0	47	0.27	0.00
19	881.31	618.4	-0.9	753	1,194	0	0	16	0.09	0.36
20	881.09	617.2	-1.2	-14	568	0	0	9	0.05	0.60
21	881.07	617.1	-0.1	11	39	0	0	26	0.15	0.02
22	881.17	617.7	0.5	673	390	0	0	14	0.08	0.12
23	881.13	617.5	-0.2	664	735	0	0	36	0.21	0.00
24	881.14	617.5	0.1	835	755	0	0	53	0.31	0.00
25	881.20	617.8	0.3	834	620	0	0	53	0.31	0.00
26	881.28	618.3	0.4	801	539	0	0	47	0.27	0.00
27	881.32	618.5	0.2	837	689	0	0	41	0.24	0.00
28	881.45	619.2	0.7	987	597	0	0	41	0.24	0.00
29	881.41	618.9	-0.2	952	1,012	0	0	47	0.27	0.00
30	881.43	619.1	0.1	1,048	978	0	0	16	0.09	0.00
<b>Totals</b>	N/A	N/A	-21.7	20,928	30,323	0	0	1,523	8.74	1.11
<b>Acre-Feet</b>	N/A	N/A	-21,700	41,511	60,146	0	0	0	N/A	N/A

\* Computed inflow is the sum of change in storage, releases, pumping and evaporation

**Summary: Release (acre-feet)**

Power	60,146
Spill	0
Outlet	0
Total Releases	60,146

**Summary: Precipitation (Month/Inches)**

This Month	1.11
July 1, 2022	20.73
October 1, 2022	1.34

Tulloch Reservoir Daily Operations, October 2022, Run Date: 10/17/2022

Day	Elev	Storage in Lake (1000 Acre-Feet)	Storage Change (1000 Acre-Feet)	Computed Inflow C.F.S.*	New Melones Release	Release C.F.S. – River Power	Release – C.F.S. River Spill	Release C.F.S. – River Outlet	EVAP – C.F.S.**
1	504.56	60,398	-231	596	603	703	0	0	9
2	504.26	60,051	-347	462	484	627	0	0	10
3	504.59	60,433	382	773	789	573	0	0	7
4	504.54	60,375	-58	566	564	588	0	0	7
5	504.59	60,433	58	690	682	653	0	0	8
6	504.34	60,143	-290	511	527	646	0	0	11
7	504.34	60,375	232	756	759	627	0	0	12
8	504.53	60,363	-12	632	642	628	0	0	10
9	504.49	60,317	-46	615	620	627	0	0	11
10	504.11	59,877	-440	330	347	542	0	0	10
11	503.93	59,670	-207	550	555	643	0	0	11
12	503.22	58,861	-809	530	552	927	0	0	11
13	503.11	58,735	-126	1,196	1,187	1,253	0	0	7
14	502.38	57,916	-819	1,234	1,252	1,636	0	0	11
15	502.28	57,804	-112	1,560	1,570	1,609	0	0	7
16	502.20	57,714	-90	1,315	1,337	1,353	0	0	7
<b>Totals</b>	N/A	N/A	-2,915	12,316	12,470	13,635	0	0	149
<b>Acre-Feet</b>	N/A	N/A	-2,915	24,429	27,045	27,045	0	0	296

\* Computed inflow is the sum of change in storage, releases, pumping and evaporation

\*\* Evaporation records taken from Shasta Pan

**Summary: Release (acre-feet)**

Power	27,045
Spill	0
Outlet	0
Total Releases	27,045



Tulloch Reservoir Daily Operations, September 2022, Run Date: 10/1/2022

Day	Elev	Storage in Lake (1000 Acre-Feet)	Storage Change (1000 Acre-Feet)	Computed Inflow C.F.S.*	New Melones Release	Release C.F.S. – River Power	Release – C.F.S. River Spill	Release C.F.S. – River Outlet	EVAP – C.F.S.**
1	508.00	64,489	145	1,410	1,396	1,322	0	0	15
2	507.62	64,028	-461	985	1,011	1,200	0	0	17
3	508.04	64,538	510	1,742	1,480	1,196	0	0	19
4	508.04	64,538	0	1,045	1,067	1,028	0	0	17
5	508.26	64,809	271	1,130	1,132	976	0	0	17
6	508.93	65,634	825	1,462	1,456	1,029	0	0	17
7	507.95	64,428	-1,206	755	789	1,344	0	0	19
8	507.11	63,410	-1,018	993	1,032	1,488	0	0	18
9	508.05	64,551	1,141	2,128	2,108	1,535	0	0	18
10	507.36	63,713	-838	1,093	1,116	1,501	0	0	14
11	508.19	64,723	1,010	1,930	1,953	1,410	0	0	11
12	508.22	64,760	37	1,189	1,177	1,158	0	0	12
13	507.45	63,822	-938	651	676	1,113	0	0	11
14	507.83	64,283	461	1,394	1,393	1,152	0	0	10
15	507.48	63,859	-424	881	910	1,086	0	0	9
16	508.00	64,489	630	1,350	1,351	1,024	0	0	8
17	508.49	65,092	603	1,288	1,284	974	0	0	10
18	508.46	65,055	-37	882	876	890	0	0	11
19	509.03	65,757	702	1,167	1,194	809	0	0	4
20	508.72	65,375	-382	597	568	788	0	0	2
21	507.50	63,883	-1,492	7	39	753	0	0	6
22	506.76	62,990	-893	376	390	823	0	0	3
23	506.56	65,752	-238	732	735	844	0	0	8
24	505.36	62,513	-239	739	755	847	0	0	12
25	505.94	62,012	-501	622	620	863	0	0	12
26	505.29	61,248	-764	515	539	890	0	0	10
27	504.82	60,699	-549	678	689	946	0	0	9
28	504.28	60,074	-625	575	597	881	0	0	9
29	504.40	60,213	139	1,024	1,012	944	0	0	10
30	504.76	60,629	416	957	978	744	0	0	3
<b>Totals</b>	N/A	N/A	-3,715	30,027	30,323	31,558	0	0	341
<b>Acre-foot</b>	N/A	N/A	-3,715	59,559	60,146	62,595	0	0	676

\* Computed inflow is the sum of change in storage, releases, pumping and evaporation

\*\* Evaporation records taken from Shasta Pan

**Summary: Release (acre-feet)**

Power	62,595
Spill	0
Outlet	0
Total Releases	62,595

Goodwin Reservoir Daily Operations, October 2022, Run Date: 10/17/2022

Day	Elev	Storage Reser- voir (Acre- Feet)	Storage Change (Acre- Feet)	Tulloch Release	Release C.F.S. – River Outlet	Release – C.F.S. River Spill	Canals – Joint Main	Canals – South Main
1	359.71	517	0	703	0	154	321	270
2	359.71	517	0	627	0	156	294	226
3	359.71	517	0	573	0	154	261	207
4	359.76	520	3	588	0	170	268	196
5	359.76	520	0	653	0	204	270	232
6	359.74	519	-1	646	0	204	262	233
7	359.74	519	0	627	0	203	236	243
8	359.74	519	0	628	0	201	239	242
9	359.76	520	1	627	0	202	239	232
10	359.77	521	1	542	0	206	163	225
11	359.76	520	-1	643	0	204	214	281
12	359.96	534	14	927	0	457	212	312
13	360.14	547	13	1,253	0	780	225	317
14	360.36	562	15	1,636	0	1,171	246	297
15	360.36	562	0	1,609	0	1,202	240	253
16	360.02	538	-24	1,353	0	949	239	256
<b>Totals</b>	N/A	N/A	21	13,635	0	6,617	3,929	4,022
<b>Acre-feet</b>	N/A	N/A	21	27,045	0	13,125	7,793	7,978

**Summary: Release (acre-feet)**

Joint Main Canal            7,793  
 South Main Canal         7,978  
 Outlet                         0  
 Spill                          13,125  
 Total Releases             28,896

Goodwin Reservoir Daily Operations, September 2022, Run Date: 10/1/2022

Day	Elev	Storage Reser- voir (Acre- Feet)	Storage Change (Acre- Feet)	Tulloch Release	Release C.F.S. – River Outlet	Release – C.F.S. River Spill	Canals – Joint Main	Canals – South Main
1	359.79	522	-1	1,322	0	228	725	416
2	359.79	522	0	1,200	0	226	666	356
3	359.80	523	1	1,196	0	227	617	392
4	359.77	521	-2	1,028	0	228	546	298
5	359.77	521	0	976	0	227	532	263
6	359.98	536	15	1,029	0	255	283	527
7	359.98	536	0	1,344	0	505	573	328
8	359.98	536	0	1,488	0	502	650	403
9	359.96	534	-2	1,535	0	502	704	398
10	359.96	534	0	1,501	0	502	743	332
11	359.83	525	-9	1,410	0	466	691	332
12	359.76	520	-5	1,158	0	234	648	332
13	359.74	519	-1	1,113	0	202	625	332
14	359.76	520	1	1,152	0	202	651	342
15	359.77	521	1	1,086	0	202	646	277
16	359.76	520	-1	1,024	0	205	589	266
17	359.77	521	1	974	0	202	542	265
18	359.77	521	0	890	0	205	538	182
19	359.76	520	-1	809	0	203	506	132
20	359.73	518	-2	788	0	196	455	182
21	359.70	516	-2	753	0	159	433	206
22	359.71	517	1	823	0	150	437	271
23	359.71	517	0	844	0	151	469	252
24	359.71	517	0	847	0	153	471	252
25	359.71	517	0	863	0	154	486	252
26	359.70	517	0	890	0	155	505	263
27	359.71	516	-1	946	0	155	535	284
28	359.71	517	1	881	0	151	546	212
29	359.71	517	0	944	0	151	540	281
30	359.71	517	0	744	0	151	408	223
<b>Totals</b>	N/A	N/A	-6	31,558	0	7,249	16,760	8,851
<b>Acre-feet</b>	N/A	N/A	-6	62,595	0	14,378	33,243	17,556

Joint Main operated by SSJID and OID

### Summary: Release (acre-feet)

Joint Main Canal	33,243
South Main Canal	17,556
Outlet	0
Spill	14,378
Total Releases	65,178

## October 2022 Water Temperature and Fish Monitoring Update

### Year-to-Date Flows

Goodwin releases since October 1, 2021 are shown in Figure 1. The releases greater than 200 cfs that occurred in December and early January were for storage management at Tulloch Reservoir due to side flows from storm events. After the late January winter instability flow, Goodwin releases increased again for the Vernalis flow requirement through early April. After the spring pulse flow, Goodwin releases higher than 150 cfs (the Critical SRP minimum between the spring pulse flow and fall pulse flow) may be needed for flow or salinity requirements at Vernalis, or dissolved oxygen requirements at Ripon.

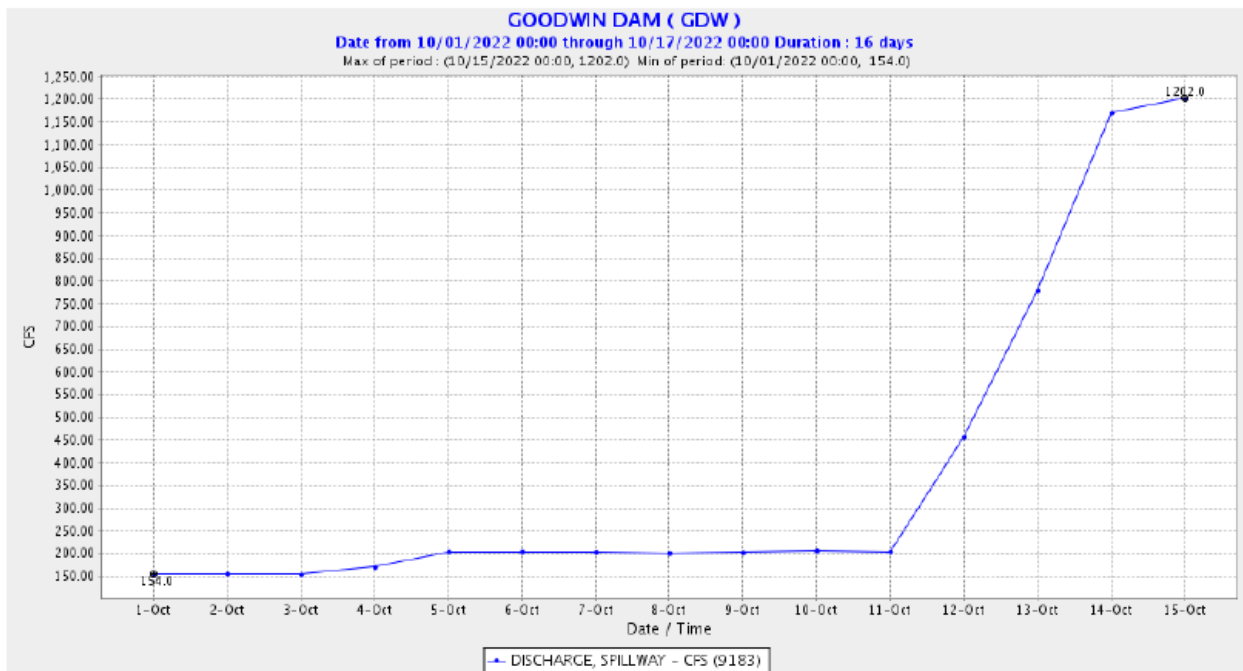


Figure 1. Goodwin (daily) releases to the Stanislaus River since October 1, 2022. Data from GDW station on CDEC.

## Water Temperature

The temperature thresholds included in Figures 2-9, below, are the thresholds used in the 2019 NMFS LTO BiOp<sup>1</sup> (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 1, 2022 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 August 1, 2022 are shown below at Vernalis (Figure 5). The end of water year 2022 temperatures are plotted along with historical temperatures for Orange Blossom Bridge (Figure 6.A), Ripon (Figure 7.A), and Vernalis (Figure 8.A). Current-year water temperatures are plotted along with historical temperatures for Orange Blossom Bridge (Figure 6.B), Ripon (Figure 7.B), and Vernalis (Figure 8.B). A compilation of Stanislaus River water temperatures and Goodwin releases for calendar year 2022 is provided in Figure 9.

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<sup>1</sup> The 2019 NMFS LTO BiOp is available online at: <https://www.fisheries.noaa.gov/resource/document/biological-opinion-reinitiation-consultation-long-term-operation-central-valley>

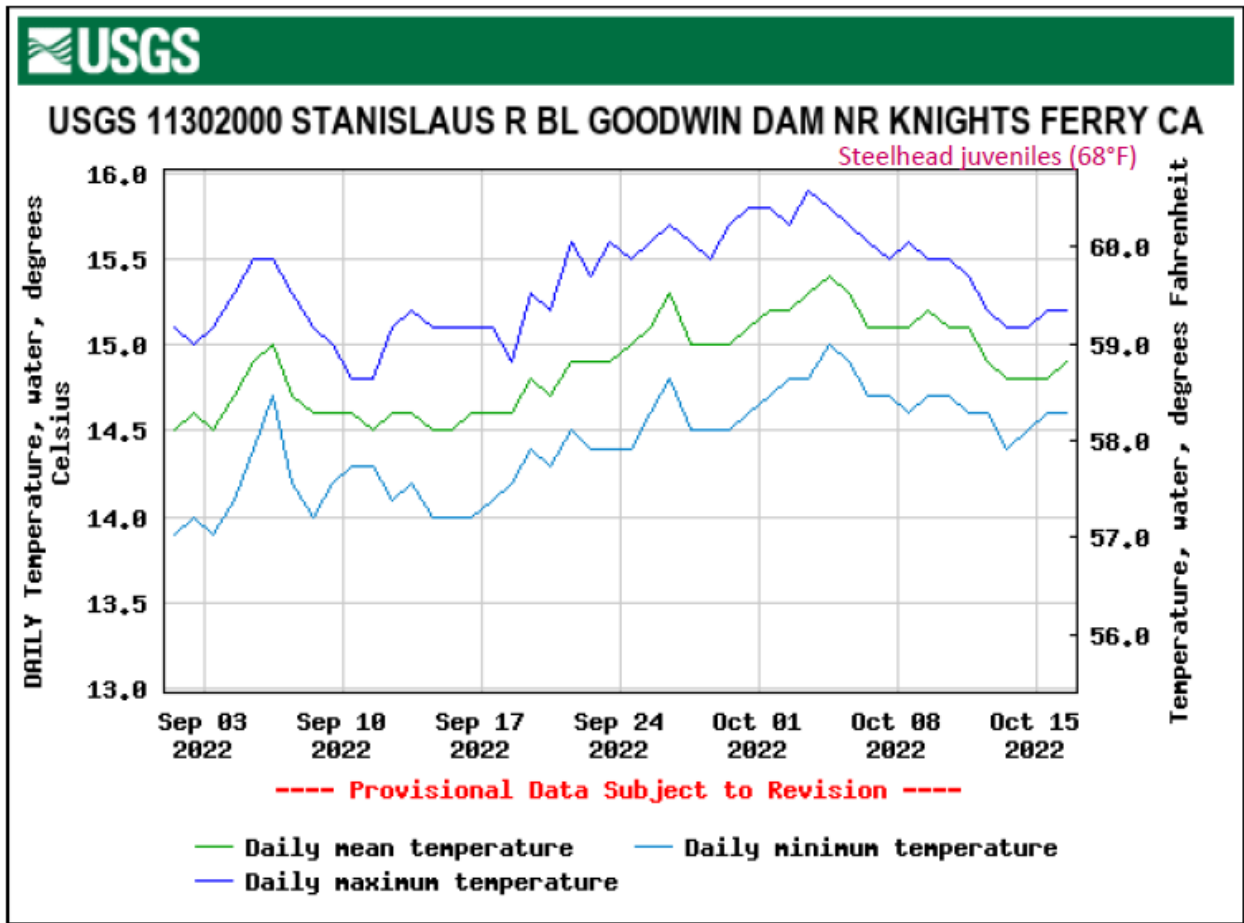


Figure 2. Daily water temperatures on the Stanislaus River upstream of Knights Ferry since September 1, 2022. Data from USGS gage 11302000 on NWIS; temperature threshold reference line added by SWT.

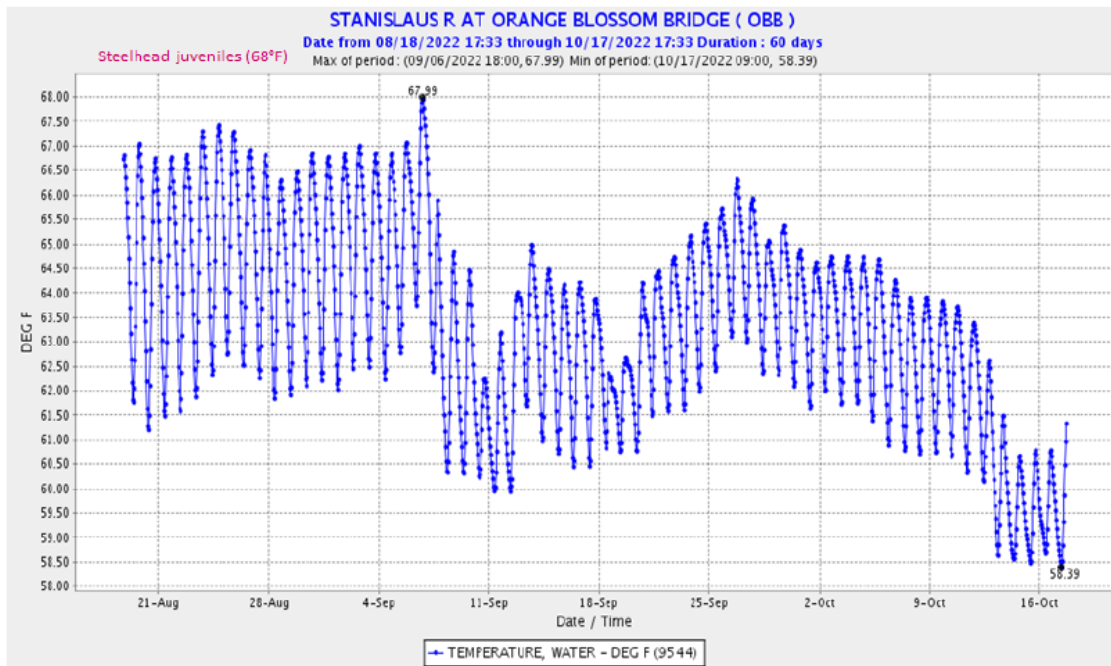


Figure 3. Stanislaus (hourly) water temperatures at Orange Blossom Bridge since June 1, 2022. Data from OBB station on CDEC; temperature threshold reference line added by SWT.

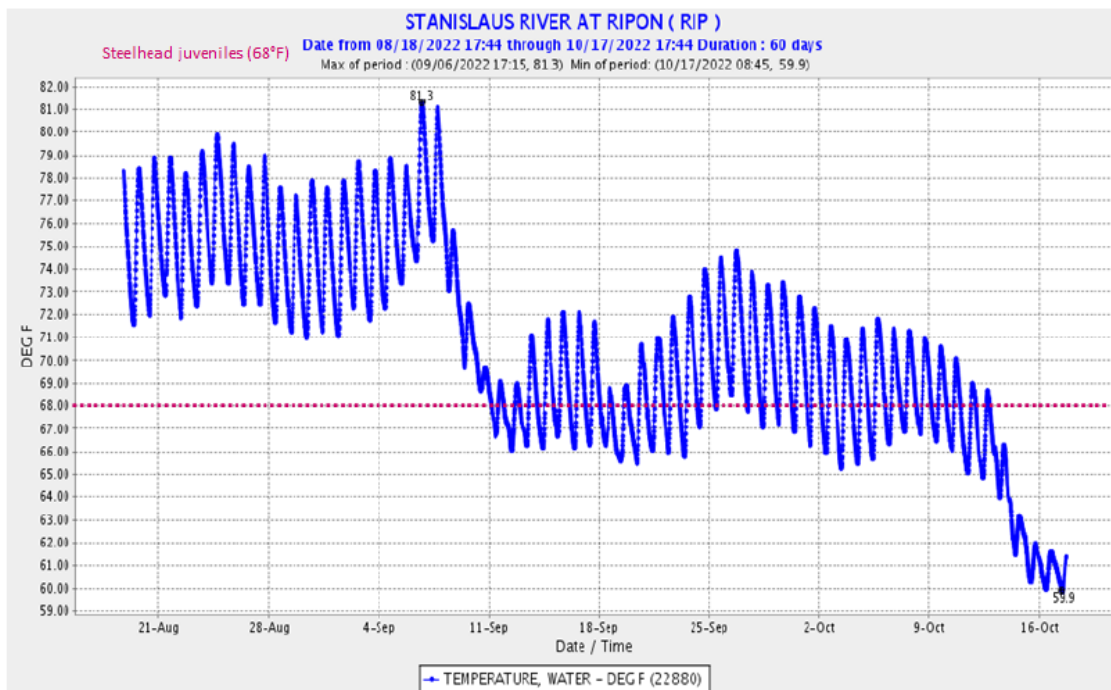


Figure 4. Stanislaus (15-minute) water temperatures at Ripon since August 1, 2022. Data from RIP station on CDEC.



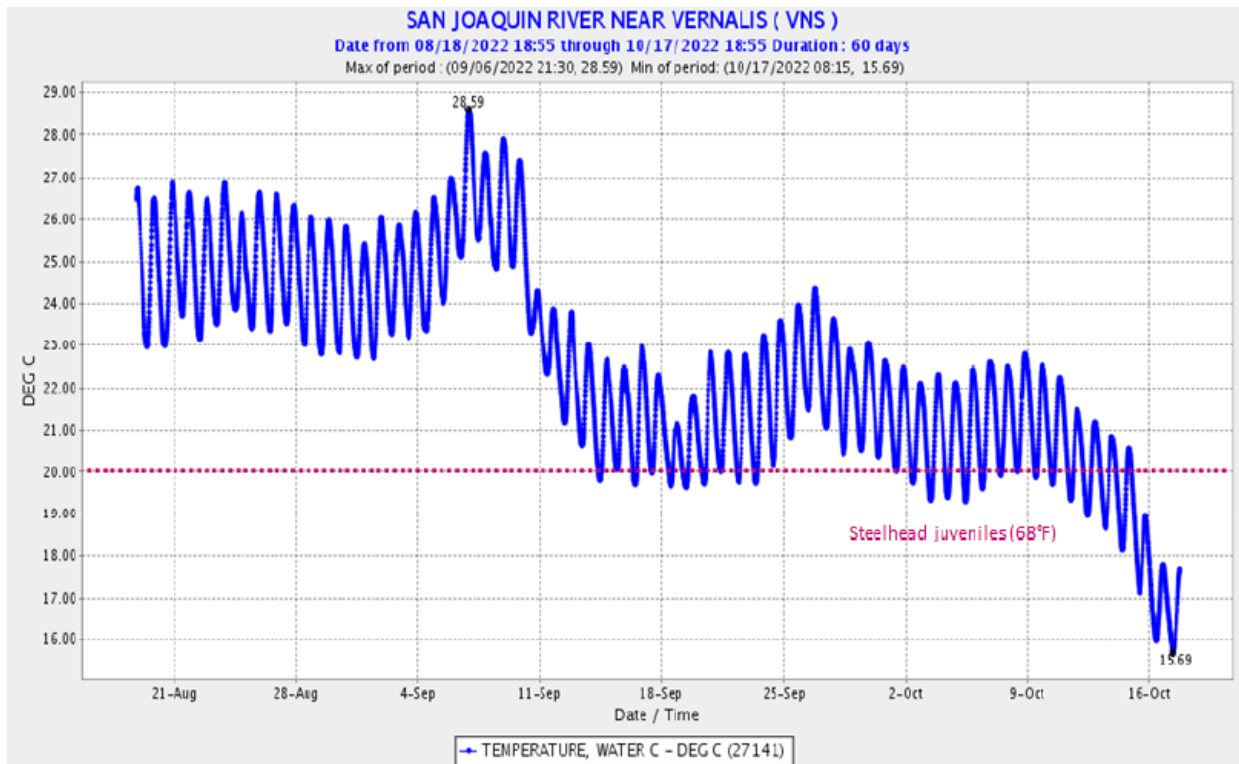


Figure 5. San Joaquin River (15-minute) water temperatures at Vernalis since August 1, 2022. Data from VNS station on CDEC. Note that, unlike in the previous figures, temperature is reported in degrees Celsius. 8°C=46.4°F; 10°C=50°F; 12°C=53.6°F; 14°C=57.2°F; 16°C=60.8°F; 18°C=64.4°F; 20°C=68.0°F; 22°C=71.6°F; 24°C=75.2°F; 26°C=78.8°F; 28°C=82.4°F.

WY 2001-2022 OBB Stanislaus R at Orange Blossom Bridge  
 Daily Average Water Temperature (F)  
 Observed Range 52.31-73.07

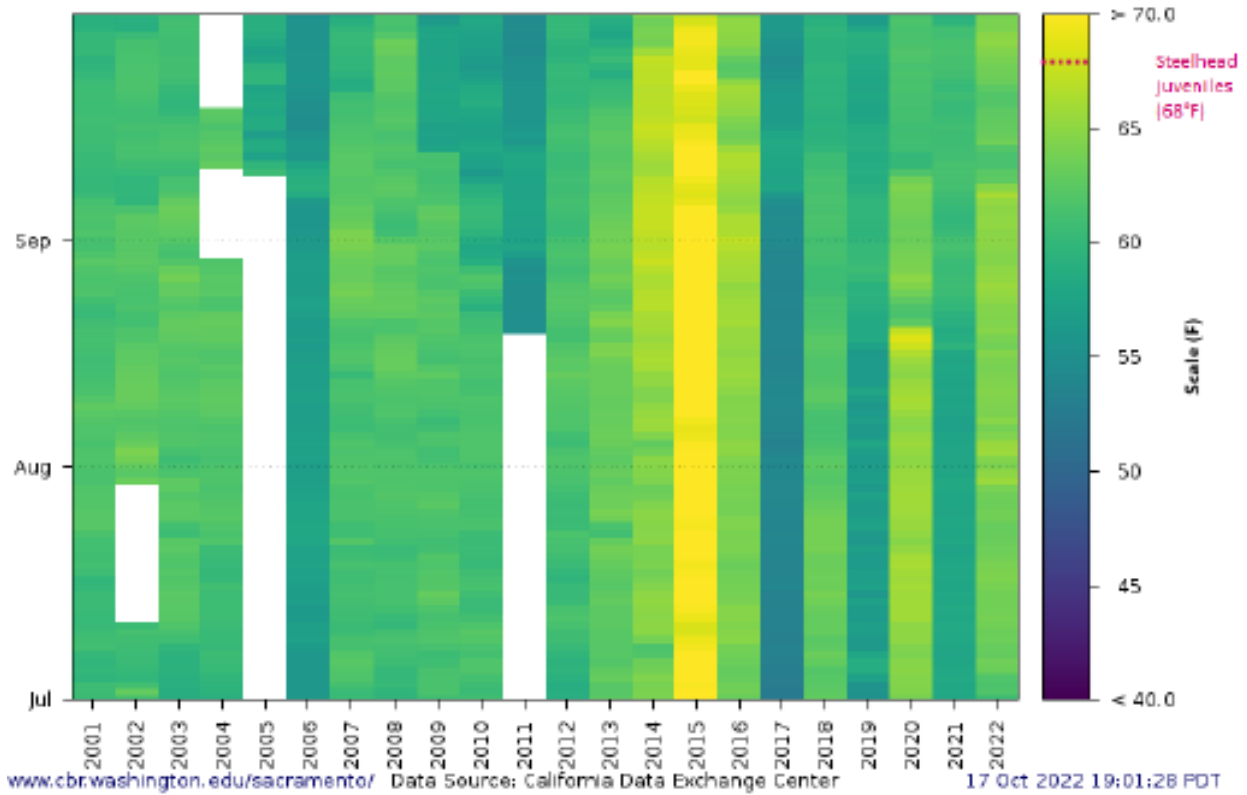


Figure 6.A Stanislaus River water temperatures at Orange Blossom Bridge for July through September from WY 2001 to present. Data from SacPAS; temperature threshold reference lines added by SWT.

[http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

WY 2001-2023 OBB Stanislaus R at Orange Blossom Bridge  
Daily Average Water Temperature (F)  
Observed Range 43.02-68.41

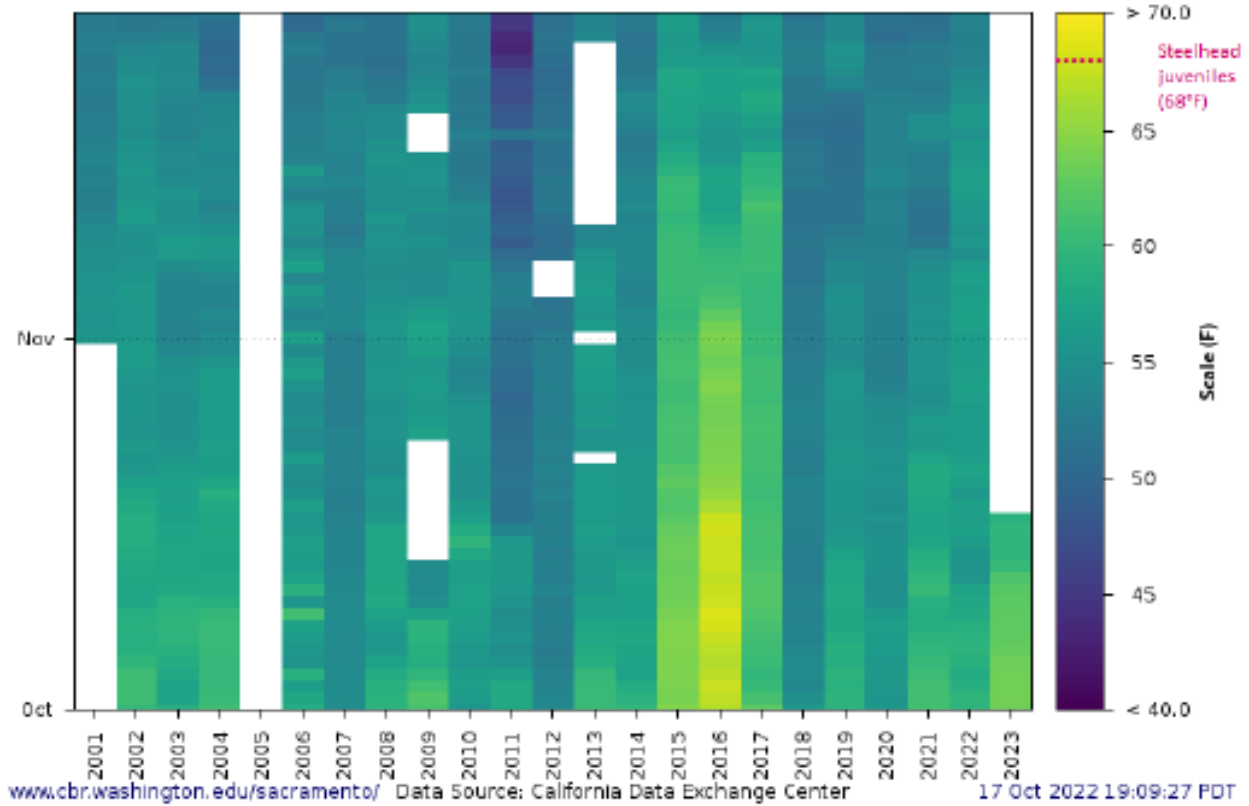


Figure 6.B Stanislaus River water temperatures at Orange Blossom Bridge for October through present. Data from SacPAS; temperature threshold reference lines added by SWT. [http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

**WY 1999-2022 RPN Stanislaus R at Ripon**  
**Daily Average Water Temperature (F)**  
**Observed Range 57.47-84.36**

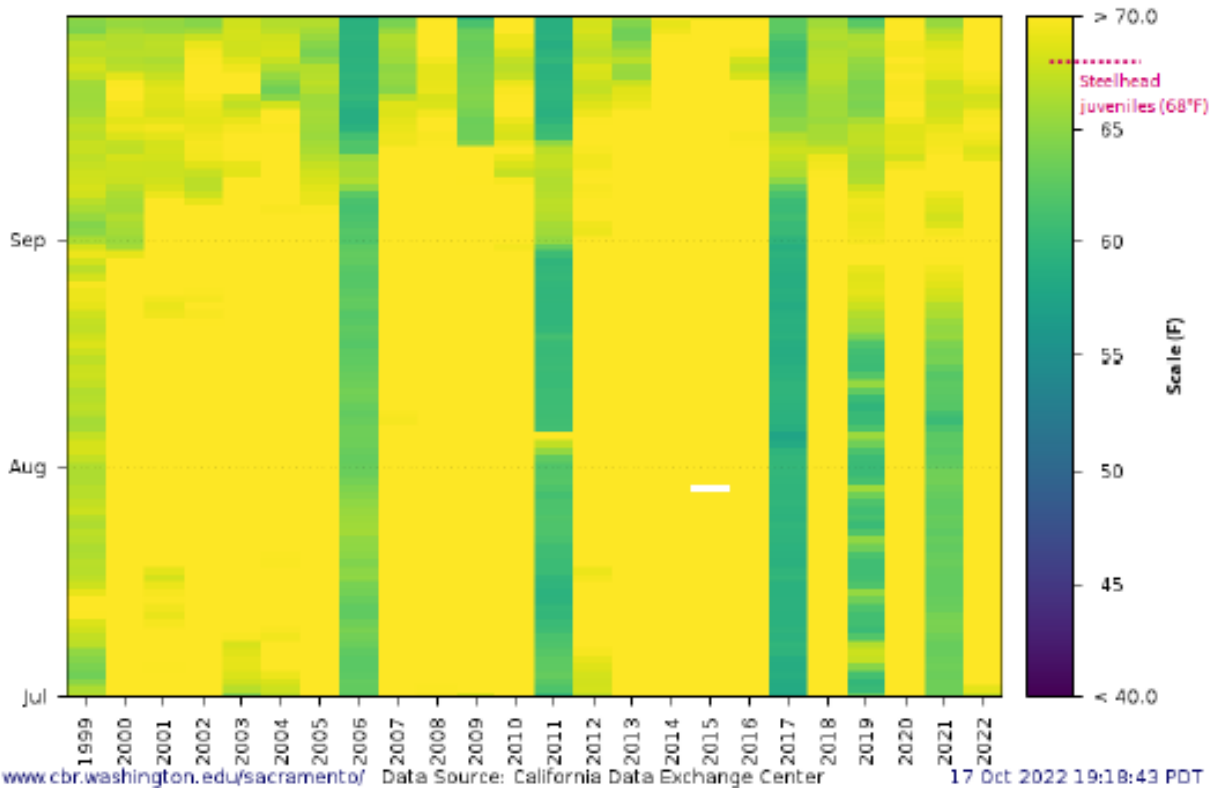


Figure 7.A Stanislaus River water temperatures at Ripon for July through September from Water Year 1999 to present. Figure from SacPAS using RIP station data from CDEC; temperature threshold reference line added by SWT.

[http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

WY 2000-2023 RPN Stanislaus R at Ripon  
Daily Average Water Temperature (F)  
Observed Range 46.88-71.84

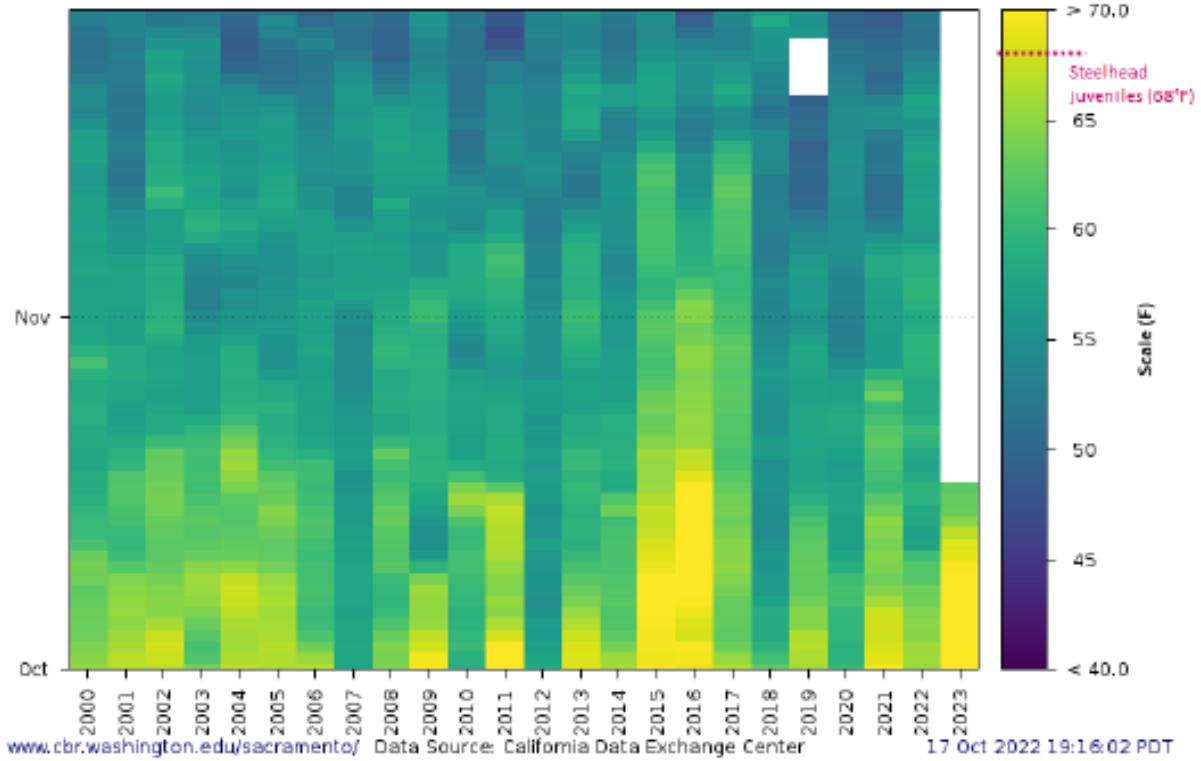


Figure 7.B Stanislaus River water temperatures at Ripon for October through Present from Water Year 2000 to present. Figure from SacPAS using RIP station data from CDEC; temperature threshold reference line added by SWT.

[http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

WY 2015-2022 VNS San Joaquin R near Vernalis  
Daily Average Water Temperature (F)  
Observed Range 61.29-84.80

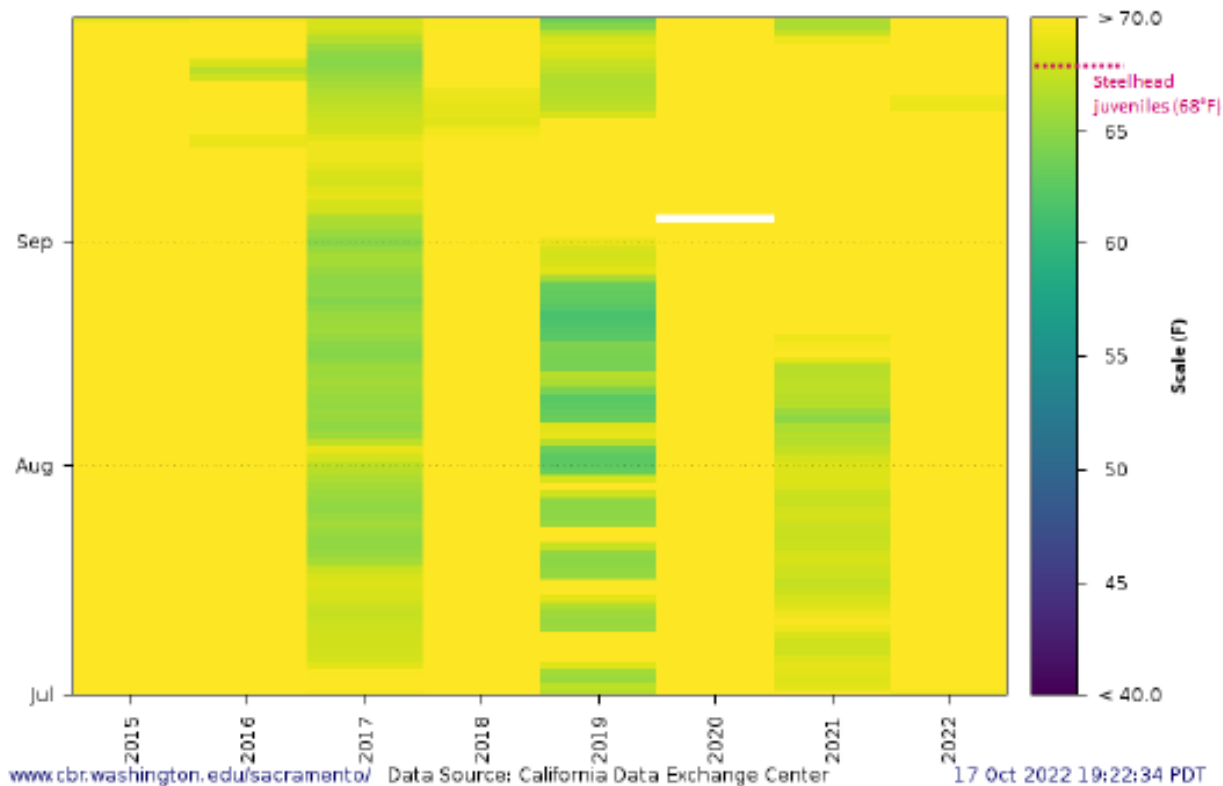


Figure 8.A San Joaquin River water temperatures at Vernalis for July through September from Water Year 2015 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT.

[http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

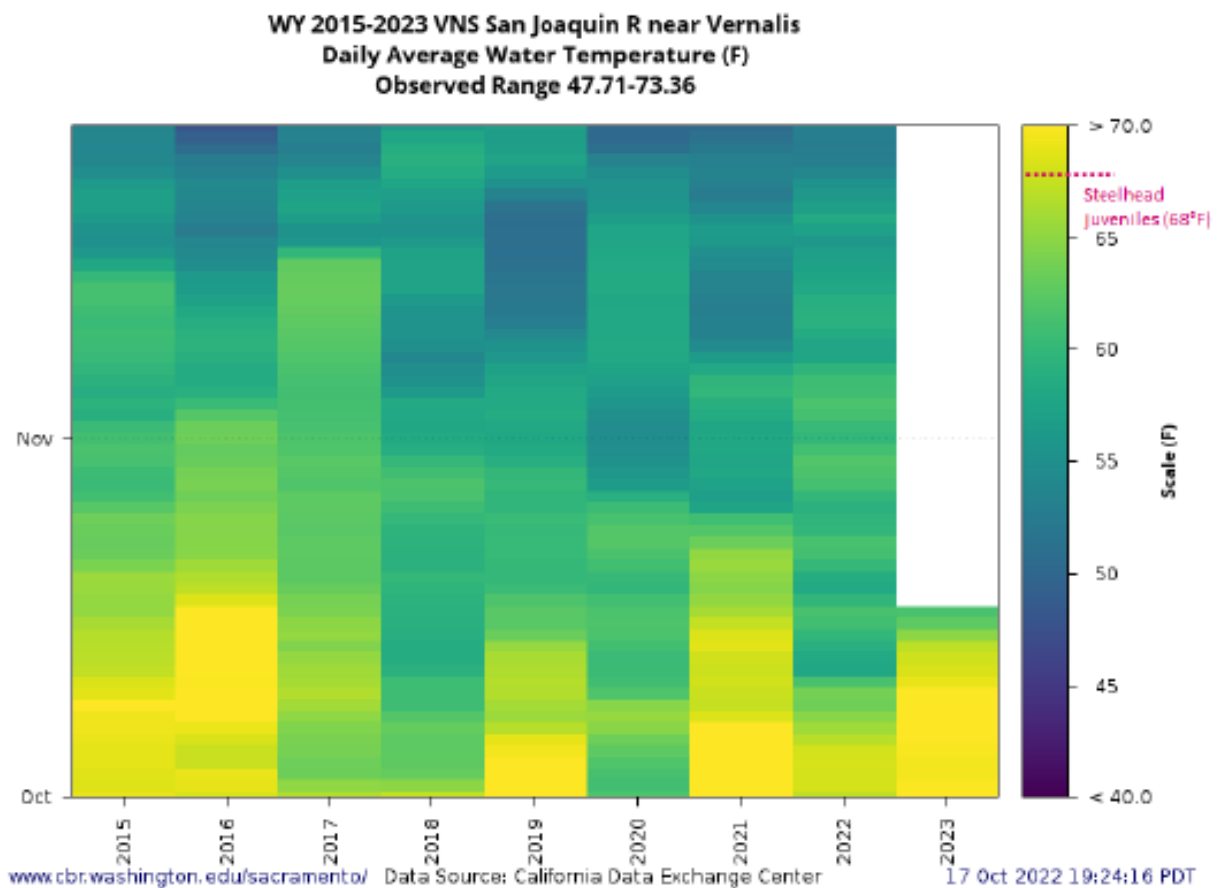


Figure 8.B San Joaquin River water temperatures at Vernalis for October through Present from Water Year 2015 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT.  
[http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

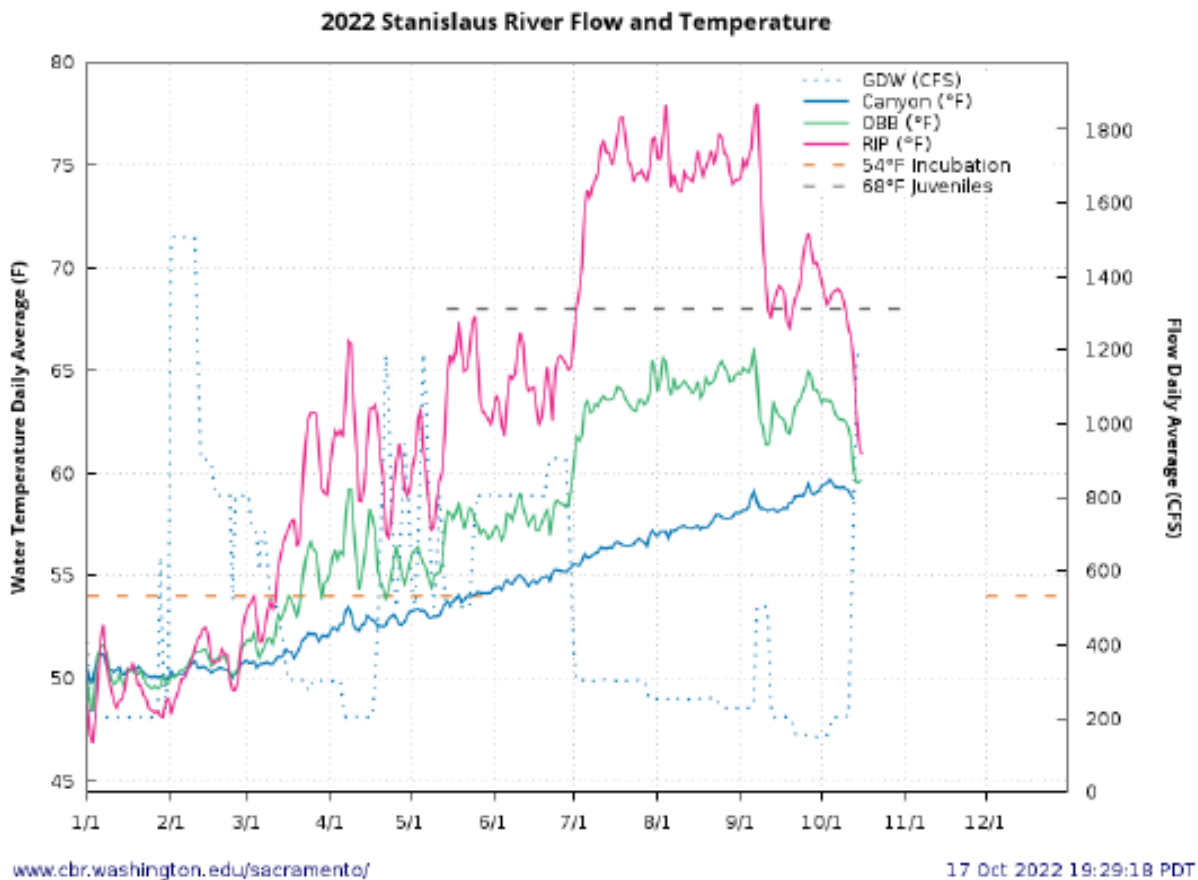


Figure 9. Stanislaus River flow and water temperatures from January 1, 2022 to present. Data (including temperature threshold reference lines) from SacPAS: [http://www.cbr.washington.edu/sacramento/data/tc\\_stanislaus.html](http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html)

## Update on Fish Monitoring (Adults)

### Chinook carcass and redd surveys

The California Department of Fish & Wildlife (CDFW) began conducting fall-run Chinook salmon carcass and redd surveys the week of October 3, 2022 for the Stanislaus River and Merced River. The Tuolumne carcass survey started on September 26. Carcass survey data for all three San Joaquin River tributaries through the week of October 9, 2022 are reported in Table 1.

Table 1. Data from the fall 2022 CDFW carcass survey for the San Joaquin tributaries.

River	Week	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recovered	Average Flow (cfs)
Stanislaus	1	10/3/2022	1	7	0	0	0	0	0	175
Stanislaus	2	10/10/2022	31	9	0	0	0	0	0	483
Tuolumne	1	9/26/2022	5	7	0	1	1	1	0	91



River	Week	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recovered	Average Flow (cfs)
Tuolumne	2	10/3/2022	8	5	1	1	2	1	0	117
Tuolumne	3	10/10/2022	5	9	1	0	0	0	0	114
Merced	1	10/3/2022	0	0	0	0	0	0	0	210
Merced	2	10/10/2022	0	0	0	0	0	0	0	235

### Weir

Fishbio installed the weir near Riverbank and began monitoring for upstream passage of adult salmonids on September 15, 2022. The cumulative net upstream passage through October 13, 2022 is 94 Chinook (24% were ad-clipped, indicating a hatchery origin) and zero *Oncorhynchus mykiss*. Data highlights provided by Fishbio on October 14, 2022 in their “Stanislaus River Weir Update through 10/13/22” are provided below in Figure 10 and Figure 11.

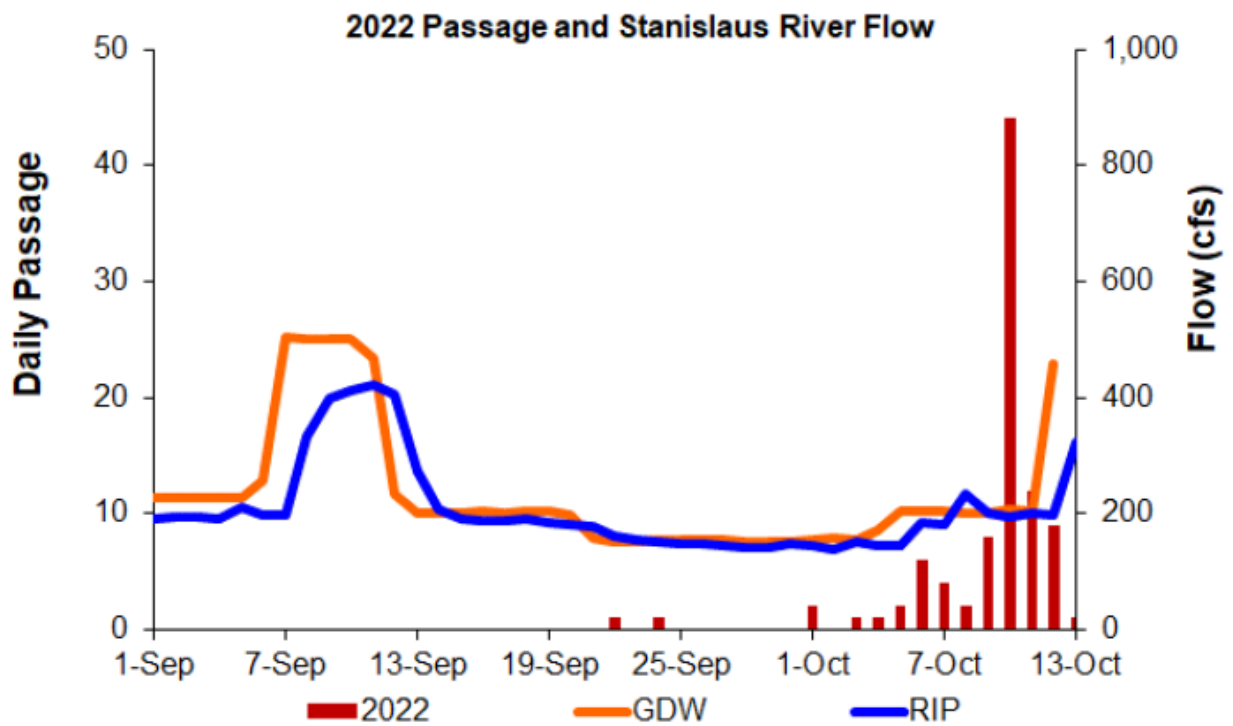


Figure 10. Daily Chinook salmon passage through October 13, 2022, at the Stanislaus River weir near Riverbank. Data courtesy of Fishbio.

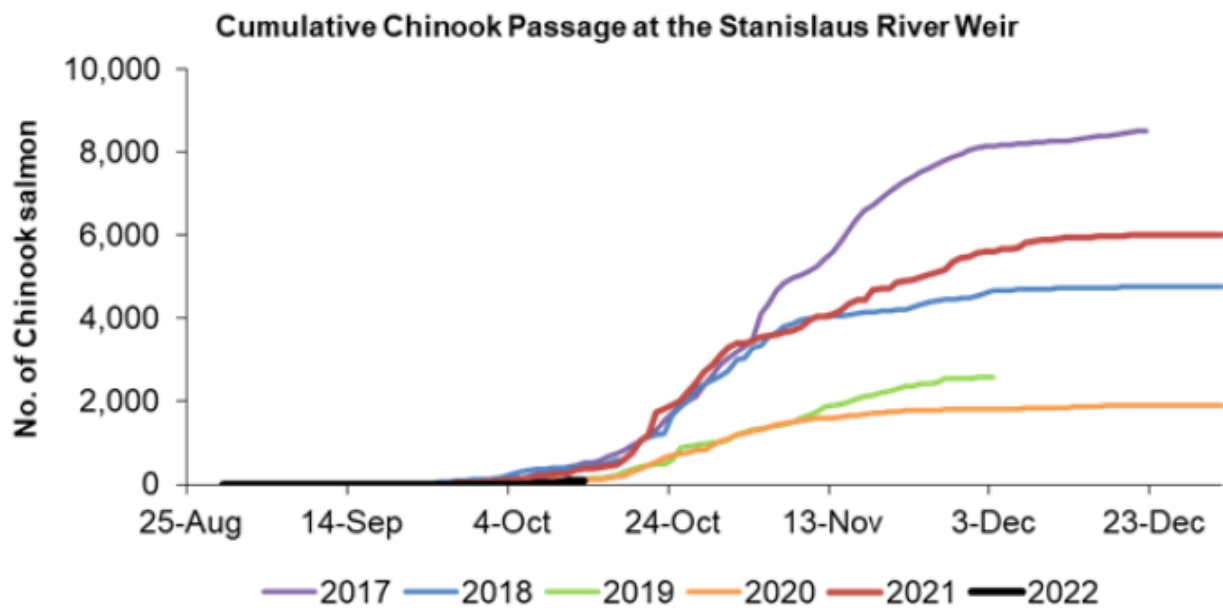


Figure 11. Cumulative Chinook salmon passage in the current year through October 13, 2022, at the Stanislaus River weir near Riverbank, along with cumulative passage for the previous five years. Data courtesy of Fishbio.

### Steelhead redd surveys

CDFW expects to start the steelhead redd surveys to start in February 2023

## Update on Fish Monitoring (Juveniles)

### Mossdale Trawl

No salmonids have been caught in the Mossdale trawl sampling since May 14, 2022. 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 2023.

### Rotary Screw Traps

Rotary screw trapping at Oakdale and Caswell for the 2022/2023 outmigration season (for monitoring of outmigrating juvenile salmonids) is expected to begin in December 2022 or January 2023.

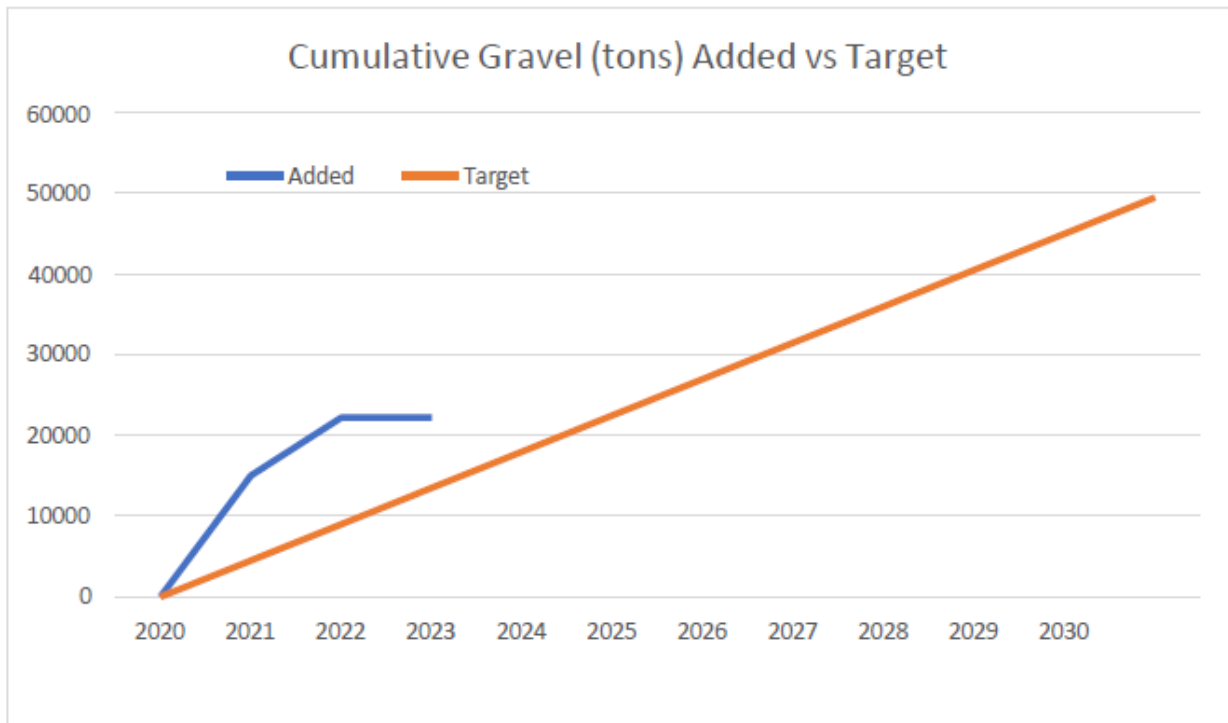
## Progress Update on Proposed Action Elements

### Spawning and Rearing Habitat Restoration

In August and September 2021, Reclamation placed 4,700 tons of gravel in the Float Tube Pool and 2,500 tons in the Cable Crossing Area below Goodwin Dam on the Stanislaus River. Reclamation has exceeded the annual average goal of 4,500 since implementation of the 2020 ROD (Section 4.10.6.2 of Proposed Action). Currently, Reclamation is two years ahead of schedule in implementing gravel placement projects on the Stanislaus River.

Table 1. Stanislaus spawning habitat restoration progress towards meeting annual average of 4,500 tons through 2030. Project implementation will only occur over the summer when in-water work will not impact salmonids.

Water Year	Gravel Added (Tons)	Cumulative Gravel Added (Tons)	Cumulative Target (Tons)	Percent of Cumulative Target Achieved
2020	15,000	15,000	4,500	333
2021	7,200	22,200	9,000	247
2022	N/A	22,200	13,500	164
2023	N/A	22,200	18,000	123
2024	N/A	22,200	22,500	99
2025	N/A	22,200	27,000	82
2026	N/A	22,200	31,500	70
2027	N/A	22,200	36,000	62
2028	N/A	22,200	40,500	55
2029	N/A	22,200	45,000	49
2030	N/A	22,200	49,500	45



Cumulative Gravel (tons) Added Vs. Target

Table 2. Stanislaus rearing habitat restoration progress towards meeting the goal of constructing an additional 50 acres of rearing habitat adjacent to the Stanislaus River by 2030. The total target acres schedule was developed by the technical team tasked with implementing the Stanislaus River Habitat Restoration non-flow charter. Project implementation will only occur over the summer when in-water work will not impact salmonids.

<b>Water Year</b>	<b>Annual Restoration Completed (Acres)</b>	<b>Cumulative Restoration Completed (Acres)</b>	<b>Cumulative I Target (Acres)</b>	<b>Percent of Cumulative Target Achieved</b>
2020	0.25	0.25	0.25	100.0
2021	N/A	0.25	0.25	100.0
2022	N/A	0.25	3	8.3
2023	N/A	0.25	6	4.2
2024	N/A	0.25	9	2.8
2025	N/A	0.25	14	1.8
2026	N/A	0.25	19	1.3
2027	N/A	0.25	24	1.0
2028	N/A	0.25	32	0.8
2029	N/A	0.25	40	0.6
2030	N/A	0.25	50	0.5