

# Stanislaus Watershed Team

April 19, 2023

## Members Attending

- USBR: Spencer Marshall, Antonia Salas, Catarina Pien, Zarela Guerrero, Elissa Buttermore
- USFWS: Craig Anderson
- CDFW: Gretchen Murphey, Crystal Rigby
- NMFS: Barb Byrne
- DWR:
- SWRCB: Chris Carr, Erin Foresman
- Stockton East: Justin Hopkins
- PSMFC: Logan Day
- SSJID: Brandon Nakagawa
- Fishbio:
- Stockton East Water District (SEWD): Lilliana Selke
- Kearns & West: Karis Johnston, Mia Schiappi

## Action Items

- All – reach out to Gretchen Murphey if you would like to be added to the poll for flow planning discussions with CVO.
- Toni – will provide Peggy Manza with operations related questions when Peggy returns from leave.
- K&W – will send out a poll to SWT members regarding in-person meetings.

## Operations Update and Forecasts/ Hydrology

### New Melones

- Total accumulated precipitation at New Melones was 41.59 inches during the previous month.
- Storage at New Melones is 1.449 MAF and is increasing. The increase in storage has slowed over the last month due to agricultural deliveries.
- Accumulated inflow for WY 2023 is 1.05 MAF and 194% of the 15-year average.
- There is a lot of water stored in snowpack.
- The flows from Friant Dam into the San Joaquin River currently show 0 cfs, however this is a mistake.

### Tulloch

- Releases from Tulloch into Goodwin Reservoir are steadily increasing due to agricultural demands.

### Goodwin

- Releases from Goodwin Dam are at 300 cfs for egg basket retrieval and will increase up to 1,500 cfs on 4/19.

#### Questions/Comments for Peggy Manza:

- What is the estimated amount of snowpack?
  - NMFS commented that based on CDEC the Stanislaus can expect approximately 1.5 MAF of inflow from snowpack.
- When the snowpack begins to enter the reservoir what is the storage management plan?

## Water Temperature Updates

- The seasonal shift has occurred; from now until mid-fall, Goodwin Canyon will be the coolest location and temperatures will warm as the water moves downstream.
- Conditions are suitable throughout the river for fish.
- Figure 9 shows apparent accretion between Goodwin and Koetitz during the month despite there being little precipitation. In fact, the high mainstem San Joaquin River flows at the confluence with the Stanislaus River are backing up into the Stanislaus River, resulting in higher than expected flows at the Koetitz gauge.

## Flow Planning

- With high flows on the San Joaquin River, USBR is not planning on doing any pulses this spring. However,
- Fish Bio has requested there be another flow drop to 300 cfs during the second half of May in order to pull their fish weir out of the water.
  - No one in the SWT meeting expressed concerns about the issue.
- CDFW, NMFS, USFWS, and Reclamation Central Valley Operations (CVO) will be discussing the possibility of recession flow planning for riparian recruitment.
  - NMFS shared a draft plan to reshape the spring pulse volume in the Stepped Release Plan. The draft includes recommendations on how to shape the water for fish benefits with the understanding that this may not be feasible if there are concerns for health and safety.
  - It is likely that there will be a limitation based on water level management for the mainstem San Joaquin River.
  - If Vernalis flows and other reservoirs decrease flows, there may be an opportunity for New Melones to increase flows to provide a pulse signal on the Stanislaus River. These increased flows would benefit fish for quicker outmigration and would move gravel.

#### Questions/Comments

- CDFW suggested looking more at recession shaping to make sure there is recruitment of cottonwoods.
- Going from 1,500 cfs to 100 cfs at 90% of the previous days flow would take 26 days, but it is unlikely that it would decrease all the way to 100 cfs which was identified as an example threshold.
- CDFW asked if a flow drop in May to get the fish weir out would make the riparian recession effects less beneficial?

- They will investigate this to discuss it at next week's planning meeting with CVO.

## Stanislaus River Forum (SRF) Call Review

- Covered similar information as covered during SWT.

## Fish Monitoring

- CDFWs *O. mykiss* and Steelhead redd surveys have not been able to survey consistently due to high turbidity and flows.
- The Mossdale trawl has not been running since mid-March due to high flows. They hope to relaunch soon and will do so when safe.
- The weir has been running since the end of March.
  - There have been no Chinook observed since January.
  - Six *O. mykiss* have been observed passing upstream. All six were greater than 16 inches which suggests that they could be Steelhead. Additionally, they all had their adipose fin clipped.
- The Oakdale Rotary Screw Trap (RST) has been sampling through the high flows, but its efficiency is likely low.
  - Parr sized fish do not respond so much to flows and can possibly resist getting moved out.
- The Caswell RST has caught 1,869 unmarked Chinook, 1 unmarked Steelhead, and 160 lamprey.
  - Capture peaked during the middle of March.
  - The size of fish that have been captured recently have increased, with mostly parr sized being observed.
  - 4 release groups for mark recapture trials have been released.
    - The first two release groups were hatchery fish and had an efficiency of 4 – 6%.
    - The second two release groups were wild fish and had a lower catch rate, likely because of the small size of the fish.
  - Traps will likely be pulled during the first two weeks of June. It may be possible to stay in the river longer based on temperature, but the contract will need review to determine whether there is funding for additional time.

### Questions/Comments

- NMFS asked PSFMC if they needed any specific flows to remove the RSTs.
- PSFMC responded that 200 cfs is the low end but they doubt flows will ever go down that far. They can remove the RSTs up to 1,500 cfs, depending on conditions.

## Restoration Project Updates

- NMFS suggested thinking about ways to keep flows down at Oakdale to allow for restoration projects.
  - Putting excess water into canals and then having it put back into the river downstream of the restoration area to allow for storage management while having flow bypass the restoration was suggested.
  - CDFW commented that this could lead to salmon in the canals based on observances and rescues in the TID canal system on the Tuolumne.
  - Brandon Nakagawa, SSJID, commented that the window NMFS is looking at is when the canals have very limited capacity.
  - Justin Hopkins, Stockton East, commented they only have up to ~200 cfs capacity in the summer and if they are able to take more water on it would exit not into the Stanislaus but into the San Joaquin River.
  - NMFS commented that they do not have a preference for where the water gets put back into the river system so long as it is downstream of the restoration site near Oakdale.
  - Stockton East, commented they would reach out to Peggy Manza to discuss the topic, including any water rights issues.

## Progress Update on Proposed Action Elements

- No update.

## Other Discussion Items

### Curtailments

- All curtailments have ended.

### Annual Reporting

- No update.

### Items to elevate to WOMT

- No items for WOMT.

## Next Meeting

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



## 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, April 19, 2023

### 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

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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

- c. Yellow-bellied cuckoo survey

11. Other Discussion Items

- a. Curtailment Updates

- b. Items to elevate to WOMT

12. Review Action Items

13. Next Meeting: Wednesday, May 17, 2022 (10am-12pm)



## Tables for BDO

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

April 17, 2023

Run Date: April 18, 2023

Table 4. Reservoir Releases in Cubic Feet Per Second

Reservoir	Dam	WY 2020	WY 2021	15-Year Median
Trinity	Lewiston	540	10,028	330
Sacramento	Keswick	3,238	3,296	4,647
Feather	Oroville (SWP)	800	15,000	1,550
American	Nimbus	1,004	7,043	2,036
Stanislaus	Goodwin	205	341	1,101
San Joaquin	Friant	1,003	0	428

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

Reservoir	Capacity	15-Yr Avg	WY 2021	WY 2021	% O 15 Yr Avg
Trinity	2,448	1,633	802	910	56
Shasta	4,552	3,554	1,754	4,225	119
Folsom	977	679	647	725	107
New Melones	2,420	1,458	928	1,449	99
Fed. San Luis	966	682	349	964	141
Total North CVP	11,363	8,005	4,480	8,273	103
Millerton	521	303	348	0	0
Oroville (SWP)	3,538	2,485	1,753	3,137	126

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

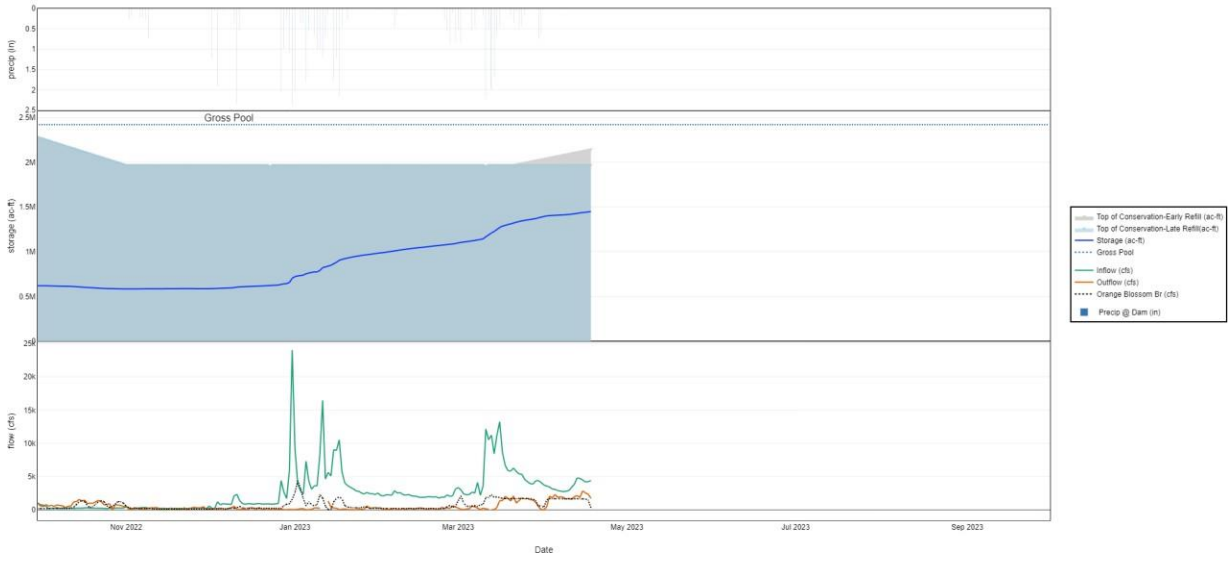
Reservoir	Current WY 2021	WY 1977	WY 1983	15-Yr Avg	% O 15 Yr Avg
Trinity	605	358	1,333	626	97
Shasta	3,690	2,253	6,735	3,294	112
Folsom	2,707	765	4,054	1,610	168
New Melones	1,051	N/A	1,151	543	194
Millerton	1,384	459	1,089	599	231

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

Reservoir	Current WY 2021	WY 1977	WY 1983	Avg (N Yrs)	% of Avg	Last 24 Hours
Trinity at Fish Hatchery	34.88	21.65	37.91	27.16 (63)	128	0.00
Sacramento at Shasta Dam	68.93	32.83	83.60	53.39 (68)	129	0.00
American at Blue Canyon	77.35	N/A	112.06	58.08 (49)	133	0.13
Stanislaus at New Melones	46.18	N/A	36.55	24.57 (46)	188	0.00
San Joaquin at Huntington LK	65.66	11.50	65.00	36.25 (50)	181	0.00



New Melones Dam & Lake - Stanislaus River Basin  
WY 2023 | Generated: 2023-04-18T08:06:35-0700



New Melones Dam & Lake – Stanislaus River Basin  
2023-02-14T08:06:21-0800

Oakdale Irrigation District  
 South San Joaquin Irrigation  
 District Tri Dams Project-California

Goodwin Reservoir Daily Operations, April 2023, Run Date: April 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	566	N/A	N/A	N/A	N/A	N/A	N/A
1	360.55	576	10	1,658	0	1,502	158	0
2	360.55	576	0	1,692	0	1,501	158	27
3	360.55	576	0	1,752	0	1,508	178	35
4	360.55	576	0	1,778	0	1,509	202	32
5	360.55	576	0	1,785	0	1,508	213	32
6	360.55	576	0	1,776	0	1,503	204	36
7	360.55	576	0	1,793	0	1,510	196	63
8	360.55	576	0	1,793	0	1,503	196	75
9	360.55	576	0	1,785	0	1,502	196	67
10	360.55	576	0	2,006	0	1,509	363	86
11	360.55	576	0	2,184	0	1,505	517	97
12	360.55	576	0	2,238	0	1,506	546	123
13	360.55	576	0	2,212	0	1,503	549	100
14	360.55	576	0	2,237	0	1,503	550	136
15	360.55	576	0	2,275	0	1,500	552	182
16	360.01	538	-38	1,680	0	1,100	485	76
17	359.86	527	-11	946	0	341	475	102
<b>Totals</b>	N/A	N/A	<b>-39</b>	<b>31,590</b>	<b>0</b>	<b>24,013</b>	<b>5,738</b>	<b>1,269</b>
<b>Acre-Feet</b>	N/A	N/A	<b>-39</b>	<b>62,659</b>	<b>0</b>	<b>47,630</b>	<b>11,381</b>	<b>2,517</b>

Joint Main Operated by SSJID and OID.

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

Joint Main Canal      11,381  
 South Main Canal      0  
 Outlet                      0  
 Spill                        47,630

**Total                      61528.17**

Oakdale Irrigation District  
 South San Joaquin Irrigation  
 District Tri Dams Project-California

Goodwin Reservoir Daily Operations, March 2023, Run Date: April 4, 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	576	N/A	N/A	N/A	N/A	N/A	N/A
1	360.33	560	-16	1,431	0	1,444	0	0
2	359.98	536	-24	701	0	718	0	0
3	359.98	536	0	500	0	504	0	0
4	359.98	536	0	500	0	501	0	0
5	359.98	536	0	500	0	510	0	0
6	359.98	536	0	501	0	506	0	0
7	359.98	536	0	500	0	501	0	0
8	360.15	548	12	746	0	740	0	0
9	360.17	549	1	946	0	764	166	0
10	360.55	576	27	1,527	0	1,243	295	0
11	360.55	576	0	1,809	0	1,523	291	0
12	360.55	576	0	1,814	0	1,543	299	0
13	360.55	575	-1	1,806	0	1,512	301	0
14	360.55	576	1	1,805	0	1,516	303	0
15	360.55	575	-1	1,811	0	1,519	302	0
16	360.55	5755	0	1,807	0	1,511	304	0
17	360.55	576	1	1,813	0	1,516	303	0
18	360.55	576	0	1,809	0	1,511	303	0
19	360.55	576	0	1,838	0	1,505	304	0
20	360.55	576	0	1,881	0	1,504	302	0
21	360.55	576	0	1,810	0	1,504	303	0
22	360.55	576	0	1,810	0	1,505	301	0
23	360.55	576	0	1,808	0	1,502	301	0
24	360.55	576	0	1,718	0	1,512	210	0
25	360.55	576	0	1,659	0	1,514	159	0
26	360.55	576	0	1,653	0	1,503	159	0
27	360.55	576	0	1,653	0	1,506	160	0
28	360.01	538	-38	1,130	0	1,027	161	0
29	259.88	529	-9	492	0	354	161	0
30	359.86	527	-2	463	0	316	164	0
31	360.42	566	39	659	0	488	163	0
<b>Totals</b>	N/A	N/A	<b>-10</b>	<b>40,901</b>	<b>0</b>	<b>35,322</b>	<b>5,715</b>	<b>0</b>
<b>Acre-Feet</b>	N/A	N/A	<b>-10</b>	<b>81,127</b>	<b>0</b>	<b>70,061</b>	<b>11,336</b>	<b>0</b>

Joint Main Operated by SSJID and OID.

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

Joint Main Canal	11,336
South Main Canal	0
Outlet	0
Spill	70,061
<b>Total</b>	<b>81396.8895</b>

United States Department of the Interior  
Bureau of Reclamation-Central Valley Project-  
California

New Melones Lake Daily Operations, April 2023, Run Date: April 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	1,393.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	992.08	1,399.5	6.1	3,576	447	0	0	37	0.13	.00
2	992.38	1,402.2	2.7	3,450	2,061	0	0	40	0.14	.00
3	992.67	1,404.8	2.6	3,143	1,801	0	0	38	0.13	.00
4	992.83	1,406.2	1.4	3,076	2,311	0	0	46	0.16	.00
5	993.05	1,408.2	2.0	2,905	1,875	0	0	40	0.14	.00
6	993.23	1,409.8	1.6	2,826	1,971	0	0	43	0.15	.00
7	993.41	1,411.4	1.6	2,746	1,892	0	0	41	0.14	.00
8	993.67	1,413.7	2.3	2,799	1,602	0	0	23	0.08	.01
9	993.92	1,416.0	2.2	2,905	1,735	0	0	41	0.14	.00
10	994.31	1,419.5	3.5	3,374	1,559	0	0	49	0.17	.00
11	994.71	1,423.1	3.6	3,848	1,975	0	0	61	0.21	.00
12	995.28	1,428.2	5.1	4,799	2,164	0	0	47	0.16	.00
13	995.90	1,433.8	5.6	4,728	1,860	0	0	47	0.16	.00
14	996.25	1,437.0	3.2	4,495	2,851	0	0	47	0.16	.00
15	996.60	1,440.2	3.2	4,196	2,548	0	0	50	0.17	.00
16	997.00	1,443.8	3.6	4,241	2,358	0	0	56	0.19	.00
17	997.57	1,449.0	5.2	4,400	1,733	0	0	53	0.18	.00
<b>Totals</b>	N/A	N/A	55.5	61,507	32,743	0	0	759	2.61	.00
<b>Acre- Feet</b>	N/A	N/A	<b>55,500</b>	<b>121,999</b>	<b>64,946</b>	<b>0</b>	<b>0</b>	<b>1,505</b>	N/A	N/A

Comments:

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

**Summary Precipitation**

This Month                      0.01  
July 1, 2021 to Date        NA  
October 1, 2021 to Date    46.18

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

Release (acre-feet)        N/A  
Power                            64,946  
Spill                              0  
Outlet                             0  
Total                              64,946

United States Department of the Interior  
Bureau of Reclamation-Central Valley Project-  
California

New Melones Lake Daily Operations, March 2023, Run Date: April 7, 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	1,097.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	956.31	1,103.3	5.7	3,005	103	0	0	7	.03	.85
2	956.91	1,107.9	4.6	2,378	31	0	0	25	.1	.03
3	957.45	1,112.0	4.2	2,275	147	0	0	30	.12	.00
4	958.00	1,116.3	4.2	2,309	161	0	0	10	.04	.00
5	958.54	1,120.5	4.2	2,669	546	0	0	15	.06	.55
6	959.07	1,124.6	4.1	2,524	446	0	0	8	.03	.46
7	960.05	1,132.2	7.6	4,130	263	0	0	23	.09	.06
8	960.59	1,136.4	4.2	2,195	48	0	0	20	.08	.01
9	961.42	1,142.9	6.5	3,557	268	0	0	13	.05	.19
10	964.42	1,166.6	23.7	12,136	152	0	0	44	.17	2.21
11	967.01	1,187.3	20.7	10,532	98	0	0	3	.01	.49
12	969.75	1,209.4	22.1	11,220	32	0	0	24	.09	1.98
13	971.79	1,226.1	16.7	8,426	30	0	0	0	.00	1.68
14	974.39	1,247.5	21.4	11,193	369	0	0	19	.07	.69
15	979.99	1,271.0	23.5	13,245	1,389	0	0	5	.02	.44
16	980.95	1,285.3	14.3	8,626	1,396	0	0	19	.07	.00
17	981.99	1,294.5	9.1	6,673	2,032	0	0	33	.12	.00
18	982.96	1,302.6	8.2	5,899	1,742	0	0	44	.16	.00
19	984.05	1,311.5	8.9	5,832	1,336	0	0	22	.08	.20
20	982.96	1,319.8	8.3	6,282	2,092	0	0	0	.00	.36
21	984.05	1,329.2	9.4	5,776	1,019	0	0	28	.1	.07
22	984.96	1,337.0	7.9	5,397	1,403	0	0	31	.11	.46
23	985.77	1,344.1	7.0	5,364	1,806	0	0	17	.06	.42
24	986.44	1,349.9	5.8	4,610	1,658	0	0	14	.05	.17
25	987.00	1,354.8	4.9	4,245	1,744	0	0	42	.15	.01
26	987.54	1,359.5	4.7	3,056	1,536	0	0	40	.14	.00
27	988.07	1,364.1	4.6	3,854	1,489	0	0	37	.13	.00
28	988.78	1,370.4	6.2	4,349	1,164	0	0	43	.15	.00
29	989.66	1,378.1	7.7	4,410	495	0	0	9	.03	.76
30	990.56	1,386.1	8.0	4,091	62	0	0	20	.07	.61
31	991.39	1,393.4	7.4	3,747	23	0	0	14	.05	.03
<b>Totals</b>	N/A	N/A	<b>295.8</b>	<b>174,915</b>	<b>25,080</b>	<b>0</b>	<b>0</b>	<b>659</b>	<b>2.43</b>	<b>12.3</b>
<b>Acre-Feet</b>	N/A	N/A	<b>295,800</b>	<b>346,944</b>	<b>49,746</b>	<b>0</b>	<b>0</b>	<b>1,307</b>	<b>N/A</b>	<b>N/A</b>

Comments:

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

**Summary Precipitation**

This Month	12.73
July 1, 2021 to Date	
October 1, 2021 to Date	46.17

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

Release (acre-feet)	N/A
Power	49,746
Spill	0
Outlet	0
Total	49,746

United States Department of the Interior  
Bureau of Reclamation-Central Valley Project-  
California

Tulloch Reservoir Daily Operations, April 2023, Run Date: April 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	56,420	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	499.07	54,311	-2,109	599	447	1,658	0	0	4
2	500.00	55,303	992	2,197	2,061	1,692	0	0	5
3	500.31	55,639	336	1,926	1,801	1,752	0	0	5
4	501.42	56,850	1,211	2,395	2,311	1,778	0	0	6
5	501.77	57,236	386	1,985	1,875	1,785	0	0	5
6	502.28	57,804	568	2,067	1,971	1,776	0	0	5
7	502.62	58,184	380	1,990	1,892	1,793	0	0	5
8	502.40	57,938	-246	1,672	1,602	1,793	0	0	3
9	502.42	57,960	22	1,801	1,735	1,785	0	0	5
10	501.69	57,148	-812	1,603	1,559	2,006	0	0	6
11	501.42	56,850	-298	2,041	1,975	2,184	0	0	7
12	501.33	56,751	-99	2,194	2,164	2,238	0	0	6
13	500.79	56,159	-592	1,920	1,860	2,212	0	0	6
14	501.93	57,413	1,254	2,875	2,851	2,237	0	0	6
15	502.43	57,972	559	2,563	2,548	2,275	0	0	6
16	503.72	59,431	1,459	2,423	2,358	1,680	0	0	7
17	505.13	61,060	1,629	1,774	1,733	946	0	0	7
<b>Totals</b>	N/A	N/A	4,640	34,025	32,743	31,590	<b>0</b>	<b>0</b>	94
<b>Acre-Feet</b>	N/A	N/A	<b>4,640</b>	<b>67,489</b>	<b>64,946</b>	<b>62,659</b>	<b>0</b>	<b>0</b>	<b>186</b>

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)**

Release (acre-feet)	N/A
Power	62,659
Spill	0
Outlet	0
Total	62,659



United States Department of the Interior  
Bureau of Reclamation-Central Valley Project-  
California

Tulloch Reservoir Daily Operations, March 2023, Run Date: April 4, 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	57,658	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	501.03	56,420	-1,238	809	103	1,432	0	0	1
2	500.24	55,563	-857	272	31	701	0	0	3
3	499.88	55,175	-388	308	147	500	0	0	4
4	499.55	54,823	-352	324	161	500	0	0	1
5	500.31	55,639	816	913	546	500	0	0	2
6	500.66	56,018	379	693	446	501	0	0	1
7	500.50	55,845	-173	416	263	500	0	0	3
8	499.46	54,727	-1,118	185	48	746	0	0	3
9	499.05	54,289	-438	727	268	946	0	0	2
10	500.59	55,943	1,654	2,367	152	1,527	0	0	6
11	500.47	55,812	-131	1,743	98	1,809	0	0	0
12	501.61	57,060	1,248	2,446	32	1,814	0	0	3
13	499.71	54,994	-2,066	764	30	1,806	0	0	0
14	499.20	54,449	-545	1,532	369	1,805	0	0	2
15	499.52	54,791	342	1,984	1,389	1,811	0	0	1
16	499.35	54,609	-182	1,717	1,396	1,807	0	0	2
17	500.21	55,531	922	2,282	2,032	1,813	0	0	4
18	500.47	55,812	281	1,957	1,742	1,809	0	0	6
19	500.00	55,303	-509	1,584	1,336	1,838	0	0	3
20	500.73	56,094	791	2,280	2,092	1,761	0	0	0
21	499.62	54,898	-1,196	1,210	1,019	1,810	0	0	3
22	499.23	54,481	-417	1,604	1,403	1,810	0	0	4
23	499.80	55,090	609	2,117	1,806	1,808	0	0	2
24	500.16	55,476	386	1,915	1,658	1,718	0	0	2
25	500.66	56,018	542	1,937	1,744	1,659	0	0	5
26	500.67	56,029	11	1,664	1,536	1,653	0	0	5
27	500.62	55,975	-54	1,631	1,489	1,653	0	0	5
28	500.99	56,376	401	1,337	1,164	1,128	0	0	5
29	501.68	57,137	761	877	495	492	0	0	1
30	501.81	57,280	143	538	62	463	0	0	3
31	501.03	56,420	-860	227	23	659	0	0	2

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)
<b>Totals</b>	NA	NA	-1,238	40,360	25,080	40,779	0	122	84
<b>Acre-Feet</b>	NA	NA	-1,238	80,054	49,746	80,885	0	242	67

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)**

Release (acre-feet)	N/A
Power	80,885
Spill	0
Outlet	242
Total	81,127

# April 2023 Water Temperature and Fish Monitoring Update

## Year-to-Date Flows

Goodwin releases since October 1, 2022 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.

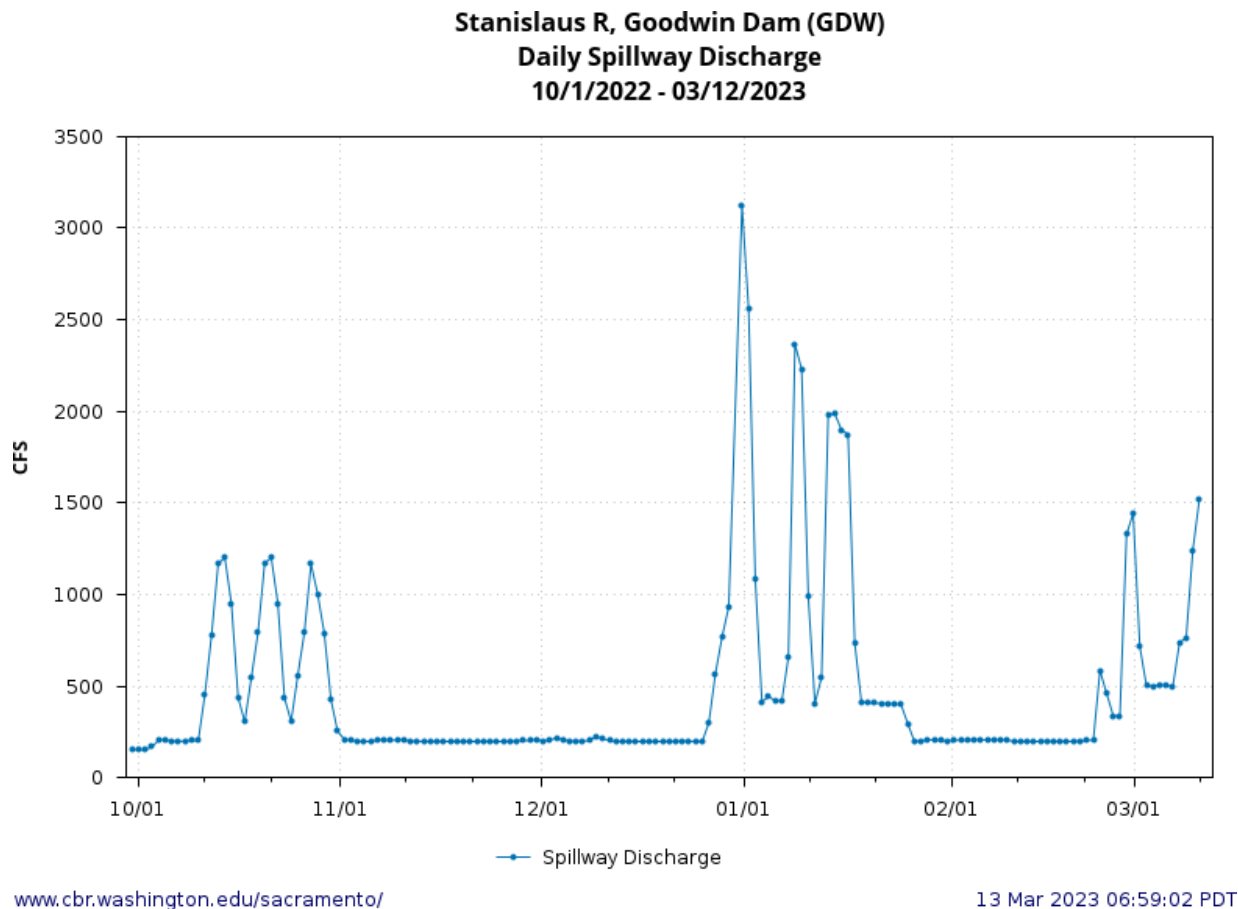


Figure 1. Goodwin (daily) releases to the Stanislaus River since October 1, 2022. Data from GDW station on CDEC.

## 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

<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>

Stanislaus Watershed Team members to provide a general reference of water temperature suitability.

Water temperatures in the Stanislaus River since February 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 February 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 calendar year 2022 is provided in Figure 9.

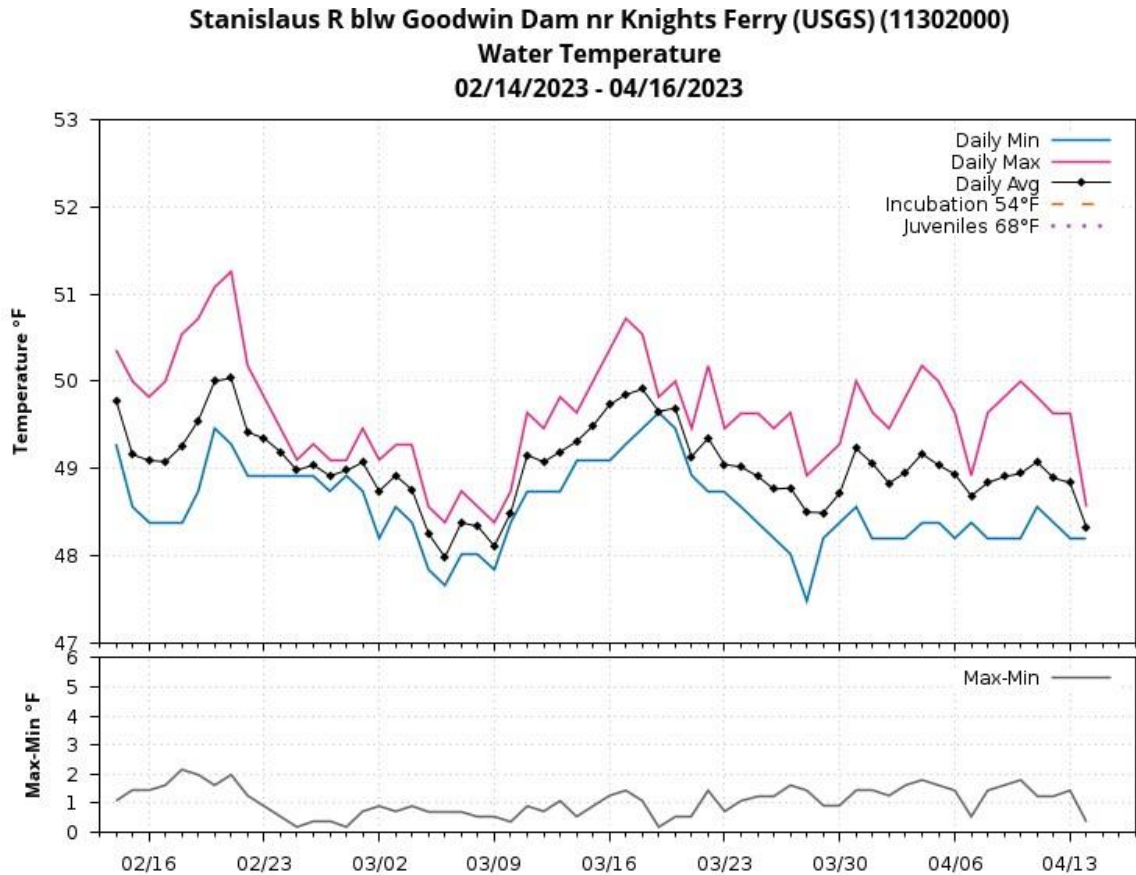
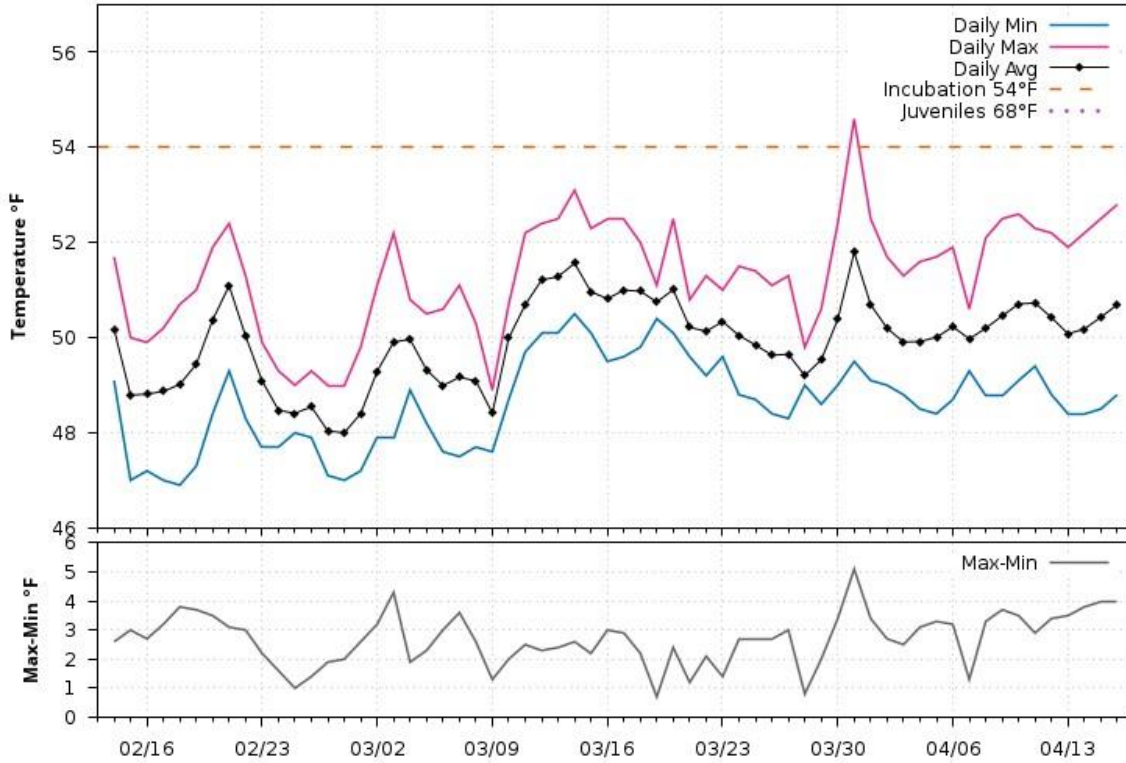


Figure 2. Daily water temperatures on the Stanislaus River upstream of Knights Ferry since February 2023. Data from USGS gage 11302000 on NWIS; temperature threshold reference line added by SWT.

**Stanislaus R at Orange Blossom Bridge (OBB)  
Water Temperature  
02/14/2023 - 04/16/2023**



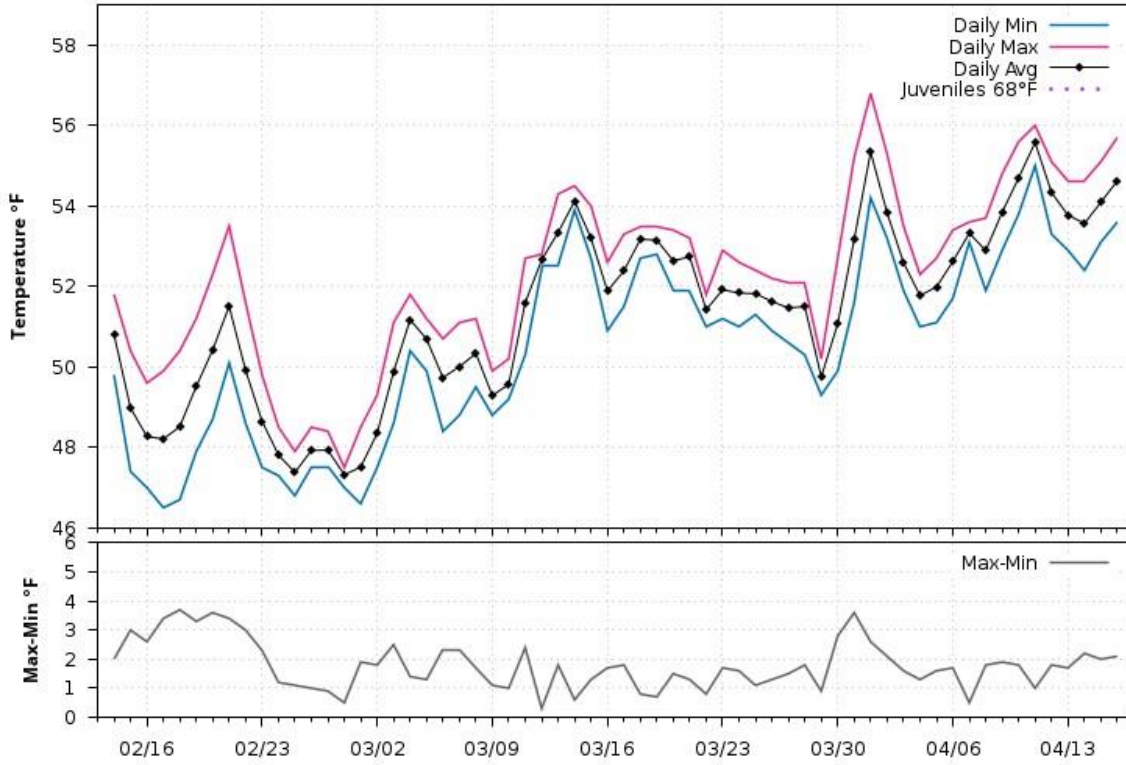
[www.cbr.washington.edu/sacramento/](http://www.cbr.washington.edu/sacramento/)

17 Apr 2023 06:59:01 PDT

Chart: Vertical axis shows hourly water temperature (in Fahrenheit degrees) at Orange Blossom Bridge on the Stanislaus River. The horizontal axis shows date from 02-14-23 through 04-16-23. Hourly water temperatures since 02-14-23 have ranged between approximately >48 and 59.4 degrees Fahrenheit. For more information, please call (916) 414-2400.

Figure 3. Stanislaus (hourly) water temperatures at Orange Blossom Bridge since February 14, 2023. Data from OBB station on CDEC.

Stanislaus R at Ripon (USGS) (RIP)  
Water Temperature  
02/14/2023 - 04/16/2023

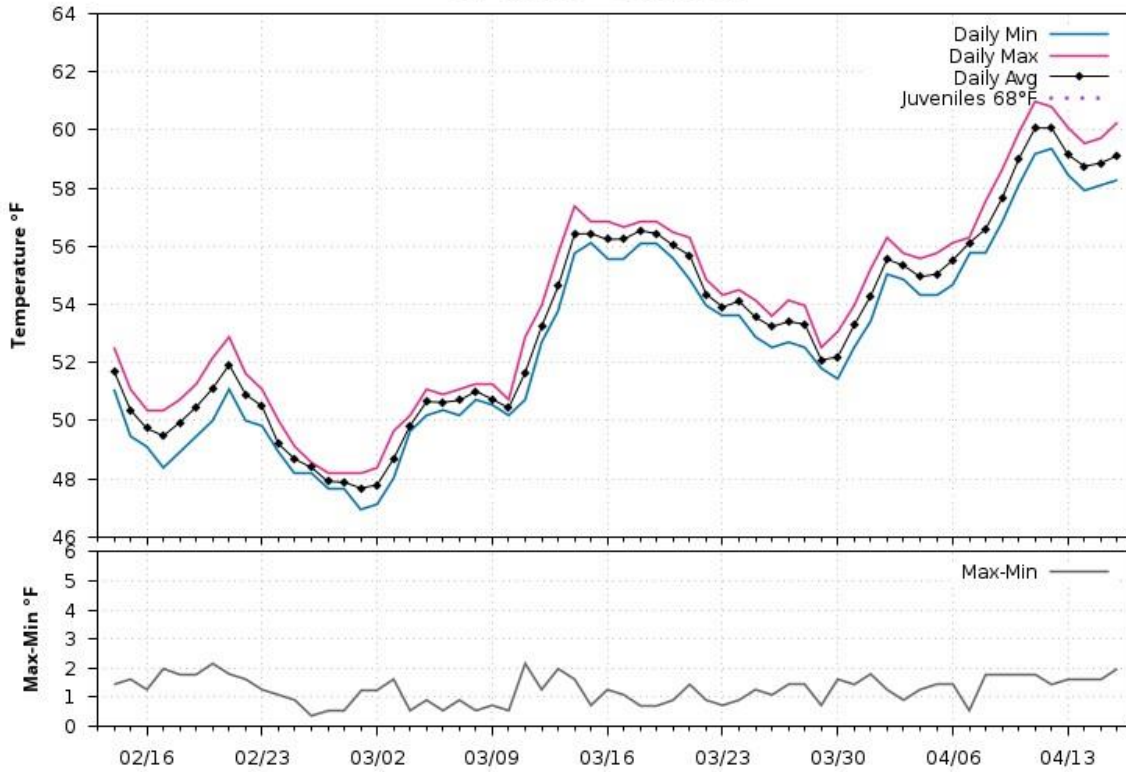


[www.cbr.washington.edu/sacramento/](http://www.cbr.washington.edu/sacramento/)

17 Apr 2023 06:59:01 PDT

Figure 4. Stanislaus (15-minute) water temperatures at Ripon since February 14, 2023. Data from RIP station on CDEC.

**San Joaquin R nr Vernalis (VNS)  
Water Temperature  
02/14/2023 - 04/16/2023**



[www.cbr.washington.edu/sacramento/](http://www.cbr.washington.edu/sacramento/)

17 Apr 2023 06:59:02 PDT

Figure 5. San Joaquin River (15-minute) water temperatures at Vernalis since February 14, 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.

**Stanislaus R at Orange Blossom Bridge (OBB)**  
**2001-2023 Daily Average Water Temperature**  
**Observed Range 48.0-70.4**  
**02/16 - 06/16**

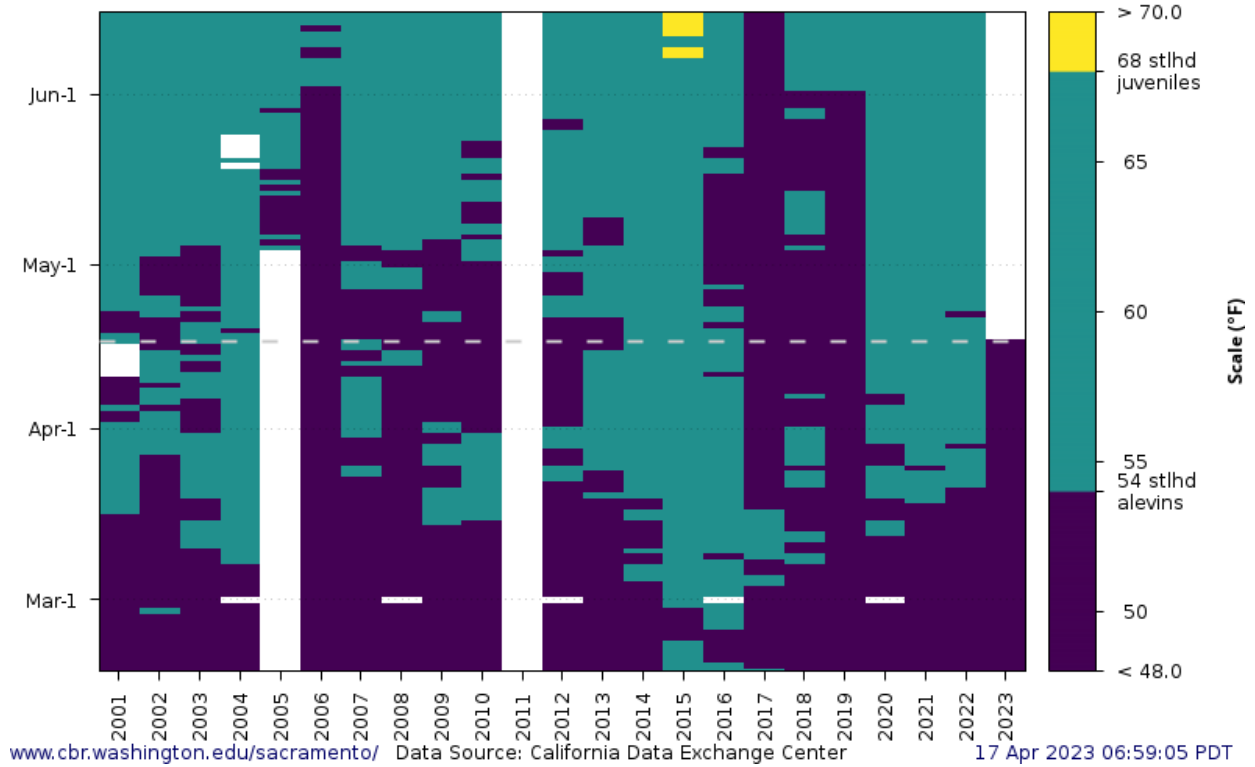


Figure 6. Stanislaus River water temperatures at Orange Blossom Bridge for WY 2000 to present. Data from SacPAS; temperature threshold reference lines added by SWT.

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



**Stanislaus R at Ripon (USGS) (RIP)**  
**2012-2023 Daily Average Water Temperature**  
**Observed Range 47.3-81.6**  
**02/16 - 06/16**



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](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

**San Joaquin R nr Vernalis (VNS)  
2015-2023 Daily Average Water Temperature  
Observed Range 47.7-82.2  
02/16 - 06/16**

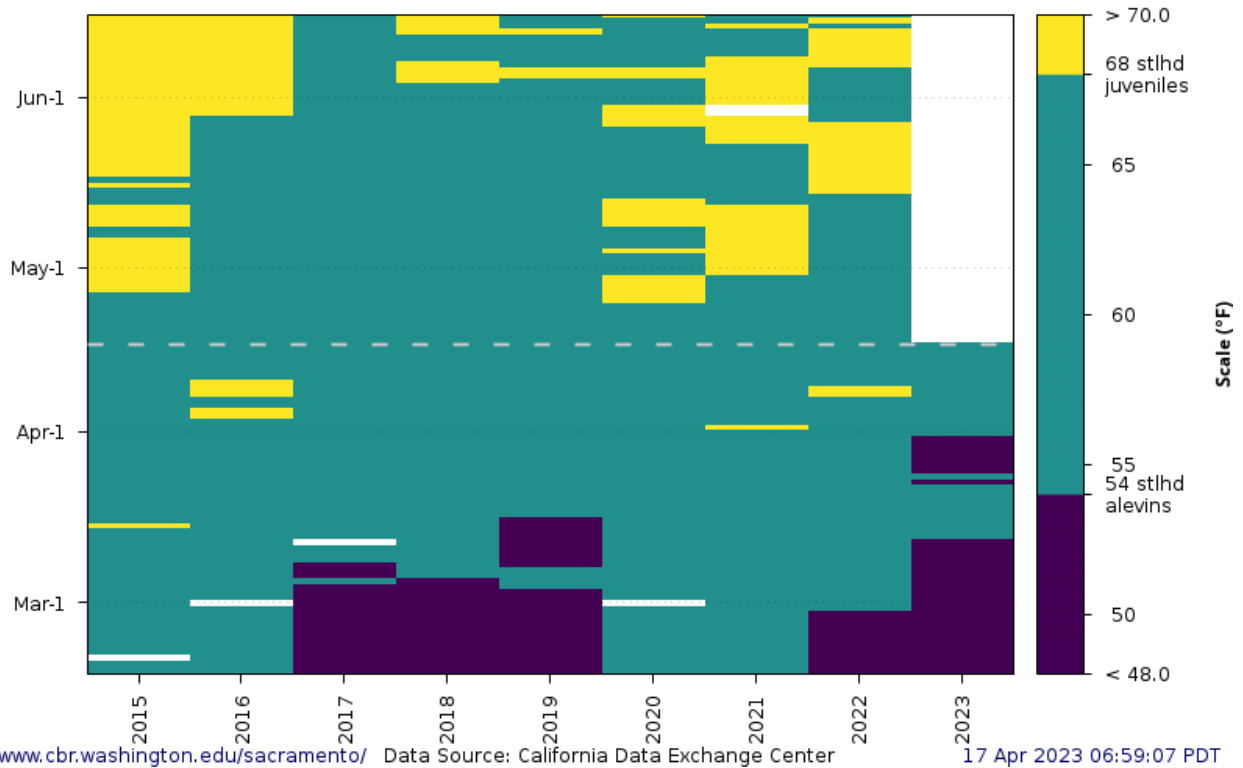


Figure 8. San Joaquin River water temperatures at Vernalis for WY 2014 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT.

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

### Water Year 2023 Stanislaus River Flow and Temperature

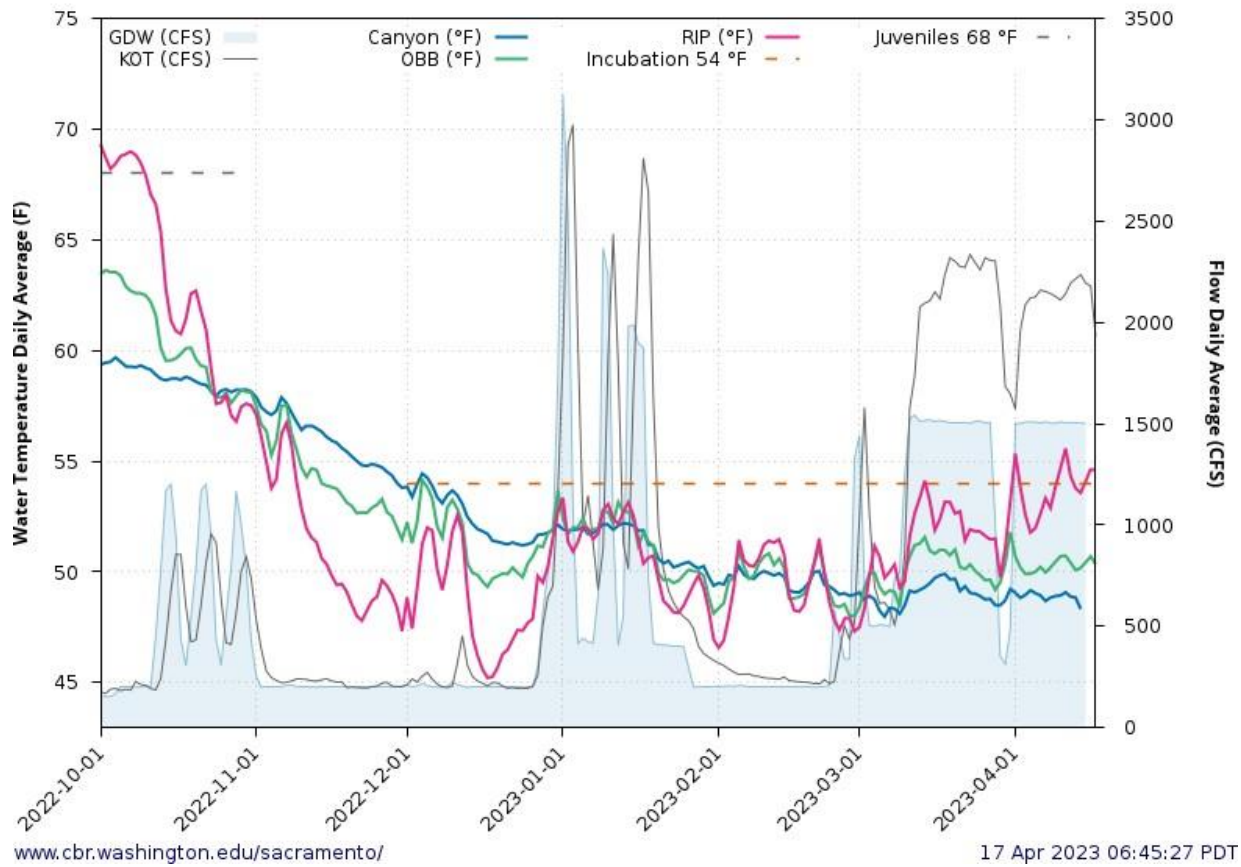


Figure 9. Stanislaus River flow and water temperatures from October 1, 2022 to April 17, 2023. Data (including temperature threshold reference lines) from SacPAS: [http://www.cbr.washington.edu/sacramento/data/tc\\_stanislaus.html](http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html)

## Update on Fish Monitoring (Adults)

Chinook carcass and redd surveys

Annual Escapement Surveys complete, estimates are in progress.

Table F-1. Results from the CDFW's O mykiss redd surveys, SH- O mykiss, CHN- Chinook, PL-Pacific Lamprey.

Date	Week	# SH Live >40	# SH Live <40	# SH Redds	# CHN Live	# CHN Redds	# PL Live	# PL Redds	Comments
1-2-23	1	0	0	0	1	2	0	0	None
1-9-23	2	0	0	0	0	0	0	0	**No Canyon Survey
1-16-23	3	NA	NA	NA	NA	NA	NA	NA	**No Survey – too turbid
1-23-23	4	NA	NA	NA	NA	NA	NA	NA	**No Survey – too turbid
1-30-23	5	1	1	1	1	0	0	0	SH Redd with 1 fish on (>40 cm)
2-6-23	6	3	2	1	0	0	0	0	SH redd with 2 fish on (1 >40, 1 <40). 2 >40 fish at redd from week 5
2-13-23	7	0	3	5	0	0	0	0	None
2-20-23	8	0	3	6	0	0	0	1	None
2-27-23	9	NA	NA	NA	NA	NA	NA	NA	**No Survey – high flows/turbidity
3-6-23	10	NA	NA	NA	NA	NA	NA	NA	**No Survey – too turbid
3-13-23	11	NA	NA	NA	NA	NA	NA	NA	**No Survey – high flows/turbidity
3-20-23	12								**No Survey – high flows/turbidity
3-27-23	13	0	0	0	0	0	0	0	**Partial Survey due to higher than expected runoff/turbidity
4-3-23	14	NA	NA	NA	NA	NA	NA	NA	**No Survey – high flows/turbidity
4-10-23	15	0	0	0	0	0	0	0	High flows, may have missed fish/redds

## Update on Fish Monitoring (Juveniles)

Mossdale Trawl:

Table F-2. Counts of Chinook catch from Mossdale trawl.

Date	Catch	Comments
1-3-2023	N/A	fry
1-3-2023	1 (190 FL PIT tagged, ad-clipped)	Spring Run from SJRRP
1-4-2023	1	fry
1-6-2023	1	fry
1-11-2023	2	fry
1-17-2023	1	fry
1-18-2023	3	2 fry, 1 sac fry
1-20-2023	1	1 sac fry
2-3-2023	1	1 fry
2-10-2023	1	parr
3-13-2023	1	Parr

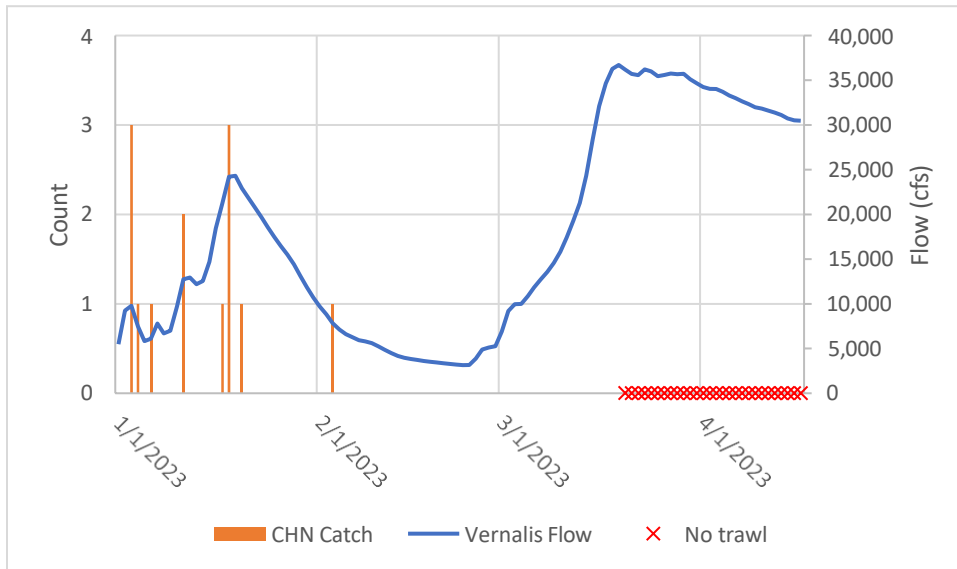


Figure 10. Graph of Chinook catch at Mossdale and flow at Vernalis

## NMFS updates:

### Weir near Riverbank:

Fishbio installed the weir near Riverbank and began monitoring for upstream passage of adult salmonids on September 15, 2022. The weir did not sample between March 10 and March 29, 2023 due to high flows in the Stanislaus River. FISHBIO resumed trapping at the weir on the Stanislaus River on March 30, 2023. The cumulative net upstream passage through April 12, 2023 is 3,625 Chinook salmon (the last Chinook was observed on January 31, 2023). Twenty-three percent of the observed Chinook were ad-clipped, indicating a hatchery origin. Six

*Oncorhynchus mykiss* have been observed (one each on October 20, December 5, January 22, and February 2; two on March 5). All *O. mykiss* observed were greater than 16” (indicating possible anadromy) and ad-clipped (indicating a hatchery origin).

### Rotary Screw Traps

Rotary screw trapping is conducted at Oakdale (by FISHBIO) and Caswell [by the Pacific States Marine Fisheries Commission (PSMFC)] for monitoring of outmigrating juvenile salmonids). For the 2023 outmigration season, sampling began at Oakdale on January 20, 2023 and at Caswell on January 21, 2023.

Chinook catch at each location is summarized in Figure F-1 (Oakdale) and Figure F-2 (Caswell); fish lengths and life stages are provided in Figure F-3 for the Chinook catch at Caswell. Through April 17, 2023, the traps at Caswell have captured a total of 1,869 unmarked Chinook Salmon, 1 unmarked *O. mykiss*, and 160 lamprey. More detailed information can be found at the Caswell RST CalFish webpage, which includes catch spreadsheets, annual reports, and other project information:

<https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/SacramentoValleyTributaryMonitoring/StanislausRiver-RSTMonitoring.aspx>

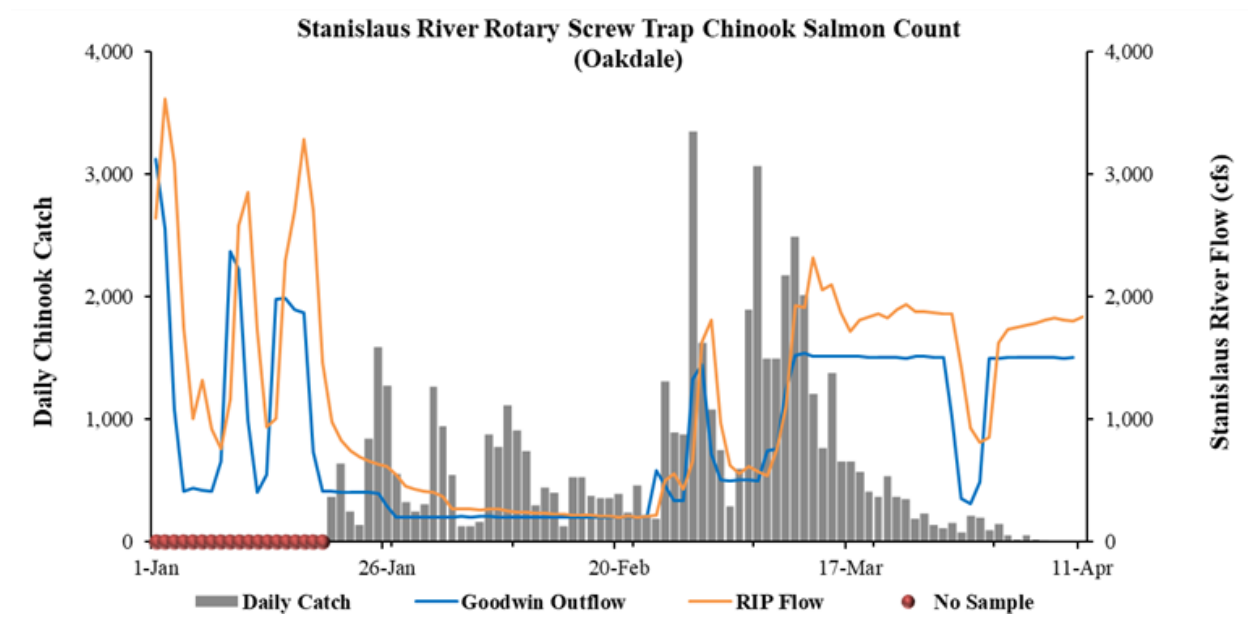


Figure 11. Daily juvenile Chinook catch through April 11, 2023, at the rotary screw trap near Oakdale. Figure courtesy of Fishbio.

**Stanislaus River at Caswell Memorial State Park (RSTs):**

Daily catch of unmarked Chinook Salmon and daily average discharge at Ripon during the 2023 Stanislaus River rotary screw trap survey season.

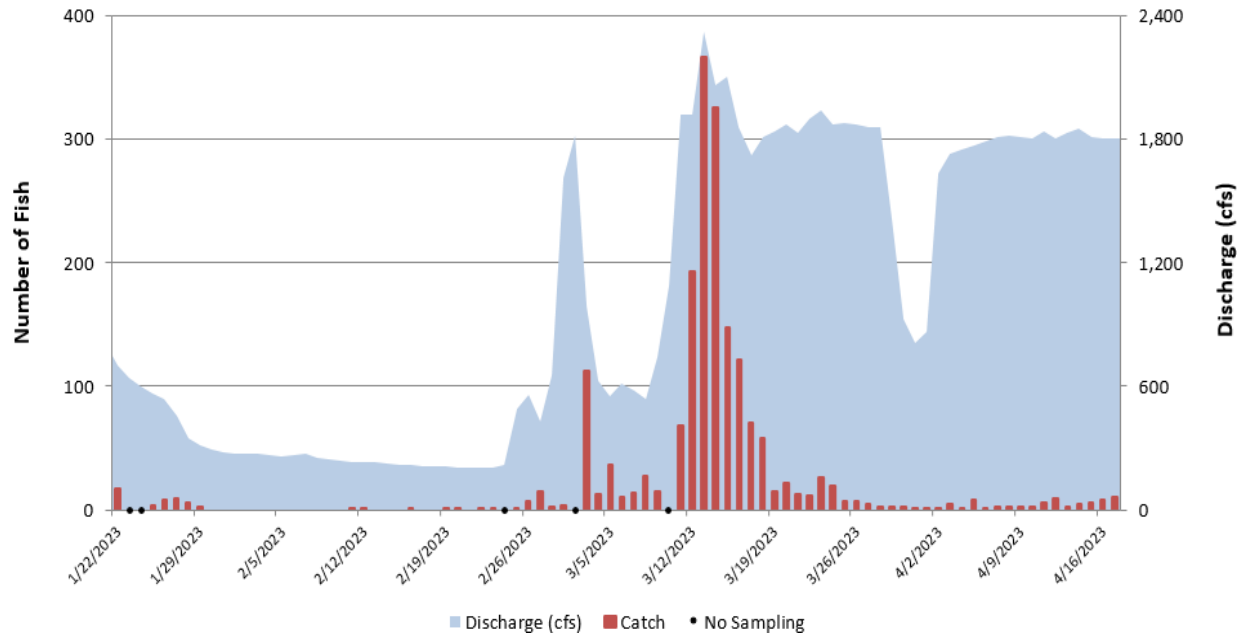


Figure 12. Daily juvenile Chinook catch through April 17, 2023, at the rotary screw trap near Caswell State Park. Discharge data is at Ripon. Figure courtesy of Pacific States Marine Fisheries Commission.



**Stanislaus River at Caswell Memorial State Park (RSTs):**

Daily fork length distribution by life stage of unmarked Chinook Salmon measured during the 2023 Stanislaus River rotary screw trap survey season.

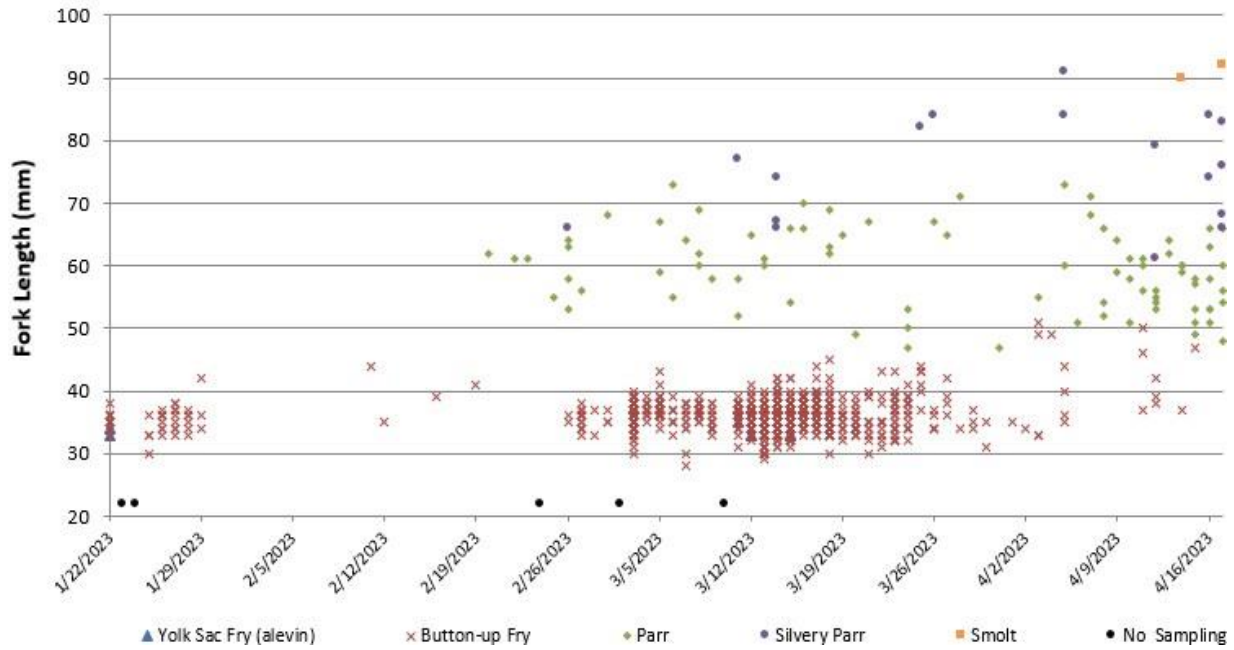


Figure 13. Daily juvenile Chinook catch (plotted by fork length and life stage) through April 17, 2023, at the rotary screw trap near Caswell State Park. Figure courtesy of Pacific States Marine Fisheries Commission.