



— 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](#)

[Stanislaus Watershed Team Notes](#)

Wednesday, January 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
  - a. Jan/Feb Instability Flows (WIFs)
    - Update on ramping rate proposal
    - Update on exceedance forecasts
    - Review and discussion of draft WIF flow schedules

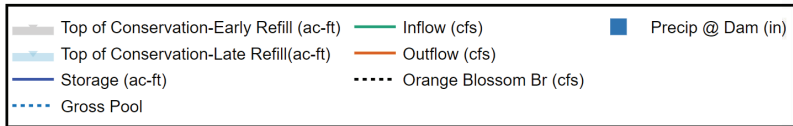
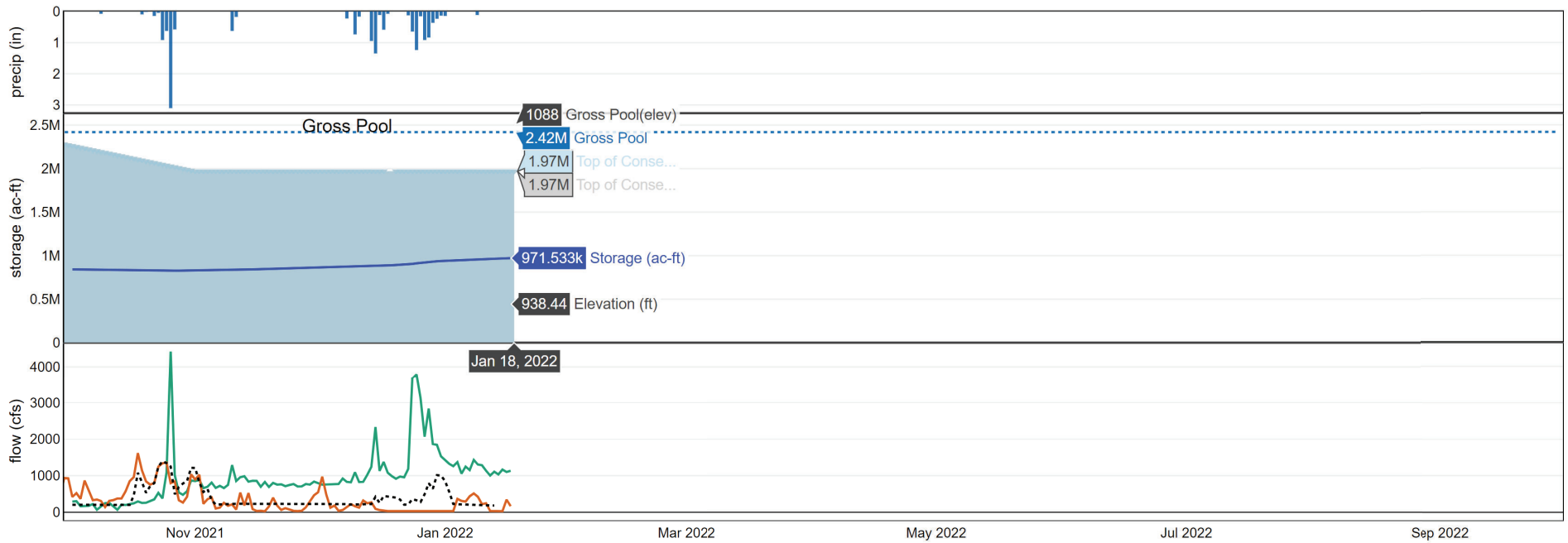
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<sup>1</sup> The Stanislaus Watershed Team's Ground Rules are as follows:

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

7. Stanislaus River Forum (SRF) Call Review
8. Fish Monitoring and Studies
9. Restoration Project Updates
10. Progress Update on Proposed Action Elements
11. Other Discussion Items
  - a. Curtailments
  - b. Items to elevate to WOMT
  - c. Annual reporting check-in
  - d. Exceedance Forecast
  - e. Review/revise Ops Outlook Table
12. Review Action Items
13. Next Meeting: Wednesday, February 16, 2022 (10am-12pm)

New Melones Dam & Lake - Stanislaus River Basin  
 2022-01-18T07:16:58-0800



Date

UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**DAILY CVP WATER SUPPLY REPORT**

JANUARY 17, 2022

RUN DATE: January 18, 2022

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2021	WY 2022	15 YR MEDIAN
TRINITY	LEWISTON	314	305	304
SACRAMENTO	KESWICK	3,237	3,256	3,484
FEATHER	OROVILLE (SWP)	1,250	950	1,450
AMERICAN	NIMBUS	1,208	3,979	1,703
STANISLAUS	GOODWIN	202	202	226
SAN JOAQUIN	FRIANT	370	649	370

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2021	WY 2022	% OF 15 YR AVG
TRINITY	2,448	1,340	1,251	738	55
SHASTA	4,552	2,469	2,083	1,560	63
FOLSOM	977	386	277	550	143
NEW MELONES	2,420	1,339	1,550	973	73
FED. SAN LUIS	966	547	384	217	40
TOTAL NORTH CVP	11,363	6,081	5,545	4,038	66
MILLERTON	520	270	173	297	110
OROVILLE (SWP)	3,538	1,647	1,222	1,559	95

ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2022	WY 1977	WY 1983	15 YR AVG	% OF 15 YR AVG
TRINITY	169	36	298	173	98
SHASTA	1,231	825	1,711	1,171	105
FOLSOM	610	132	1,243	494	123
NEW MELONES	206	n/a	435	184	112
MILLERTON	219	77	613	191	115

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2022	WY 1997	WY 1983	AVG (IN YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	13.76	4.40	19.70	15.51 (60)	89	0.00
SACRAMENTO AT SHASTA DAM	34.90	5.34	30.56	27.79 (65)	126	0.00
AMERICAN AT BLUE CANYON	48.00	7.61	41.05	29.69 (47)	162	0.00
STANISLAUS AT NEW MELONES	15.64	n/a	14.75	11.59 (44)	135	0.00

<b>RESERVOIR</b>	<b>CURRENT WY 2022</b>	<b>WY 1997</b>	<b>WY 1983</b>	<b>AVG (IN YRS)</b>	<b>% OF AVG</b>	<b>LAST 24 HRS</b>
SAN JOAQUIN AT HUNTINGTON LK	19.10	4.80	29.80	17.13 (47)	112	0.00

UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**JANUARY 2022**

**NEW MELONES LAKE DAILY OPERATIONS**

RUN DATE: January 18, 2022

DAY	ELEV	STORAGE 1000-ACRE- FEET IN LAKE	STORAGE 1000- ACRE- FEET CHANGE	COMPUTED* INFLOW C.F.S.	RELEAS E 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	940.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	934.43	943.4	+2.5	1,325	30	0	0	34	0.15	0
2	934.78	945.8	+2.4	1,261	30	0	0	5	0.02	0
3	935.06	947.8	+1.9	1,372	365	0	0	25	0.11	0
4	935.27	949.3	+1.5	1,055	307	0	0	9	0.04	0
5	935.54	951.1	+1.9	1,248	289	0	0	9	0.04	0
6	935.74	952.5	+1.4	1,153	435	0	0	14	0.06	0
7	936	954.4	+1.8	1,433	513	0	0	5	0.02	0
8	936.25	956.1	+1.8	1,305	421	0	0	0	0	0.12
9	936.55	958.2	+2.1	1,285	219	0	0	5	0.02	0
10	936.79	959.9	+1.7	1,136	244	0	0	43	0.19	0
11	937.06	961.8	+1.9	1,003	31	0	0	16	0.07	0
12	937.36	963.9	+2.1	1,110	30	0	0	14	0.06	0
13	937.64	965.9	+2	1,034	26	0	0	14	0.06	0
14	937.96	968.1	+2.3	1,167	25	0	0	5	0.02	0
15	938.17	969.6	+1.5	1,100	342	0	0	9	0.04	0
16	938.44	971.5	+1.9	1,136	163	0	0	9	0.04	0
17	938.68	973.2	+1.7	1,152	279	0	0	16	0.07	0
<b>TOTALS</b>	N/A	N/A	<b>+32.4</b>	<b>20,275</b>	<b>3,749</b>	<b>0</b>	<b>0</b>	<b>232</b>	<b>1.01</b>	<b>0.12</b>
<b>ACRE- FEET</b>	N/A	N/A	<b>+32400</b>	<b>40,215</b>	<b>7,436</b>	<b>0</b>	<b>0</b>	<b>460</b>	<b>N/A</b>	<b>N/A</b>

\* COMPUTED INFLOW IS THE SUM OF CHANGE IN STORAGE, RELEASES AND EVAPORATION.

**SUMMARY PERCIPITATION**

TIME	PERCIPITATION
THIS MONTH	0.12
JULY 1, 2021, TO DATE	15.68
OCT 1, 2021, TO DATE	15.64

**SUMMARY: RELEASE (ACRE-FEET)**

RELEASE (ACRES-FEET)	N/A
POWER	7,436
SPILL	0
OUTLET	0
TOTAL	7,436

OAKDALE IRRIGATION DISTRICT  
 SOUTH SAN JOAQUIN IRRIGATION DISTRICT  
 TRI DAMS PROJECT-CALIFORNIA

JANUARY 2022

GOODWIN RESERVOIR DAILY OPERATIONS

RUN DATE: January 18, 2022

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	541	N/A	N/A	N/A	N/A	N/A	N/A
1	359.76	520	-21	405	0	408	0	0
2	359.76	520	0	221	0	206	0	0
3	359.77	521	1	222	0	205	0	0
4	359.77	521	0	222	0	206	0	0
5	359.77	521	0	218	0	203	0	0
6	359.77	521	0	217	0	205	0	0
7	359.77	521	0	218	0	203	0	0
8	359.77	521	0	219	0	203	0	0
9	359.77	521	0	219	0	202	0	0
10	359.77	521	0	220	0	203	0	0
11	359.77	521	0	218	0	202	0	0
12	359.77	521	0	217	0	202	0	0
13	359.77	521	0	217	0	202	0	0
14	359.77	521	0	217	0	202	0	0
15	359.77	521	0	217	0	201	0	0
16	359.77	521	0	217	0	202	0	0
17	359.77	521	0	217	0	202	0	0
<b>TOTALS</b>	N/A	N/A	-20	<b>3,901</b>	0	<b>3,657</b>	0	0
<b>ACRE- FEET</b>	N/A	N/A	-20	<b>7,738</b>	0	<b>7,254</b>	0	0

JOINT MAIN OPERATED BY SSJID AND OID

SUMMARY: RELEASE (ACRE-FEET)

RELEASE (ACRES-FEET)	N/A
JOINT MAIN CANAL	0
SOUTH MAIN CANAL	0
OUTLET	0
SPILL	7,254
TOTAL	7,254

UNITED STATES DEPARTMENT OF THE  
INTERIOR

U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**JANUARY 2022**

**TULLOCH RESERVOIR DAILY OPERATIONS**

RUN DATE: January 18, 2022

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. CFS (1)
N/A	N/A	54,279	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	498.47	53,679	-600	108	30	405	0	0	5
2	498.21	53,406	-273	84	30	221	0	0	1
3	498.59	53,805	399	427	365	222	0	0	4
4	498.8	54,026	221	334	307	222	0	0	1
5	498.99	54,225	199	319	289	218	0	0	1
6	499.43	54,695	470	456	435	217	0	0	2
7	500.01	55,314	619	531	513	218	0	0	1
8	500.42	55,758	444	443	421	219	0	0	0
9	500.45	55,791	33	237	219	219	0	0	1
10	500.51	55,856	65	260	244	220	0	0	7
11	500.15	55,466	-390	23	31	218	0	0	2
12	499.82	55,111	-355	40	30	217	0	0	2
13	499.47	54,737	-374	30	26	217	0	0	2
14	499.12	54,364	-373	30	25	217	0	0	1
15	499.37	54,631	267	353	342	217	0	0	1
16	499.28	54,535	-96	170	163	217	0	0	1
17	499.38	54,641	106	272	279	217	0	0	2
<b>TOTALS</b>	N/A	N/A	<b>362</b>	4,117	<b>3,749</b>	<b>3,901</b>	0	0	<b>34</b>
<b>ACRES- FEET</b>	N/A	N/A	<b>362</b>	8,166	<b>7,436</b>	<b>7,738</b>	0	0	<b>67</b>

\*COMPUTED INFLOW IS SUM OF CHANGE IN STORAGE, RELEASES, AND EVAPORATION

(1) EVAPORATION RECORDS TAKEN FROM NEW MELONES PAN.

**SUMMARY: RELEASE (ACRE-FEET)**

RELEASE (ACRES-FEET)	N/A
POWER	7,738
SPILL	0
OUTLET	0
TOTAL	7,738



UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**DECEMBER 2021**

**NEW MELONES LAKE DAILY OPERATIONS**

RUN DATE: January 5, 2022

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	860.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	922.12	860.3	-0.5	752	972	0	0	11	0.05	0
2	922.2	860.9	+0.5	758	478	0	0	15	0.07	0
3	922.39	862.1	+1.2	764	120	0	0	15	0.07	0
4	922.56	863.2	+1.1	758	180	0	0	15	0.07	0
5	922.78	864.7	+1.4	773	34	0	0	11	0.05	0
6	923.04	866.4	+1.7	922	57	0	0	4	0.02	0
7	923.25	867.8	+1.4	830	130	0	0	2	0.01	0.23
8	923.43	869	+1.2	817	219	0	0	0	0	0.01
9	923.71	870.8	+1.8	1,093	160	0	0	2	0.01	0.74
10	923.92	872.2	+1.4	826	124	0	0	4	0.02	0.17
11	924.07	873.2	+1	830	319	0	0	11	0.05	0
12	924.3	874.7	+1.5	1,023	244	0	0	11	0.05	0
13	924.59	876.6	+1.9	1,241	270	0	0	2	0.01	0.95
14	925.26	881.1	+4.4	2,336	91	0	0	2	0.01	1.35
15	925.58	883.2	+2.1	1,130	56	0	0	0	0	0.12
16	925.98	885.9	+2.7	1,376	31	0	0	2	0.01	0.59
17	926.29	887.9	+2.1	1,079	30	0	0	4	0.02	0.08
18	926.57	889.8	+1.9	986	30	0	0	11	0.05	0
19	926.83	891.6	+1.7	914	30	0	0	7	0.03	0
20	927.11	893.4	+1.9	976	30	0	0	0	0	0
21	927.38	895.3	+1.8	956	30	0	0	11	0.05	0
22	927.72	897.5	+2.3	1,185	30	0	0	2	0.01	0.13
23	928.79	904.8	+7.2	3,680	30	0	0	11	0.05	0.65
24	929.89	912.2	+7.5	3,793	30	0	0	2	0.01	1.24
25	930.79	918.3	+6.1	3,130	30	0	0	7	0.03	0.16
26	931.38	922.4	+4	2,068	30	0	0	4	0.02	0.92
27	932.19	927.9	+5.6	2,840	30	0	0	9	0.04	0.84
28	932.72	931.6	+3.6	1,869	30	0	0	0	0	0.37
29	933.24	935.2	+3.6	1,846	30	0	0	7	0.03	0.24
30	933.67	938.1	+3	1,531	30	0	0	2	0.01	0.14
31	934.07	940.9	+2.8	1,430	30	0	0	4	0.02	0.15
<b>TOTALS</b>	N/A	N/A	+79.9	44,512	3,935	0	0	188	0.87	9.08
<b>ACRE- FEET</b>	N/A	N/A	+79900	88,290	7,805	0	0	373	N/A	N/A

COMMENTS:

\* COMPUTED INFLOW IS THE SUM OF CHANGE IN STORAGE, RELEASES AND EVAPORATION.

**SUMMARY PERCIPITATION**

TIME	PERCIPITATION
THIS MONTH	9.08
JULY 1, 2021, TO DATE	15.56
OCT 1, 2021, TO DATE	15.52

**SUMMARY: RELEASE (ACRE-FEET)**

RELEASE (ACRES-FEET)	N/A
POWER	7,805
SPILL	0
OUTLET	0
TOTAL	7,805

OAKDALE IRRIGATION DISTRICT  
 SOUTH SAN JOAQUIN IRRIGATION DISTRICT  
 TRI DAMS PROJECT-CALIFORNIA

DECEMBER 2021

GOODWIN RESERVOIR DAILY OPERATIONS

RUN DATE: January 3, 2022

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	521	N/A	N/A	N/A	N/A	N/A	N/A
1	359.77	521	+0	221	0	202	0	0
2	359.77	521	+0	222	0	205	0	0
3	359.77	521	+0	222	0	204	0	0
4	359.77	521	+0	222	0	203	0	0
5	359.77	521	+0	222	0	202	0	0
6	359.77	521	+0	221	0	202	0	0
7	359.77	521	+0	221	0	203	0	0
8	359.77	521	+0	221	0	202	0	0
9	359.77	521	+0	221	0	203	0	0
10	359.77	521	+0	222	0	203	0	0
11	359.77	521	+0	221	0	202	0	0
12	359.77	521	+0	221	0	204	0	0
13	359.8	523	+2	221	0	210	0	0
14	359.77	521	-2	222	0	221	0	0
15	359.92	531	+10	301	0	282	0	0
16	359.92	531	+0	411	0	409	0	0
17	359.92	531	+0	410	0	406	0	0
18	359.92	531	+0	410	0	403	0	0
19	359.92	531	+0	409	0	402	0	0
20	359.77	521	-10	294	0	294	0	0
21	359.77	521	+0	221	0	202	0	0
22	359.8	523	+2	224	0	208	0	0
23	359.79	522	-1	226	0	225	0	0
24	359.79	522	+0	227	0	219	0	0
25	359.8	523	+1	228	0	222	0	0
26	359.95	534	+11	294	0	278	0	0
27	359.95	534	+0	427	0	431	0	0
28	360.18	550	+16	589	0	569	0	0
29	360.17	549	-1	819	0	814	0	0
30	360.17	549	+0	818	0	812	0	0
31	360.05	541	-8	686	0	683	0	0
TOTALS	N/A	N/A	+20	10,094	0	9,725	0	0
ACRE- FEET	N/A	N/A	+20	20,021	0	19,290	0	0

**SUMMARY: RELEASE (ACRE-FEET)**

RELEASE (ACRES-FEET)	N/A
JOINT MAIN CANAL	0
SOUTH MAIN CANAL	0
OUTLET	0
SPILL	19,290
TOTAL	19,290

UNITED STATES DEPARTMENT OF THE  
INTERIOR  
U.S. BUREAU OF RECLAMATION-CENTRAL VALLEY PROJECT-CALIFORNIA

**DECEMBER 2021**

**TULLOCH RESERVOIR DAILY OPERATIONS**

RUN DATE: 01/10/2022

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. CFS (1)
N/A	N/A	56,159	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1	502.16	57,669	+1510	984	972	221	0	0	2
2	502.62	58,184	+515	485	478	222	0	0	3
3	502.43	57,972	-212	118	120	222	0	0	3
4	502.35	57,882	-90	180	180	222	0	0	3
5	502.01	57,501	-381	32	34	222	0	0	2
6	501.68	57,137	-364	38	57	221	0	0	1
7	501.53	56,972	-165	138	130	221	0	0	0
8	501.52	56,961	-11	215	219	221	0	0	0
9	501.49	56,927	-34	204	160	221	0	0	0
10	501.31	56,729	-198	123	124	222	0	0	1
11	501.44	56,872	+143	295	319	221	0	0	2
12	501.57	57,016	+144	296	244	221	0	0	2
13	501.89	57,369	+353	399	270	221	0	0	0
14	502.74	58,319	+950	701	91	222	0	0	0
15	502.4	57,938	-381	109	56	301	0	0	0
16	502.06	57,557	-381	219	31	411	0	0	0
17	501.47	56,905	-652	82	30	410	0	0	1
18	500.84	56,214	-691	64	30	410	0	0	2
19	500.18	55,498	-716	49	30	409	0	0	1
20	499.71	54,994	-504	40	30	294	0	0	0
21	499.38	54,641	-353	45	30	221	0	0	2
22	499.09	54,332	-309	68	30	224	0	0	0
23	499.88	55,175	+843	653	30	226	0	0	2
24	500.48	55,823	+648	554	30	227	0	0	0
25	501.14	56,541	+718	591	30	228	0	0	1
26	501.48	56,916	+375	484	30	294	0	0	1
27	502.59	58,151	+1235	1,051	30	427	0	0	1
28	502.17	57,680	-471	352	30	589	0	0	0
29	501.21	56,619	-1061	285	30	819	0	0	1
30	500.07	55,379	-1240	193	30	818	0	0	0
31	499.04	54,279	-1100	132	30	686	0	0	1
<b>TOTALS</b>	N/A	N/A	<b>-1880</b>	9,179	<b>3,935</b>	<b>10,094</b>	0	0	<b>32</b>
<b>ACRES- FEET</b>	N/A	N/A	<b>-1880</b>	18,207	<b>7,805</b>	<b>20,021</b>	0	0	<b>63</b>

\*COMPUTED INFLOW IS SUM OF CHANGE IN STORAGE, RELEASES, AND EVAPORATION  
(1) EVAPORATION RECORDS TAKEN FROM NEW MELONES PAN.

**SUMMARY: RELEASE (ACRE-FEET)**

RELEASE (ACRES-FEET)	N/A
POWER	20,021
SPILL	0
OUTLET	0
TOTAL	20,021

# January 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.

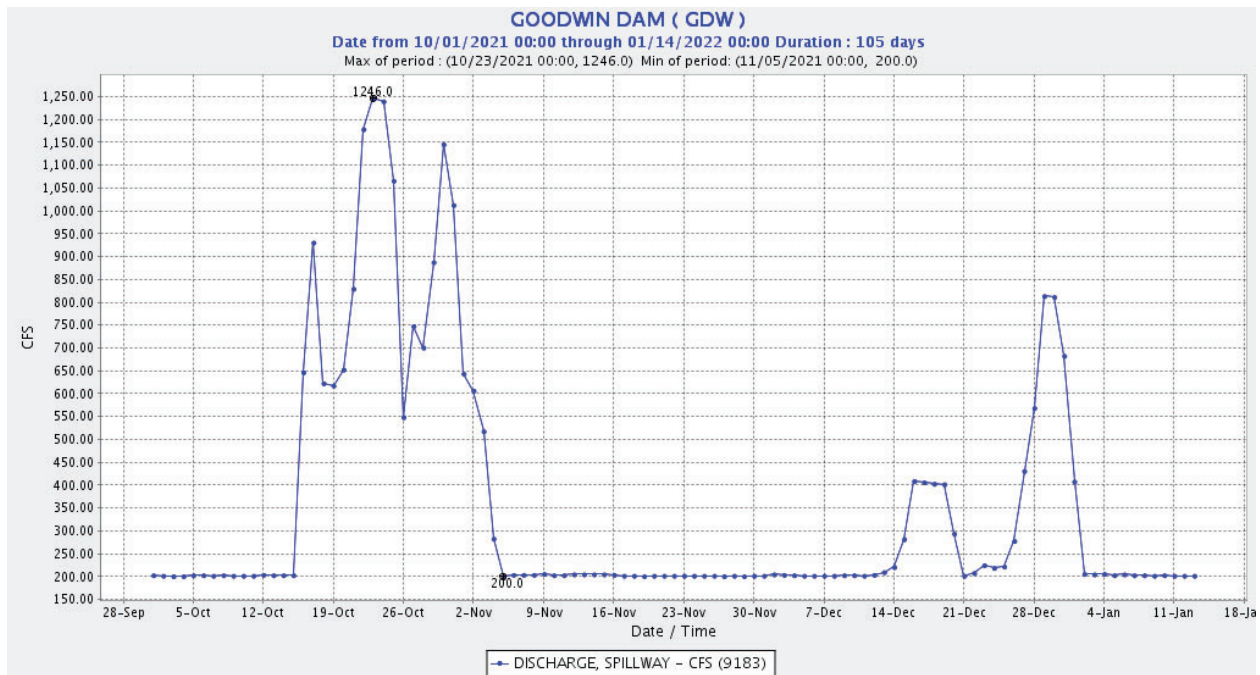


Figure 1. Goodwin (daily) releases to the Stanislaus River since October 1, 2021. Data from GDW station on CDEC.

## 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 October 1, 2021 are shown below at Goodwin Canyon (Figure 2), Orange Blossom Bridge (Figure 3), and at Ripon (Figure 4). Water temperatures in the San Joaquin River since October 1, 2021 are shown below at Vernalis (Figure 5). Current-year water temperatures are plotted along with historical temperatures for Orange Blossom Bridge

<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 6), Ripon (Figure 7), and Vernalis (Figure 8). A compilation of Stanislaus River water temperatures and Goodwin releases is provided in Figure 9.

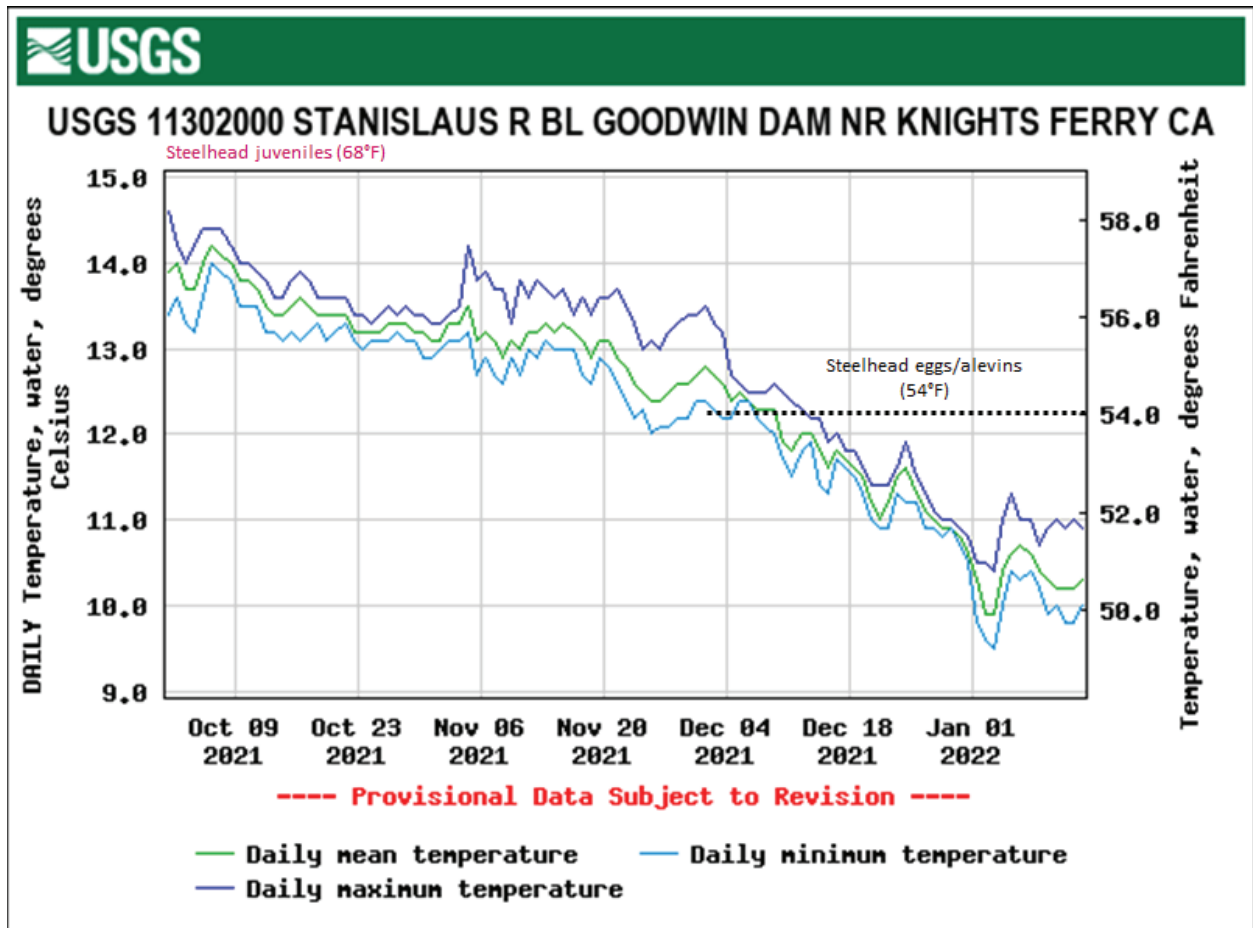


Figure 2. Daily water temperatures on the Stanislaus River upstream of Knights Ferry since October 1, 2021. Data from USGS gage 11302000 on NWIS; temperature threshold reference line added by SWT.



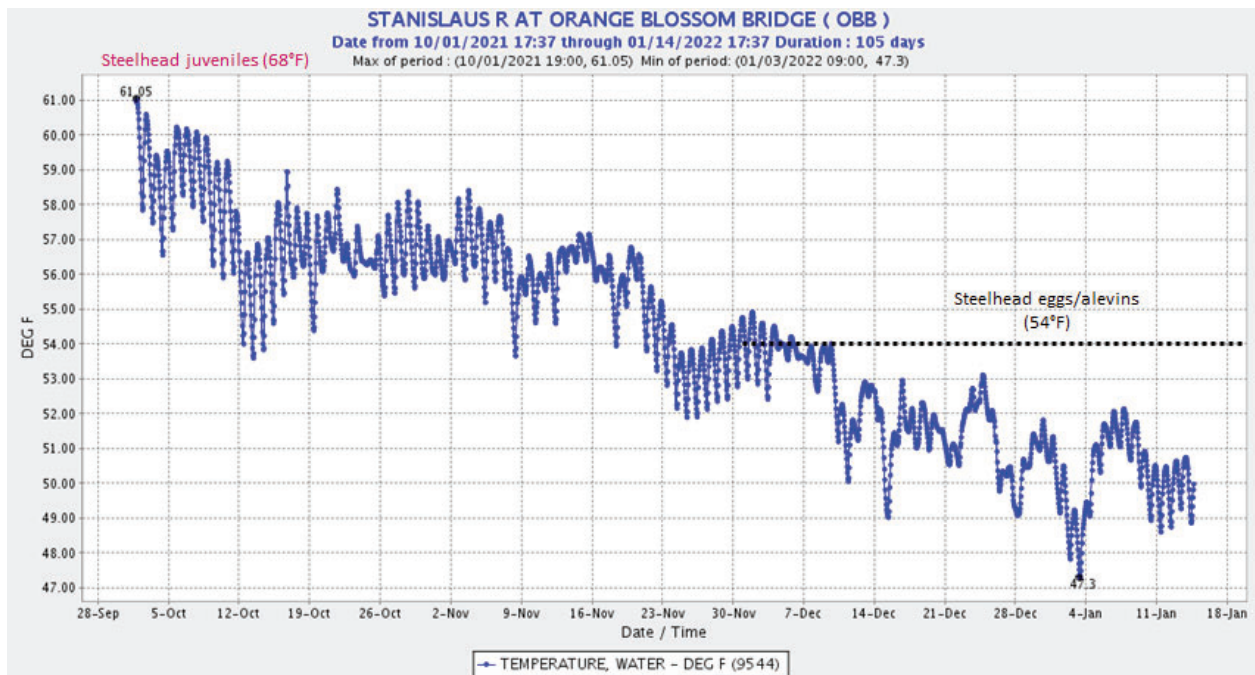


Figure 3. Stanislaus (hourly) water temperatures at Orange Blossom Bridge since October 1, 2021. Data from OBB station on CDEC; temperature threshold reference line added by SWT.

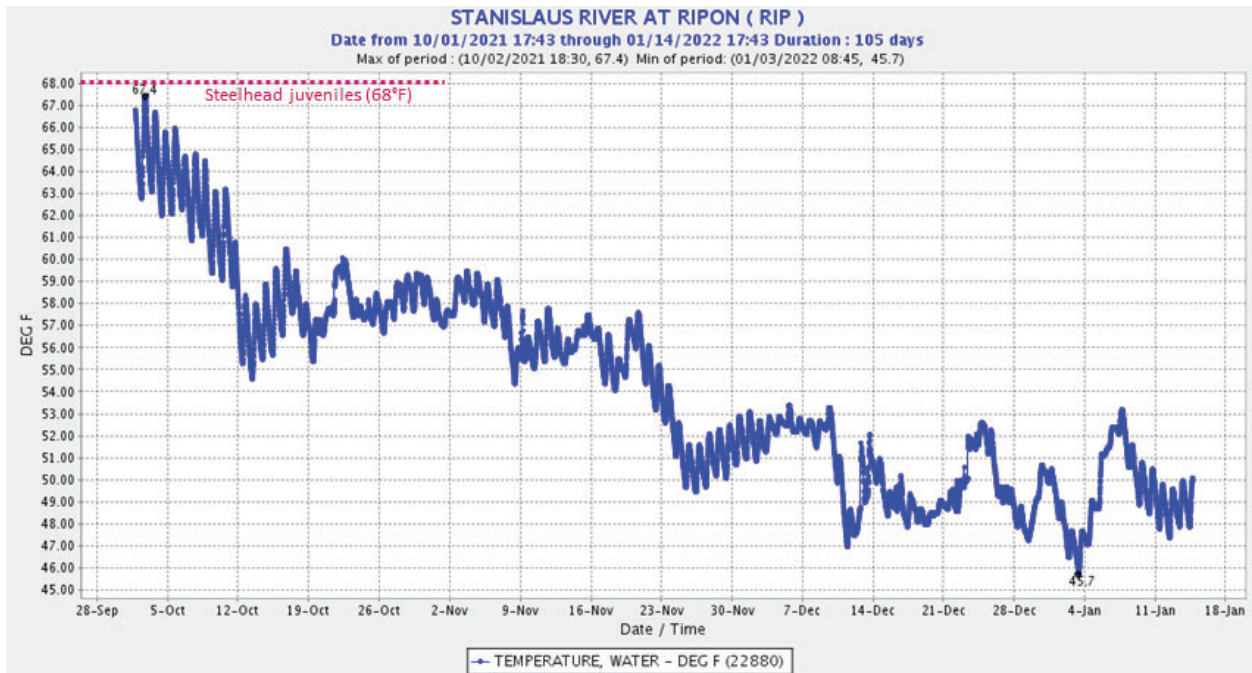


Figure 4. Stanislaus (15-minute) water temperatures at Ripon since October 1, 2021. Data from RIP station on CDEC; temperature threshold reference line added by SWT.

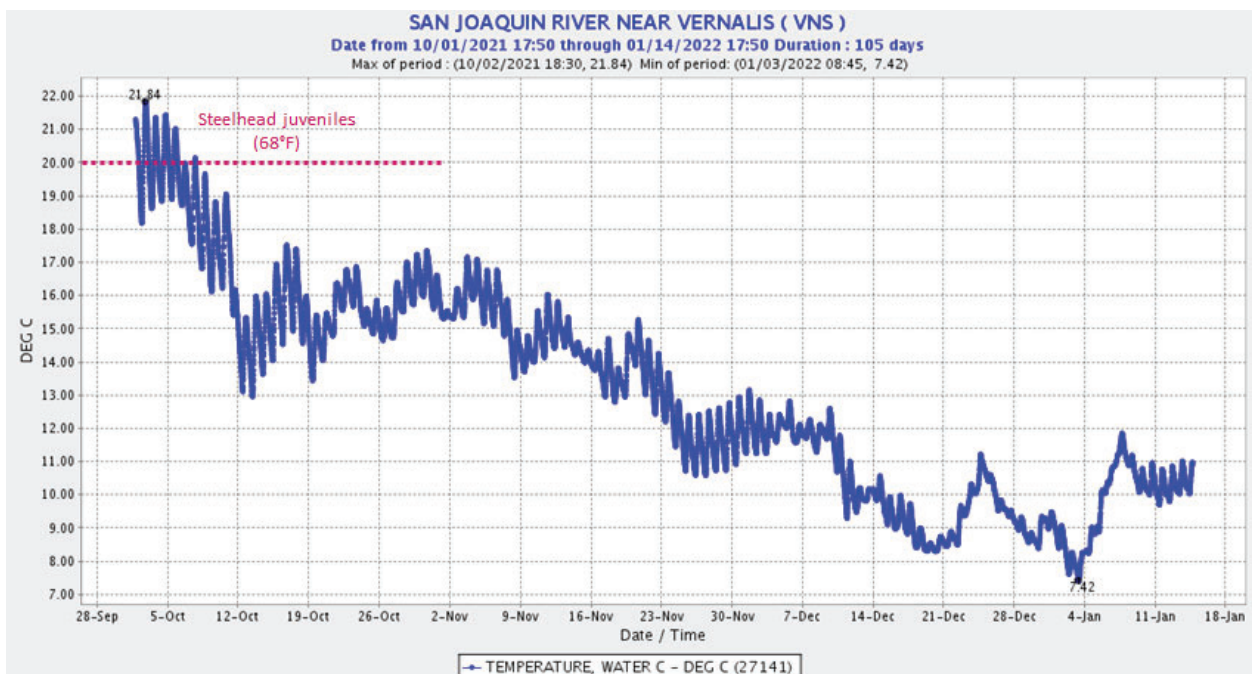


Figure 5. San Joaquin River (15-minute) water temperatures at Vernalis since October 1, 2021. Data from VNS station on CDEC; temperature threshold reference line added by SWT. Note that, unlike in the previous figures, temperature is reported in degrees Celsius. 8°C=46.4°F; 10°C=50°F; 12°C=53.6°F; 14°C=57.2°F; 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; 30°C=86.0°F.

**WY 2001-2022 OBB Stanislaus R at Orange Blossom Bridge**  
**Daily Average Water Temperature (F)**  
**Observed Range 43.02-68.41**

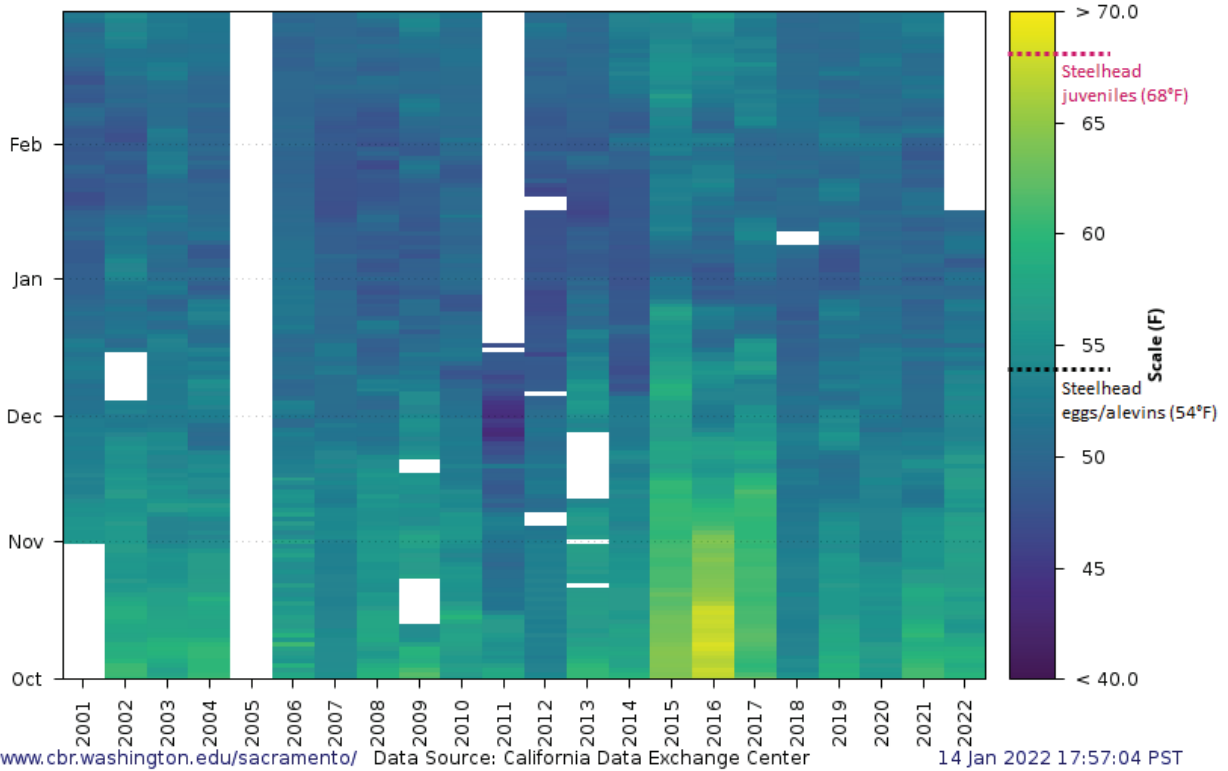


Figure 6. Stanislaus River water temperatures at Orange Blossom Bridge for October through February from WY 2001 to present. Data from SacPAS; temperature threshold reference lines added by SWT. [http://www.cbr.washington.edu/sacramento/data/query\\_river\\_allyears.html](http://www.cbr.washington.edu/sacramento/data/query_river_allyears.html)

WY 2012-2022 RIP Stanislaus R at Ripon (USGS)  
Daily Average Water Temperature (F)  
Observed Range 42.10-70.94

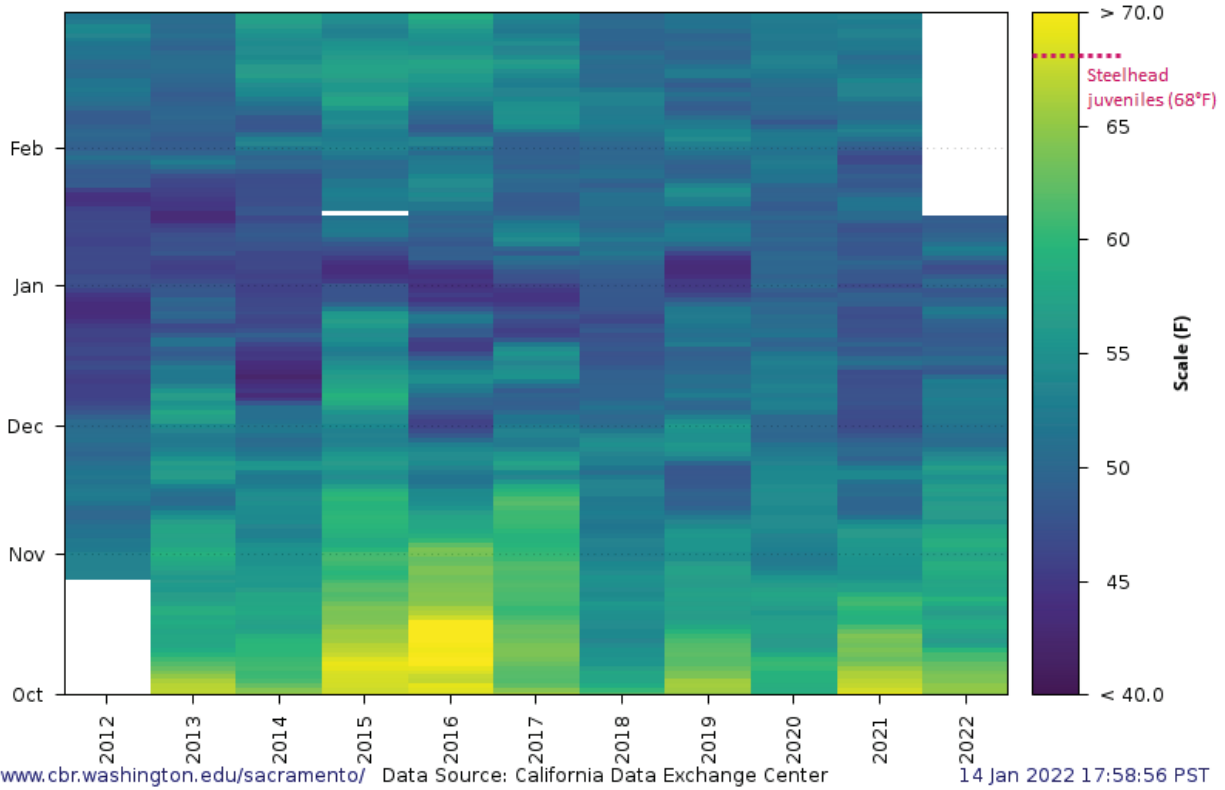


Figure 7. Stanislaus River water temperatures at Ripon for October through February from Water Year 2012 to present. Figure from SacPAS using RIP station data from CDEC; temperature threshold reference line added by SWT.

[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 44.20-73.36

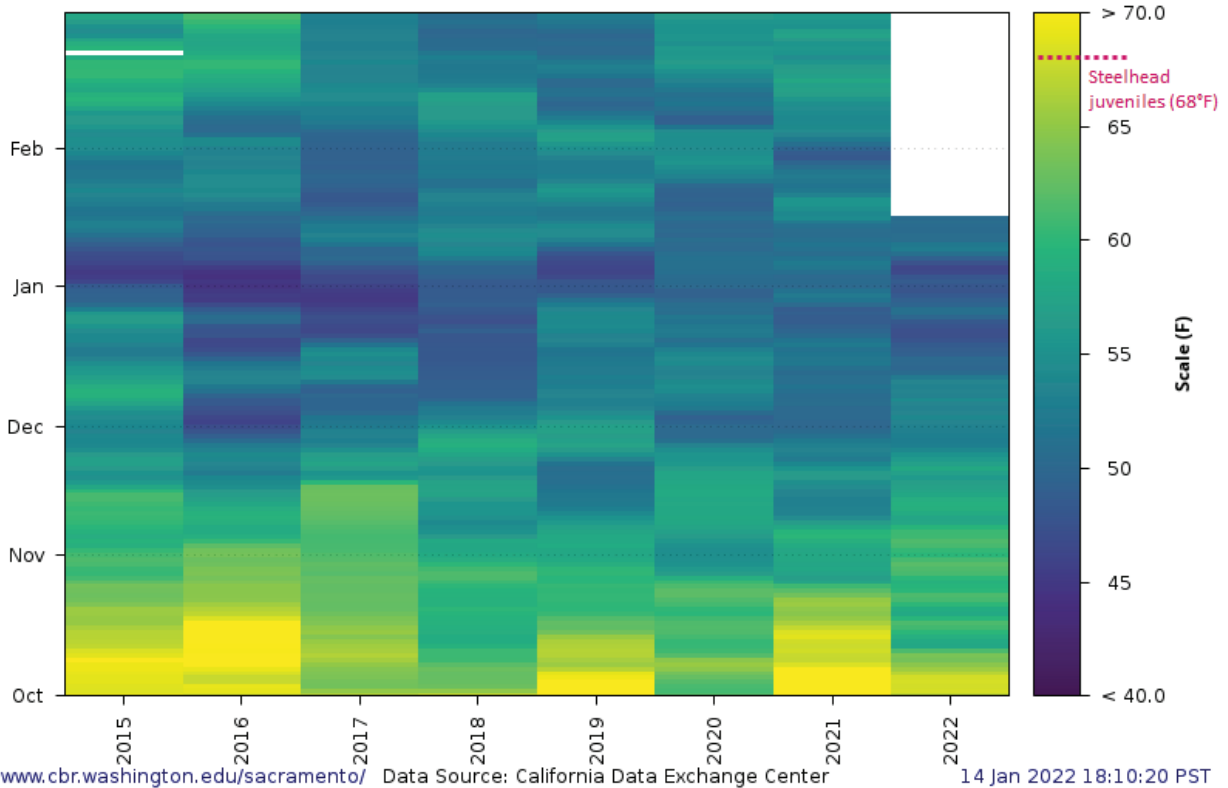


Figure 8. San Joaquin River water temperatures at Vernalis for October through February from Water Year 2015 to present. Figure from SacPAS using VNS station data from CDEC; temperature threshold reference line added by SWT.

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

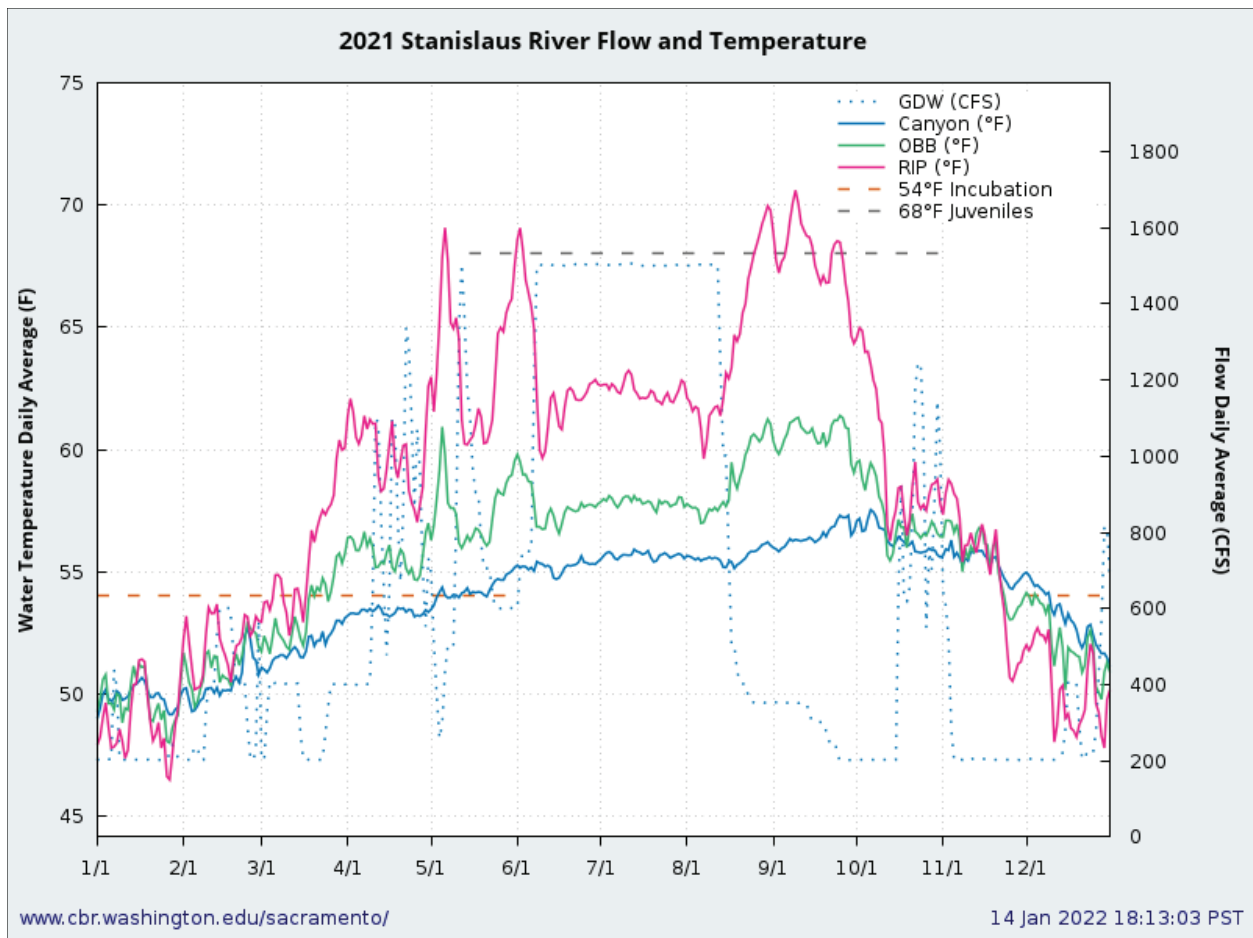


Figure 9. Stanislaus River flow and water temperatures from January 1, 2021 to December 31, 2021. Data (including temperature threshold reference lines) from SacPAS: [http://www.cbr.washington.edu/sacramento/data/tc\\_stanislaus.html](http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html)

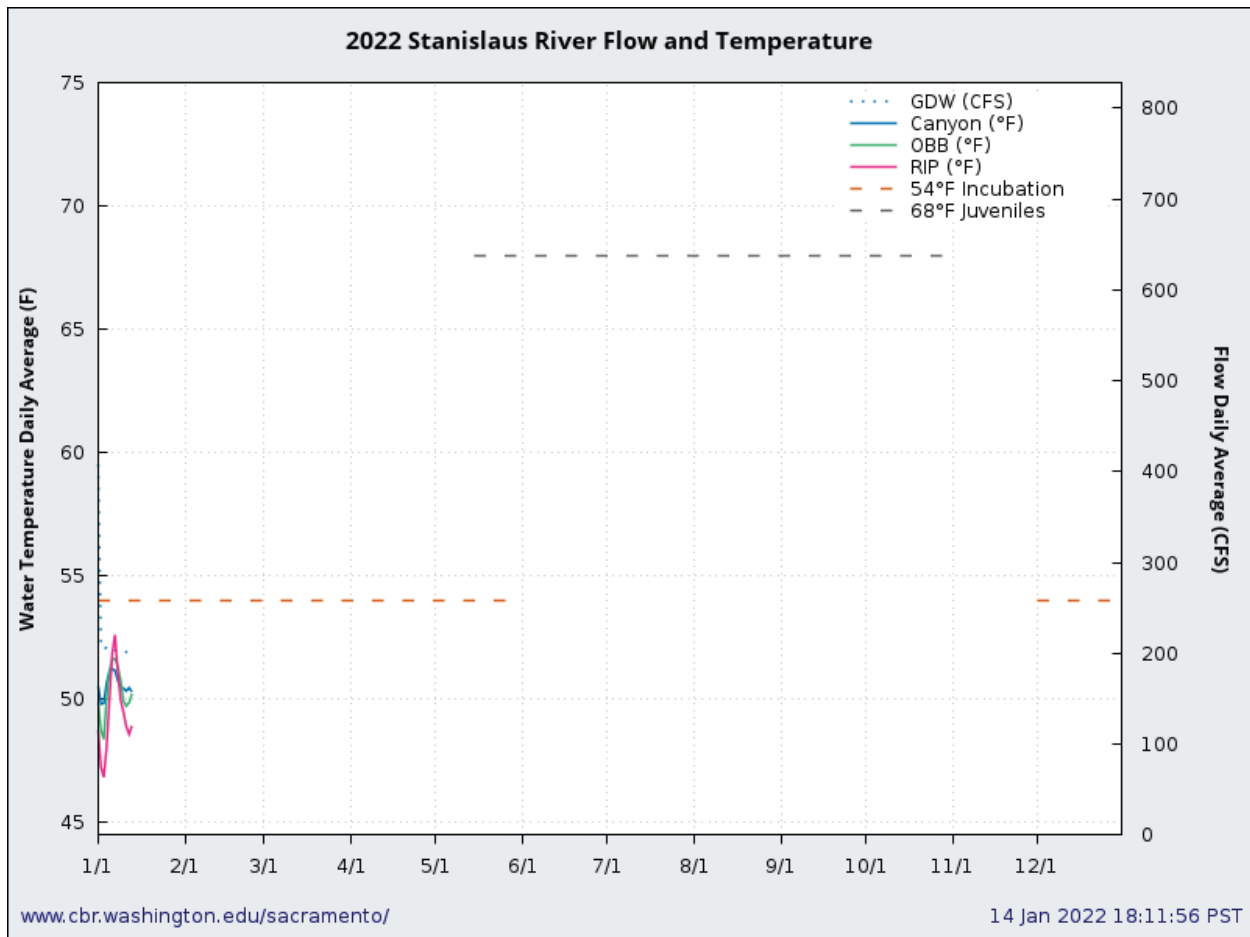


Figure 10. Stanislaus River flow and water temperatures from January 1, 2022 to present. Data (including temperature threshold reference lines) from SacPAS: [http://www.cbr.washington.edu/sacramento/data/tc\\_stanislaus.html](http://www.cbr.washington.edu/sacramento/data/tc_stanislaus.html)

### Update on Fish Monitoring (Adults)

#### 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 4, 2021 for the Stanislaus River and Merced River, and the week of September 27, 2021 for the Tuolumne River. Carcass survey data for all three San Joaquin River tributaries through the week of December 13, 2021, are reported in Table 1.

Table 1. Data from the fall 2021 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	10/4/2021	18	4	1	2	2	2	0	200
Stanislaus	2	10/11/2021	2	1	0	0	0	0	0	200
Stanislaus	3	10/18/2021	46	5	1	0	0	0	0	600
Stanislaus	4	10/24/2021	121	14	0	1	0	0	0	666
Stanislaus	5	11/1/2021	510	181	1	5	0	5	0	550
Stanislaus	6	11/8/2021	1016	447	37	115	25	115	0	200
Stanislaus	7	11/15/2021	1045	458	225	212	55	212	32	200
Stanislaus	8	11/22/2021	922	461	141	177	44	177	76	200

River	Week	Date	# Live	# Redds	# Skeletons	# Tagged	# Ad-Clipped	# Scale Samples	# Recovered	Average Flow (cfs)
Stanislaus	9	11/29/2021	646	482	234	171	41	170	82	200
Stanislaus	10	12/6/2021	510	424	230	105	25	105	111	200
Stanislaus	11	12/13/2021	90	55	12	11	2	11	11	316
Tuolumne	1	9/27/2021	42	12	3	1	1	1	0	97.5
Tuolumne	2	10/4/2021	35	14	4	7	6	6	0	129
Tuolumne	3	10/11/2021	22	12	5	2	1	1	1	126
Tuolumne	4	10/18/2021	1	13	8	2	2	2	3	172
Tuolumne	5	10/24/2021	33	5	0	0	0	0	0	188
Tuolumne	6	11/1/2021	39	31	2	0	0	0	1	175
Tuolumne	7	11/8/2021	51	58	1	2	0	2	0	175
Tuolumne	8	11/15/2021	49	100	6	6	1	6	1	175
Tuolumne	9	11/22/2021	65	97	5	9	0	9	3	172
Tuolumne	10	11/29/2021	62	141	3	5	0	5	2	171
Tuolumne	11	12/6/2021	43	130	14	5	1	5	4	170
Tuolumne	12	12/13/2021	12	89	6	1	1	1	0	175
Merced	1	10/4/2021	3	1	0	0	0	0	0	213
Merced	2	10/11/2021	6	1	0	0	0	0	0	190
Merced	3	10/18/2021	0	1	0	0	0	0	0	236
Merced	4	10/24/2021	21	4	0	0	0	0	0	220
Merced	5	11/1/2021	65	25	2	3	0	3	0	147
Merced	6	11/8/2021	72	34	2	9	1	9	0	128
Merced	7	11/15/2021	88	75	4	20	3	20	0	155
Merced	8	11/22/2021	101	89	9	16	5	16	2	150
Merced	9	11/29/2021	47	108	7	10	1	10	4	135
Merced	10	12/6/2021	36	105	7	6	1	6	2	121
Merced	11	12/13/2021	13	14	1	0	0	0	0	142

## Weir

Fishbio installed the weir near Riverbank and began monitoring for upstream passage of adult salmonids on September 8, 2021. The cumulative net upstream passage through January 11, 2022 is 6,065 Chinook (23% were ad-clipped, indicating a hatchery origin) and 23 *Oncorhynchus mykiss*. Of the 23 *O. mykiss* observed, 21 were greater than 16” (indicating possible anadromy) and 15 of the 23 were ad-clipped (indicating a hatchery origin). Data highlights provided by Fishbio on January 12, 2022 in their “Stanislaus River Weir Update through 1/11/22” are provided below in Figure 11 and Figure 12.



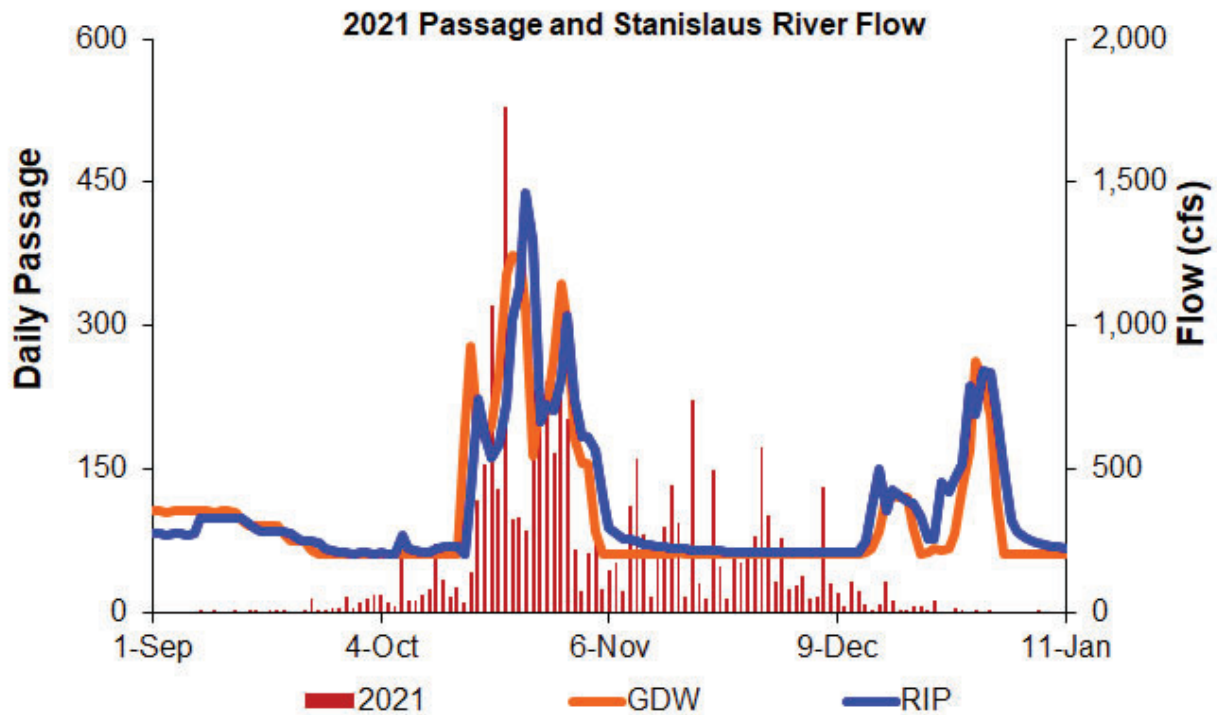


Figure 11. Daily Chinook salmon passage through January 11, 2022, at the Stanislaus River weir near Riverbank. *Data courtesy of Fishbio.*

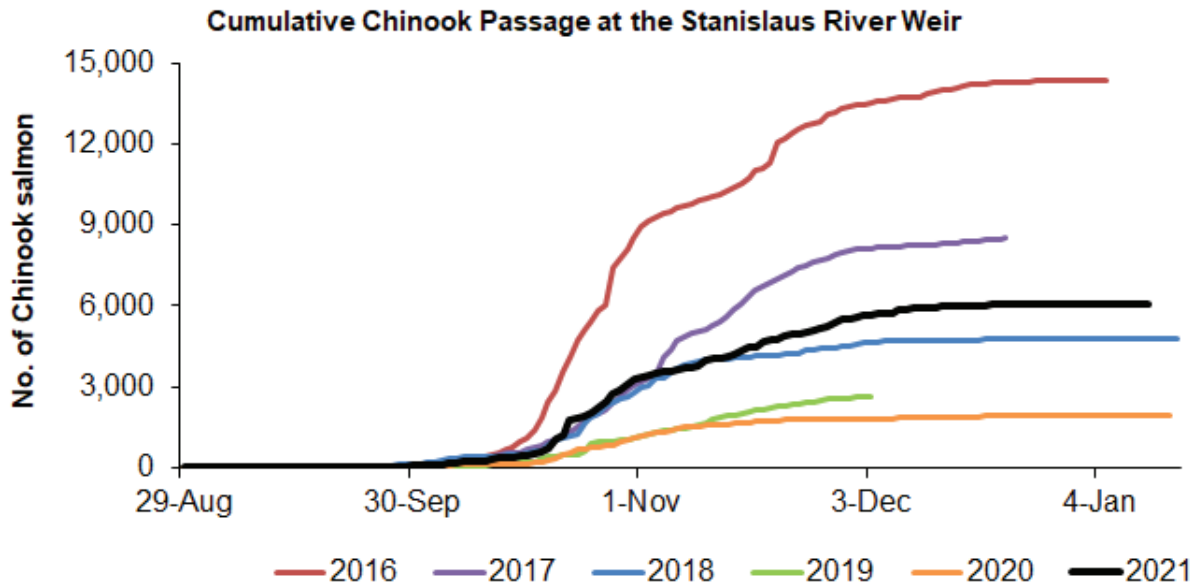


Figure 12. Cumulative Chinook salmon passage in the current year through January 11, 2022, at the Stanislaus River weir near Riverbank, along with cumulative passage for the previous five years. *Data courtesy of Fishbio.*

### Update on Fish Monitoring (Juveniles)

#### Mossdale Trawl

Mossdale trawl sampling has been sporadic since early October because of low flows in the San Joaquin River; regular sampling resumed in January 2022. Because catch is rare outside of the spring months, reporting on the Mossdale Trawl will not resume until March 2022.

Operations Outlook Table 1

River	n/a
Stanislaus River	Juvenile and adult O. mykiss are present. O. mykiss spawning season begins in December.
Stanislaus River	Adult fall-run Chinook Salmon present. Spawning observed.
n/a	Updated 12/15/2021