BUREAU OF RECLAMATION

American River Group

1:30 PM – 3:30 PM
Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#
Webinar: Join Microsoft Teams Meeting

Thursday, March 17, 2022

Agenda

1. Introductions
2. Housekeeping
    a. Welcome Melissa Vignau (USBR)
3. Fisheries Update
    a. CDFW
    b. CFS
    c. PSMFC
4. Operations Forecast
    a. SMUD
    b. PCWA
5. Central Valley Operations
6. Discussion
7. Next Meetings:
    a. Thursday, April 21, 1:30-3:30pm

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE

Provisional Data Subject to Revision

NIMBUS HATCHERY

Presented by Emily Fisher, CDFW, 916-272-4113, emily.fisher@wildlife.ca.gov

- Steelhead spawning began 12/21/2021
- Steelhead spawning ended on 2/22/2022
- Estimated 1,474,000 eggs to date
- Steelhead are beginning to hatch and are being held in indoor tanks

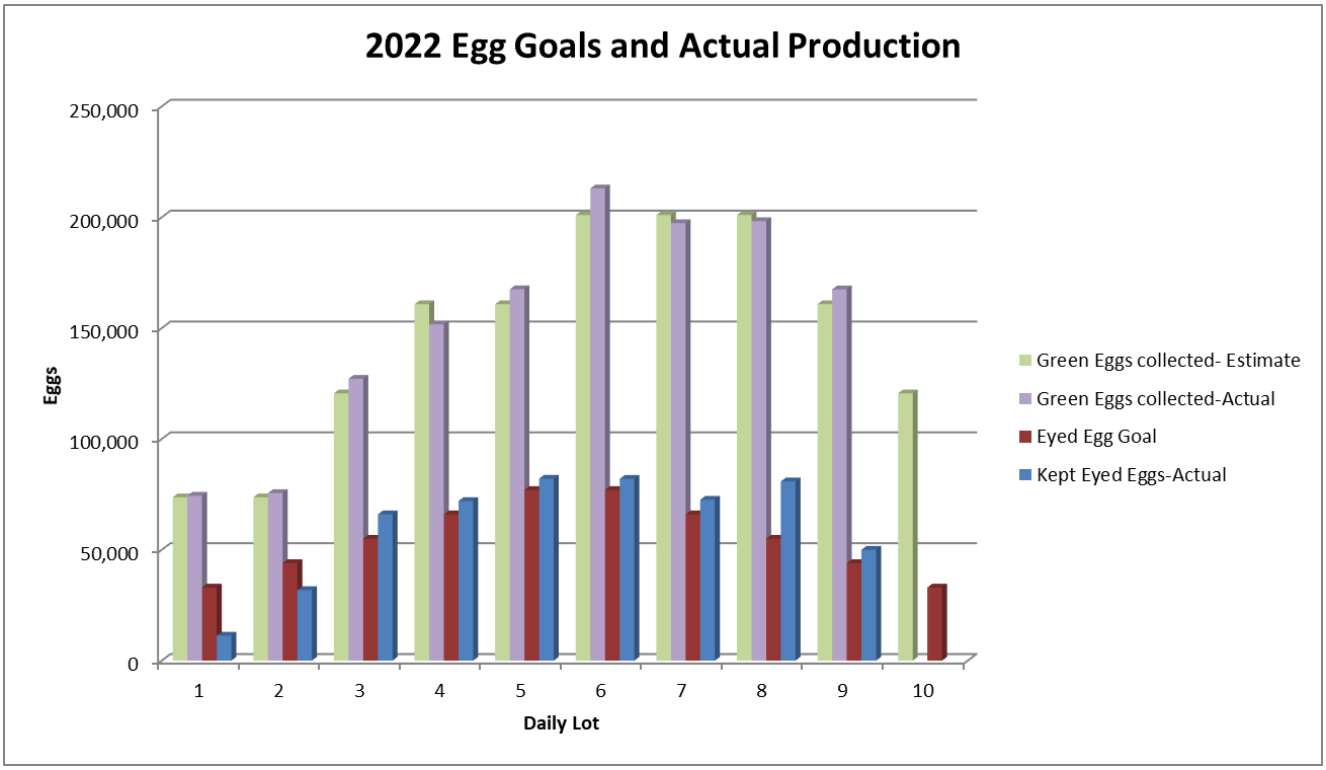

Figure 1. Comparison of steelhead egg goals and actual egg production at Nimbus Fish Hatchery

- Chinook are being moved outdoors
- Planning is underway for the release of fall-run Chinook salmon this spring

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Lower American River 2022 Steelhead Spawning and Stranding Survey Summary

Spawning

Table 1. Steelhead, Chinook salmon, older redd, and test redd counts during 2022 spawning surveys.

Dates	Steelhead	Chinook	Lamprey	Unkown[1]	Older with some algae[2]	Test	Total
Jan 12-14	5	0	0	0	3	4	12
Jan 26-28	28	0	0	0	2	9	39
Feb 9-11	26	0	0	5	3	13	47
Feb 23-25	12	0	4	0	0	9	25
Mar 8-10	15	0	1	0	0	10	26
Total	86	0	5	5	8	45	149

[1]Redd(s) not measured due to high velocity and/or angler presence, therefore species not classified using DFA

[2]Older redds likely constructed within the previous 2 weeks

Next spawning surveys will occur March 23-25.

Stranding

Salmonid stranding surveys will be conducted from 17-18 March to assess potential stranding of juvenile salmonids and steelhead redds. CFS will coordinate with CDFW and conduct juvenile salmonid rescues as needed.

UPDATED 3/15/22

Unmarked Juvenile Chinook Salmon (length-at-date):

Fall	Late Fall	Spring	Winter
25, 584	0	7	0

Lower American River at Watt Ave (RSTs):
Daily catch of unmarked Chinook Salmon and daily average discharge at Fair Oaks during the 2022 Lower American River rotary screw trap survey season.

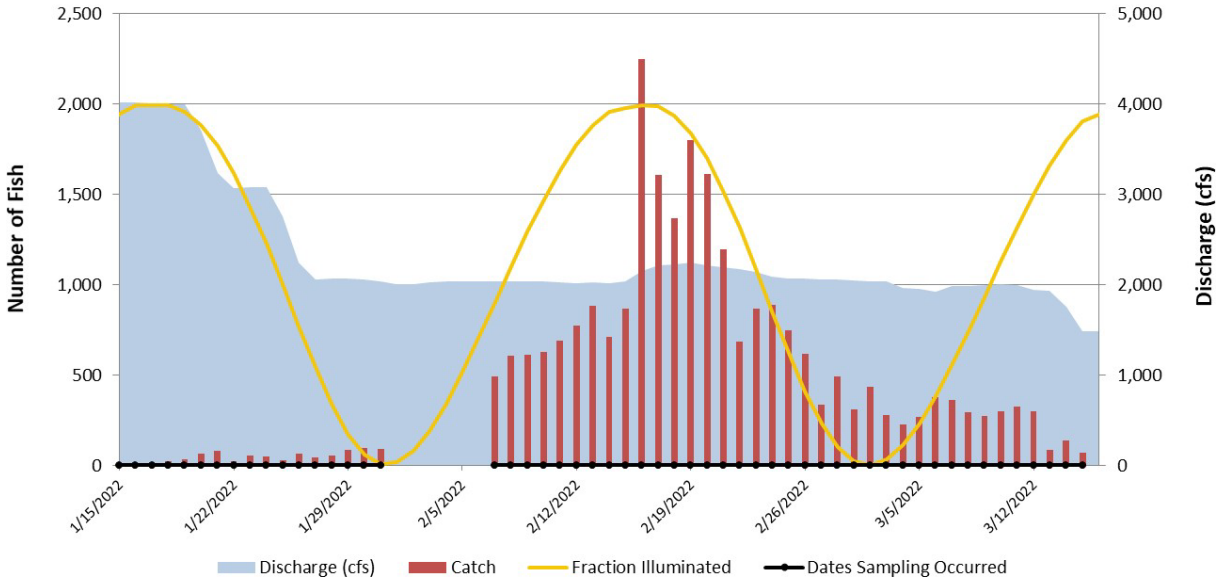


Figure 2. Lower American River at Watt Ave (RSTs): Daily catch of unmarked Chinook Salmon and daily average discharge at Fair Oaks during the 2022 Lower American River rotary screw trap survey season.

Lower American River at Watt Ave (RSTs):
Daily fork length distribution by life stage of unmarked Chinook Salmon measured during the 2022 Lower American River rotary screw trap survey season.

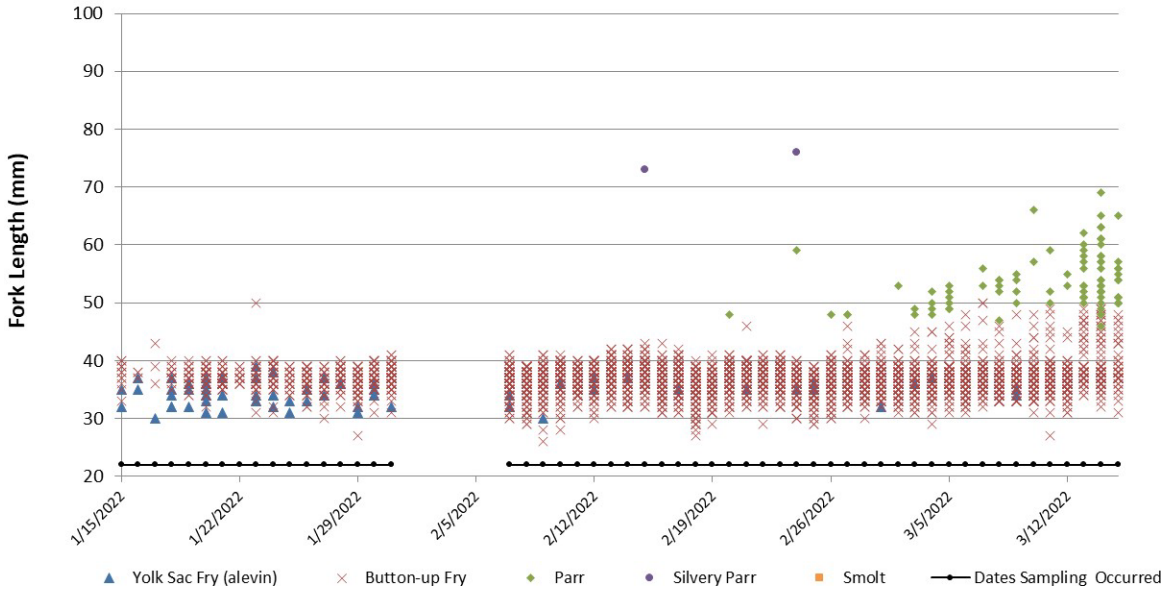


Figure 3. Lower American River at Watt Ave (RSTs): Daily fork length distribution by life stages of unmarked Chinook Salmon measured during the 2022 Lower American River rotary screw trap survey season.

Lower American River RST CalFish Webpage:

https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/SacramentoValleyTributaryMonitoring/LowerAmericanRiver-RSTMonitoring.aspx

SMUD Upper American River Project Update

Conditions – Tuesday 15 March 2022

March precipitation through 3/15/2022 7:00:00 AM is 0.38 in., which is 4% of the March average of 9.06". Precip for the water year to date is 37.95" which is 89% of average to date (42.74") and 66% of the entire water year average of 57.32". Still expecting around 0.4-1.0" of precipitation to fall across the region on Tuesday.

Runoff into the storage reservoir basins is 147.9% of median to date through 3/15/2022.The snowpack is 54.2% of average at selected snow sensors.

Combined reservoir storage for Loon Lake, Union Valley and Ice House Reservoirs

- 278,774 Acre-feet (Storage this time last month: 265,622 acre feet)
- 73.5% full
- 114% of historical average (15 March historical average: 245,340 AF)

Individual Reservoir Storage

- Loon Lake: 30,846 AF
- Ice House: 33,948 AF
- Union Valley: 213,979 AF

Last year (on March 15, 2022), storage was at 50% (189,584 AF). **Total capacity: 329,210 AF.*

Chili Bar releases into the South Fork American River

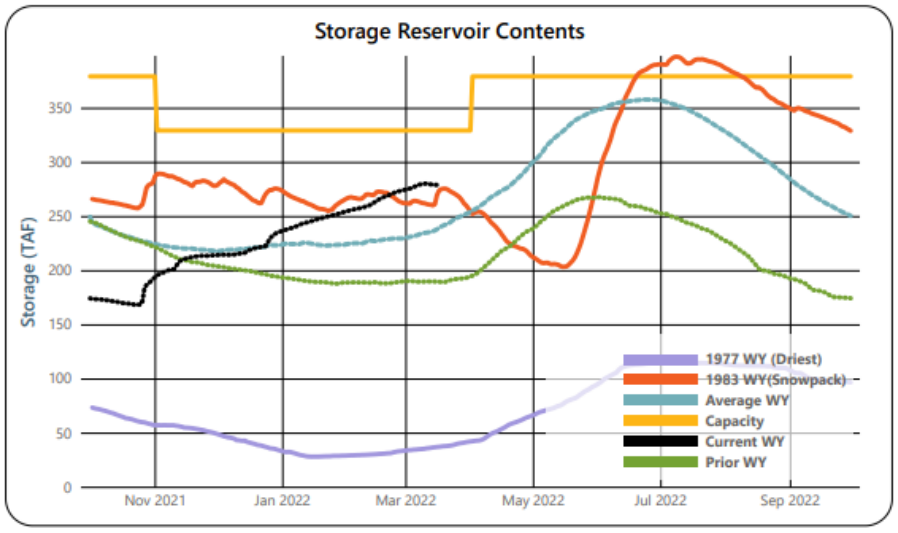
(Previous month) February 2022 releases:

- Daily average flow: 651 cfs
- Total releases: 36,183 AF

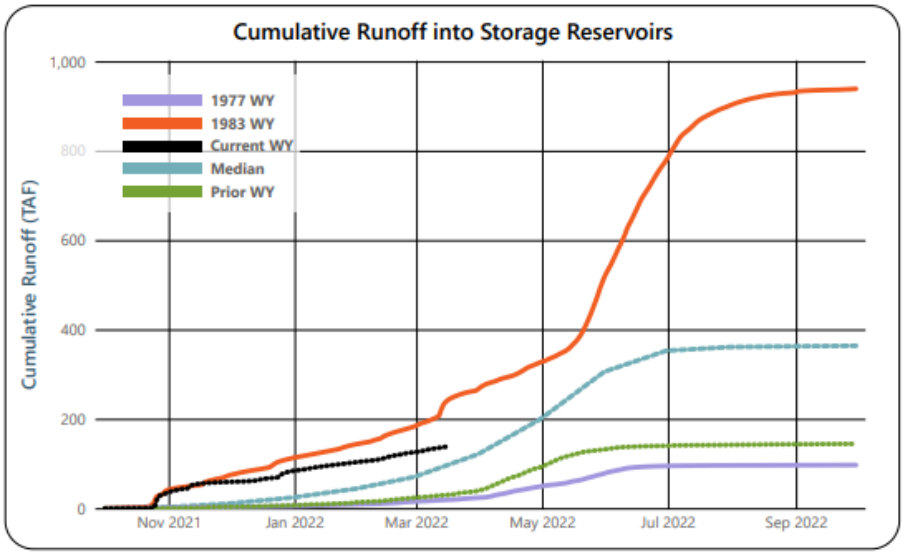
(Current month) March 2022 releases (March 1-14)

- Daily average flow so far: 839 cfs
- Total releases so far: 23,298 AF

March 15, 2022 reservoir storage: (Figure 1)



March 15, 2022 runoff into SMUD storage: (Figure 2)

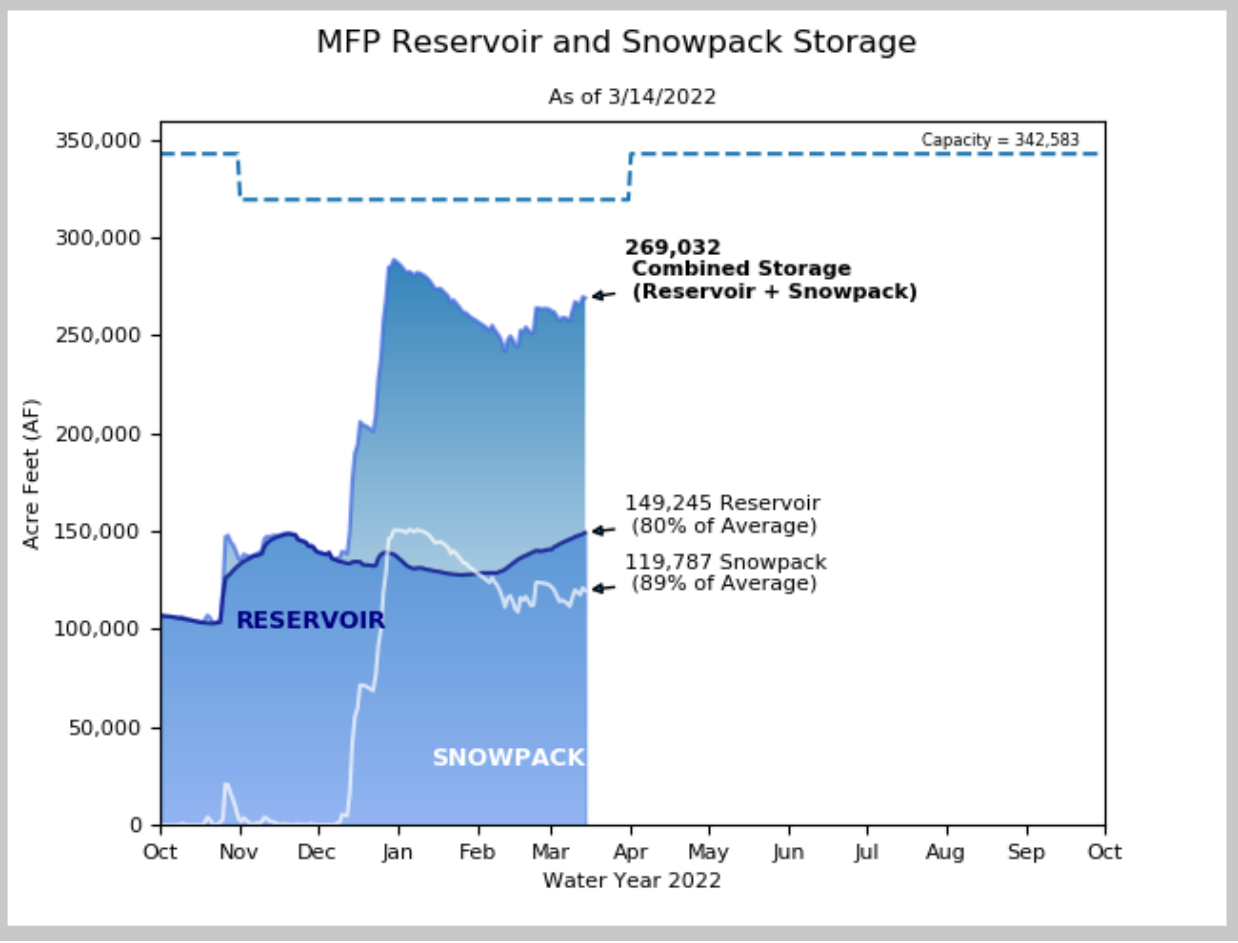


South Fork American River Natural Runoff Forecast (in cfs, daily average forecasted flow, forecast 2022-03-15) (Figure 3)

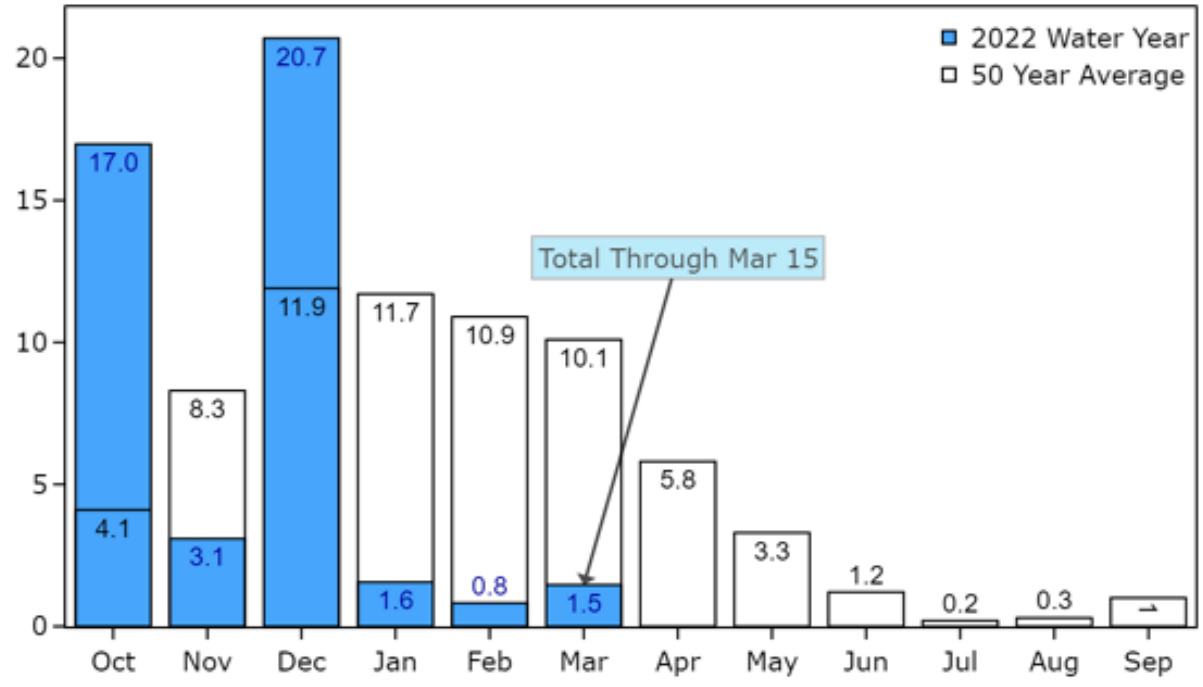
BASIN	**Fri 18-Mar**	**19-Mar**	**20-Mar**	**21-Mar**	**22-Mar**	**23-Mar**
SFA above Slab	464.1	535.7	454.9	356.6	576	774.4
Slab Creek Reservoir	72.4	77.8	89	78.8	76.8	72.6
Combined South Fork	537	614	544	444	653	847

PCWA MFP OPERATIONS OVERVIEW for American River Operations Group (Real Time Data as of March 16, 2022)

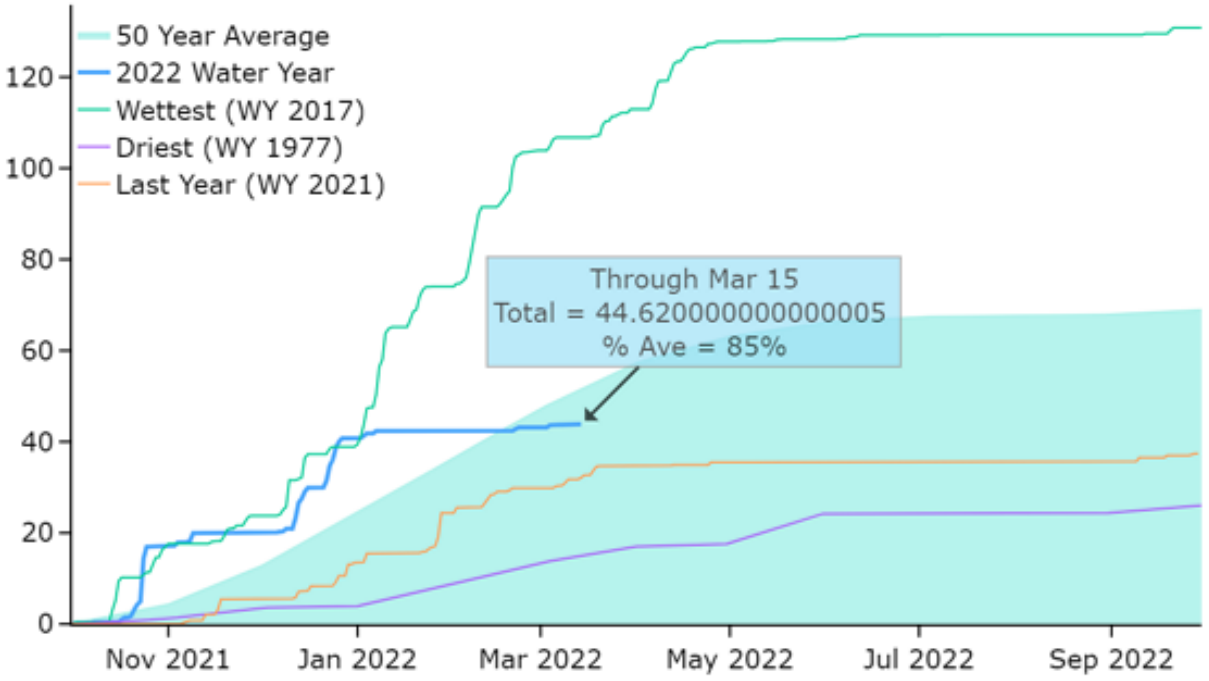
- **French Meadows Storage = 60,000 AF of 136,405 AF = 44% Capacity**
  - MFAR above FM Inflow (R24) =7-day AVG ~150 cfs
- **Hell Hole Storage = 92,000 AF of 207,590 AF = 44% Capacity**
  - Five Lakes Inflow (R23) = 7-day AVG 50 cfs
  - Rubicon Inflow (R22) = 7-day AVG 115 cfs
- **Combined Storage (FM+HH) = 152,000 AF/342,590 AF = 44% Capacity; 82% of AVG**
  - 7 Day Change = +5,000 AF
- **MFAR @ R11:** 7-day AVG 540 cfs
- **NFAR @ ARPS:** 7-day AVG 975 cfs
- **MFP currently operating in storage conservation mode**



Lake Spaulding Precipitation: Water Year 2022



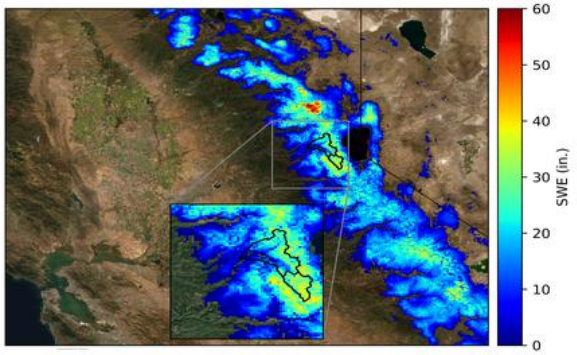
Lake Spaulding Precipitation: Water Year 2022



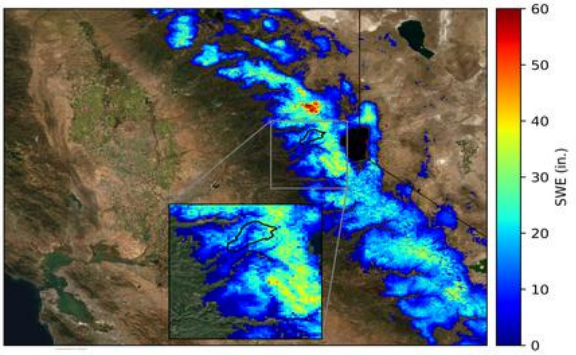
MFP Basin Snow Water Equivalent in Acre-Feet

Combined Total Acre Feet = 118,054 AF

Hell Hole 03/15/2022
Total AF from SWE: 78,830 acre feet



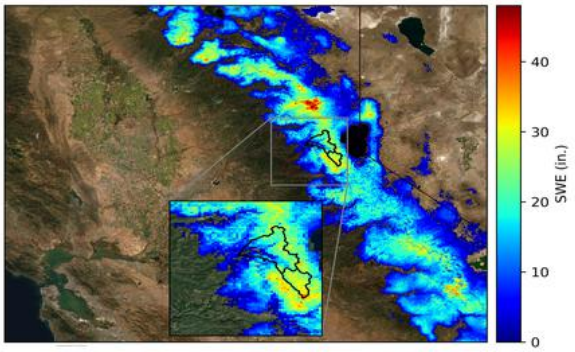
French Meadows 03/15/2022
Total AF from SWE: 39,223 acre feet



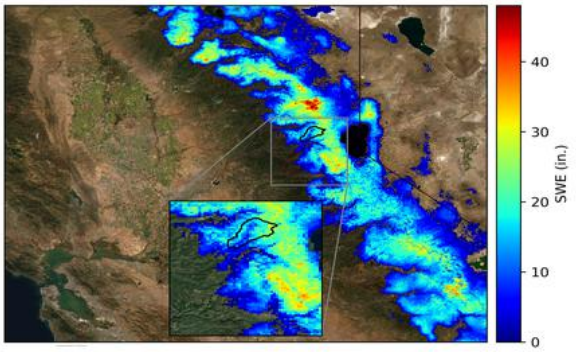
Combined 7 Day Change = +1,914 AF

Combined Total Acre Feet = 114,083 AF

Hell Hole 02/14/2022
Total AF from SWE: 74,142 acre feet



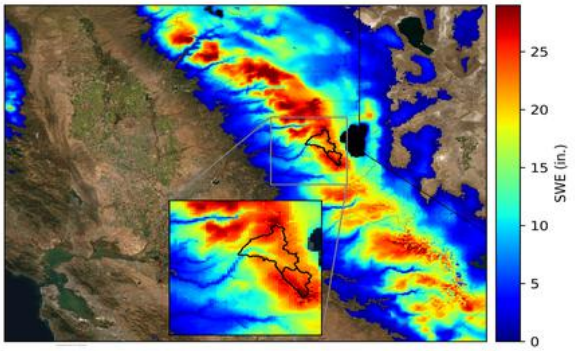
French Meadows 02/14/2022
Total AF from SWE: 39,941 acre feet



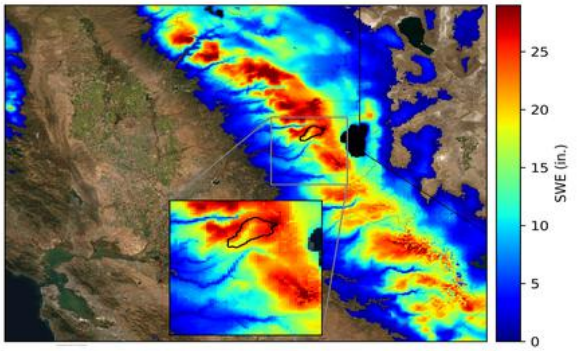
Combined 7 Day Change = -8,111 AF

Combined Total Acre Feet = 150,803 AF

Hell Hole 01/05/2022
Total AF from SWE: 93,389 acre feet



French Meadows 01/05/2022
Total AF from SWE: 57,414 acre feet



Combined 7 Day Change = +336 AF

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

DAILY CVP WATER SUPPLY REPORT

MARCH 15, 2022 RUN DATE: March 16, 2022

TABLE 1. RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2021	WY 2022	15 YR MEDIAN
TRINITY	LEWISTON	310	292	299
SACRAMENTO	KESWICK	3, 477	3, 221	3, 477
FEATHER	OROVILLE (SWP)	1, 050	2,500	1, 350
AMERICAN	NIMBUS	2, 583	1, 665	1, 665
STANISLAUS	GOODWIN	276	402	276
SAN JOAQUIN	FRIANT	252	600	260

TABLE 2. STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESEVOIR	CAPACITY	15 YR AVG	WY 2021	WY 2022	% O 15 YR AVG
TRINITY	2, 448	1, 543	1, 280	795	52
SHASTA	4,552	3,139	2,317	1,710	54
FOLSOM	977	521	335	523	100
NEWMLEONES	2,420	1,443	1,542	955	66
FED. SAN LUIS	966	647	450	313	48
TOTAL NORTH CVP	11,363	7,294	5,924	4,296	59
MILLERTON	520	302	171	288	95
OROVILLE (SWP)	3,538	2,116	1,377	1,611	76

TABLE 3. ACCUMULATED INFLOW FOR WATER YEAR TO DATE IN THOUSANDS OF ACRE-FEET

RESERVOIR	CURRENT WY 2022	WY 1997	WY 1983	15 YR AVG	% O 15 YR AVG
TRINITY	274	66	1,077	425	64
SHASTA	1,719	1,269	5,945	2,466	70
FOLSOM	840	180	3,033	1,069	79
NEW MELONES	305	N/A	989	364	84
MILLERTON	347	104	1,383	379	91

TABLE 4. ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2022	WY 1977	WY 1983	AVG (IN YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	13.92	7.46	44.80	24.66 (60)	56	0.29
SACRAMENTO AT SHASTA DAM	34.46	8.72	89.31	47.71 (65)	72	0.00
AMERICAN AT BLUE CANYON	50.18	13.78	84.50	50.97 (47)	98	0.79
STANISLAUS AT NEW MELONES	16.44	N/A	36.67	21.00 (44)	78	0.00
SAN JOAQUIN AT HUNTINGTON LK	20.66	9.10	66.10	30.91 (47)	67	0.00

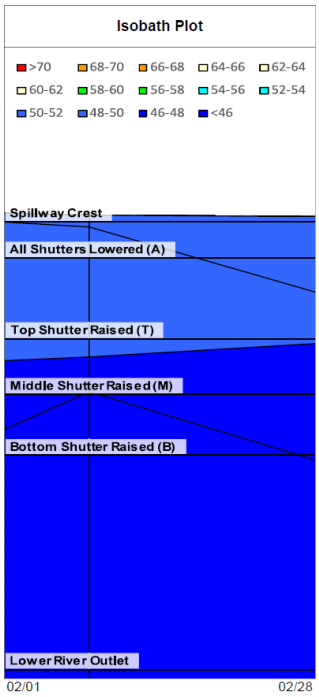


Figure 5. Isobath Plot 02/01- -2/28.

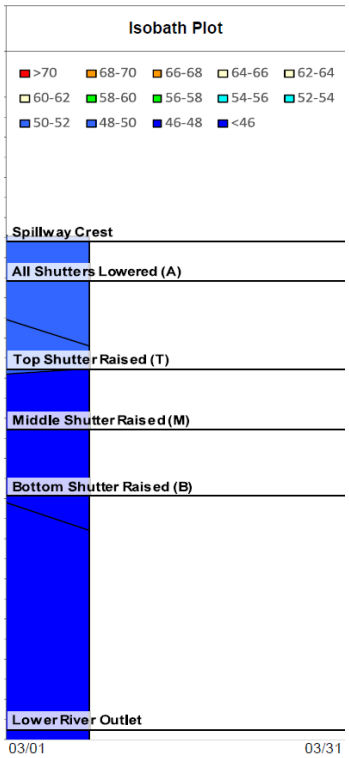


Figure 6. Isobath Plot 03/01- 03/31

Table 5. Isobath Plot 02/01- 02/28

Mean Daily Temperatures (°F) = MDT, Unit Shutter Position = USP, Load Percentage = LP, A= All Shutters Lowered, B= Bottom Shutter Raised, and T= Top Shutter Raised

Date	MDT Water NFA	MDT Water ARP	MDT Water AFD[1]	MDT Water AFO	MDT Water AWP	MDT Water AWB	MDT Air CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP Unit 1	LP Unit 1	USP Unit 2	LP Unit 2	USP Unit 3	LP Unit 3
Jan	43.5	42.0	47.5	47.7	47.4	47.8	48.2	3787	N/A	N/A	N/A	N/A	N/A	N/A	N/A
02/01	42.5	41.7	47.2	47.4	47.1	47.5	49.6	2027	533	B	2	B	44	B	55
02/02	41.8	40.4	47.6	47.0	46.6	47.0	47.9	2027	532	B	2	B	43	B	55
02/03	41.6	40.7	47.3	46.9	46.7	47.1	46.3	2015	532	B	3	B	58	B	39
02/04	41.7	40.6	47.3	47.4	47.1	47.6	48.6	2006	533	B	2	B	48	B	49
02/05	42.0	40.8	47.1	47.8	47.7	48.2	49.3	2009	533	B	2	B	58	B	39
02/06	42.2	41.5	47.0	47.8	47.7	48.3	49.8	2007	532	B	3	B	44	B	53
02/07	42.6	41.4	47.0	47.9	47.9	48.6	51.8	2008	531	B	2	B	55	B	43
02/08	43.0	41.7	46.8	47.8	48.0	48.8	52.4	2009	531	A	1	B	75	B	24
02/09	43.5	42.2	47.5	47.8	48.0	48.7	53.6	2007	531	A	39	B	42	B	19
02/10	44.5	43.4	46.9	48.0	48.2	49.1	56.0	2006	530	T	1	B	44	B	55
02/11	45.5	44.8	46.9	48.4	48.7	49.6	57.8	2007	530	T	1	B	51	B	48
02/12	46.2	44.5	46.9	48.3	48.8	49.8	58.5	2009	531	T	1	B	41	B	58
02/13	46.7	43.9	47.9	48.2	48.7	49.8	58.1	2007	531	T	49	B	40	B	11
02/14	46.9	44.1	47.1	48.3	48.7	49.7	53.4	2006	532	T	17	B	51	T	32
02/15	47.0	43.9	48.1	48.9	48.7	49.3	52.3	2007	533	T	42	T	44	T	14
02/16	46.4	43.1	48.4	48.5	48.8	49.5	56.1	2007	533	T	52	T	39	T	9
02/17	46.0	43.8	49.0	48.6	48.7	49.5	55.0	2003	532	T	45	T	8	T	47
02/18	45.5	43.0	50.0	49.1	49.1	49.7	52.9	2024	531	T	57	M	2	T	41
02/19	45.4	44.1	51.2	49.8	49.6	50.3	54.1	2050	531	T	89	M	6	T	5
02/20	45.5	44.3	50.8	50.8	50.5	50.8	51.6	2032	530	T	89	M	6	T	5
02/21	45.7	44.8	50.1	51.1	50.8	51.3	48.9	2027	529	T	89	M	6	T	5
02/22	45.1	44.4	49.9	51.2	50.9	51.3	44.5	2089	529	T	89	M	6	T	5
02/23	44.2	42.4	50.4	50.5	50.2	50.5	42.6	2203	529	T	89	M	6	T	5
02/24	42.8	42.2	50.3	49.8	49.6	50.1	43.6	2165	530	T	89	M	6	T	5
02/25	42.1	42.8	50.3	50.1	49.7	50.2	45.5	2163	529	T	89	M	6	T	5

Date	MDT Water NFA	MDT Water ARP	MDT Water AFD[1]	MDT Water AFO	MDT Water AWP	MDT Water AWB	MDT Air CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP Unit 1	LP Unit 1	USP Unit 2	LP Unit 2	USP Unit 3	LP Unit 3
02/26	42.5	42.9	50.5	50.5	50.0	50.4	48.3	2133	528	T	89	M	6	T	5
02/27	43.8	44.6	50.7	50.8	51.0	51.7	54.7	2137	527	T	89	M	6	T	5
02/28	44.7	45.8	50.9	51.4	51.7	52.4	57.3	2129	526	T	89	M	6	T	5
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feb	44.2	43.0	48.6	48.9	48.9	49.5	51.4	2047	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	Total AF	113690	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[1] AFD is a weighted average based on hourly flow values, including generation, bypass, and spill.

Table 6. Isobath Plot 03/01- 03/31

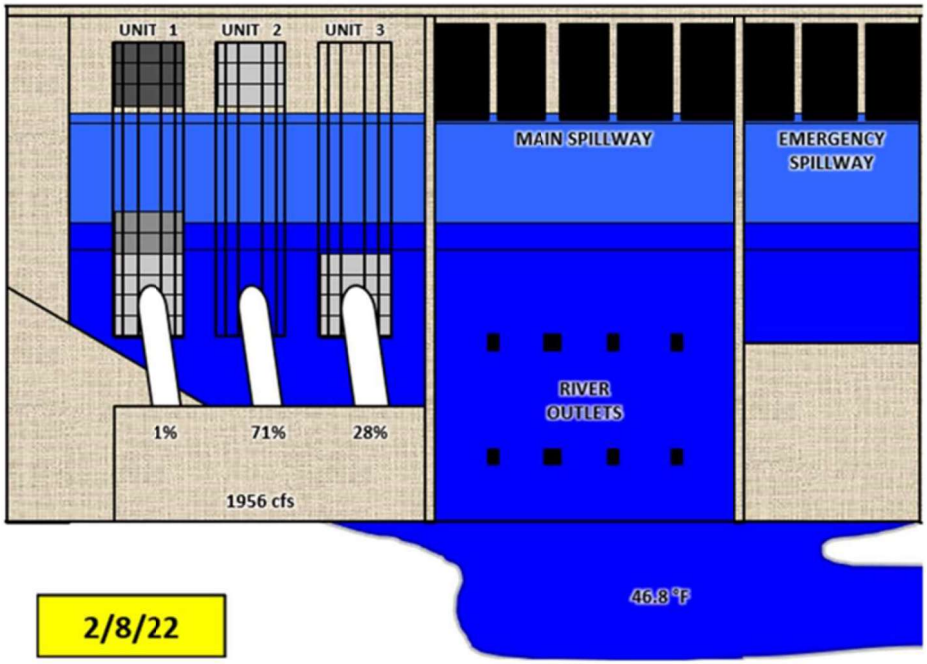
Mean Daily Temperatures (°F) = MDT, Unit Shutter Position = USP, Load Percentage = LP, A= All Shutters Lowered, B= Bottom Shutter Raised, and T= Top Shutter Raised

Date	MDT Water NFA	MDT Water ARP	MDT Water AFD	MDT Water AFO	MDT Water AWP	MDT Water AWB	MDT Air CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP Unit 1	LP Unit 1	USP Unit 2	LP Unit 2	USP Unit 3	LP Unit 3
Feb	44.2	43.0	48.6	48.9	48.9	49.5	51.4	2047	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/01	45.9	47.3	51.1	51.8	52.2	53.1	59.7	2119	525	T	89	M	6	T	5
03/02	47.0	46.8	50.5	52.1	52.4	53.2	59.2	2124	523	T	32	M	36	T	31
03/03	47.7	46.7	49.2	52.2	52.3	53.1	54.8	2106	522	T	12	M	26	T	62
03/04	48.2	46.6	48.6	51.2	52.3	53.4	55.3	2039	521	T	13	M	35	T	52
03/05	47.0	44.5	48.9	51.0	50.6	51.1	46.2	2039	522	T	14	M	54	T	32
03/06	47.1	43.8	49.7	50.0	50.6	51.3	47.8	1993	523	T	15	M	51	T	34
03/07	46.9	44.1	50.4	50.0	50.0	50.8	53.7	2081	522	T	15	M	51	T	35
03/08	47.0	44.1	49.9	50.4	50.9	51.7	55.4	2090	522	T	14	M	27	T	59
03/09	47.2	45.6	49.9	51.0	51.3	52.2	55.5	2084	521	T	13	M	53	T	34
03/10	47.3	44.7	50.3	51.2	51.4	52.3	55.0	2092	521	T	13	M	28	T	59
03/11	47.1	44.5	50.2	50.9	51.6	52.3	54.2	2102	521	T	9	M	57	T	34
03/12	47.9	45.7	49.9	51.2	51.5	52.4	55.5	2092	521	T	1	M	38	T	61
03/13	48.5	46.3	48.7	50.7	51.6	52.7	57.7	2073	520	T	28	M	54	T	18
03/14	49.5	46.0	50.1	51.6	52.4	53.4	57.0	1928	521	T	61	M	13	T	26
03/15	50.7	46.8	50.3	51.6	52.7	54.1	60.0	1665	523	T	24	M	30	T	46
03/16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/17	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/22	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Date	MDT Water NFA	MDT Water ARP	MDT Water AFD	MDT Water AFO	MDT Water AWP	MDT Water AWB	MDT Air CSU	Release (CFS) Nimbus	Storage (TAF) Folsom	USP Unit 1	LP Unit 1	USP Unit 2	LP Unit 2	USP Unit 3	LP Unit 3
03/27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
03/31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mar	47.7	45.6	49.8	51.1	51.6	52.5	55.1	2042	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	Total AF	60747	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Folsom Dam & Lake - American River Basin
2022-03-16T09:16:43-0700

FOLSOM DAM



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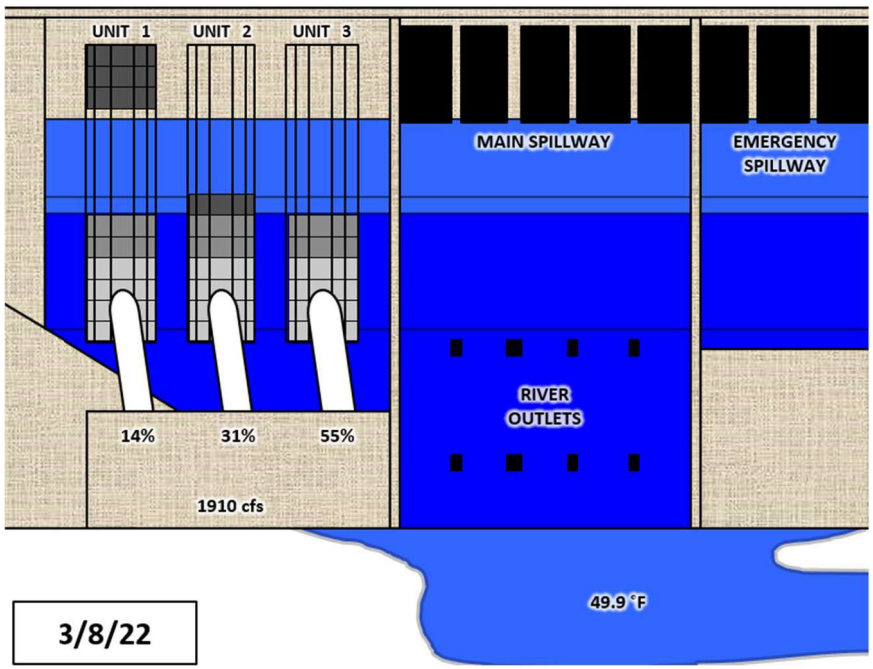

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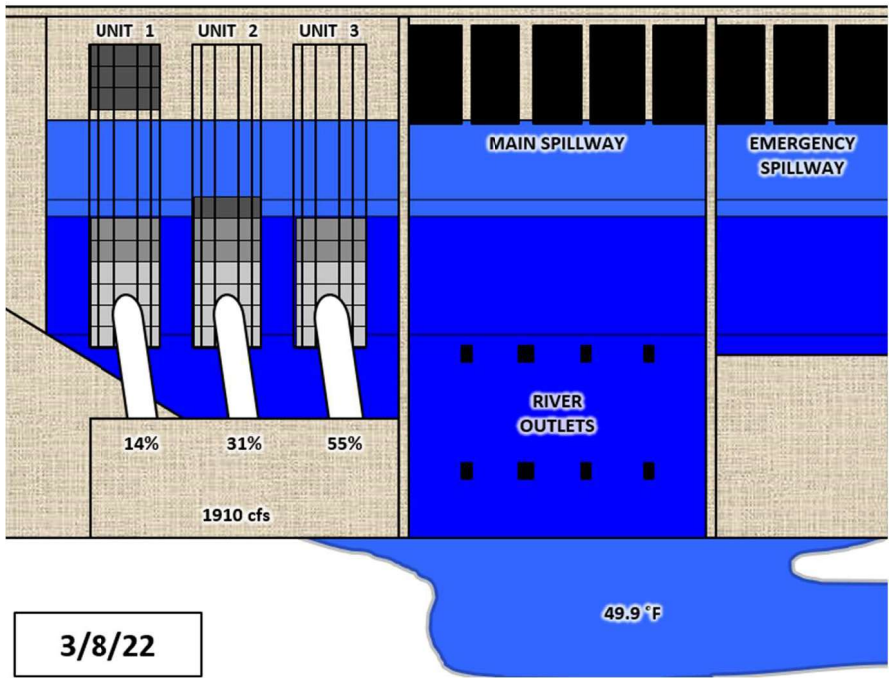

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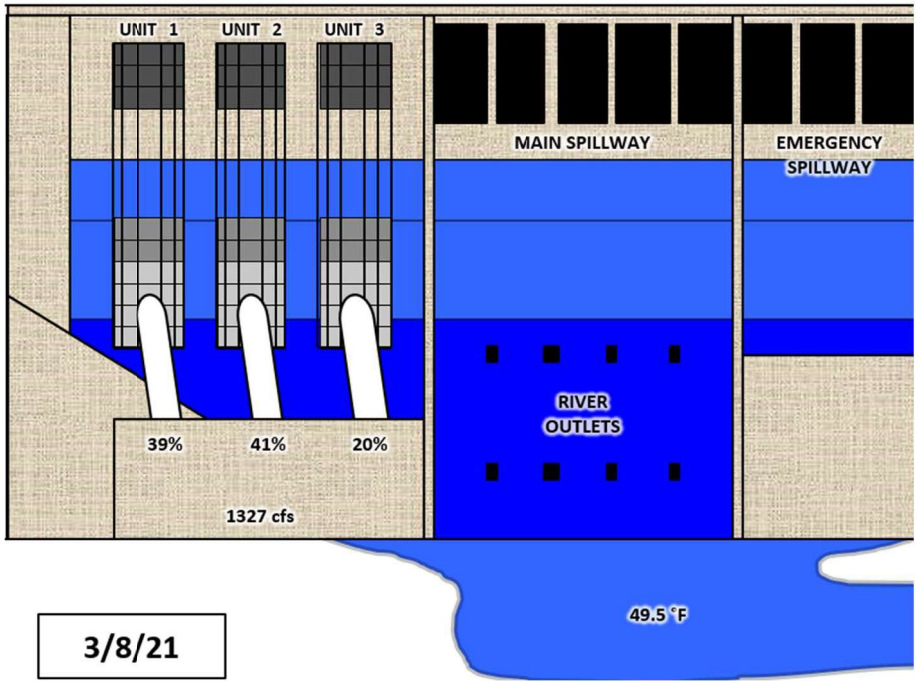

3/8/21

American River Summary Conditions – March (On-going)

Storage/Release Management Conditions

- Releases are currently at 1,250 cfs
- Release cut to 2,000 on Monday, March 13, 2022
    - Monday, March 14, 2022: from 2000 cfs to 1750 cfs
    - Tuesday, March 15, 2022: from 1750 cfs to 1500 cfs
    - Wednesday, March 16, 2022: from 1500 cfs to 1250 cfs
    - Friday, March 18, 2022: from 1250 cfs to 1200 cfs
- Continue to look at further release cuts in April

Temperature Management:

- Top Shutters: Units 1 and 3-raised, unit 2—one set (1/3) of lower panels
- Middle Shutters: Units 1,2, and 3 -- down
- Bottom Shutters: Units 1,2, and 3 -- down

Folsom Shutter Configuration and Changes:

Continue to release water from the highest elevation of the lake

American River 90% Outlook:

American River Release Outlook for February:

Table 7. Federal End of the Month Storage/Elevation (TAF/feet)

Reservoir	End of 2021 Carryover Storage Volume	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Folsom Storage	533	535	721	849	940	816	694	652	590	447
Folsom Elevation	Elev.	421	442	454	463	451	439	434	427	410

Table 8. Monthly River Release (TAF/cfs)

Reservoir	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
American TAF	111	201	198	246	285	221	132	146	184
American cfs	2000	3276	3322	4000	4787	3593	2149	2453	2987

American Base Flow Table:

Table 9. American Base Flow Table
Minimum Release Requirement = MRR, Redd Dewatering Protective Adjustment= RDPA, American River Index = ARI, Sacramento River Index = SRI

Month	Index Used for Index-based MRR	Index Based MRR	RDPA-based MRR for fall-run Chinook salmon (applicable in January and February)	RDPA-based MRR for steelhead (applicable February through May)	Controlling MRR	Actual Average Monthly Nimbus release[1]
October	May ARI[2] (50% exceedance)	515 cfs	N/A	N/A	515 cfs	627 cfs
November	May ARI[2] (50% exceedance)	515 cfs	N/A	N/A	515 cfs	583 cfs
December	May ARI[2] (50% exceedance)	515 cfs	N/A	N/A	515 cfs	890 cfs
January	January SRI (75% exceedance)	1750 cfs	515 cfs	N/A	515 cfs	3787 cfs
February	February ARI (50% exceedance)	1750 cfs	1750 cfs	500 cfs	1750 cfs	N/A
March	March ARI (50% exceedance)	1733 cfs	N/A	1215 cfs	1215	N/A
March	March ARI[3] (90% exceedance)	1197 cfs	N/A	1215 CFS	1215	N/A

[1] Average of daily release over the month from NAT station on CDEC

[2] Since new forecasts are usually provided January through May, the May ARI would also be used for June-September of the current water year and October through December of the next water year unless there is an update to the ARI after May

[3] Due to the critical CVP system wide ops, MRR 90% was considered and implemented