



— BUREAU OF —
RECLAMATION

American River Group

1:30 p.m.–3:30 p.m.

Conference Line: +1 (321) 209-6143; Access Code: 985 598 947#

Webinar: [Join Microsoft Teams Meeting](#)

Thursday, November 17, 2022

Agenda

1. Introductions
2. Announcements
3. Housekeeping
 - a. Meeting will be recorded for notetaking purposes
4. Fisheries Update
 - a. CDFW
 - b. CFS
 - c. PSMFC
5. Operations Forecast
 - a. SMUD
 - b. PCWA
6. Central Valley Operations
7. Discussion
 - a. Power Bypass
8. Next Meetings:
 - a. Thursday, December 15th, 1:30 p.m.–3:30 p.m.

Provisional Data Subject to Revision

FALL-RUN CHINOOK CARCASS SURVEY

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

- Survey began 10/17/2022

Table 1. Preliminary count of Chinook Salmon carcasses processed during the 2022 lower American River escapement survey

Survey Period	Dates	Nimbus Basin	Section 1A	Section 1B	Section 2	Section 3	Total Carcasses Processed
1	Oct 17-20	2	11	2	7	5	27
2	Oct 24-27	1	8	3	3	1	16
3	Oct 31-Nov 4	4	22	4	6	2	38
4	Nov 7-10	9	21	12	4	3	49
	Total	16	62	21	20	11	130

- NA: Side channel no longer present, salmonids were salvaged from isolated pools in the upper Sunrise side channel in March
- *: Not able to seine due to presence of steelhead redds
- **: Lower Sunrise Side Channel is not connected at the upstream end
- ***: Not seined at this time

Table 2. Preliminary count of female Chinook Salmon carcasses assessed for spawning condition during the 2022 lower American River escapement survey

Date	Survey Period	Unspawned	Partial	Spawned	Total
Oct 17-20	1	2	1	1	4
Oct 24-27	2	2	0	0	2
Oct 31-Nov 4	3	2	1	0	3
Nov 7-10	4	18	4	4	26
	Total	24	6	5	35
	%	69	17	14	

Data and annual reports available on CalFish:

<https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/SacramentoValleyTributaryMonitoring/LowerAmericanRiver.aspx> .

Provisional Data Subject to Revision

LOWER AMERICAN RIVER REDD SURVEY

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

- Survey began 10/21/2022
- Cramer Fish Science has been conducting bi-weekly redd surveys
- Carcass witnessed redds being actively defended in section 3

Table 3. Preliminary count of Chinook Salmon redds measured during the 2022 lower American River redd survey.

Survey Period	Dates	Nimbus Basin	Section 1A	Section 1B	Section 2	Section 3	Total Redds
1	Oct 17-21	0	0	0	0	0	0
2	Oct 24-28	0	0	0	0	0	0
3	Oct 31-Nov 4	2	8	1	0	0	11
4	Nov 7-11	3	15	30	4	N/A	52
	Total	5	23	31	4	0*	63

NIMBUS FISH HATCHERY

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

- Fall-run Chinook Salmon spawning began 11/1/2022
- 3,058,370 eggs collected thus far

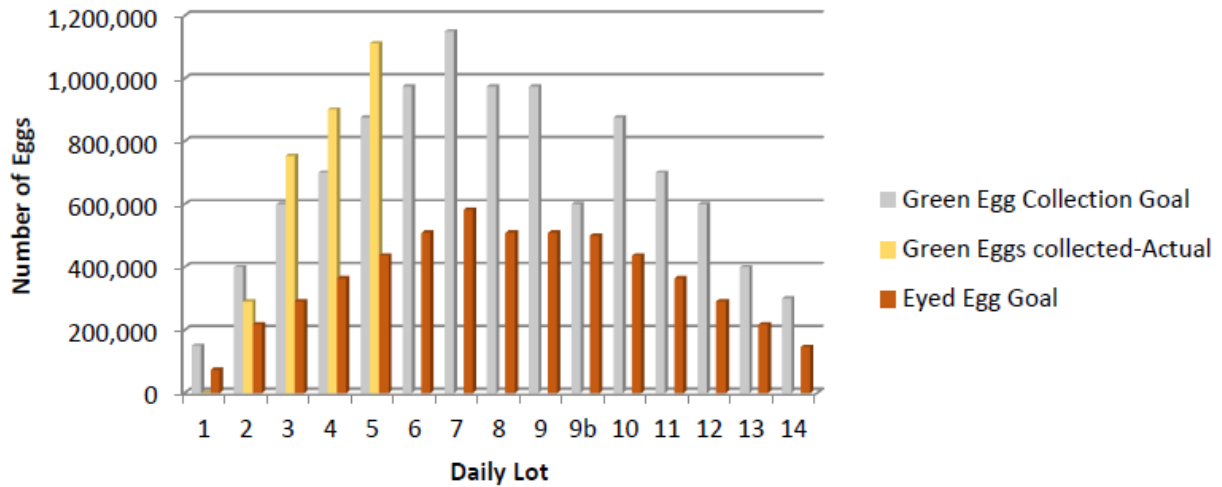


Figure 1. Fall-run Chinook Salmon egg collection goals and eggs collected per spawning at Nimbus Fish Hatchery

SMUD Upper American River Project Update

Conditions – Tuesday 15 November 2022

November precipitation through 11/15/2022 is 6.33”, which is 92% of November’s average total, as well as 94% of the water year average to date (October 1 – November 15). Runoff has been minimal due to the cold temperature of the November storms—60% of median to date. Snowpack at selected sensors in the Crystal Basin is at 166% of average (3.5”)

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

- 242,689 acre feet (18 October was 254,511 acre feet)
- 64% full
- 109% of historical average (15 November historical average: 223,473 AF)

Individual Reservoir Storage

- Loon Lake: 43,230 AF
- Ice House: 29,525 AF
- Union Valley: 169,934 AF

Last year (on November 15, 2021), total storage was at 56% (210,471 AF). *Total capacity: 329,210 AF.

Chili Bar releases into the South Fork American River

(Previous month) October 2022 releases:

- Daily average flow: 520 cfs
- Total releases: 31,977 AF

(Current month) November 2022 releases (November 1-15)

- Daily average flow so far: 326 cfs
- Total releases so far: 9,057 AF

Table 4. South Fork American River Natural Runoff Forecast (in cfs, daily average forecasted flow, forecast 2022-11-15)

Basin	Fri Nov 18	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov
SFA above Slab	97	96	96	97	110	109
Slab Creek Reservoir	51	50	48	47	48	45
Combined South Fork	148	146	144	144	158	154

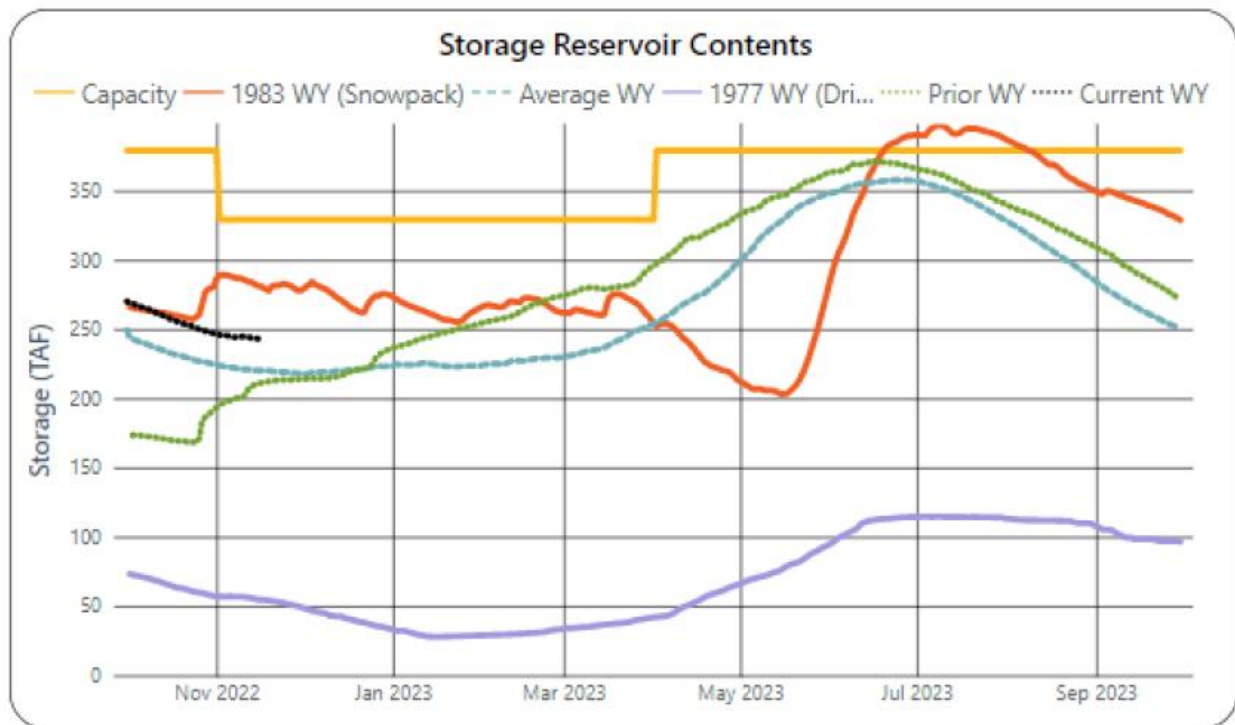


Figure 2. November 15, 2022 reservoir storage

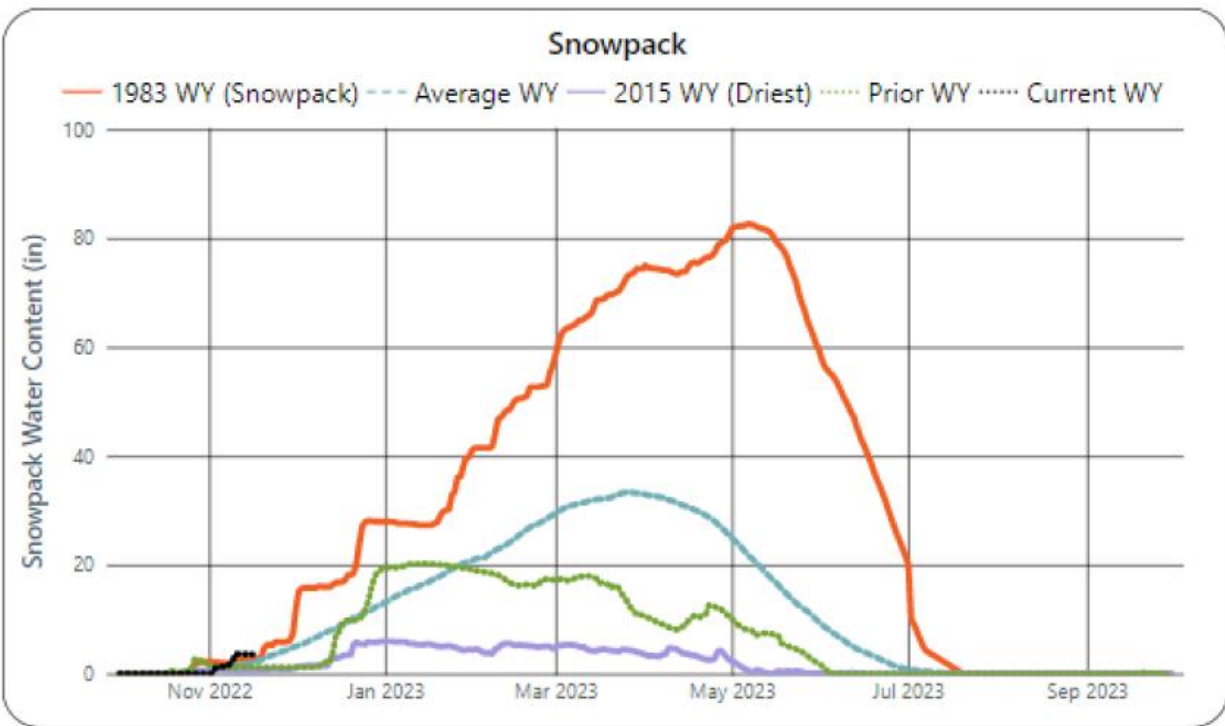
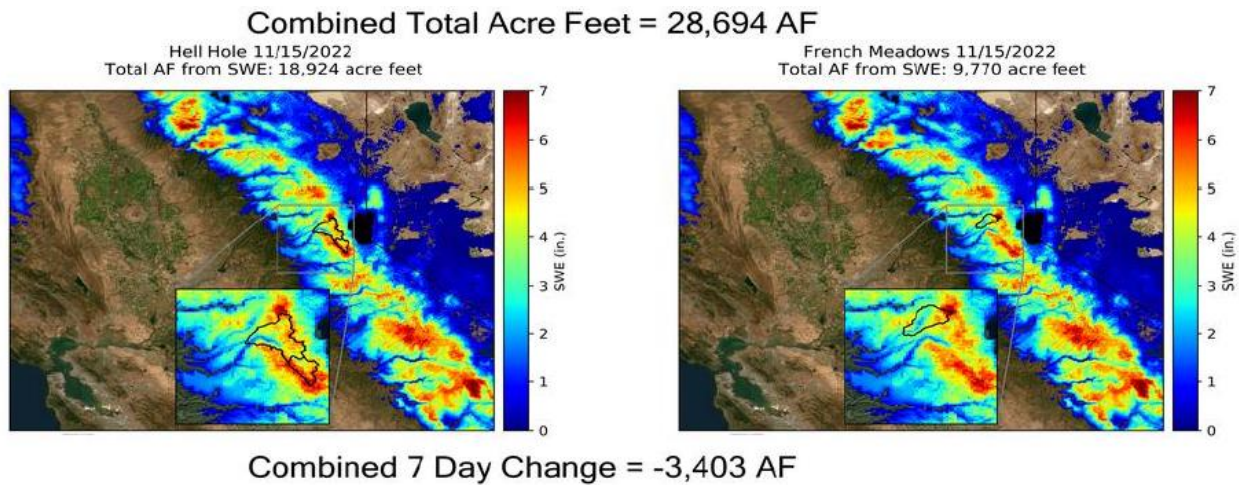


Figure 3. November 15, 2022 snowpack

PCWA MFP Operations Overview for American River Operations Group

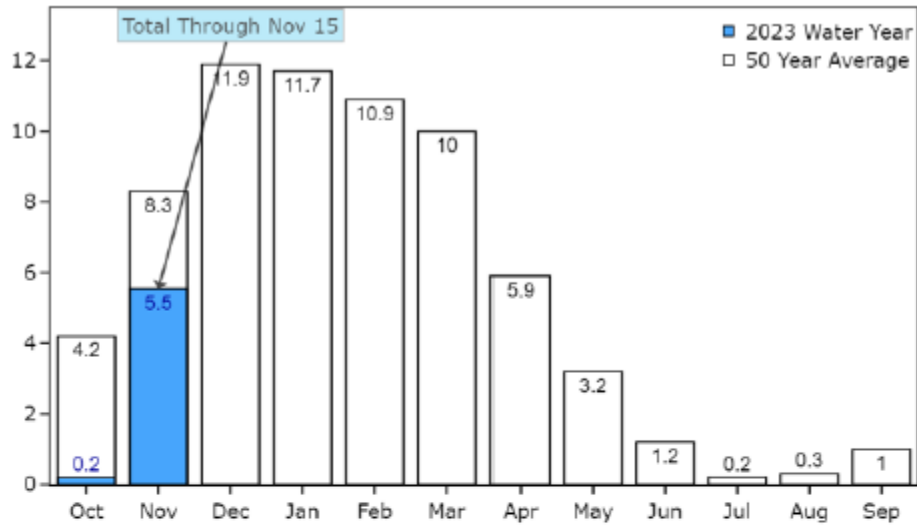
(Real Time Data as of November 16, 2022)

- French Meadows Storage = 72,000 AF of 136,405 AF = 53% Capacity
 - MFAR above FM Inflow (R24) = 7-day AVG ~12 cfs
- Hell Hole Storage = 92,000 AF of 207,590 AF = 44% Capacity
 - Five Lakes Inflow (R23) = 7-day AVG ~2 cfs
 - Rubicon Inflow (R22) = 7-day AVG ~20 cfs
- Combined Storage (FM+HH) = 164,000 AF/342,590 AF = 48% Capacity; 98% of AVG YTD
 - 14 Day Change = -2,000 AF
- MFAR @ R11: 7-day AVG 300 cfs
- NFAR @ ARPS: 7-day AVG 450 cfs

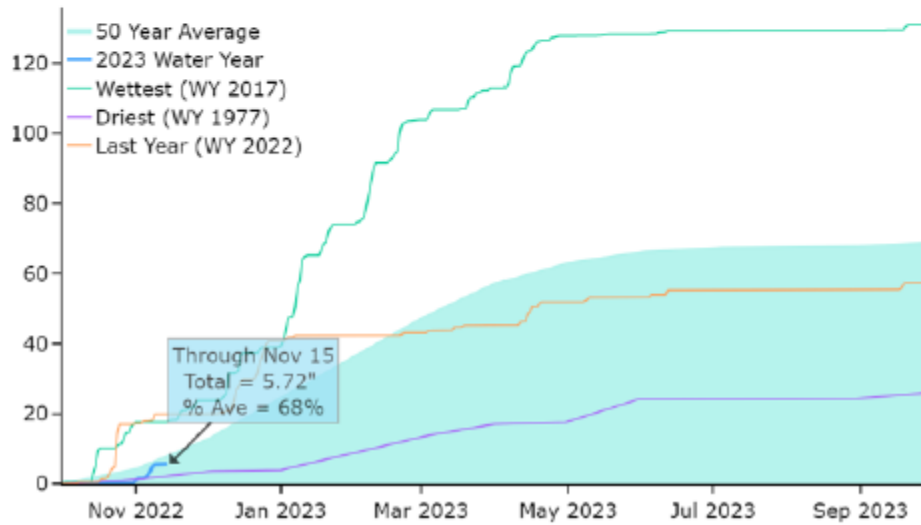


Maps showing Hell Hole 11/15/2022 and French Meadows 11/15/2022; Combined Total Acre-feet = 28,694 AF; Combined 7-Day Change = 3,403 AF

Lake Spaulding Precipitation: Water Year 2023



Lake Spaulding Precipitation: Water Year 2023



Lake Spaulding Precipitation: Water Year 2023

Reservoir Releases in Cubic Feet/Second

Reservoir	Dam	WY 2022	WY 2023	15 Yr Median
Trinity	Lewiston	296	304	304
Sacramento	Keswick	3,262	3,615	4,638
Feather	Oroville (SWP)	950	1,800	1,750
American	Nimbus	570	1,314	1,314
Stanislaus	Goodwin	205	202	205
San Joaquin	Friant	230	501	385

Storage in Major Reservoirs in Thousands of Acre-Feet

Reservoir	Capacity	15 Yr Avg	WY 2022	WY 2023	% of 15 Yr Avg
Trinity	2,448	1,212	705	532	44
Shasta	4,552	2,122	1,091	1,396	66
Folsom	977	361	338	264	73
New Melones	2,420	1,193	844	586	49
Fed. San Luis	966	349	90	185	53
Total North CVP	11,363	5,237	3,068	2,963	57
Millerton	521	247	312	312	126
Oroville (SWP)	3,538	1,399	1,034	1,015	73

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

Reservoir	Current WY 2023	WY 1977	WY 1983	15 Yr Avg	% of 15 Yr Avg
Trinity	5	27	102	33	16
Shasta	210	341	611	320	66
Folsom	63	26	268	92	69
New Melones	27	N/A	97	50	53
Millerton	56	13	175	75	74

Accumulated Precipitation for Water Year to Date in Inches

Reservoir	Current WY 2023	WY 1977	WY 1983	Average (N Years)	% of Average	Last 24 Hours
Trinity at Fish Hatchery	2.80	1.80	5.76	31.82 (60)	9	0.00
Sacramento at Shasta Dam	3.37	3.10	14.08	61.69 (65)	5	0.00
American at Blue Canyon	6.43	1.46	12.43	67.90 (46)	9	0.00
Stanislaus at New Melones	1.98	N/A	4.89	27.93 (43)	7	0.00
San Joaquin at Huntington Lk	4.94	1.50	4.40	42.31 (47)	12	0.00

November 2022 | Folsom Lake Daily Operations | Run Date: 11/16/2022

Day	Elev	Storage (1000 Acre-Feet) in Lake	Storage (1000 Acre-Feet) Change	Computed* Inflow C.F.S.	Release - C.F.S. River Power	Release - C.F.S. River Spill	Release - C.F.S. River Outlet	Pumping Plant	Evap. - C.F.S.	Evap. - Inches	Precip Inches
		289.0									
1	384.79	286.8	-2.2	540	1,077	1	499	71	11	0.06	0.33
2	384.38	284.5	-2.3	386	961	3	499	62	0	0.00	0.00
3	384.01	282.5	-2.0	383	854	0	498	57	2	0.01	0.00
4	383.62	280.4	-2.1	429	934	1	498	64	2	0.01	0.00
5	383.26	278.4	-2.0	612	1,031	2	497	65	5	0.03	0.00
6	382.92	276.6	-1.8	578	943	2	497	66	0	0.00	0.01
7	382.61	274.9	-1.7	728	1,003	2	496	66	0	0.00	0.60
8	382.44	274.0	-0.9	1,056	964	2	496	54	0	0.00	1.24
9	382.33	273.4	-0.6	988	735	0	496	55	0	0.00	0.00
10	382.09	272.1	-1.3	822	922	0	496	54	0	0.00	0.00
11	381.82	270.7	-1.4	551	723	2	495	55	0	0.00	0.00
12	381.54	269.2	-1.5	674	870	2	495	56	0	0.00	0.01
13	381.32	268.0	-1.2	763	798	1	495	57	0	0.00	0.01
14	381.03	266.5	-1.5	462	686	0	494	57	0	0.00	0.01
15	380.62	264.3	-2.1	499	1,017	0	494	54	16	0.09	0.00
Totals			-24.7	9,471	13,518	18	7,445	893	36	0.20	2.21
Acre-Feet			-24,670	18,786	26,813	36	14,767	1,771	71		

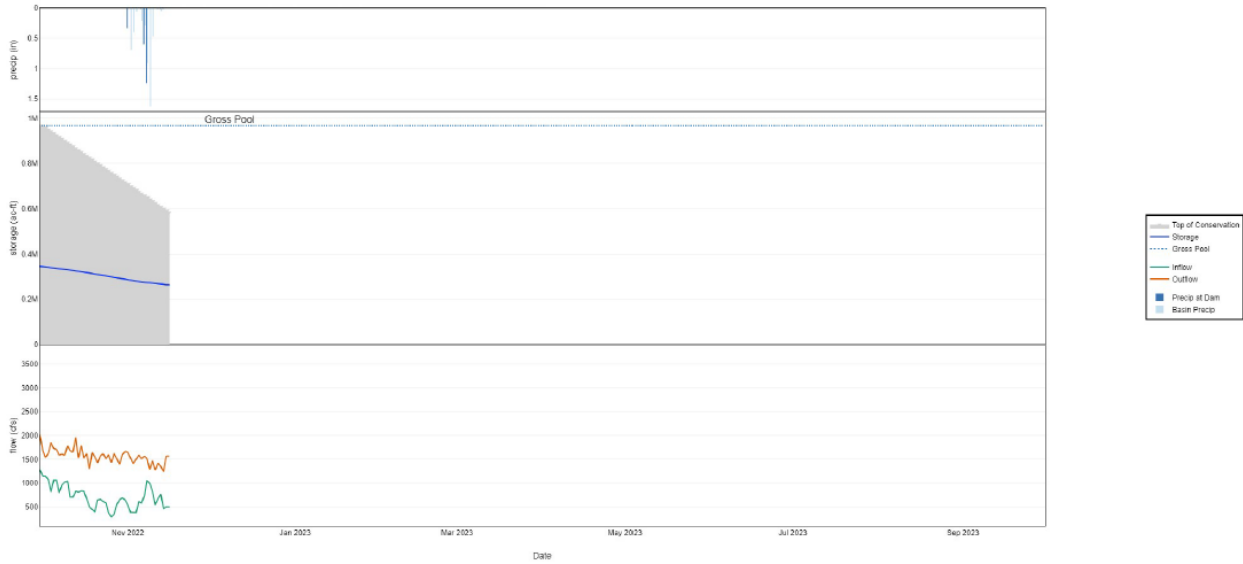
* Computed inflow is the sum of change in storage, releases, pumping and evaporation

Summary: Release (acre-feet)

Power	26,813
Spill	36
Outlet	14,767
Pumping Plant	1,771
Total Releases	43,387

Summary: Precipitation (Month/Inches)

This Month 2.21
October 1, 2022 to date 2.21



Folsom Dam & Lake – American River Basin
2022-11-16T09:06:27-0800

Isobath 10/1–10/31 (Mean Daily Temperature, Release, Storage, Unit Shutter Position/Load Percentage)

MDT = Mean Daily Temperature (°F)

USP/LP = Unit Shutter Position/Load Percentage

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/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
Sep	66.0	60.0	63.5	65.4	66.0	66.9	75.1	2641				
10/01	67.4	57.4	64.6	65.1	66.5	67.3	68.4	1550	344	M 19	M 39	B 43
10/02	67.7	57.4	63.6	65.4	66.2	66.8	66.1	1535	343	M 38	M 7	B 56
10/03	67.2	57.6	64.0	65.7	66.6	67.2	68.0	1538	342	M 1	M 49	B 51
10/04	67.2	58.1	64.6	65.9	67.0	67.7	69.5	1523	340	M 31	M 19	B 50
10/05	67.5	57.7	63.9	65.7	66.8	67.7	72.1	1513	338	M 1	M 44	B 55
10/06	67.6	58.9	63.6	66.3	67.4	68.2	73.7	1513	336	M 28	M 5	B 67
10/07	67.2	58.3	64.1	65.9	67.0	68.0	74.0	1507	335	M 1	M 35	B 65
10/08	66.6	58.1	64.1	65.8 ?	66.9	67.9	74.6	1517	334	M 33	M 1	B 66
10/09	66.2	57.9	64.0	65.6 ?	66.6	67.6	70.9	1504	333	M 2	M 32	B 66
10/10	65.8	57.7	64.0	65.8 ?	66.7	67.3	71.6	1499	331	M 32	M 1	B 68
10/11	65.4	58.1	64.3	65.9	66.7	67.4	70.3	1509	329	M 7	M 29	B 64
10/12	65.1	58.3	64.3	65.7	66.4	67.2	67.2	1512	327	M 27	M 5	B 68
10/13	64.8	58.5	63.5	65.6	66.2	66.8	65.4	1503	325	M 13	M 24	B 63
10/14	64.4	58.2	64.3	65.5	66.3	66.8	67.3	1401	323	M 25	M 1	B 74
10/15	64.1	57.3	64.6	65.6	66.2	66.6	63.8	1413	321	M 14	M 20	B 67
10/16	64.2 ?	57.3	64.5	65.2	65.7	66.0	63.5	1410	320	M 7	M 23	B 70
10/17	63.3 ?	56.3	64.3	65.4	65.6	65.9	62.7	1404	318	M 19	M 12	B 69
10/18	62.6 ?	56.4	64.9	65.7	66.2	66.5	66.6	1418	316	M 21	B 14	M 65
10/19	62.2	56.4	65.3	65.6	66.1	66.8	67.8	1418	314	B 55	B 23	B 22
10/20	61.9	57.0	63.2	66.0	66.3	66.5	69.1	1436	311	B 1	B 97	B 2
10/21	62.0	56.5	62.1	65.5	66.1	66.7	65.5	1439	310	B 1	B 1	B 98
10/22	61.9	56.5	61.7	64.6	65.1	65.7	64.5	1443	308	B 0	B 99	B 1
10/23	59.6	53.1	61.7	63.4	63.1	63.4	59.5	1450	306	B 0	B 99	B 1
10/24	57.5	52.4	61.6	62.4	62.3	62.1	59.3	1445	304	B 0	B 99	B 1
10/25	56.4	52.7	61.9	61.7	61.8	62.6	60.5	1435	301	B 8	B 85	B 7
10/26	55.9	52.4	61.2	61.5	61.4	61.5	57.8	784	299	B 1	B 50	B 49
10/27	55.1	52.0	61.8	61.1	61.1	60.9	56.0	1390	296	B 1	B 52	B 48
10/28	54.6	51.5	61.5	61.0	60.6	60.5	57.0	1421	294	B 47	B 41	B 12
10/29	54.3	51.6	60.5	61.0	60.8	60.6	57.5	1355	293	B 1	B 52	B 47

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/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
10/30	54.1	51.3	59.9	61.0	60.9	60.7	58.5	1414	291	B 1	B 52	B 48
10/31	53.7	51.0	60.0	60.6	60.3	60.3	57.7	1448	289	B 59	B 40	B 1
Oct	62.4	55.9	63.1	64.4	64.9	65.4	65.4	1440				
							Total AF	88556				

Legend:

? = 1-9 hours of data missing

! = 10 or more hours of data missing

= Station out of service

October Monthly Averages

A = All Shutters Lowered

T = Top Shutter Raised

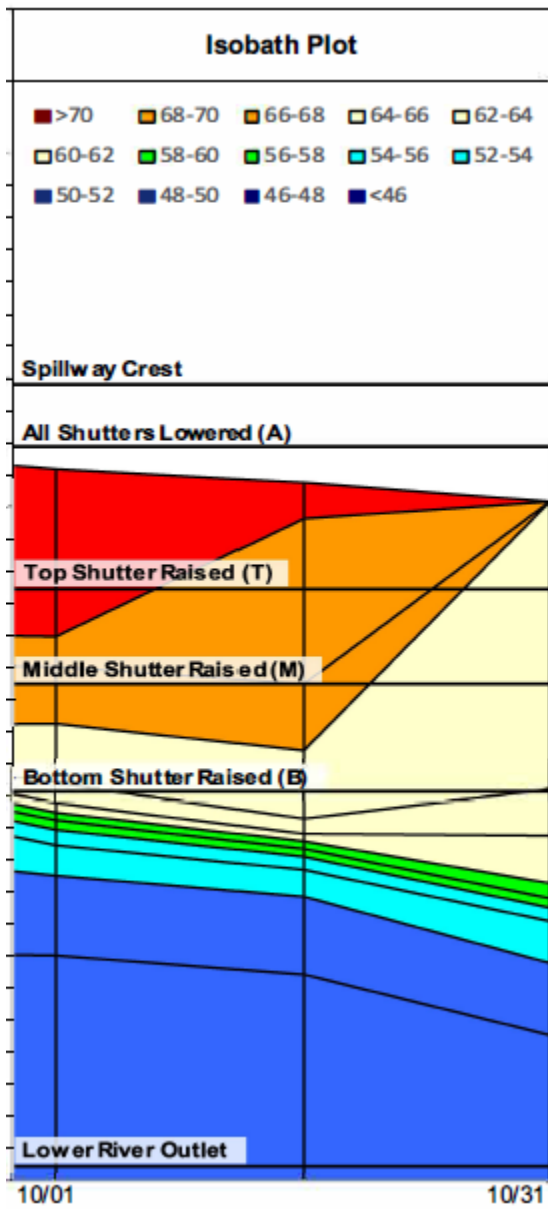
M = Middle Shutter Raised

B = Bottom Shutter Raised

O = Unit Outage

Notes:

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



Isobath Plot 10/01-10/31

Isobath 11/1–11/15 (Mean Daily Temperature, Release, Storage, Unit Shutter Position/Load Percentage)

MDT = Mean Daily Temperature (°F)

USP/LP = Unit Shutter Position/Load Percentage

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/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
Oct	62.4	55.9	63.1	64.4	64.9	65.4	65.4	1440				
11/01	53.0 !	50.5	59.5	60.1	59.5	59.2	53.5	1454	287	B 32	B 65	B 2
11/02	- !	50.3	59.0	59.2	58.6	58.3	51.0	1441	285	B 31	B 68	B 1
11/03	- !	50.8	58.5	58.5	57.9	57.6	48.3	1437	282	B 38	B 61	B 2
11/04	- !	50.1	58.5	58.3	57.6	57.3	50.4	1416	280	B 39	B 60	B 2
11/05	- !	49.7	58.7	58.1	57.4	57.2	54.6	1419	278	B 44	B 55	B 1
11/06	- !	51.0	58.4	58.2	58.1	58.1	54.4	1405	277	B 37	B 62	B 2
11/07	- !	50.7	58.0	58.0	57.3	57.1	51.7	1427	275	B 46	B 53	B 2
11/08	- !	50.0	57.9	57.5	56.4	56.0	48.8	1433	274	B 43	B 55	B 2
11/09	- !	48.8	57.2	57.2	56.6	56.0	49.1	1281	273	B 45	B 53	B 2
11/10	- !	48.5	57.7	56.9	56.1	55.9	46.4	1308	272	B 48	B 42	B 10
11/11	- !	47.6	57.6	56.8	55.8	55.4	47.0	1309	271	B 44	B 54	B 2
11/12	- !	47.7	57.5	56.8	55.9	55.6	48.5	1320	269	B 51	B 47	B 1
11/13	- !	47.6	57.7	56.7	55.8	55.4	48.6	1310	268	B 1	B 97	B 1
11/14	- !	46.4	57.3	56.7	55.6	55.1	46.5	1320	266	B 96	B 2	B 2
11/15	- !	45.5	57.2	56.7	55.6	55.2	50.4	1314	264	B 19	B 49	B 32
11/15												
11/16												
11/17												
11/19												
11/20												
11/21												
11/22												
11/23												
11/24												
11/25												
11/26												
11/27												
11/28												
11/29												
11/30												
-												

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/LP Unit 1	USP/LP Unit 2	USP/LP Unit 3
Nov	53.0	49.0	58.0	57.7	56.9	56.6	49.9	1373				
								Total AF	40847			

Legend:

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November Monthly Averages

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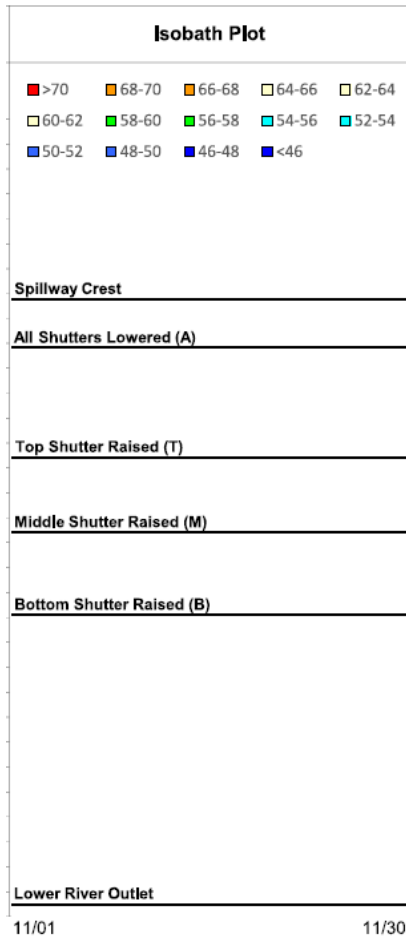
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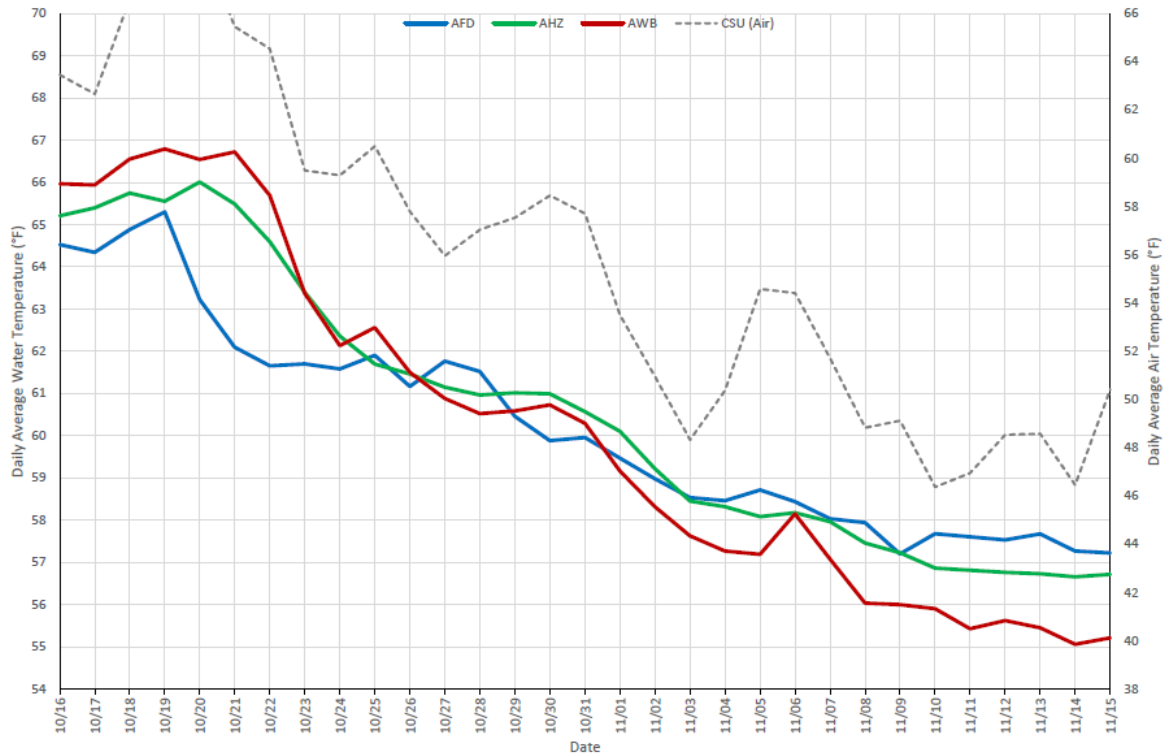
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Notes:

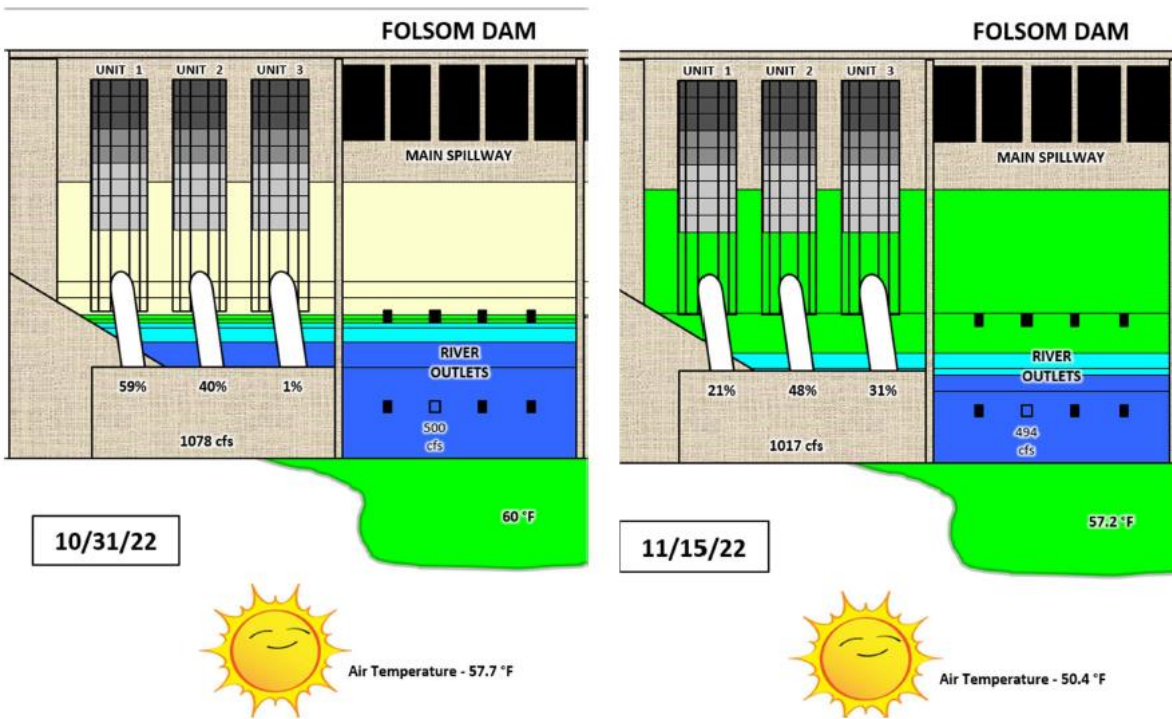
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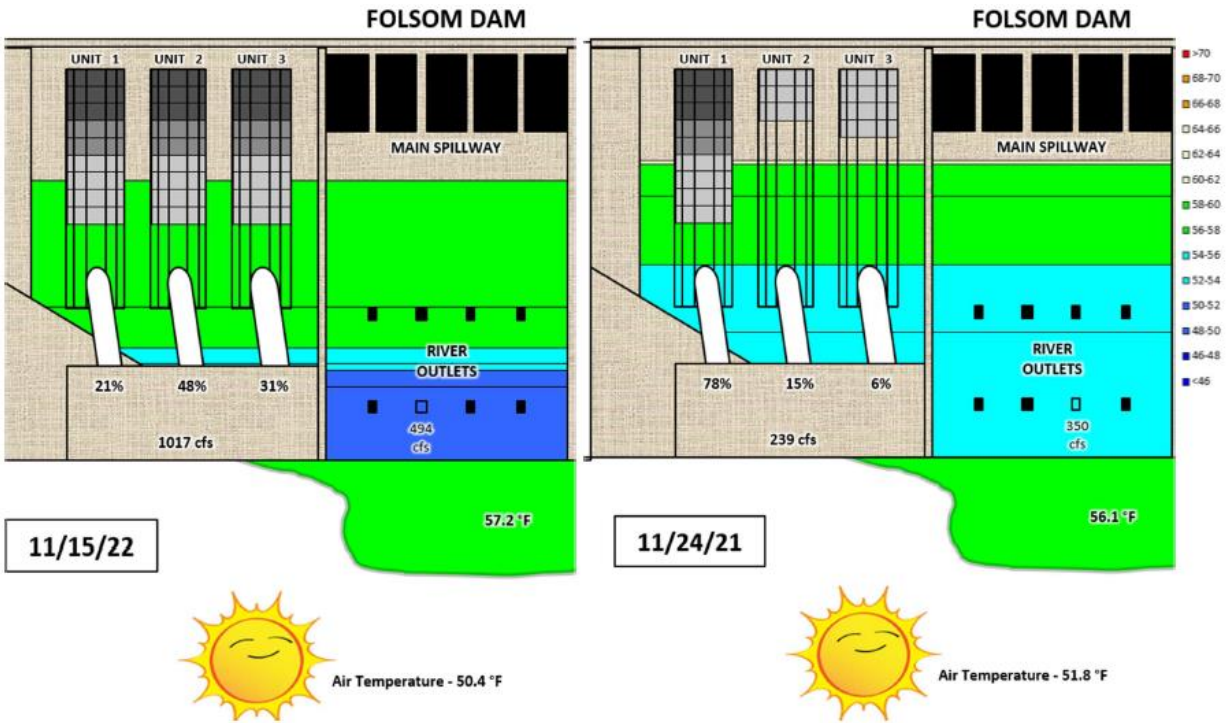
Isobath Plot 11/01-11/30



American River Daily Average Water and Air Temperatures (2022)



Graphic showing Folsom Dam on 10/31/22 with an air temperature of 57.5 °F and 11/15/22 with an air temperature of 50.4 °F

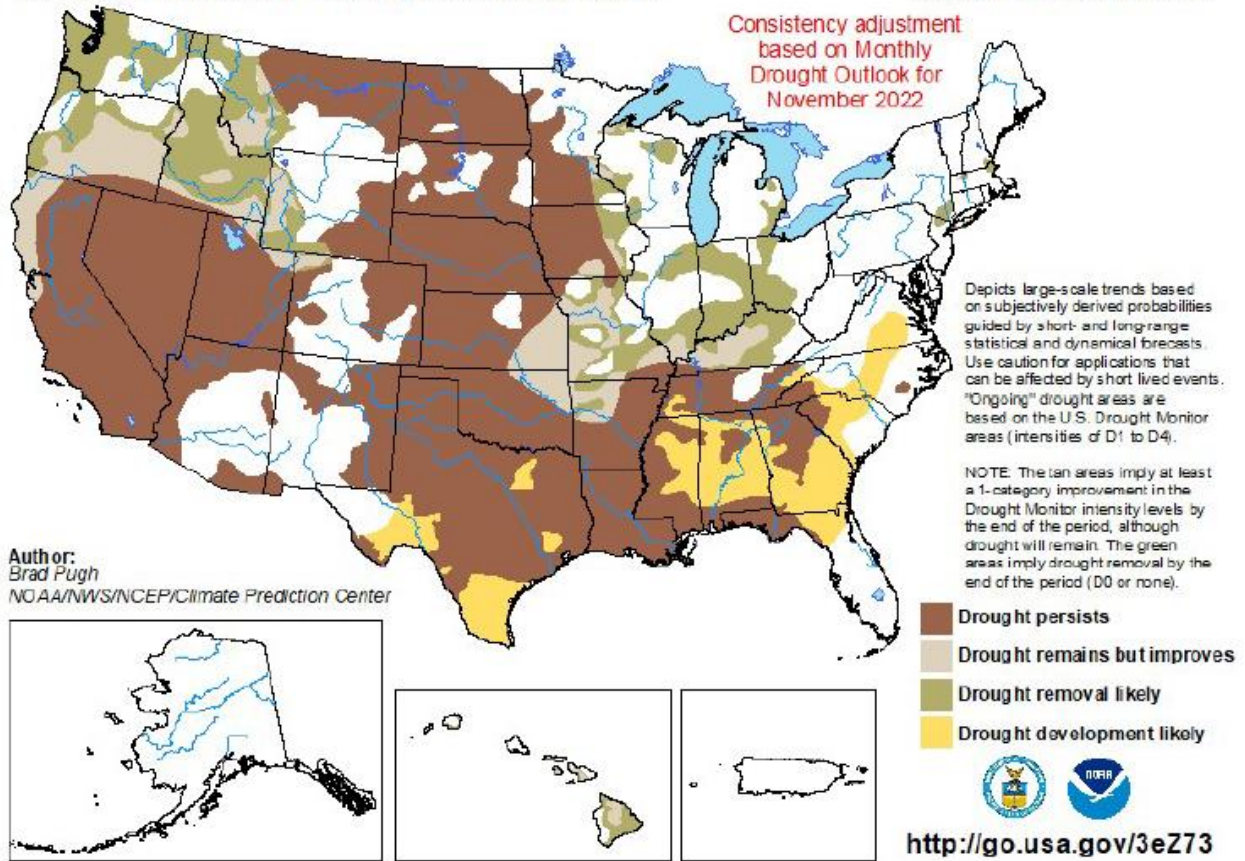


Graphic showing Folsom Dam on 11/15/22 with an air temperature of 50.4 °F and 11/24/22 with an air temperature of 51.8 °F

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for November 1, 2022 - January 31, 2023
Released October 31, 2022



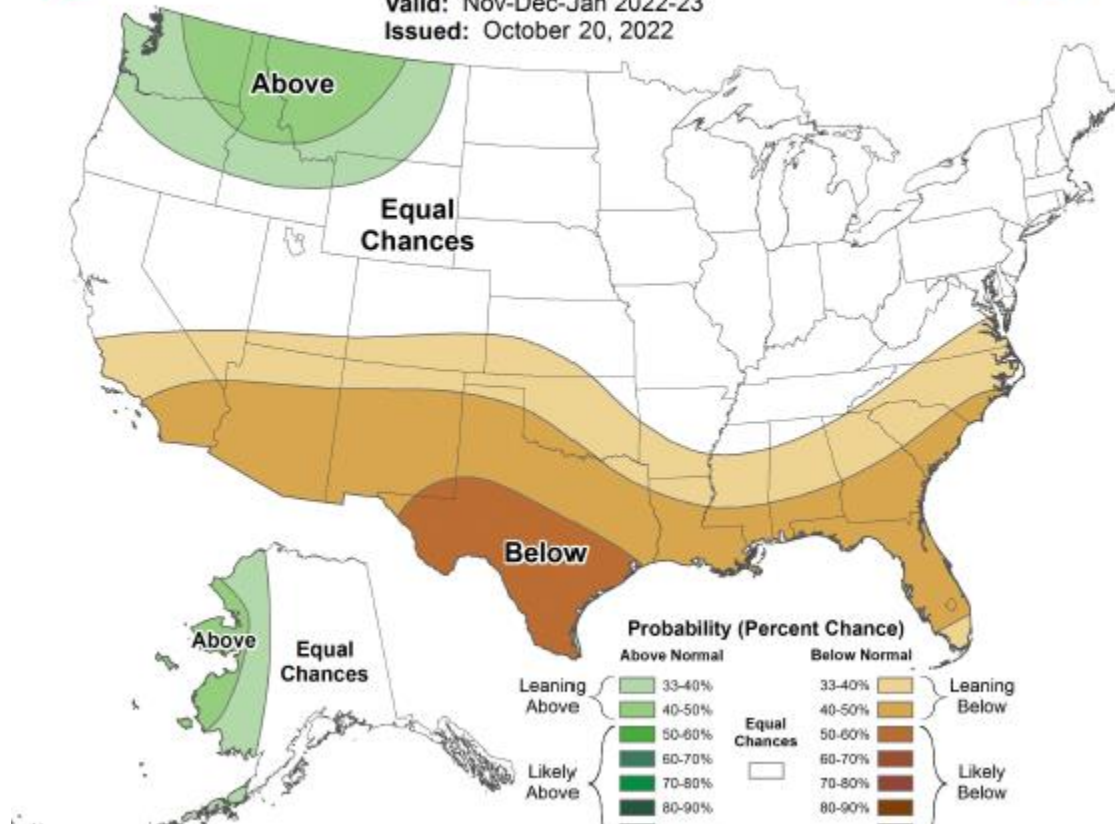
Map – U.S. Seasonal Drought Outlook, Drought Tendency During the Valid Period, Valid for November 1, 2022 – January 31, 2023; Released October 31, 2022



Seasonal Precipitation Outlook



Valid: Nov-Dec-Jan 2022-23
Issued: October 20, 2022



Map – Seasonal Precipitation Outlook; Valid Nov-Dec-Jan 2022-23; Issued October 20, 2022

American River Summary Conditions – November (On-going)

Storage/Release Management Conditions

- Releases are currently at 1,300 cfs
 - November 9, 2022, from 1,400 cfs to 1,300 cfs

Temperature Management

- Top Shutters: Units 1, 2, and 3 -- raised
- Middle Shutters: Units 1, 2, and 3 -- raised
- Bottom Shutters: Units 1, and 2 – down and Unit 3 --raised

Folsom Shutter Configuration and Changes

Drawing water from Units 1, 2, and 3

American River 90% Outlook

October 90% Exceedance

Federal End of the Month Storage/Elevation (TAF/Feet)

Facility	Oct	Nov	Dec	Jan	Feb	Mar
Folsom Storage	300	266	239	240	286	397
Folsom Elevation	387	381	376	376	385	403

Monthly River Release (TAF/cfs)

Facility	Oct	Nov	Dec	Jan	Feb	Mar
American TAF	86	77	80	61	57	62
American cfs	1400	1302	1303	1000	1033	1002

American River Baseflow Table

Month	Index Used for Index-based MRR	Index Based MRR	RDPA-based MRR for fall-run Chinook salmon (applicable in Jun and Feb)	RDPB-based MRR for steelhead (applicable Feb to May)	Controlling MRR	Actual Average Monthly Nimbus release ¹
October	May ARI ² (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	1,462 cfs
November	May ARI ² (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	
December	May ARI ² (50% exceedance)	1,326 cfs	Not applicable	Not applicable	1,326 cfs	

MRR= Minimum Release Requirements; RDPA= Redd Dewatering Protective Adjustment; ARI= American River Index; SRI= Sacramento River Index

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 critical CVP system wide ops, MRR 90% was considered and implemented.