

Sacramento River Temperature Task Group Meeting

December 2, 2019

Update

- Hydrology & Operations update (information is available on web-pages)
 - Daily Operation
 - Summary
 - 8-Station Index and Snow Water Content
 - Operations Outlook
 - Mean Daily Water Temperatures
 - Redding 10-Day Forecasted Air Temperatures
 - Sac River Gage temp plot and air temp plot
 - Lake Shasta Isothermobath Plot
 - Lake Shasta Isotherm Statistics Plots
 - Lake Shasta Current TCD Configuration
 - Trinity Lake Isothermobath Plot
 - Whiskeytown Lake Isothermobath Plot

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

DAILY CVP WATER SUPPLY REPORT

DECEMBER 1, 2019

RUN DATE: December 2, 2019

RESERVOIR RELEASES IN CUBIC FEET/SECOND

RESERVOIR	DAM	WY 2019	WY 2020	15 YR MEDIAN
TRINITY	LEWISTON	295	294	310
SACRAMENTO	KESWICK	3,989	5,016	4,433
FEATHER	OROVILLE (SWP)	1,750	3,000	2,050
AMERICAN	NIMBUS	1,870	2,354	1,806
STANISLAUS	GOODWIN	220	1,693	252
SAN JOAQUIN	FRIANT	375	379	173

STORAGE IN MAJOR RESERVOIRS IN THOUSANDS OF ACRE-FEET

RESERVOIR	CAPACITY	15 YR AVG	WY 2019	WY 2020	% O 15 YR AVG
TRINITY	2,448	1,372	1,451	1,928	141
SHASTA	4,552	2,359	2,177	3,211	136
FOLSOM	977	382	331	493	129
NEW MELONES	2,420	1,369	1,768	2,002	146
FED. SAN LUIS	966	437	439	251	57
TOTAL NORTH CVP	11,363	5,920	6,166	7,885	133
MILLERTON	520	244	296	232	95
OROVILLE (SWP)	3,538	1,602	1,028	1,925	120

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

RESERVOIR	CURRENT WY 2020	WY 1977	WY 1983	15 YR AVG	% O 15 YR AVG
TRINITY	20	19	103	55	36
SHASTA	454	472	666	490	93
FOLSOM	142	84	508	148	96
NEW MELONES	79	----	228	79	100
MILLERTON	125	53	275	103	121

ACCUMULATED PRECIPITATION FOR WATER YEAR TO DATE IN INCHES

RESERVOIR	CURRENT WY 2020	WY 1977	WY1983	AVG (N YRS)	% OF AVG	LAST 24 HRS
TRINITY AT FISH HATCHERY	2.40	1.22	11.16	6.56 (57)	37	0.92
SACRAMENTO AT SHASTA DAM	3.93	1.63	15.64	11.42 (62)	34	1.07
AMERICAN AT BLUE CANYON	6.81	3.19	25.39	12.29 (44)	55	2.71
STANISLAUS AT NEW MELONES	2.92	----	11.20	4.86 (41)	60	1.02
SAN JOAQUIN AT HUNTINGTON LK	3.75	1.80	19.80	6.63 (44)	57	0.91

Upper Sacramento River Summary Conditions – November (On-going):

Storage/Release Management Conditions:

- Reservoir Inflow Uncertainty: Meteorological projections: Shorter term forecasts (8-14 day) suggest above normal chances of precipitation
- Longer term forecasts (one-month outlook) suggest equal chance of below/above normal precipitation
- Current release from Keswick Dam: 5,000 cfs storage management
- Weather related power generation unit outages have resulted in some minor release instability downstream of Keswick Dam
- Current storm event is cold and significant amounts of inflow are not expected. More storms are forecasted with warmer conditions that may yield more inflow and runoff.

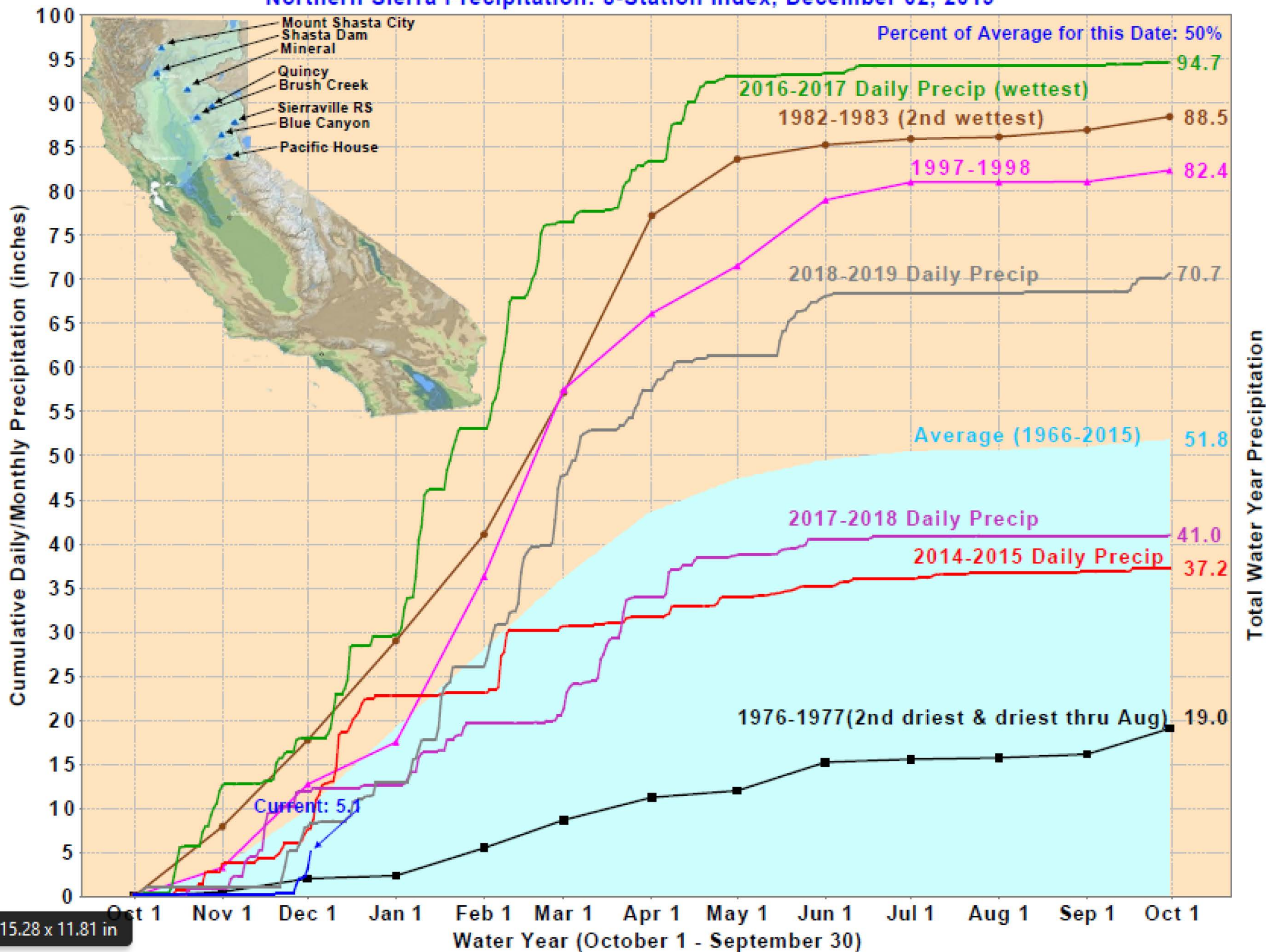
Temperature Management:

- Temperature management: Active management
- Selective withdrawal: 5 PRG TCD gates, expect this configuration to remain until winter ambient conditions and amenable storage elevations allow for the opportunity to conserve cold water.
- Meteorological Uncertainty: Shorter term forecasts (8-14 day) suggest above normal temperatures
- Longer term forecasts (one-month outlook) suggest above normal chances of warmer temperatures

Resources:

- Excellent link for short term precipitation forecasts, overlay with burn areas, debris flow potential, etc: <https://www.cnrfc.noaa.gov/>
- Comprehensive Upper Sacramento fishery information: <https://www.calfish.org/ProgramsData/ConservationandManagement/CentralValleyMonitoring/CDFWUpperSacRiverBasinSalmonidMonitoring.aspx>

Northern Sierra Precipitation: 8-Station Index, December 02, 2019



15.28 x 11.81 in

CVP Northern System Operation Outlooks

DRAFT November 2019

90% Runoff Exceedance Outlook:

Inflow based on DWR B120 90%; Historical Inflows Oct and future months

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

		Nov	Dec	Jan	Feb	Mar	Apr
Shasta	3271	3214	3177	3257	3473	3792	3855
Elev.		1017	1015	1013	1028	1040	1042

Monthly River Releases (cfs)

Sacramento	5100	5000	4000	3250	4000	6500
Clear Creek	200	200	200	200	200	218

Trinity Diversions (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr
Carr Power Plant	31	21	15	20	43	40
Spring Creek PP	20	12	10	20	50	10

Please note:

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions.

CVP operational forecasts or outlooks consider general system-wide dynamics and do not necessarily address specific watershed/tributary details.

CVP releases represent monthly averages.

CVP operations are updated monthly as new hydrology information is made available December through May.

50% Runoff Exceedance Outlook:

Inflow based on DWR B120 50%; Historical Inflows Oct and future months

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

		Nov	Dec	Jan	Feb	Mar	Apr
Shasta	3271	3174	3257	3494	3765	4080	4273
Elev.		1015	1019	1028	1039	1051	1057

Monthly River Releases (cfs)

Sacramento	5100	5000	6000	10000	10000	8000
Clear Creek	200	200	240	200	200	218

Trinity Diversions (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr
Carr Power Plant	26	9	0	67	100	81
Spring Creek PP	20	12	19.8	100	125	60

Estimated CVP Operations 90% Exceedance

Storages

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

		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Trinity	1969	1932	1914	1911	1928	1952	2011	2045	1943	1824	1668	1515	1474
	Elev.	2336	2335	2335	2336	2338	2342	2344	2337	2328	2317	2304	2301
Whiskeytown	205	206	206	206	206	206	238	238	238	238	238	238	206
	Elev.	1199	1199	1199	1199	1199	1209	1209	1209	1209	1209	1209	1199
Shasta	3271	3214	3177	3257	3473	3792	3855	3762	3422	2955	2595	2347	2125
	Elev.	1017	1015	1013	1028	1040	1042	1039	1026	1006	989	976	964
Folsom	598	472	386	336	347	399	477	505	454	402	342	295	165
	Elev.	413	401	393	395	403	414	417	411	403	394	386	358
New Melones	1999	1982	1970	1964	1963	1961	1860	1748	1658	1563	1485	1439	1385
	Elev.	1051	1050	1049	1049	1049	1039	1029	1020	1010	1001	996	990
San Luis	332	323	524	679	609	560	479	343	144	38	37	130	235
	Elev.	459	498	523	519	525	514	498	479	461	459	480	512
Total		8128	8176	8354	8527	8871	8921	8641	7858	7019	6364	5964	5589

Trinity	TAF	18	18	18	17	18	36	92	47	28	53	52	23
	cfs	300	300	300	300	300	600	1,498	783	450	857	870	373
Clear Creek	TAF	12	12	12	11	12	13	13	17	9	9	9	12
	cfs	200	200	200	200	200	218	216	288	150	150	150	200
Sacramento	TAF	303	307	246	180	246	387	430	654	738	615	506	461
	cfs	5100	5000	4000	3250	4000	6500	7000	11000	12000	10000	8500	7500
American	TAF	165	138	111	91	119	124	143	119	86	92	90	166
	cfs	2781	2250	1800	1636	1943	2088	2332	2000	1403	1500	1505	2704
Stanislaus	TAF	30	28	22	12	12	91	76	12	12	12	12	52
	cfs	500	450	358	221	200	1537	1243	200	200	200	200	842

Trinity Diversions (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Carr PP	31	21	15	20	43	40	17	105	100	101	100	24
Spring Crk. PP	20	12	10	20	50	10	10	90	90	90	90	45

Delta Summary (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Tracy	75	265	230	45	49	45	46	50	166	232	265	265
USBR Banks	0	0	0	0	0	0	0	0	11	11	11	0
Contra Costa	18.4	18.3	14.0	14.0	12.7	12.7	12.7	9.8	11.1	12.7	14.0	16.8
Total USBR	93	283	244	59	62	57	59	60	188	256	290	282
COA Balance	-39	-6	-6	-36	-30	-44	-73	-9	-9	-8	124	302
Vernalis	95	91	85	82	92	151	156	97	103	104	92	99
Vernalis	1593	1475	1383	1482	1501	2538	2543	1629	1680	1697	1545	1606
Old/Middle River Std.												
Old/Middle R. calc.	-3,399	-6,982	-4,991	-1,629	-2,729	-575	-567	-2,132	-2,816	-4,269	-6,703	-7,693
Computed DOI	6472	4506	8687	11400	11403	10506	7597	7094	4994	3497	3009	3026
Excess Outflow	0	0	2684	0	0	0	0	0	0	0	0	0
% Export/Inflow	37%	66%	44%	15%	23%	10%	12%	22%	28%	43%	60%	68%
% Export/Inflow std.	65%	65%	65%	45%	35%	35%	35%	35%	65%	65%	65%	65%

Hydrology

Water Year Inflow (TAF)	Trinity	Shasta	Folsom	New Melones
Year to Date + Forecasted % of mean	598 50%	3,535 64%	1,219 45%	453 43%

CVP actual operations do not follow any forecasted operation or outlook; actual operations are based on real-time conditions.

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CVP releases or export values represent monthly averages.

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Estimated CVP Operations 50% Exceedance

Storages

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

		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Trinity	1969	1955	1985	2049	2094	2123	2218	2164	2001	1852	1701	1552	1517
	Elev.	2338	2340	2344	2347	2349	2356	2352	2341	2330	2319	2307	2305
Whiskeytown	205	206	206	206	206	206	238	238	238	238	238	238	206
	Elev.	1199	1199	1199	1199	1199	1209	1209	1209	1209	1209	1209	1199
Shasta	3271	3174	3257	3494	3765	4080	4273	4319	4127	3657	3263	3013	2861
	Elev.	1015	1019	1028	1039	1051	1057	1059	1052	1035	1019	1008	1001
Folsom	598	487	445	458	581	737	862	952	806	734	631	584	505
	Elev.	415	409	411	426	443	455	464	450	443	432	427	417
New Melones	1999	1997	1971	1968	1979	1956	1947	1992	1966	1890	1824	1781	1739
	Elev.	1052	1050	1049	1050	1048	1047	1052	1049	1042	1036	1032	1028
San Luis	332	323	524	714	845	960	813	575	401	197	74	90	196
	Elev.	441	481	507	525	542	512	470	424	381	366	378	408
Total		8141	8387	8889	9469	10062	10351	10239	9539	8567	7730	7258	7023

Monthly River Releases (TAF/cfs)

Trinity	TAF	18	18	18	17	18	28	258	126	68	53	52	23
	cfs	300	300	300	300	300	477	4,189	2,120	1,102	857	870	373
Clear Creek	TAF	12	12	15	11	12	13	13	17	9	9	9	12
	cfs	200	200	240	200	200	218	216	288	150	150	150	200
Sacramento	TAF	303	307	369	555	615	476	430	595	768	676	535	430
	cfs	5100	5000	6000	10000	10000	8000	7000	10000	12500	11000	9000	7000
American	TAF	161	154	138	139	154	297	369	362	184	192	149	154
	cfs	2701	2500	2250	2500	2500	5000	6000	6091	3000	3127	2500	2500
Stanislaus	TAF	30	61	49	56	93	83	96	56	18	18	18	49
	cfs	500	1000	800	1000	1521	1400	1555	940	300	300	300	797

Trinity Diversions (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Carr PP	26	9	0	67	100	81	9	131	99	100	99	23
Spring Crk. PP	20	12	20	100	125	60	10	120	90	90	90	45

Delta Summary (TAF)

	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Tracy	75	265	265	245	265	54	55	230	266	265	265	265
USBR Banks	0	0	0	0	0	0	0	0	22	22	22	0
Contra Costa	18.4	18.3	14.0	14.0	12.7	12.7	12.7	9.8	11.1	12.7	14.0	16.8
Total USBR	93	283	279	259	278	66	68	240	299	300	301	282
COA Balance	-33	-33	-33	-33	-33	-33	-33	63	-57	-57	14	14

Vernalis	TAF	95	152	154	280	330	161	219	130	83	74	77	127
Vernalis	cfs	1593	2480	2508	5034	5376	2701	3556	2184	1357	1211	1292	2066

Old/Middle River Std.													
Old/Middle R. calc.	cfs	-3,399	-8,158	-5,085	-4,967	-4,154	-694	-304	-4,161	-6,832	-8,722	-8,435	-8,326

Computed DOI		6472	8866	18203	27826	28419	20457	14852	9397	8004	5596	7094	4718
Excess Outflow		0	4360	12200	15615	17016	9060	3449	0	0	0	0	683
% Export/Inflow		37%	55%	29%	23%	21%	6%	8%	32%	41%	54%	52%	63%
% Export/Inflow std.		65%	65%	65%	45%	35%	35%	35%	35%	65%	65%	65%	65%

Hydrology

Water Year Inflow (TAF)	Trinity		Shasta		Folsom		New Melones
Year to Date + Forecasted % of mean	1043		4,985		2,539		1033
	86%		90%		93%		98%

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CVP releases or export values represent monthly averages.

CVP Operations are updated monthly as new hydrology information is made available December through May.

Northern CVP Water Temperature Report

November - 2019

Page	Description
1	- Mean Daily Water Temperature, Release Flow Rates and Air Temperatures with Monthly Averages
2	- Redding 10-Day Forecasted Air Temperatures
3	- Sacramento River Mean Daily Water Temperature, Air Temperature and 10-Day Forecasted Air Temperature Plot - Water Temperature Measuring Station Details - Temperature Control Point Details
4	- Shasta Lake Isothermobaths Plot
5	- Trinity Lake Isothermobaths Plot
6	- Whiskeytown Lake Isothermobaths Plot
x	- TCD Configuration (External Link)



All Data in this Report is Preliminary and Subject to Change

DATE	Mean Daily Water Temperatures (°F)														Mean Daily Release (CFS)			Mean Daily Air Temperatures (°F)					
	TCD ¹	SHD	SPP ¹	KWK	SAC	CCR	APR ⁴	BSF ²	JLF	BND	RDB	IGO	LWS	NFH ³	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB	LWS		
Oct	50.5	49.7	54.5	51.3	51.6	52.0	52.2	52.5	53.1	53.6	53.6	54.3	47.7	51.1	6166	1196	7247	62.7	57.8	61.0	-		
11/01	51.3	50.5	54.2	50.8	51.2	51.4	51.4	51.4	51.5	#	-	51.0	52.8	44.6	45.1	5891	541	6022	57.0	51.5	51.9	-	
11/02	51.4	50.8	54.1	51.1	51.3	51.5	51.5	51.5	51.7	#	-	51.6	52.8	44.5	46.0	5398	279	5741	59.0	51.8	54.4	-	
11/03	51.7	50.8	54.0	51.1	51.5	51.8	51.8	51.8	52.1	#	-	51.8	53.0	44.5	46.7	4936	152	5559	59.0	52.4	54.2	-	
11/04	#	-	50.6	54.1	51.3	51.7	52.0	52.0	52.1	!	-	52.2	53.1	44.7	47.1	4249	666	5343	64.0	55.9	57.8	-	
11/05	#	-	50.7	53.9	51.6	51.9	52.2	52.3	52.4	52.7	52.8	52.6	53.1	45.0	47.3	4380	466	5192	61.5	55.4	57.0	-	
11/06	#	-	50.7	53.9	51.4	51.9	52.3	52.5	52.7	53.2	53.3	53.2	53.0	45.2	47.7	4528	183	5091	62.0	56.6	58.9	-	
11/07	#	-	51.1	53.6	51.3	51.6	51.9	52.0	52.2	52.6	52.8	53.0	52.6	45.0	47.1	4373	280	5086	57.5	52.7	56.4	-	
11/08	#	-	51.0	53.4	51.4	51.7	52.0	52.1	52.1	52.4	52.5	52.5	52.4	44.8	46.8	4501	248	5088	61.0	53.8	58.0	-	
11/09	#	-	51.5	53.3	51.5	51.8	52.0	52.1	52.1	52.4	52.5	52.4	52.4	44.7	46.3	3855	345	5089	60.5	54.0	58.1	-	
11/10	#	-	51.1	53.3	51.6	52.0	52.4	52.5	52.6	52.9	53.0	52.7	52.9	44.9	47.0	5136	396	5091	↑	65.0	60.7	60.9	-
11/11	#	-	51.2	53.6	51.7	52.3	52.8	53.1	53.3	53.8	53.9	53.7	53.1	45.3	47.3	4721	139	5091	↑	70.0	64.0	65.9	-
11/12	#	-	51.2	53.3	51.7	52.0	52.3	52.6	52.9	53.5	53.7	53.9	52.8	45.7	47.6	4358	434	5081		61.0	55.4	58.2	-
11/13	#	-	51.1	53.4	51.8	52.1	52.3	52.4	52.6	52.9	53.0	53.1	52.7	45.6	47.3	4214	360	5071		59.5	53.3	57.3	-
11/14	#	-	51.1	53.2	51.7	52.1	52.4	52.6	52.8	53.2	53.3	53.1	52.7	46.0	47.9	4427	300	5063		59.5	54.9	56.2	-
11/15	#	-	51.5	53.1	51.8	52.2	52.6	52.9	53.1	53.6	53.7	53.7	53.0	46.5	49.0	4373	424	5110		59.5	56.3	58.1	-
11/16	#	-	? 51.6	53.7	51.9	52.2	52.6	52.7	52.8	53.2	53.3	53.5	52.8	46.3	48.7	4331	451	5116		63.5	57.8	62.3	-
11/17	#	-	? 51.3	53.6	52.1	52.4	52.8	52.9	53.0	53.2	53.3	53.2	52.9	45.9	47.8	4505	138	5111	↑	66.5	60.3	57.8	-
11/18	#	-	51.3	53.2	52.0	52.4	52.8	53.0	53.2	53.6	53.7	53.4	52.9	45.9	47.4	4354	185	5040		62.5	58.8	58.9	-
11/19	#	-	51.6	53.6	51.9	52.3	52.6	52.8	53.0	53.4	53.6	53.6	52.6	45.9	48.4	4735	235	5002		58.5	57.4	59.8	-
11/20	#	-	51.9	53.5	51.7	51.9	52.0	52.0	52.1	52.4	? 52.5	52.5	52.1	45.3	48.1	3783	619	5001		62.0	60.8	61.4	-
11/21	#	-	51.3	53.1	51.6	51.8	52.0	51.9	51.8	51.8	51.6	51.6	51.8	44.3	45.9	4361	295	5000		54.5	52.4	54.0	-
11/22	#	-	51.4	53.2	51.6	51.7	51.7	51.6	51.5	51.5	51.5	51.5	51.4	43.8	44.2	4375	205	4997		51.5	46.9	50.5	-
11/23	#	-	51.7	53.1	51.5	51.7	51.8	51.7	51.5	51.5	51.4	51.3	51.6	43.6	43.5	4504	174	5038		54.0	47.9	52.3	-
11/24	#	-	51.8	53.0	51.3	51.5	51.5	51.3	51.2	51.2	51.1	51.1	51.6	43.8	43.3	4478	130	5097		50.5	45.4	49.1	-
11/25	#	-	51.7	53.2	51.5	51.5	51.4	51.2	50.9	50.8	50.7	50.5	51.1	43.3	43.6	4171	412	5068		48.5	46.1	49.4	-
11/26	#	-	51.7	? 53.0	51.2	50.9	50.4	50.0	49.6	49.2	49.2	48.9	? 49.5	? 42.0	40.5	4367	363	5047		37.5	36.4	39.3	-
11/27																							
11/28																							
11/29																							
11/30																							
-																							
Nov	51.5	51.2	53.5	51.5	51.8	52.1	52.1	52.2	52.4	52.6	52.4	52.4	44.9	46.4	4512	324	5163	58.7	53.8	56.1	-		
Total CFS														117304	8420	134235							
Total AF														232668	16701	266250							
Legend														Notes									

Legend

Notes

- ? = 1-9 hours of data missing (Average includes estimations)
- ! = 10 or more hours of data missing (Average not calculated)
- # = Station out of service
- ↑ = Record high air temperature
- ↓ = Record low air temperature
- Monthly Averages

- ¹ Temperatures are weighted averages based on individual penstock flow and temperature
Highlighted cells in the TCD column indicate a TCD change was made on that day
- ² Current control point (see page 3 for more details)
- ³ NFH is only reported in October, November and December
- ⁴ APR = Airport Road. This is a virtual site interpolated linearly between CCR and BSF based on distance.

DATE	Redding (RDD) Daily Air Temperatures (°F)																																			
	Actual			Forecasted																																
	Previous Day			Current Day			1 Day			2 Days			3 Days			4 Days			5 Days			6 Days			7 Days			8 Days			9 Days			10 Days		
	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg	↓	↑	Avg			
11/01	30	75	52.5	36	79	57.5	42	80	61.0	44	82	63.0	45	80	62.5	45	81	63.0	44	81	62.5	44	78	61.0	47	82	64.5	46	71	58.5	42	70	56.0	43	70	56.5
11/02	34	80	57.0	36	82	59.0	44	84	64.0	45	83	64.0	46	81	63.5	44	79	61.5	45	78	61.5	44	77	60.5	43	74	58.5	46	68	57.0	47	68	57.5	42	71	56.5
11/03	36	82	59.0	39	84	61.5	40	84	62.0	40	82	61.0	42	82	62.0	42	77	59.5	44	75	59.5	43	75	59.0	50	78	64.0	50	76	63.0	47	71	59.0	45	71	58.0
11/04	37	81	59.0	39	84	61.5	42	81	61.5	43	82	62.5	43	81	62.0	44	79	61.5	45	80	62.5	46	80	63.0	51	81	66.0	46	75	60.5	44	73	58.5	41	70	55.5
11/05	39	89	64.0	40	82	61.0	44	82	63.0	46	81	63.5	44	81	62.5	44	83	63.5	46	83	64.5	46	80	63.0	44	81	62.5	44	72	58.0	42	70	56.0	42	67	54.5
11/06	40	83	61.5	43	82	62.5	44	81	62.5	43	82	62.5	43	81	62.0	44	83	63.5	47	82	64.5	44	79	61.5	43	78	60.5	43	71	57.0	42	66	54.0	44	66	55.0
11/07	42	82	62.0	39	83	61.0	41	84	62.5	43	84	63.5	44	83	63.5	45	83	64.0	44	78	61.0	42	77	59.5	45	74	59.5	46	65	55.5	47	62	54.5	45	61	53.0
11/08	39	76	57.5	39	83	61.0	39	83	61.0	42	84	63.0	47	83	65.0	45	78	61.5	43	77	60.0	41	74	57.5	44	71	57.5	42	73	57.5	45	69	57.0	41	66	53.5
11/09	39	83	61.0	39	83	61.0	42	84	63.0	46	83	64.5	45	78	61.5	41	75	58.0	40	71	55.5	39	69	54.0	49	74	61.5	42	68	55.0	40	68	54.0	43	67	55.0
11/10	40	81	60.5	40	83	61.5	47	83	65.0	42	79	60.5	40	77	58.5	39	70	54.5	38	69	53.5	37	73	55.0	44	69	56.5	42	68	55.0	37	65	51.0	37	62	49.5
11/11	43	87	65.0	43	85	64.0	42	78	60.0	42	79	60.5	41	74	57.5	39	72	55.5	38	75	56.5	40	74	57.0	44	72	58.0	45	65	55.0	38	67	52.5	39	65	52.0
11/12	54	86	70.0	54	76	65.0	42	76	59.0	41	71	56.0	38	72	55.0	39	77	58.0	42	80	61.0	42	76	59.0	42	65	53.5	37	61	49.0	35	60	47.5	34	60	47.0
11/13	45	77	61.0	44	76	60.0	41	71	56.0	39	71	55.0	40	78	59.0	41	82	61.5	41	78	59.5	38	70	54.0	48	67	57.5	36	67	51.5	37	64	50.5	37	66	51.5
11/14	44	75	59.5	49	71	60.0	40	70	55.0	40	77	58.5	42	81	61.5	42	79	60.5	40	71	55.5	37	69	53.0	43	70	56.5	39	67	53.0	37	63	50.0	38	60	49.0
11/15	48	71	59.5	54	71	62.5	40	80	60.0	42	84	63.0	42	81	61.5	41	71	56.0	38	69	53.5	36	70	53.0	39	68	53.5	41	68	54.5	40	66	53.0	38	65	51.5
11/16	48	71	59.5	49	80	64.5	42	84	63.0	42	80	61.0	40	71	55.5	38	68	53.0	37	69	53.0	33	69	51.0	37	68	52.5	38	66	52.0	39	61	50.0	38	60	49.0
11/17	47	80	63.5	47	84	65.5	42	80	61.0	40	70	55.0	40	68	54.0	36	70	53.0	34	70	52.0	33	71	52.0	36	66	51.0	38	60	49.0	34	57	45.5	33	62	47.5
11/18	46	87	66.5	50	78	64.0	41	69	55.0	44	66	55.0	38	66	52.0	32	68	50.0	33	71	52.0	33	72	52.5	39	62	50.5	40	60	50.0	34	57	45.5	39	57	48.0
11/19	47	78	62.5	46	68	57.0	42	67	54.5	34	66	50.0	32	68	50.0	32	71	51.5	33	71	52.0	34	65	49.5	46	65	55.5	36	58	47.0	35	57	46.0	38	55	46.5
11/20	45	72	58.5	57	68	62.5	35	67	51.0	32	68	50.0	32	71	51.5	33	71	52.0	33	65	49.0	31	62	46.5	35	52	43.5	34	53	43.5	32	54	43.0	34	55	44.5
11/21	57	67	62.0	50	67	58.5	33	69	51.0	33	72	52.5	34	70	52.0	34	66	50.0	31	59	45.0	31	55	43.0	35	55	45.0	36	52	44.0	34	55	44.5	37	60	48.5
11/22	41	68	54.5	37	69	53.0	33	73	53.0	34	74	54.0	36	66	51.0	31	55	43.0	28	51	39.5	25	52	38.5	35	55	45.0	34	57	45.5	33	54	43.5	37	56	46.5
11/23	35	68	51.5	35	73	54.0	34	72	53.0	35	64	49.5	30	53	41.5	29	47	38.0	26	50	38.0	26	52	39.0	32	56	44.0	39	55	47.0	35	59	47.0	39	61	50.0
11/24	35	73	54.0	32	72	52.0	34	62	48.0	29	51	40.0	29	48	38.5	25	47	36.0	21	49	35.0	23	48	35.5	39	53	46.0	43	57	50.0	40	62	51.0	39	58	48.5
11/25	32	69	50.5	35	59	47.0	31	48	39.5	34	47	40.5	28	47	37.5	25	48	36.5	22	49	35.5	27	50	38.5	42	55	48.5	41	60	50.5	41	59	50.0	41	57	49.0
11/26	35	62	48.5	33	41	37.0	31	44	37.5	26	47	36.5	23	46	34.5	28	46	37.0	30	50	40.0	35	56	45.5	40	58	49.0	42	59	50.5	39	58	48.5	40	57	48.5
11/27	31	44	37.5	31	47	39.0	26	48	37.0	24	47	35.5	27	45	36.0	30	50	40.0	35	56	45.5	34	59	46.5	40	57	48.5	44	54	49.0	39	54	46.5	37	55	46.0
11/28																																				
11/29																																				
11/30																																				
-																																				

[Web Links](#)

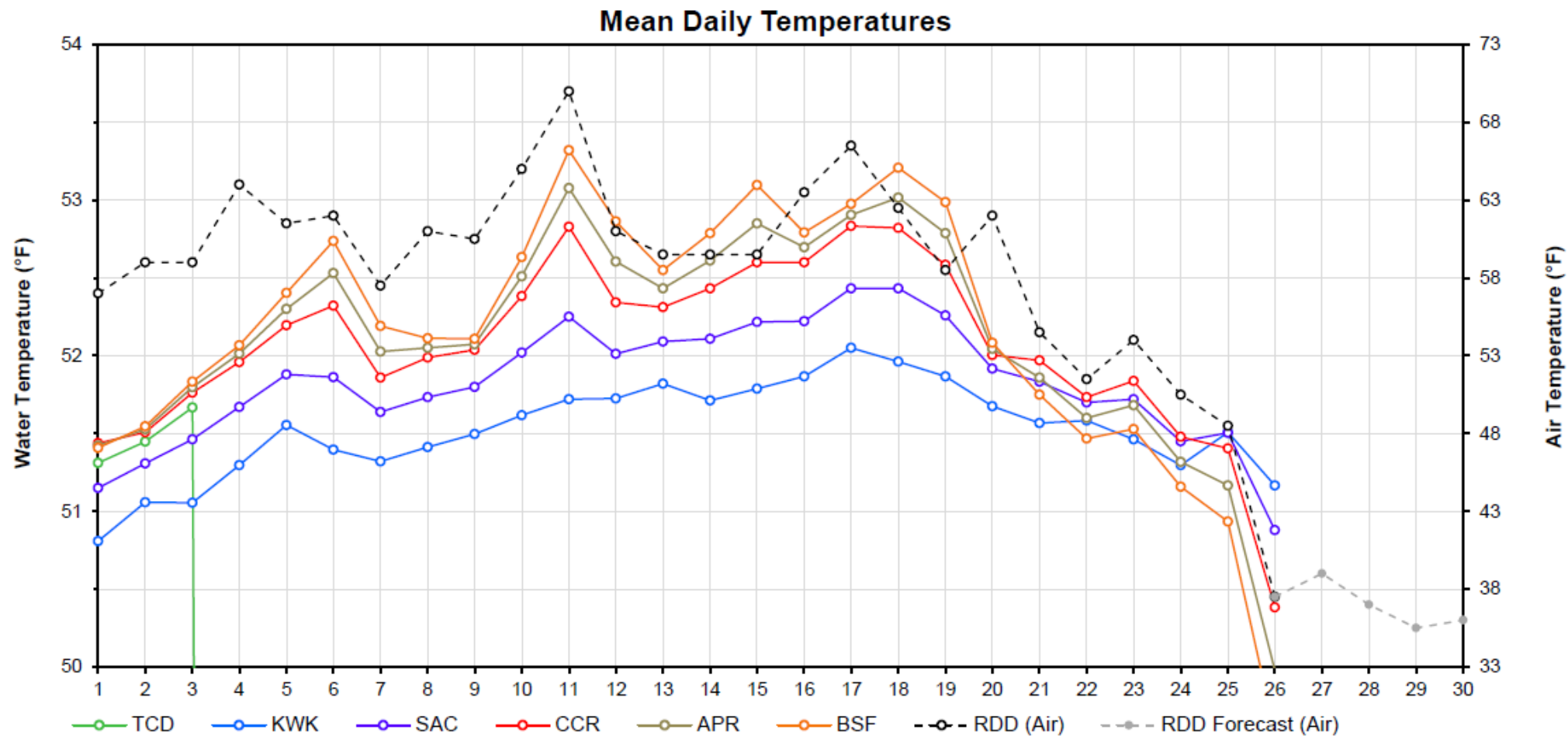
[Legend](#)

[10-Day Min/Max Forecast](#)

[Previous Days Min/Max Actuals](#)

NR = Forecasted temperatures not recorded

100 = Previous day actual temperatures in red and bolded indicate a record temperature for that date



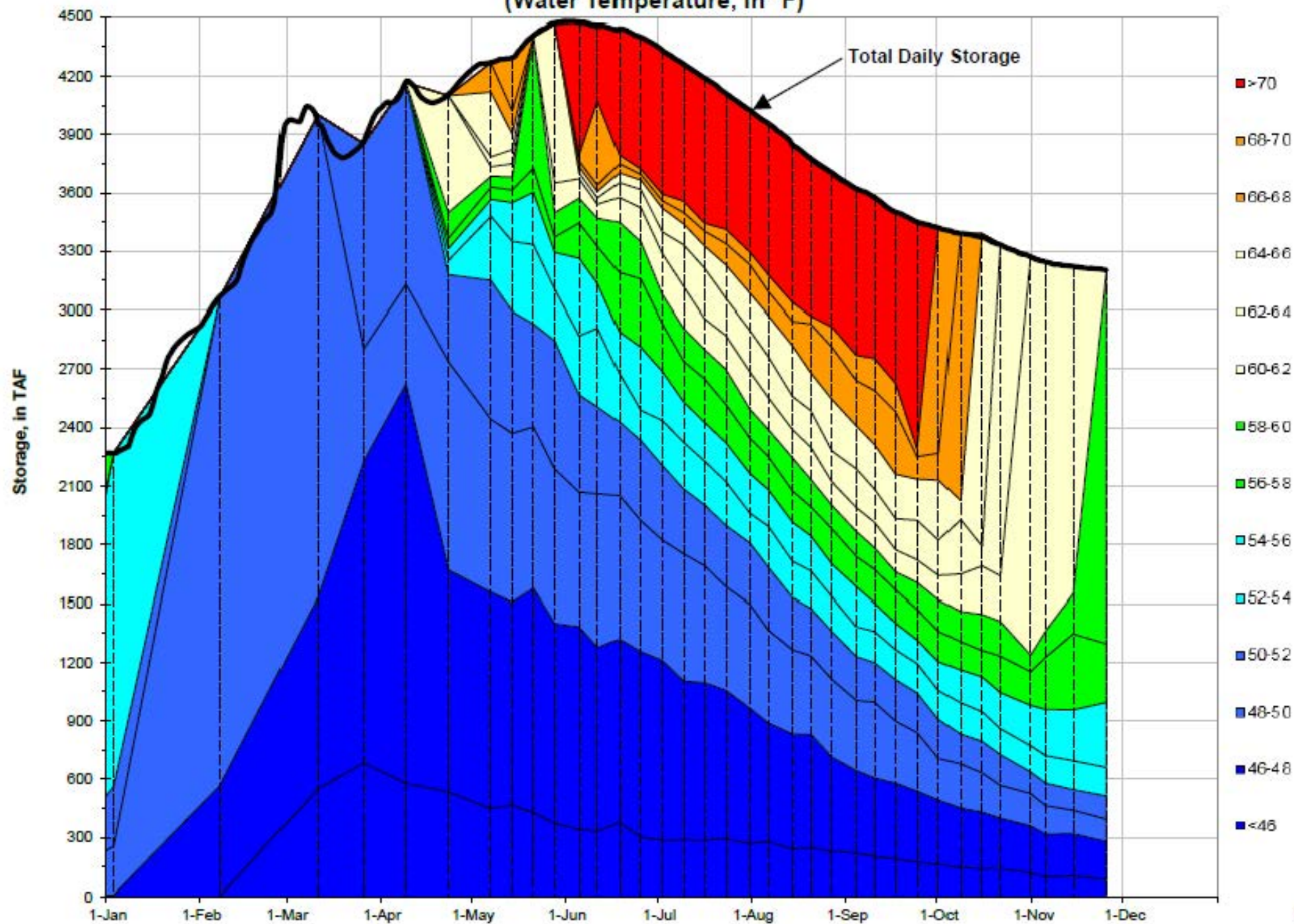
Station Details			
Code	Body of Water	Location ¹	CDEC Link
TCD	N/A	Shasta Power Plant	N/A
SHD	Sacramento River	0.3 miles downstream of Shasta Power Plant	Click Here
SPP	N/A	Spring Creek Power Plant	N/A
KWK	Sacramento River	0.8 miles downstream of Keswick Dam	Click Here
SAC	Sacramento River	4.8 miles downstream of Keswick Dam	Click Here
CCR	Sacramento River	9.7 miles downstream of Keswick Dam	Click Here
BSF	Sacramento River	25 miles downstream of Keswick Dam	Click Here
JLF	Sacramento River	34 miles downstream of Keswick Dam	Click Here
BND	Sacramento River	41 miles downstream of Keswick Dam	Click Here
RDB	Sacramento River	58 miles downstream of Keswick Dam	Click Here
IGO	Clear Creek	7.3 miles downstream of Whiskeytown Dam	Click Here
LWS	Trinity River	1.1 miles downstream of Lewiston Dam	Click Here
DGC ²	Trinity River	19 miles downstream of Lewiston Dam	Click Here
NFH ³	Trinity River	38 miles downstream of Lewiston Dam	Click Here

Temperature Control Point		
Point	Temp. (°F)	Begin Date
BSF	56.0	05/25/2018

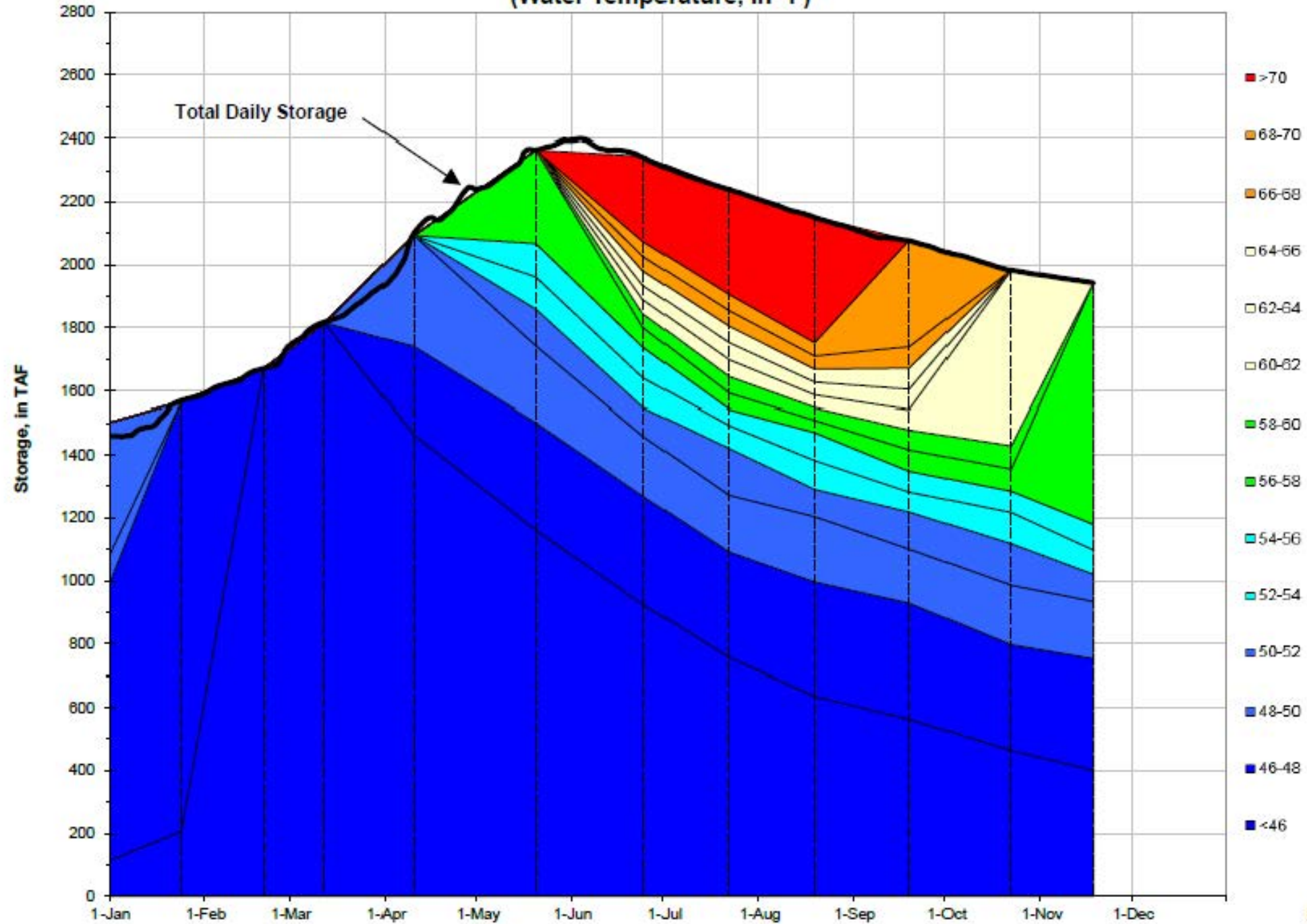
Notes

- ¹ Distances are approximate
- ² DGC is only reported in September
- ³ NFH is only reported in October, November and December

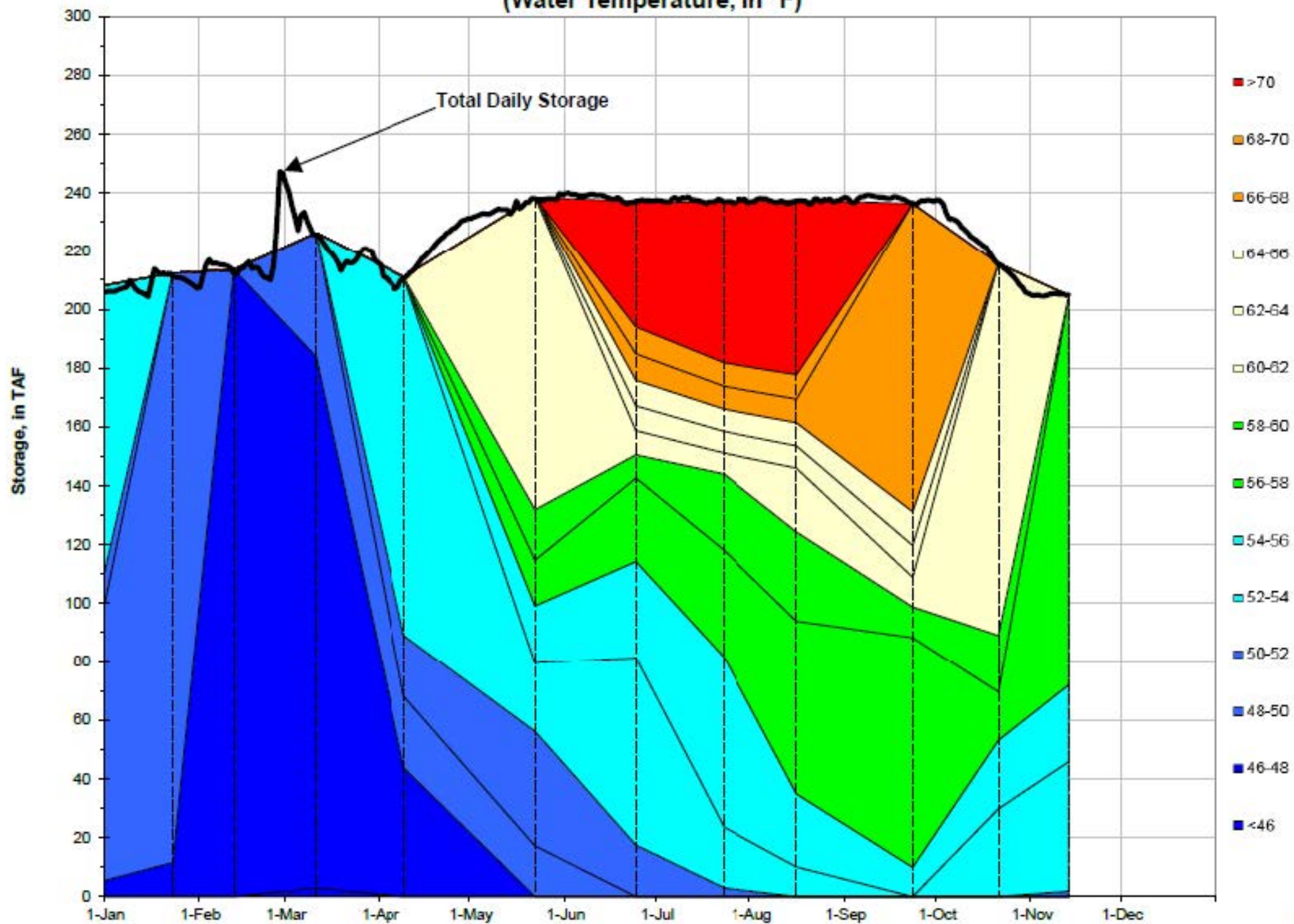
Shasta Lake Isothermobaths - 2019 (Water Temperature, in °F)



Trinity Lake Isothermobaths - 2019
(Water Temperature, in °F)



Whiskeytown Lake Isothermobaths - 2019 (Water Temperature, in °F)

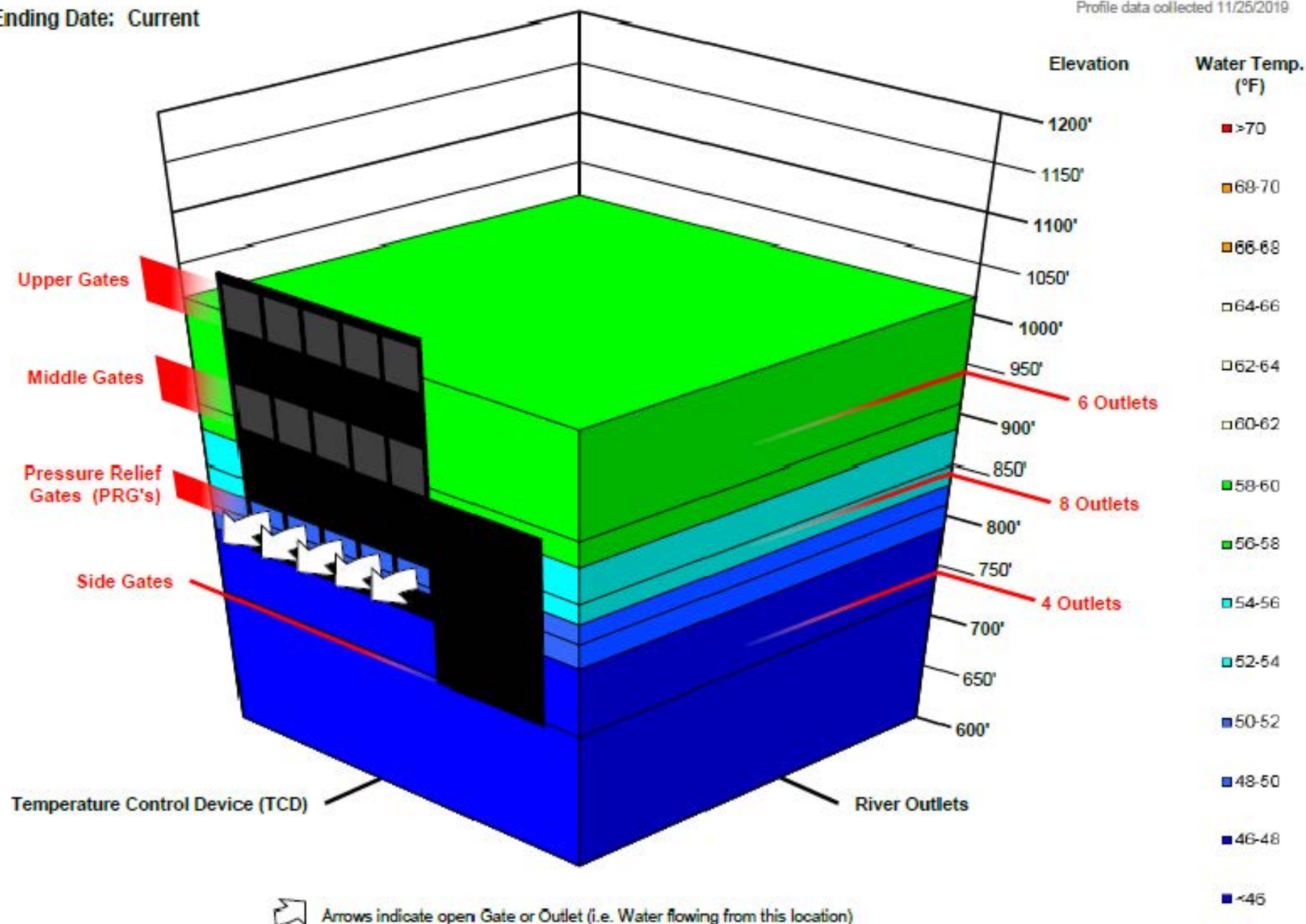


Shasta TCD Configuration

Starting Date: 09/27/2019

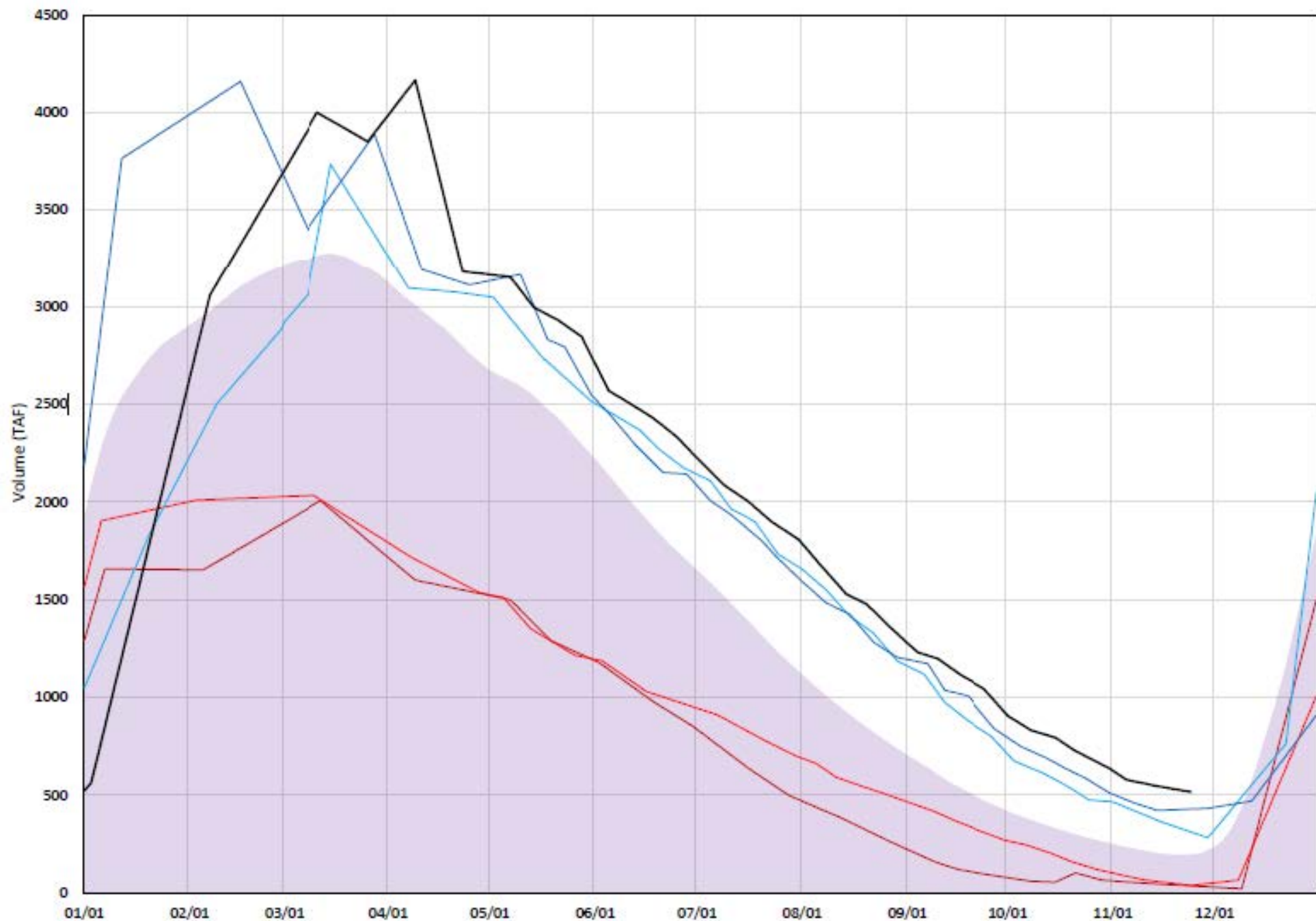
Ending Date: Current

Profile data collected 11/25/2019



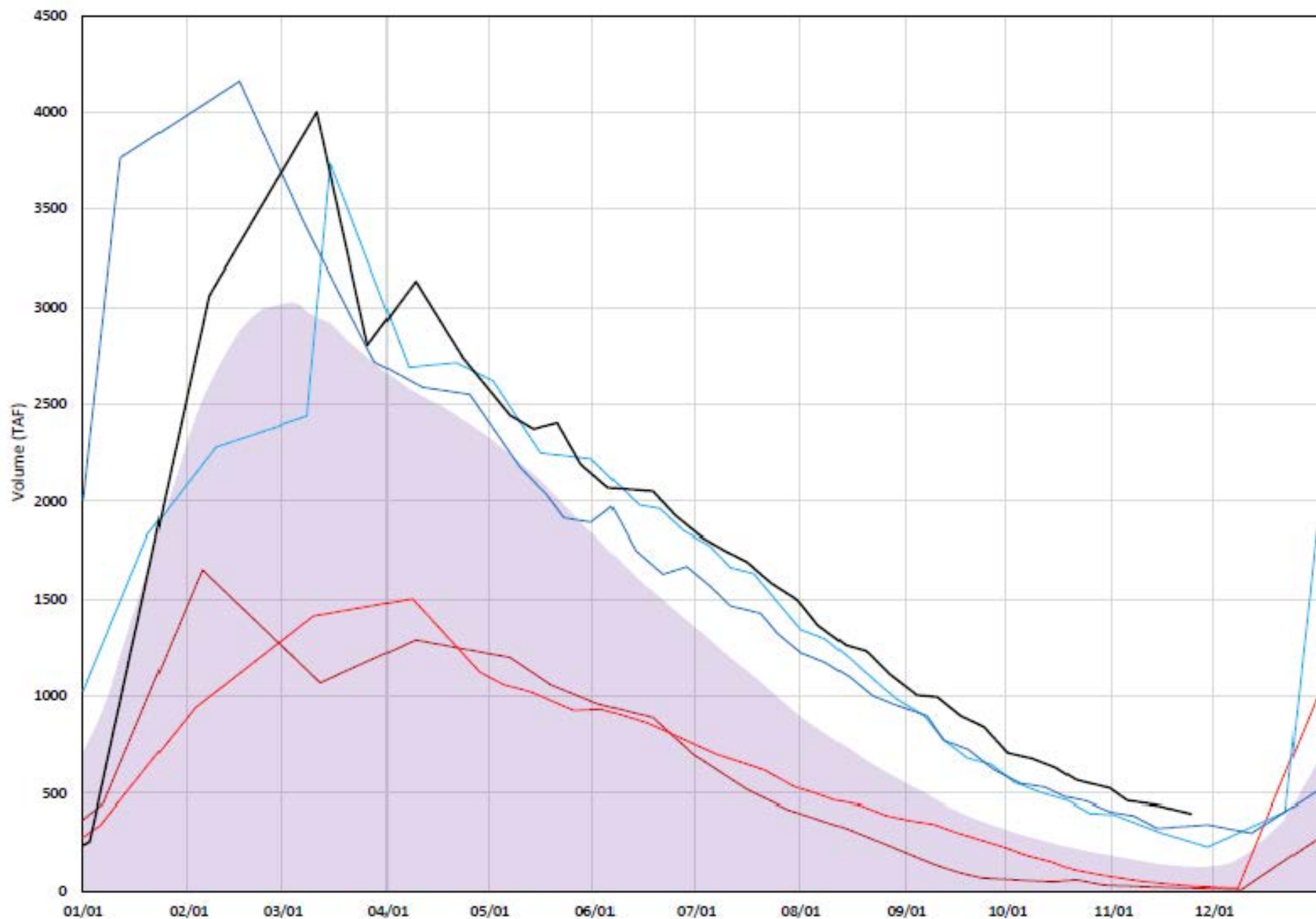
≤52°F - Shasta Cold Water Pool Volume

Avg (1998-2018) 2014 2015 2016 2017 2019



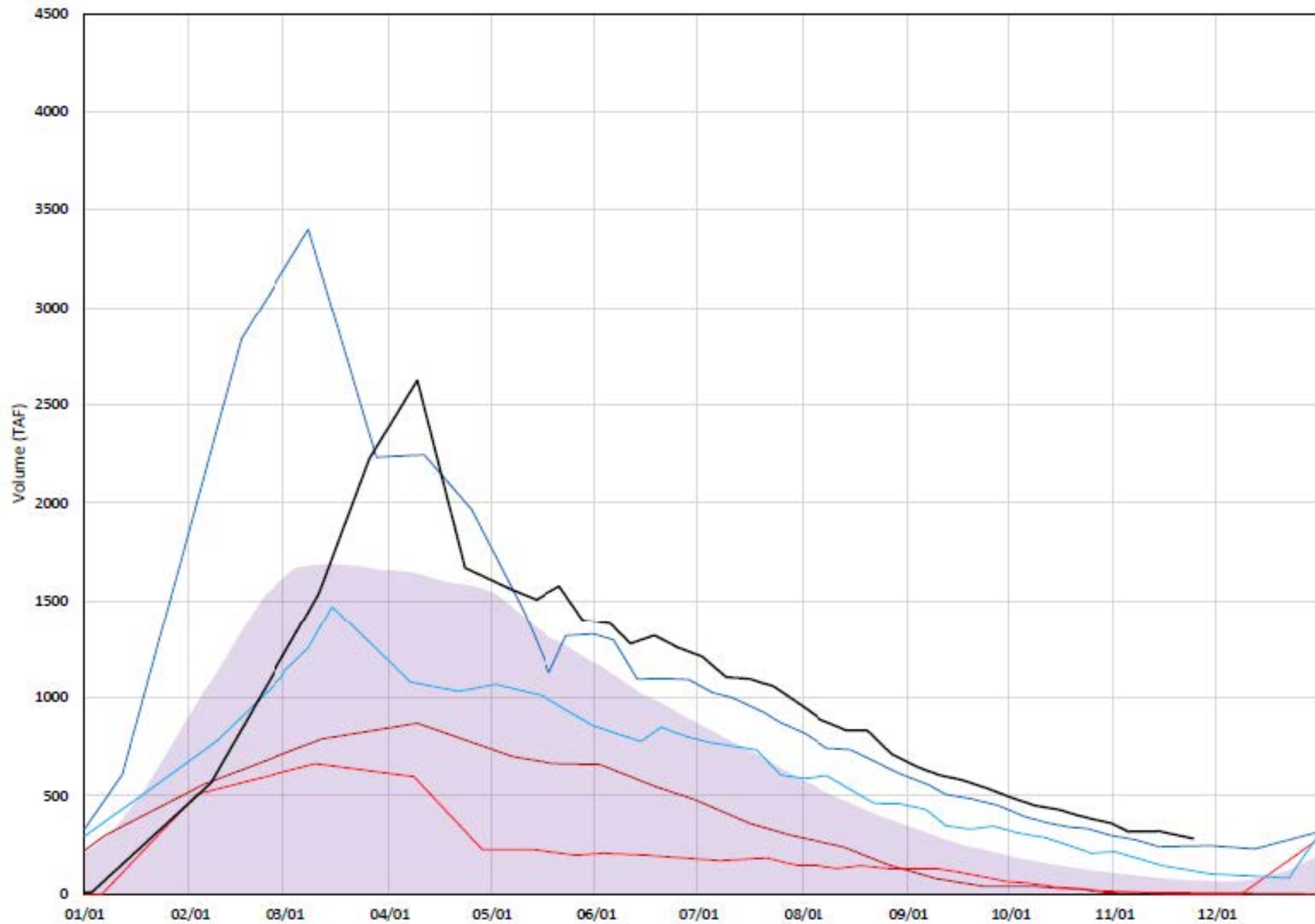
≤50°F - Shasta Cold Water Pool Volume

Avg (1998-2018) 2014 2015 2016 2017 2019

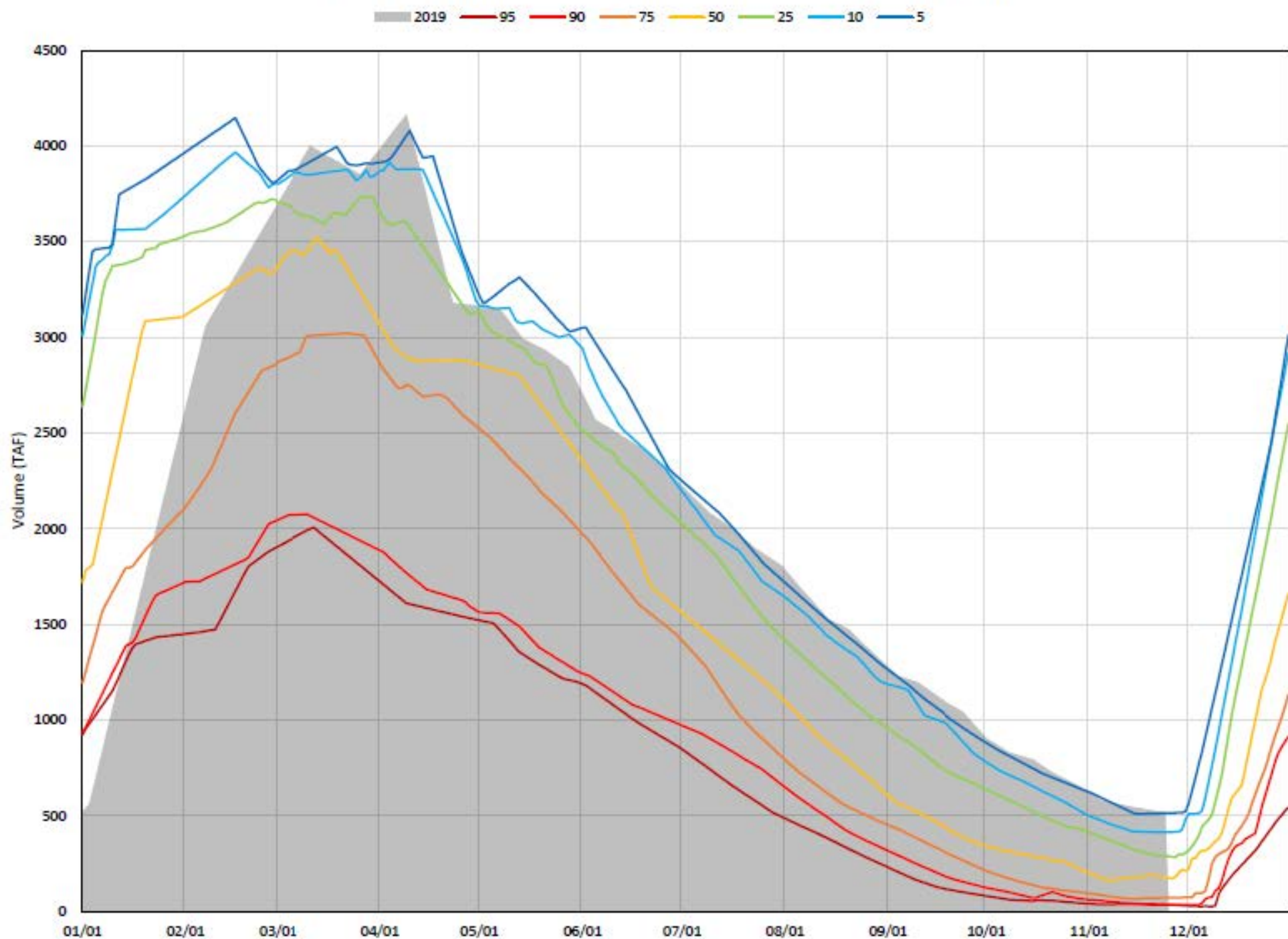


≤48°F - Shasta Cold Water Pool Volume

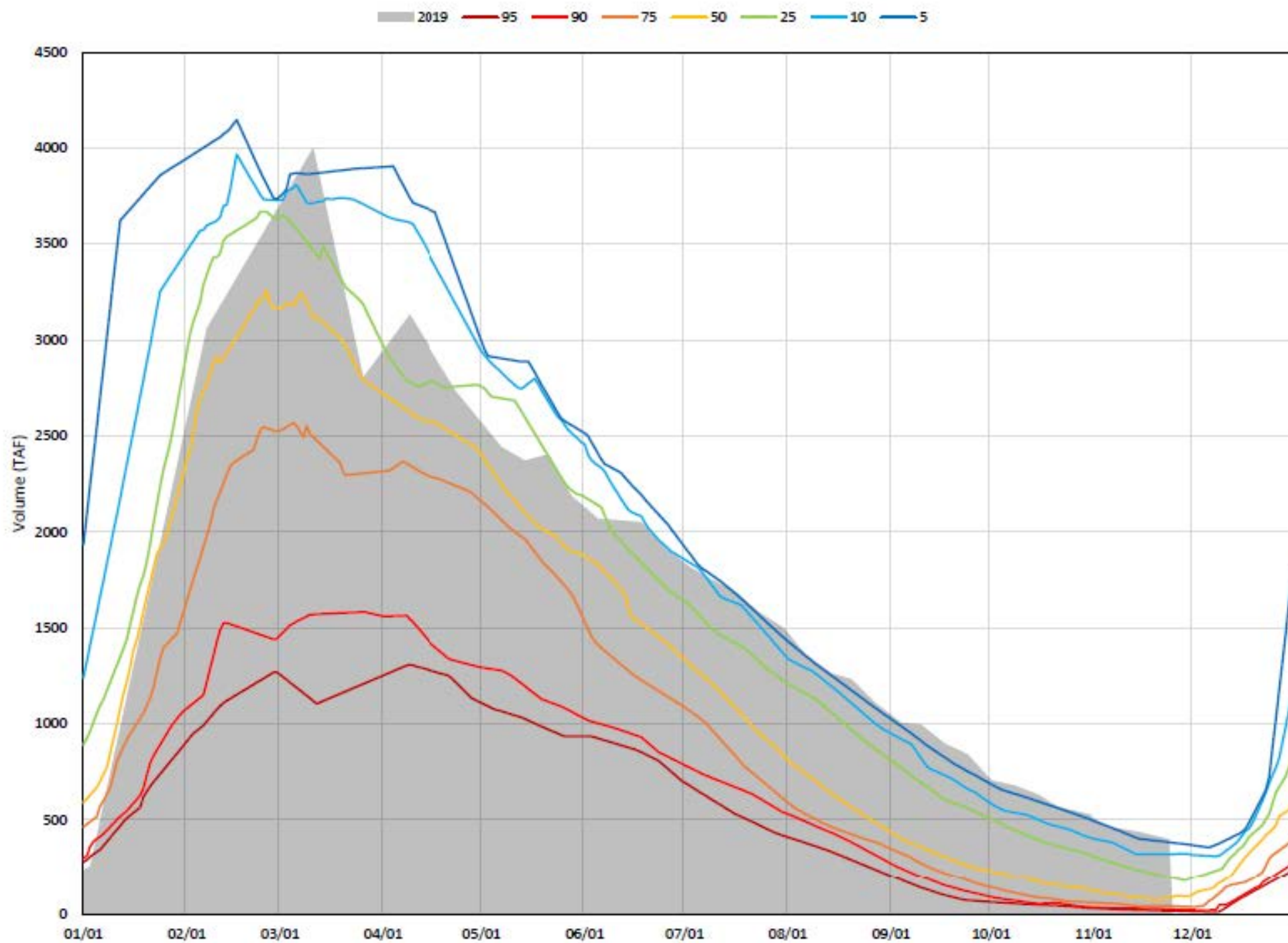
Avg (1998-2018) 2014 2015 2016 2017 2019



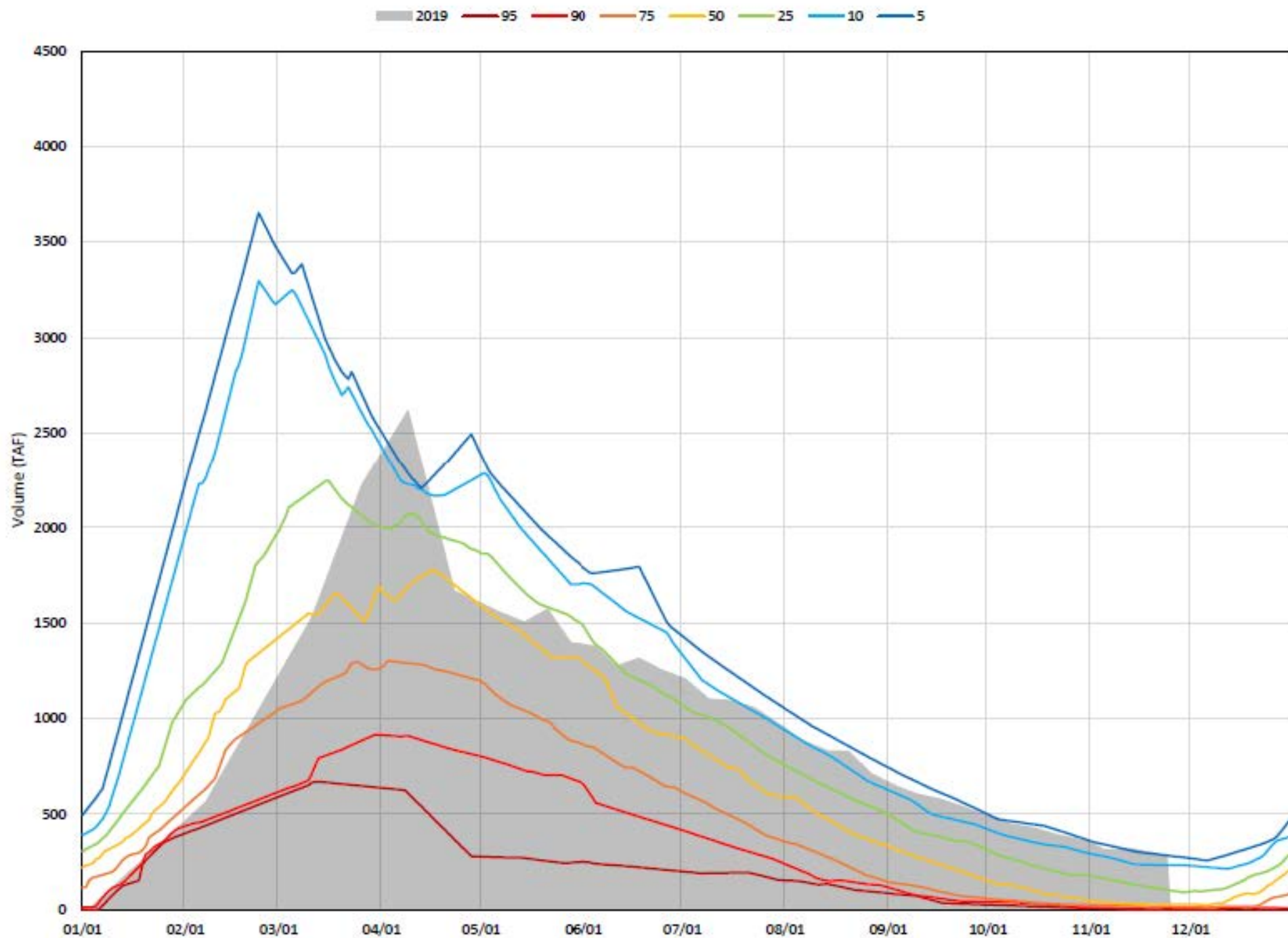
≤52°F - Shasta Cold Water Pool Volume Percent Exceedances (1998-2018)



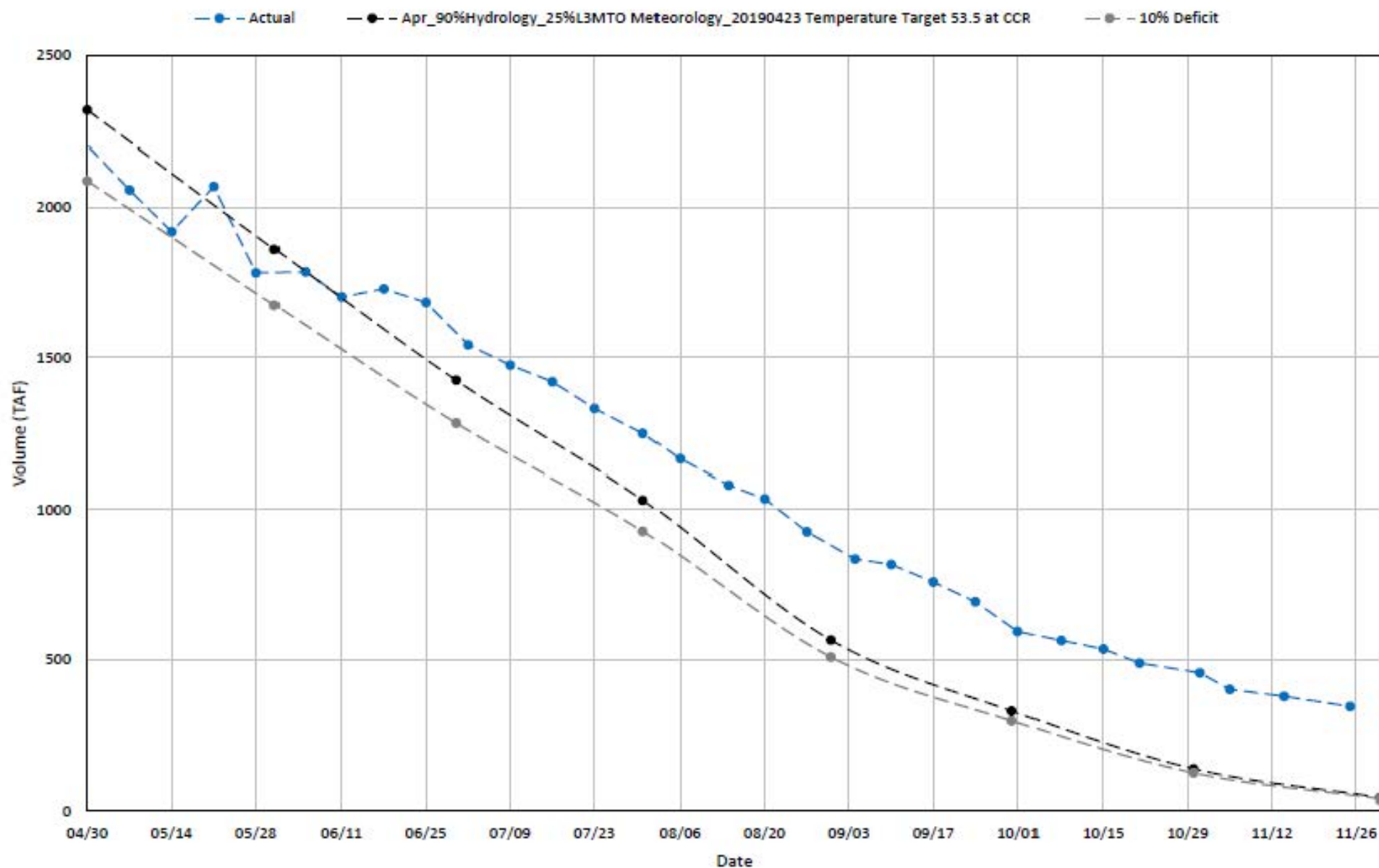
≤50°F - Shasta Cold Water Pool Volume Percent Exceedances (1998-2018)



≤48°F - Shasta Cold Water Pool Volume Percent Exceedances (1998-2018)



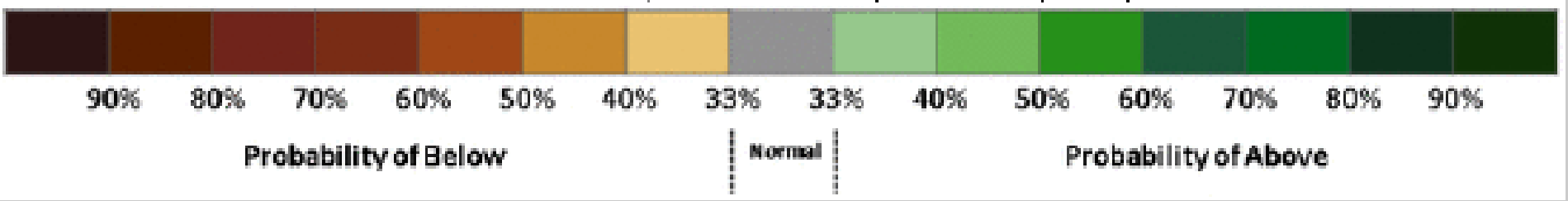
2019 Shasta Cold Water Pool Volume $\leq 49^{\circ}\text{F}$

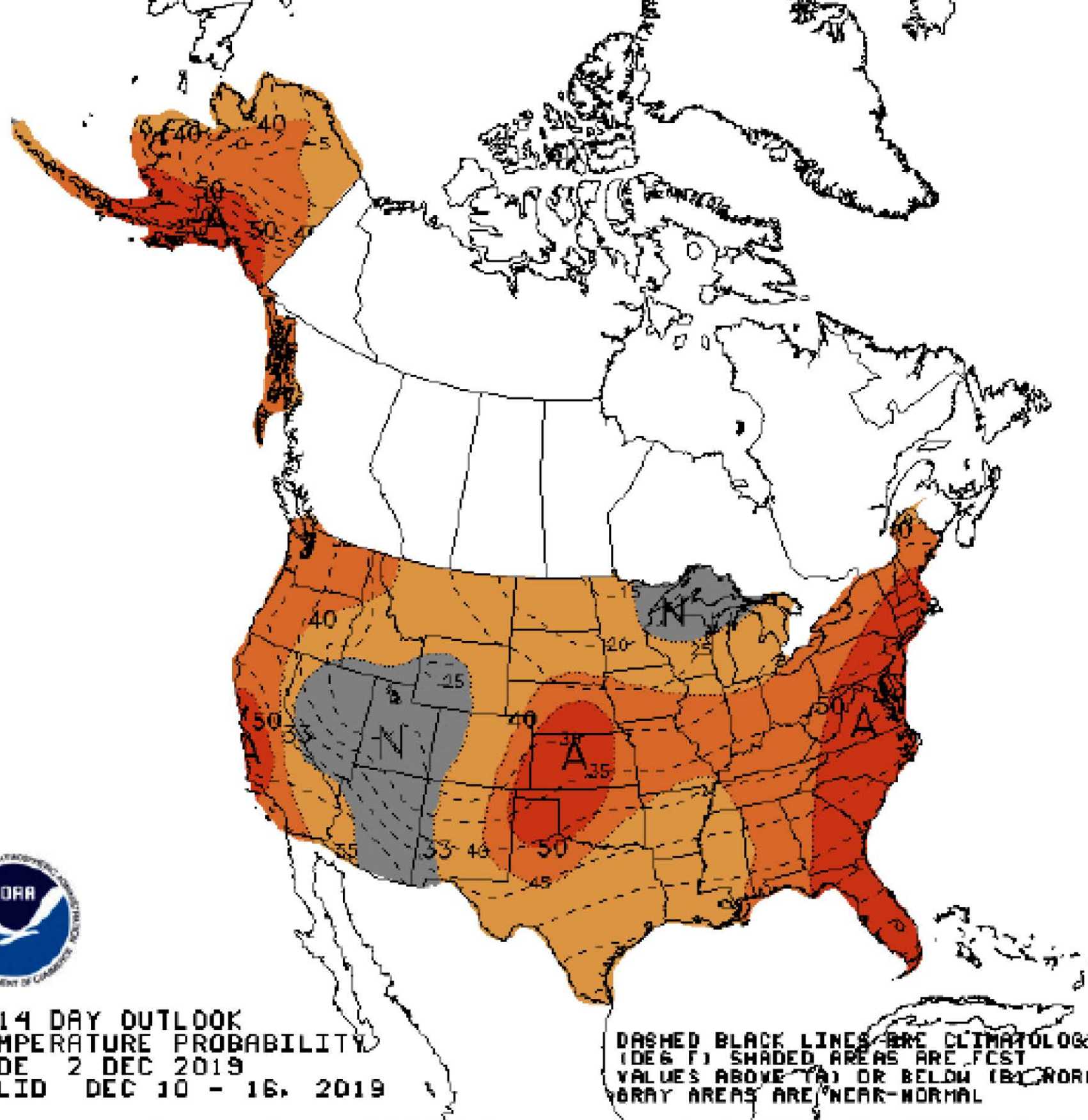




8-14 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 2 DEC 2019
VALID DEC 10 - 16, 2019

DASHED BLACK LINES ARE CLIMATOLOGY
(10THS OF INCHES) SHADED AREAS ARE FCS
VALUES ABOVE (A) OR BELOW (B) NORMAL
GRAY AREAS ARE NEAR-NORMAL





90% 80% 70% 60% 50% 40% 33% 33% 40% 50% 60% 70% 80% 90%

Probability of Below

Normal

Probability of Above