

Northern CVP Water Temperature Report

August - 2022

Page	Description
2	- Mean Daily Water Temperature, Release Flow Rates and Air Temperatures with Monthly Averages
3	- Sacramento River Mean Daily Water Temperature Plot
4	- Trinity River Mean Daily Water Temperature Plot
5	- Shasta Lake Isothermobaths & Cold Water Pool Statistics
14	- Trinity Lake Isothermobaths & Cold Water Pool Statistics
23	- Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics
x	- TCD Configuration (External Link)



— BUREAU OF —
RECLAMATION

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 ²	CCR	BSF	BND	RDB	IGO	LWS	DGC	NFH	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB	
Jul	50.3	49.2	56.1	52.3	53.7	55.0	58.9	61.9	64.1	58.7	56.4	63.6	69.0	3780	364	4528	84.6	80.0	79.6	
08/01	50.4	49.2	57.7	52.2	52.9	54.1	58.1	61.0	63.3	58.1	57.3	63.0	69.1	4151	352	4605	83.0	78.3	76.1	
08/02	50.2	49.1	56.7	52.0	53.5	54.9	57.5	59.9	62.2	59.6	57.4	62.8	68.5	3916	366	4608	87.5	83.8	84.1	
08/03	50.2	49.1	57.9	51.9	53.4	54.9	59.1	62.4	64.2	59.7	57.0	64.6	70.6	3643	360	4606	92.0	87.5	86.4	
08/04	50.7	49.5	56.9	52.1	53.7	55.2	59.2	62.5	65.2	59.7	57.2	64.7	70.8	3765	354	4606	93.0	87.5	86.9	
08/05	50.7	49.6	58.1	52.3	53.7	55.3	59.3	62.6	65.0	59.3	57.6	65.4	71.2	3459	350	4606	86.5	81.7	80.6	
08/06	50.7	49.9	57.0	52.7	54.1	55.6	59.3	62.4	64.9	59.5	57.7	64.9	71.2	3739	363	4605	85.5	80.5	79.0	
08/07	51.1	50.3	57.1	52.9	54.4	55.8	59.4	62.4	64.8	59.3	57.7	64.4	70.5	3908	347	4607	85.0	80.0	79.2	
08/08	51.2	50.1	57.2	52.9	54.3	55.7	59.3	62.3	64.6	59.0	57.6	63.9	69.6	3956	356	4627	83.5	79.5	78.1	
08/09	51.1	50.1	57.1	52.9	54.3	55.6	59.1	61.8	64.1	58.9	57.5	63.4	69.1	3602	424	4666	82.5	77.4	76.2	
08/10	51.3	50.2	58.4	53.2	54.5	55.7	58.9	61.5	63.6	58.8	57.6	63.3	68.2	3769	362	4683	79.0	75.8	74.9	
08/11	49.8	49.3	57.4	53.1	54.5	55.7	58.8	61.1	63.3	58.7	57.1	63.0	68.5	3867	359	4684	79.0	74.9	75.4	
08/12	50.3	48.9	58.7	53.0	54.4	55.6	58.8	61.1	63.3	58.8	56.7	62.7	67.6	3902	367	4683	79.5	75.1	75.3	
08/13	50.6	49.2	57.5	52.1	53.6	55.1	58.7	61.1	63.3	59.0	56.8	62.1	66.7	3793	423	4680	83.0	77.8	77.9	
08/14	50.6	49.3	59.0	52.1	53.4	54.6	58.0	60.6	63.0	59.0	56.7	62.0	66.4	3520	351	4609	84.5	79.2	79.3	
08/15	50.6	49.5	57.8	52.3	53.7	55.0	58.1	60.6	62.7	59.4	56.6	62.0	66.5	3425	361	4608	87.0	81.2	81.3	
08/16	50.7	50.1	59.0	52.4	53.9	55.2	58.5	61.1	63.2	59.7	56.6	62.6	67.6	3910	346	4608	↑	89.0	84.0	82.8
08/17	50.8	50.0	57.9	52.4	53.7	54.9	58.3	60.9	63.0	59.1	56.6	62.5	68.2	3946	288	4608	↑	91.5	83.5	83.5
08/18	51.1	49.8	59.2	52.5	54.0	55.5	58.7	61.4	63.2	60.2	56.8	63.7	69.5	3721	356	4606	93.5	88.1	88.1	
08/19	51.0	49.9	58.0	52.7	54.1	55.5	59.1	62.1	64.2	60.0	56.6	63.1	68.3	3903	349	4608	92.0	86.0	85.3	
08/20	51.2	50.1	58.2	52.8	54.3	55.6	59.0	62.0	64.3	60.0	56.3	62.7	68.1	3573	352	4585	↑	90.5	84.5	84.6
08/21	51.5	50.4	58.3	52.8	54.3	55.6	59.1	62.0	64.1	59.9	56.6	62.8	68.5	3276	428	4506	88.0	82.1	81.1	
08/22	50.9	50.2	58.3	53.1	54.4	55.6	59.0	61.8	64.0	59.6	56.4	62.7	67.8	4121	393	4489	85.5	81.7	80.0	
08/23	50.9	49.5	58.7	53.2	54.6	55.9	58.9	61.6	63.7	60.1	56.7	62.8	68.6	3567	428	4492	87.0	81.7	81.2	
08/24	51.1	49.6	58.5	52.7	54.3	55.7	59.2	61.9	63.9	60.0	56.9	63.4	69.2	3390	348	4495	87.0	81.2	82.5	
08/25	51.2	49.8	58.6	52.5	54.0	55.2	58.7	61.6	63.9	59.8	56.5	63.4	69.4	3524	373	4494	84.5	78.6	78.2	
08/26	51.4	50.1	58.7	52.7	54.1	55.3	58.3	61.0	63.2	59.5	56.5	62.4	68.5	3841	397	4492	82.5	77.3	78.5	
08/27	51.6	50.0	59.3	52.7	54.0	55.3	58.4	60.9	62.9	59.6	56.6	59.9	65.1	3441	467	4492	81.5	75.9	76.8	
08/28	51.6	50.1	60.1	52.9	54.1	55.2	58.0	60.4	62.3	59.4	56.1	58.9	63.0	3282	399	4390	81.0	74.9	75.0	
08/29	51.8	50.2	59.0	53.0	54.4	55.5	58.2	60.5	62.2	59.5	55.7	58.2	62.2	3459	365	4394	83.0	77.0	76.8	
08/30	51.8	50.4	58.7	52.9	54.4	55.8	59.0	61.5	63.1	60.1	55.4	58.5	62.7	3449	86	4392	85.0	80.1	81.0	
08/31	52.0	50.7	57.7	52.8	54.2	55.5	59.0	61.7	63.7	59.9	55.6	58.4	62.6	3466	75	4389	84.5	78.4	79.0	
Aug	51.0	49.8	58.2	52.6	54.0	55.4	58.7	61.5	63.6	59.5	56.8	62.5	67.9	3687	353	4565	85.7	80.5	80.2	
														Total CFS	114284	10945	141523			
														Total AF	226678	21709	280705			

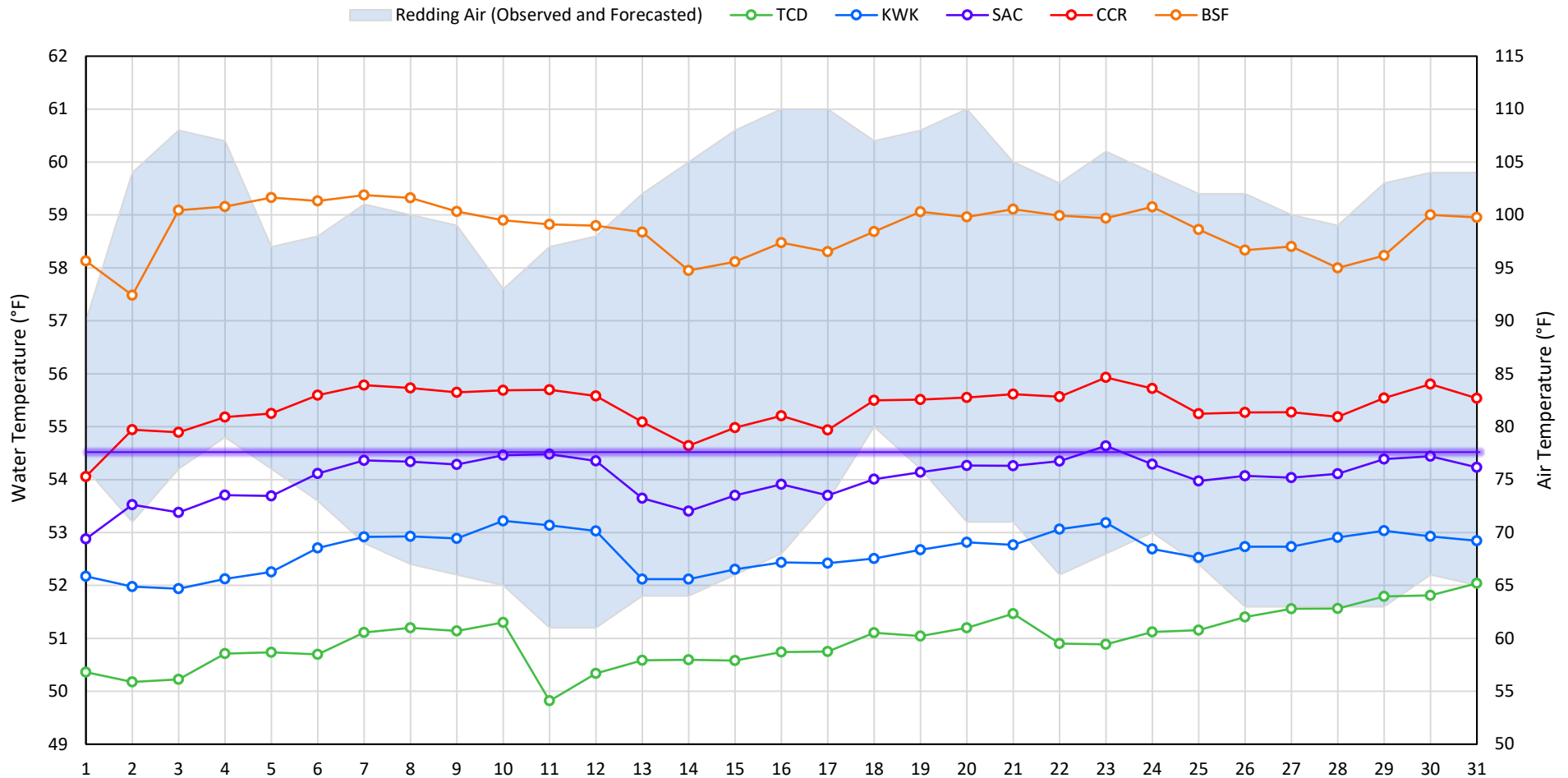
Legend

- ? = 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

Notes

- 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 Sacramento River control point (see page 4 for more details)

Sacramento River Mean Daily Temperatures



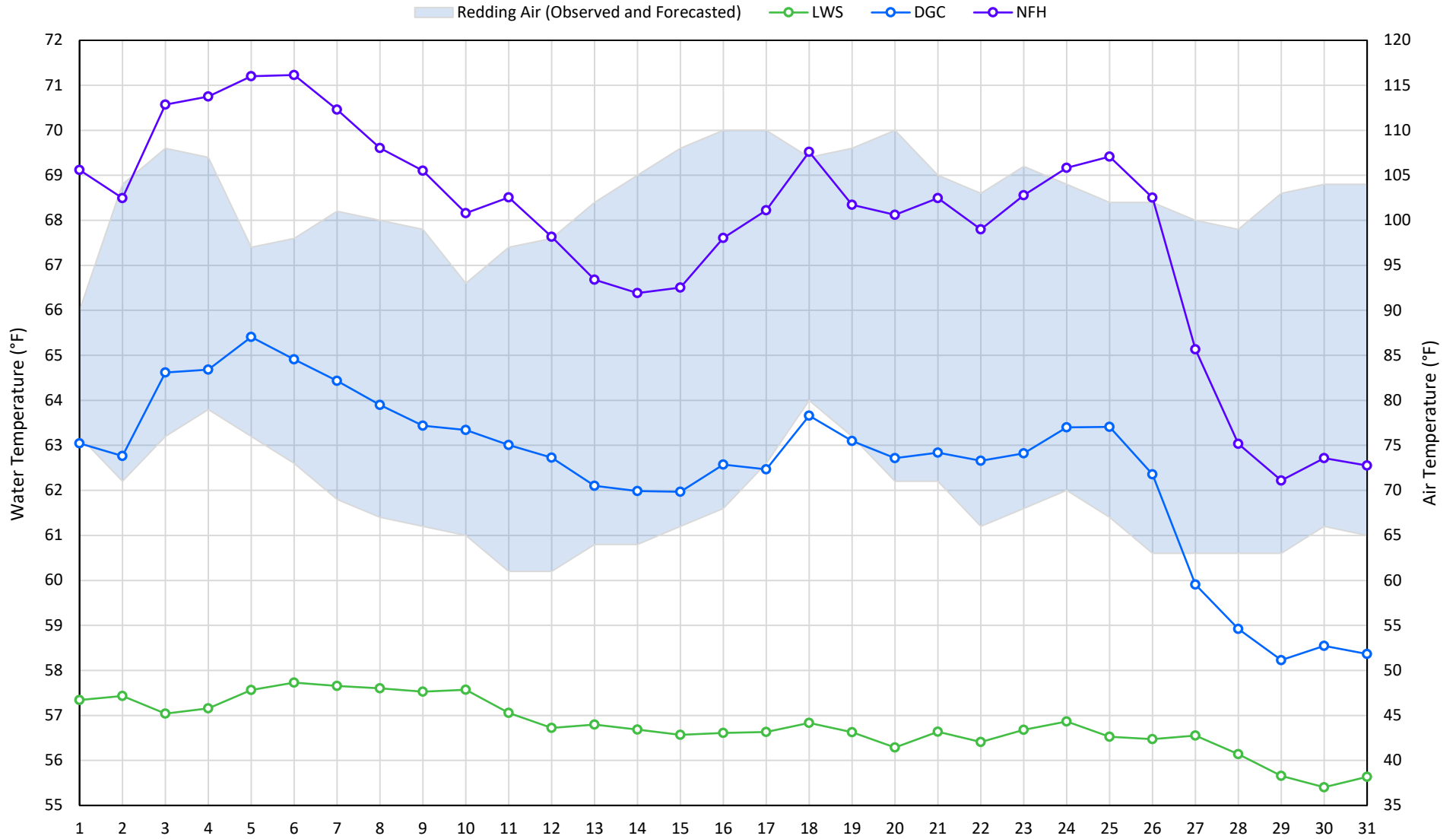
Station Details			
Code	Body of Water	Location ¹	CDEC Link
TCD	N/A	Shasta Power Plant	N/A
SHD	Sacramento River	0.3 miles downstream of Shasta Power Plant	Click Here
SPP	N/A	Spring Creek Power Plant	N/A
KWK	Sacramento River	0.8 miles downstream of Keswick Dam	Click Here
SAC	Sacramento River	4.8 miles 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

Water Right Temperature Control Points				
River	Point	Temp. (°F)	Begin Date	End Date
Sacramento	SAC	55	06/15/2021	05/02/2022
Sacramento	SAC	58	05/02/2022	06/07/2022
Sacramento	SAC	54.5	06/07/2022	TBD

Notes

¹ Distances are approximate

Trinity River Mean Daily Temperatures



Station Details			
Code	Body of Water	Location ¹	CDEC Link
LWS	Trinity River	1.1 miles downstream of Lewiston Dam	Click Here
DGC	Trinity River	19 miles downstream of Lewiston Dam	Click Here
NFH	Trinity River	38 miles downstream of Lewiston Dam	Click Here

Water Right Temperature Control Points				
River	Point	Temp. (°F)	Begin Date	End Date
Trinity	DGC	56	Sep-15	Oct-01
Trinity	NFH	56	Oct-01	Dec-31

Notes

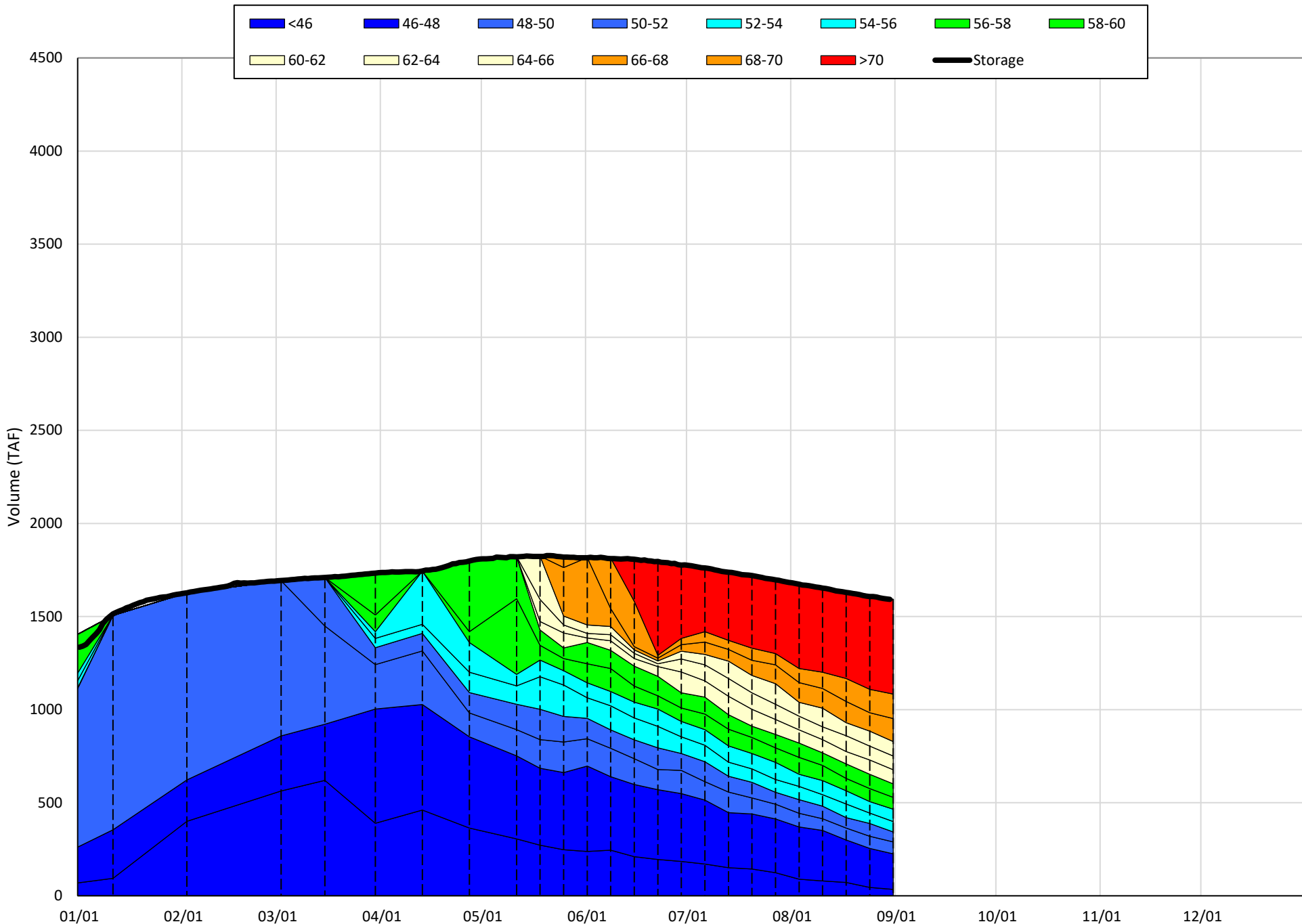
¹ Distances are approximate

Shasta Lake Isothermobaths & Cold Water Pool Statistics

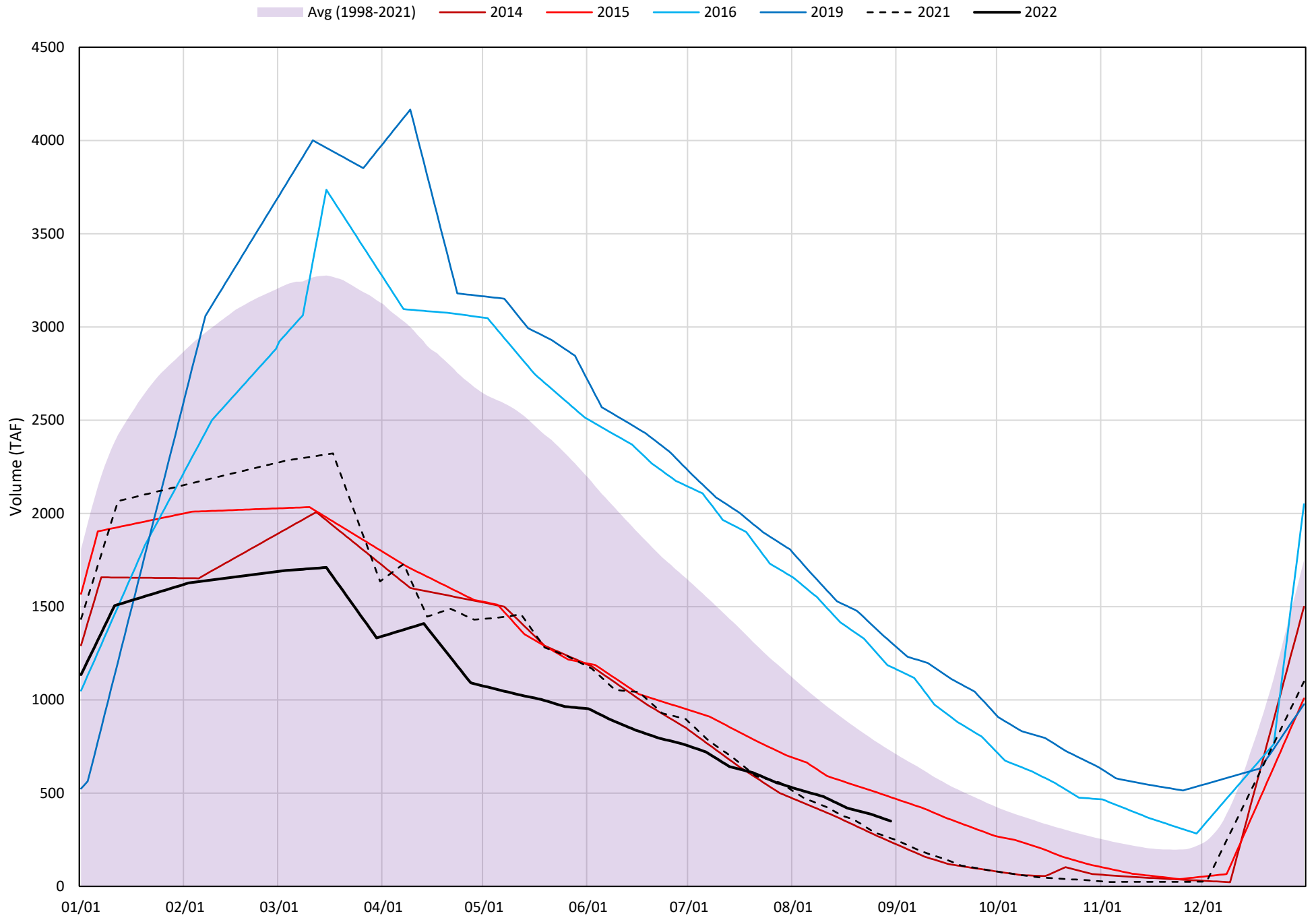
2022

Page	Description
6	- Shasta Lake Isothermobaths Plot
7	- Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
8	- Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
9	- Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
10	- Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances
11	- Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances
12	- Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances
13	- Shasta Lake Cold Water Pool Comparison by Year

Shasta Lake Isothermobaths Plot - 2022

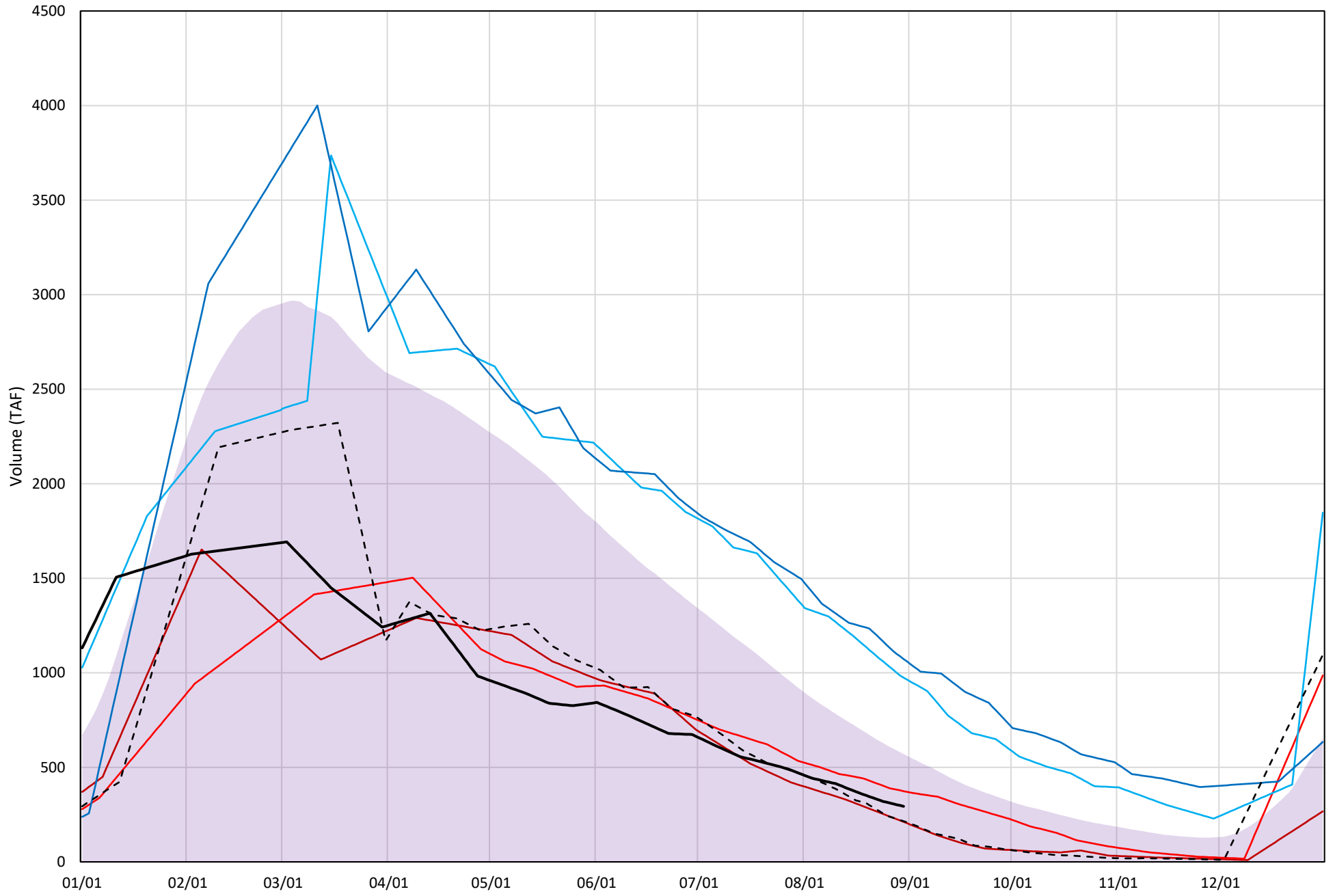


Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$



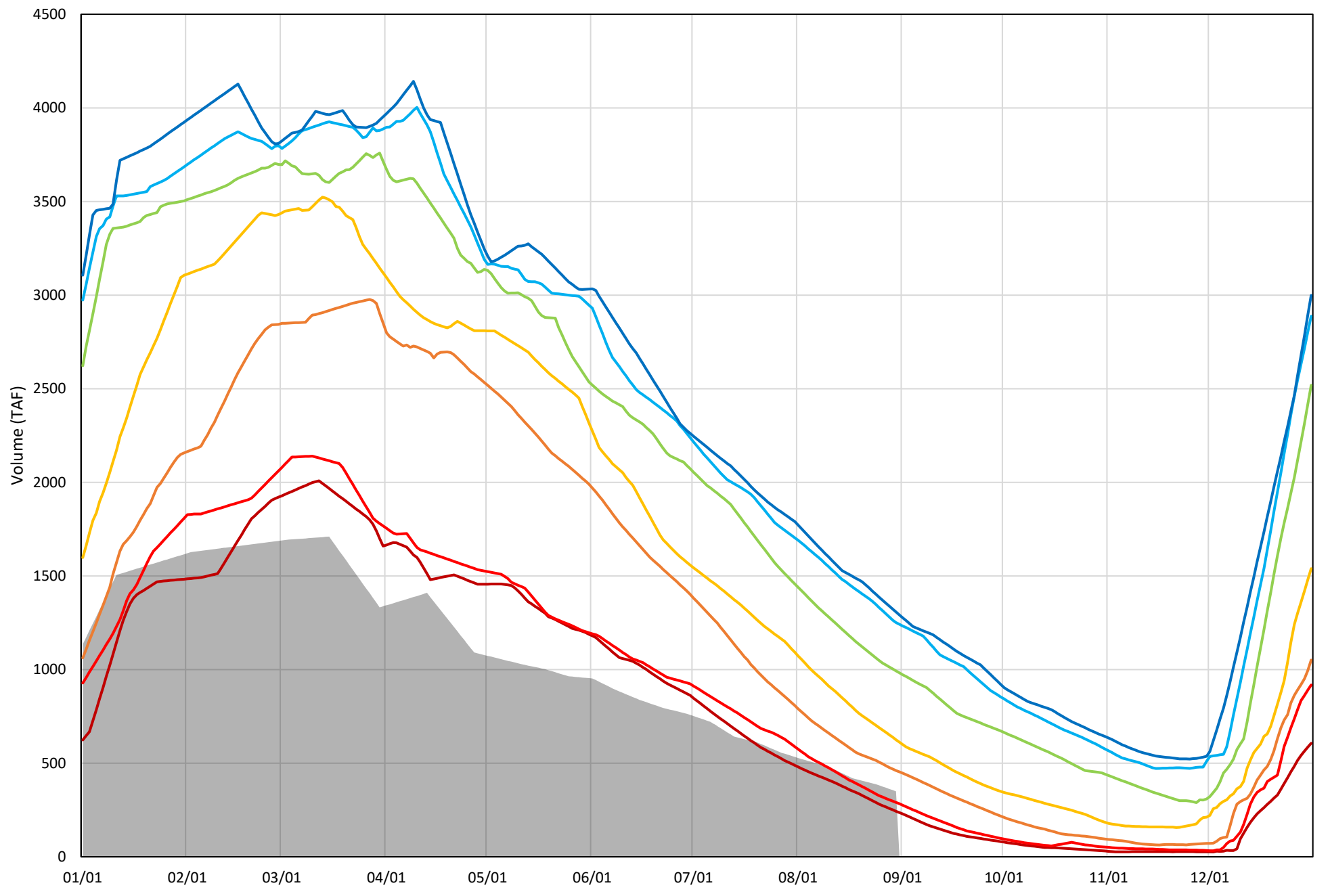
Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$

Avg (1998-2021) 2014 2015 2016 2019 2021 2022

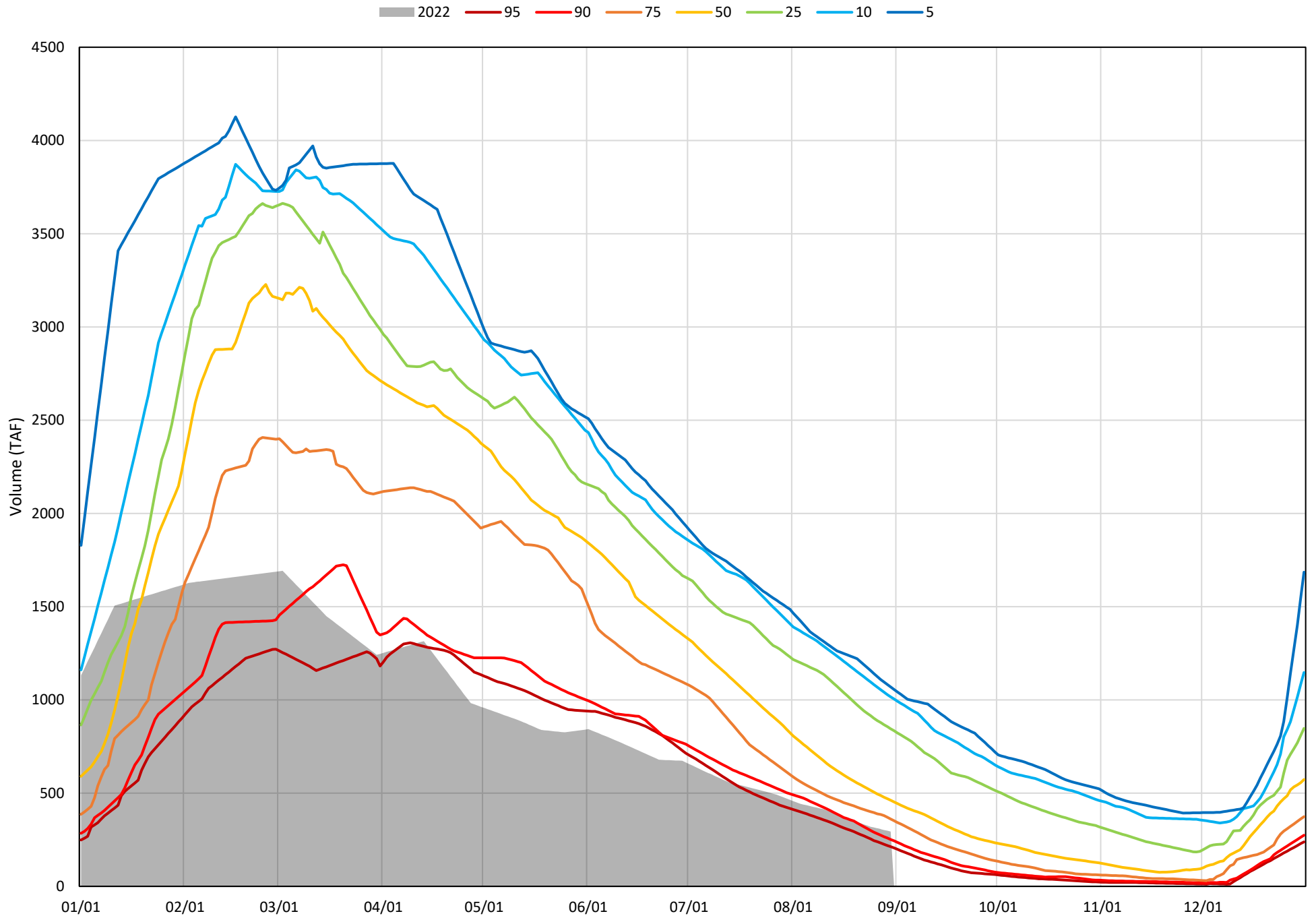


Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5

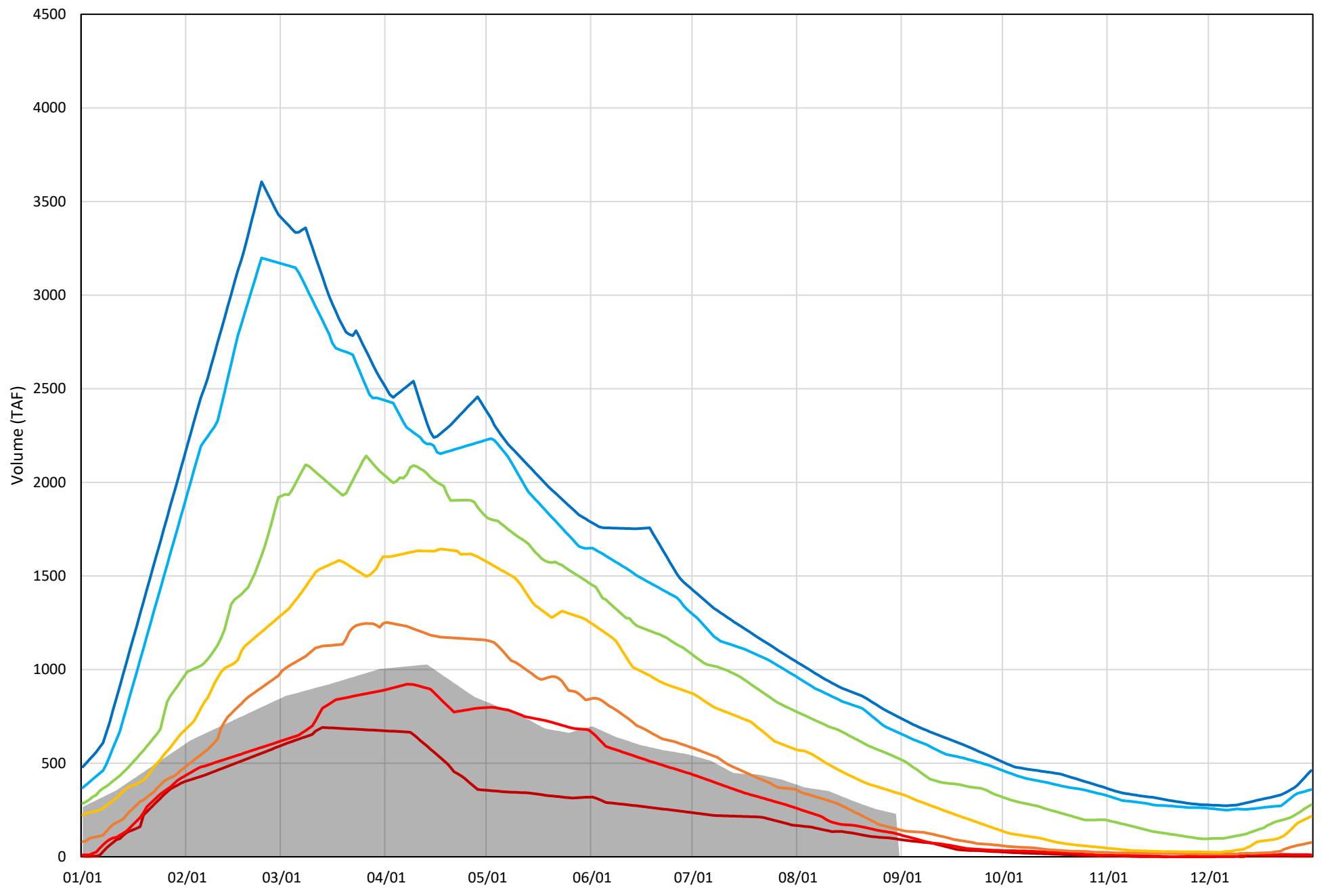


Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances (1998-2021)



Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5



Shasta Lake Cold Water Pool Comparison by Year (for Specified Date)

Aug-31 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
1998	287	65	-103	151	82	22	-45	50
1999	656	562	420	546	188	191	183	187
2000	219	93	-89	133	62	32	-39	44
2001	167	142	113	141	48	48	49	48
2002	461	365	254	360	132	124	111	122
2003	374	76	-143	198	107	26	-62	65
2004	31	10	-34	25	9	3	-15	9
2005	101	25	-56	61	29	9	-24	21
2006	492	346	203	347	141	118	89	116
2007	169	163	128	153	48	55	56	53
2008	-28	-6	18	17	-8	-2	8	6
2009	106	97	80	94	30	33	35	33
2010	844	613	335	597	241	209	146	199
2011	950	764	546	753	272	260	238	257
2012	604	521	318	481	173	177	139	163
2013	258	233	175	222	74	79	76	77
2014	-111	-82	-99	98	-32	-28	-43	34
2015	129	81	-99	103	37	27	-43	36
2016	828	681	228	579	237	232	99	189
2017	852	653	380	628	243	223	166	211
2018	511	362	115	329	146	123	50	107
2019	960	779	458	733	275	265	200	247
2020	265	172	7	148	76	59	3	46
2021	-91	-79	-108	93	-26	-27	-47	33
2022	0	0	0	0	0	0	0	0

Historic - Current

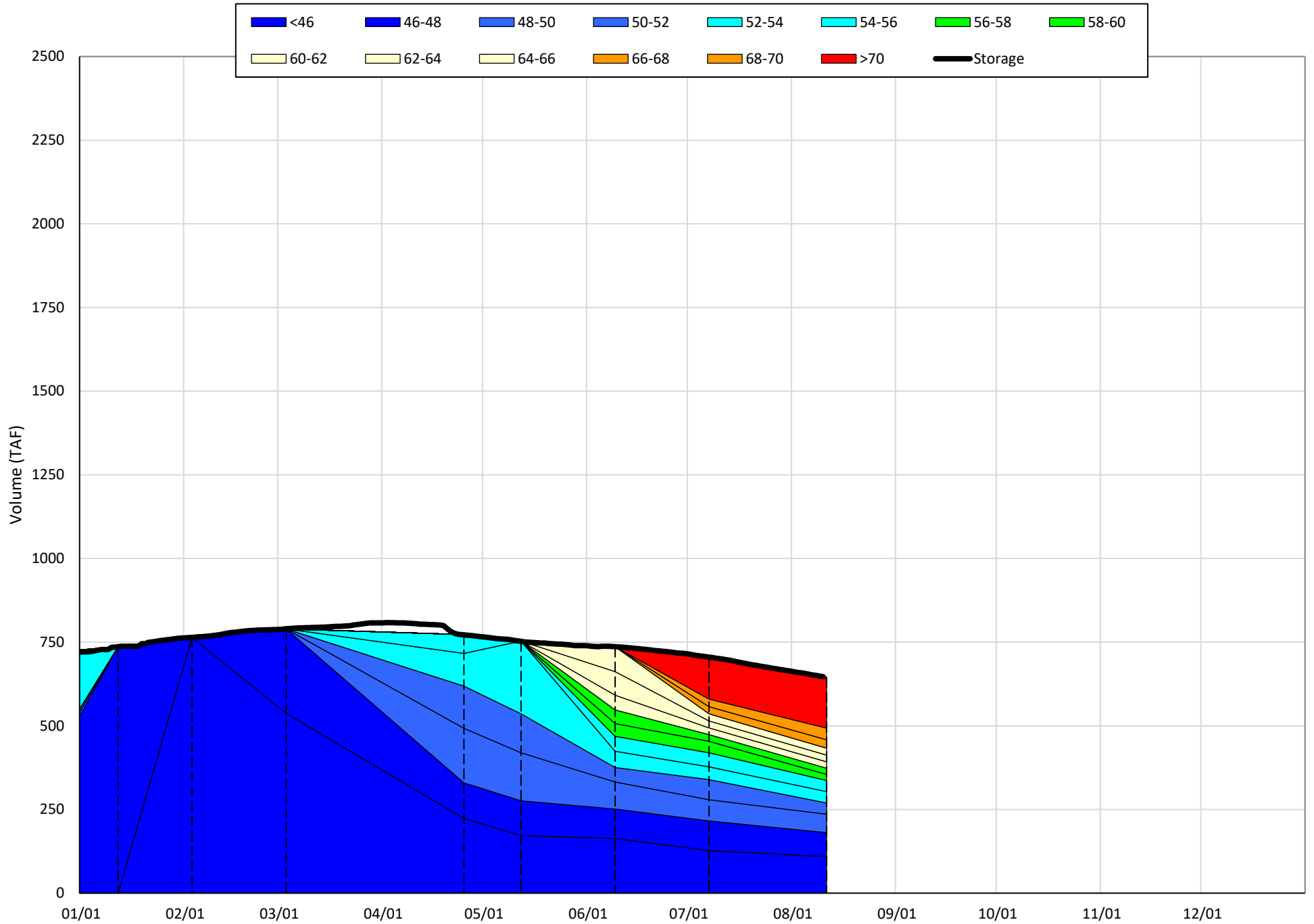
(Historic - Current) / Current

Trinity Lake Isothermobaths & Cold Water Pool Statistics

2022

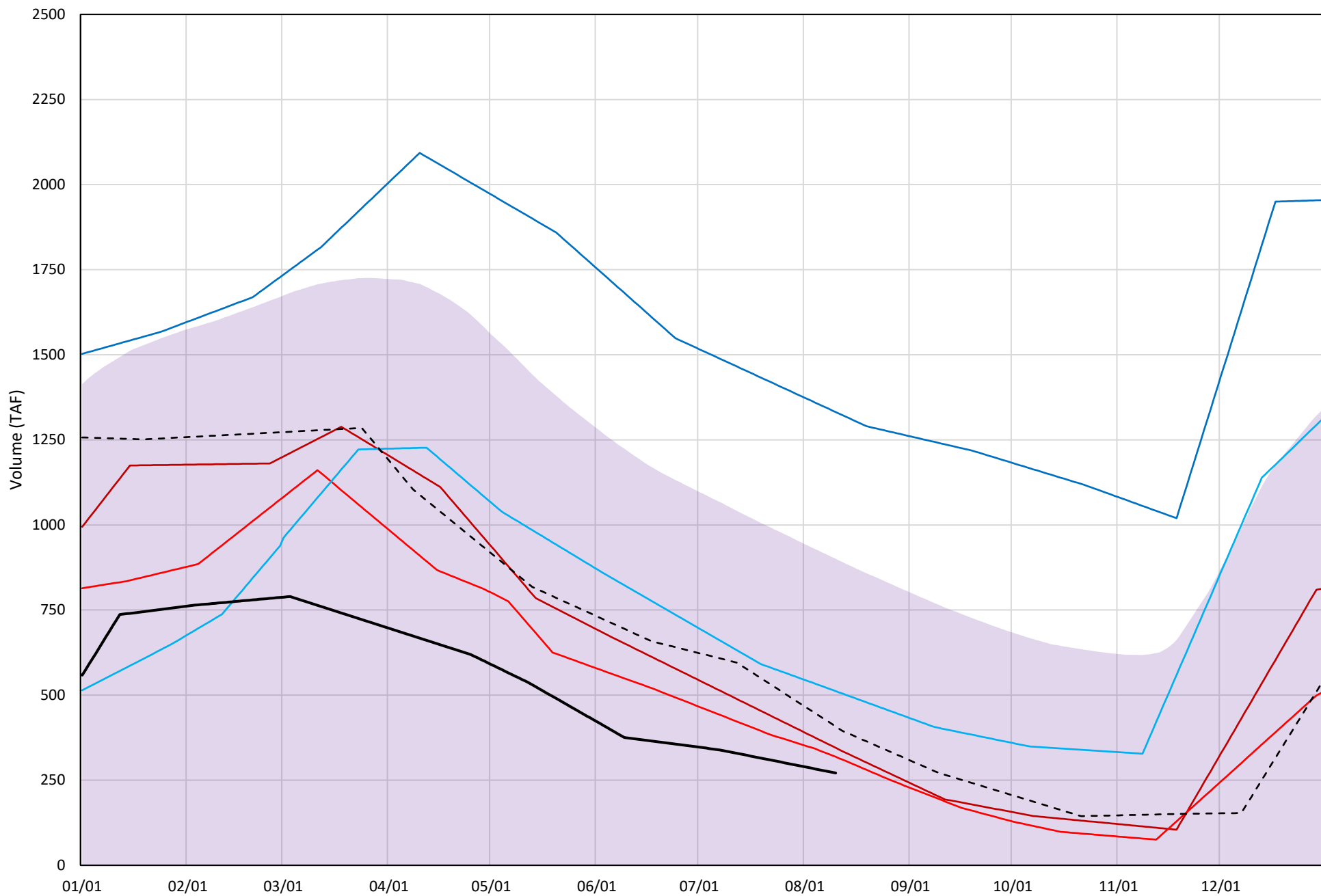
Page	Description
15	- Trinity Lake Isothermobaths Plot
16	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
17	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
18	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
19	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances
20	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances
21	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances
22	- Trinity Lake Cold Water Pool Comparison by Year

Trinity Lake Isothermobaths Plot - 2022



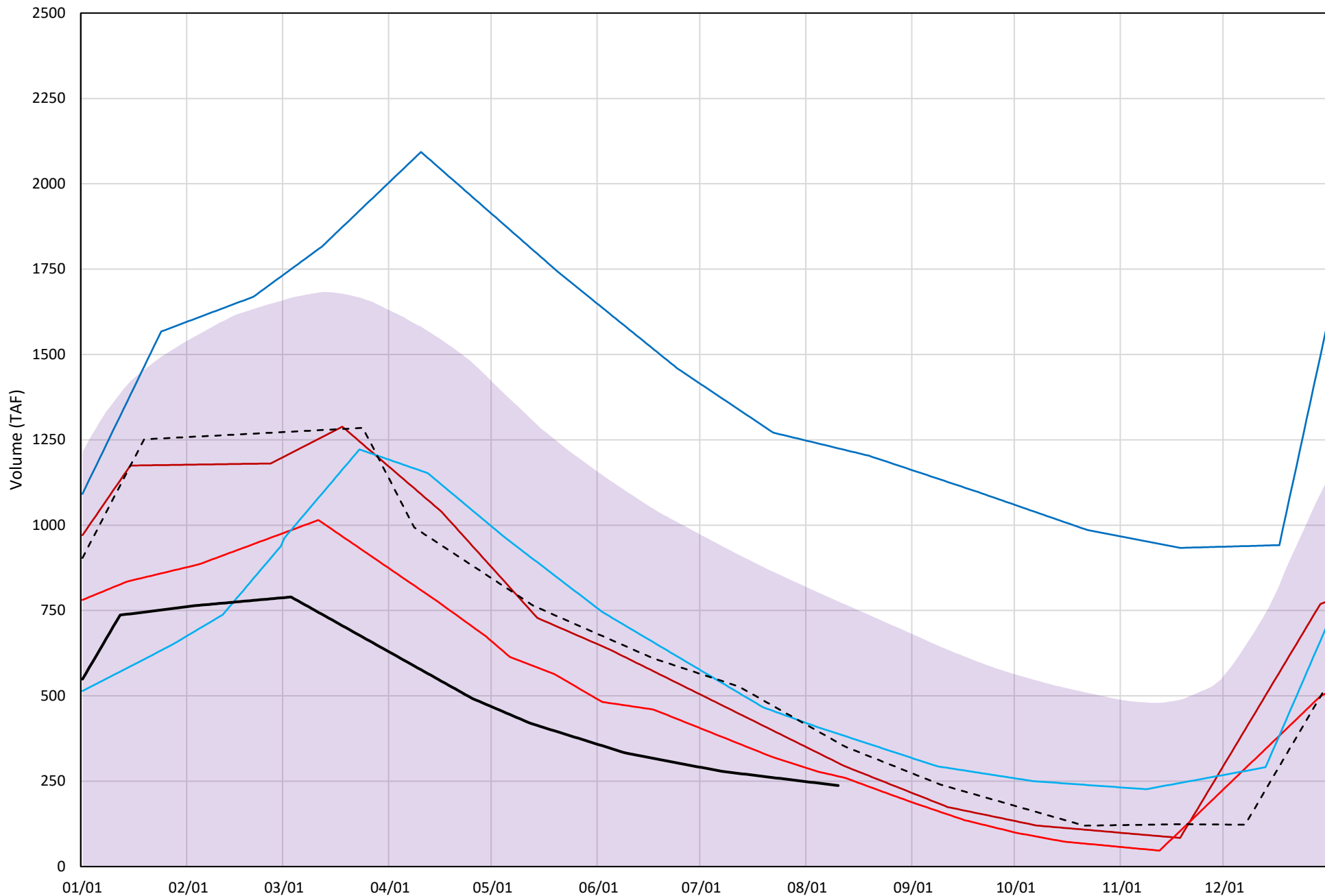
Trinity Lake Cold Water Pool Volume ≤52°F

Avg (2000-2021) 2014 2015 2016 2019 2021 2022



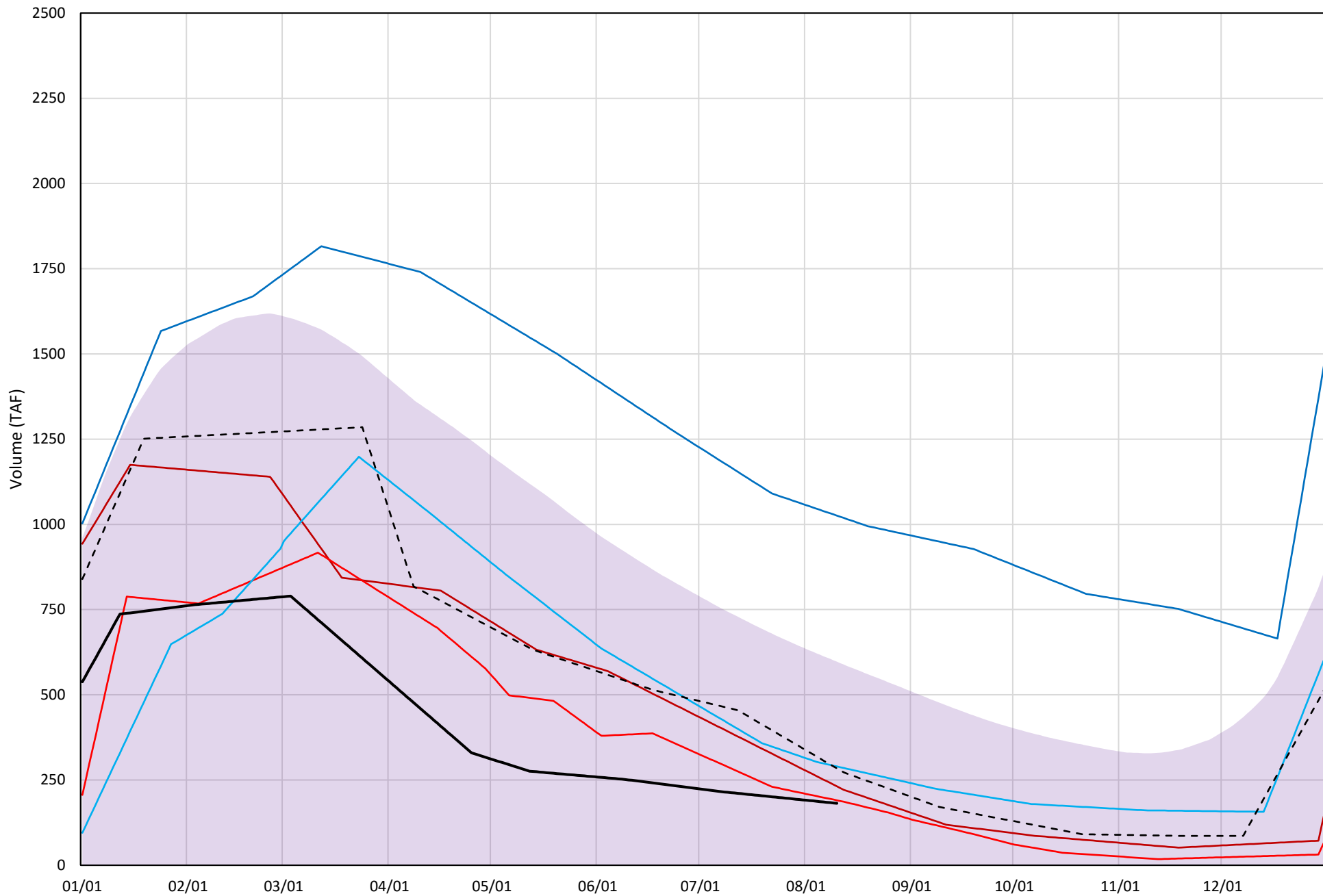
Trinity Lake Cold Water Pool Volume ≤50°F

Avg (2000-2021) 2014 2015 2016 2019 2021 2022

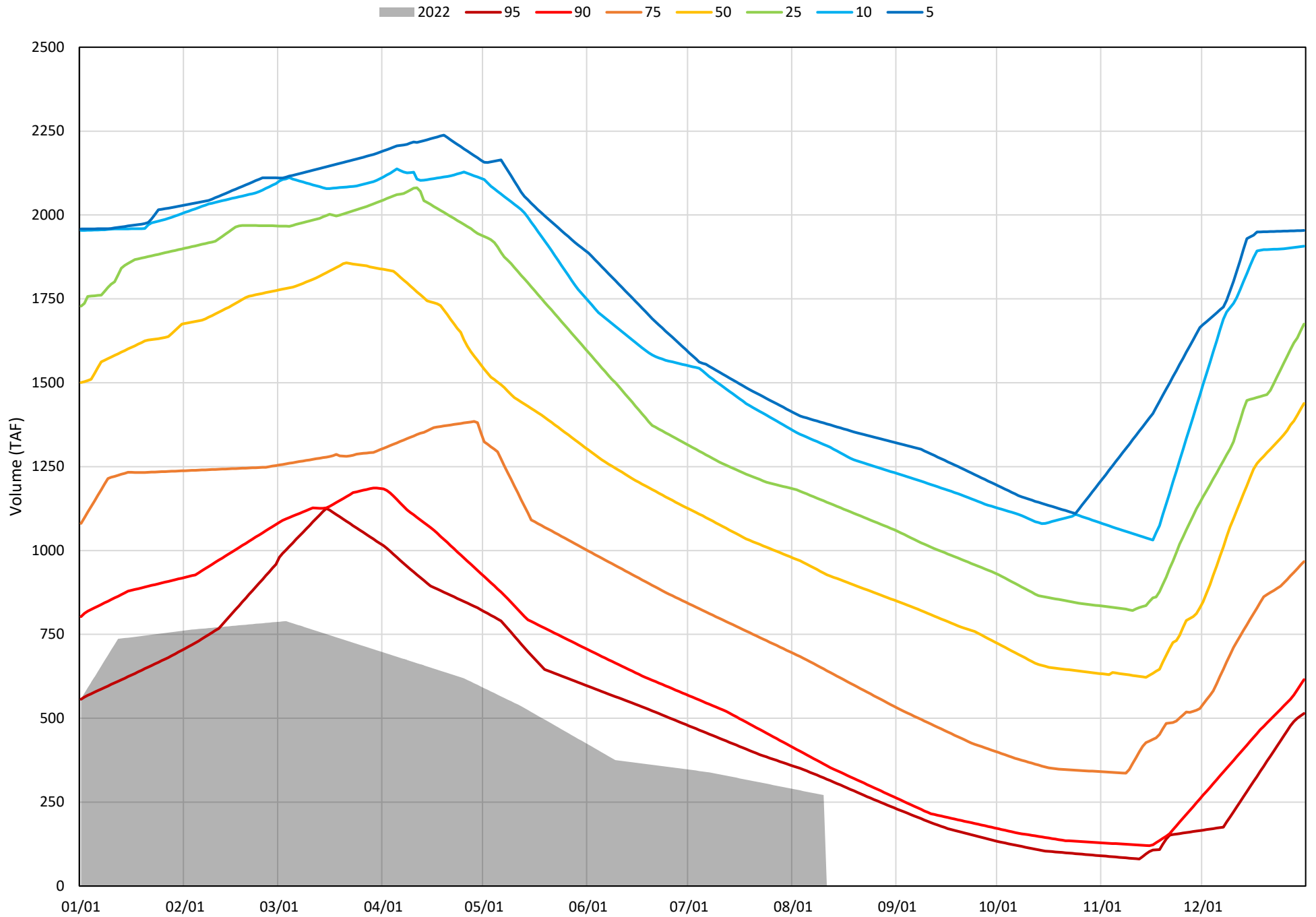


Trinity Lake Cold Water Pool Volume ≤48°F

Avg (2000-2021) 2014 2015 2016 2019 2021 2022

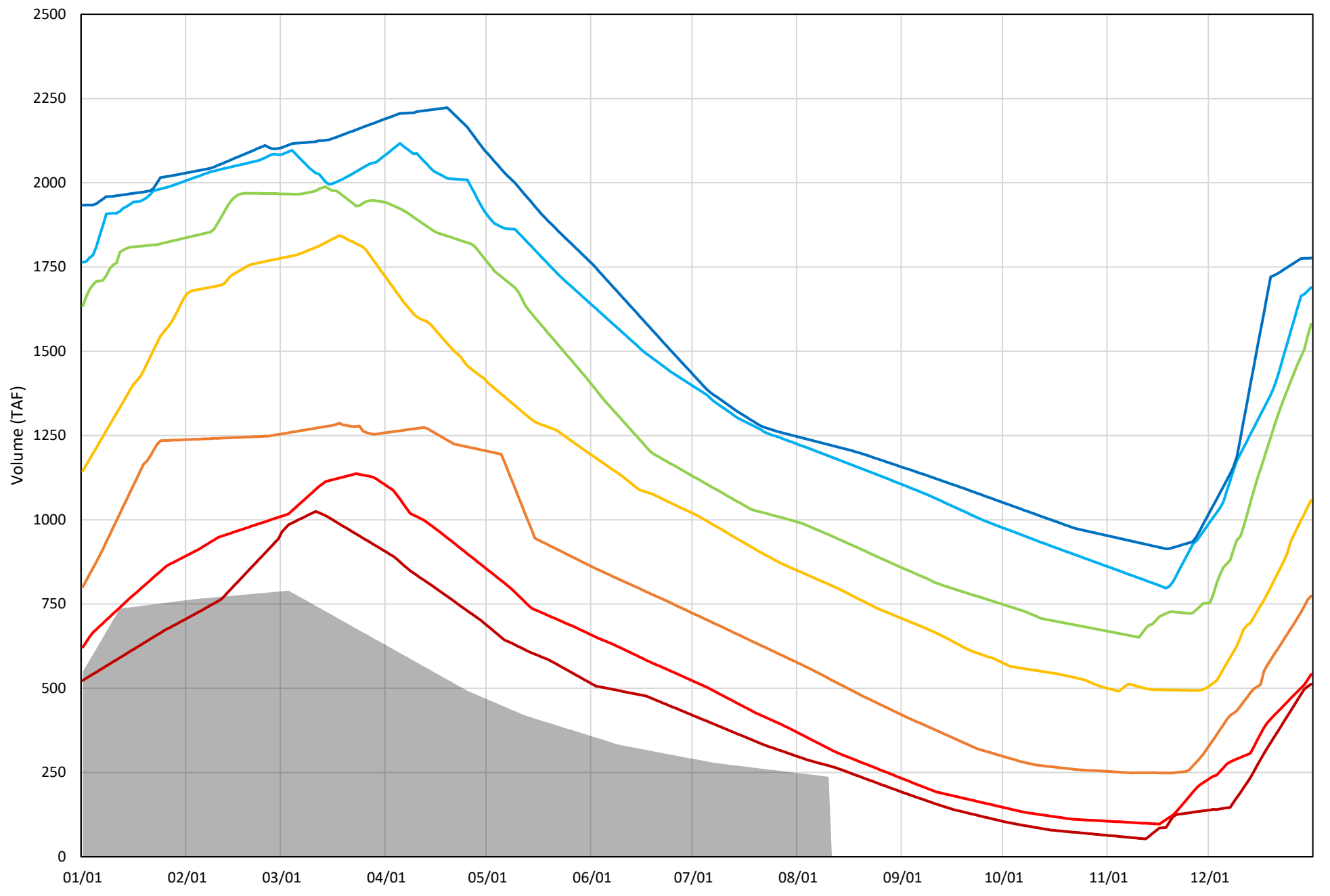


Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2021)

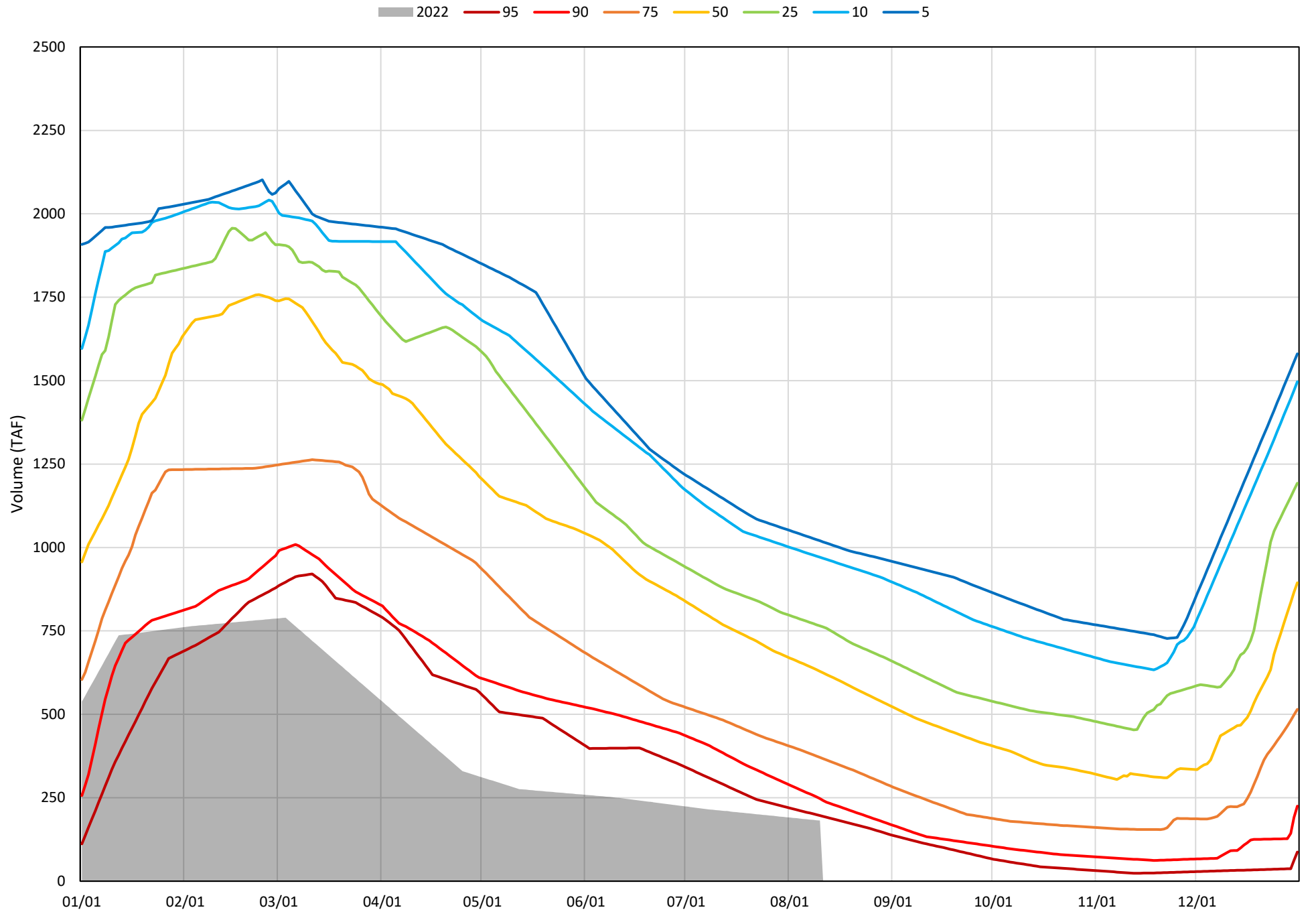


Trinity Lake Cold Water Pool Volume ≤50°F - Percent Exceedances (2000-2021)

2022 95 90 75 50 25 10 5



Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances (2000-2021)



Trinity Cold Water Pool Comparison by Year (for Specified Date)

Aug-11 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	772	615	445	611	285	259	245	263
2001	626	545	450	540	231	230	248	236
2002	638	579	505	574	235	244	278	252
2003	1009	784	577	790	372	330	318	340
2004	668	536	362	522	246	226	199	224
2005	853	697	399	650	315	293	220	276
2006	999	861	644	834	368	363	354	362
2007	684	630	561	625	252	265	309	275
2008	398	307	202	302	147	129	111	129
2009	310	247	151	236	114	104	83	101
2010	656	517	291	488	242	218	160	207
2011	1118	972	748	946	412	409	412	411
2012	949	906	807	887	350	381	444	392
2013	490	437	343	423	181	184	189	185
2014	74	66	50	63	27	28	27	28
2015	47	27	9	28	17	11	5	11
2016	241	151	108	167	89	64	60	71
2017	790	638	483	637	291	269	266	275
2018	733	679	602	671	270	286	331	296
2019	1061	988	844	964	391	416	465	424
2020	593	564	452	536	219	237	249	235
2021	137	125	102	121	50	53	56	53
2022	0	0	0	0	0	0	0	0

Historic - Current

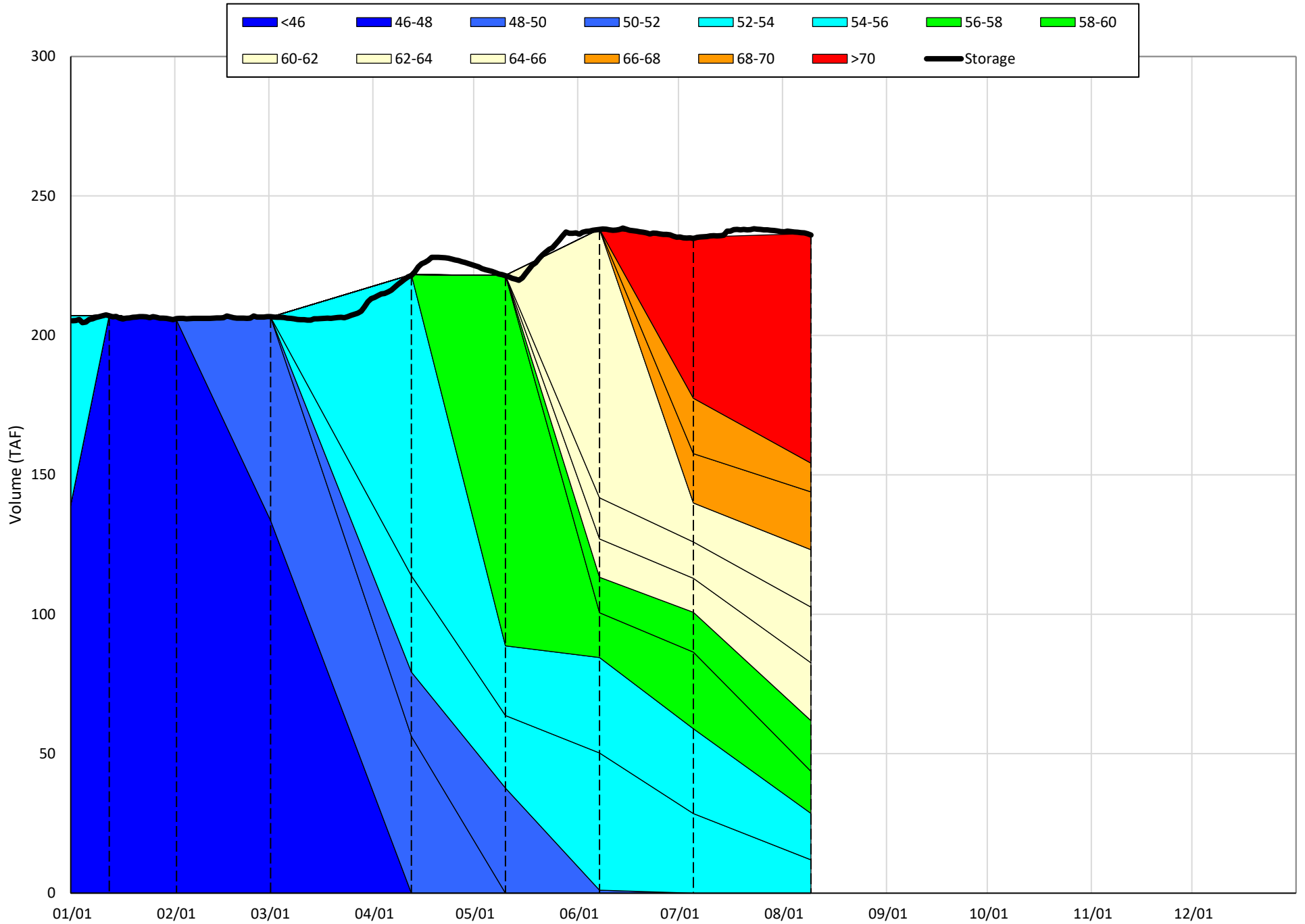
(Historic - Current) / Current

Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

2022

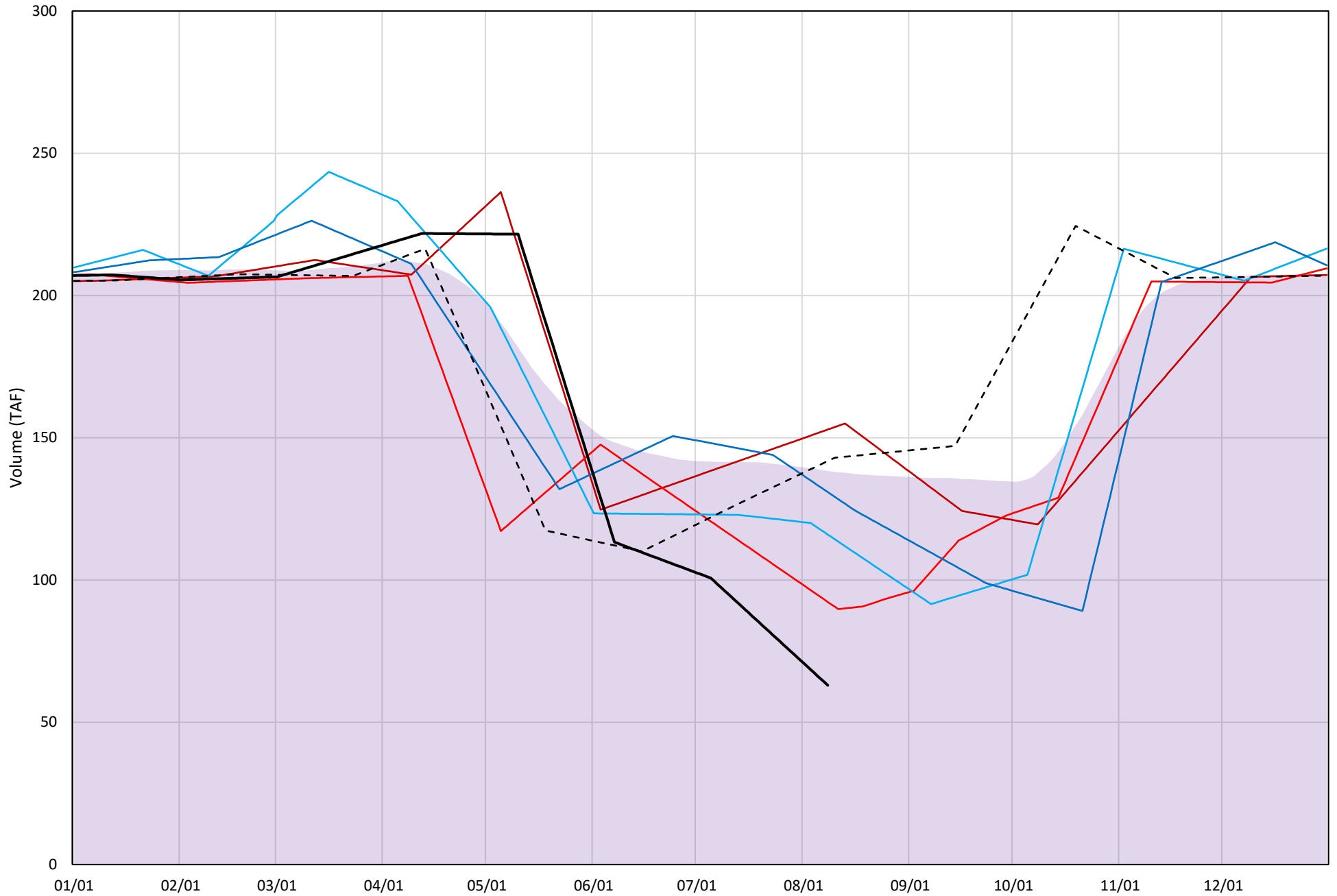
Page	Description
24	- Whiskeytown Lake Isothermobaths Plot
25	- Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$
26	- Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$
27	- Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$
28	- Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$ - Percent Exceedances
29	- Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$ - Percent Exceedances
30	- Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$ - Percent Exceedances
31	- Whiskeytown Lake Cold Water Pool Comparison by Year

Whiskeytown Lake Isothermobaths Plot - 2022



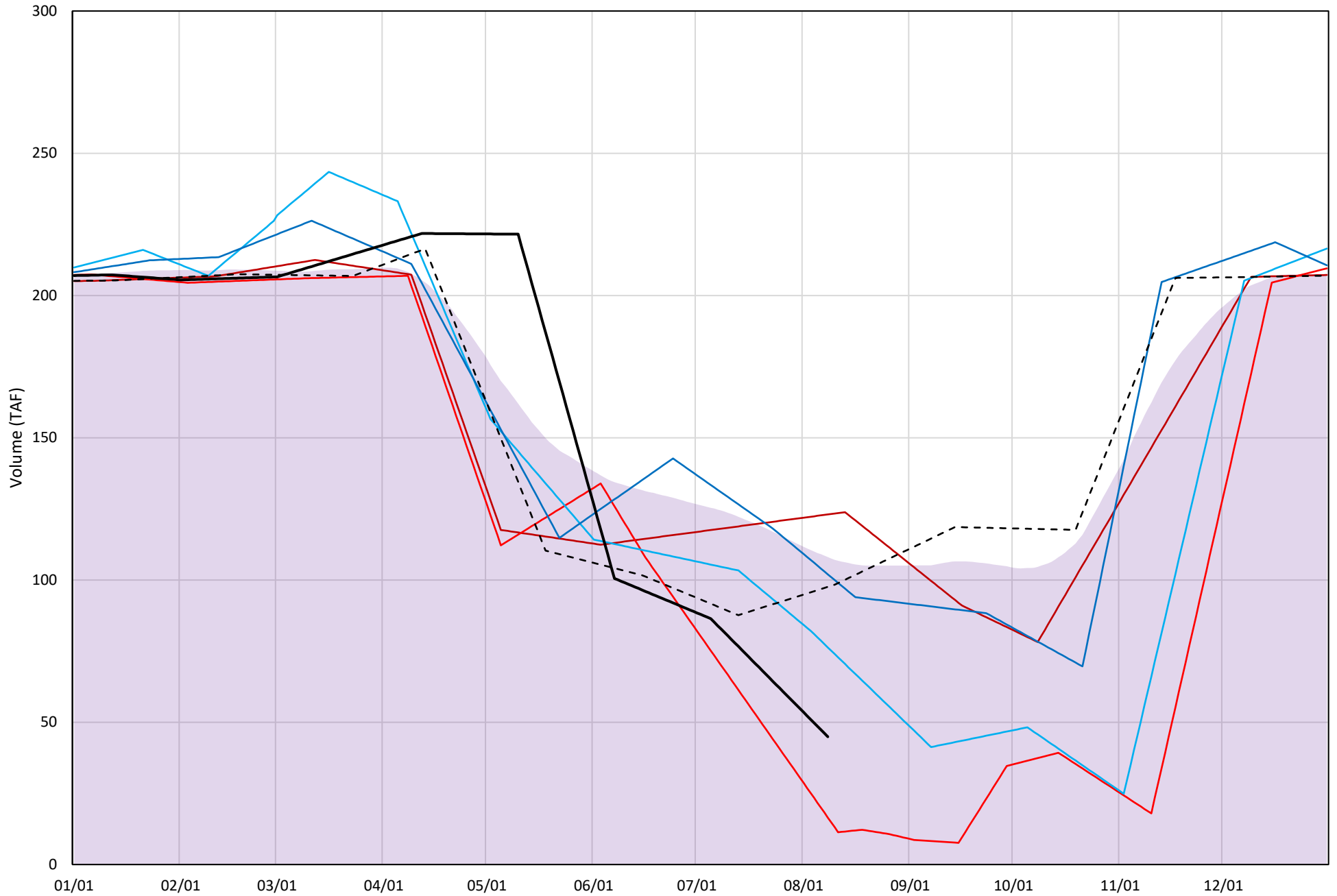
Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

Avg (2000-2021) 2014 2015 2016 2019 2021 2022



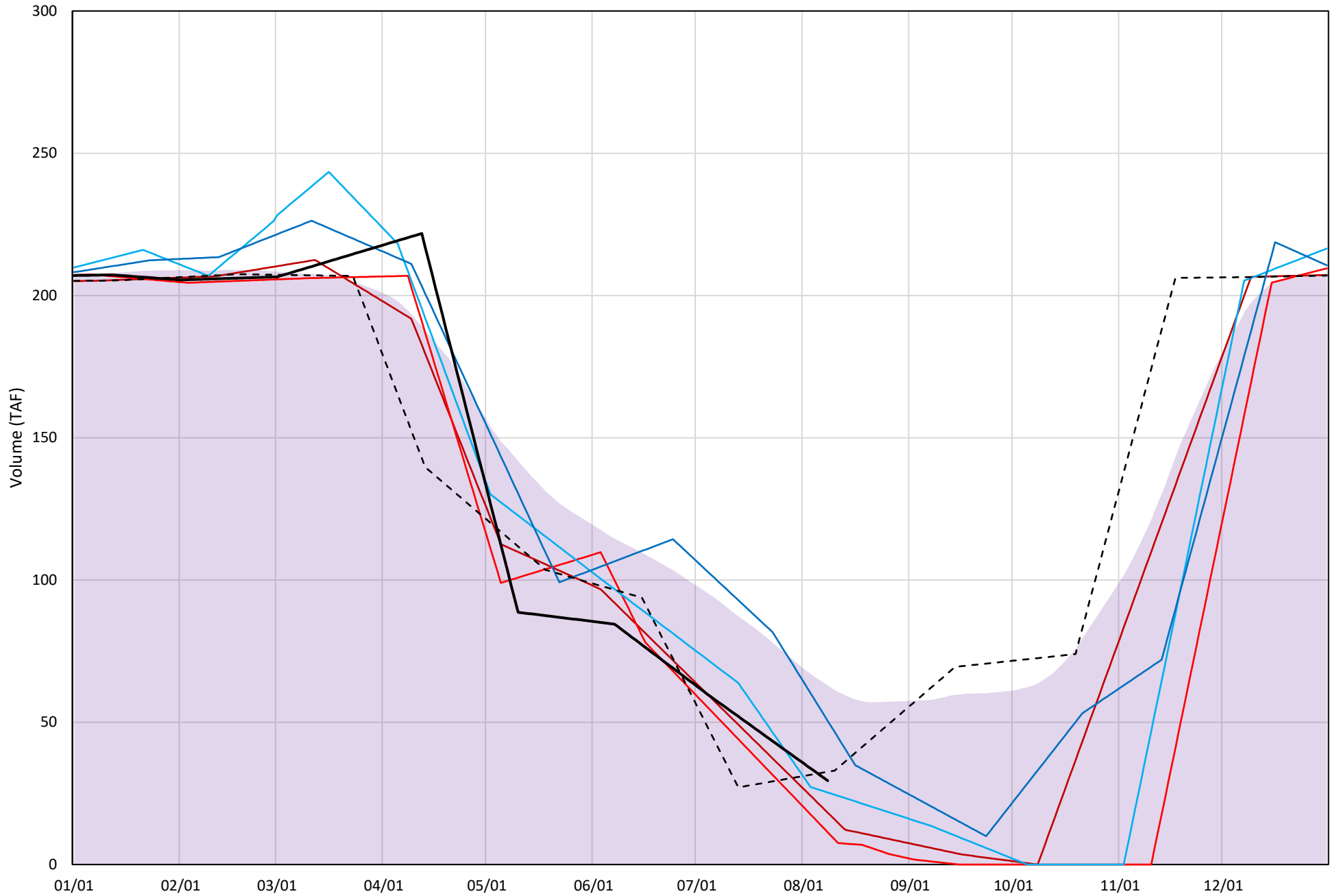
Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

Avg (2000-2021) 2014 2015 2016 2019 2021 2022

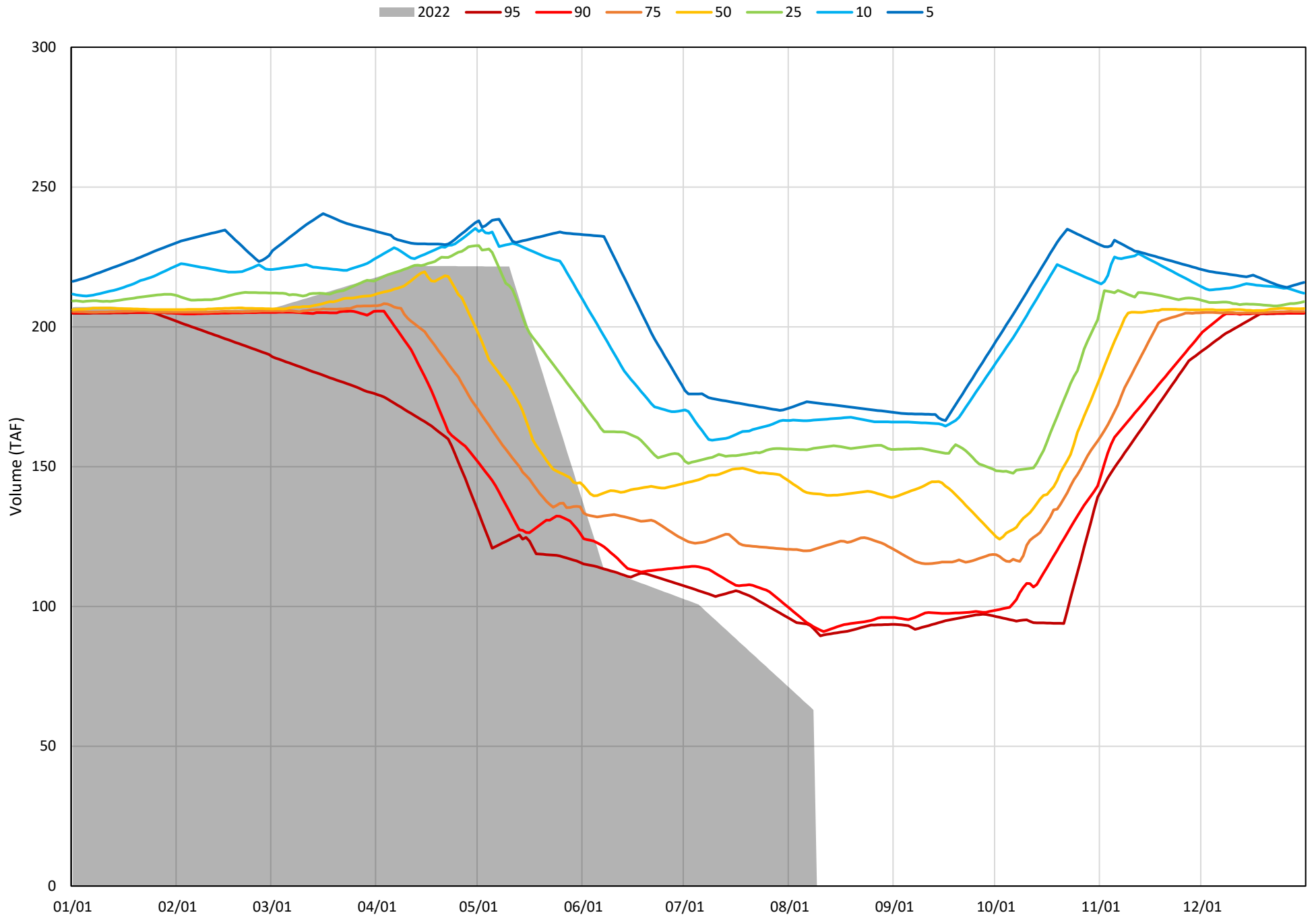


Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

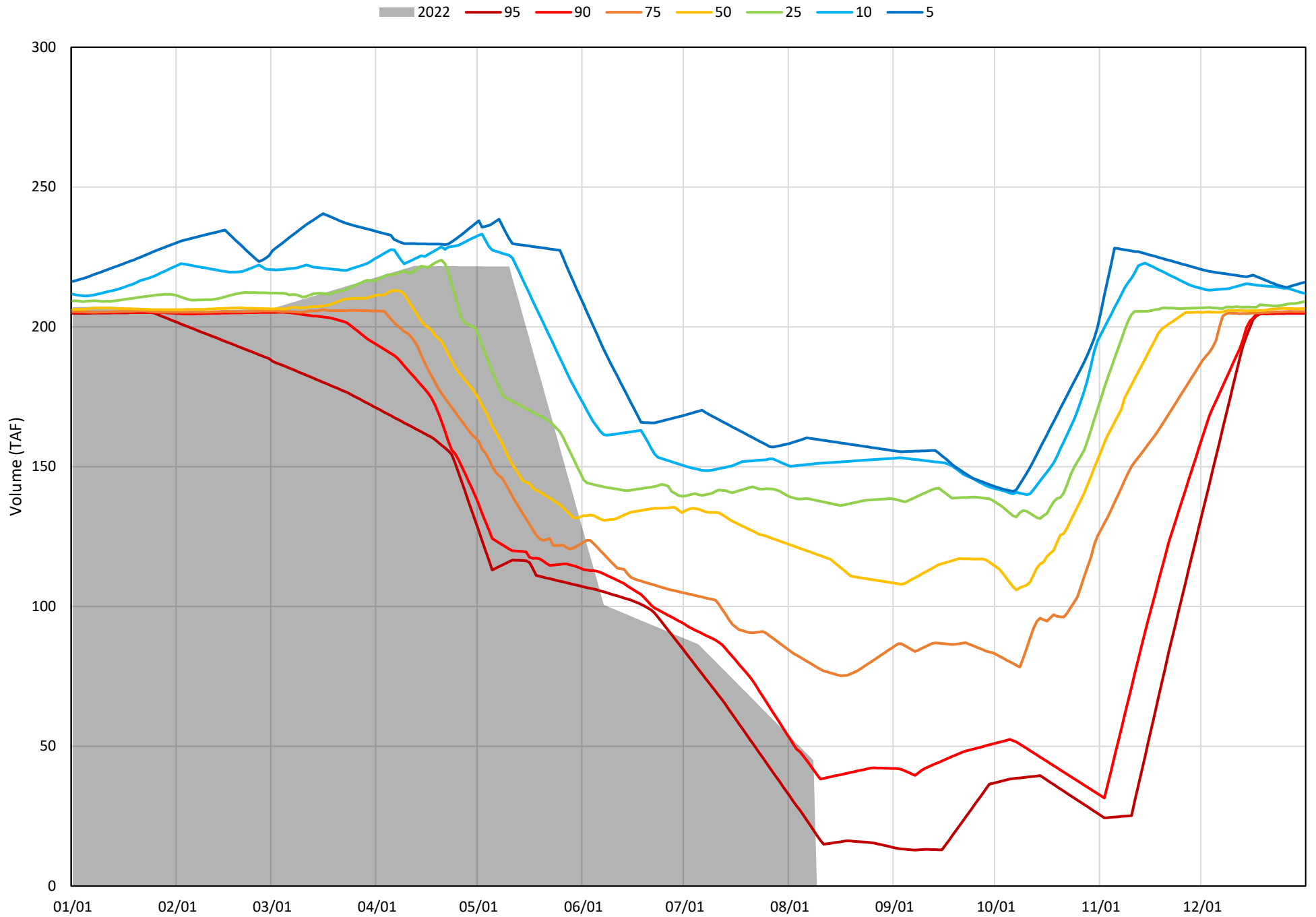
Avg (2000-2021) 2014 2015 2016 2019 2021 2022



Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$ - Percent Exceedances (2000-2021)

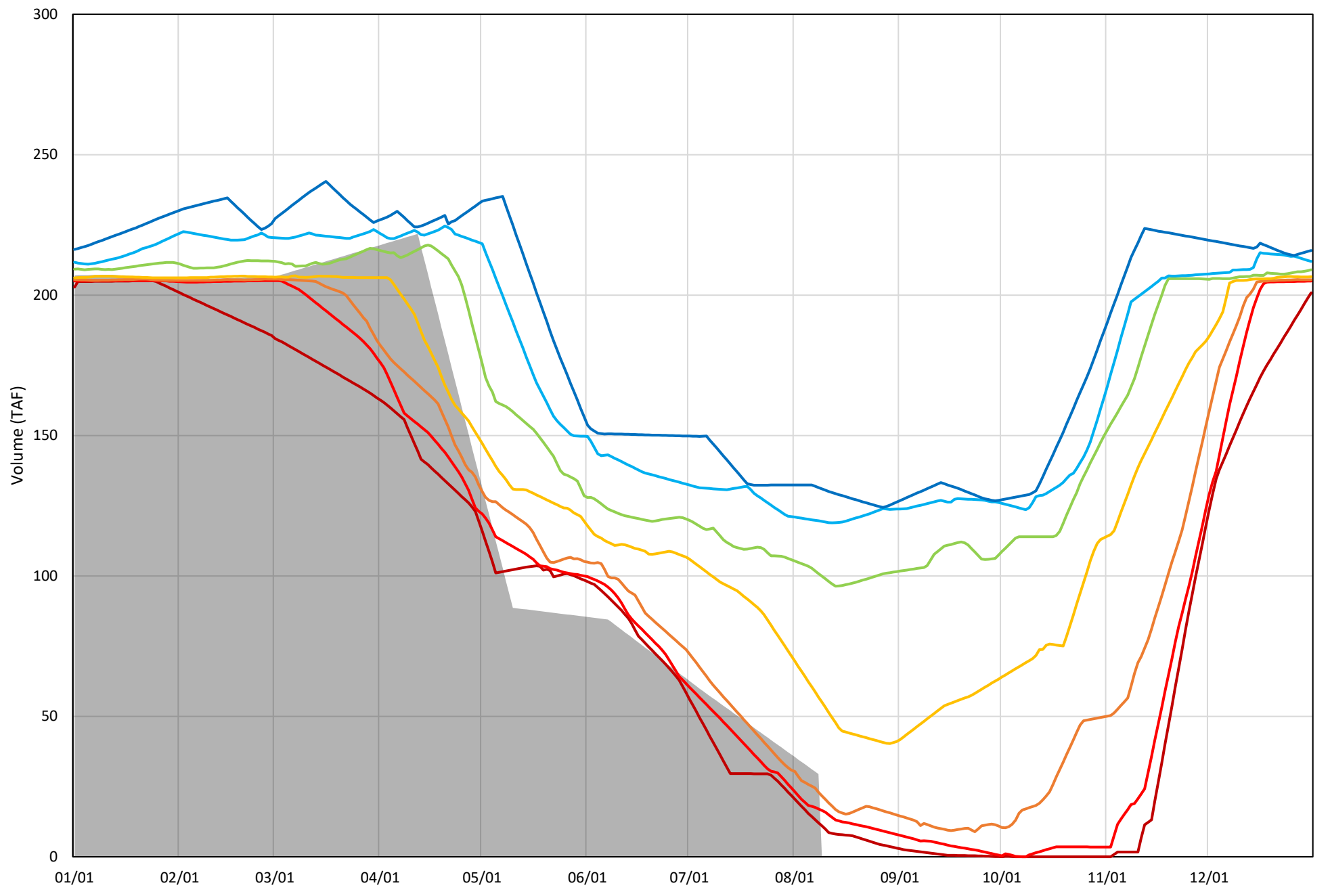


Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$ - Percent Exceedances (2000-2021)



Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$ - Percent Exceedances (2000-2021)

2022 95 90 75 50 25 10 5



Whiskeytown Cold Water Pool Comparison by Year (for Specified Date)

Aug-09 2022	Δ TAF				% Δ			
	≤60°	≤58°	≤56°	Abs. Avg.	≤60°	≤58°	≤56°	Abs. Avg.
2000	75.8	88.4	91.0	85.1	120.4	196.9	308.8	208.7
2001	96.1	101.5	88.3	95.3	152.6	226.1	299.8	226.2
2002	92.7	94.0	64.0	83.6	147.3	209.4	217.4	191.3
2003	85.3	81.2	41.0	69.2	135.4	180.8	139.3	151.8
2004	91.9	86.0	49.7	75.9	145.9	191.5	168.8	168.7
2005	30.7	1.9	-10.6	14.4	48.8	4.3	-36.1	29.7
2006	106.1	108.0	83.9	99.4	168.5	240.5	284.9	231.3
2007	96.2	91.4	65.1	84.2	152.7	203.5	221.0	192.4
2008	97.8	98.6	73.2	89.9	155.3	219.5	248.4	207.7
2009	58.4	27.3	-12.9	32.8	92.7	60.7	-43.7	65.7
2010	29.1	-5.6	-10.0	14.9	46.2	-12.4	-33.8	30.8
2011	75.8	70.1	33.8	59.9	120.4	156.1	114.8	130.5
2012	73.7	49.7	-5.3	42.9	117.1	110.5	-17.9	81.8
2013	110.6	116.3	104.0	110.3	175.6	258.8	352.9	262.5
2014	89.9	78.1	-11.3	59.8	142.8	174.0	-38.2	118.3
2015	29.3	-28.4	-18.1	25.3	46.6	-63.2	-61.6	57.1
2016	53.0	31.4	-4.2	29.5	84.2	69.9	-14.1	56.1
2017	92.2	93.0	70.8	85.3	146.5	207.0	240.4	197.9
2018	72.7	61.8	12.6	49.0	115.5	137.6	42.7	98.6
2019	67.9	57.1	21.0	48.7	107.9	127.2	71.3	102.1
2020	54.5	34.9	7.7	32.4	86.5	77.8	26.0	63.4
2021	78.8	52.7	3.1	44.9	125.2	117.3	10.6	84.3
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Historic - Current

(Historic - Current) / Current