

Northern CVP Water Temperature Report

July - 2022

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— 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	
Jun	50.8	49.2	54.6	52.4	53.9	55.2	59.1	62.0	64.0	57.5	54.6	60.7	63.5	3448	299	4072	78.1	74.4	76.2	
07/01	50.3	? 49.1	55.1	51.6	53.2	54.4	58.2	61.4	63.8	59.0	57.1	63.3	67.6	3675	366	4516	79.5	75.3	74.5	
07/02	50.4	? 49.2	56.3	51.8	53.4	54.6	58.3	61.4	63.6	58.9	57.1	63.8	67.1	3668	447	4544	76.5	71.9	71.6	
07/03	50.4	? 49.0	55.2	52.2	53.3	54.3	57.9	60.8	? 62.9	57.9	56.4	61.9	65.7	3448	388	4557	70.0	68.3	67.3	
07/04	50.3	? 49.1	56.2	52.1	53.5	54.4	57.7	60.2	62.3	58.1	55.8	60.8	64.6	3996	366	4536	74.5	72.0	70.6	
07/05	50.6	48.9	55.3	51.8	53.0	53.9	57.7	61.0	62.9	57.9	55.3	60.9	64.4	3791	376	4539	79.0	76.3	76.4	
07/06	50.8	? 49.2	55.2	51.5	53.2	54.4	57.6	60.7	? 63.3	58.9	55.1	61.2	65.4	3689	359	4535	78.0	74.9	73.3	
07/07	50.3	48.9	55.3	51.7	53.2	54.4	58.3	61.5	63.6	59.3	55.5	62.5	66.7	3366	347	4534	78.0	74.0	73.6	
07/08	50.9	? 49.2	55.2	52.0	53.6	54.8	58.4	!	63.8	59.3	55.3	62.5	67.4	4207	373	4537	81.5	76.5	78.0	
07/09	51.0	49.8	55.4	52.1	53.7	55.0	58.7	!	64.1	58.3	56.0	62.8	67.9	3802	361	4537	81.0	76.8	76.5	
07/10	51.1	49.8	55.3	52.4	54.0	55.4	59.1	62.2	64.5	58.7	56.3	63.8	68.8	3679	359	4551	86.0	82.3	84.0	
07/11	50.5	49.1	55.5	52.5	54.2	55.5	59.6	63.0	65.3	58.7	56.2	64.4	70.2	3798	355	4573	91.0	86.2	86.4	
07/12	50.3	49.1	55.5	52.6	54.1	55.4	59.4	63.0	65.5	58.4	56.1	64.0	70.2	5203	362	4571	89.5	84.1	84.4	
07/13	50.2	49.2	56.6	52.5	54.0	55.3	59.2	62.4	? 64.8	58.6	56.4	64.2	70.3	4248	360	4573	84.5	79.5	78.9	
07/14	50.3	49.4	55.7	52.4	53.8	55.1	58.9	62.3	64.6	58.6	56.4	64.1	69.6	3173	351	4563	83.0	79.6	79.8	
07/15	51.0	? 49.5	56.3	52.7	54.1	55.5	59.1	62.3	64.5	58.7	56.8	64.2	69.5	4335	75	4555	87.0	81.8	81.8	
07/16	50.5	50.0	56.8	52.8	54.2	55.6	59.2	62.4	64.6	58.7	56.5	64.5	69.9	3803	360	4528	87.5	82.1	83.3	
07/17	50.6	49.9	55.8	53.1	54.5	55.9	59.4	62.5	64.6	58.8	56.0	64.4	70.1	3793	363	4515	87.5	83.2	84.9	
07/18	49.8	49.3	55.8	52.8	54.2	55.8	59.6	62.8	64.8	58.7	56.1	63.8	69.9	3257	494	4516	86.5	82.2	83.6	
07/19	49.6	48.6	57.0	52.8	54.2	55.6	58.9	62.4	64.7	58.5	56.2	63.9	69.9	3833	364	4507	84.5	80.9	81.9	
07/20	50.2	49.3	56.0	52.2	53.8	55.4	#	62.1	64.4	58.5	55.9	63.7	69.9	3750	327	4504	86.0	81.3	82.1	
07/21	50.3	49.3	56.0	52.0	53.4	54.9	59.7	62.1	64.4	58.7	56.3	63.4	69.2	3878	360	4504	86.5	82.4	81.9	
07/22	50.8	49.5	57.3	52.3	53.6	55.1	59.5	61.9	64.3	58.6	56.5	63.2	68.4	3241	362	4504	84.5	81.5	81.0	
07/23	50.3	50.0	56.1	52.5	53.9	55.3	59.4	61.8	64.0	58.7	56.6	63.7	68.9	3605	373	4505	86.0	81.3	80.0	
07/24	50.3	49.2	57.2	52.9	54.3	55.6	59.5	61.9	63.9	58.7	56.8	64.2	70.0	4047	366	4501	86.0	80.6	80.3	
07/25	49.7	49.0	56.2	52.7	54.1	55.5	59.7	62.3	64.2	58.5	56.5	63.9	70.1	3657	362	4505	87.5	83.0	81.2	
07/26	49.6	48.6	57.3	52.4	53.5	54.9	59.3	61.6	63.8	58.5	56.5	63.9	70.2	4003	433	4506	87.0	81.6	79.7	
07/27	49.4	48.4	56.3	52.0	53.5	55.0	59.5	61.4	63.5	59.1	56.7	64.7	70.6	3517	359	4500	89.0	84.1	81.3	
07/28	49.7	48.6	57.6	51.8	53.3	54.9	59.4	62.3	64.4	59.3	? 56.8	? 65.1	? 71.6	3690	361	4502	↑ 93.5	85.5	84.9	
07/29	49.9	48.8	56.4	51.7	53.2	54.7	59.4	62.6	64.9	59.6	57.1	65.2	71.9	3727	360	4541	91.5	85.6	83.2	
07/30	50.0	? 49.0	57.6	51.9	53.0	54.4	58.4	61.3	63.8	59.1	57.3	65.0	71.2	3665	353	4507	89.5	83.0	79.4	
07/31	50.0	? 49.0	56.4	52.2	53.6	55.0	58.4	61.1	62.9	59.5	57.4	64.8	70.8	3637	432	4508	90.0	83.6	82.0	
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	
														Total CFS	117181	11274	140374			
														Total AF	232424	22362	278426			

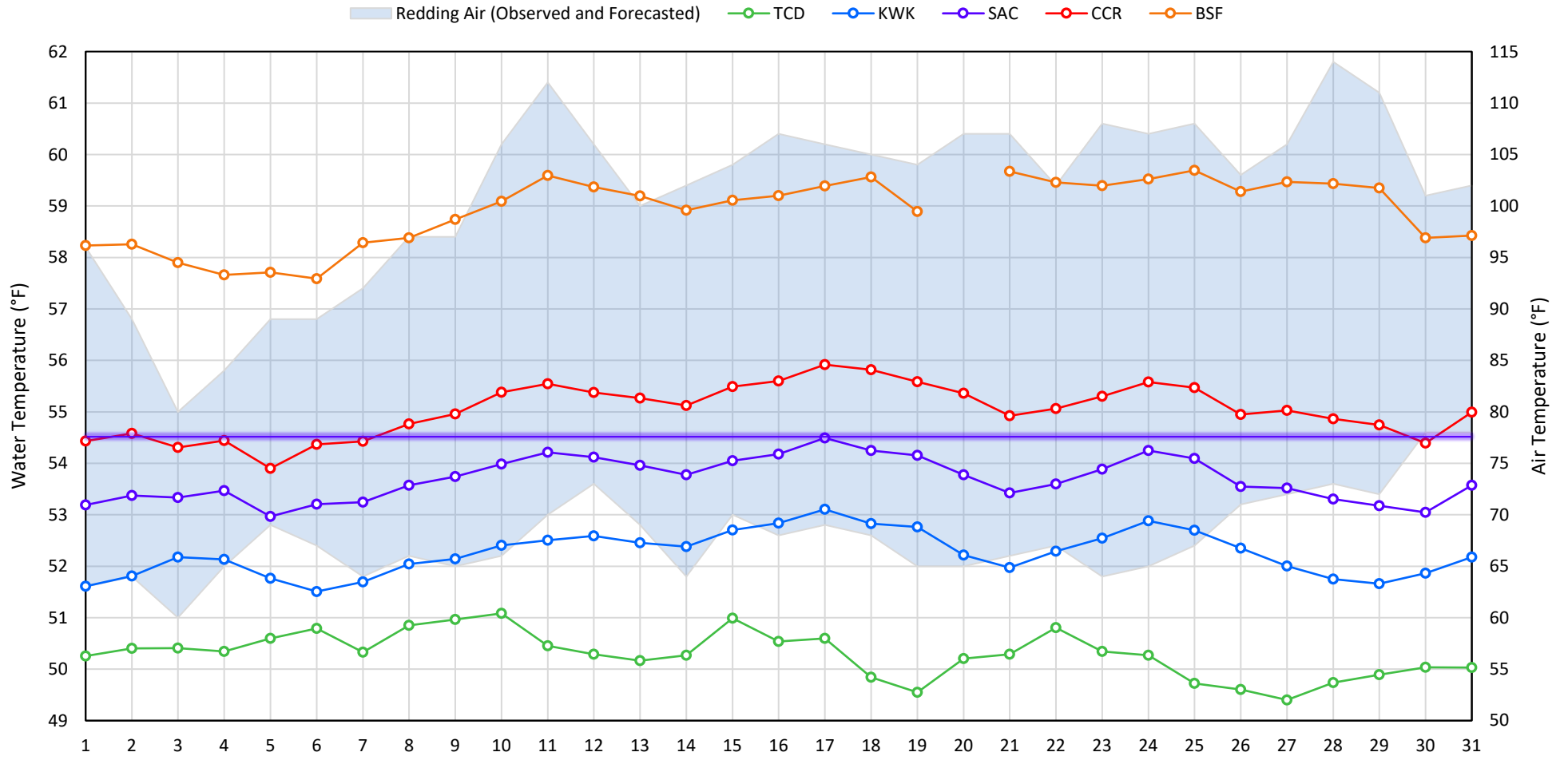
Legend

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 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

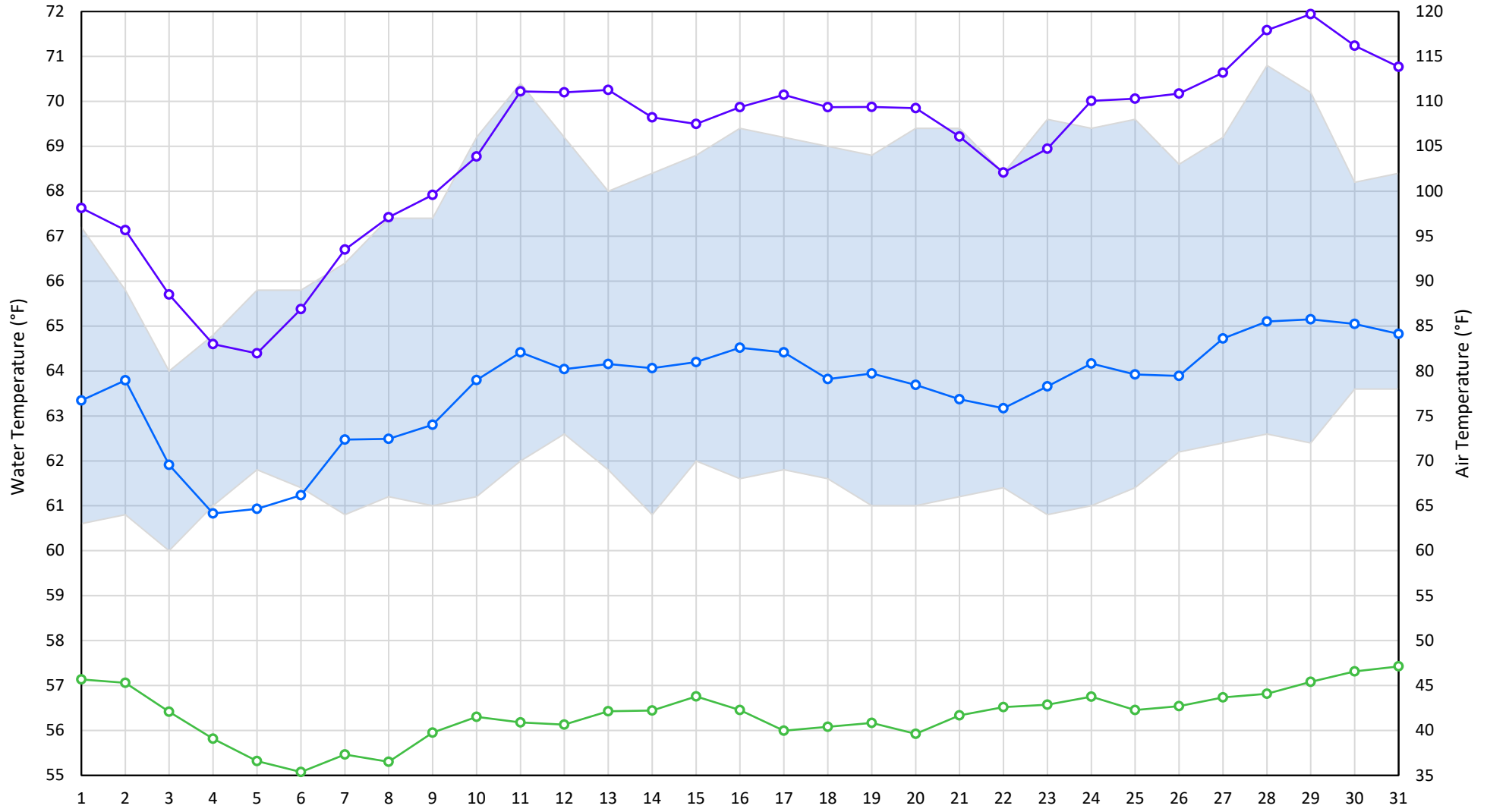
Water Right Temperature Control Points				
River	Point	Temp. (°F)	Begin Date	End Date
Sacramento	SAC	55	06/15/2021	05/02/2022
Sacramento	SAC	58	05/02/2022	06/07/2022
Sacramento	SAC	54.5	06/07/2022	TBD

Notes

¹ Distances are approximate

Trinity River Mean Daily Temperatures

Redding Air (Observed and Forecasted) LWS DGC NFH



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

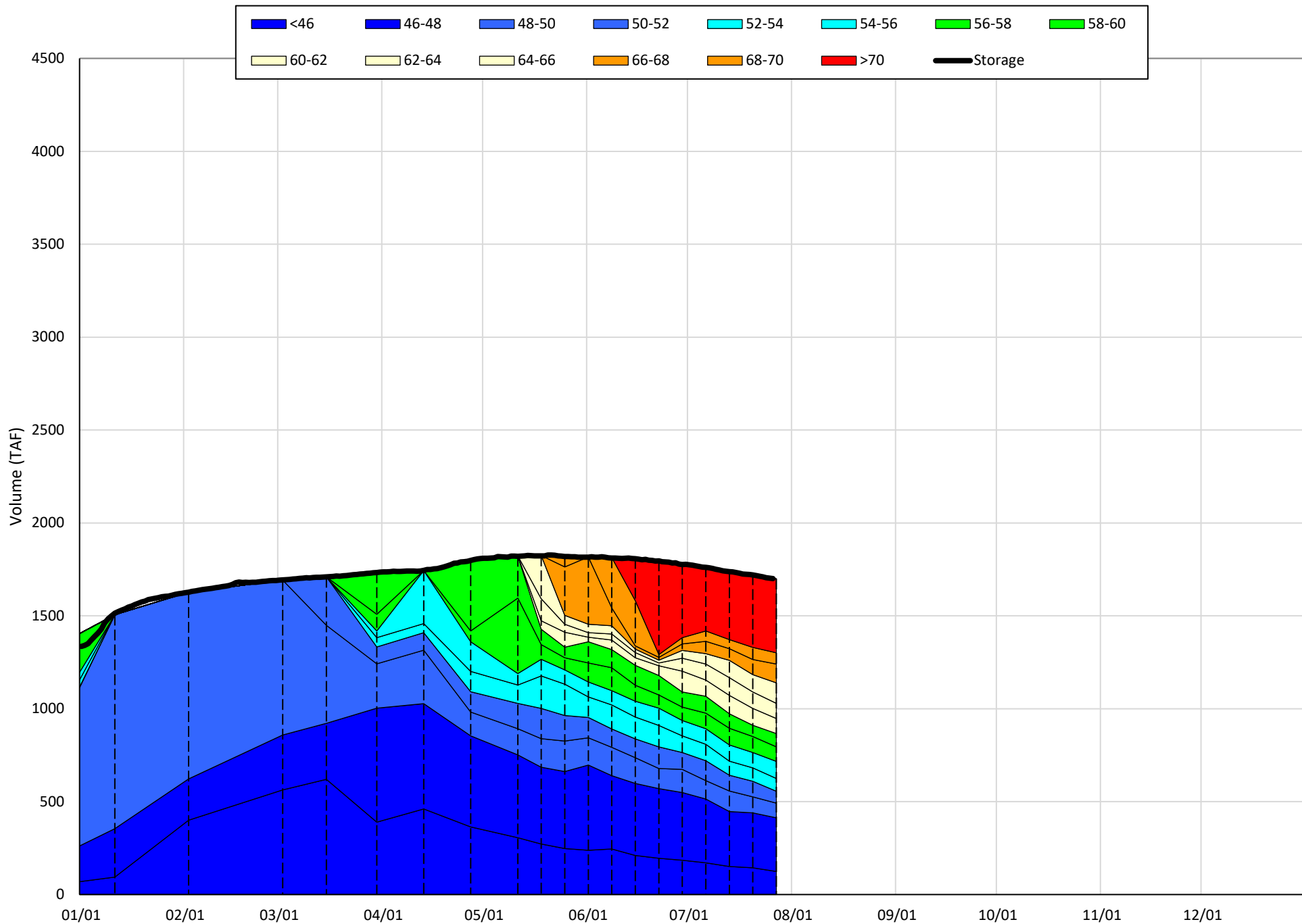
¹ Distances are approximate

Shasta Lake Isothermobaths & Cold Water Pool Statistics

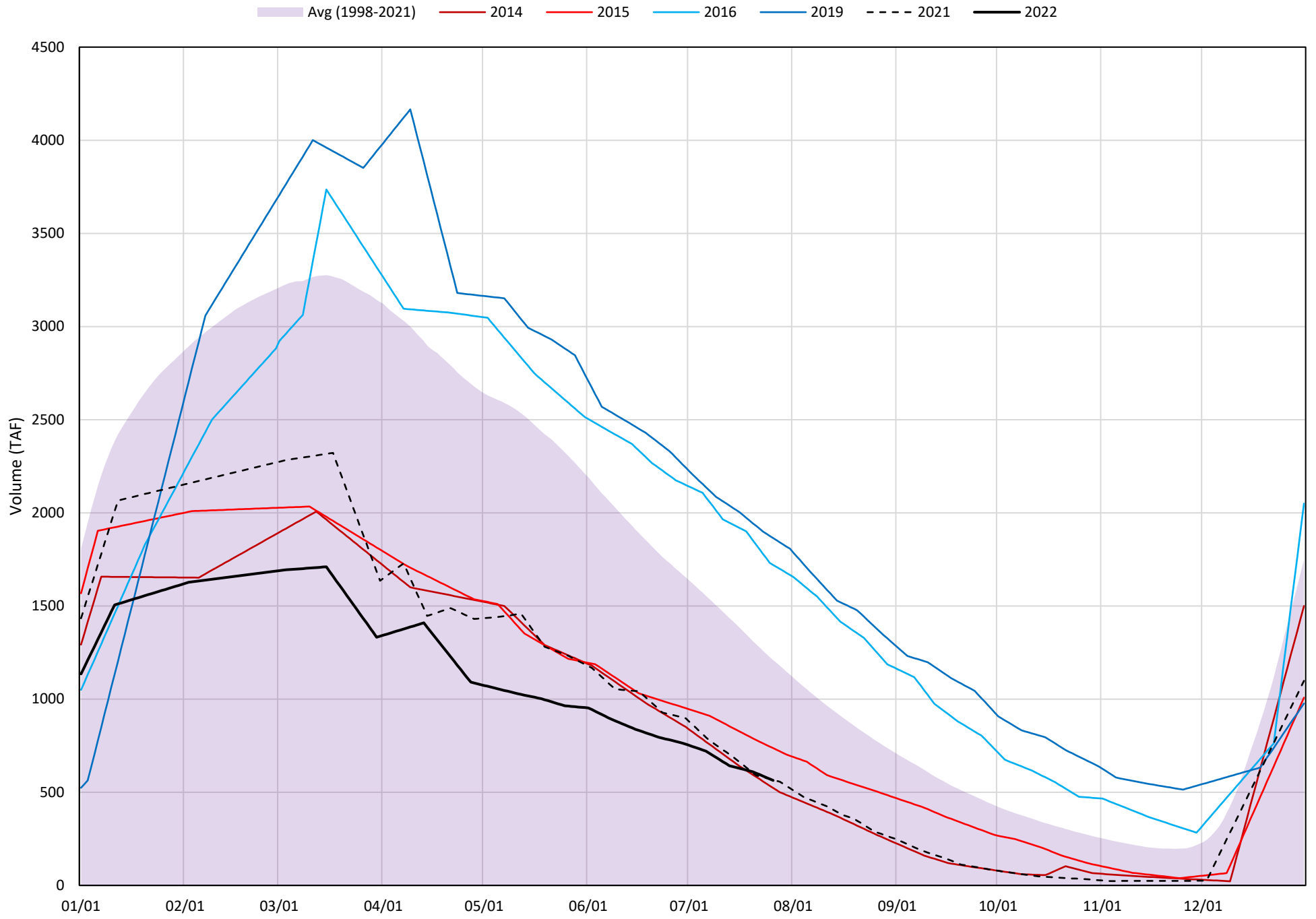
2022

Page	Description
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7	- Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
8	- Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
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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

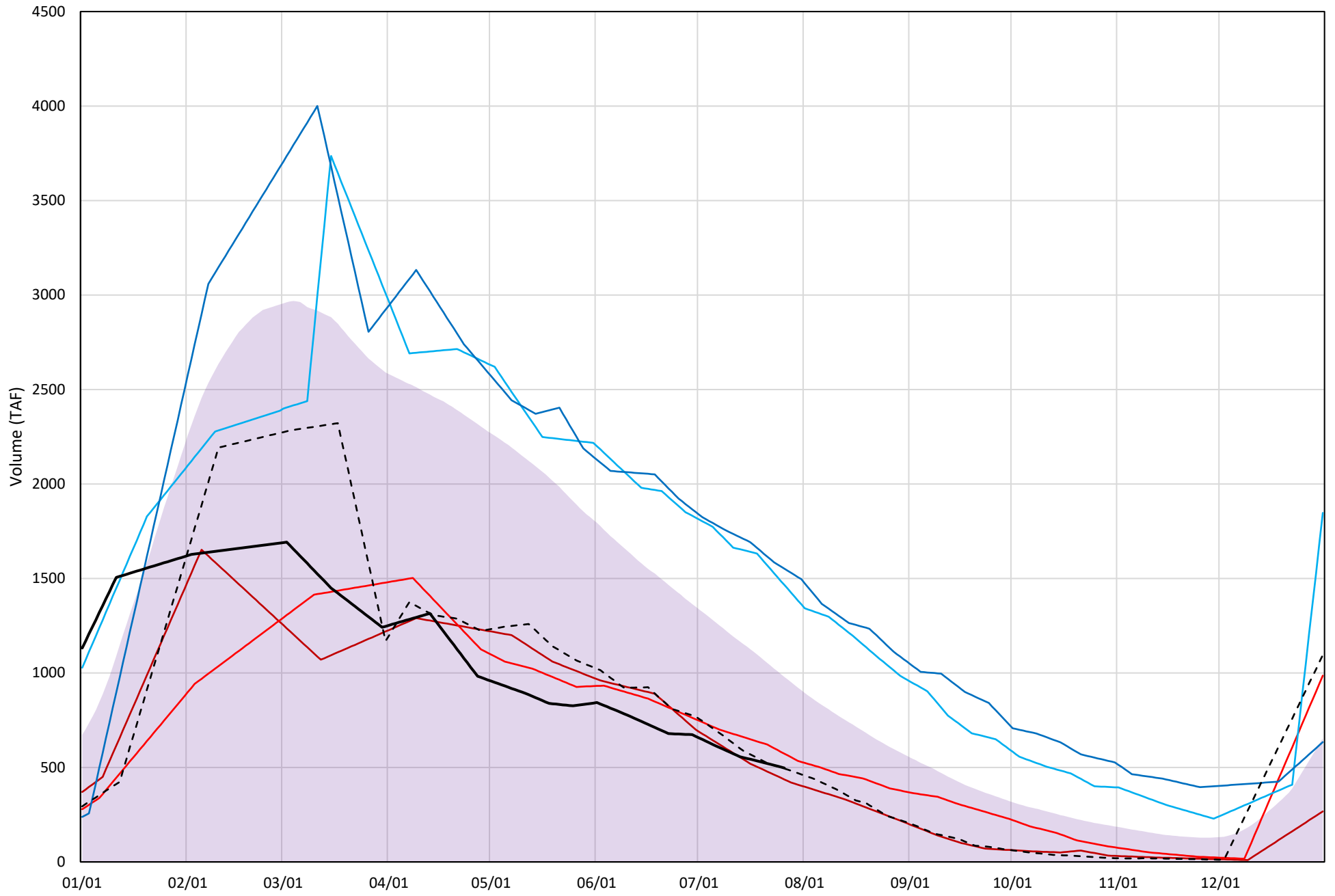


Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$



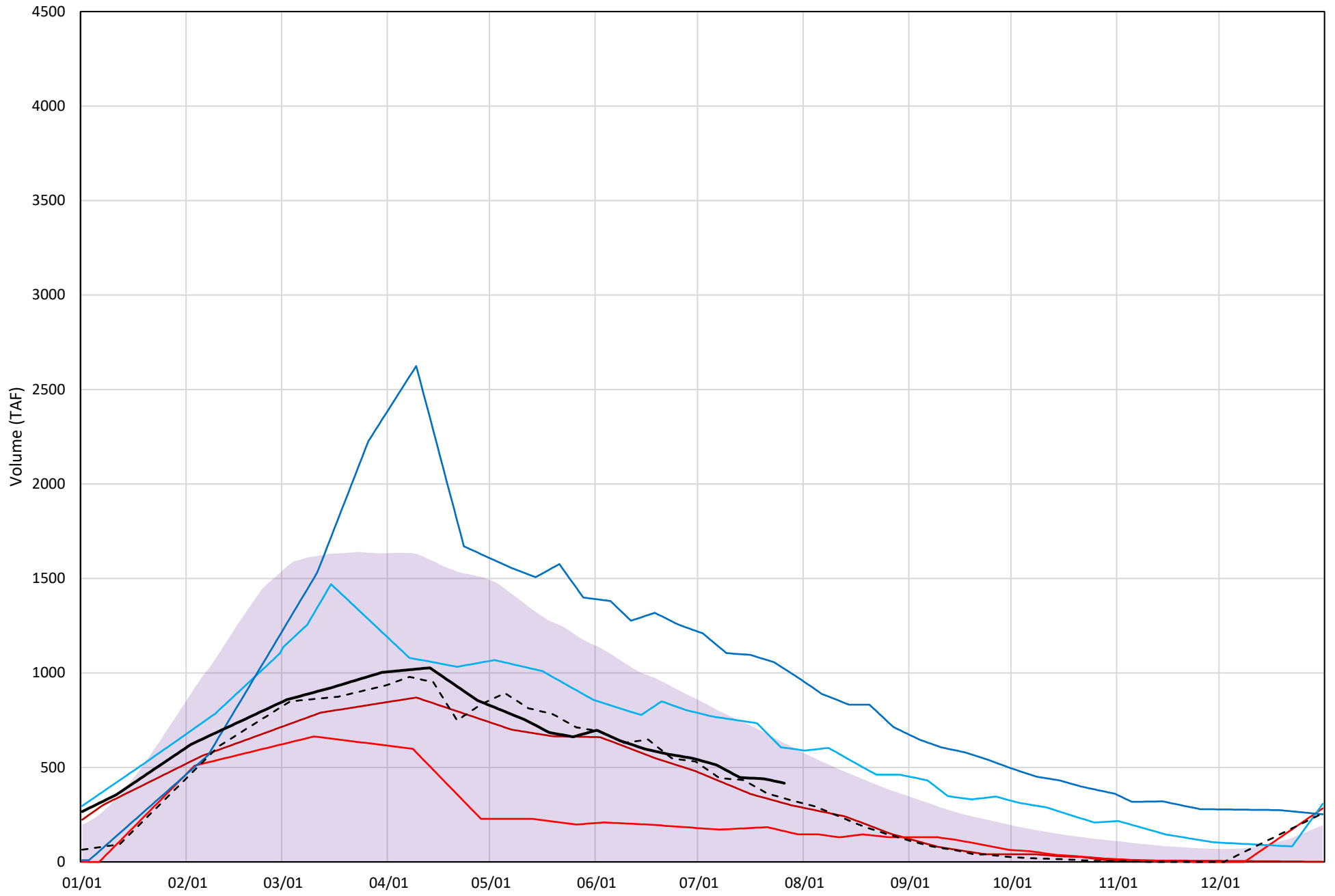
Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$

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



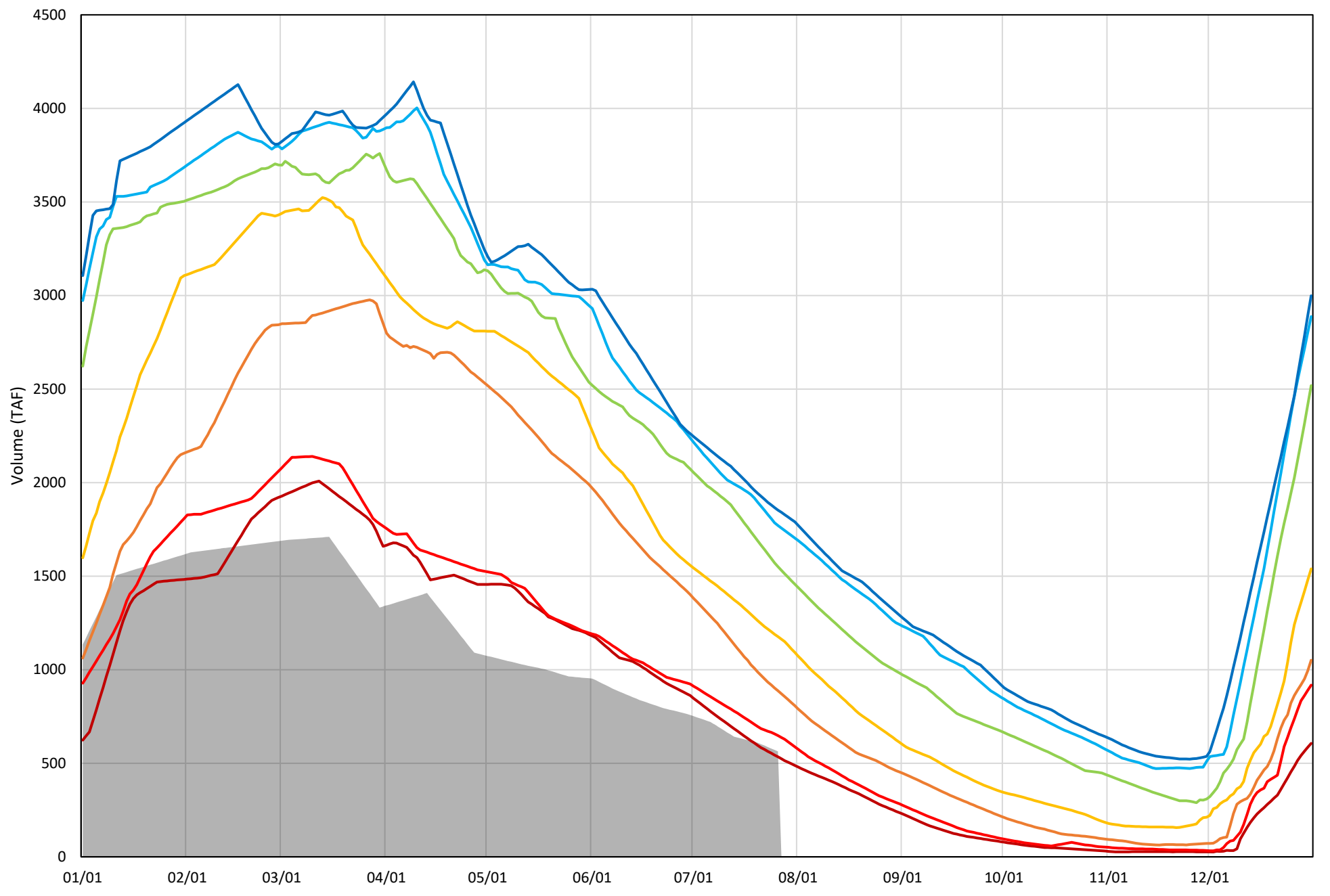
Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

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

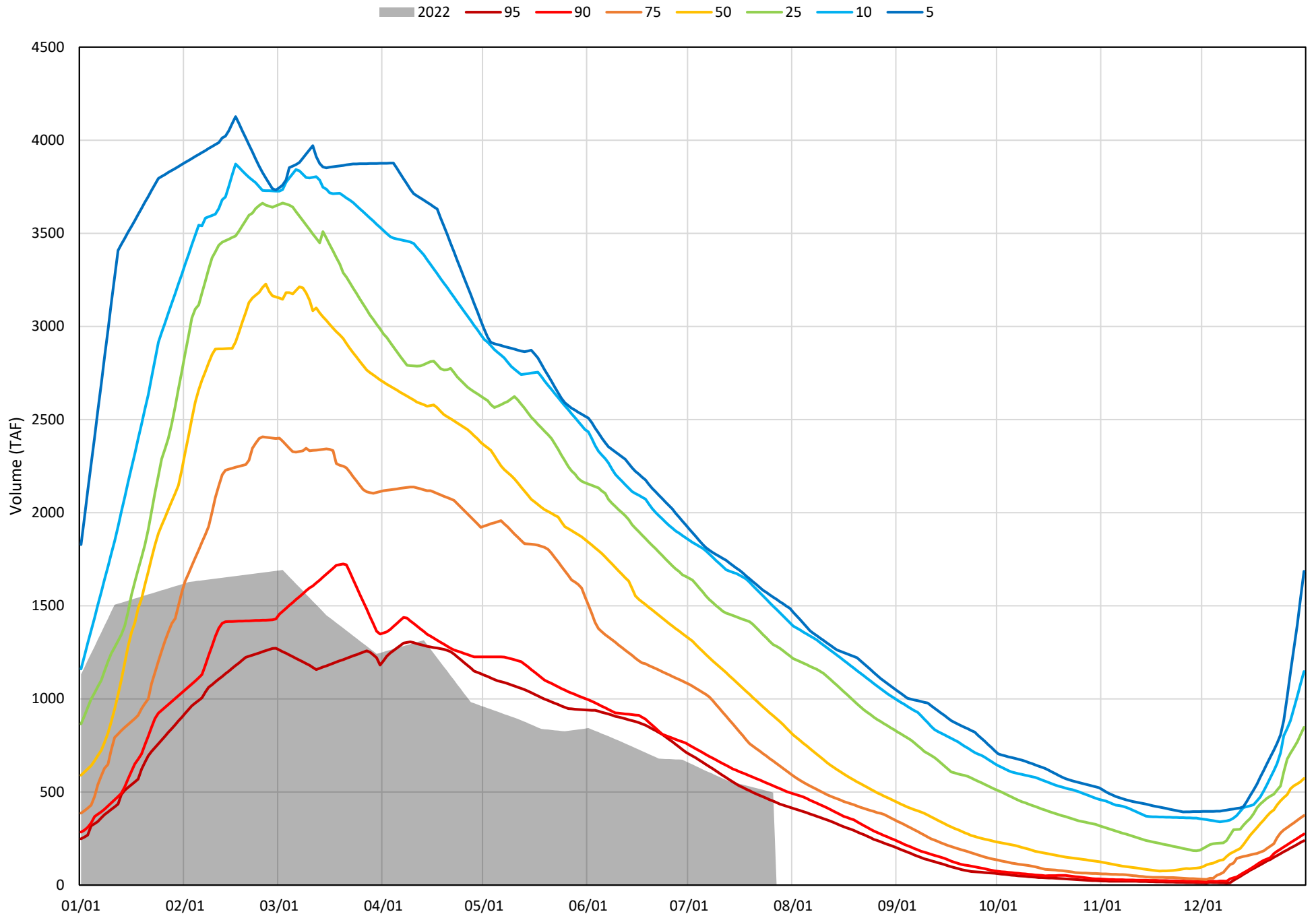


Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5

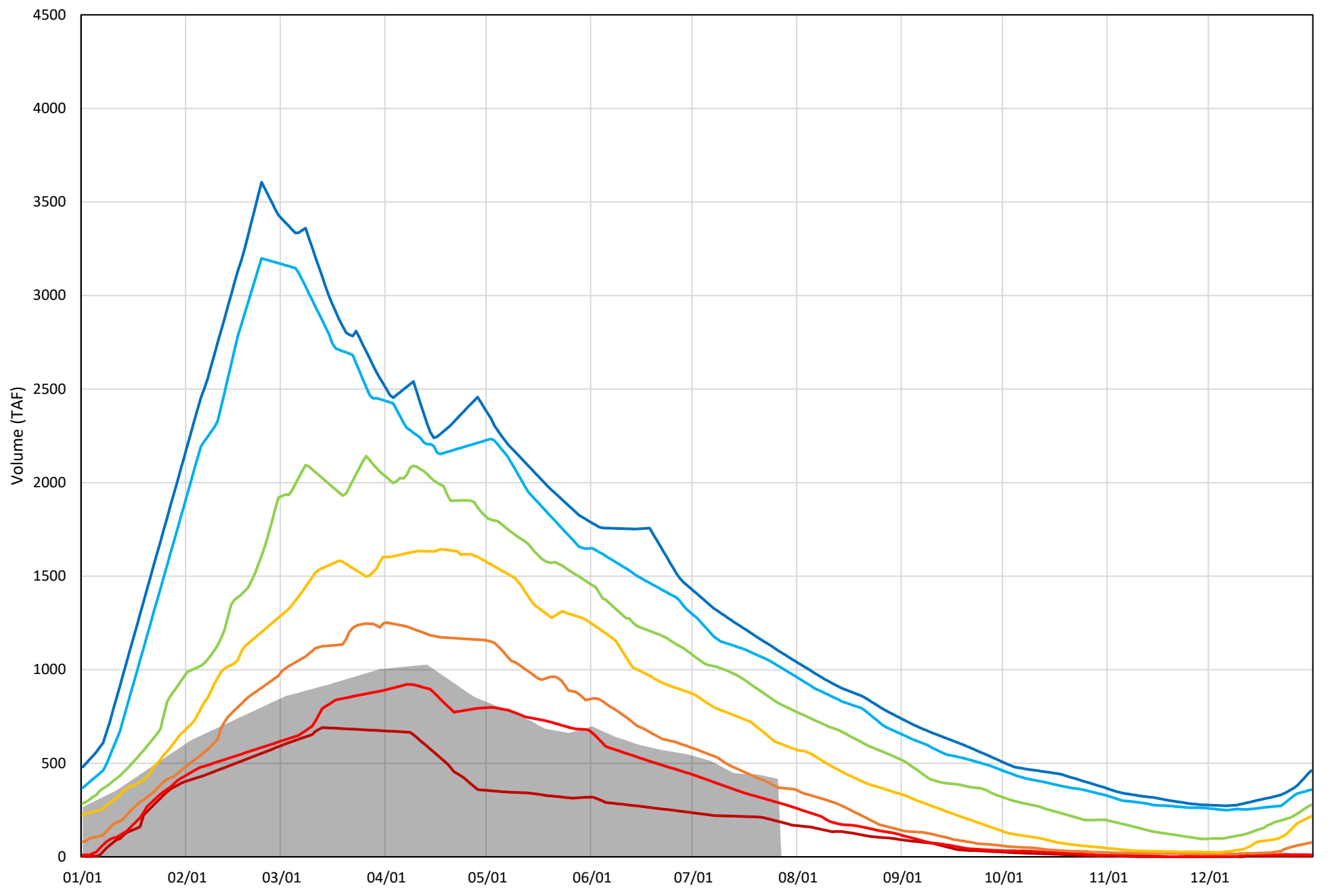


Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances (1998-2021)



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)

Jul-27 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
1998	688	340	13	347	122	68	3	65
1999	891	767	603	754	158	154	145	152
2000	546	303	-67	305	97	61	-16	58
2001	451	409	304	388	80	82	73	78
2002	711	606	382	566	126	122	92	113
2003	634	147	-146	309	112	30	-35	59
2004	308	203	90	200	55	41	22	39
2005	321	158	-67	182	57	32	-16	35
2006	901	686	364	650	160	138	87	128
2007	494	429	305	409	88	86	73	82
2008	165	141	122	143	29	28	29	29
2009	330	271	199	267	59	55	48	54
2010	1096	803	413	771	195	162	99	152
2011	1256	1033	713	1001	223	208	171	201
2012	1016	944	519	826	180	190	125	165
2013	479	416	290	395	85	84	70	79
2014	-40	-60	-107	69	-7	-12	-26	15
2015	173	76	-254	168	31	15	-61	36
2016	1157	969	187	771	205	195	45	148
2017	1129	814	448	797	200	164	107	157
2018	901	681	180	587	160	137	43	113
2019	1301	1055	605	987	231	212	145	196
2020	593	388	53	345	105	78	13	65
2021	3	-3	-81	29	1	-1	-19	7
2022	0	0	0	0	0	0	0	0

Historic - Current

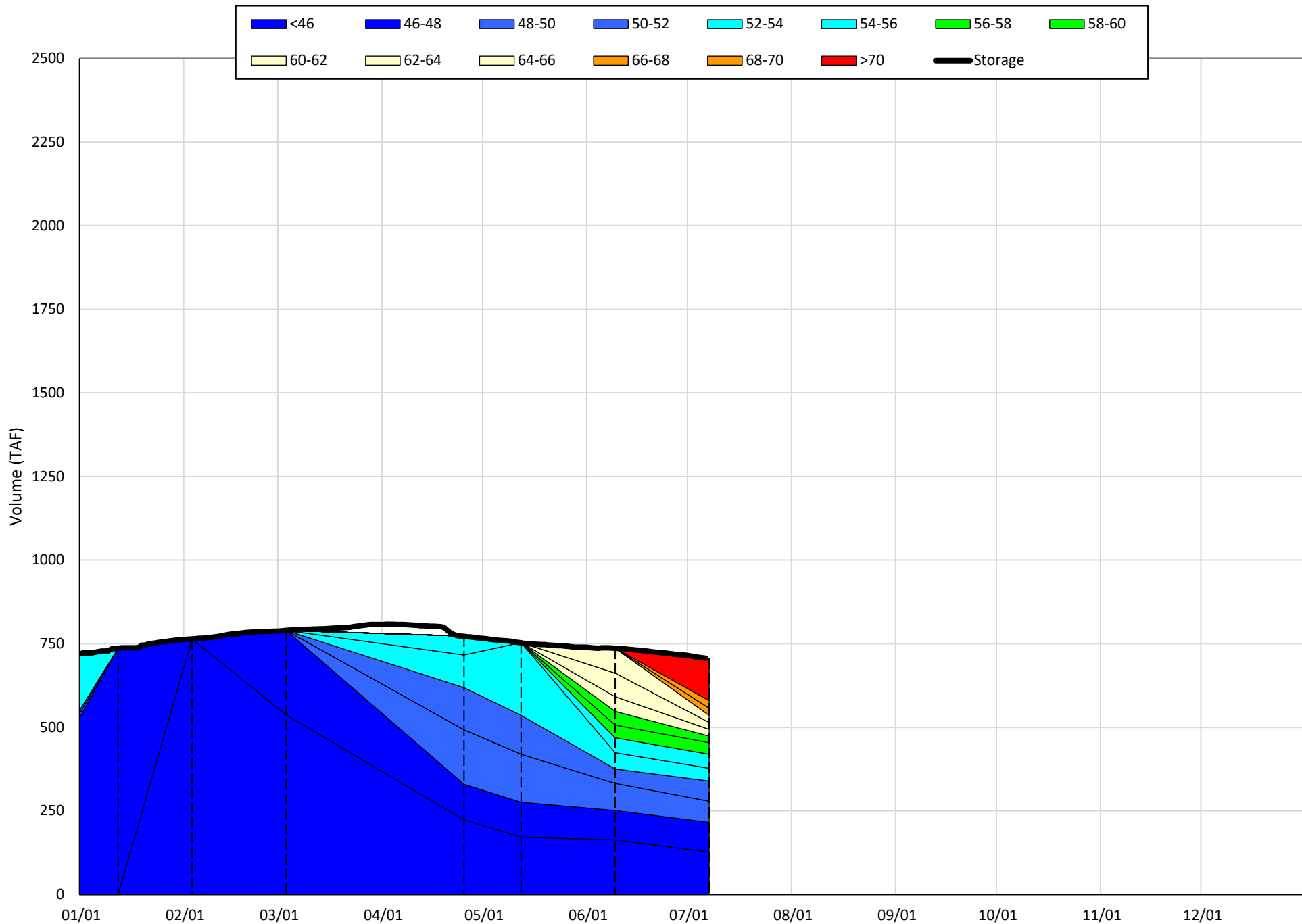
(Historic - Current) / Current

Trinity Lake Isothermobaths & Cold Water Pool Statistics

2022

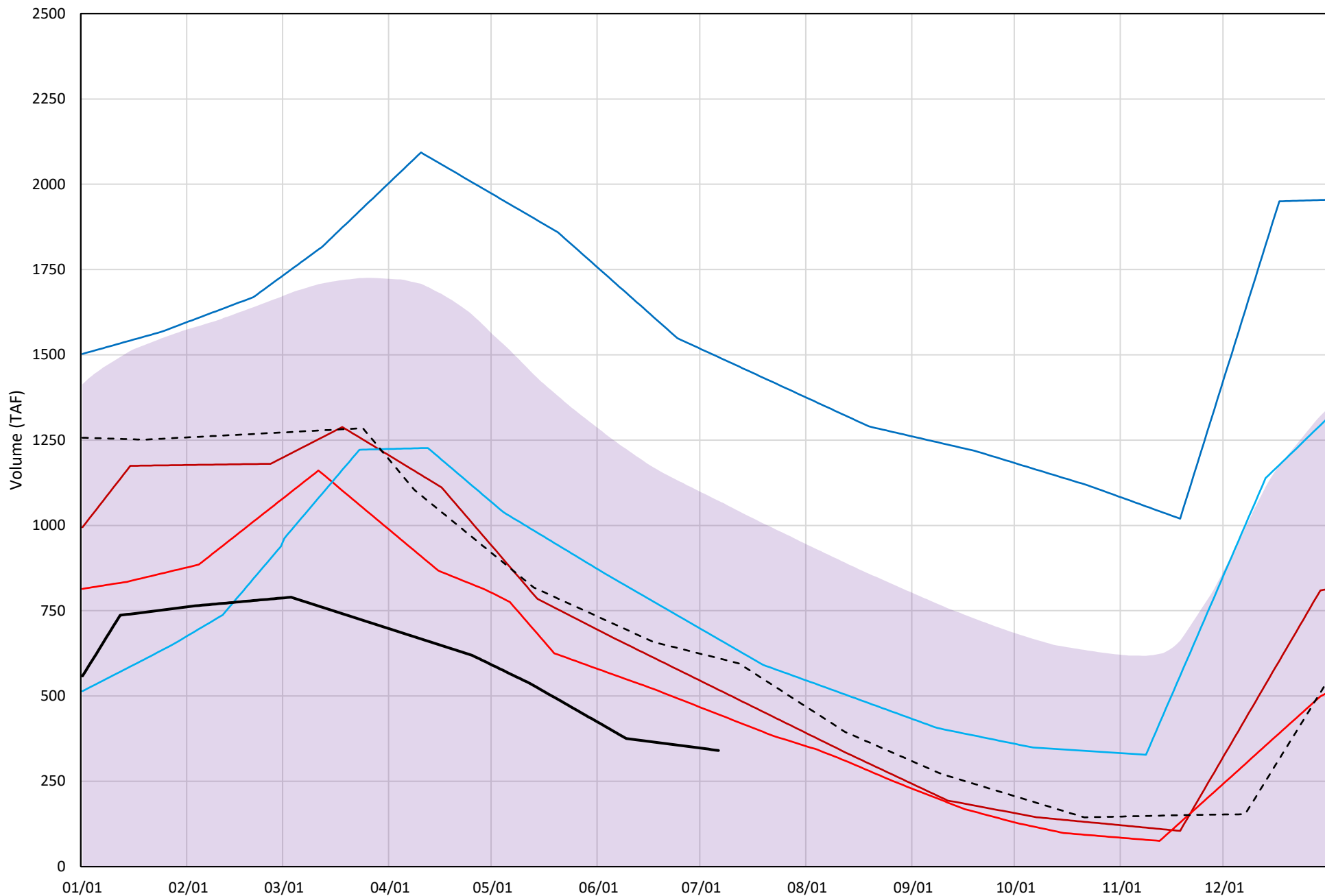
Page	Description
15	- Trinity Lake Isothermobaths Plot
16	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
17	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
18	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
19	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - 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



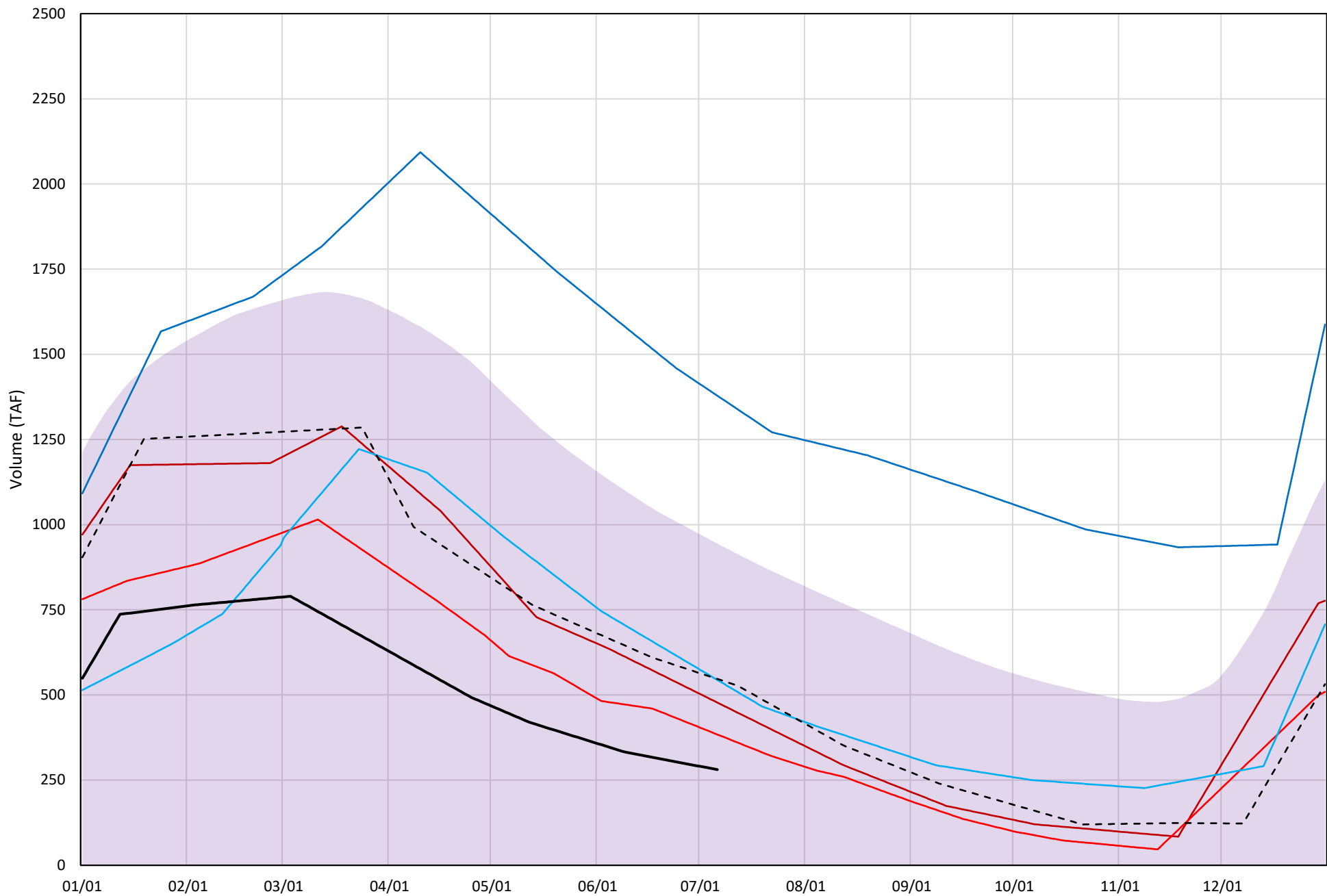
Trinity Lake Cold Water Pool Volume ≤52°F

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



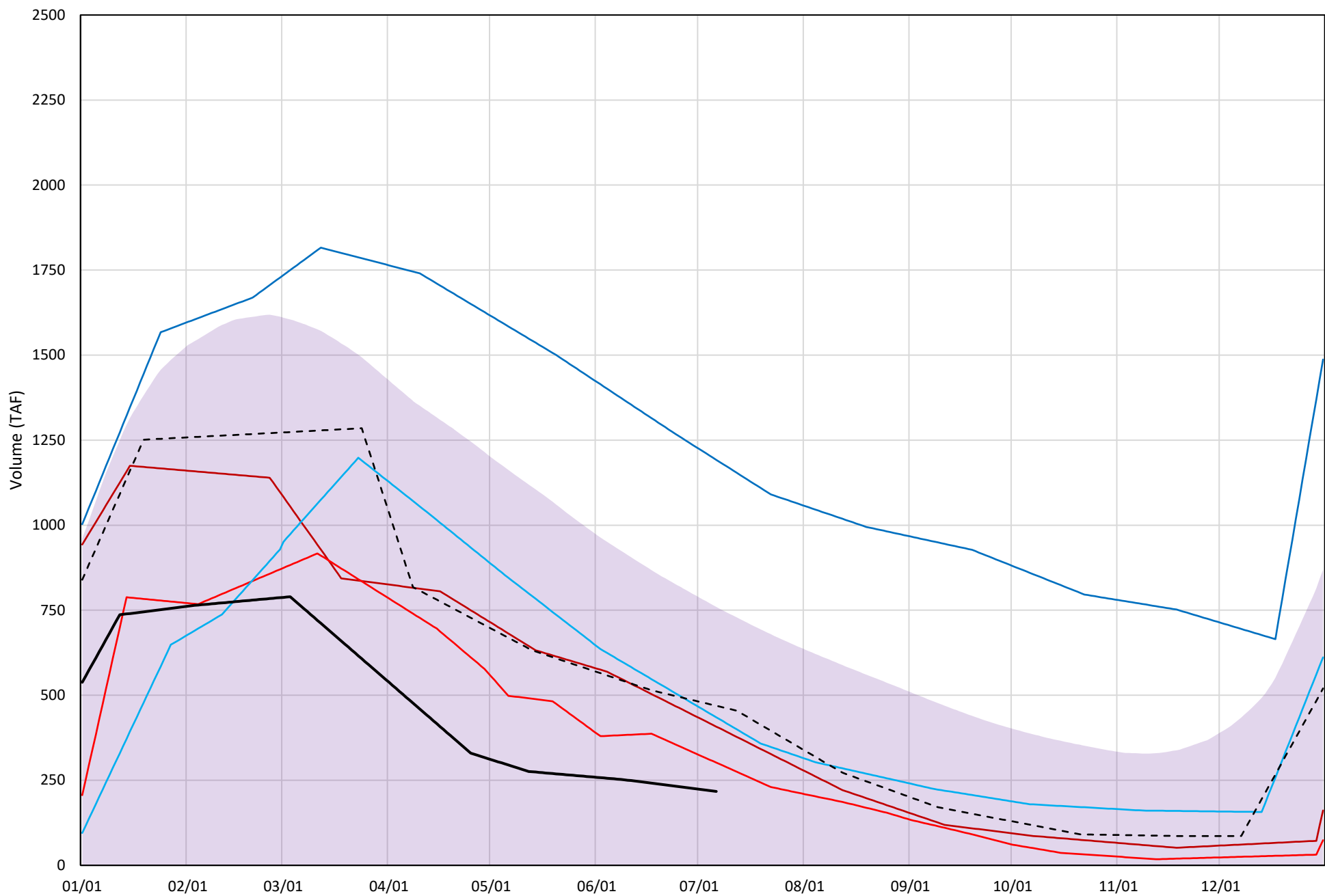
Trinity Lake Cold Water Pool Volume ≤50°F

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



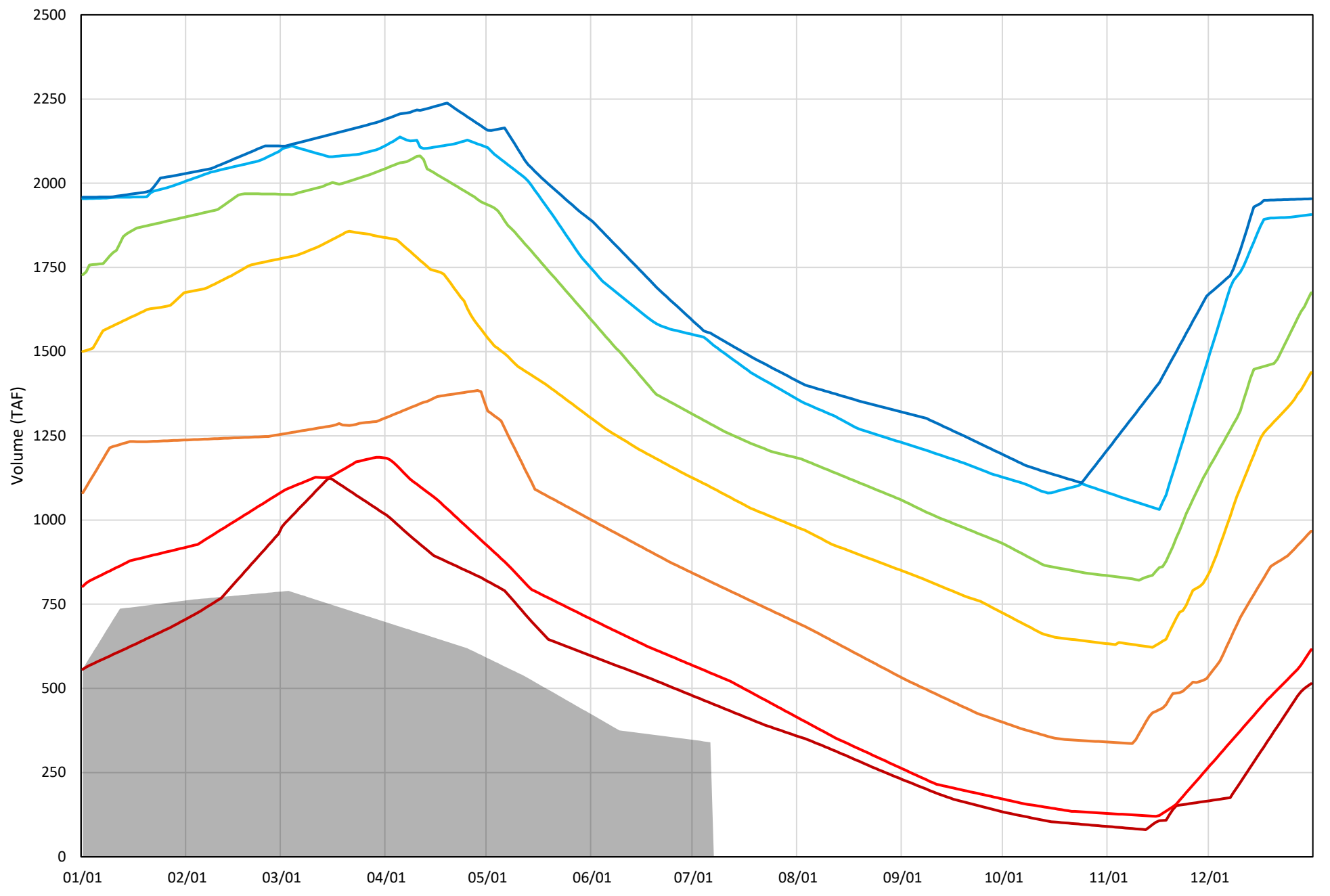
Trinity Lake Cold Water Pool Volume ≤48°F

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

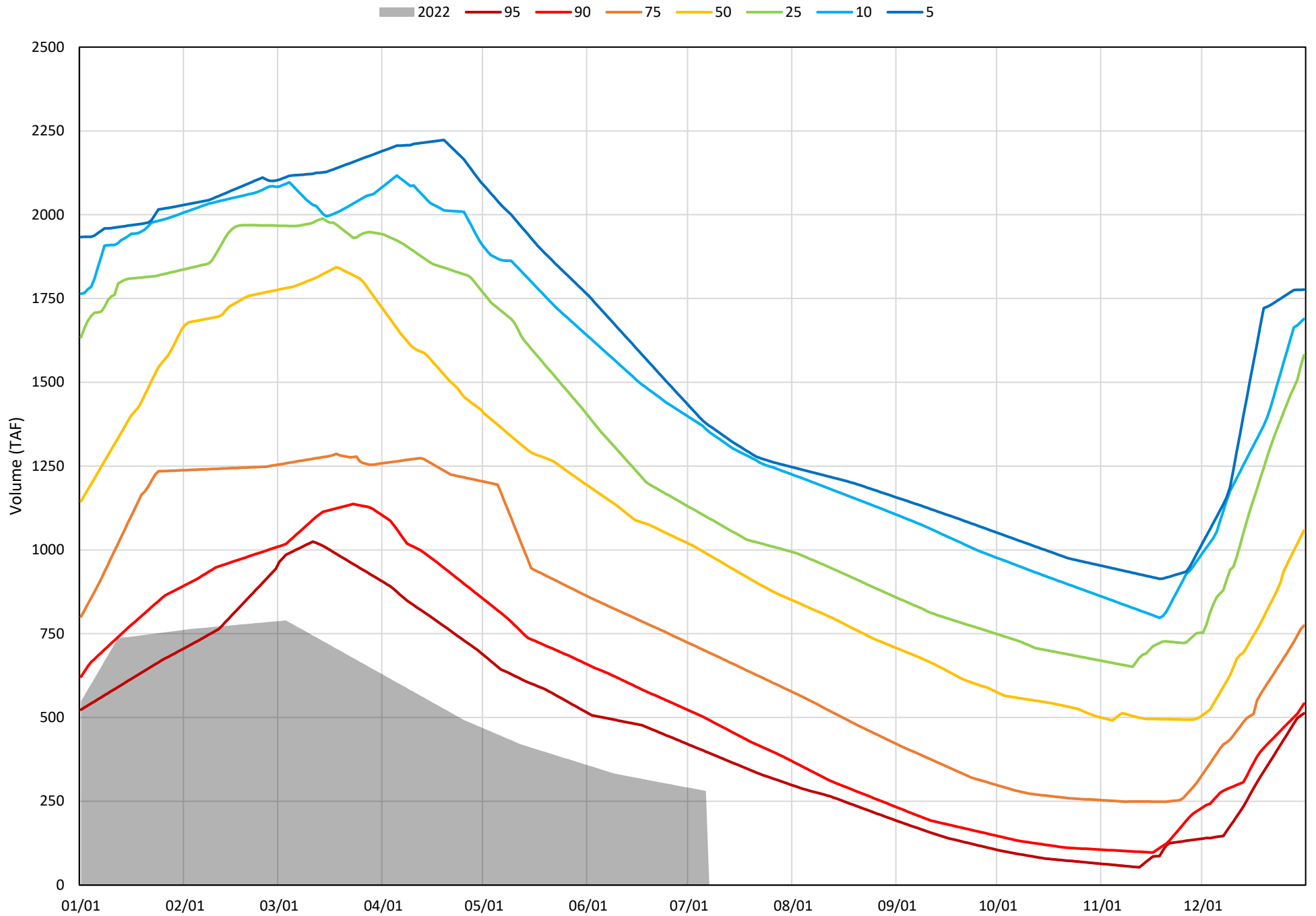


Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2021)

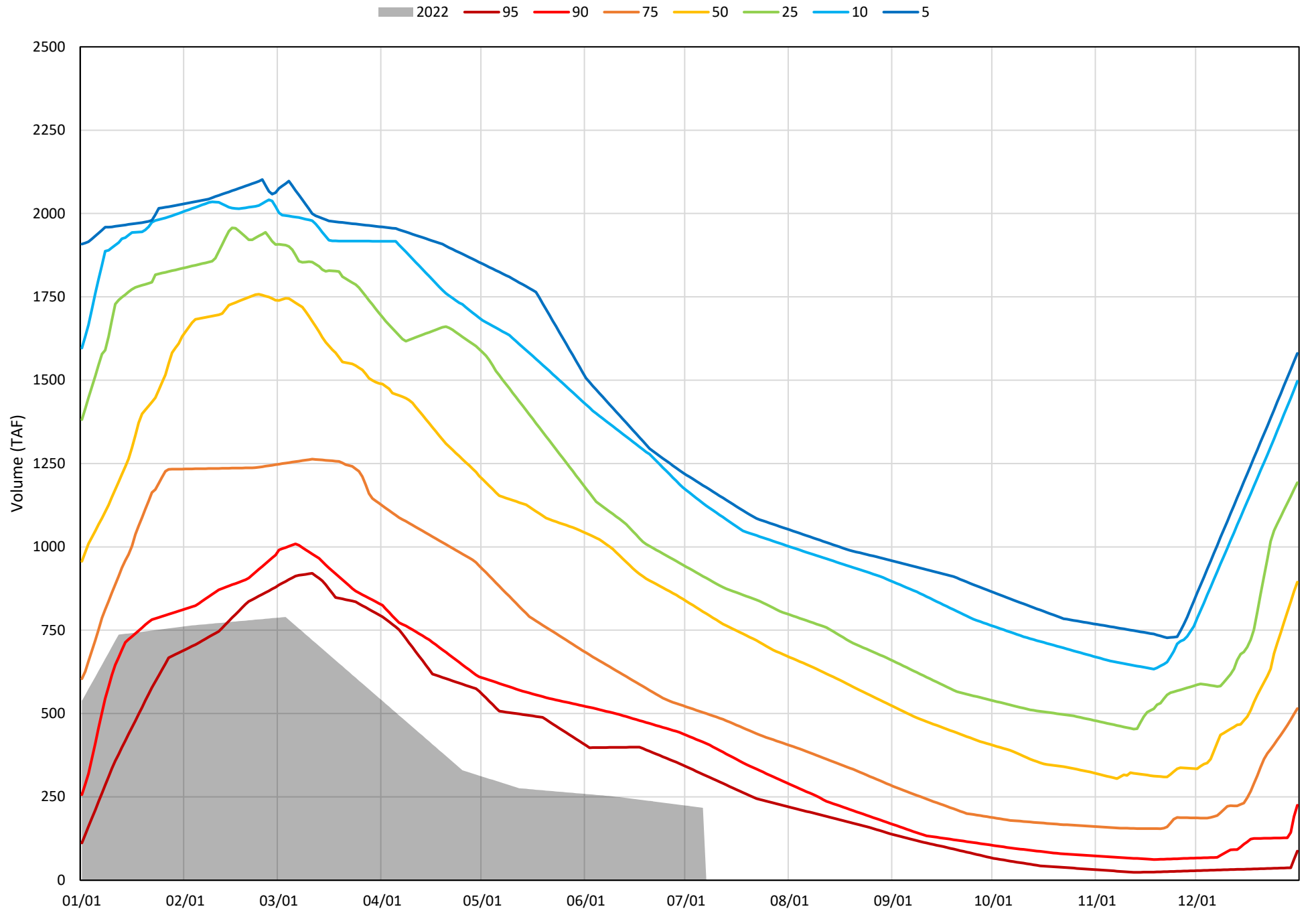
2022 95 90 75 50 25 10 5



Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances (2000-2021)



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)

Jul-07 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	903	784	640	776	265	279	295	280
2001	754	691	611	685	221	246	281	250
2002	719	695	623	679	211	248	287	249
2003	1128	924	719	924	332	329	331	331
2004	815	723	566	702	239	258	261	253
2005	892	745	467	702	262	265	215	248
2006	1201	1094	889	1061	353	390	409	384
2007	762	737	681	727	224	263	313	267
2008	516	455	297	423	152	162	137	150
2009	358	305	212	292	105	109	98	104
2010	722	613	366	567	212	218	169	200
2011	1217	1048	818	1027	358	373	376	369
2012	1055	1035	924	1005	310	368	425	368
2013	644	614	510	589	189	219	235	214
2014	178	197	191	188	52	70	88	70
2015	106	103	85	98	31	37	39	36
2016	326	263	218	269	96	94	100	97
2017	908	776	650	778	267	276	299	281
2018	789	757	687	744	232	270	316	272
2019	1153	1098	975	1075	339	391	449	393
2020	684	674	551	636	201	240	254	232
2021	270	266	252	263	79	95	116	97
2022	0	0	0	0	0	0	0	0

Historic - Current

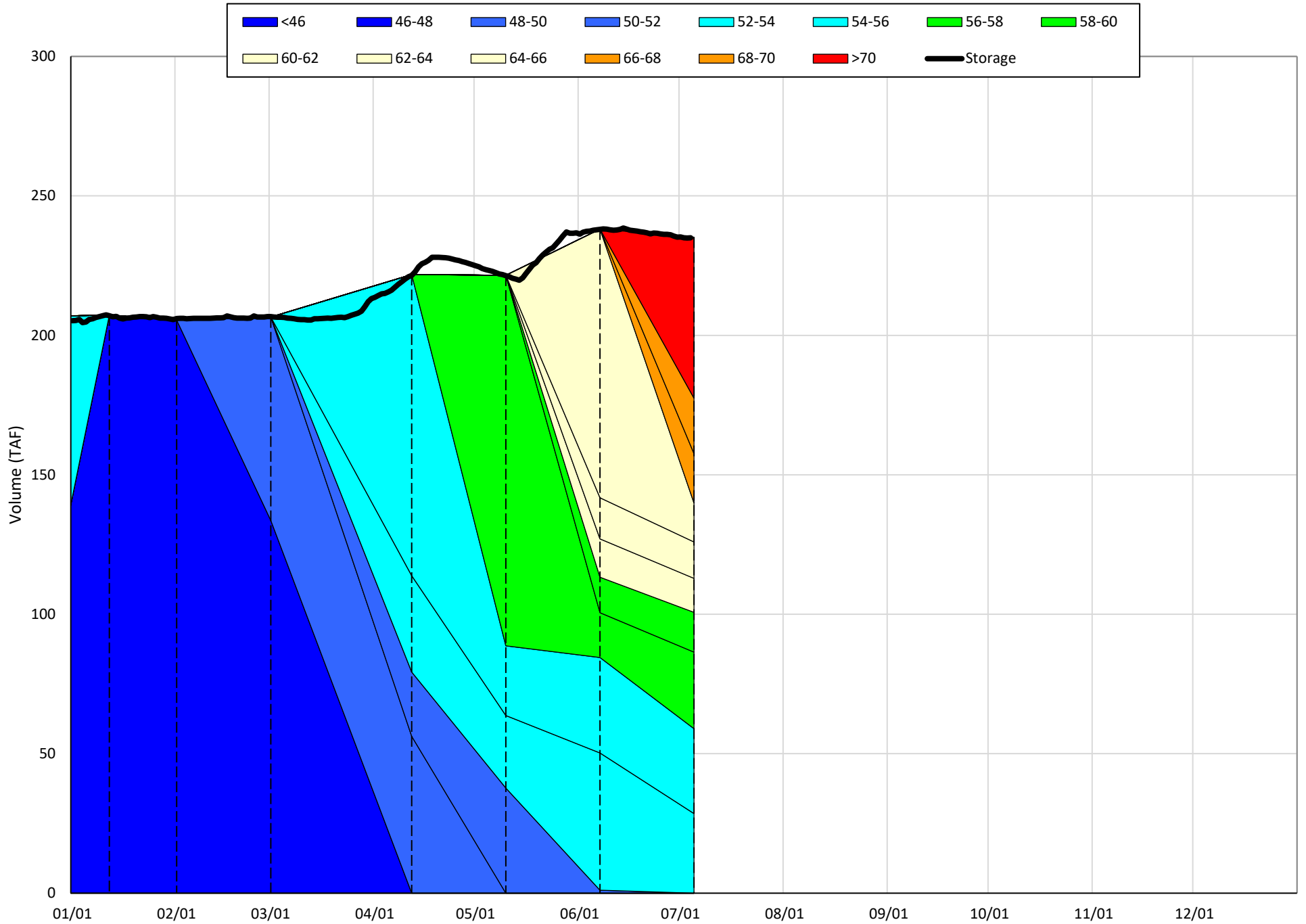
(Historic - Current) / Current

Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

2022

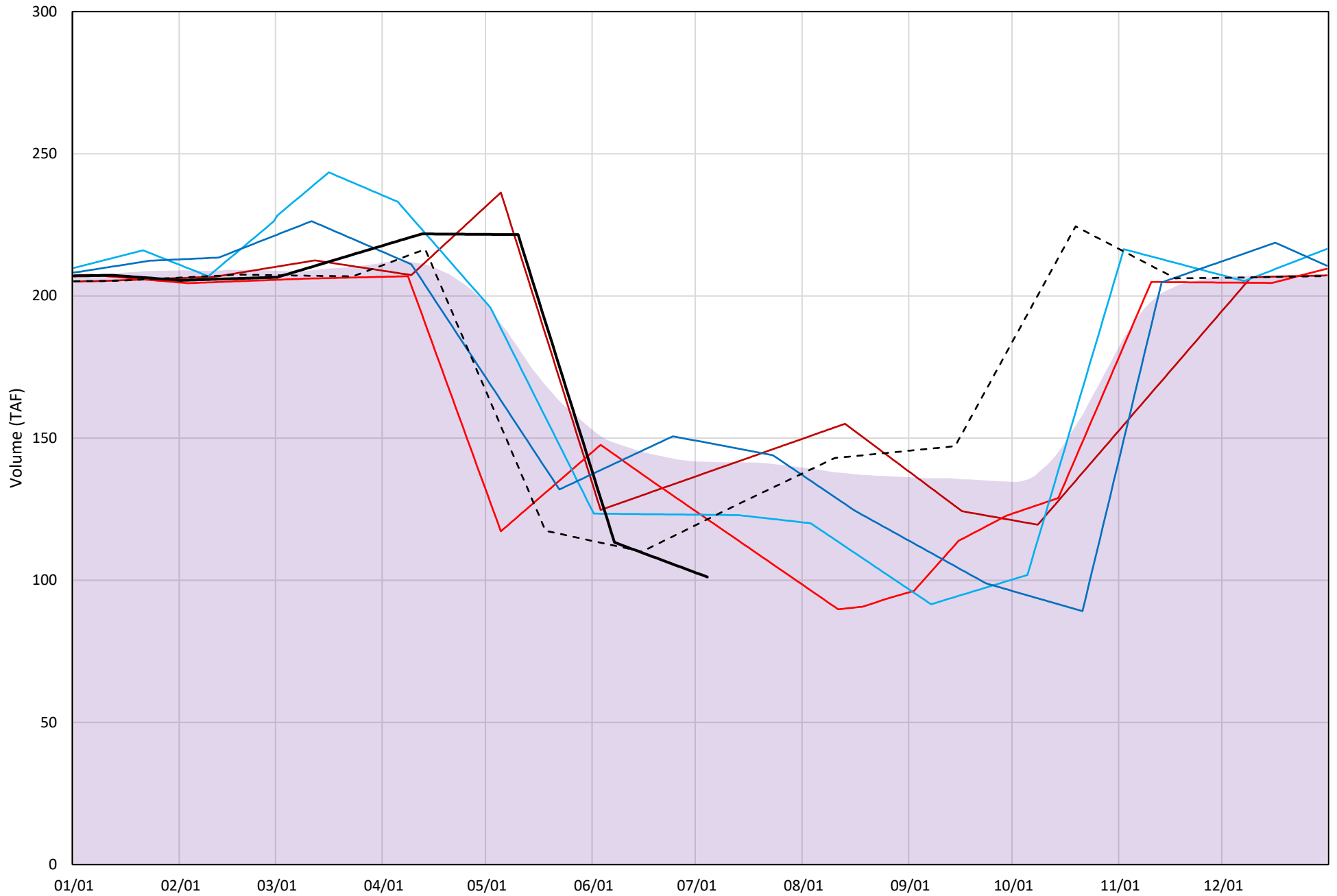
Page	Description
24	- Whiskeytown Lake Isothermobaths Plot
25	- Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$
26	- Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$
27	- Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$
28	- Whiskeytown Lake Cold Water 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



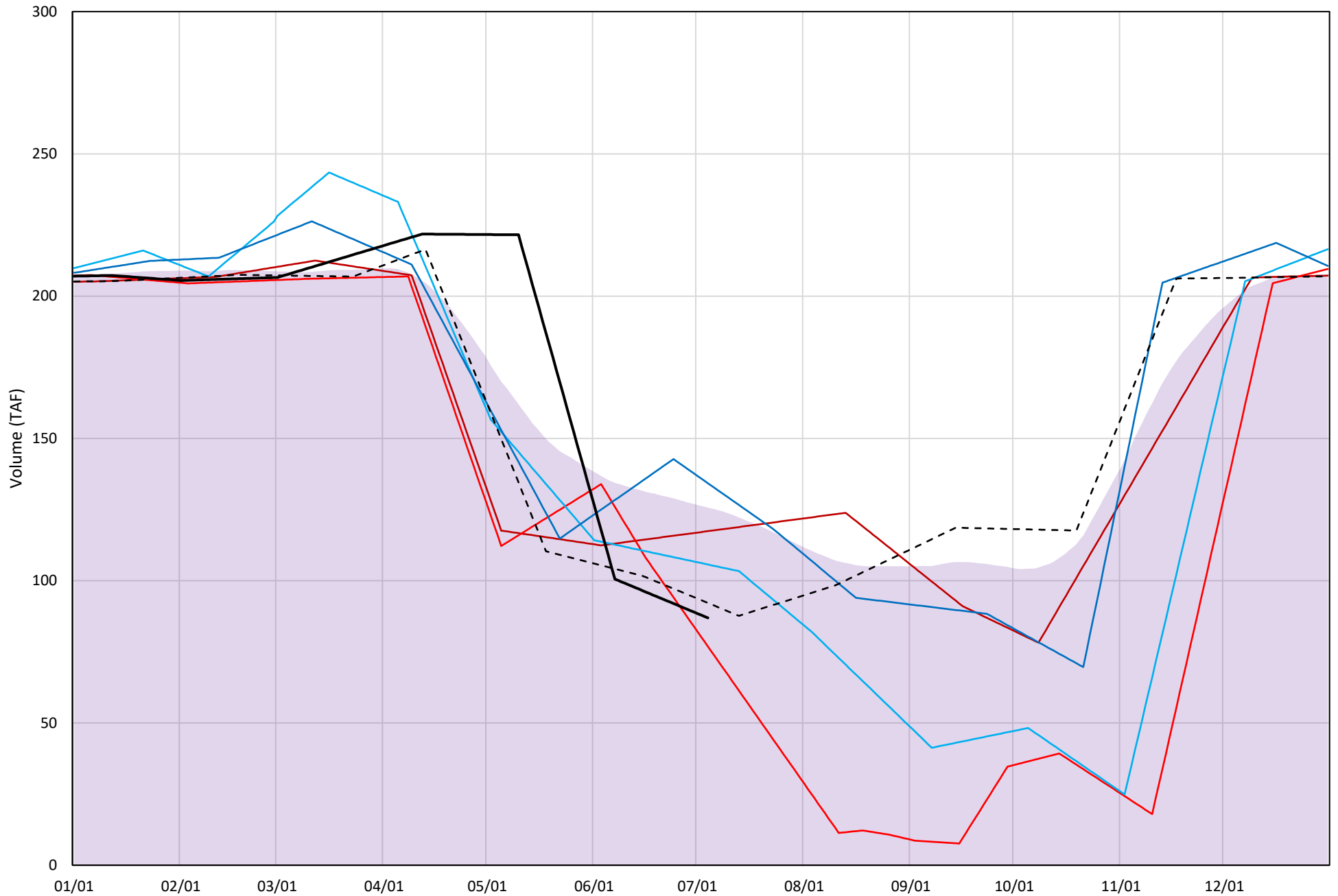
Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

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



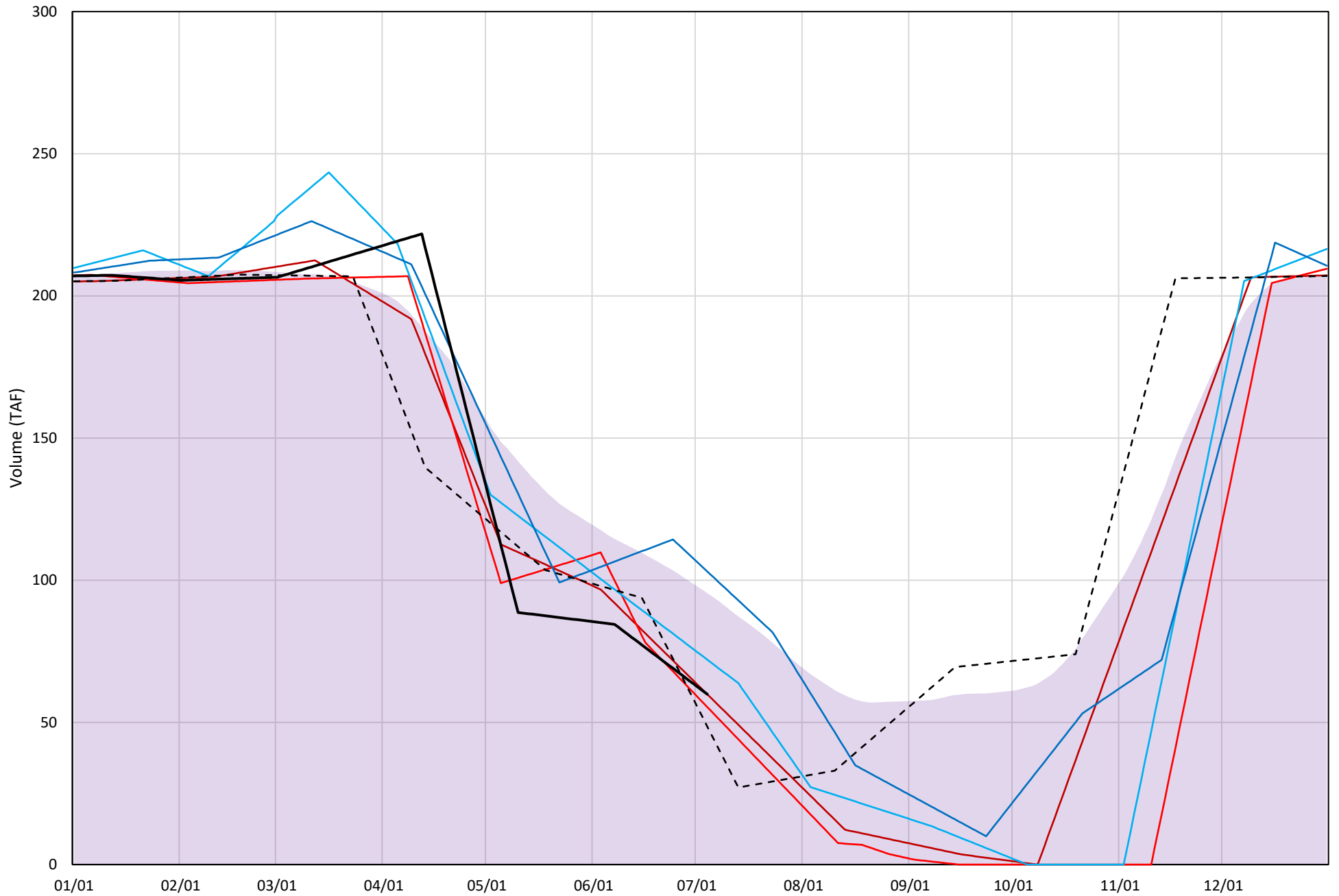
Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

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

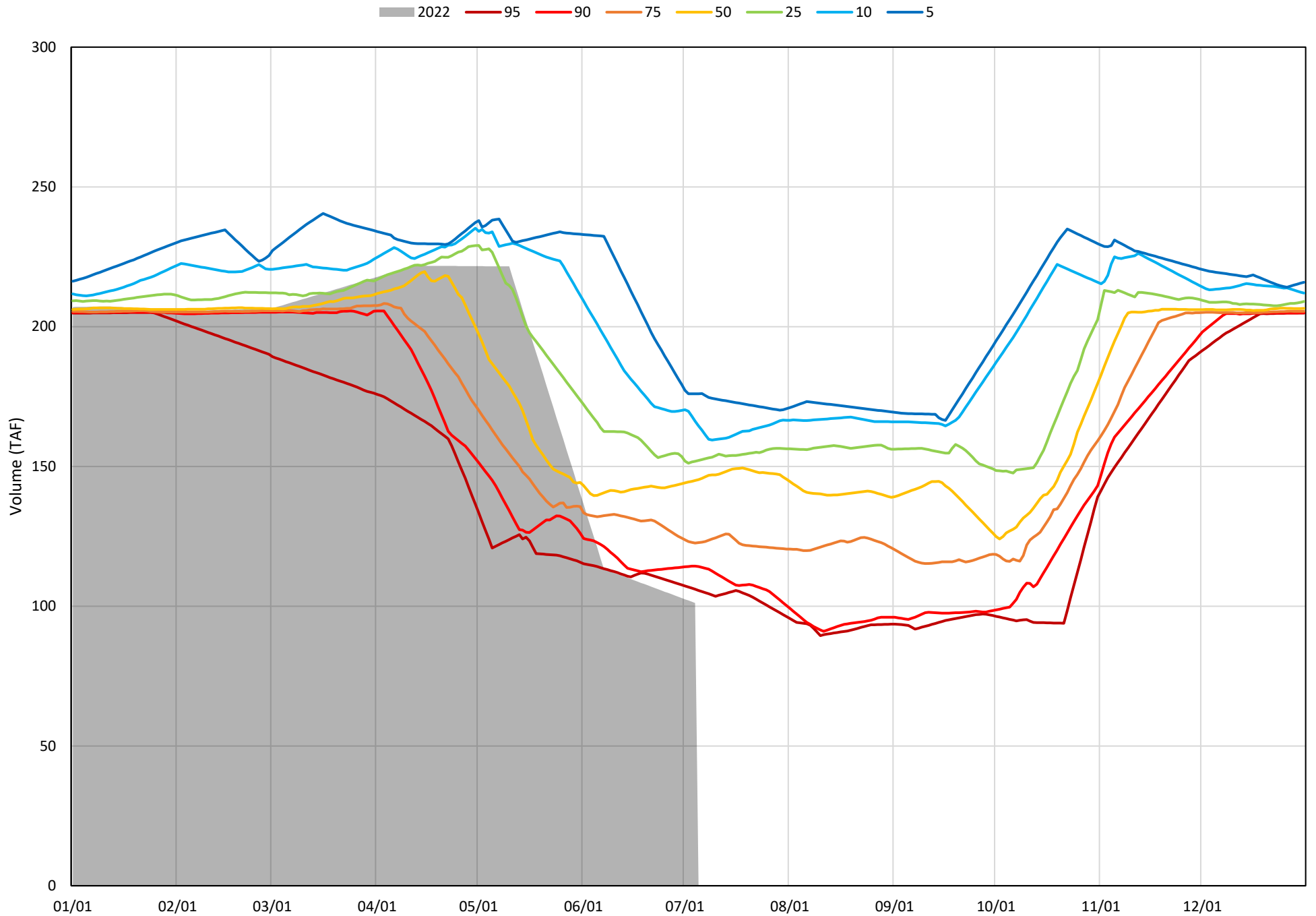


Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

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

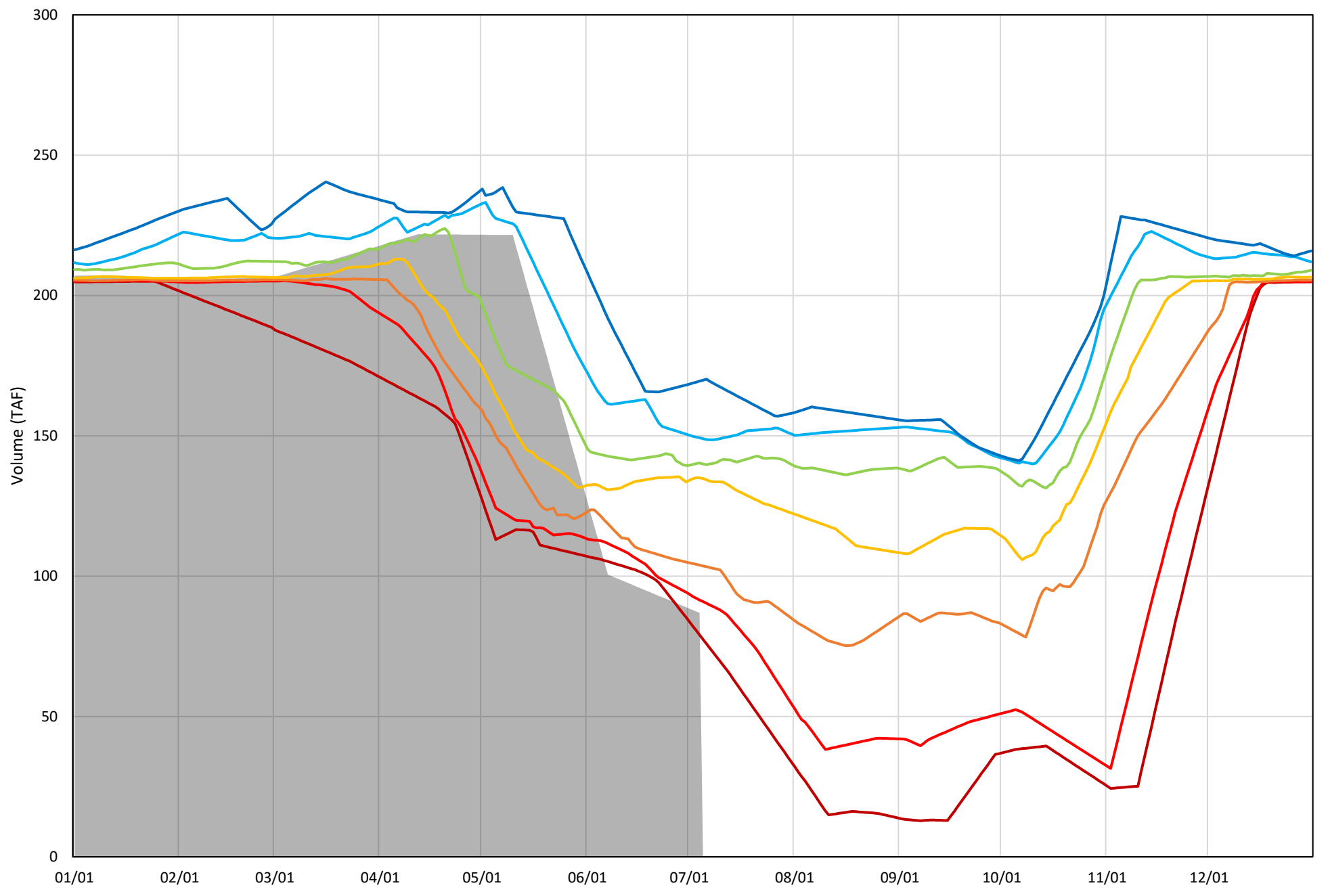


Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$ - Percent Exceedances (2000-2021)



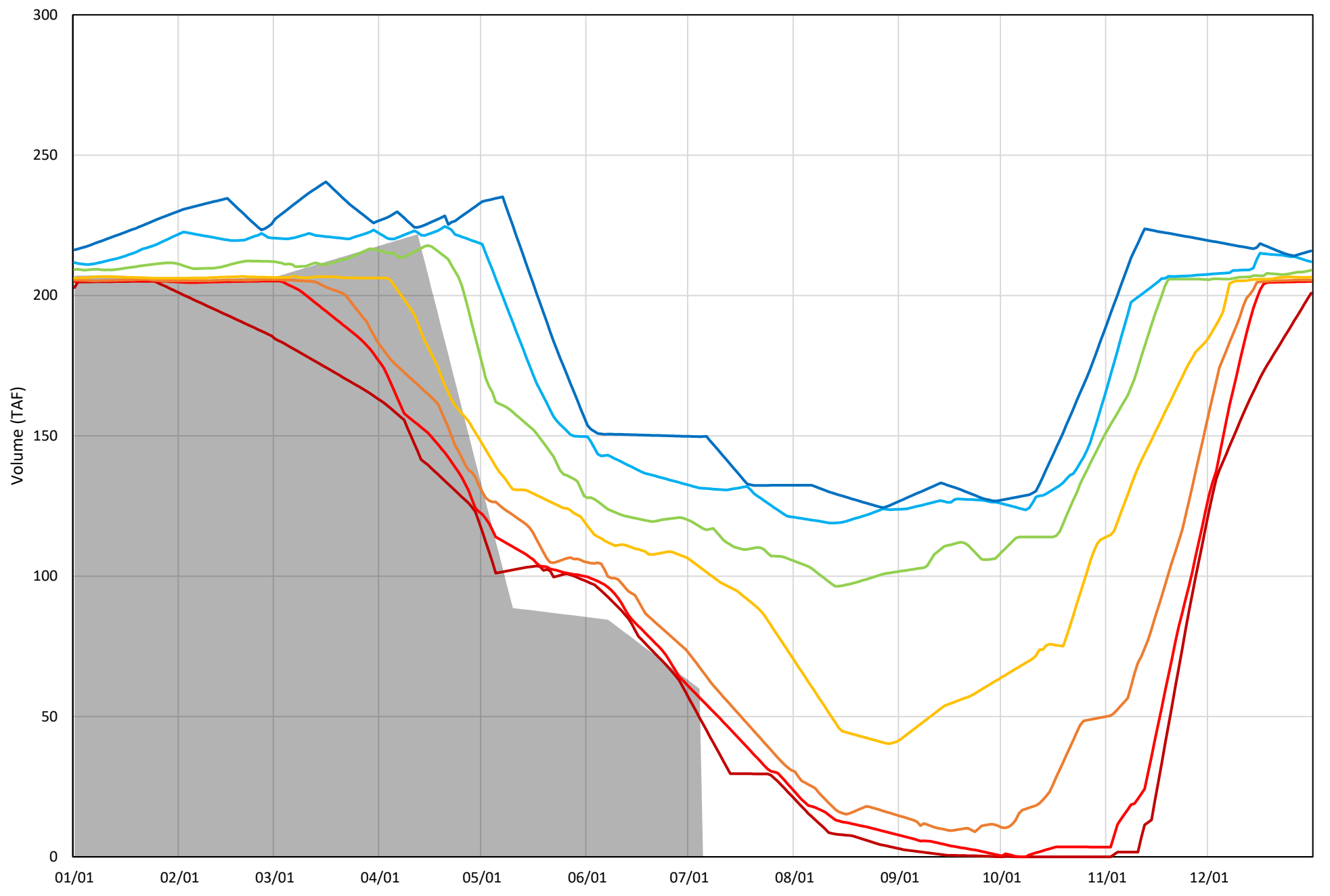
Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$ - Percent Exceedances (2000-2021)

2022 95 90 75 50 25 10 5



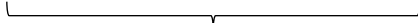
Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$ - Percent Exceedances (2000-2021)

2022 95 90 75 50 25 10 5

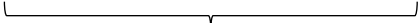


Whiskeytown Cold Water Pool Comparison by Year (for Specified Date)

Jul-05 2022	Δ TAF				% Δ			
	$\leq 60^\circ$	$\leq 58^\circ$	$\leq 56^\circ$	Abs. Avg.	$\leq 60^\circ$	$\leq 58^\circ$	$\leq 56^\circ$	Abs. Avg.
2000	49.4	53.5	63.7	55.5	48.9	61.6	106.3	72.3
2001	44.3	48.9	46.3	46.5	43.8	56.3	77.3	59.1
2002	44.1	49.3	48.3	47.2	43.6	56.7	80.7	60.3
2003	54.4	53.3	56.7	54.8	53.8	61.4	94.7	69.9
2004	42.9	48.9	61.2	51.0	42.5	56.2	102.1	66.9
2005	10.4	9.0	1.7	7.0	10.2	10.4	2.9	7.8
2006	75.9	86.1	93.0	85.0	75.1	99.1	155.3	109.8
2007	43.6	49.8	43.6	45.6	43.1	57.2	72.8	57.7
2008	48.0	51.9	50.8	50.2	47.5	59.7	84.8	64.0
2009	19.9	4.3	1.2	8.5	19.6	5.0	2.0	8.9
2010	42.9	33.6	9.5	28.7	42.5	38.6	15.9	32.3
2011	68.9	61.9	54.3	61.7	68.1	71.2	90.6	76.6
2012	35.6	32.5	18.4	28.9	35.2	37.4	30.7	34.5
2013	55.7	59.7	71.5	62.3	55.1	68.7	119.4	81.1
2014	36.8	30.5	0.0	22.4	36.4	35.1	-0.1	23.8
2015	20.3	-10.0	-4.5	11.6	20.1	-11.5	-7.5	13.1
2016	21.9	18.8	12.1	17.6	21.6	21.6	20.3	21.2
2017	56.1	62.5	71.5	63.4	55.5	72.0	119.3	82.3
2018	49.5	44.3	18.6	37.4	48.9	51.0	31.0	43.6
2019	47.2	47.3	43.2	45.9	46.7	54.4	72.1	57.7
2020	4.0	11.7	32.4	16.0	3.9	13.4	54.1	23.8
2021	20.3	5.2	-11.4	12.3	20.0	6.0	-19.0	15.0
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Historic - Current



(Historic - Current) / Current