

# Northern CVP Water Temperature Report

## June - 2023

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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 <sup>1</sup>	SHD	SPP <sup>1</sup>	KWK	SAC	CCR <sup>2</sup>	BSF	BND	RDB	IGO	LWS	DGC <sup>3</sup>	NFH	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB								
May	51.1	49.7	49.5	50.9	51.2	51.7	53.8	55.5	55.3	52.9	48.8	-	51.7	9532	215	12119	69.1	66.0	66.6								
06/01	50.6	48.7	50.8	50.4	51.0	51.8	55.0	57.8	?	59.9	54.7	51.5	#	55.1	8249	37	10104	75.5	71.6	71.0							
06/02	50.4	48.7	50.4	50.3	50.8	51.6	54.4	56.9	58.8	54.7	51.3	#	54.9	8271	37	10134	74.5	71.8	71.7								
06/03	50.2	48.7	50.5	50.1	50.7	51.4	54.2	56.7	?	58.5	55.1	51.4	#	55.9	8897	37	10059	79.0	76.2	74.8							
06/04	50.4	48.7	50.1	50.2	50.8	51.6	54.5	57.2	?	58.9	55.5	51.8	#	56.8	8104	166	10006	83.0	80.0	78.7							
06/05	50.6	?	48.8	51.0	50.2	50.6	51.2	53.8	56.6	58.8	54.2	51.7	#	56.6	8182	14	10054	83.0	76.3	79.8							
06/06	50.7	48.9	51.1	50.1	50.7	51.4	53.8	55.8	57.4	55.3	51.8	#	56.6	7639	24	9111	73.5	69.2	68.9								
06/07	50.7	48.9	50.7	50.3	51.0	51.7	54.7	57.0	58.7	55.2	52.3	#	56.3	7795	39	9048	73.5	69.4	68.2								
06/08	50.2	48.6	50.6	50.4	51.1	51.9	55.1	57.5	59.6	55.3	52.5	#	57.7	7319	37	9070	75.5	71.5	70.9								
06/09	50.7	48.9	50.6	50.3	51.0	51.9	55.1	57.7	59.7	56.4	53.0	#	57.4	7416	37	9036	76.5	72.7	71.7								
06/10	50.8	?	48.7	50.7	51.0	51.6	52.3	55.0	57.4	59.6	55.5	53.0	#	57.5	6935	37	9052	78.0	72.5	73.0							
06/11	50.3	?	48.9	50.7	50.8	51.5	52.4	55.3	57.8	59.8	56.1	53.2	#	58.9	7791	37	9057	79.5	74.7	75.8							
06/12	50.5	?	49.0	50.5	50.7	51.4	52.4	55.7	58.1	60.1	56.1	53.6	#	59.6	7787	57	9076	75.5	71.6	70.9							
06/13	50.9	?	49.2	50.7	50.7	51.5	52.3	55.6	58.3	60.6	55.9	54.1	#	60.0	7256	46	8982	78.5	74.0	73.3							
06/14	51.0	49.3	50.8	51.0	51.6	52.4	55.4	58.1	60.3	55.5	54.4	#	60.1	7713	37	8999	81.0	77.9	77.0								
06/15	50.6	?	48.8	50.7	51.0	51.7	52.6	55.4	57.9	59.8	54.5	54.8	#	60.4	7890	38	8962	83.5	78.0	79.8							
06/16	50.4	?	49.2	50.8	50.8	51.6	52.5	55.5	57.9	59.9	53.0	55.0	#	61.1	9018	37	8992	87.5	82.8	84.5							
06/17	50.8	?	49.0	50.8	50.7	51.4	52.2	55.2	57.8	60.1	52.1	55.3	#	61.7	8891	37	8992	80.5	75.5	76.0							
06/18	50.8	?	48.6	51.0	51.0	51.7	52.5	55.0	57.5	59.6	51.8	55.5	#	60.6	7140	37	8970	76.0	73.8	76.4							
06/19	50.7	?	49.3	50.9	50.8	51.4	52.1	54.5	56.5	?	58.3	51.1	55.5	#	58.5	8845	37	8991	66.5	64.3	63.5						
06/20	50.5	49.3	50.9	50.7	51.2	51.9	54.0	55.6	57.1	51.6	55.9	#	57.7	8675	37	8994	↓	65.5	63.3	62.6							
06/21	51.1	49.4	51.1	50.9	51.5	52.3	54.5	56.1	57.7	52.6	55.1	#	59.1	6667	37	8992	71.5	68.9	69.2								
06/22	50.7	49.2	51.1	50.9	51.3	51.8	54.1	56.0	57.8	52.7	54.1	#	60.2	7585	37	8997	71.0	66.3	65.9								
06/23	51.3	49.6	51.0	50.9	51.5	52.2	54.4	56.1	57.5	53.8	54.5	#	60.1	9007	51	9499	70.5	66.8	66.1								
06/24	50.9	49.6	51.2	51.1	51.6	52.2	54.4	56.5	?	58.4	54.1	53.8	#	60.4	9079	37	9496	72.5	67.4	68.1							
06/25	51.2	49.7	51.2	51.2	51.8	52.5	54.7	56.6	58.4	54.5	53.6	#	60.5	9382	37	9498	75.0	69.5	68.8								
06/26	51.3	49.8	51.3	51.3	51.9	52.6	54.9	57.0	58.9	54.8	53.9	#	61.4	9275	37	97	76.5	71.2	70.4								
06/27	50.5	49.2	51.0	51.6	52.2	53.0	55.4	57.5	59.4	55.3	53.9	#	62.6	8361	592	9494	79.5	76.0	74.3								
06/28	49.8	48.8	51.0	51.7	52.3	53.2	55.8	58.1	60.1	55.6	54.0	#	62.8	8277	510	9493	83.5	80.4	79.0								
06/29	49.6	?	48.4	51.0	?	51.1	51.9	?	52.9	?	55.6	58.1	?	60.4	?	55.9	?	53.7	#	63.8	9009	500	9247	?	86.0	83.4	83.5
06/30	49.8	?	48.3	51.0	50.5	51.2	52.1	54.7	57.3	?	59.7	56.5	53.3	#	65.2	8749	507	9560	88.5	86.2	86.1						
-																											
Jun	50.6	49.0	50.8	50.8	51.4	52.2	54.9	57.2	59.1	54.5	53.6	-	59.3	8173	107	9002	77.4	73.4	73.3								
														Total CFS	245204	3210	270062										
														Total AF	486352	6367	535657										

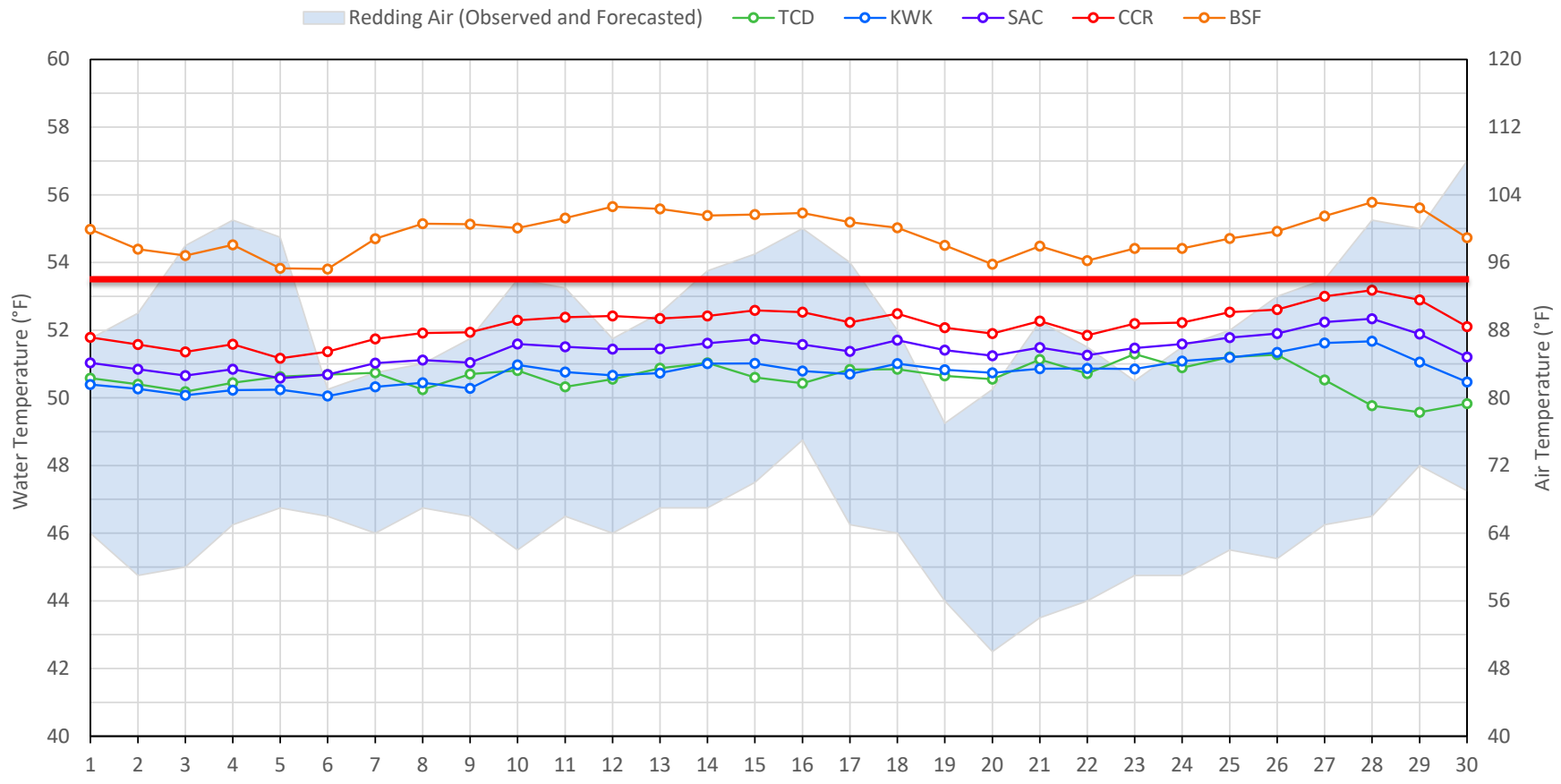
**Legend**

- ? = 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**

- <sup>1</sup> 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
- <sup>2</sup> Current Clear Creek River control point (see page 4 for more details)
- <sup>3</sup> DGC reporting incorrect water temperatures due to probe being buried in fine sediment

### Sacramento River Mean Daily Temperatures



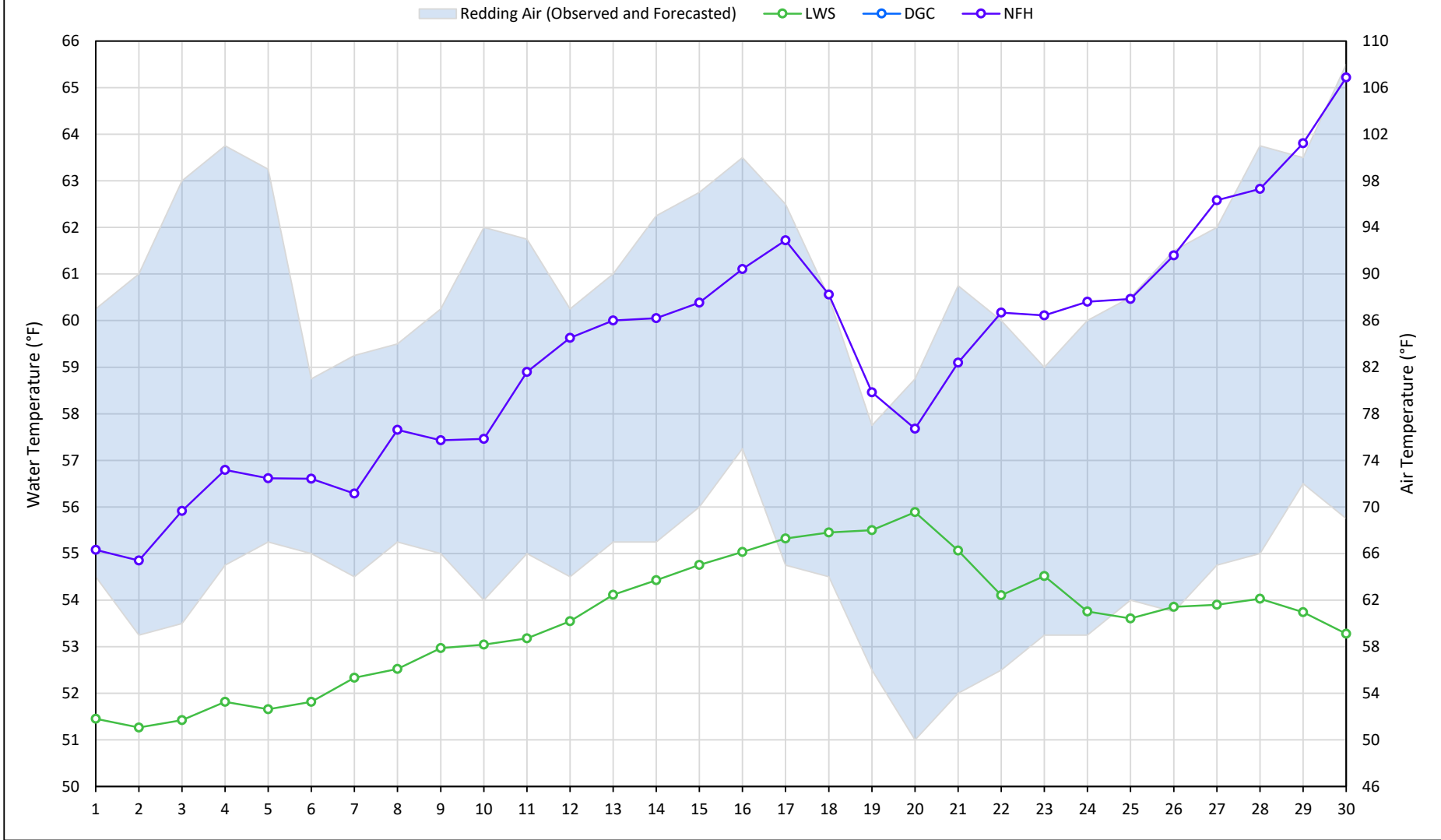
Station Details			
Code	Body of Water	Location <sup>1</sup>	CDEC Link
TCD	N/A	Shasta Power Plant	N/A
SHD	Sacramento River	0.3 miles downstream of Shasta Power Plant	<a href="#">Click Here</a>
SPP	N/A	Spring Creek Power Plant	N/A
KWK	Sacramento River	0.8 miles downstream of Keswick Dam	<a href="#">Click Here</a>
SAC	Sacramento River	4.8 miles downstream of Keswick Dam	<a href="#">Click Here</a>
CCR	Sacramento River	9.7 miles downstream of Keswick Dam	<a href="#">Click Here</a>
BSF	Sacramento River	25 miles downstream of Keswick Dam	<a href="#">Click Here</a>
JLF	Sacramento River	34 miles downstream of Keswick Dam	<a href="#">Click Here</a>
BND	Sacramento River	41 miles downstream of Keswick Dam	<a href="#">Click Here</a>
RDB	Sacramento River	58 miles downstream of Keswick Dam	<a href="#">Click Here</a>
IGO	Clear Creek	7.3 miles downstream of Whiskeytown Dam	<a href="#">Click Here</a>

Water Right Temperature Control Points				
River	Point	Temp. (°F)	Begin Date	End Date
Sacramento	SAC	54.5	06/07/2022	5/14/2023
Sacramento	CCR	53.5	05/14/2023	TBD

**Notes**

<sup>1</sup> Distances are approximate

### Trinity River Mean Daily Temperatures



Station Details			
Code	Body of Water	Location <sup>1</sup>	CDEC Link
LWS	Trinity River	1.1 miles downstream of Lewiston Dam	<a href="#">Click Here</a>
DGC	Trinity River	19 miles downstream of Lewiston Dam	<a href="#">Click Here</a>
NFH	Trinity River	38 miles downstream of Lewiston Dam	<a href="#">Click Here</a>

Water Right Temperature Control Points				
River	Point	Temp. (°F)	Begin Date	End Date
Trinity	DGC <sup>2</sup>	56	Sep-15	Oct-01
Trinity	NFH	56	Oct-01	Dec-31

**Notes**

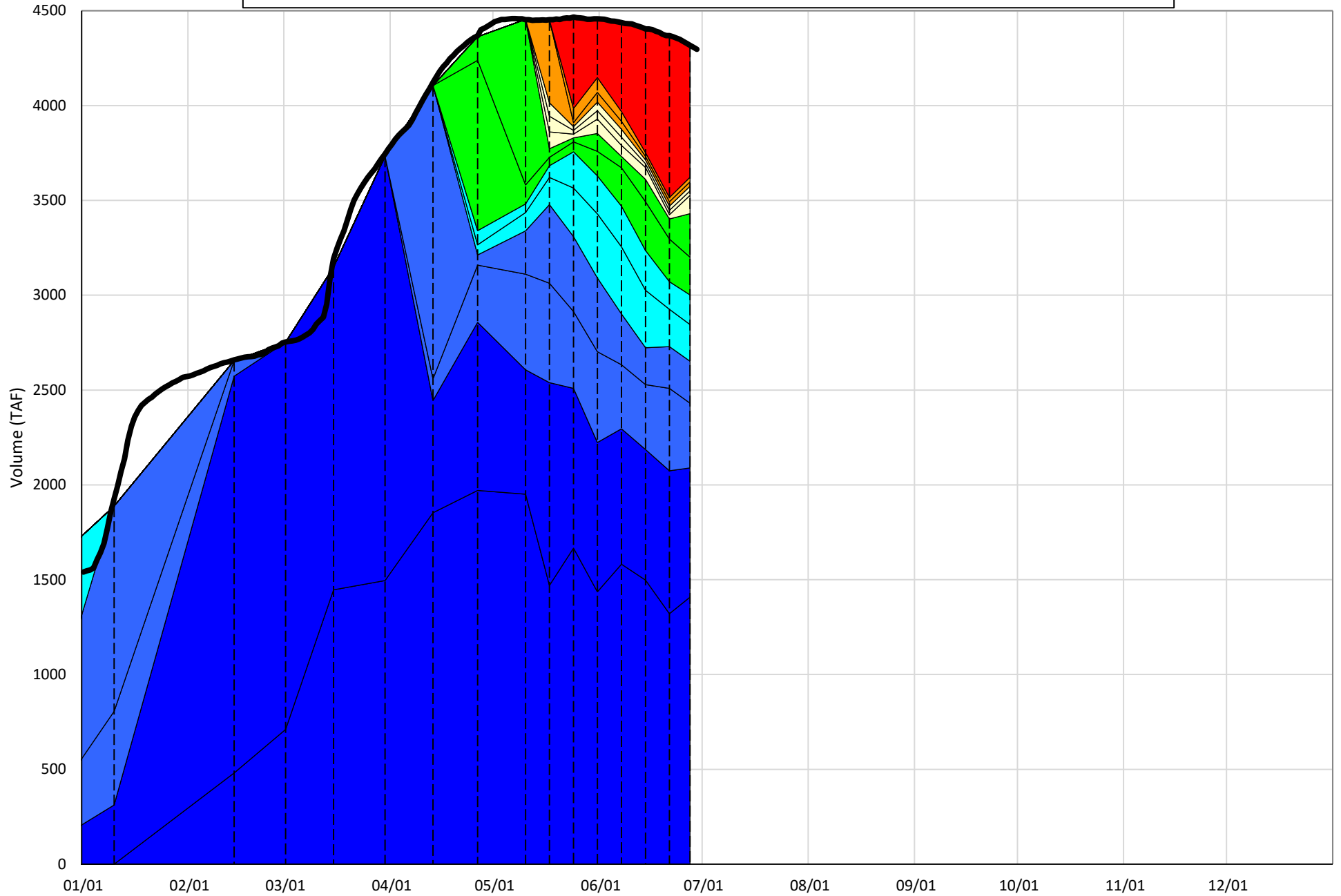
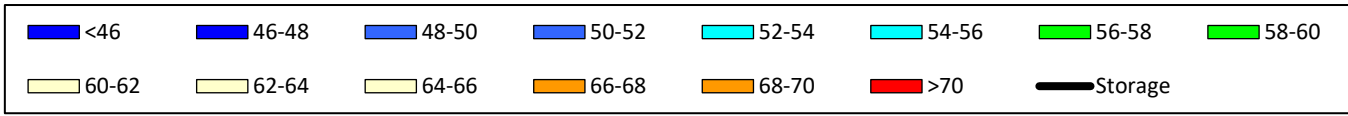
- <sup>1</sup> Distances are approximate
- <sup>2</sup> DGC reporting incorrect water temperatures due to probe being buried in fine sediment

# Shasta Lake Isothermobaths & Cold Water Pool Statistics

## 2023

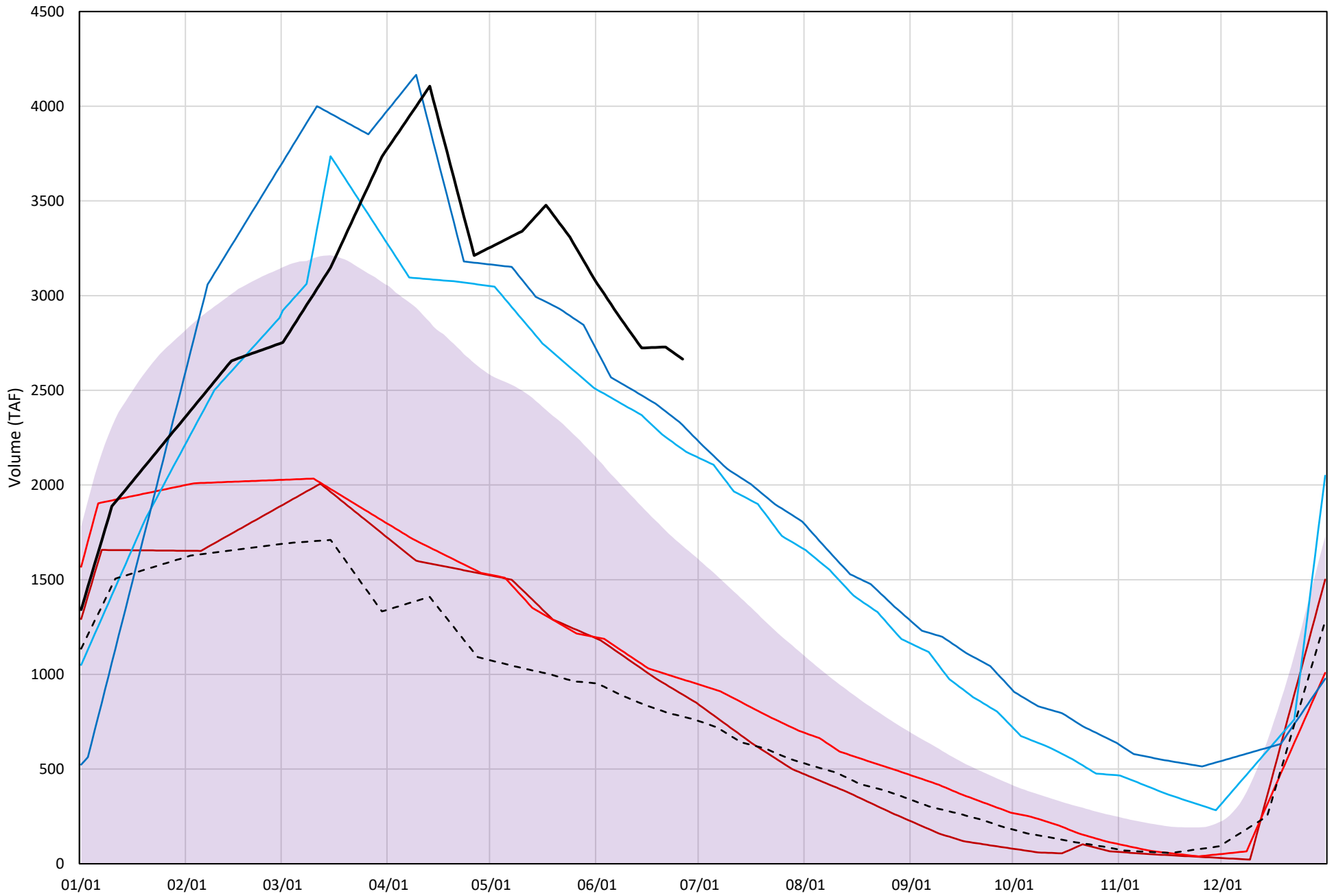
Page	Description
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12	- Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances
13	- Shasta Lake Cold Water Pool Comparison by Year

Shasta Lake Isothermobaths Plot - 2023



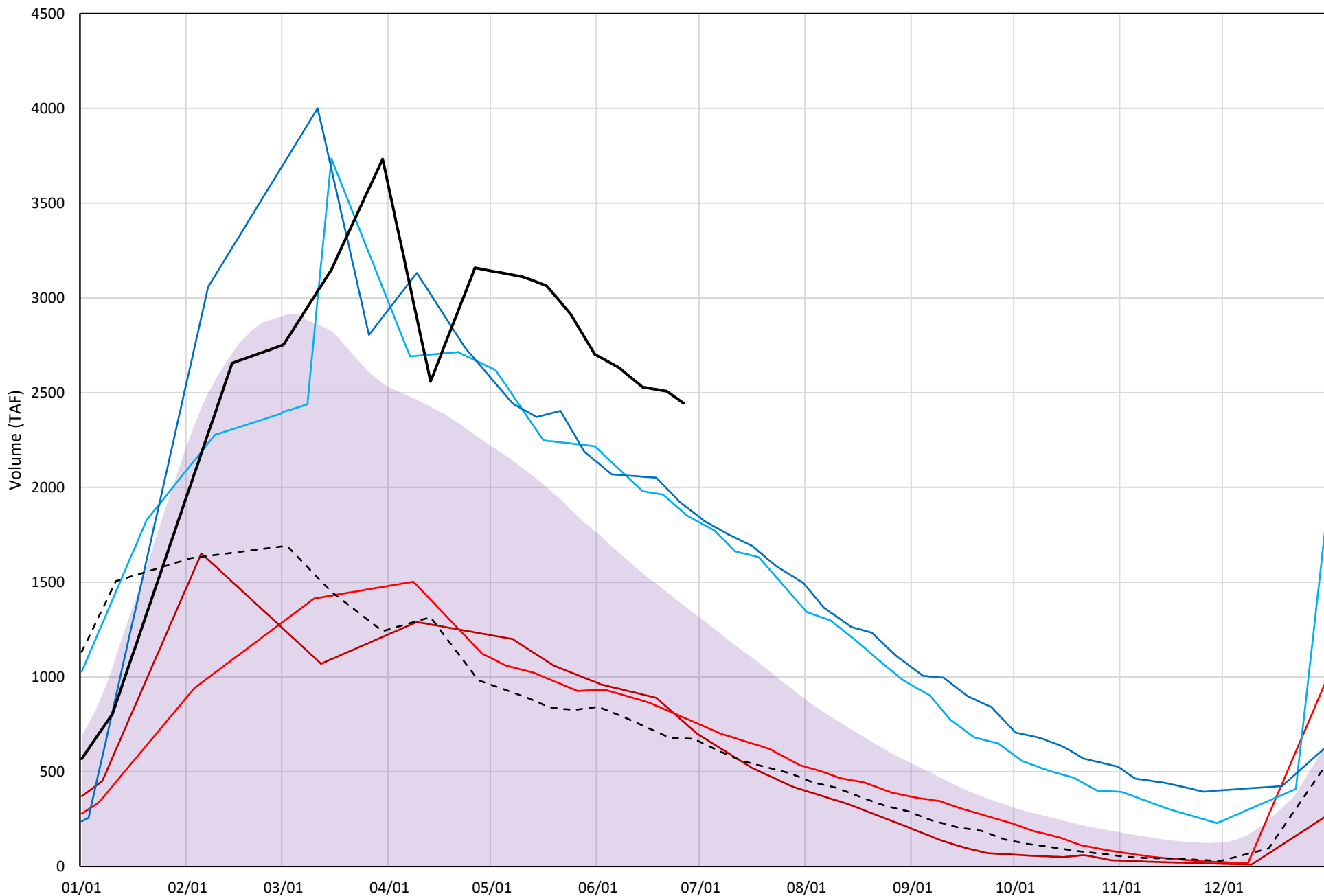
# Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$

Avg (1998-2022) 2014 2015 2016 2019 2022 2023



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

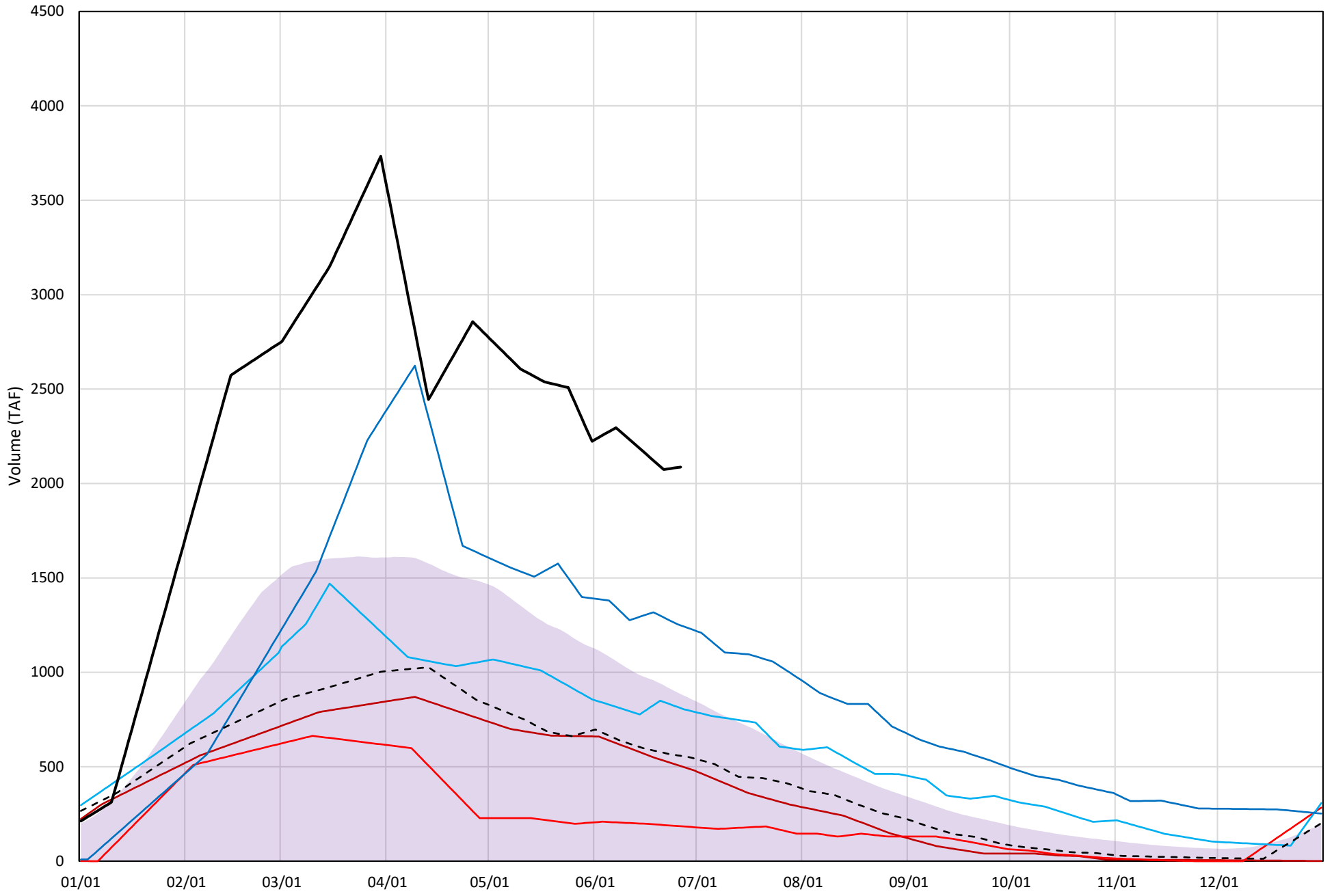
Avg (1998-2022) 2014 2015 2016 2019 2022 2023



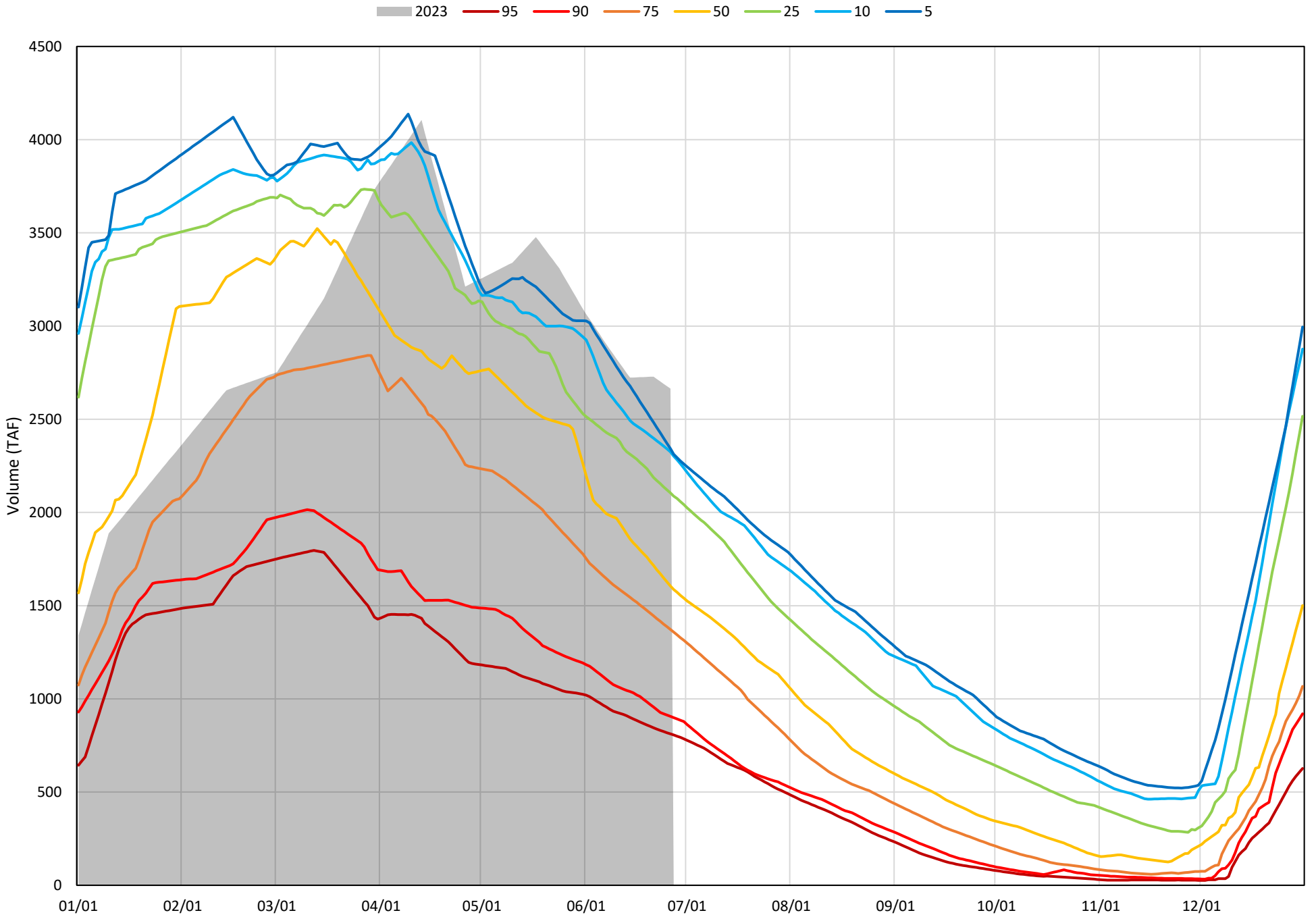


# Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

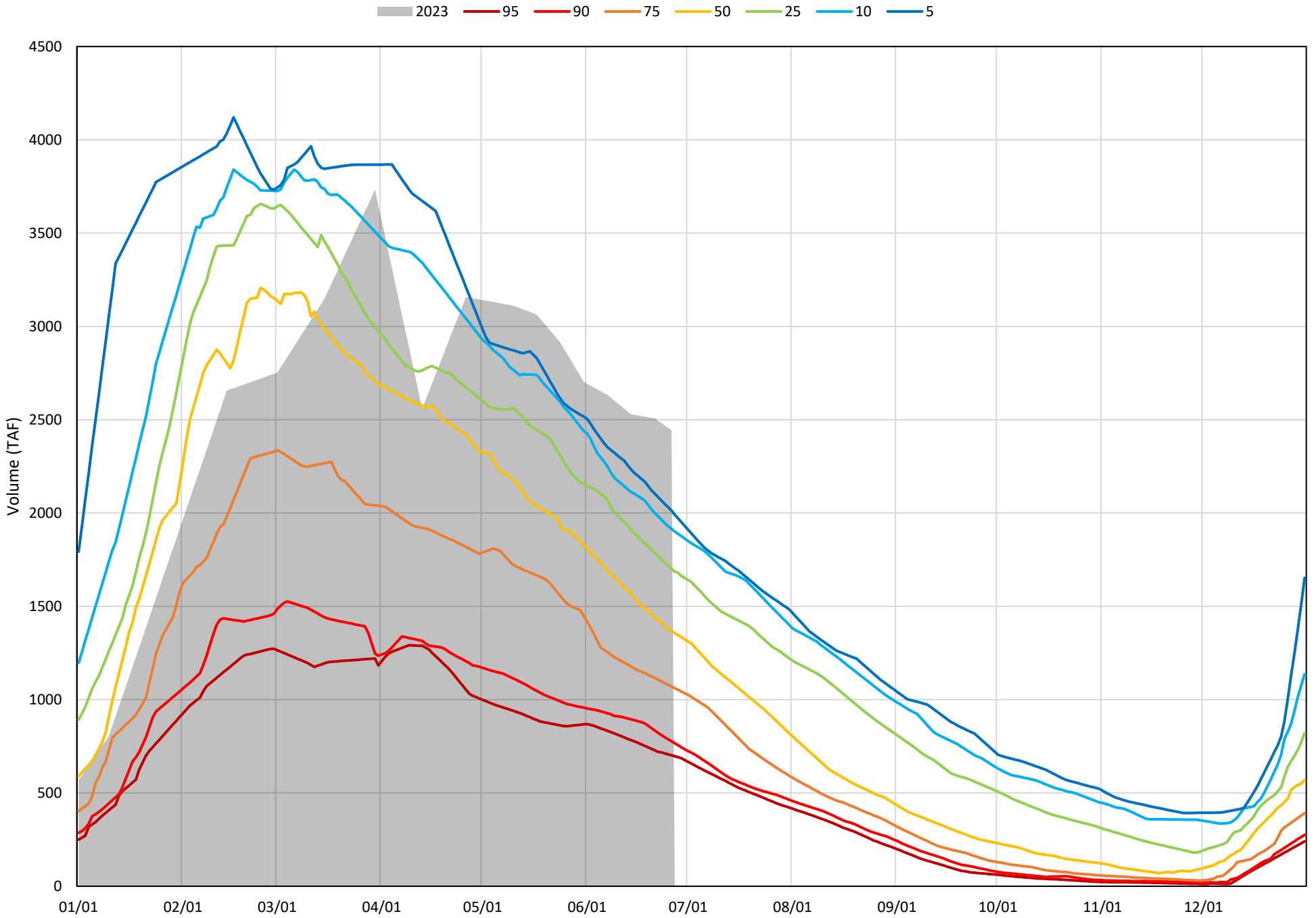
Avg (1998-2022) 2014 2015 2016 2019 2022 2023



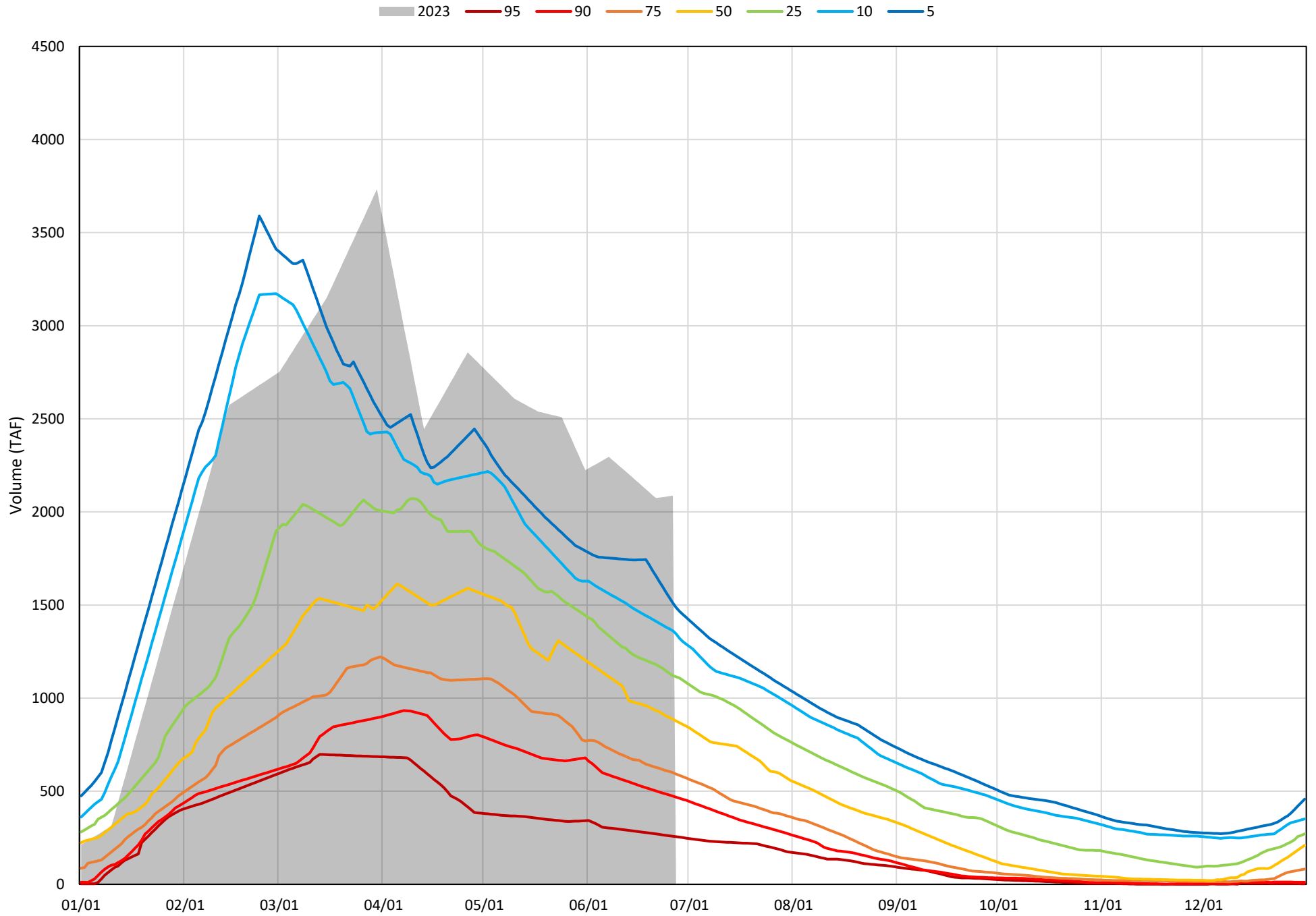
Shasta Lake Cold Water Pool Volume  $\leq 52^{\circ}\text{F}$  - Percent Exceedances (1998-2022)



Shasta Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (1998-2022)



Shasta Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (1998-2022)



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

Jun-27 2023	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
1998	-756	-1077	-1362	1065	-28	-44	-65	46
1999	-601	-634	-571	602	-23	-26	-27	25
2000	-1074	-1233	-1498	1268	-40	-50	-72	54
2001	-1083	-1030	-934	1016	-41	-42	-45	43
2002	-784	-800	-941	842	-29	-33	-45	36
2003	-1031	-1444	-1658	1377	-39	-59	-79	59
2004	-1220	-1261	-1211	1231	-46	-52	-58	52
2005	-1090	-1204	-1477	1257	-41	-49	-71	54
2006	-631	-771	-992	798	-24	-32	-48	34
2007	-1060	-1009	-993	1021	-40	-41	-48	43
2008	-1515	-1402	-1201	1373	-57	-57	-58	57
2009	-1365	-1344	-1171	1293	-51	-55	-56	54
2010	-449	-716	-1001	722	-17	-29	-48	31
2011	-321	-518	-589	476	-12	-21	-28	20
2012	-325	-394	-817	512	-12	-16	-39	22
2013	-1121	-1079	-1082	1094	-42	-44	-52	46
2014	-1771	-1681	-1584	1679	-66	-69	-76	70
2015	-1691	-1658	-1902	1750	-63	-68	-91	74
2016	-477	-577	-1277	777	-18	-24	-61	34
2017	-520	-787	-993	767	-20	-32	-48	33
2018	-721	-892	-1409	1007	-27	-36	-67	44
2019	-349	-536	-839	575	-13	-22	-40	25
2020	-1062	-1185	-1474	1240	-40	-48	-71	53
2021	-1750	-1651	-1547	1649	-66	-68	-74	69
2022	-1887	-1768	-1530	1728	-71	-72	-73	72
2023	0	0	0	0	0	0	0	0

}

Historic - Current

}

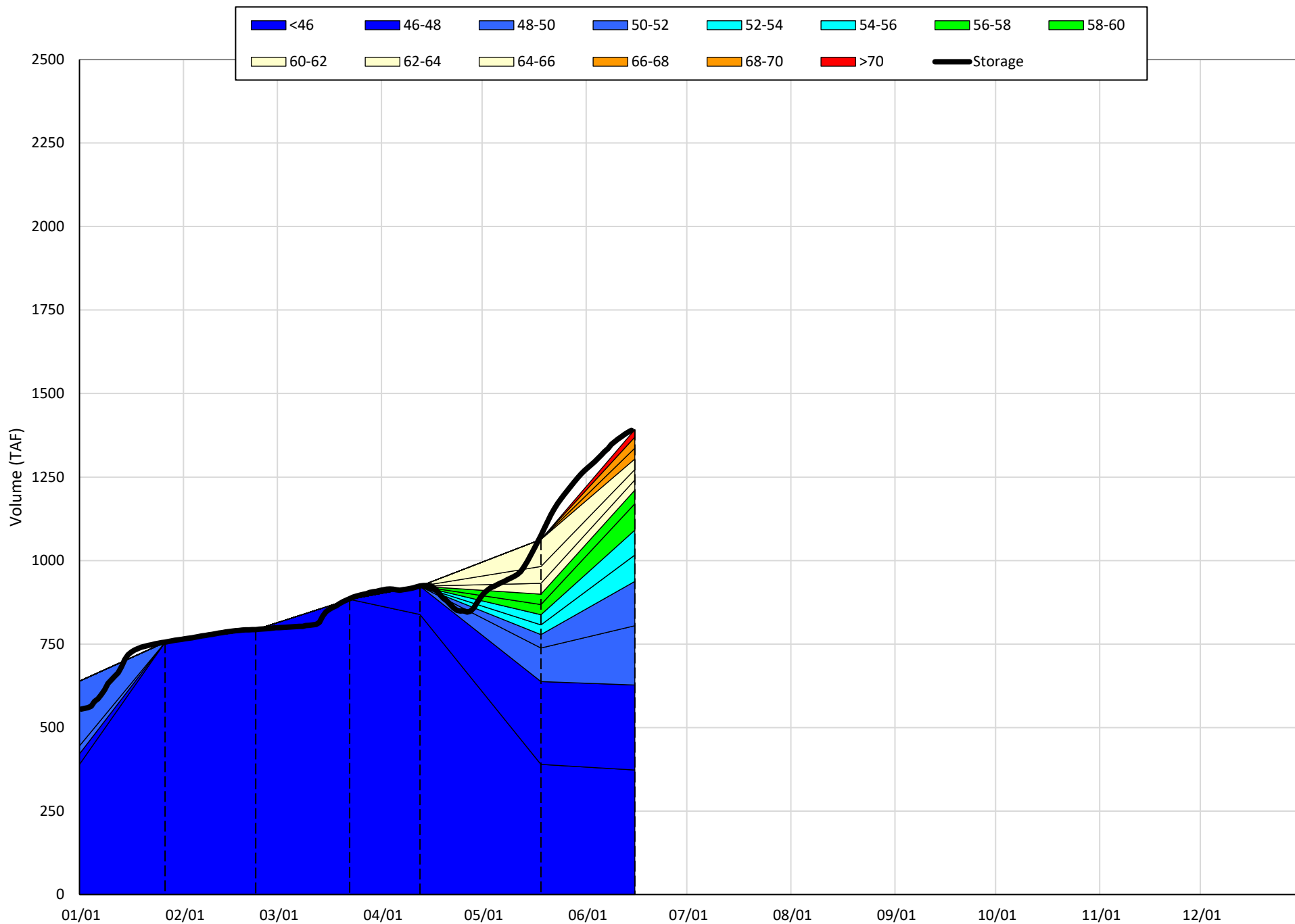
(Historic - Current) / Current

# Trinity Lake Isothermobaths & Cold Water Pool Statistics

## 2023

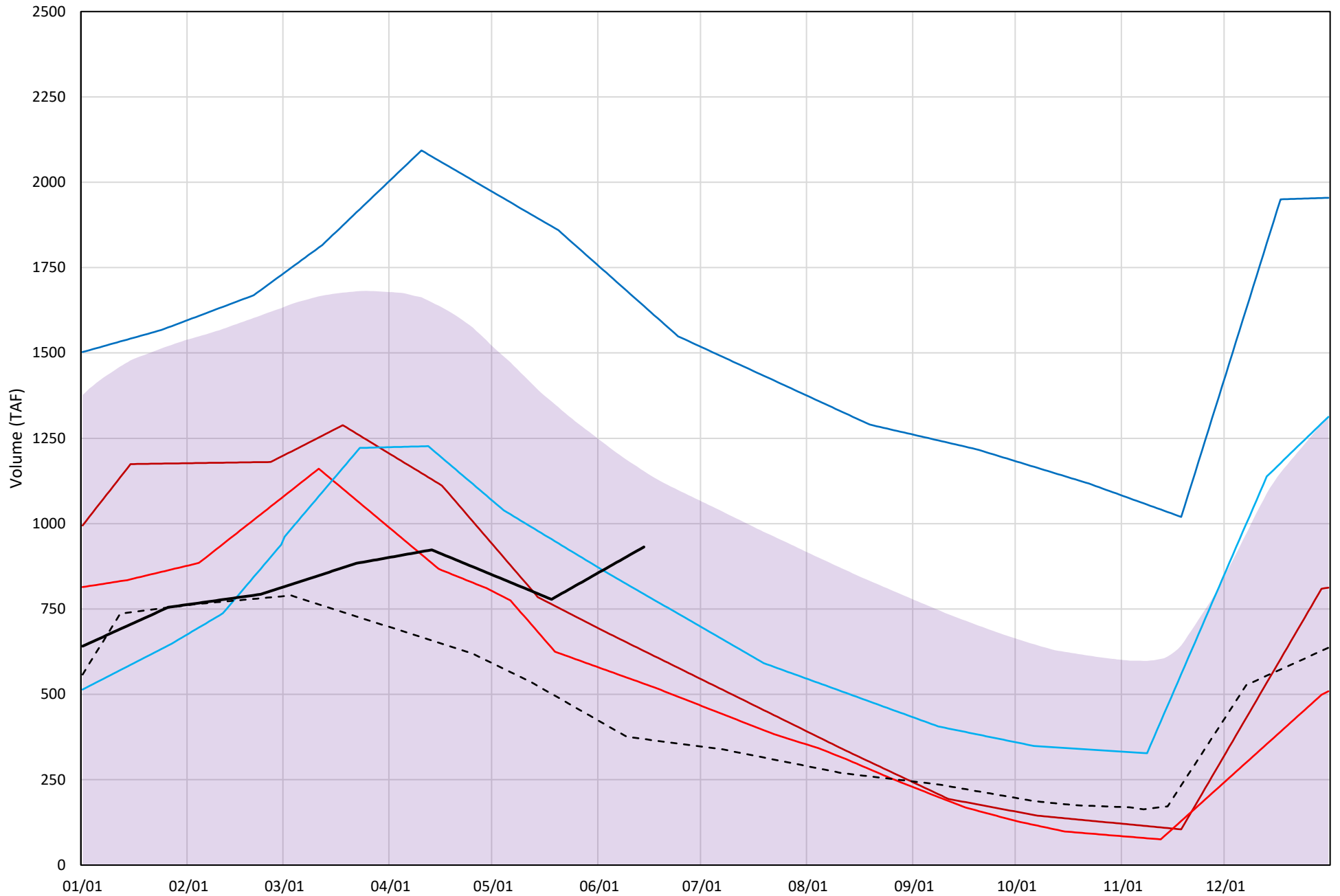
Page	Description
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17	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
18	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
19	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances
20	- Trinity 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 - 2023



# Trinity Lake Cold Water Pool Volume ≤52°F

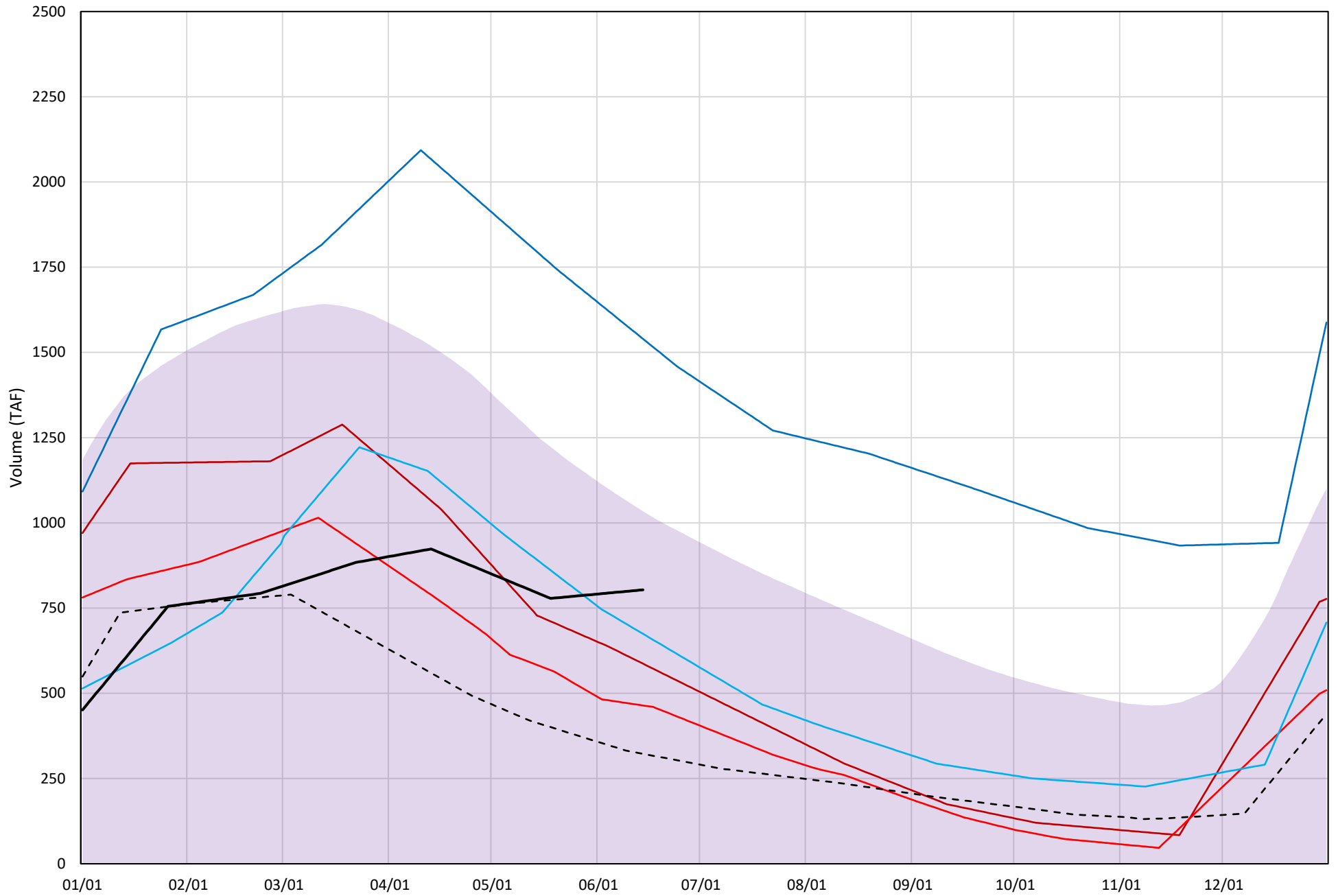
Avg (2000-2022) 2014 2015 2016 2019 2022 2023





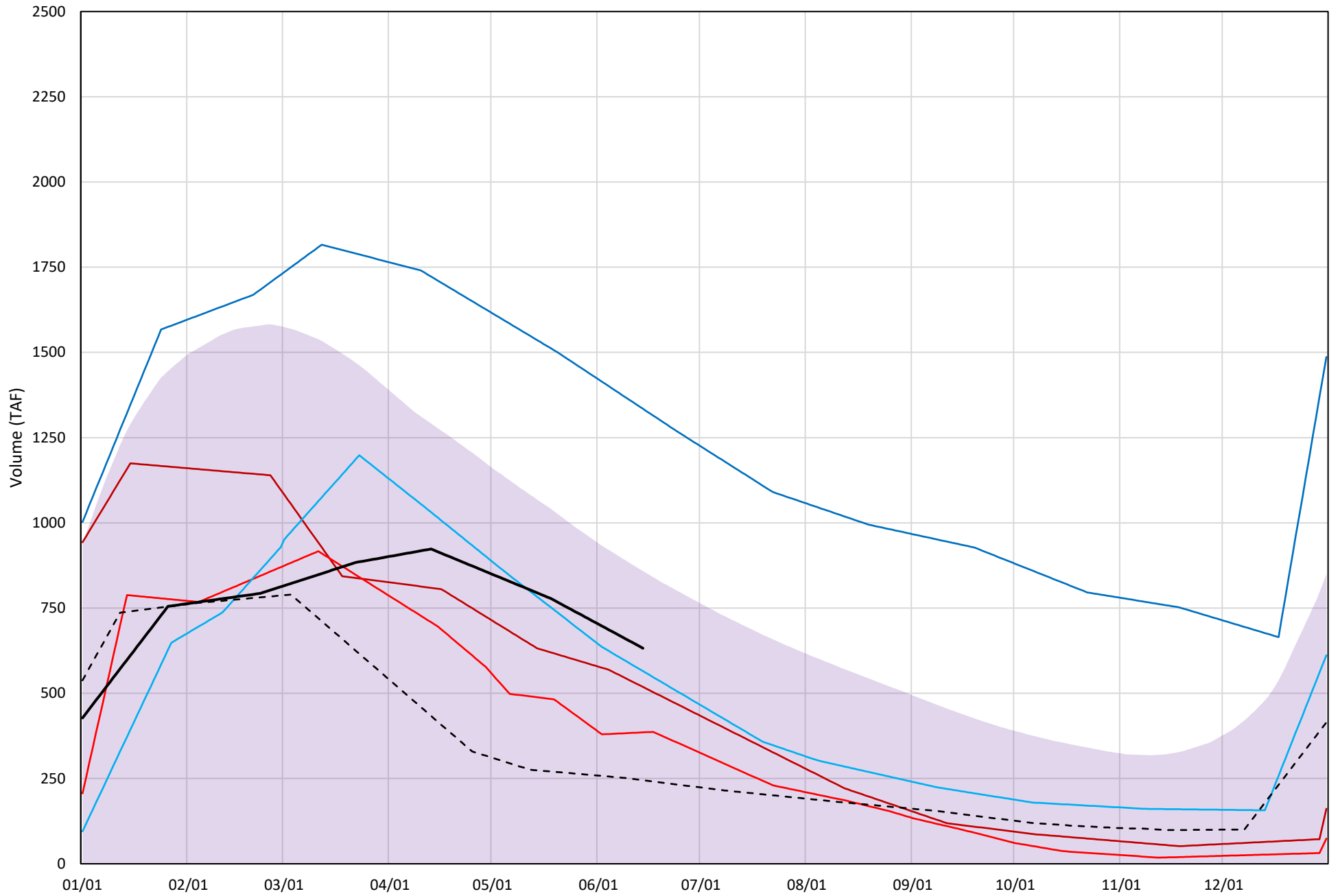
# Trinity Lake Cold Water Pool Volume ≤50°F

Avg (2000-2022) 2014 2015 2016 2019 2022 2023

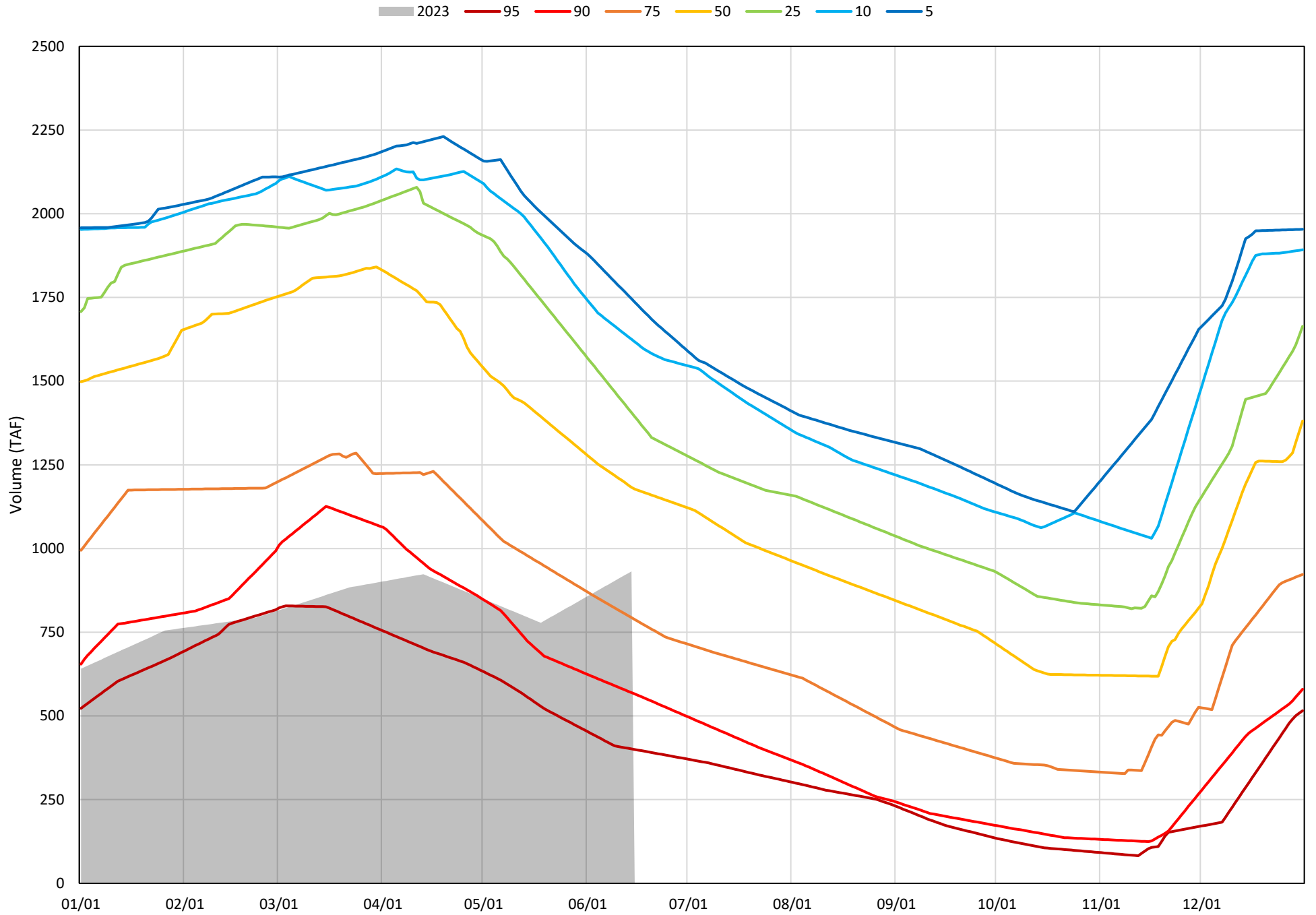


# Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

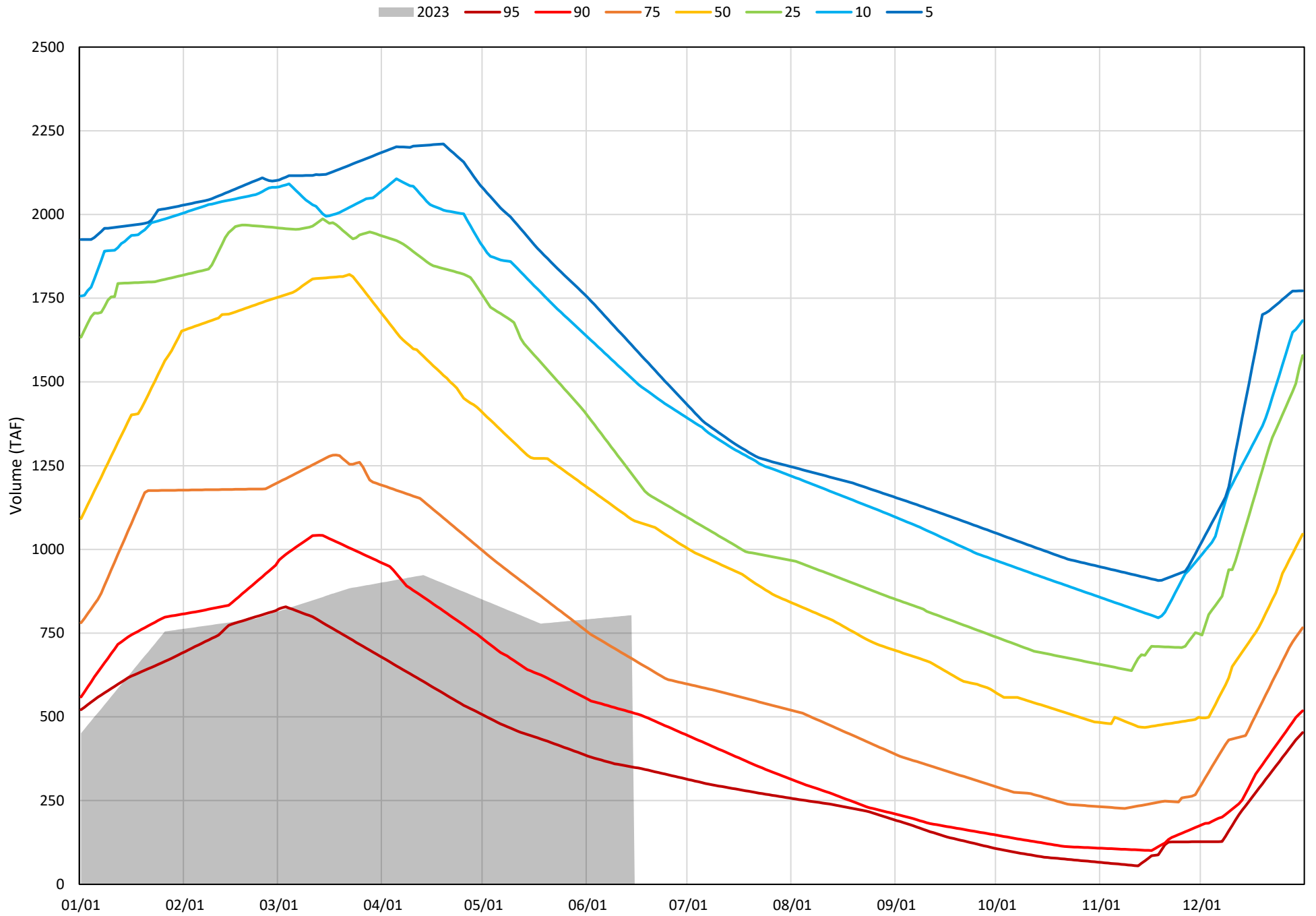
Avg (2000-2022) 2014 2015 2016 2019 2022 2023



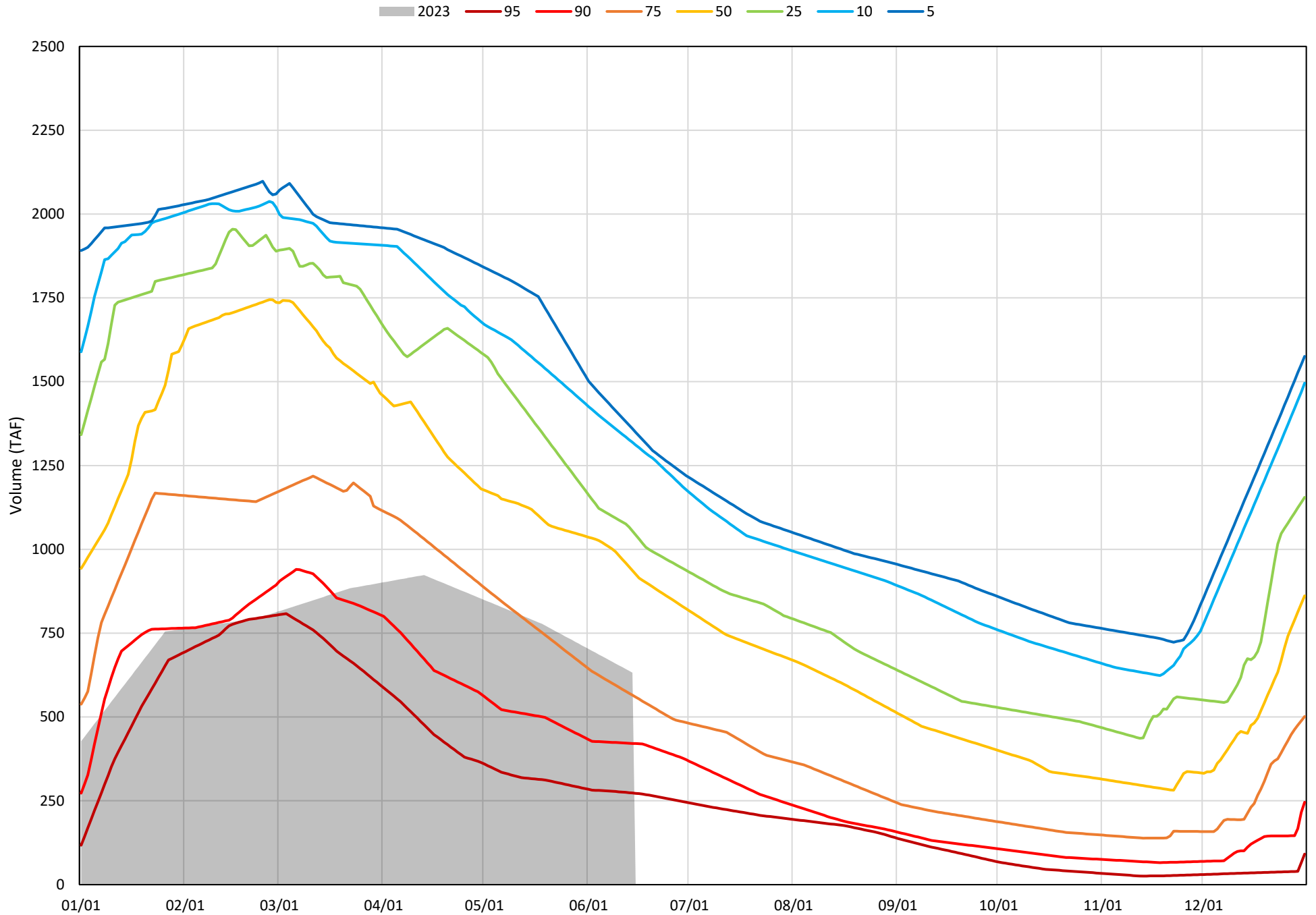
Trinity Lake Cold Water Pool Volume  $\leq 52^{\circ}\text{F}$  - Percent Exceedances (2000-2022)



Trinity Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (2000-2022)



Trinity Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (2000-2022)



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

Jun-15 2023	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	406	394	397	399	44	49	63	52
2001	316	308	331	318	34	38	52	42
2002	238	287	321	282	26	36	51	37
2003	675	513	432	540	72	64	68	68
2004	366	366	304	346	39	46	48	44
2005	412	298	131	280	44	37	21	34
2006	842	825	734	800	90	103	116	103
2007	249	284	366	300	27	35	58	40
2008	42	39	-14	31	4	5	-2	4
2009	-164	-167	-158	163	-18	-21	-25	21
2010	174	159	47	127	19	20	8	15
2011	657	655	611	641	71	82	97	83
2012	619	667	663	650	66	83	105	85
2013	193	231	222	215	21	29	35	28
2014	-304	-217	-114	212	-33	-27	-18	26
2015	-400	-339	-247	329	-43	-42	-39	41
2016	-138	-129	-67	111	-15	-16	-11	14
2017	475	423	422	440	51	53	67	57
2018	315	369	394	359	34	46	62	47
2019	706	736	702	715	76	92	111	93
2020	251	267	226	248	27	33	36	32
2021	-260	-181	-108	183	-28	-23	-17	22
2022	-563	-481	-387	477	-60	-60	-61	60
2023	0	0	0	0	0	0	0	0

Historic - Current

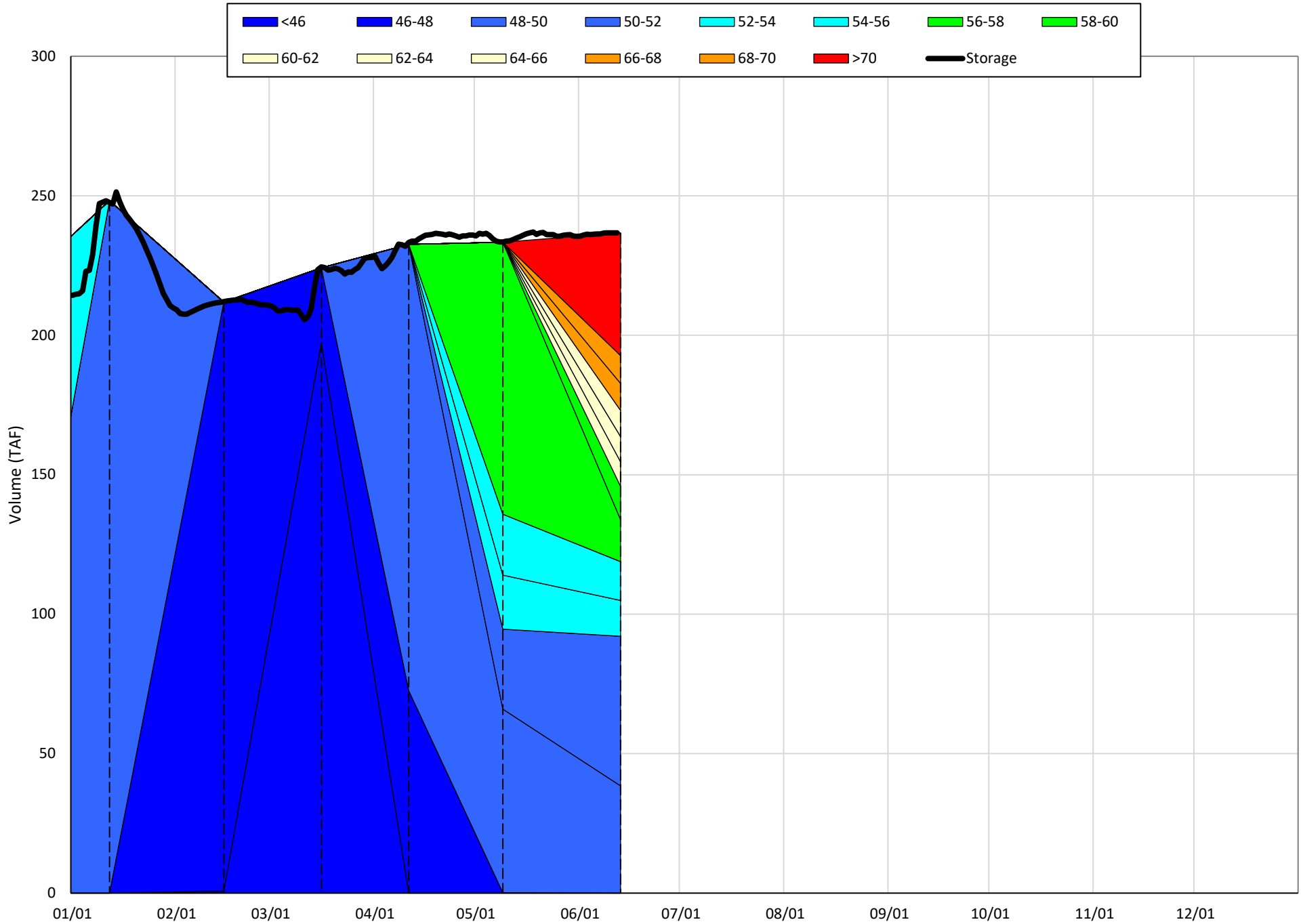
(Historic - Current) / Current

# Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

## 2023

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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

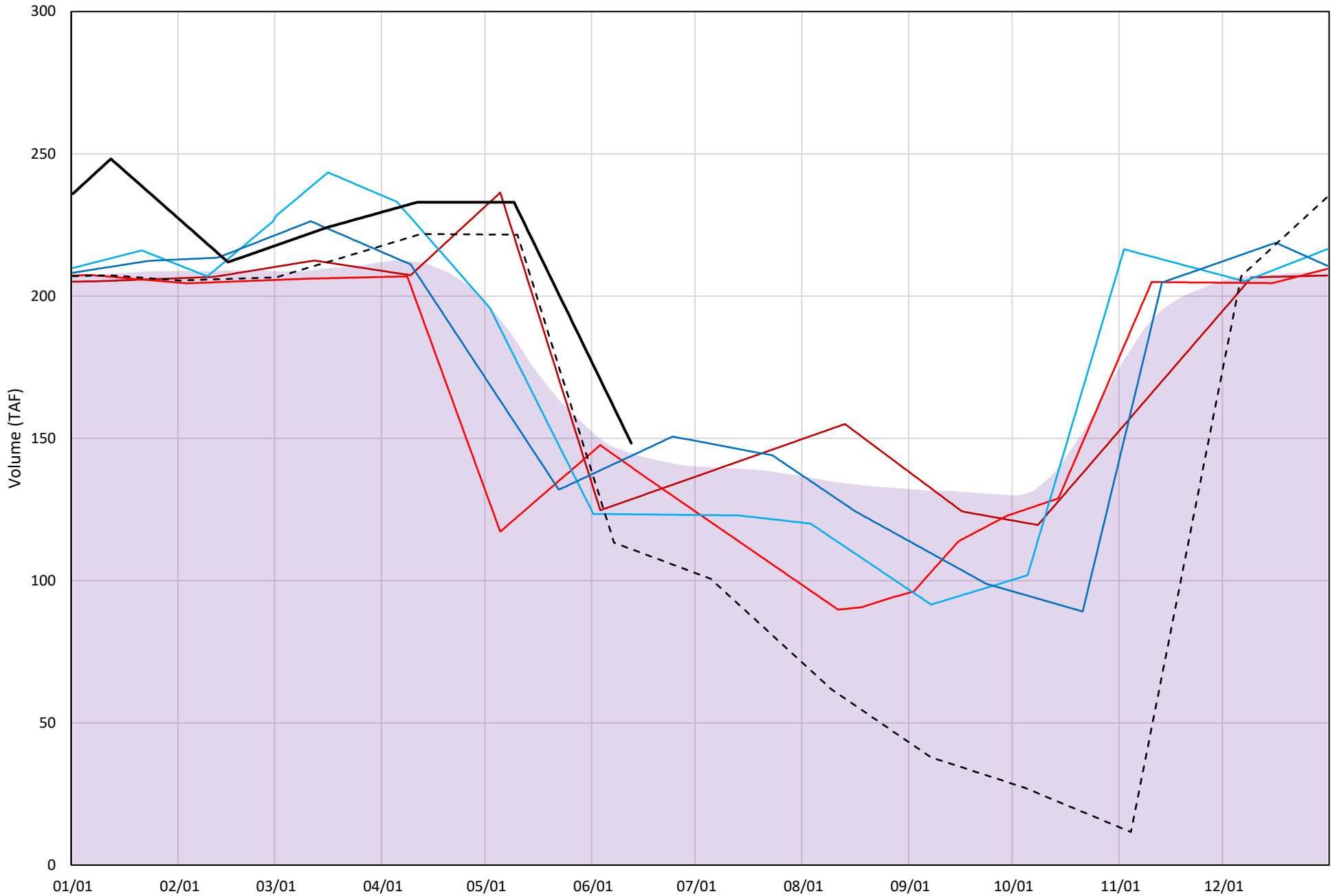
Whiskeytown Lake Isothermobaths Plot - 2023





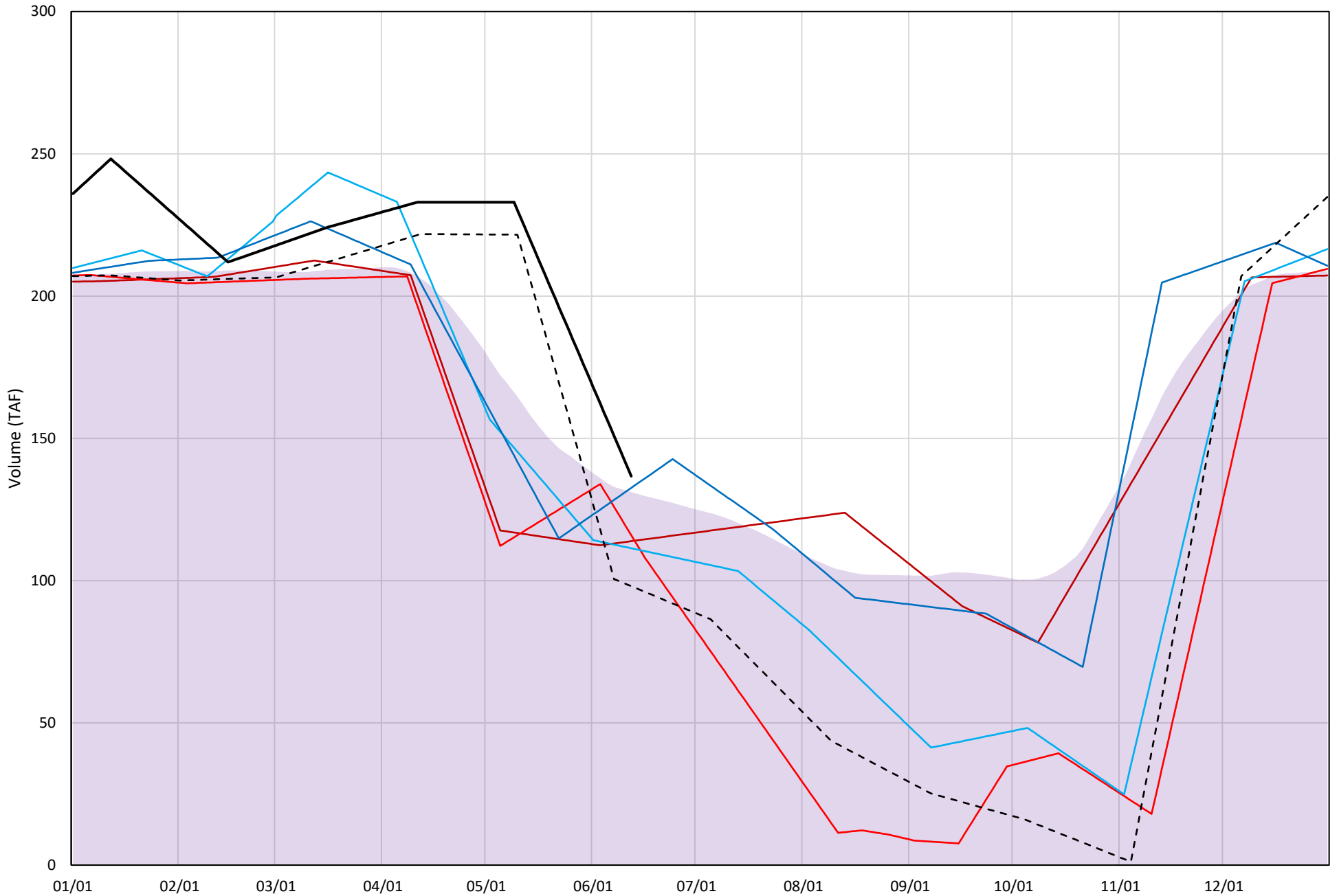
# Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

Avg (2000-2022) 2014 2015 2016 2019 2022 2023



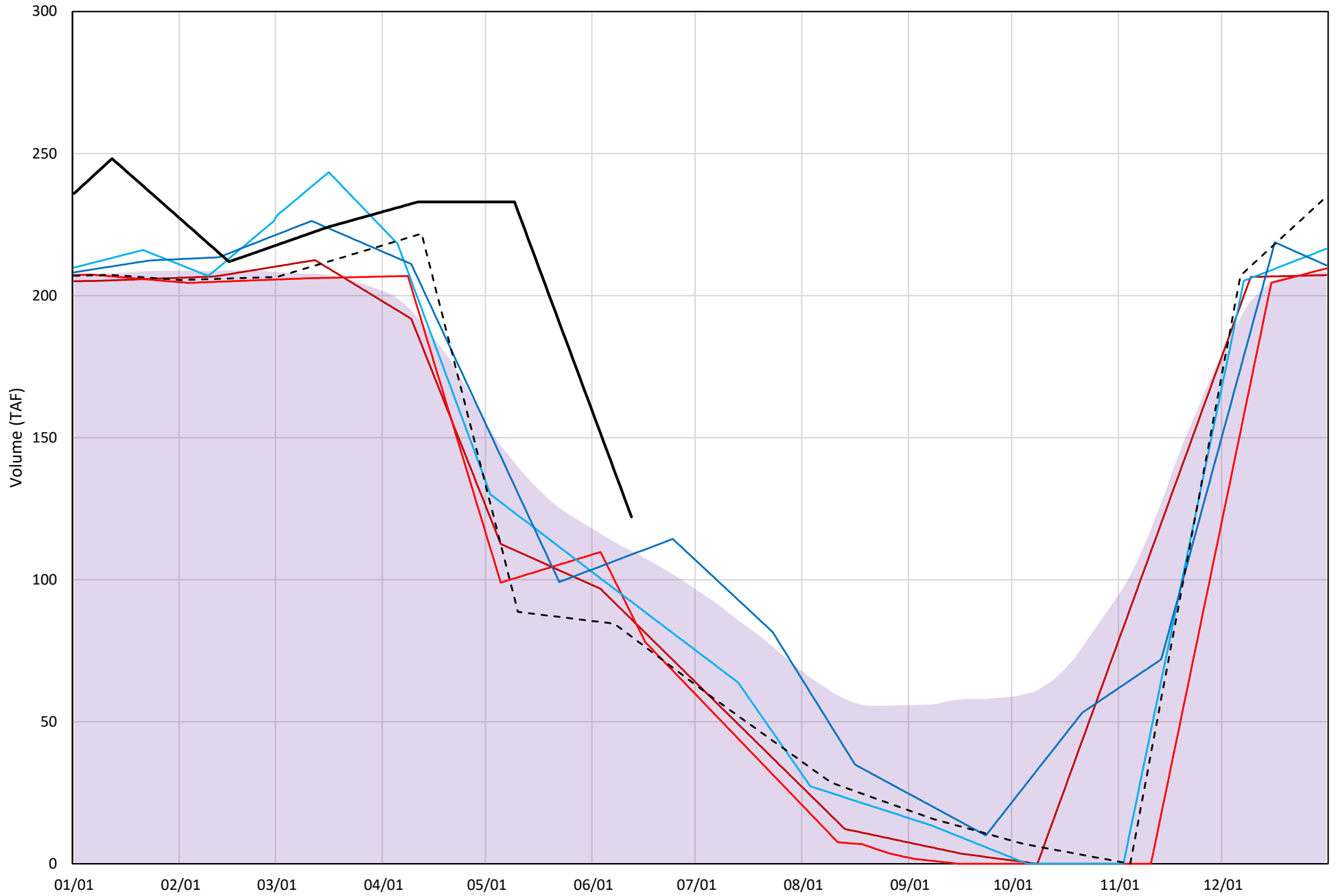
# Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

Avg (2000-2022) 2014 2015 2016 2019 2022 2023



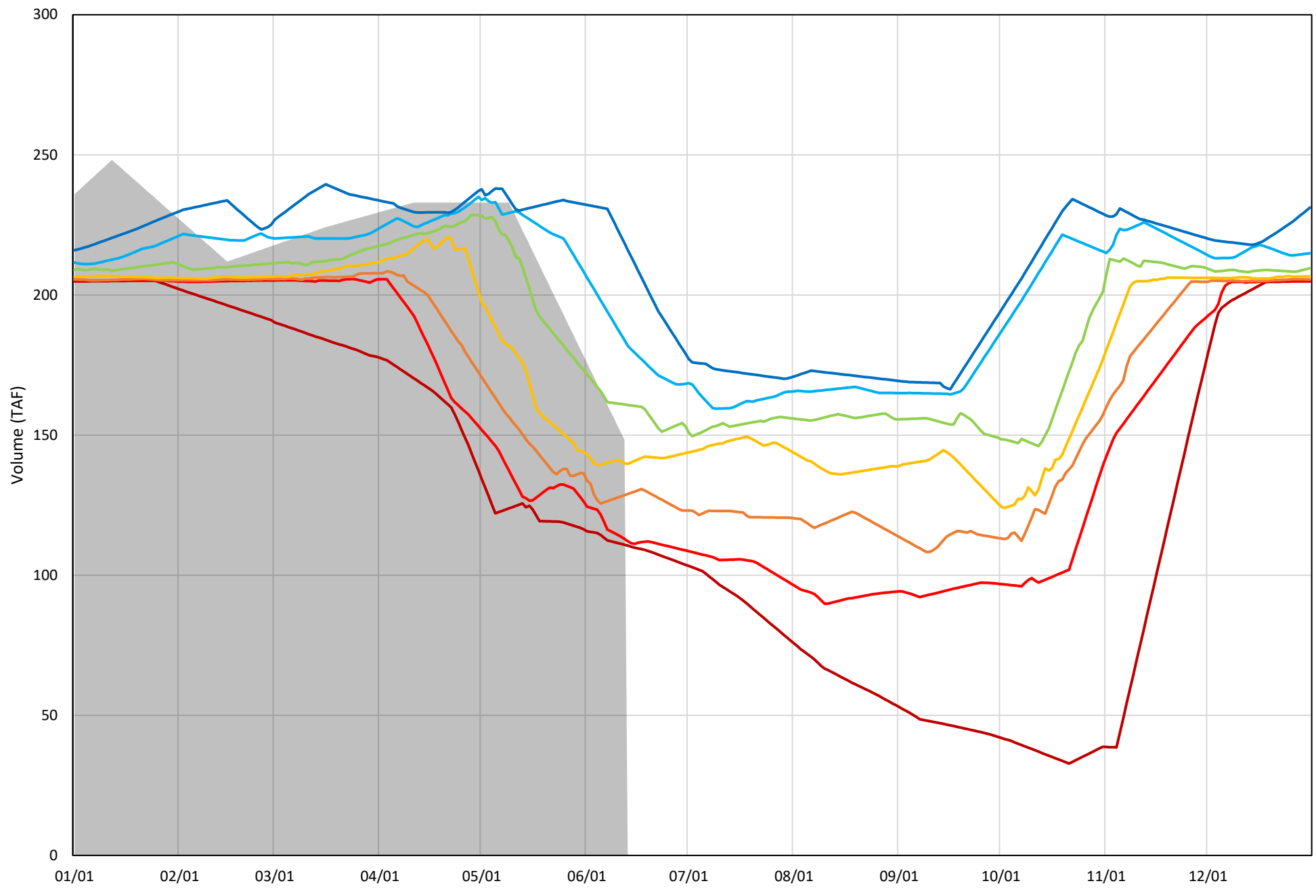
# Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

Avg (2000-2022) 2014 2015 2016 2019 2022 2023



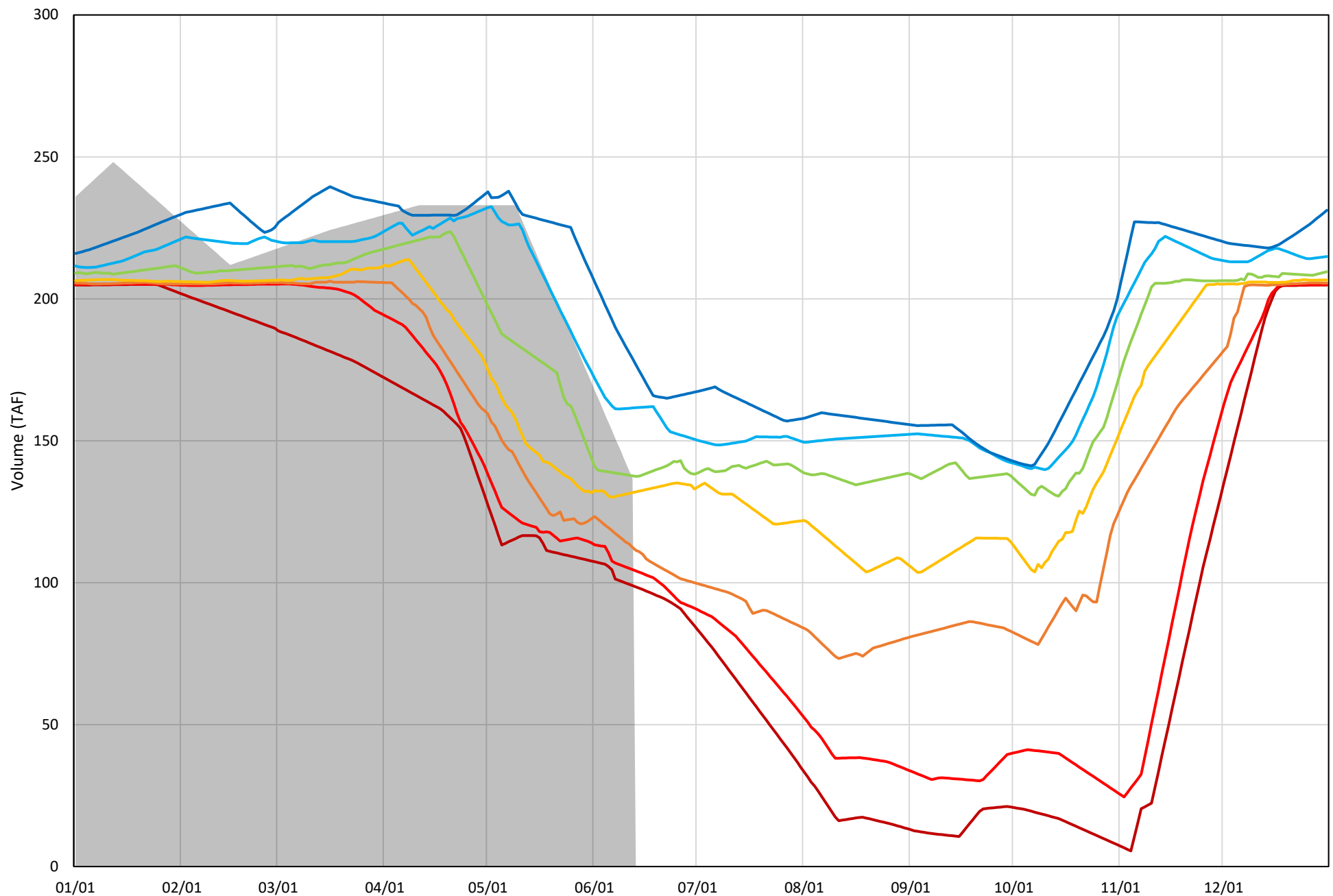
Whiskeytown Lake Cold Water Pool Volume  $\leq 60^{\circ}\text{F}$  - Percent Exceedances (2000-2022)

2023 95 90 75 50 25 10 5



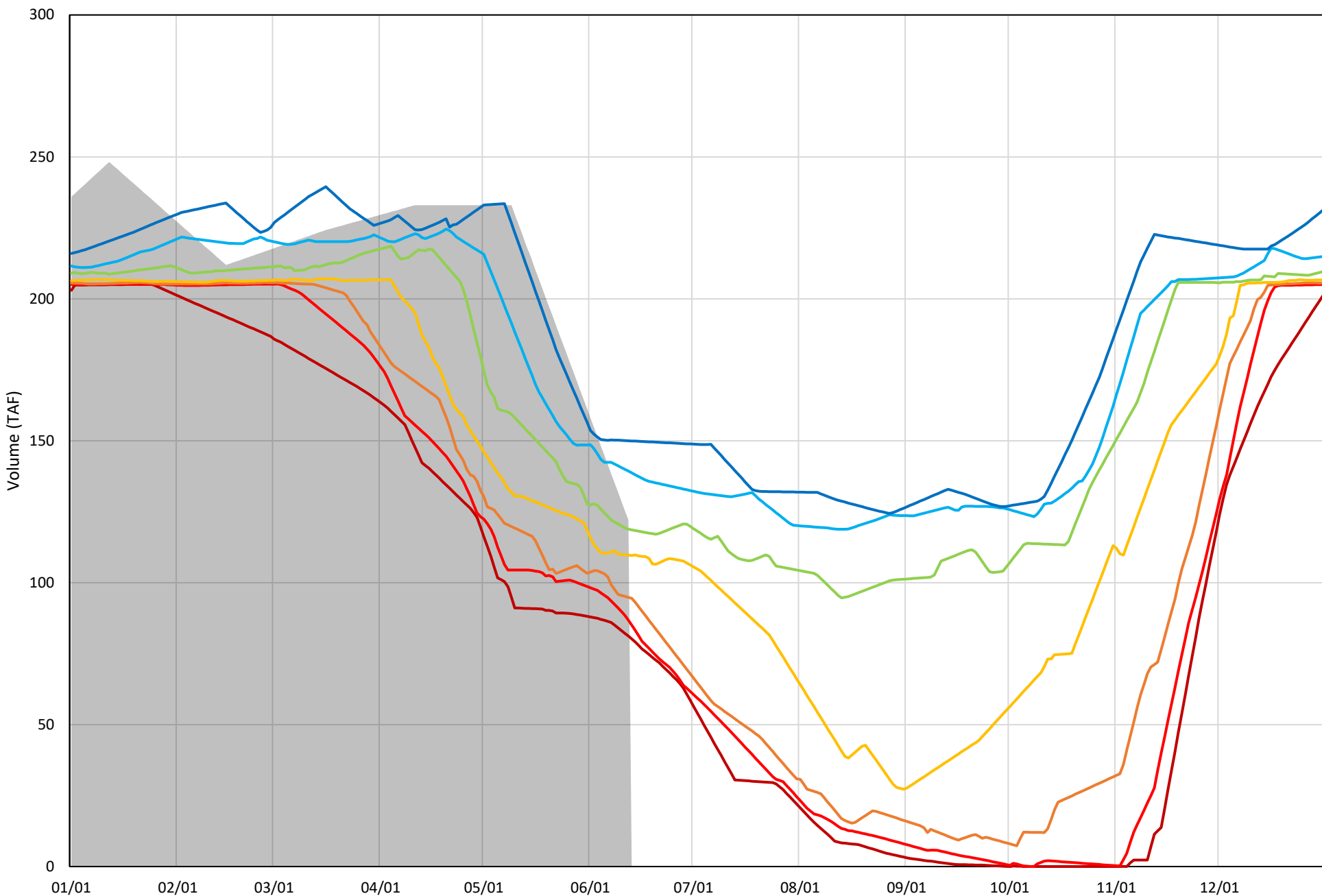
Whiskeytown Lake Cold Water Pool Volume  $\leq 58^{\circ}\text{F}$  - Percent Exceedances (2000-2022)

2023 95 90 75 50 25 10 5



Whiskeytown Lake Cold Water Pool Volume  $\leq 56^{\circ}\text{F}$  - Percent Exceedances (2000-2022)

2023 95 90 75 50 25 10 5



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

Jun-13 2023	$\Delta$ TAF				% $\Delta$			
	$\leq 60^\circ$	$\leq 58^\circ$	$\leq 56^\circ$	Abs. Avg.	$\leq 60^\circ$	$\leq 58^\circ$	$\leq 56^\circ$	Abs. Avg.
2000	21.1	-5.0	-9.0	11.7	14.2	-3.7	-7.3	8.4
2001	-13.4	-10.3	-12.4	12.0	-9.1	-7.5	-10.2	8.9
2002	-1.4	-2.3	-3.3	2.4	-1.0	-1.7	-2.7	1.8
2003	19.2	17.6	12.2	16.3	12.9	12.9	10.0	11.9
2004	-5.2	0.9	7.2	4.4	-3.5	0.7	5.9	3.4
2005	-32.5	-24.4	-25.6	27.5	-21.9	-17.9	-21.0	20.3
2006	18.7	26.3	29.7	24.9	12.6	19.3	24.4	18.7
2007	-9.9	-1.8	-3.5	5.0	-6.6	-1.3	-2.9	3.6
2008	-6.5	-0.9	-6.3	4.6	-4.4	-0.6	-5.2	3.4
2009	-14.2	-24.3	-32.7	23.7	-9.6	-17.8	-26.8	18.0
2010	45.2	46.2	-16.9	36.1	30.5	33.8	-13.9	26.1
2011	76.5	22.5	-20.0	39.7	51.6	16.5	-16.4	28.1
2012	-14.7	-10.1	-9.6	11.5	-9.9	-7.4	-7.8	8.4
2013	-2.8	-0.1	7.3	3.4	-1.9	0.0	6.0	2.6
2014	-19.7	-22.9	-36.0	26.2	-13.3	-16.7	-29.5	19.8
2015	-8.4	-20.8	-34.3	21.2	-5.7	-15.2	-28.1	16.3
2016	-25.0	-25.3	-29.9	26.7	-16.9	-18.5	-24.5	20.0
2017	12.6	17.3	20.5	16.8	8.5	12.7	16.8	12.7
2018	-9.1	-5.5	-8.1	7.6	-6.1	-4.0	-6.6	5.6
2019	-4.5	-4.1	-13.3	7.3	-3.0	-3.0	-10.9	5.6
2020	-31.8	-29.0	-22.8	27.9	-21.5	-21.2	-18.7	20.5
2021	-37.5	-34.1	-27.3	32.9	-25.3	-24.9	-22.3	24.2
2022	-37.2	-38.7	-42.1	39.4	-25.1	-28.3	-34.5	29.3
2023	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

}

Historic - Current

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(Historic - Current) / Current