

# Northern CVP Water Temperature Report

## October - 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 <sup>1</sup>	SHD	SPP <sup>1</sup>	KWK	SAC <sup>2</sup>	CCR	BSF	BND	RDB	IGO	LWS	DGC	NFH	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB
Sep	53.9	52.6	58.4	53.9	54.9	55.9	58.3	60.2	61.8	57.9	55.2	57.2	60.6	3684	62	4181	78.8	72.8	74.6
10/01	54.5 ?	55.6	60.4	55.8	56.6	57.5	59.1	60.2	61.5	56.1	53.0	55.2	58.9	4190	39	4105	78.0	69.6	72.7
10/02	55.0 ?	55.6	60.7	55.7	56.5	57.3	59.1	60.2	61.6	56.1	53.1	55.5	59.1	3494	39	4108	71.5	66.8	67.5
10/03	54.6 ?	54.4	60.6	55.5	56.4	57.1	59.0	60.2 ?	61.6	56.2	53.1	55.8	59.4	3625	39	4107	74.5	68.0	69.3
10/04	54.8 ?	54.2	60.6	55.5	56.4	57.1	58.8	60.1	61.6	56.2	53.2	55.6	59.4	3500	39	4132	74.0	68.1	69.8
10/05	54.8 ?	54.9	60.7	55.5	56.3	57.0	58.9	60.1	61.5	56.3	53.4	55.6	59.2	4019	39	4106	75.0	68.6	70.8
10/06	55.0 ?	54.9	60.9	55.4	56.2	56.9	58.8	60.0	61.4 ?	56.3 ?	53.6	55.7 ?	59.2	4023	51	4109	76.5	69.1	71.5
10/07	55.0	55.1	61.2	55.5	56.3	56.9	58.4	59.6 ?	61.1	56.1	53.6	55.5	59.0	3624	39	4115	76.5	68.6	71.9
10/08	55.1	56.2	61.1	55.6	56.4	57.0	58.4	59.4 ?	60.6	56.2	53.5	55.2	58.5	3703	39	4105	78.0	69.1	71.5
10/09	55.2 ?	56.0	61.3	55.6	56.3	56.9	58.5	59.4	60.7	56.2	53.7	55.0	58.1	3594	39	4107	76.0	68.7	71.6
10/10	55.4	55.9	61.5	55.7	56.4	57.0	58.3	59.2 ?	60.5	56.2	53.8	54.9	57.8	3764	39	4105	76.0	68.7	71.7
10/11	55.5	56.1	61.3	55.8	56.4	57.0	58.3	59.2	60.4	56.1	53.7	54.8	57.7	3568	39	4107	74.0	67.5	70.5
10/12	55.6 ?	56.4	61.0	55.8	56.5	57.1 ?	58.3	59.0	60.2	56.3	53.6	54.7 ?	57.7	3401	61	4041	76.5	67.8	71.9
10/13	56.4 ?	57.0	61.1	55.9	56.5 ?	57.0	58.4	59.1 ?	60.2	56.2	53.5	54.6	57.5	3394	73	4045	75.5	68.0	69.4
10/14	56.2 ?	56.4	61.1	56.1	56.5	57.0	58.3	59.1 ?	60.3	56.1	53.4	54.2	57.1	3522	73	3931	76.0	67.3	70.6
10/15	55.8 ?	56.4	61.1	56.4	56.9	57.3	58.4	59.1 ?	60.2	56.1	53.2	53.8	56.6	3297	73	3917	73.0	66.5	70.5
10/16	55.9 ?	57.1	61.2	56.4	56.8	57.2	58.5	59.4 ?	60.4	56.2	53.4	53.9	56.6	3371	73	3942	66.5	62.6	63.9
10/17	56.0 ?	56.9	60.8	56.3	56.8	57.1	58.3	58.8 ?	60.1	56.4	53.4	54.8	57.3	3175	50	3954	66.0	61.0	63.4
10/18	56.3 ?	56.7	60.5	56.4	56.6	56.9	58.0	58.6 ?	59.6	56.3	53.2	54.0	56.8	3727	35	3955	69.5	61.8	65.2
10/19	56.8 ?	56.4	60.6	56.3	56.7	57.1	58.0	58.1 ?	59.2	56.6	53.0	52.7	55.7	3576	35	3954	74.0	65.1	70.7
10/20	57.0 ?	57.8	60.5	56.3	56.7	57.1	58.1	58.3	59.2	56.6	52.9	52.9	55.5	3596	35	3955	69.5	63.0	65.4
10/21	57.0	58.1	60.6	56.6	56.8	57.0	57.9	58.1	59.1	56.3	52.8	53.0	55.2	3642	35	3955	67.0	63.9	66.2
10/22	57.0	58.4	60.6	56.9	57.0	57.2	58.3	58.4 ?	59.1	56.5	52.8	53.8	55.7	3362	35	3957	65.0	64.4	65.3
10/23	57.0	58.8	60.6	56.7	56.7	56.6	56.9	56.5 ?	57.7	55.7	52.6	50.9	53.6	3656	35	3953	57.0	54.0	57.9
10/24	56.8	58.9	-	56.6	56.7	56.9	56.9	56.2 ?	56.7	56.1	52.9	49.9	51.7	3757	0	3925	61.5	57.1	59.0
10/25	57.2	57.4	-	56.6	56.8	57.0	57.6	57.2 ?	57.2	56.4	52.9	51.8	52.8	3262	0	3911	62.0	58.4	57.4
10/26	57.5	58.4	-	56.4	56.4	56.4	56.8	56.7 ?	57.1	56.0	52.5	51.0	52.7	3456	0	3907	57.5	55.8	58.4
10/27	57.9 ?	59.3	-	56.4 ?	56.4 ?	56.3 ?	56.5 ?	56.0 ?	56.4 ?	56.1 ?	52.2 ?	50.1 ?	52.0	3360	9	3905	60.5	55.1	58.5
10/28	57.3 !	-	61.4	56.5	56.4	56.3	56.4	55.9 ?	56.2	55.9	52.0	49.6	50.8	3466	36	3906	58.0	51.9	54.8
10/29	57.8 !	-	61.1	56.9	56.8	56.7	56.5	55.9	55.9	56.3	51.7	49.6	50.8	3601	35	3909	60.5	52.8	56.9
10/30	57.8 !	-	61.1	56.9	57.0	57.1	57.1	56.5 ?	56.4	56.9	51.5	49.8	51.2	3789	35	3912	63.0	56.5	61.3
10/31	57.5	56.6	61.1	57.1	57.1	57.2	57.4	57.0 ?	57.1	56.6	51.2	49.8	51.2	3788	35	3907	60.5	54.6	56.8
Oct	56.2	56.6	60.9	56.2	56.6	57.0	58.0	58.4	59.4	56.2	53.0	53.3	56.0	3590	39	4002	69.3	63.2	65.9

Total CFS	111302	1204	124047
Total AF	220763	2388	246042

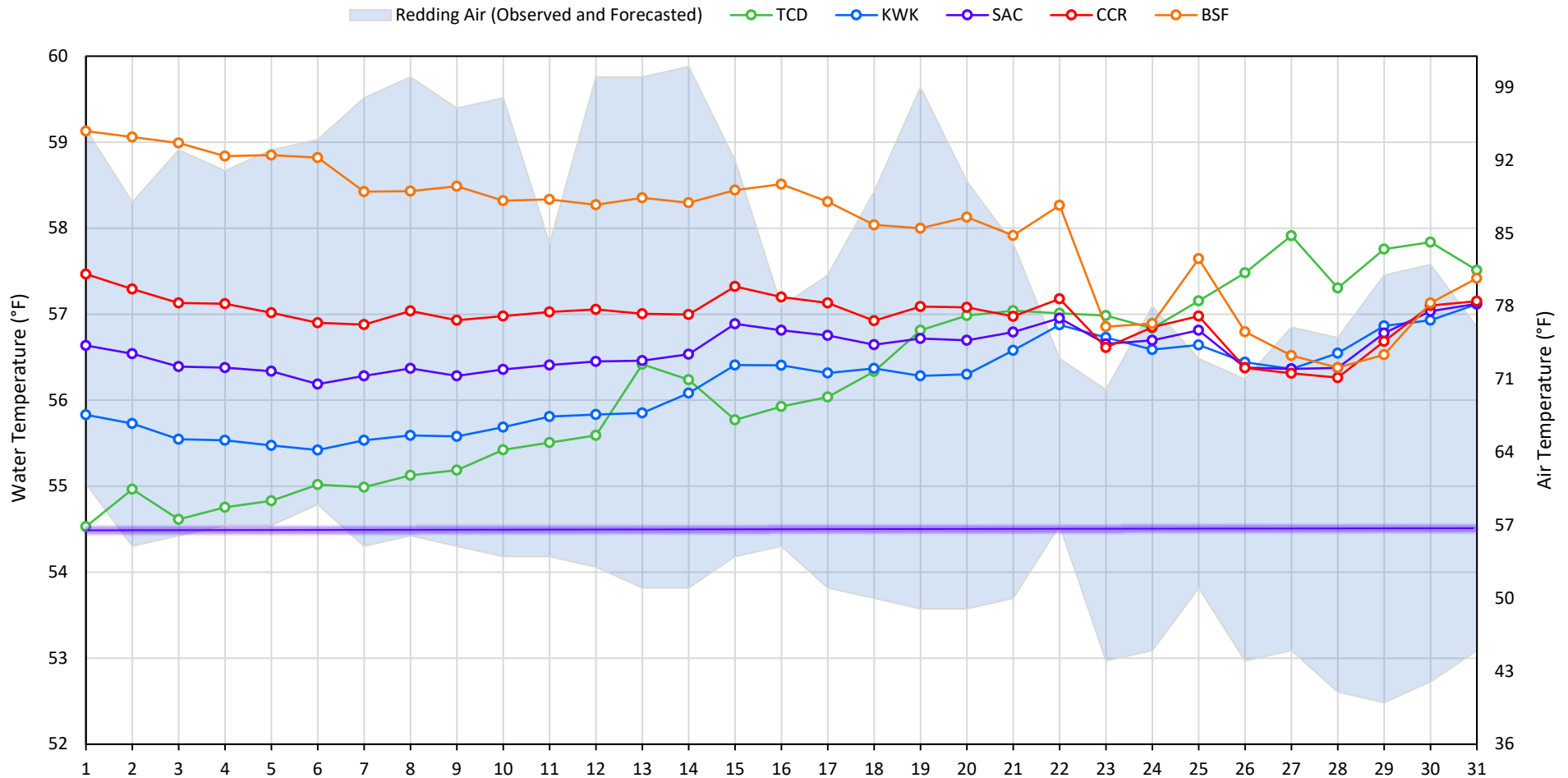
**Legend**

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

## Sacramento River Mean Daily Temperatures



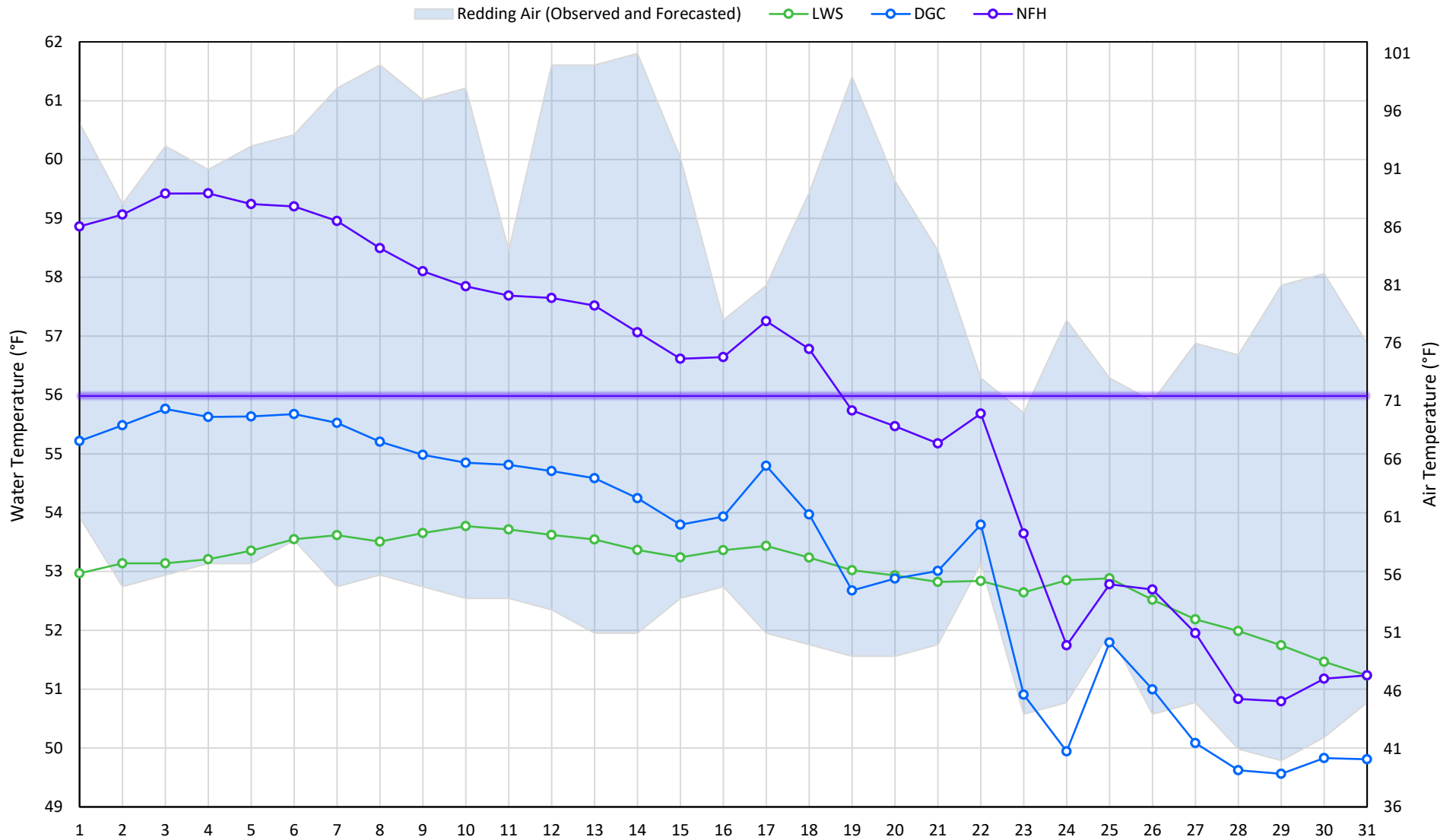
Station Details			
Code	Body of Water	Location <sup>1</sup>	CDEC Link
TCD	N/A	Shasta Power Plant	N/A
SHD	Sacramento River	0.3 miles downstream of Shasta Power Plant	<a href="#">Click Here</a>
SPP	N/A	Spring Creek Power Plant	N/A
KWK	Sacramento River	0.8 miles downstream of Keswick Dam	<a href="#">Click 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	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**

<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	56	Sep-15	Oct-01
Trinity	NFH	56	Oct-01	Dec-31

### Notes

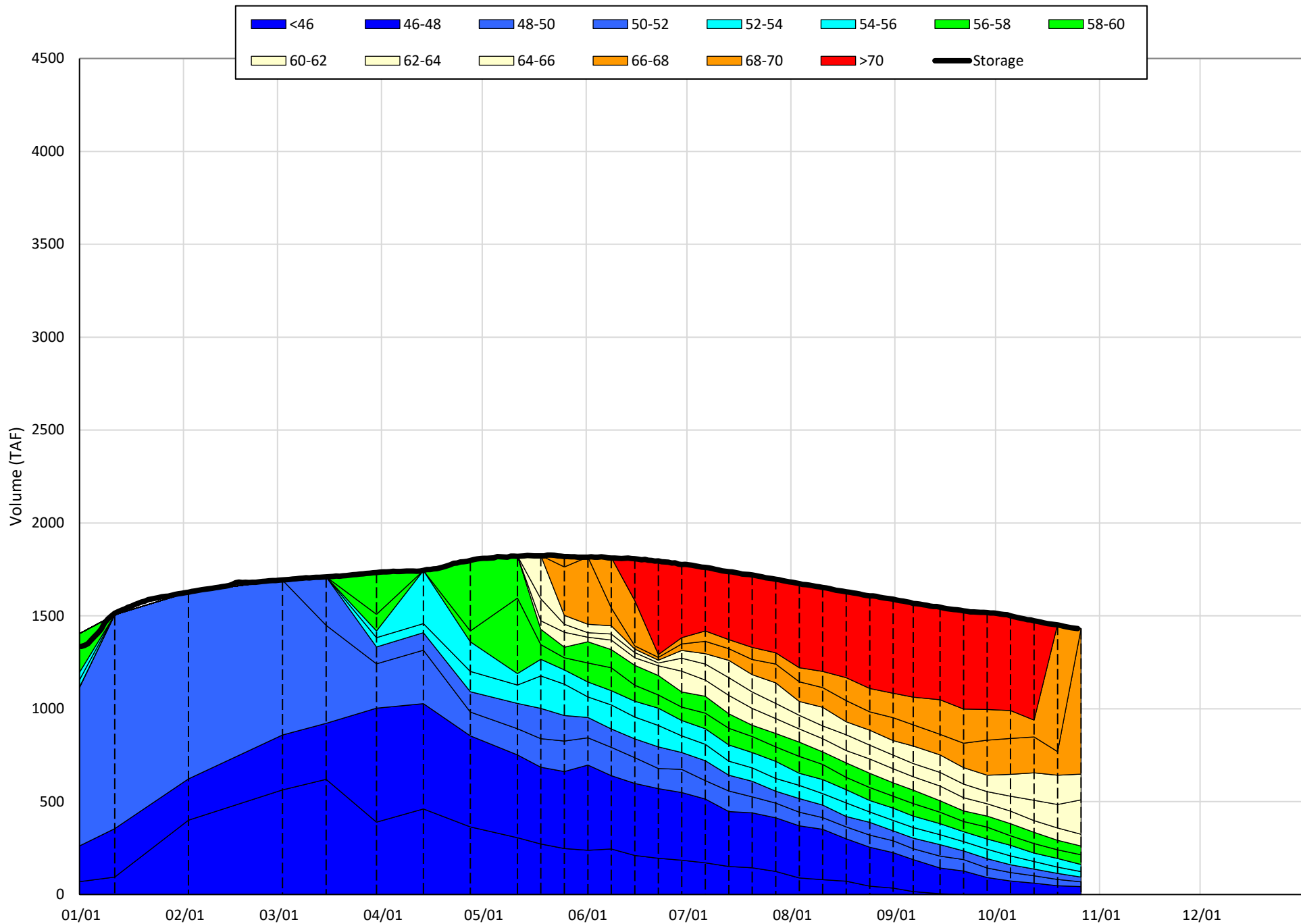
<sup>1</sup> Distances are approximate

# Shasta Lake Isothermobaths & Cold Water Pool Statistics

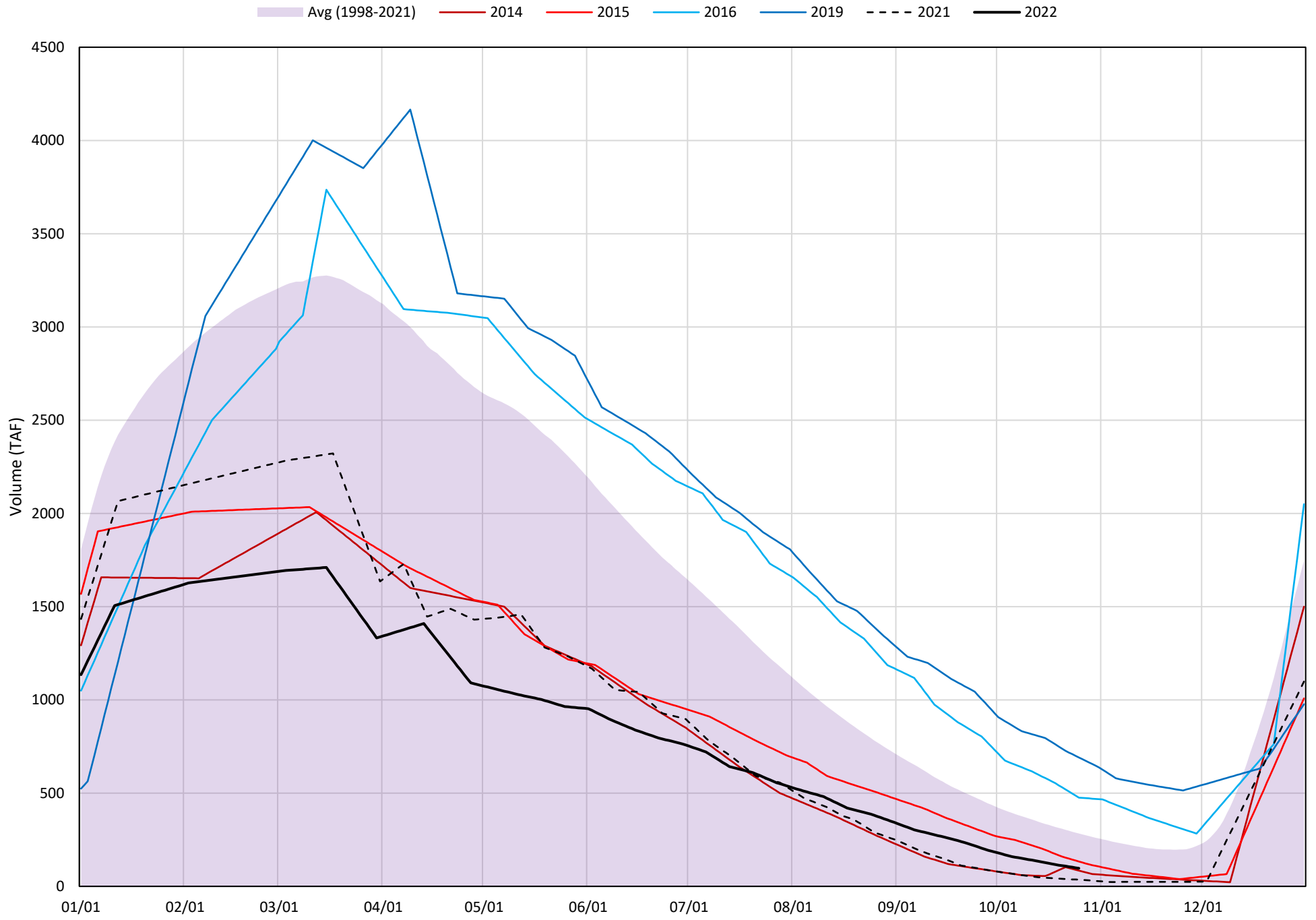
## 2022

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12	- Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ - Percent Exceedances
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Shasta Lake Isothermobaths Plot - 2022

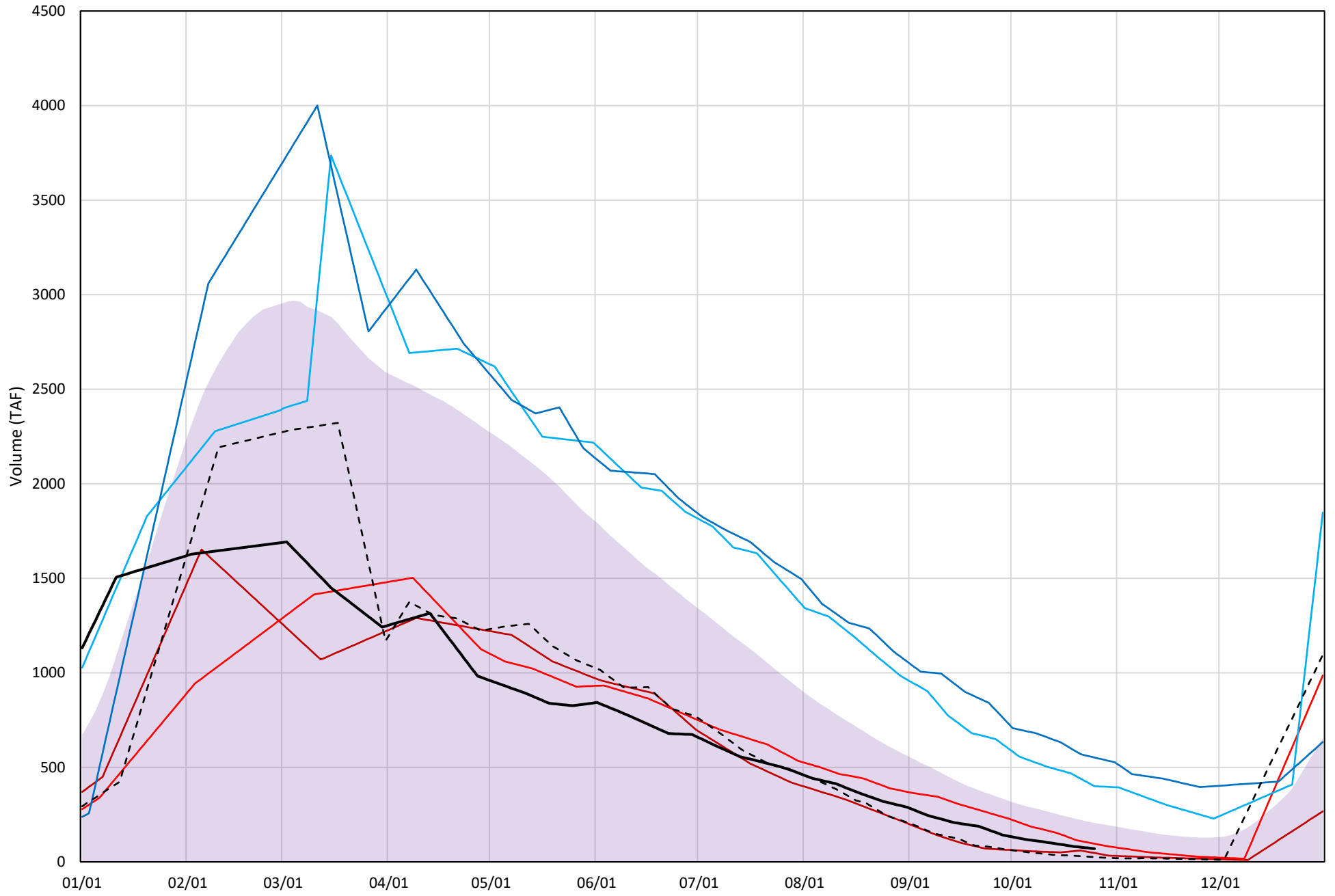


# Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$



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

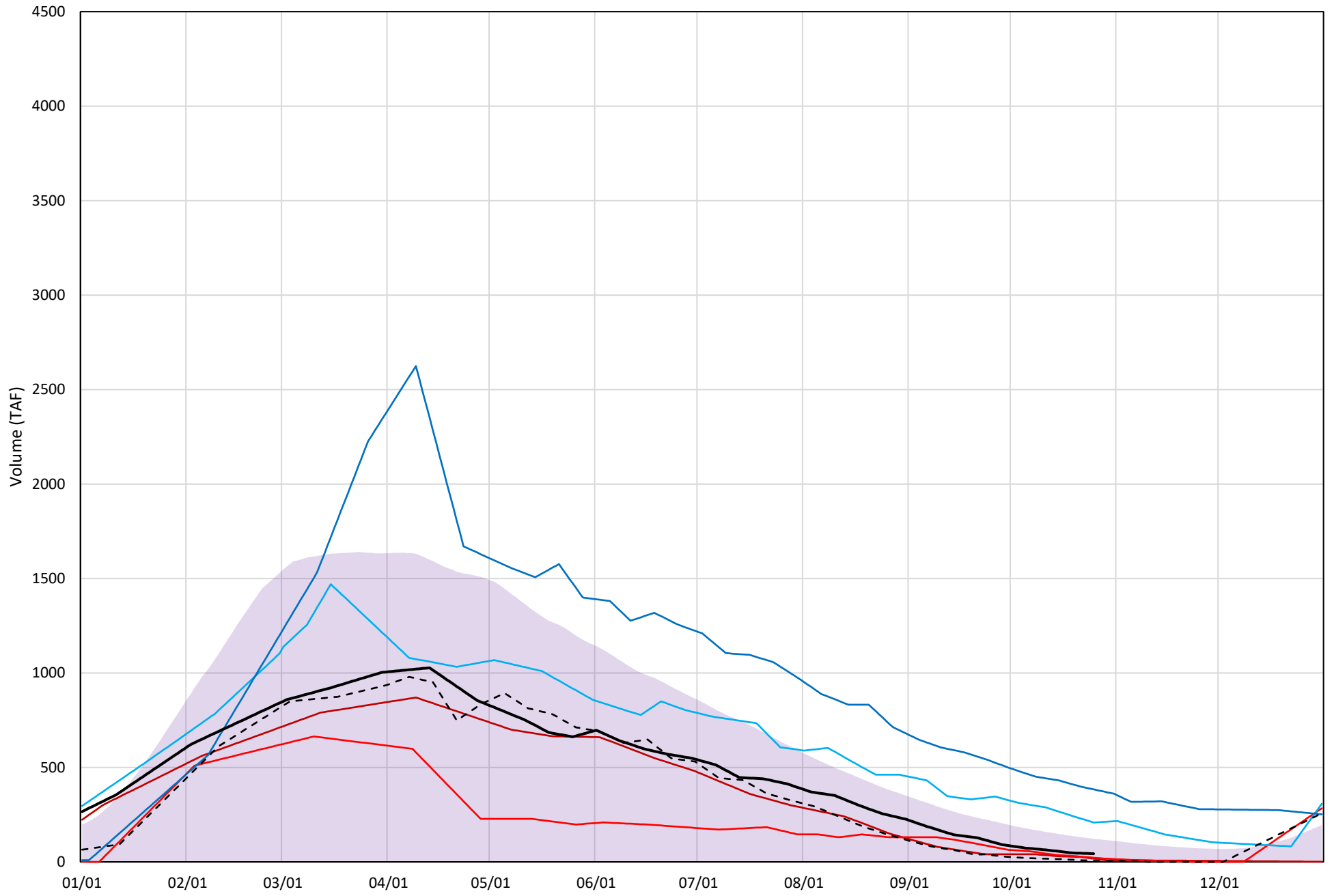
Avg (1998-2021) 2014 2015 2016 2019 2021 2022





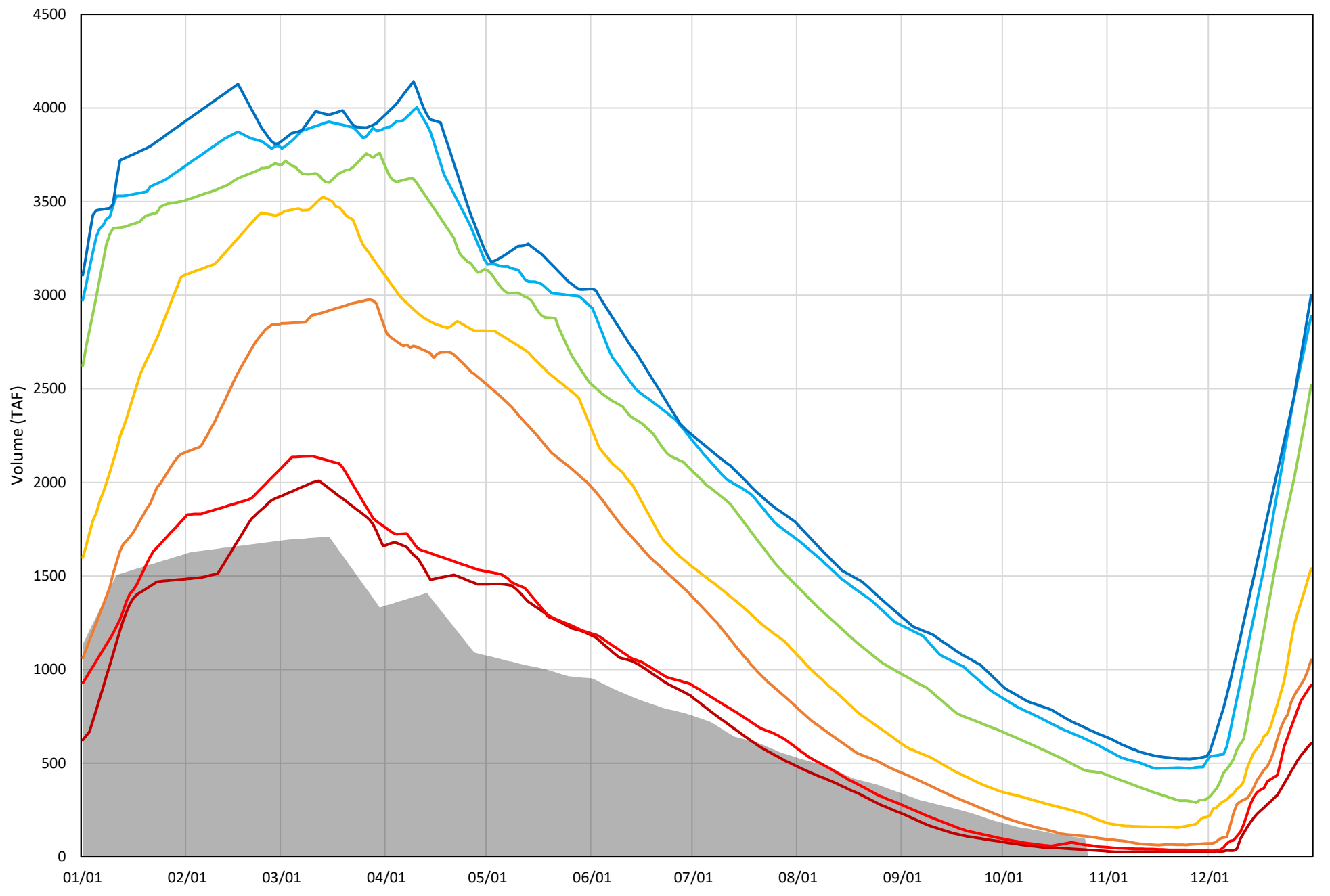
# Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

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

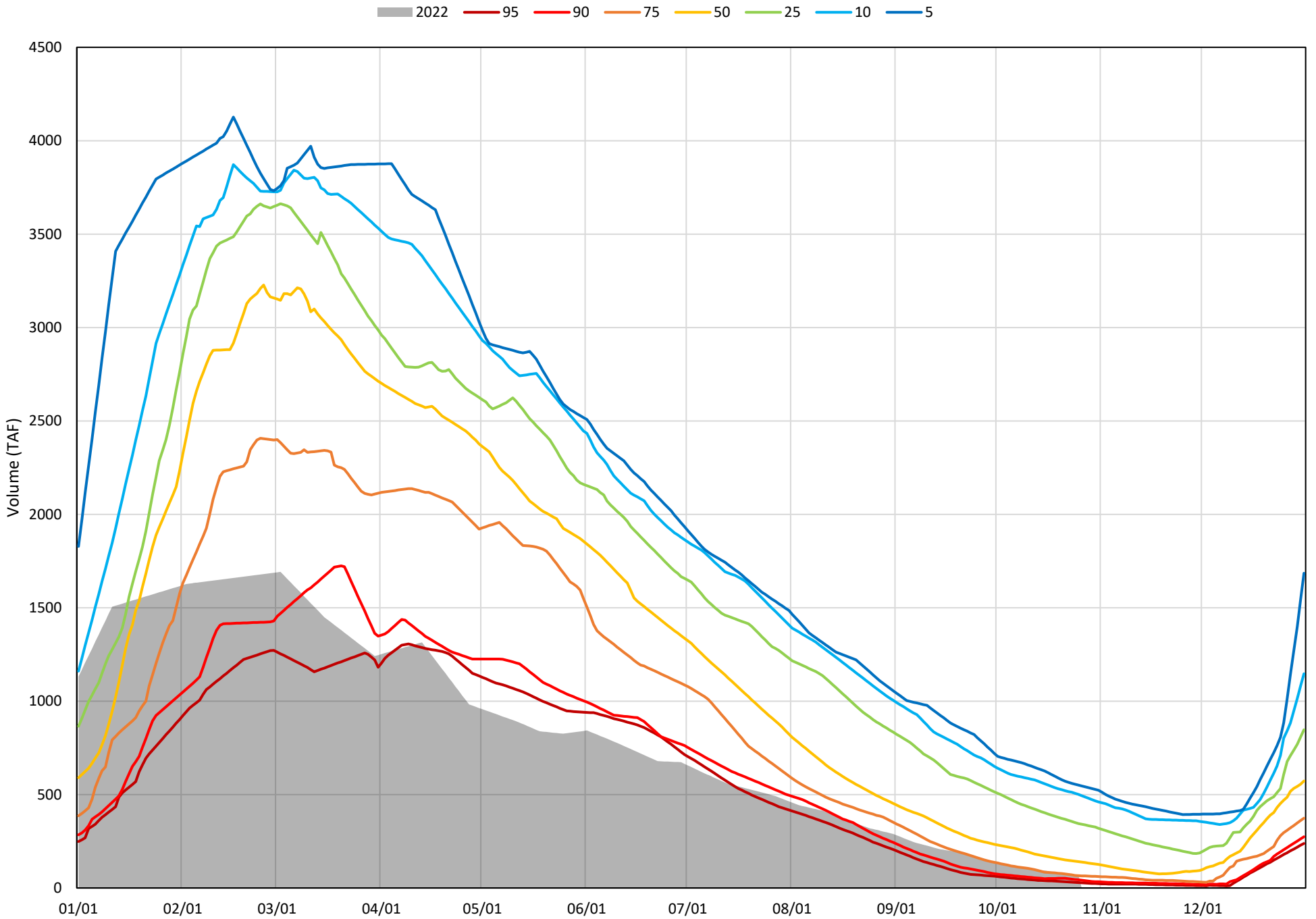


Shasta Lake Cold Water Pool Volume  $\leq 52^{\circ}\text{F}$  - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5

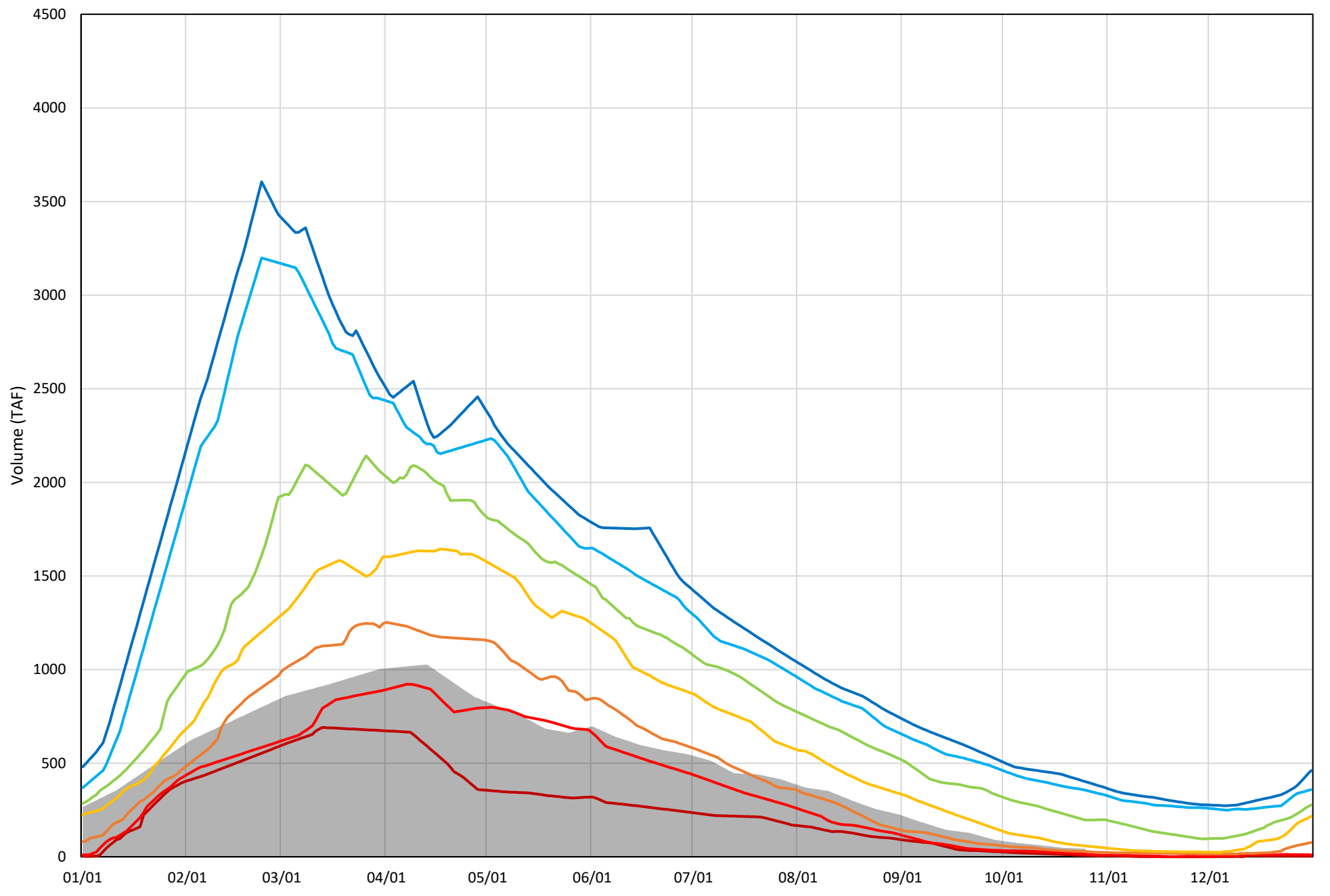


Shasta Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (1998-2021)



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)

Oct-26 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
1998	52	-16	-32	34	54	-24	-75	51
1999	406	348	269	341	419	499	619	513
2000	160	75	-4	80	166	107	-9	94
2001	76	59	42	59	79	85	96	86
2002	224	182	119	175	231	261	275	256
2003	235	68	-19	107	243	97	-43	128
2004	13	10	-3	9	14	15	-8	12
2005	12	-5	-15	11	13	-7	-34	18
2006	248	180	105	178	256	258	242	252
2007	-17	-10	-3	10	-17	-14	-8	13
2008	-49	-30	-13	31	-51	-43	-31	42
2009	-3	0	6	3	-3	0	14	6
2010	439	275	115	276	453	395	265	371
2011	586	478	365	476	605	686	840	710
2012	316	276	192	261	326	395	442	388
2013	89	86	65	80	92	124	149	121
2014	-13	-23	-26	21	-13	-33	-61	36
2015	36	26	-21	28	37	37	-49	41
2016	379	330	164	291	391	474	379	415
2017	479	383	285	382	494	550	656	567
2018	161	107	24	97	166	153	54	125
2019	594	482	340	472	613	692	784	696
2020	99	41	-15	52	103	59	-34	65
2021	-62	-45	-38	48	-63	-64	-87	71
2022	0	0	0	0	0	0	0	0

} Historic - Current

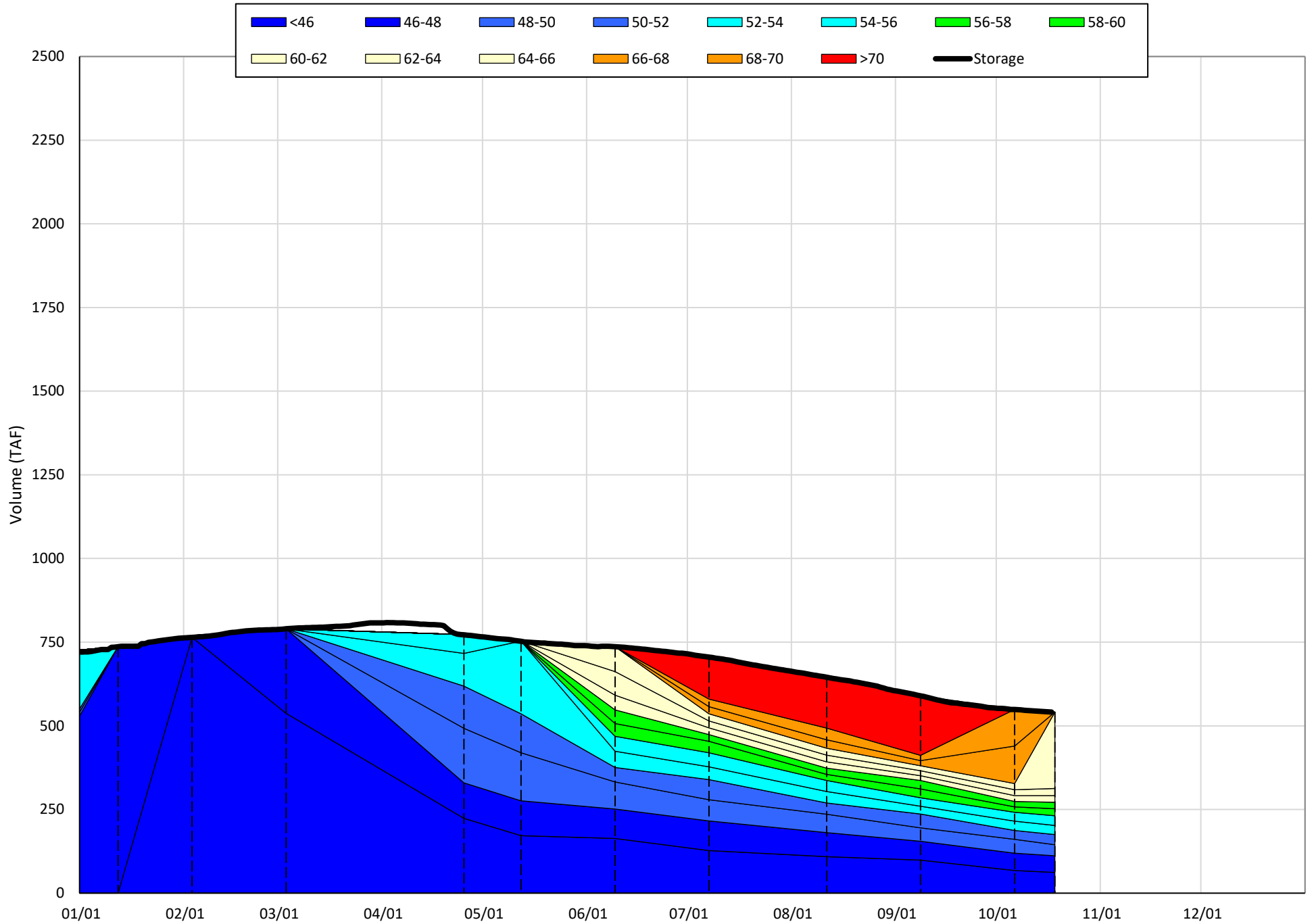
} (Historic - Current) / Current

# Trinity Lake Isothermobaths & Cold Water Pool Statistics

## 2022

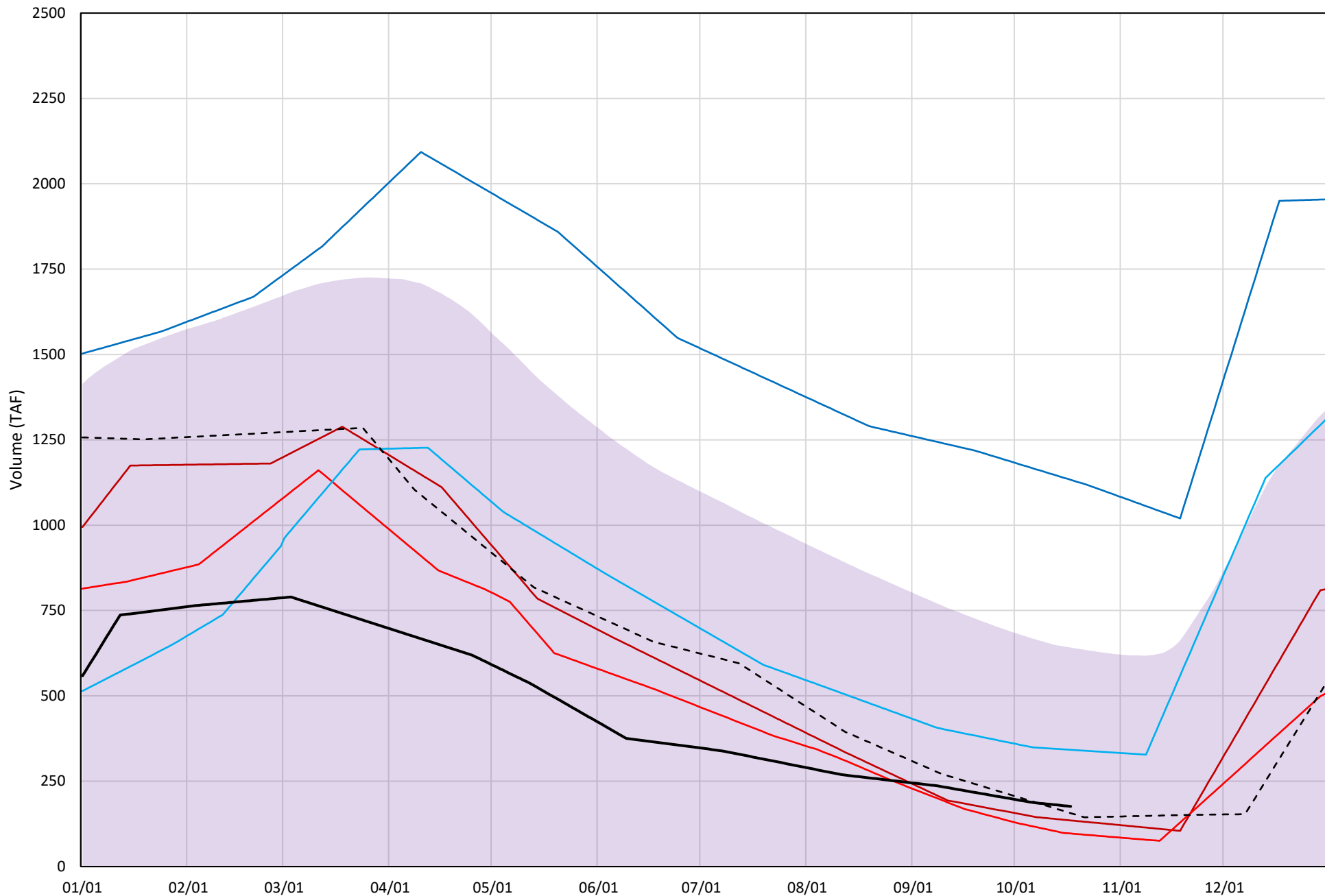
Page	Description
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19	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances
20	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances
21	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$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

Trinity Lake Isothermobaths Plot - 2022



# Trinity Lake Cold Water Pool Volume ≤52°F

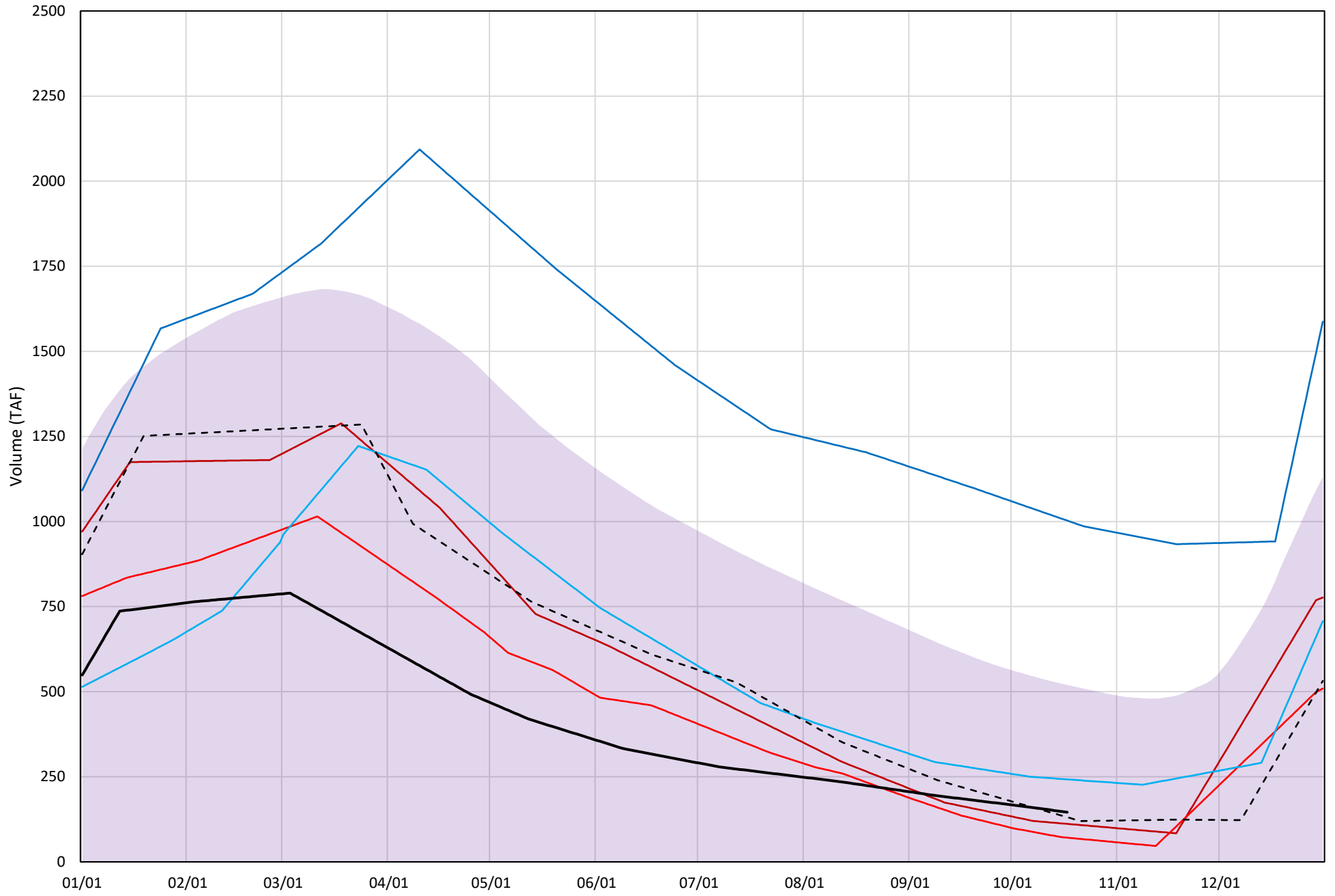
Avg (2000-2021) 2014 2015 2016 2019 2021 2022





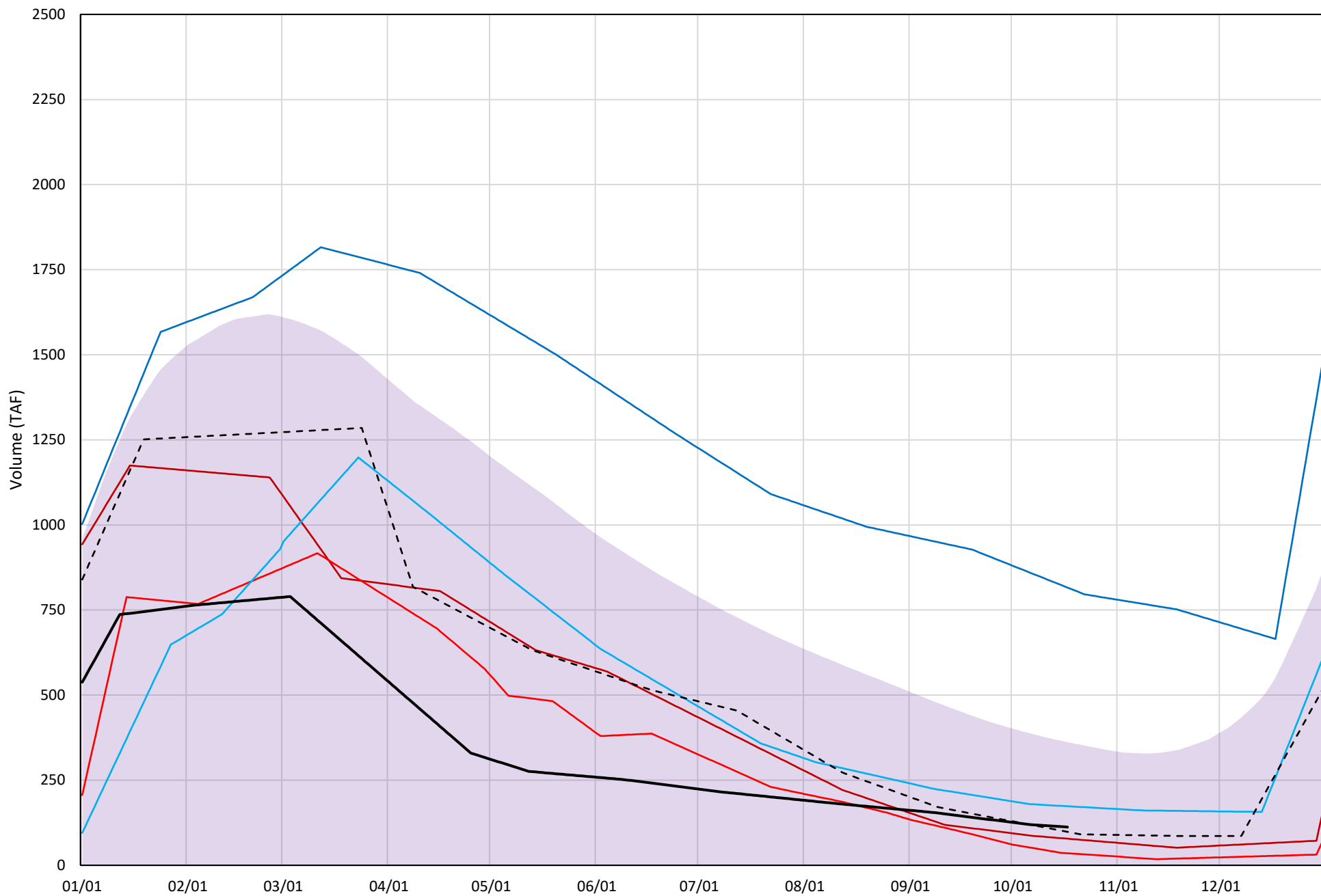
# Trinity Lake Cold Water Pool Volume ≤50°F

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

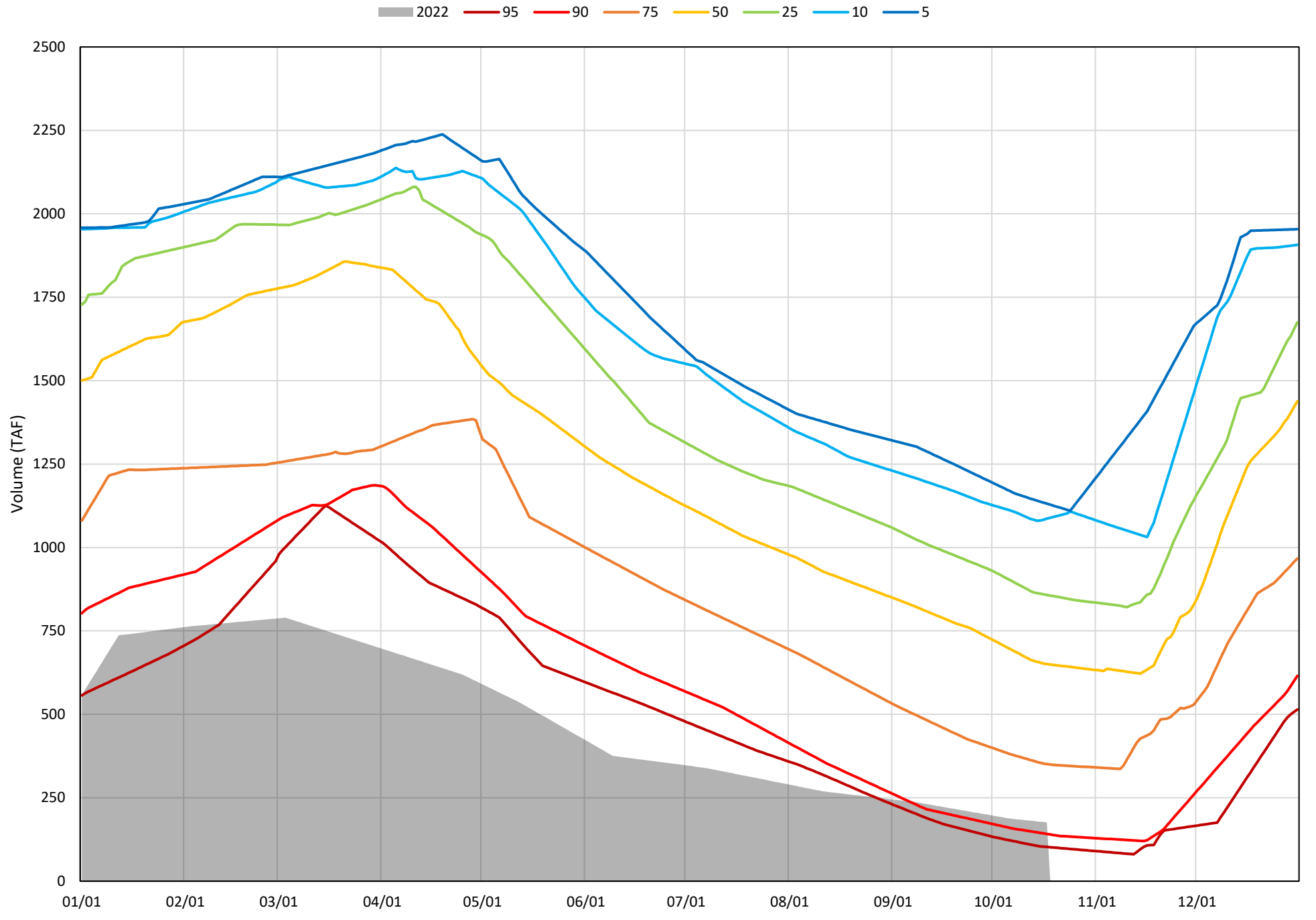


# Trinity Lake Cold Water Pool Volume ≤48°F

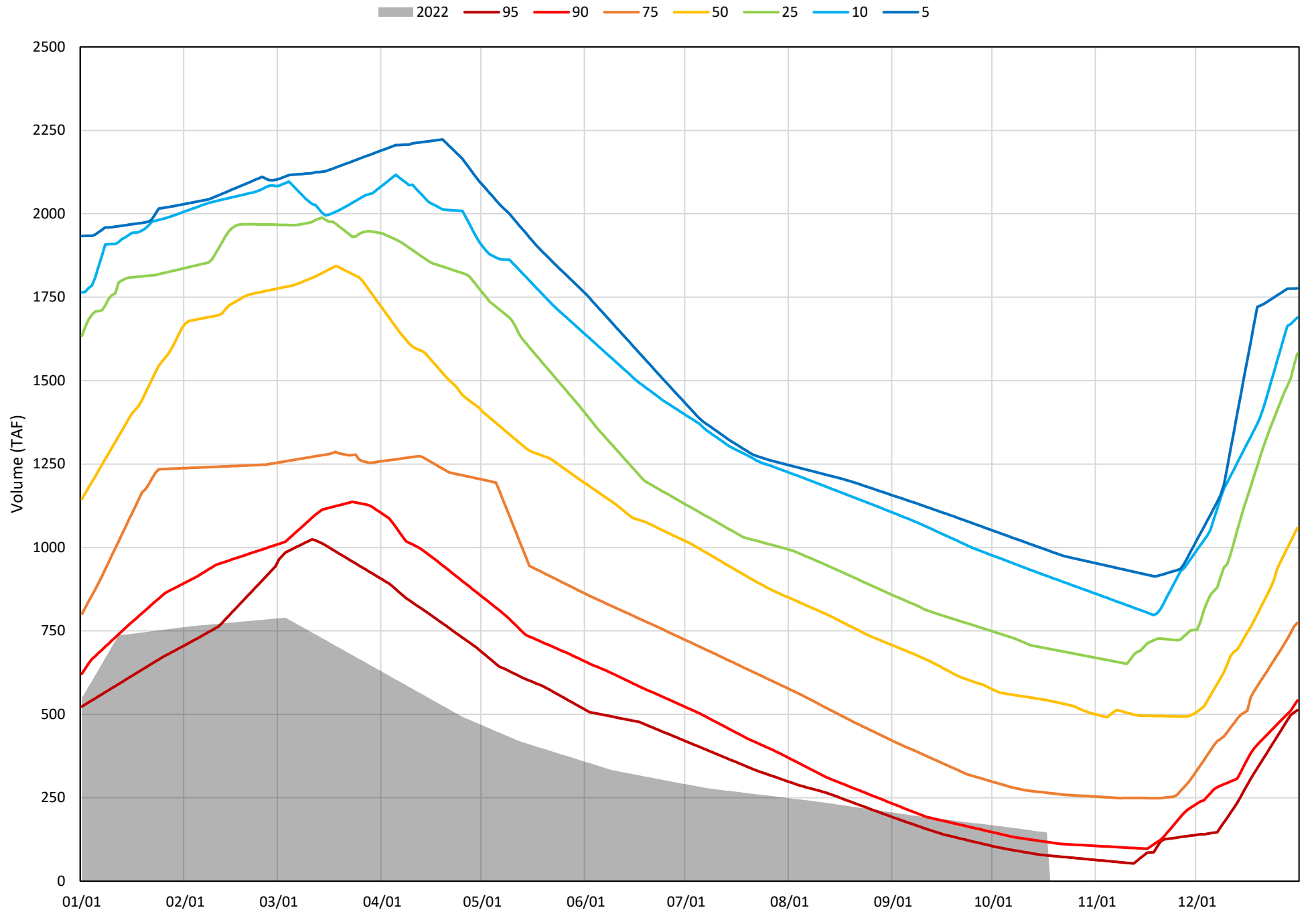
Avg (2000-2021) 2014 2015 2016 2019 2021 2022



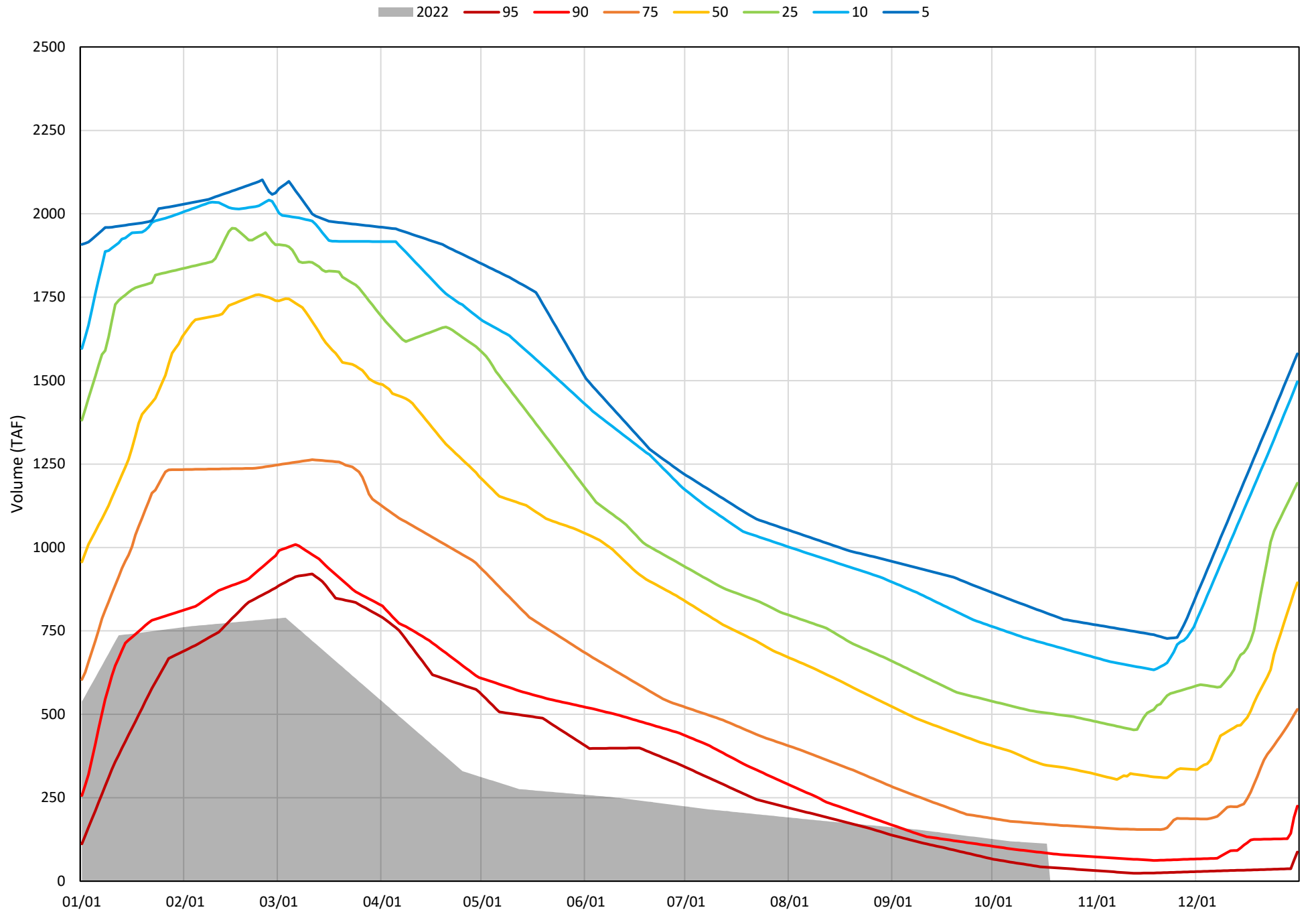
Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2021)



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

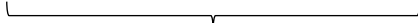


Trinity Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (2000-2021)

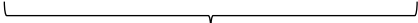


### Trinity Cold Water Pool Comparison by Year (for Specified Date)

Oct-18 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	581	413	223	406	330	283	199	270
2001	416	360	254	343	236	247	226	236
2002	445	380	296	374	253	261	263	259
2003	657	450	220	442	373	309	196	292
2004	428	323	169	307	243	221	151	205
2005	703	540	247	497	399	370	220	330
2006	823	587	403	605	467	403	359	410
2007	524	474	388	462	297	325	346	323
2008	172	108	50	110	97	74	44	72
2009	176	123	47	115	100	84	42	75
2010	501	345	124	323	284	236	111	210
2011	947	788	553	763	537	540	493	523
2012	773	725	618	705	438	497	551	495
2013	323	271	173	255	183	186	155	174
2014	-41	-34	-34	36	-23	-23	-30	26
2015	-80	-75	-77	77	-45	-51	-68	55
2016	165	97	61	108	94	66	55	72
2017	674	492	331	499	382	337	295	338
2018	663	610	494	589	376	418	441	412
2019	956	857	704	839	542	587	627	586
2020	448	413	265	375	254	283	236	258
2021	-20	-15	-14	16	-11	-10	-12	11
2022	0	0	0	0	0	0	0	0



Historic - Current



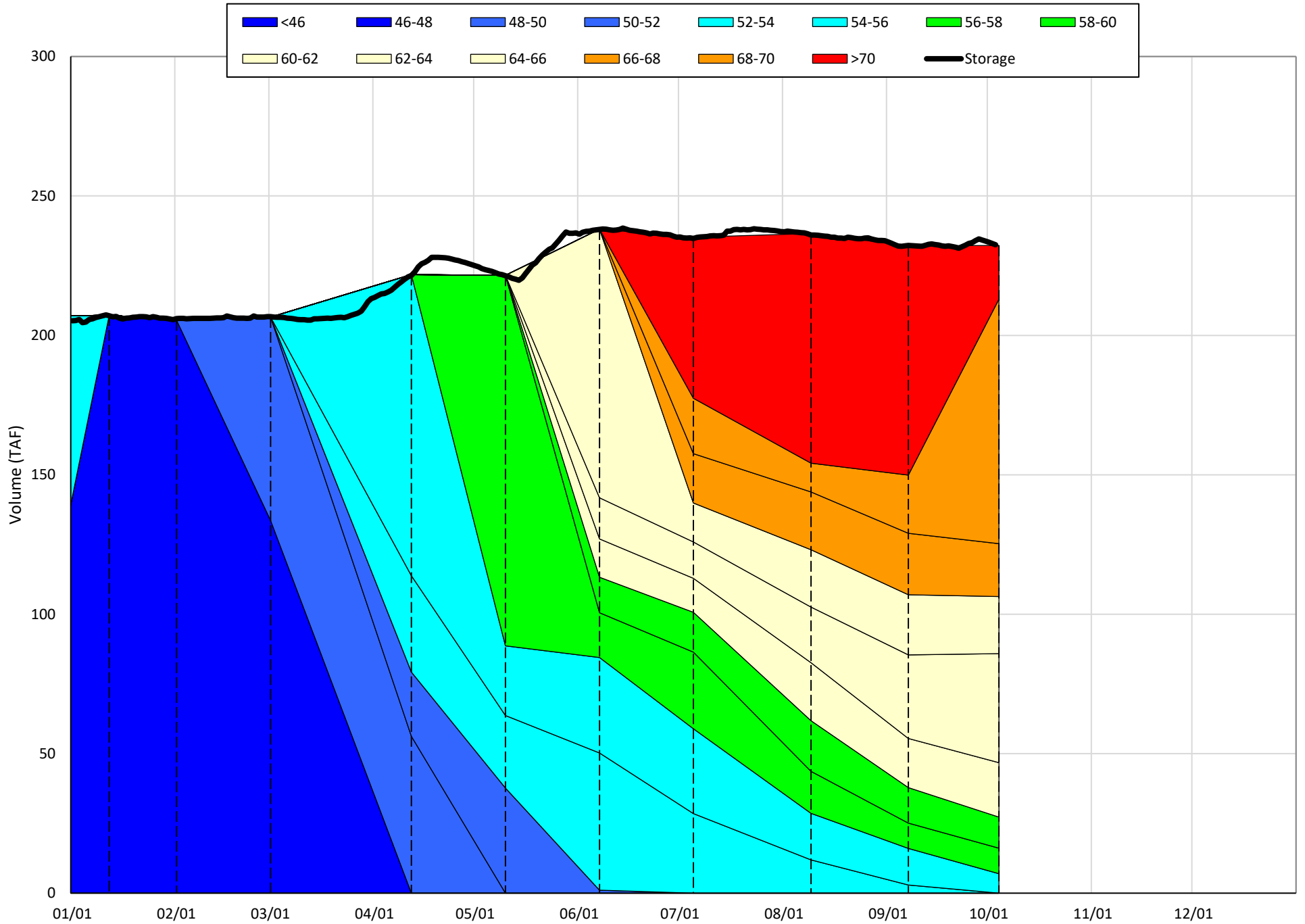
(Historic - Current) / Current

# Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

## 2022

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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

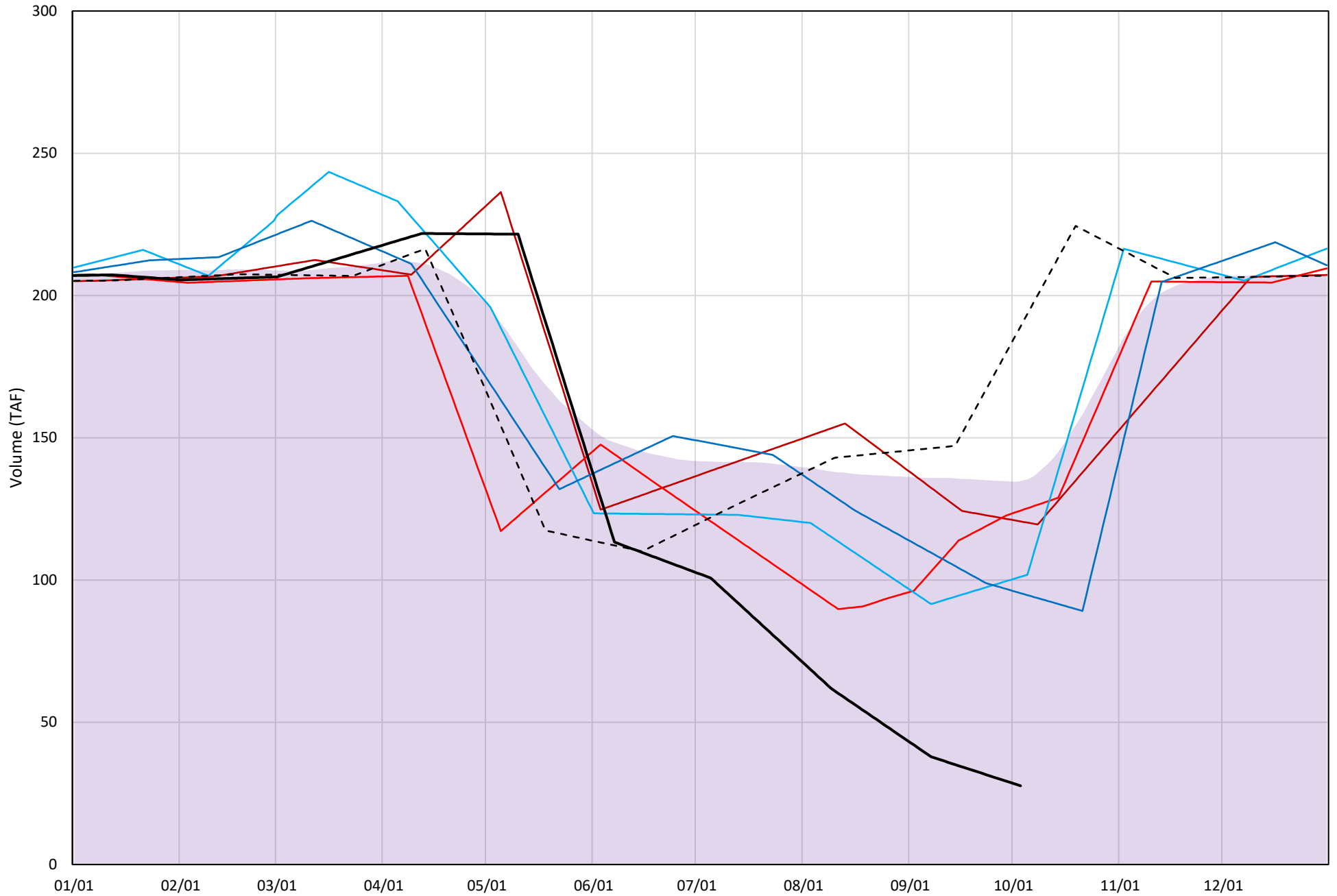
### Whiskeytown Lake Isothermobaths Plot - 2022





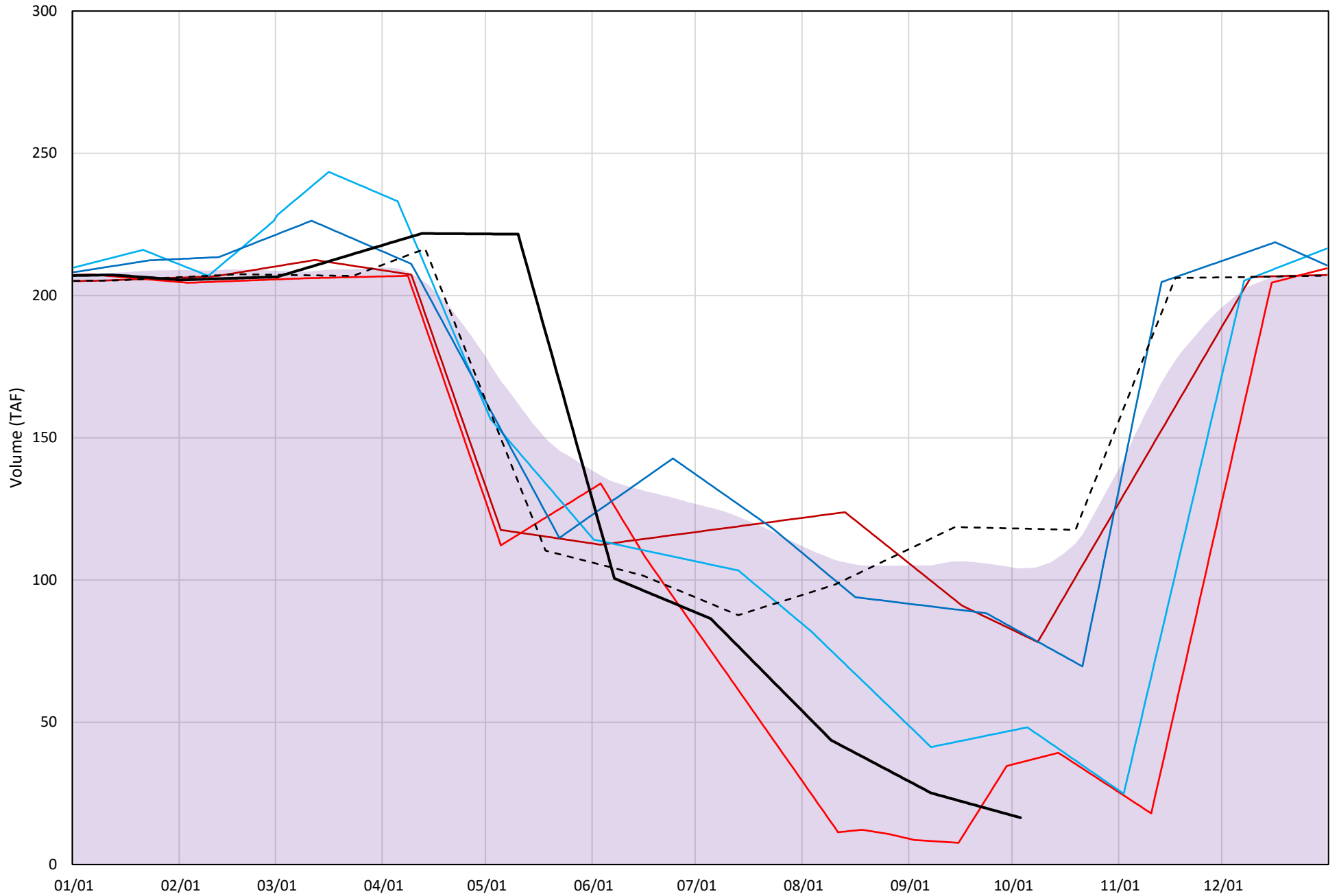
# Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

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



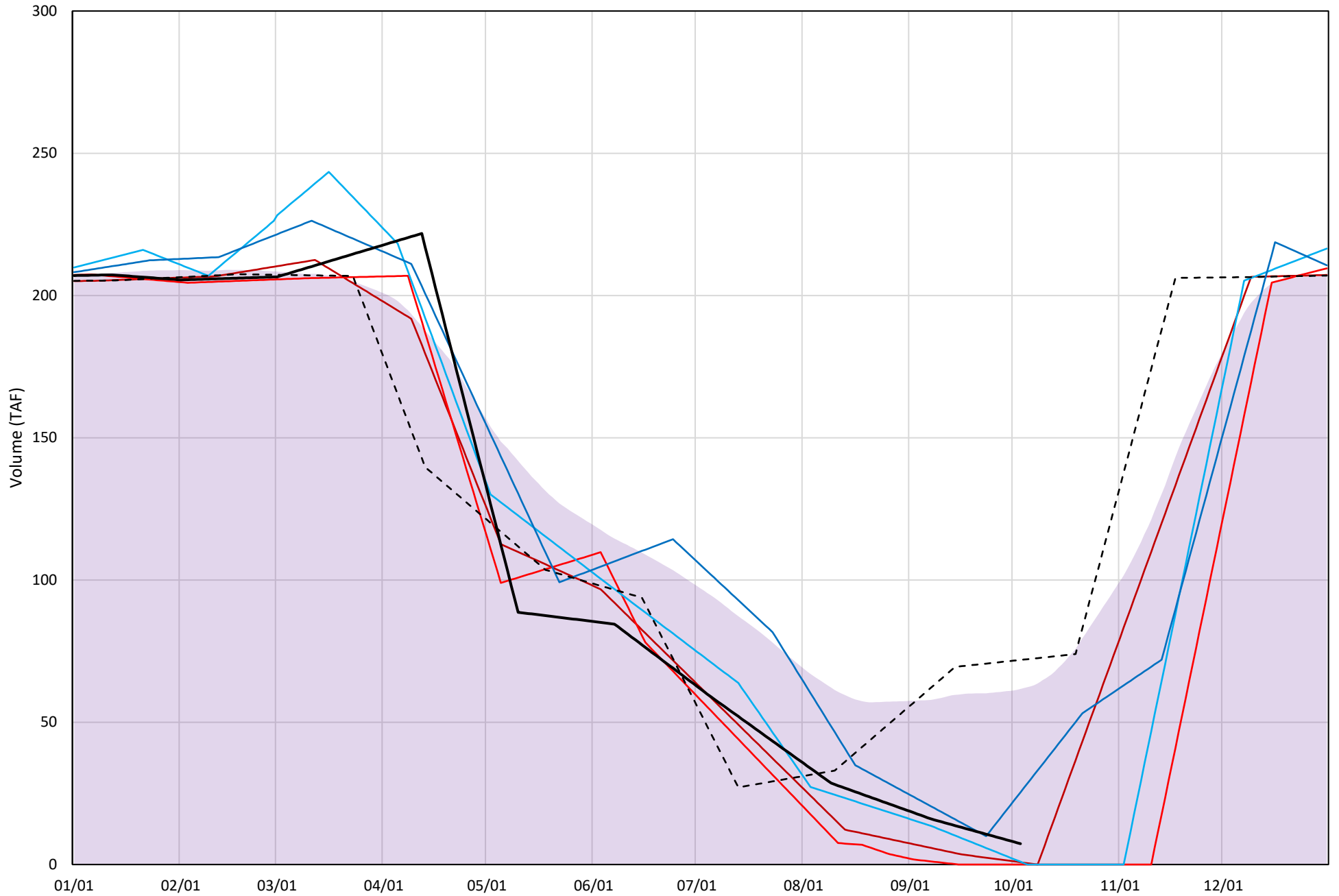
# Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

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

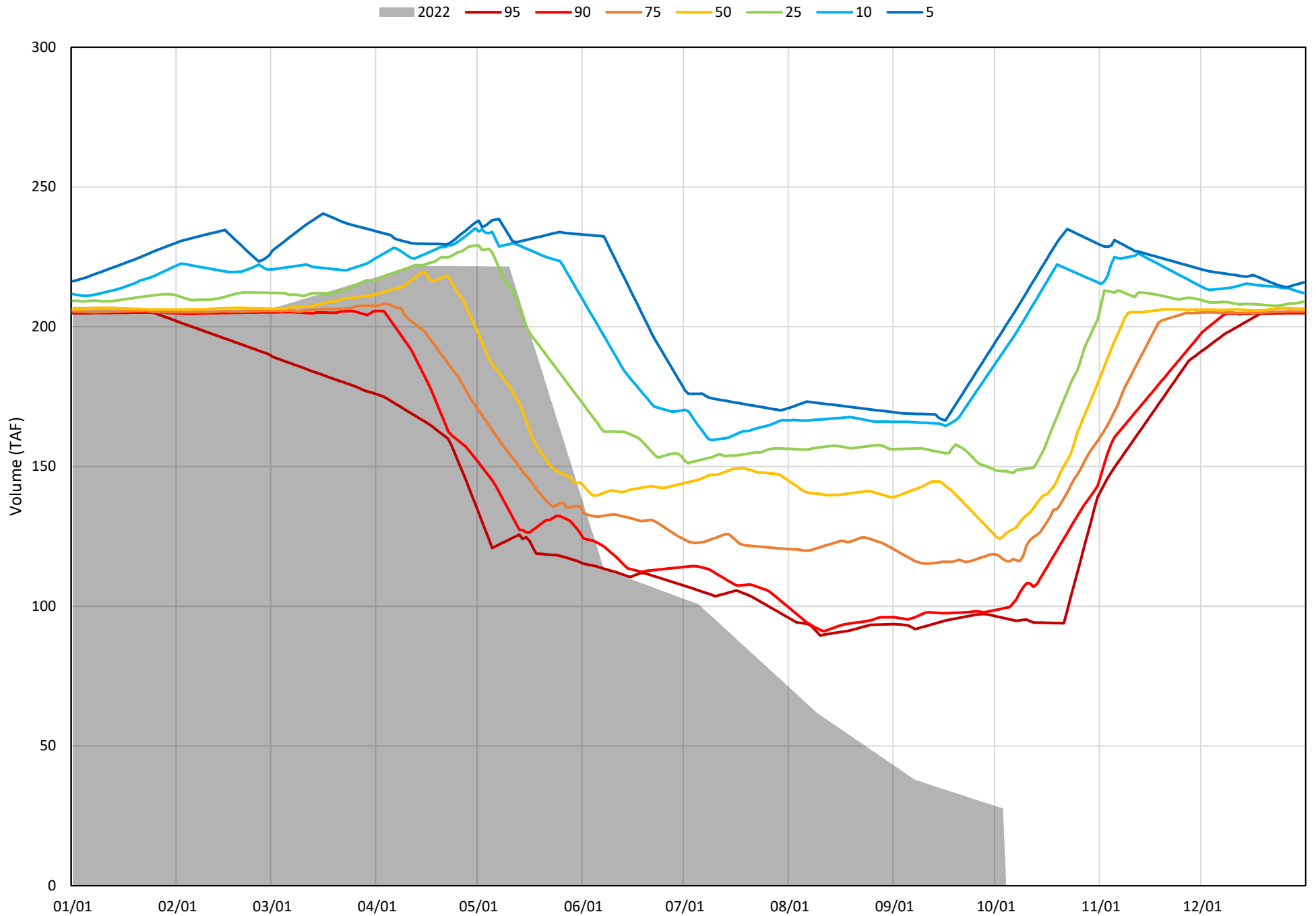


# Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

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

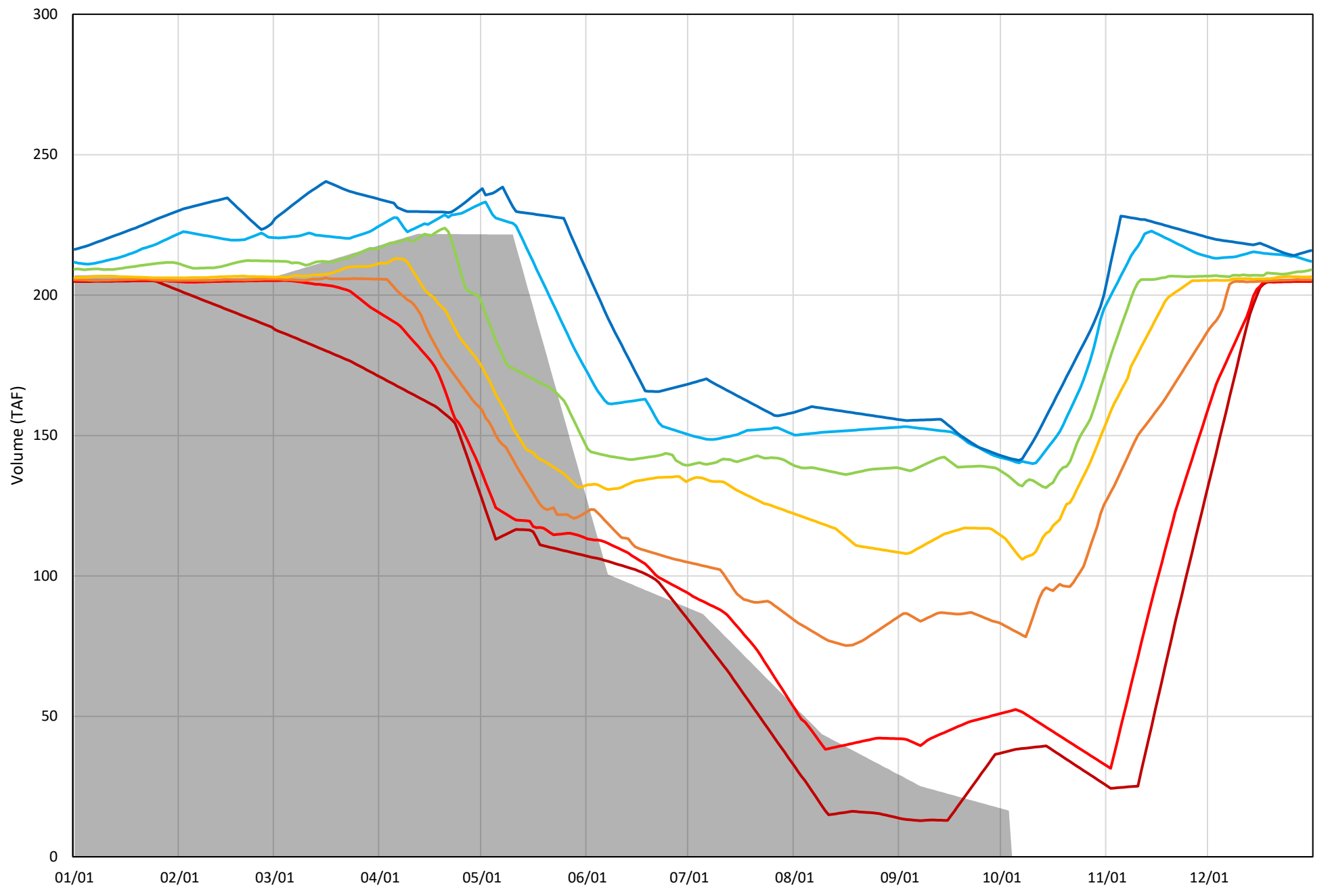


Whiskeytown Lake Cold Water Pool Volume  $\leq 60^{\circ}\text{F}$  - Percent Exceedances (2000-2021)



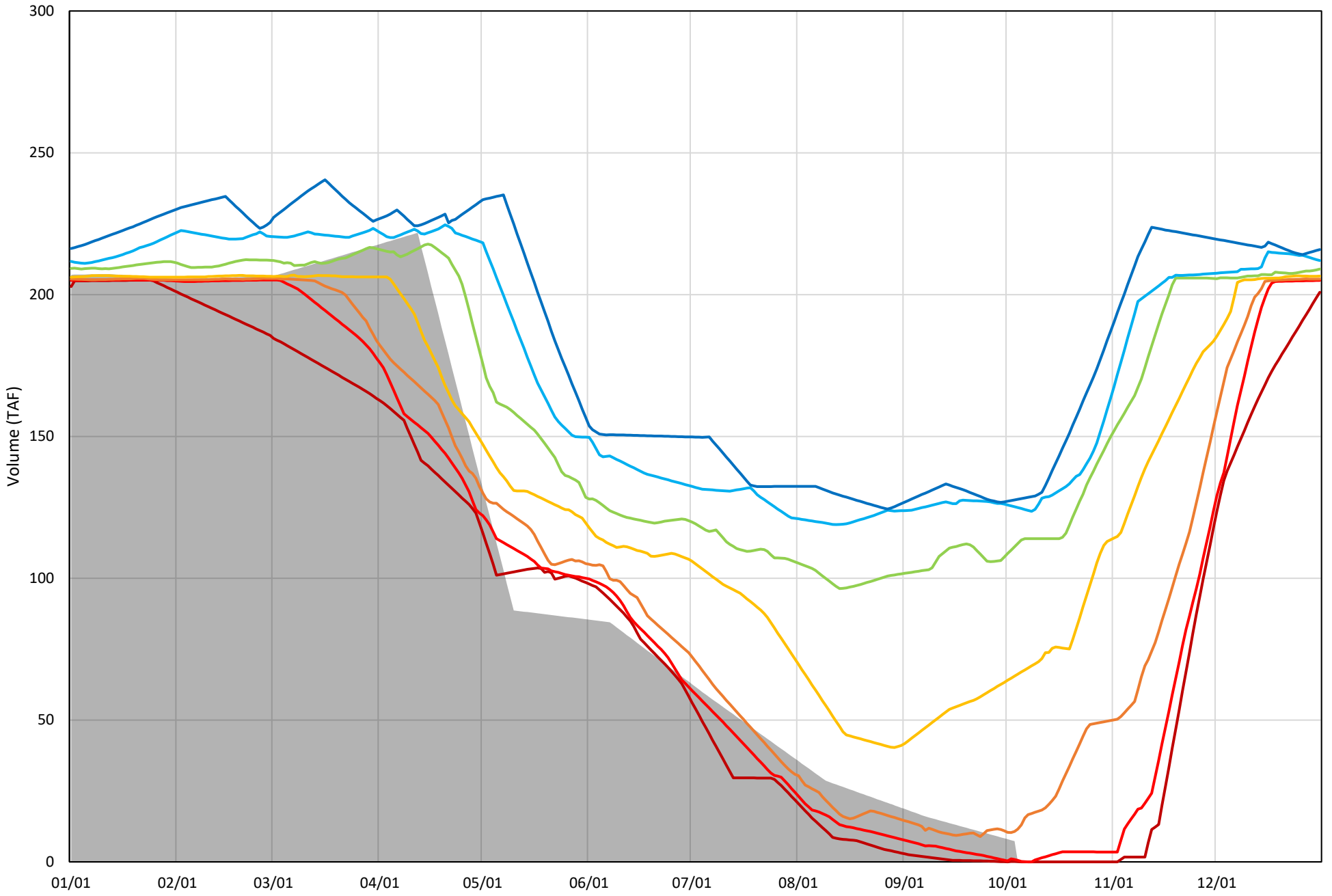
Whiskeytown Lake Cold Water Pool Volume  $\leq 58^{\circ}\text{F}$  - Percent Exceedances (2000-2021)

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)

Oct-04 2022	Δ TAF				% Δ			
	≤60°	≤58°	≤56°	Abs. Avg.	≤60°	≤58°	≤56°	Abs. Avg.
2000	90.5	93.0	82.9	88.8	327.1	565.3	1133.3	675.2
2001	119.2	124.1	118.5	120.6	431.0	753.8	1620.7	935.2
2002	123.0	125.5	106.3	118.3	444.7	762.4	1453.5	886.8
2003	116.7	125.4	120.6	120.9	421.8	761.7	1648.7	944.1
2004	120.5	122.6	102.9	115.3	435.5	744.6	1407.1	862.4
2005	70.7	52.8	9.2	44.2	255.6	320.9	125.8	234.1
2006	112.4	117.9	116.4	115.6	406.3	716.3	1591.2	904.6
2007	97.8	105.0	66.3	89.7	353.5	637.8	906.1	632.5
2008	102.5	105.1	97.0	101.5	370.6	638.4	1325.6	778.2
2009	85.6	77.6	-0.7	54.6	309.5	471.4	-9.1	263.3
2010	94.8	44.8	-6.2	48.6	342.8	272.2	-84.3	233.1
2011	85.0	84.7	38.5	69.4	307.3	514.6	526.4	449.5
2012	121.2	99.1	45.2	88.5	438.1	601.8	617.5	552.5
2013	172.4	122.3	106.7	133.8	623.1	743.0	1458.6	941.6
2014	93.0	64.7	-6.5	54.7	336.1	392.8	-89.0	272.6
2015	96.7	19.4	-7.3	41.2	349.8	118.0	-100.0	189.3
2016	73.5	31.3	-6.3	37.0	265.6	189.9	-86.7	180.8
2017	163.9	97.5	74.5	111.9	592.5	592.2	1017.8	734.2
2018	92.7	66.3	4.8	54.6	335.2	403.1	65.8	268.0
2019	67.7	65.2	18.1	50.3	244.9	396.2	247.1	296.1
2020	95.2	82.3	51.7	76.4	344.2	500.0	707.3	517.1
2021	161.5	101.6	64.6	109.2	583.7	617.4	883.0	694.7
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Historic - Current

(Historic - Current) / Current