

# Northern CVP Water Temperature Report

## February - 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	JLF <sup>3</sup>	BND	RDB	IGO	LWS	DGC	NFH	Shasta Generation	Spring Creek P.P.	Keswick Total	RDD	BSF	RDB	
Jan	48.8	48.2	-	48.4	48.5	48.4	48.1	47.8	47.8	47.8	46.7	45.3	41.9	42.5	2889	138	3294	50.1	45.8	48.3	
02/01	48.1	47.4	# -	47.2	47.3	47.0	46.8	46.8	46.5	46.7	45.5	44.9	40.9	41.5	2568	39	3283	51.0	49.3	50.3	
02/02	48.3	47.7	# -	46.8	46.9	46.8	46.4	46.4	46.0	46.2	45.2	44.9	40.0	40.4	3151	29	3285	50.0	48.3	49.3	
02/03	48.2	47.6	# -	46.7	47.0	47.0	47.0	46.9	46.6	46.7	46.1	45.0	41.0	40.9	2867	14	3288	54.0	49.6	52.4	
02/04	48.0	47.5	# -	47.1	47.2	47.3	47.3	47.5	47.2	47.5	46.4	44.9	41.5	41.7	2821	98	3285	50.0	45.5	50.5	
02/05	48.2	47.6	# -	# -	47.7	47.9	47.9	48.1	47.8	48.1	46.6	44.9	41.8	42.3	3051	14	3288	56.0	50.4	54.8	
02/06	48.3	47.8	# -	# -	48.0	48.3	48.5	48.7	48.4	48.6	46.9	44.9	41.6	42.1	3040	14	3281	↑ 58.5	51.0	56.3	
02/07	48.4	47.6	# -	# -	48.0	48.2	48.5	48.9	48.7	49.1	46.5	44.9	41.7	42.2	2774	14	3285	52.5	47.8	50.8	
02/08	48.7	47.8	# -	!	48.3	48.6	48.9	49.2	49.0	49.4	47.2	45.1	42.1	42.6	2822	26	3286	59.5	56.0	61.0	
02/09	49.1	48.5	# -	48.3	48.6	49.2	? 49.7	50.2	50.1	50.2	48.0	45.3	42.8	43.3	3109	36	3277	↑ 73.0	62.0	64.1	
02/10	49.1	48.6	# -	48.6	48.9	49.7	!	-	51.5	51.4	51.7	48.3	45.6	? 44.0	45.2	2743	14	3274	↑ 68.5	-	65.4
02/11	49.3	48.8	# -	49.1	49.2	49.8	50.7	51.6	51.7	52.5	48.0	45.7	!	-	45.2	3024	14	3279	↑ 63.0	57.5	60.8
02/12	49.1	48.8	# -	49.3	49.4	49.9	? 50.6	51.4	51.3	52.1	47.4	45.7	!	-	44.9	3012	15	3283	60.0	53.8	58.3
02/13	49.0	48.6	# -	49.4	49.5	49.9	50.5	51.1	51.1	51.8	47.3	46.0	44.0	44.8	2939	14	3286	57.5	52.5	55.9	
02/14	48.7	48.3	# -	49.3	49.5	50.0	50.5	51.2	51.2	51.6	47.4	46.3	44.8	45.5	2941	14	3284	54.5	51.8	53.5	
02/15	49.2	48.2	# -	49.3	49.3	49.4	49.8	50.3	50.2	50.8	46.8	46.0	43.5	44.5	2887	33	3281	53.0	51.4	52.8	
02/16	49.2	48.5	# -	49.1	49.3	49.6	? 49.8	# -	50.0	50.5	47.3	46.2	43.0	43.6	2789	54	3296	55.5	52.8	56.3	
02/17	49.2	48.8	# -	48.9	49.1	49.4	50.0	# -	50.5	50.8	47.3	46.7	42.9	43.4	3315	47	3280	58.0	55.3	56.0	
02/18	49.2	48.5	# -	48.7	48.9	49.3	49.7	# -	50.3	50.9	47.2	46.8	43.8	43.9	2912	76	3286	54.0	49.8	52.0	
02/19	49.2	48.7	# -	49.0	49.2	49.5	50.0	# -	50.5	50.9	47.3	46.9	44.6	44.8	2748	77	3292	54.0	49.8	53.0	
02/20	49.3	48.7	# -	49.2	49.3	49.7	? 50.4	# -	50.9	51.2	47.5	46.8	45.2	45.4	2644	47	3281	54.0	50.8	52.4	
02/21	49.0	48.4	# -	49.0	49.0	49.1	49.4	# -	50.0	50.5	47.0	46.7	43.6	44.3	2715	93	3290	46.5	48.0	49.0	
02/22	49.3	48.5	# -	49.0	48.9	48.8	48.7	# -	48.6	49.3	46.2	46.8	42.6	43.0	2949	92	3291	42.0	40.0	43.2	
02/23	48.9	48.4	# -	48.8	48.7	48.5	47.8	# -	47.4	47.9	? 46.1	46.6	42.0	42.4	2949	92	3291	44.0	42.0	43.5	
02/24	? 48.6	? 48.2	# -	? 48.3	? 48.4	? 48.4	? 47.8	# -	? 47.1	? 47.3	? 45.9	? 46.5	41.9	? 41.9	2963	112	3274	↓ 40.5	37.1	40.5	
02/25	48.6	48.1	# -	48.4	48.4	48.4	48.0	# -	47.6	47.8	46.2	46.2	42.3	42.3	2846	280	3259	↓ 45.0	41.5	44.5	
02/26	48.8	48.1	# -	48.3	48.3	48.3	48.1	# -	48.0	48.1	46.4	45.9	42.3	41.9	2676	110	3268	44.0	44.1	46.6	
02/27	48.8	48.2	# -	48.5	48.8	49.3	49.6	# -	49.8	49.6	47.9	46.2	45.1	44.8	3107	47	3263	55.5	52.2	53.4	
02/28	48.8	48.3	# -	48.6	48.9	49.4	50.0	# -	50.7	51.2	48.0	46.3	46.7	47.5	3218	47	3268	55.5	51.8	55.3	
-																					
-																					
-																					
Feb	48.8	48.2	-	48.5	48.6	48.8	49.0	49.3	49.2	49.6	46.9	45.9	42.9	43.4	2914	56	3282	53.9	49.7	52.9	
															Total CFS	81580	1562	91884			
															Total AF	161811	3098	182248			

**Legend**

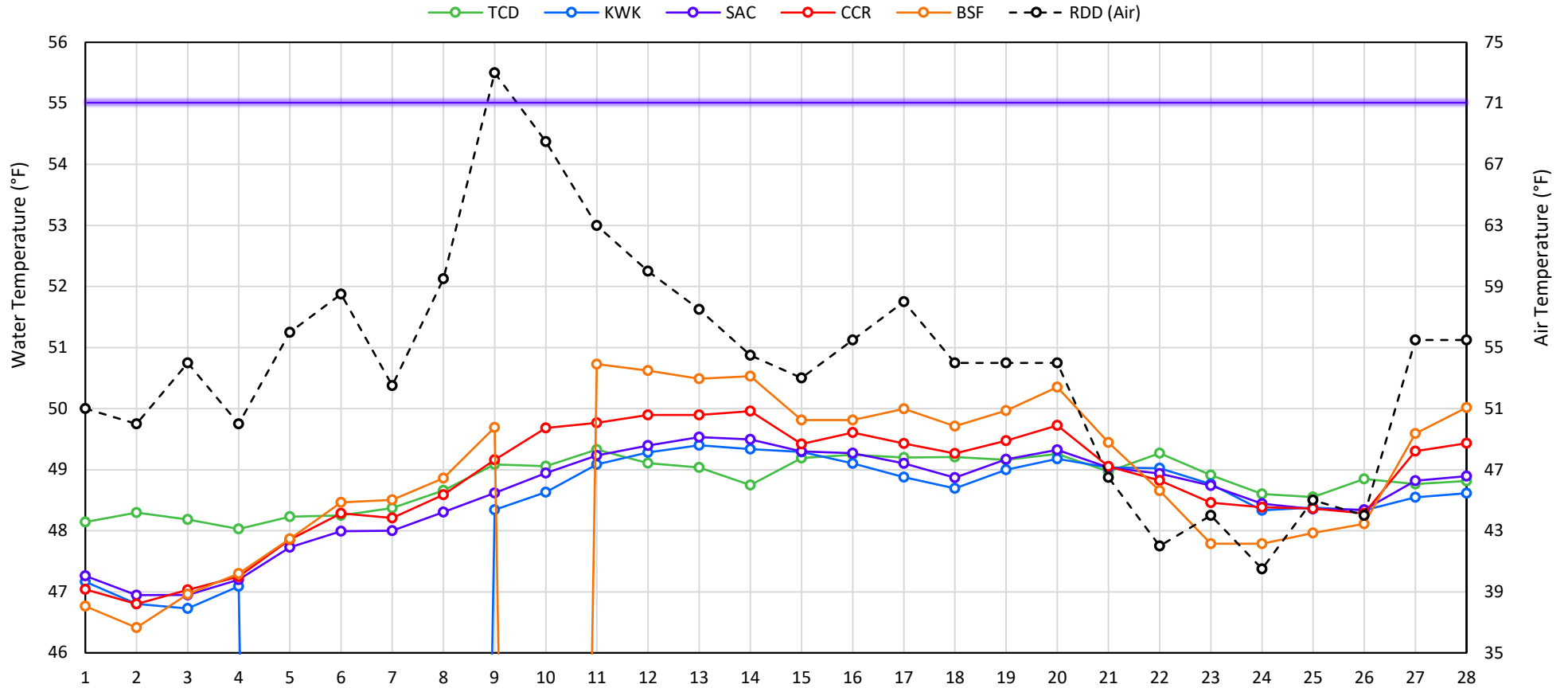
- ? = 1-9 hours of data missing (Average includes estimations)
- ! = 10 or more hours of data missing (Average not calculated)
- # = Station out of service
- ↑ = Record high air temperature
- ↓ = Record low air temperature
- ☐ = Monthly Averages

**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)
- <sup>3</sup> On 2/16/2022 JLF was removed from service indefinitely due to reconstruction of the bridge it was located on and no suitable replacement location in the area.



## 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>
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
Sacramento	CCR	56	09/21/2020	04/18/2021
Sacramento	CCR	60	04/18/2021	05/17/2021
Sacramento	SAC	57	05/17/2021	06/15/2021
<b>Sacramento</b>	<b>SAC</b>	<b>55</b>	<b>06/15/2021</b>	<b>TBD</b>
Trinity	DGC	56	09/15/2021	10/01/2021
Trinity	NFH	56	10/01/2021	12/31/2021

### Notes

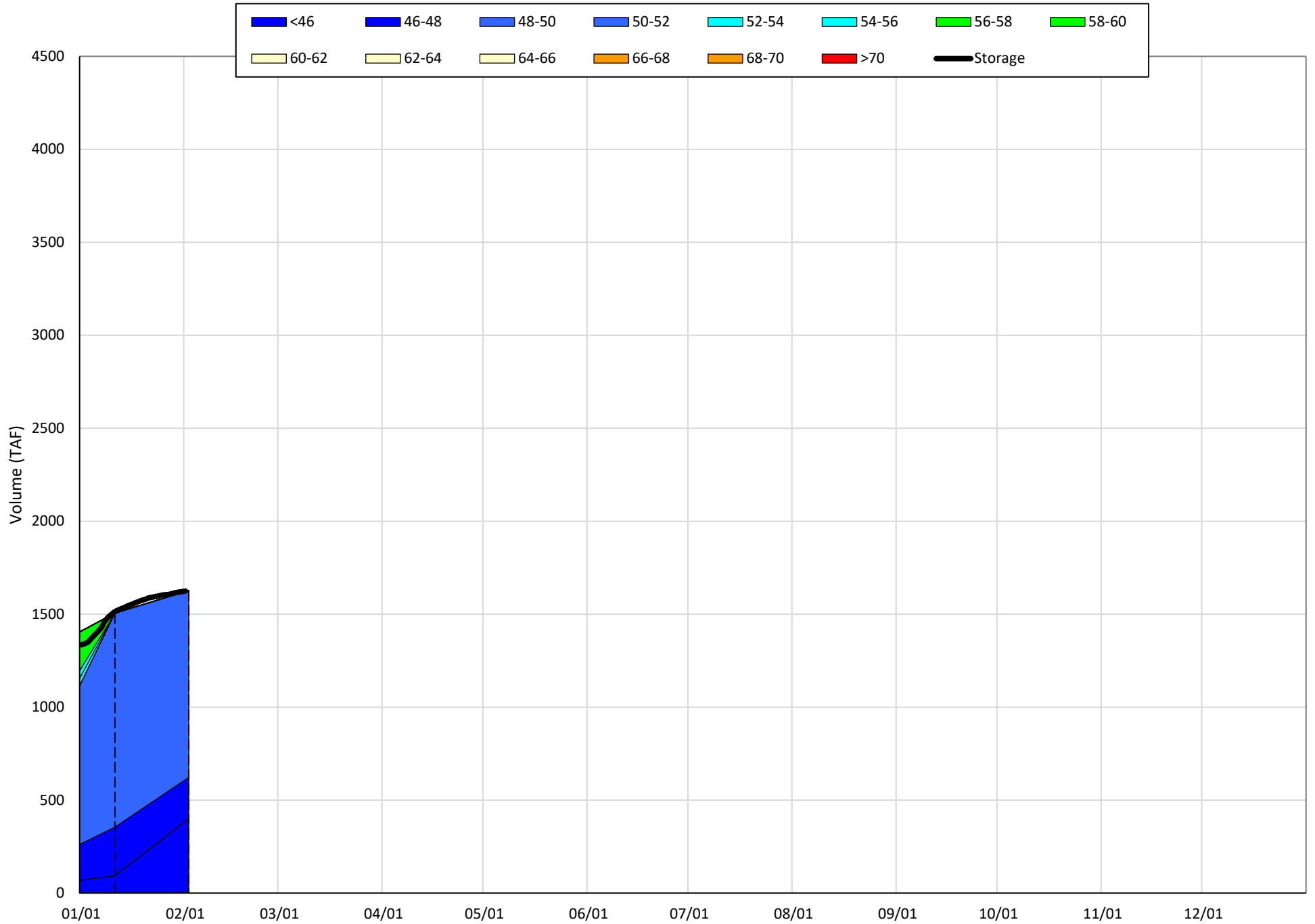
<sup>1</sup> Distances are approximate

# Shasta Lake Isothermobaths & Cold Water Pool Statistics

## 2022

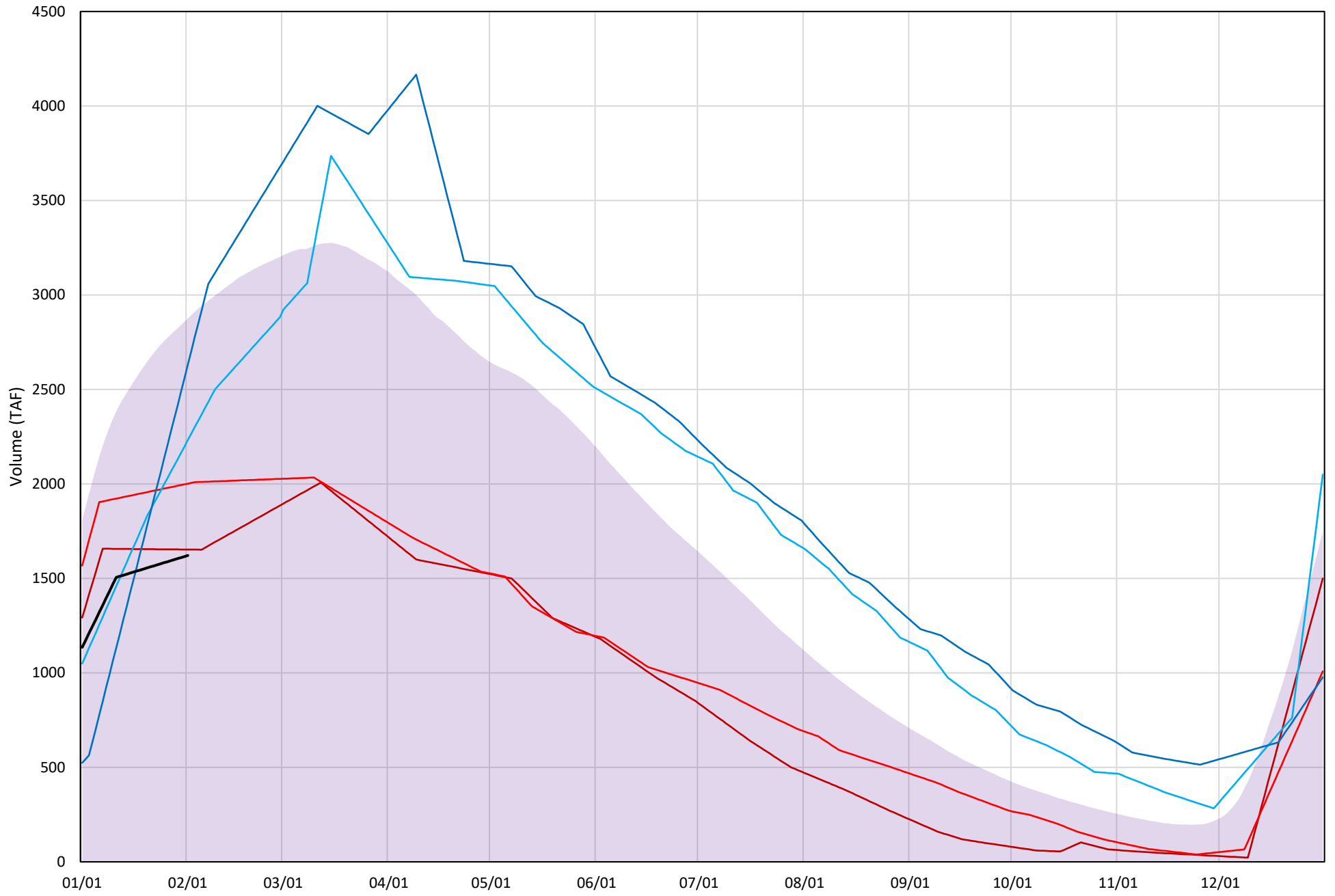
Page	Description
6	- Shasta Lake Isothermobaths Plot
7	- Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
8	- Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
9	- Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
10	- Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - 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



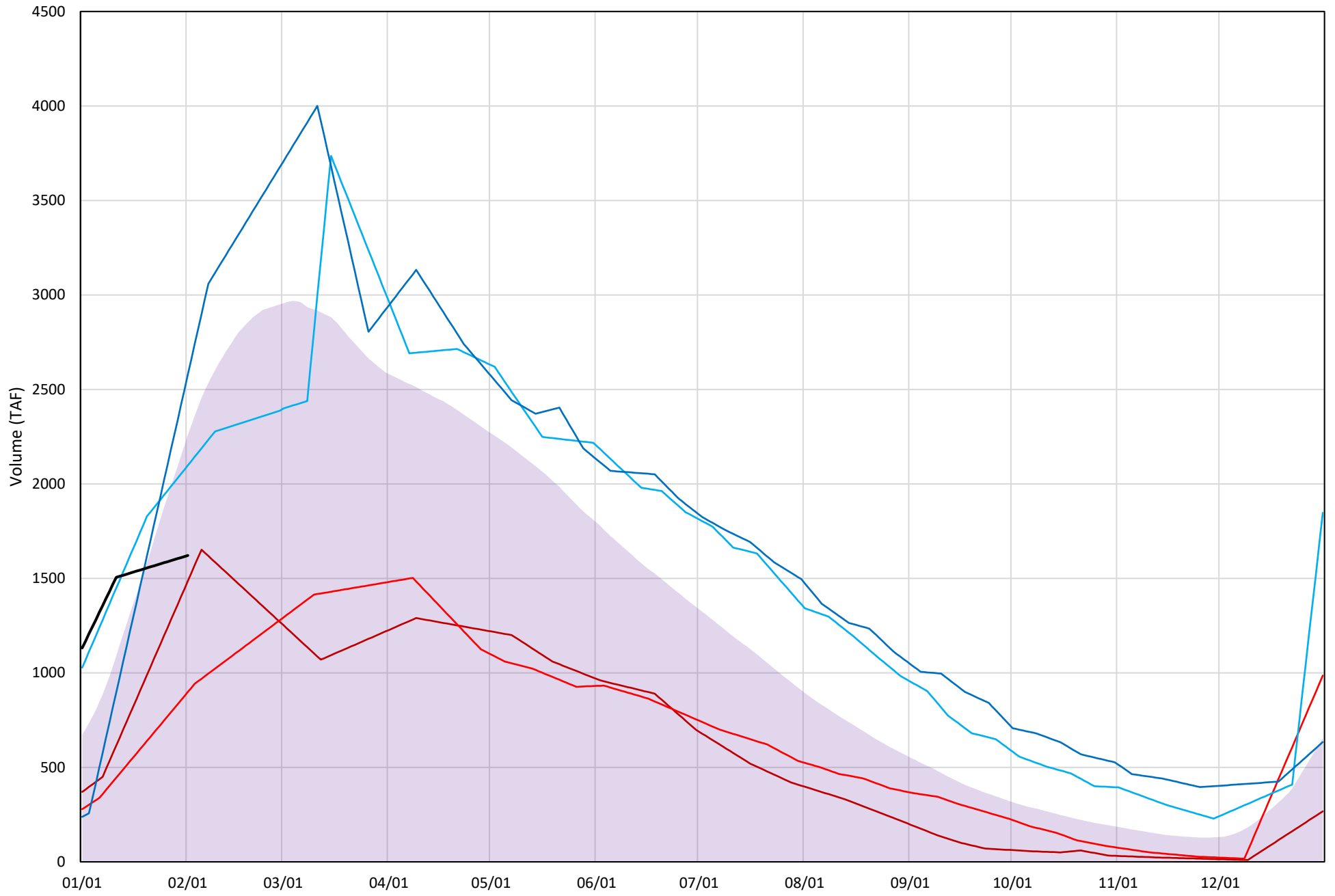
# Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$

Avg (1998-2021) 2014 2015 2016 2019 2022



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

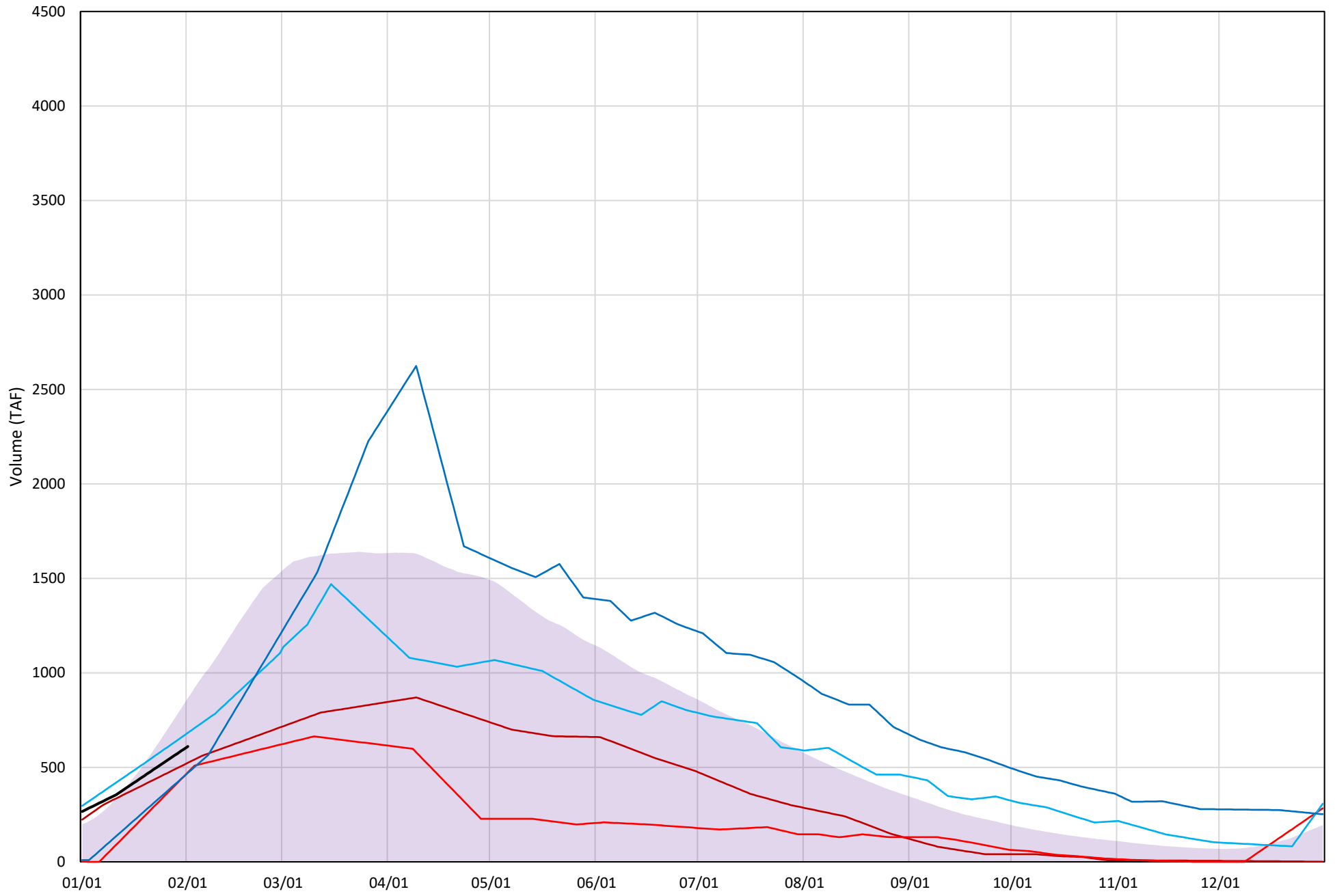
Avg (1998-2021) 2014 2015 2016 2019 2022





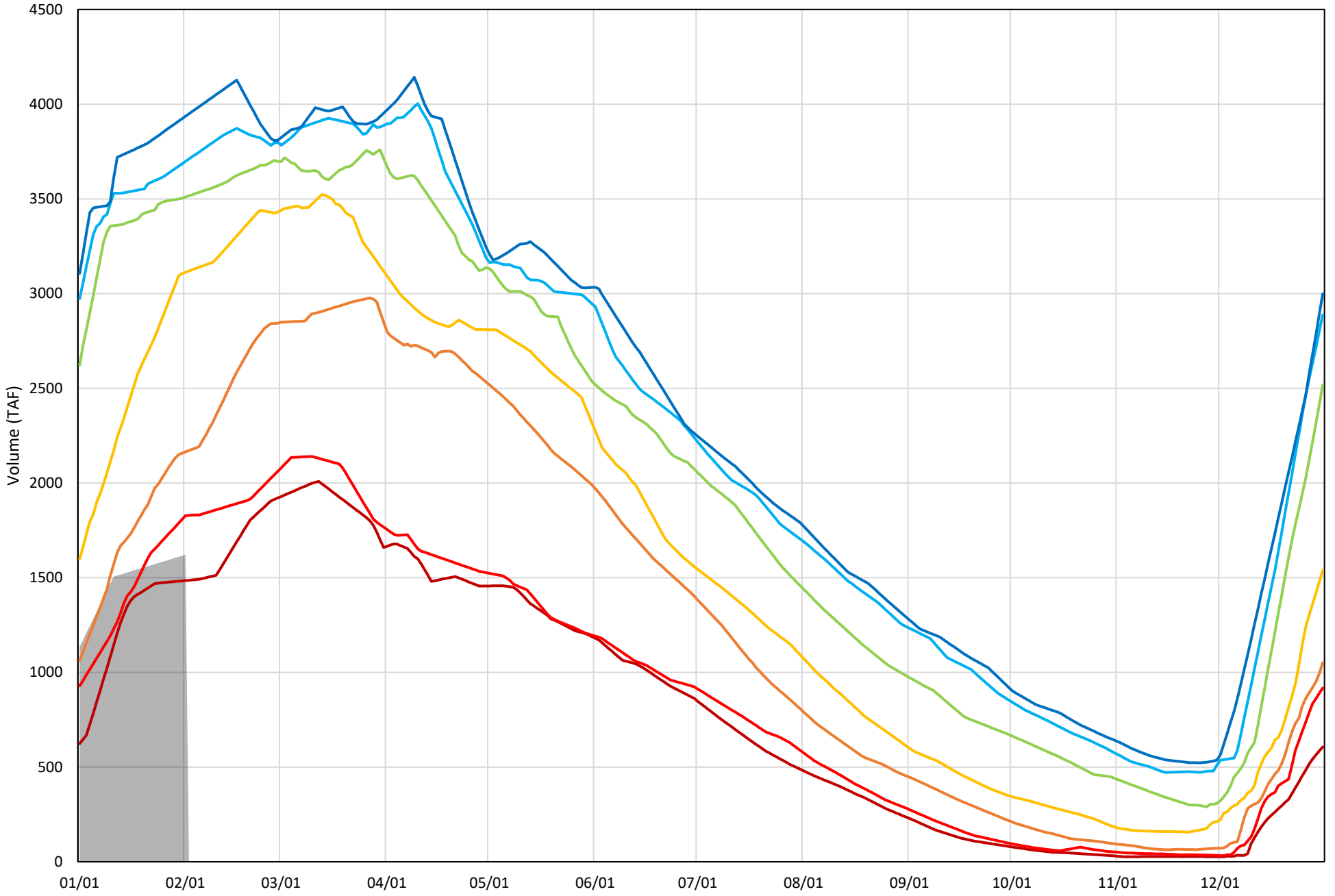
# Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

Avg (1998-2021) 2014 2015 2016 2019 2022



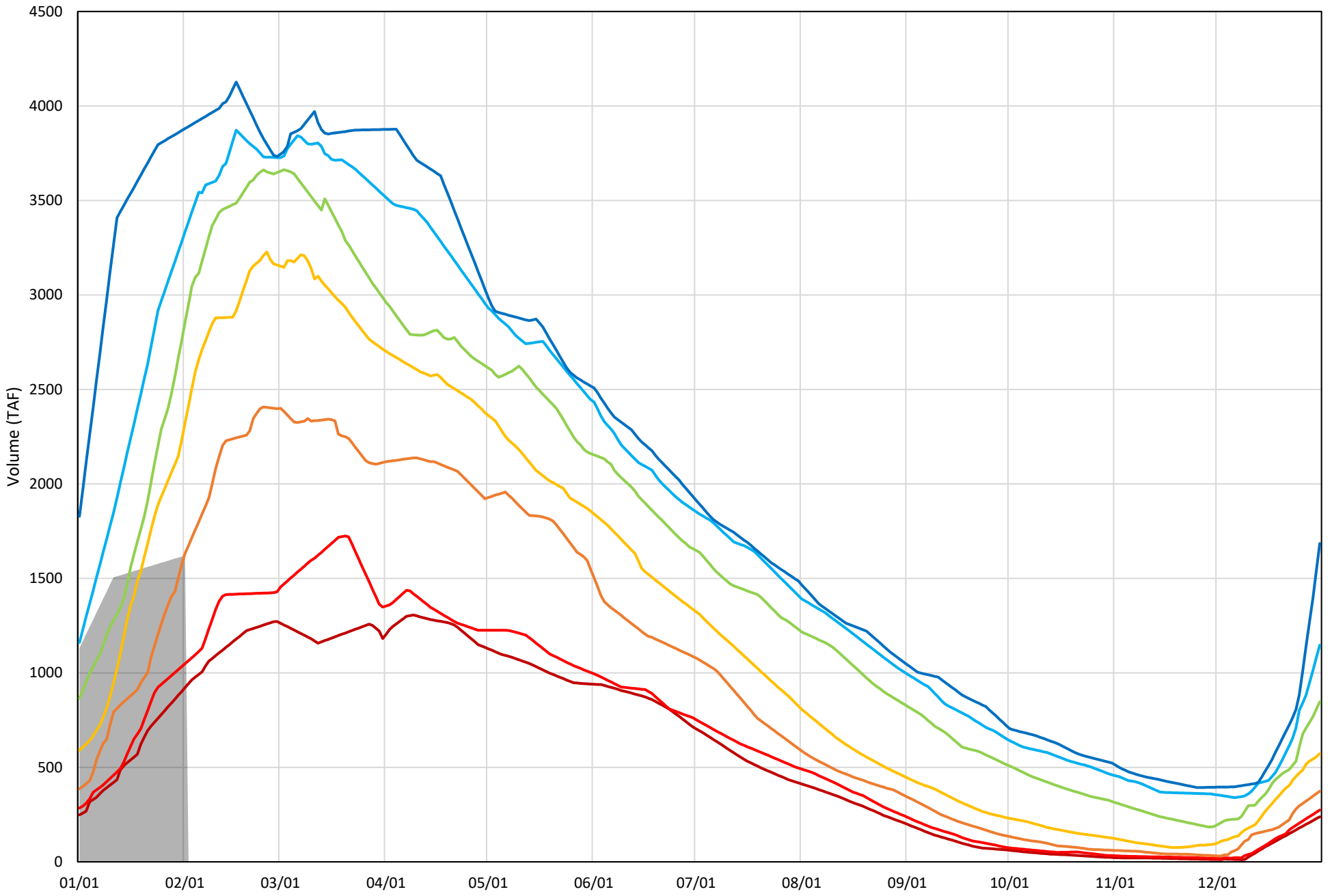
Shasta Lake Cold Water Pool Volume  $\leq 52^{\circ}\text{F}$  - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5



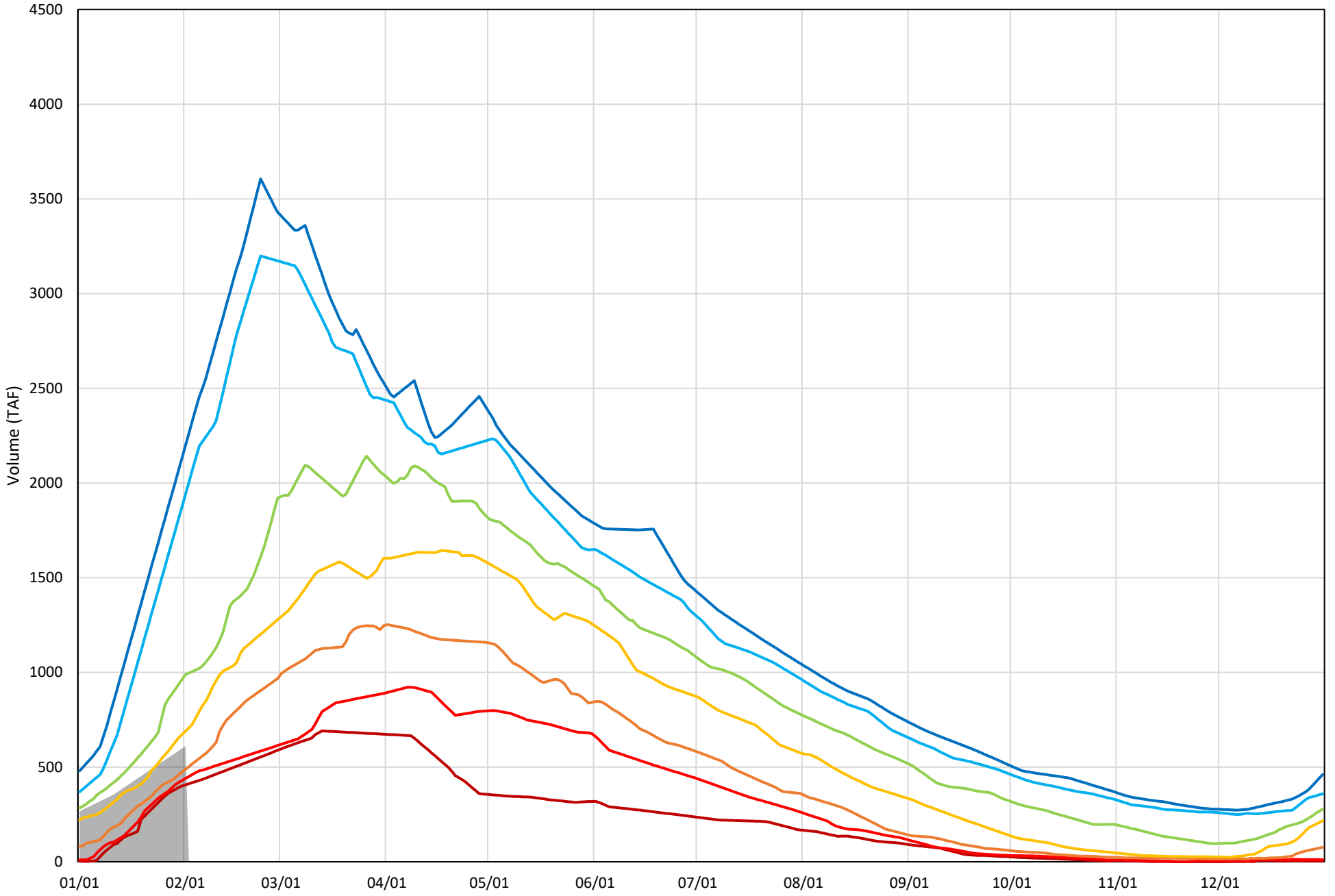
Shasta Lake Cold Water Pool Volume  $\leq 50^{\circ}\text{F}$  - Percent Exceedances (1998-2021)

2022 95 90 75 50 25 10 5



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)

Feb-02 2022	$\Delta$ TAF				% $\Delta$			
	$\leq 52^\circ$	$\leq 50^\circ$	$\leq 48^\circ$	Abs. Avg.	$\leq 52^\circ$	$\leq 50^\circ$	$\leq 48^\circ$	Abs. Avg.
1998	410	385	-213	336	25	24	-35	28
1999	1891	854	1654	1466	117	53	271	147
2000	2151	655	-54	953	133	40	-9	61
2001	1495	29	787	770	92	2	129	74
2002	1930	1930	283	1381	119	119	46	95
2003	1837	747	254	946	113	46	42	67
2004	2002	1154	-11	1056	123	71	-2	65
2005	1162	986	106	751	72	61	17	50
2006	1943	1369	86	1133	120	84	14	73
2007	1750	1260	254	1088	108	78	42	76
2008	575	400	1387	787	35	25	227	96
2009	-193	-193	-134	173	-12	-12	-22	15
2010	975	929	40	648	60	57	7	41
2011	1882	6	109	666	116	0	18	45
2012	1487	1487	409	1128	92	92	67	83
2013	1860	1495	559	1305	115	92	92	100
2014	31	-135	-86	84	2	-8	-14	8
2015	380	-723	-137	413	23	-45	-22	30
2016	611	477	72	386	38	29	12	26
2017	2369	2369	1271	2003	146	146	208	167
2018	380	-629	-181	396	23	-39	-30	31
2019	1010	957	-140	702	62	59	-23	48
2020	1635	-517	-24	725	101	-32	-4	46
2021	532	22	-160	238	33	1	-26	20
2022	0	0	0	0	0	0	0	0

Historic - Current

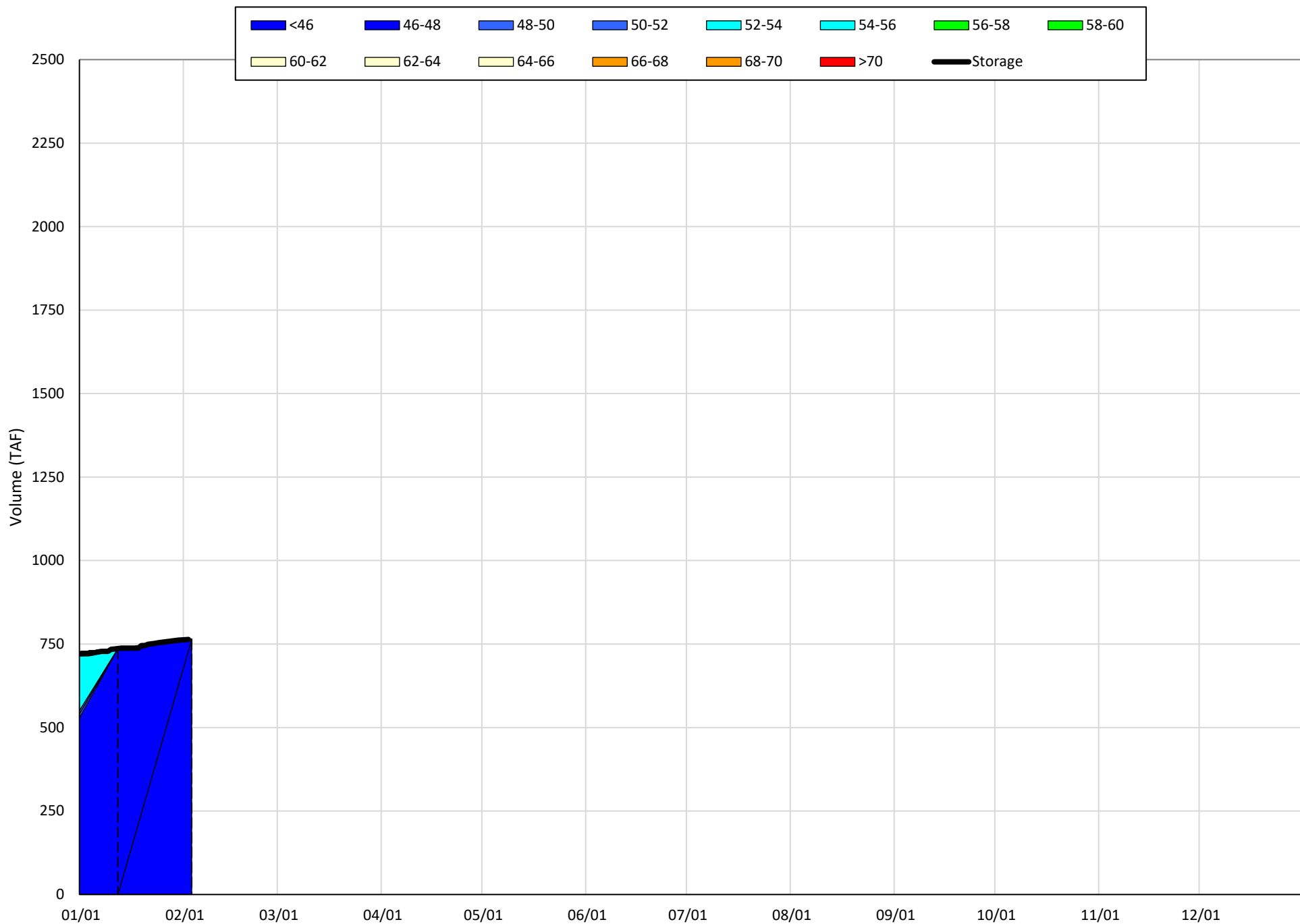
(Historic - Current) / Current

# Trinity Lake Isothermobaths & Cold Water Pool Statistics

## 2022

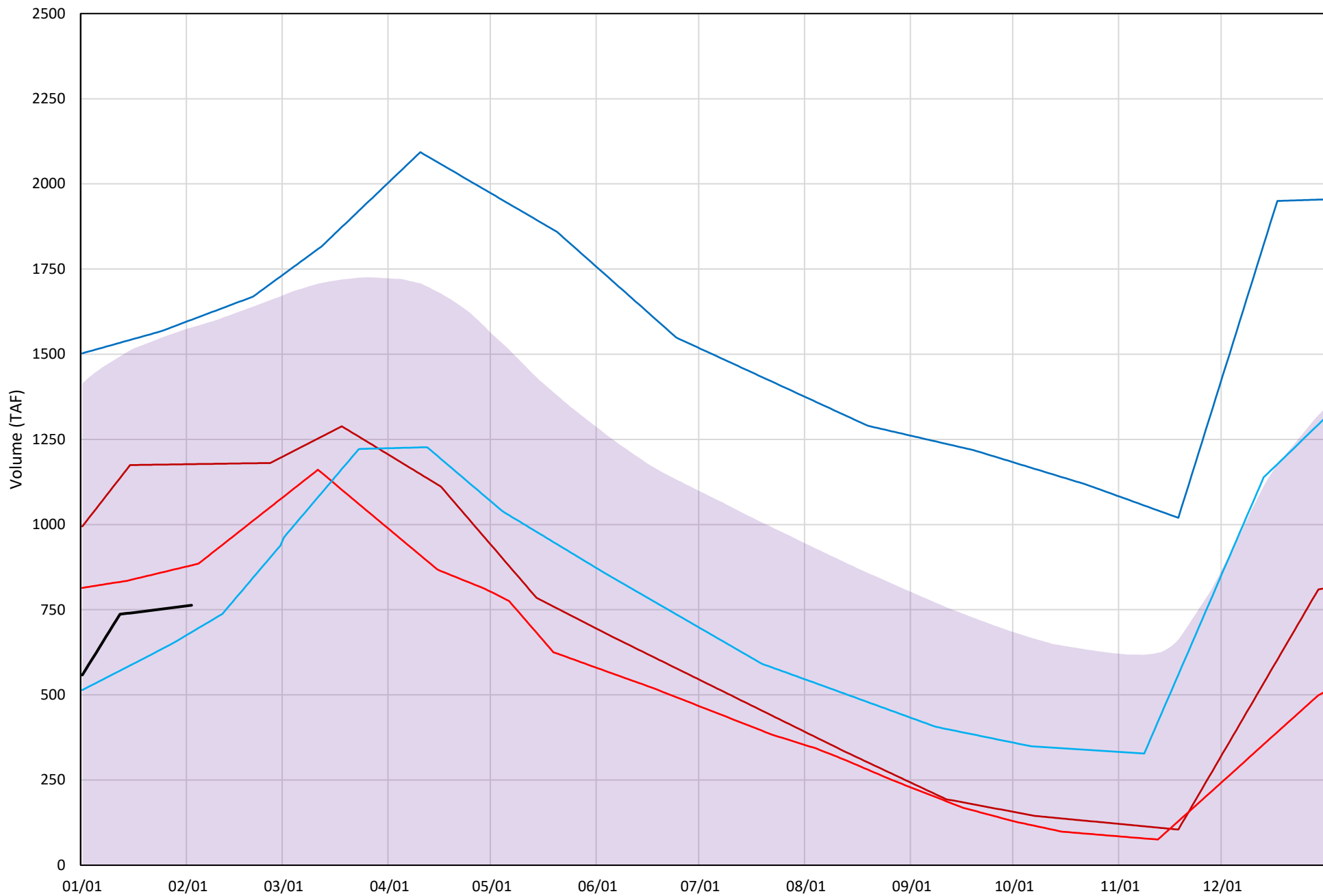
Page	Description
15	- Trinity Lake Isothermobaths Plot
16	- Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$
17	- Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$
18	- Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$
19	- Trinity Lake Cold Water Pool Volume $\leq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

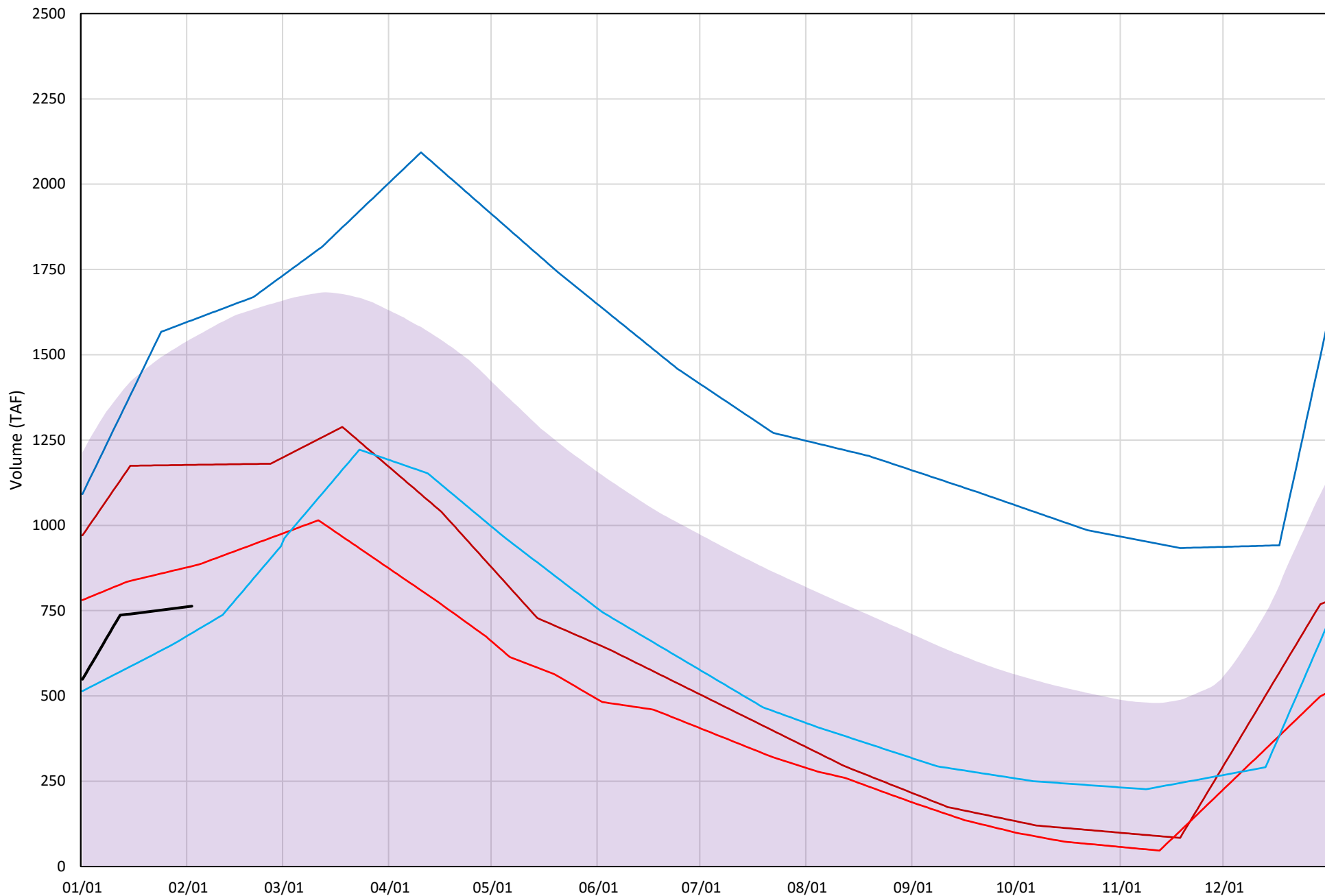
Avg (2000-2021) 2014 2015 2016 2019 2022





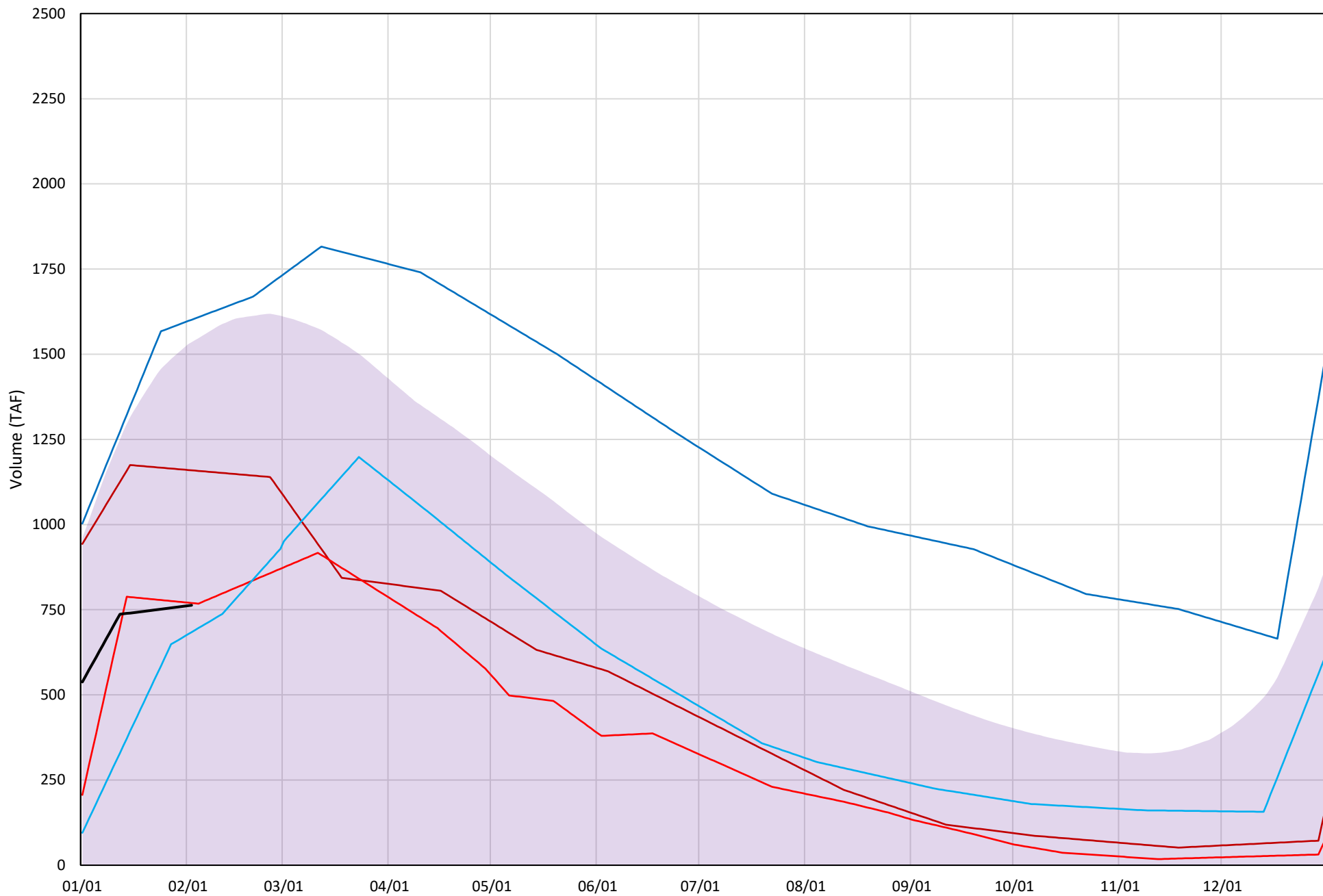
# Trinity Lake Cold Water Pool Volume ≤50°F

Avg (2000-2021) 2014 2015 2016 2019 2022

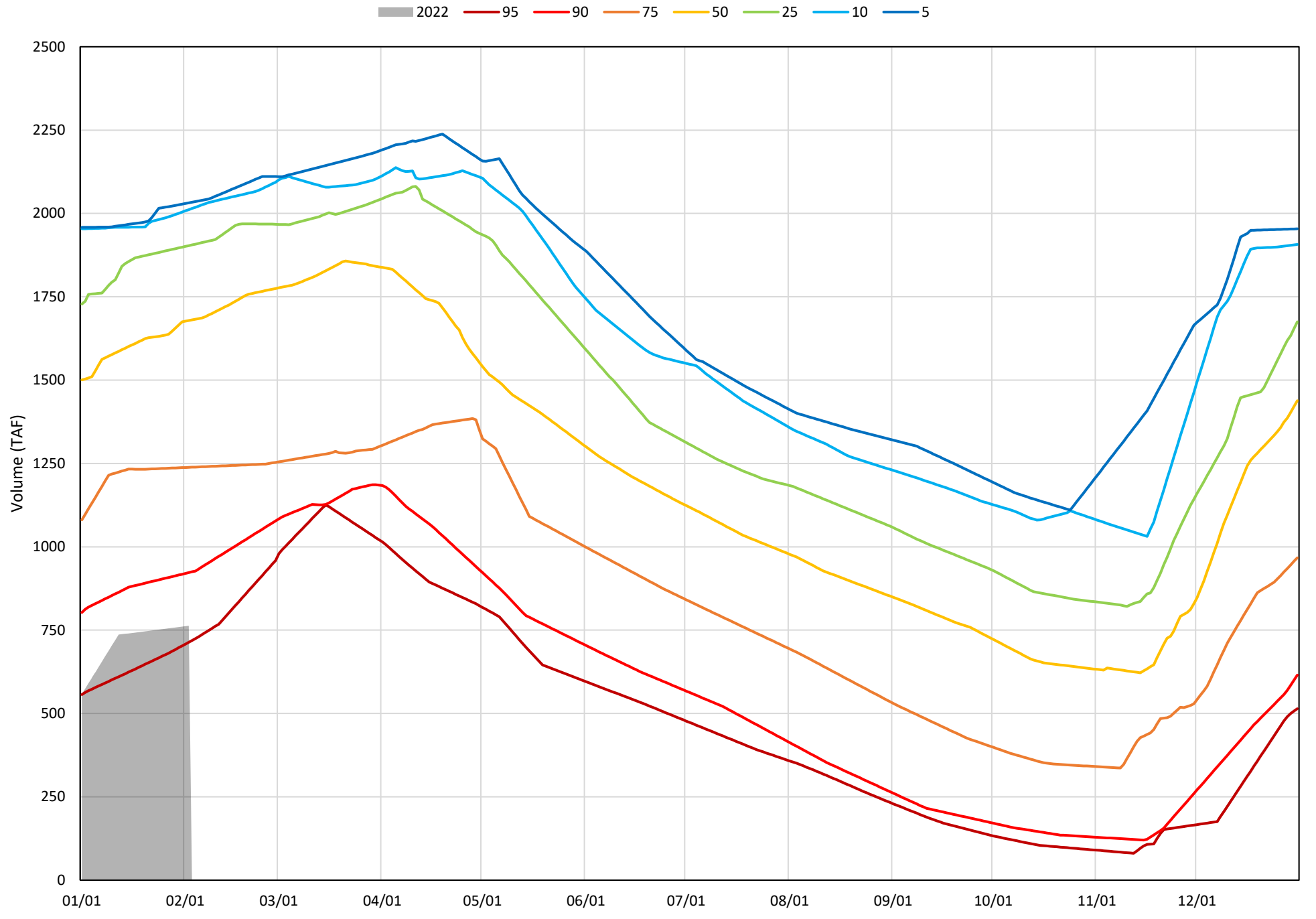


# Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

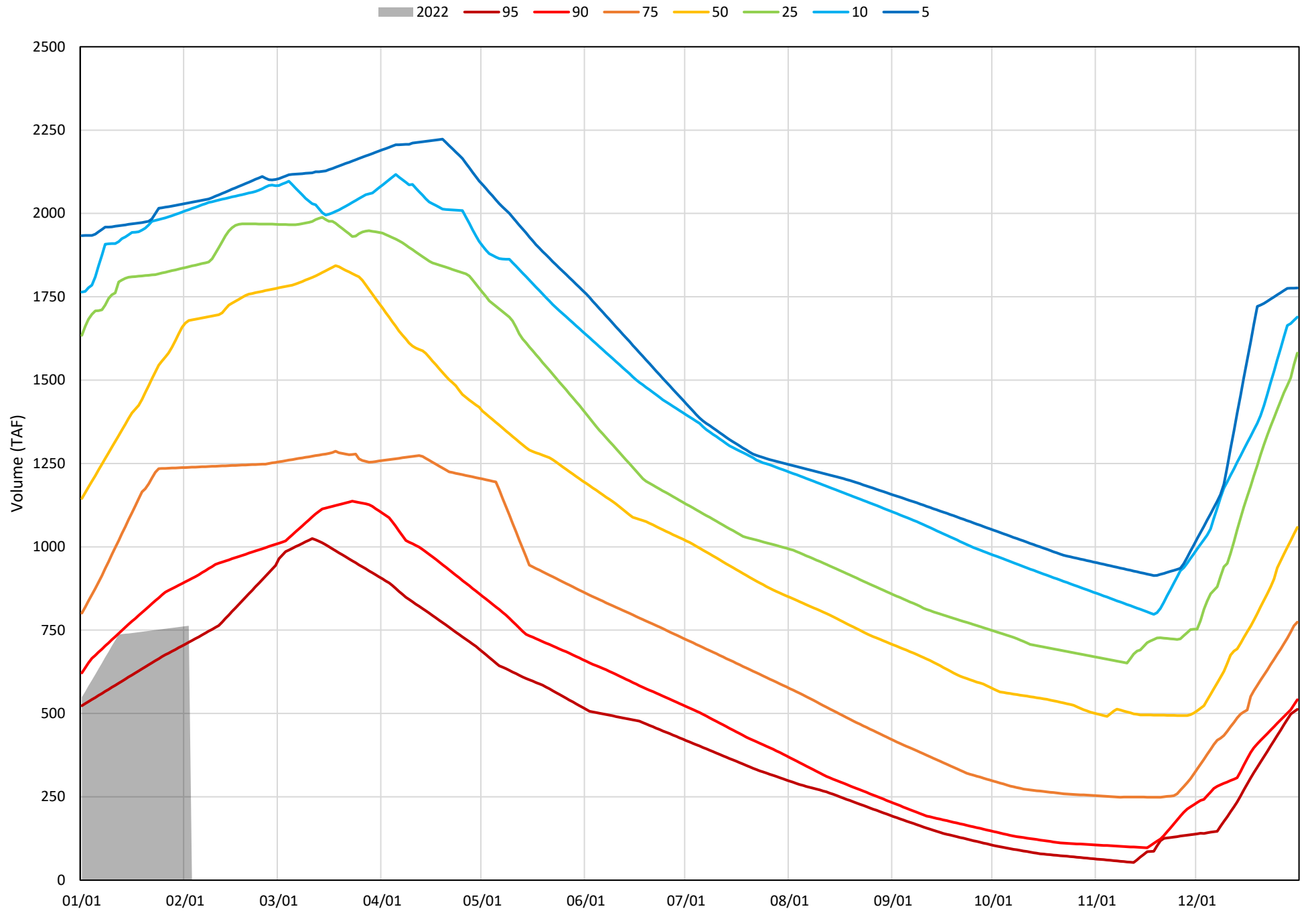
Avg (2000-2021) 2014 2015 2016 2019 2022



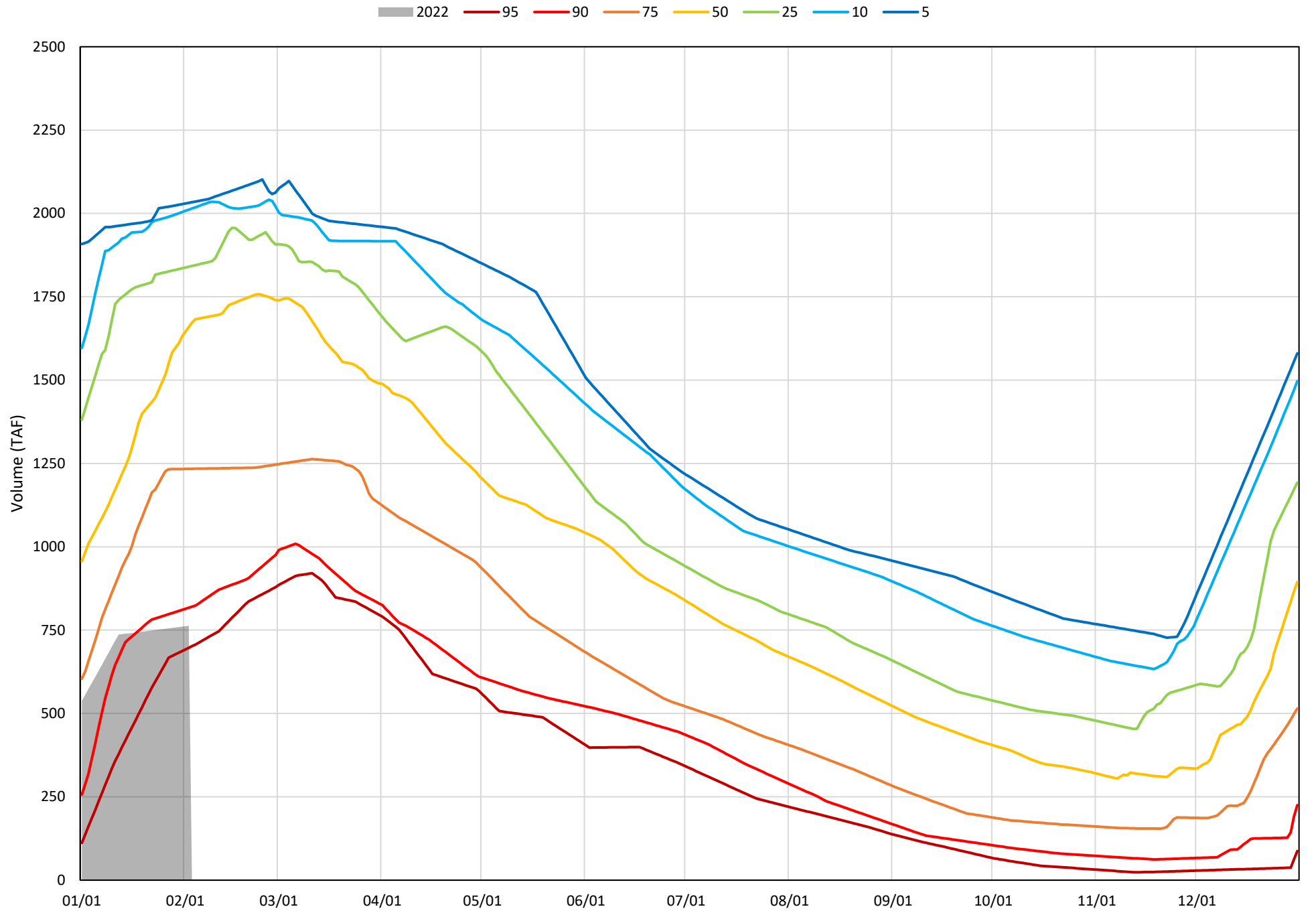
Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2021)



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

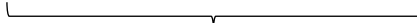


Trinity Lake Cold Water Pool Volume  $\leq 48^{\circ}\text{F}$  - Percent Exceedances (2000-2021)

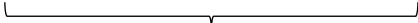


### Trinity Cold Water Pool Comparison by Year (for Specified Date)

Feb-03 2022	Δ TAF				% Δ			
	≤52°	≤50°	≤48°	Abs. Avg.	≤52°	≤50°	≤48°	Abs. Avg.
2000	1254	1254	1254	1254	164	164	164	164
2001	935	935	935	935	122	122	122	122
2002	896	896	896	896	117	117	117	117
2003	1018	1018	996	1011	133	133	131	132
2004	1129	1129	1129	1129	148	148	148	148
2005	829	691	656	725	109	90	86	95
2006	1272	1272	1272	1272	167	167	167	167
2007	1060	1060	1060	1060	139	139	139	139
2008	669	669	669	669	88	88	88	88
2009	258	258	258	258	34	34	34	34
2010	295	183	164	214	39	24	21	28
2011	1042	1042	1042	1042	137	137	137	137
2012	1203	943	895	1014	158	124	117	133
2013	1175	1175	1175	1175	154	154	154	154
2014	414	414	396	408	54	54	52	53
2015	117	117	7	80	15	15	1	11
2016	-79	-79	-79	79	-10	-10	-10	10
2017	869	708	682	753	114	93	89	99
2018	1014	1014	1014	1014	133	133	133	133
2019	838	838	838	838	110	110	110	110
2020	1236	1236	1236	1236	162	162	162	162
2021	496	496	496	496	65	65	65	65
2022	0	0	0	0	0	0	0	0



Historic - Current



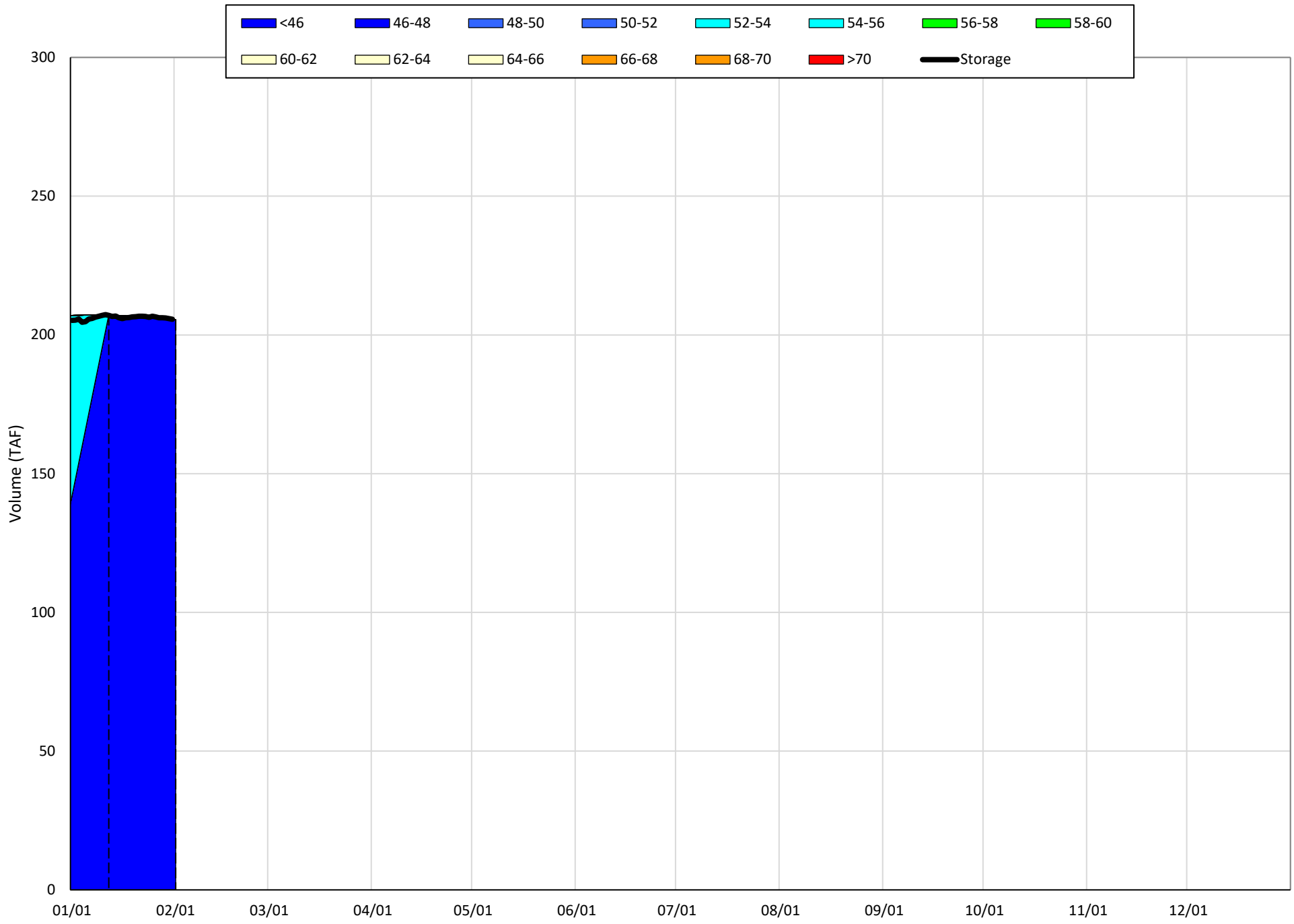
(Historic - Current) / Current

# Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

## 2022

Page	Description
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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

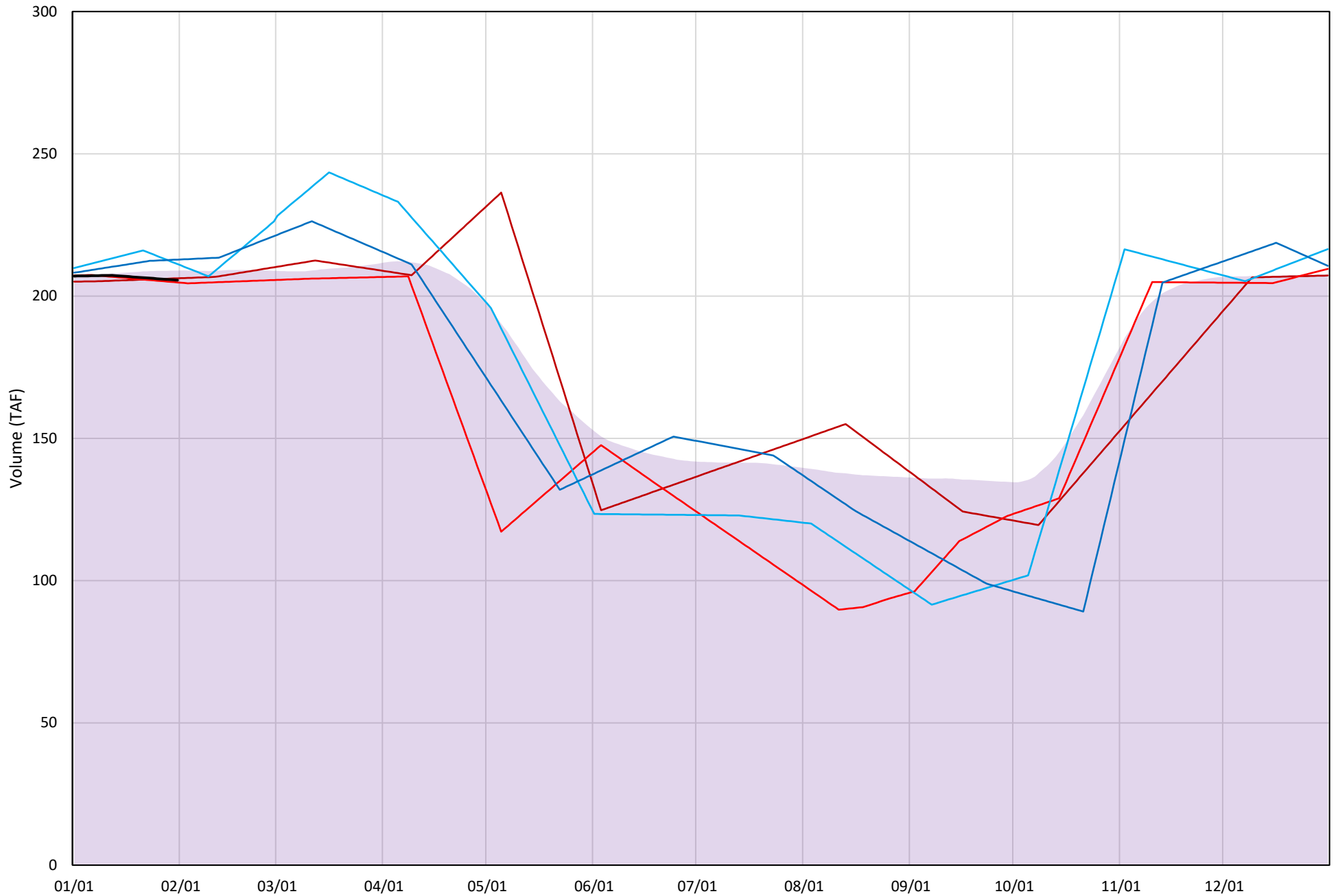
# Whiskeytown Lake Isothermobaths Plot - 2022





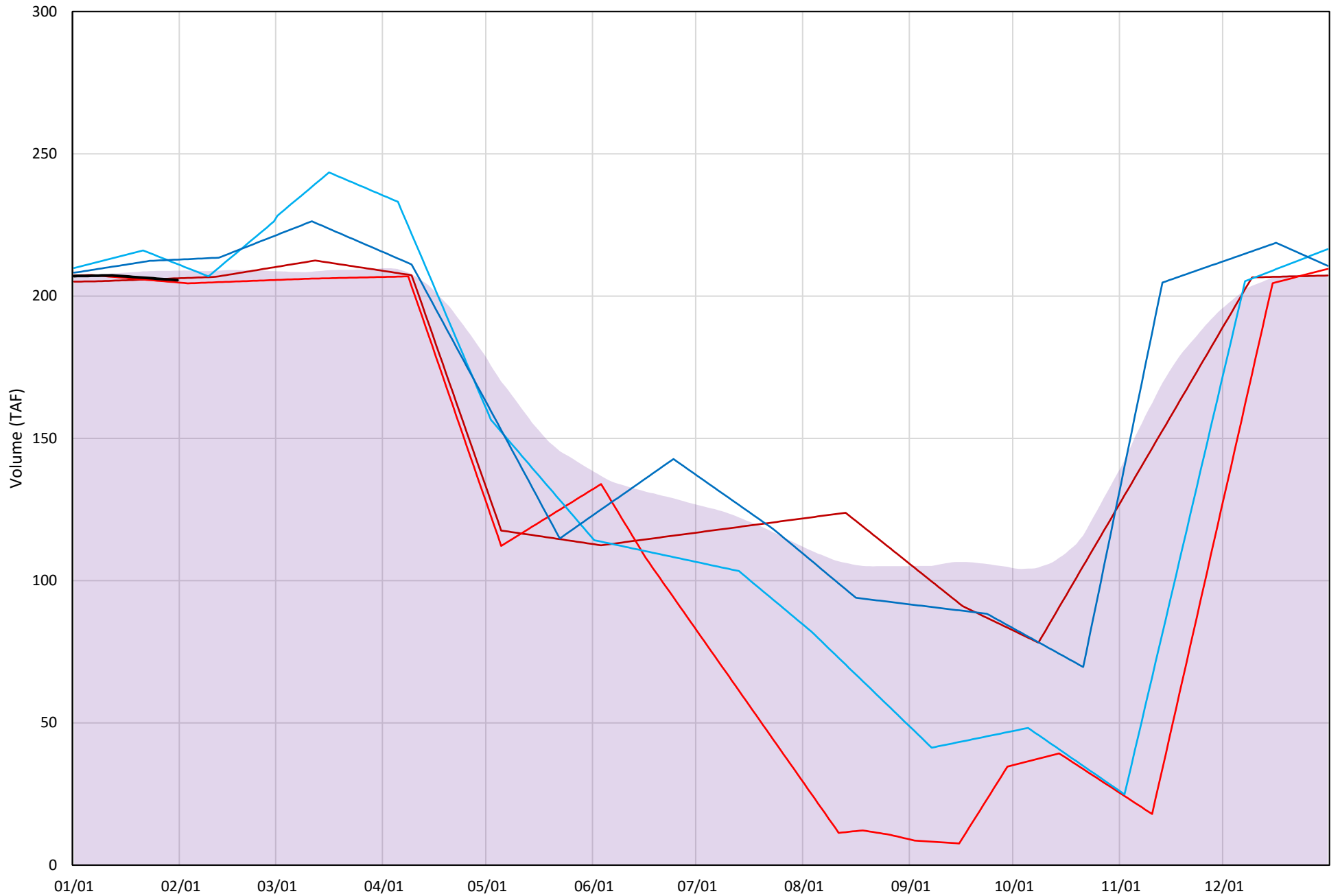
# Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

Avg (2000-2021) 2014 2015 2016 2019 2022



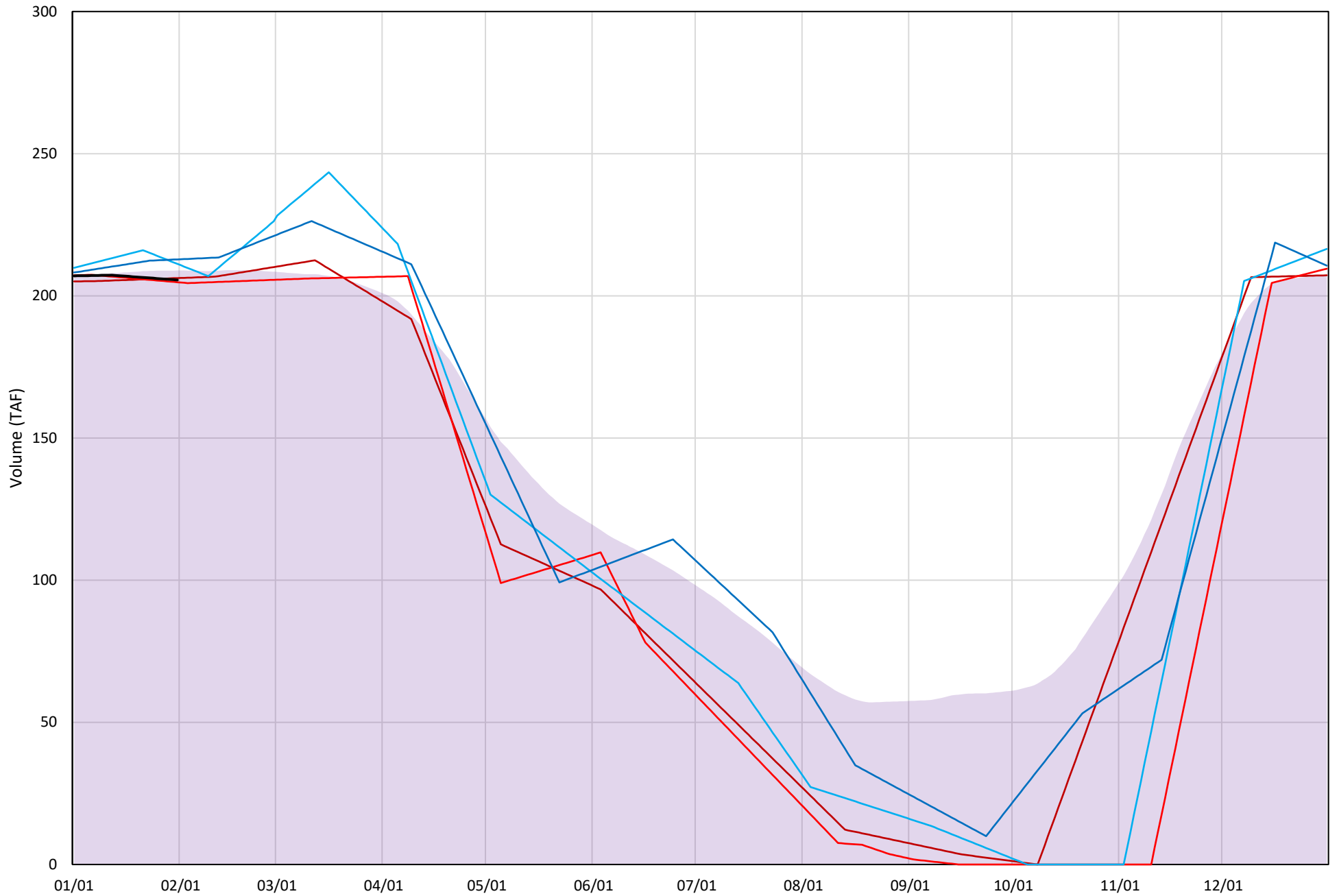
# Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

Avg (2000-2021) 2014 2015 2016 2019 2022



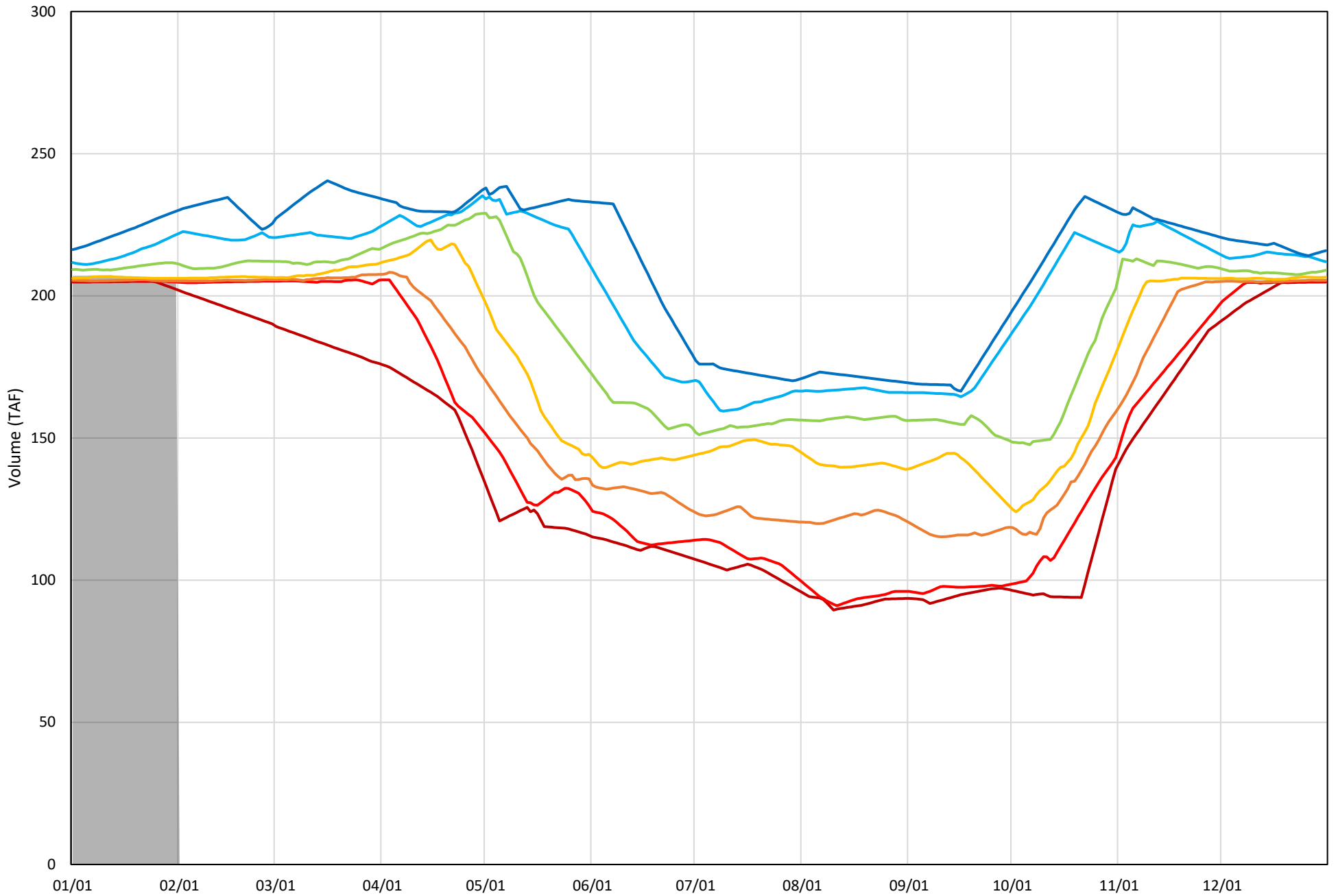
# Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

Avg (2000-2021) 2014 2015 2016 2019 2022



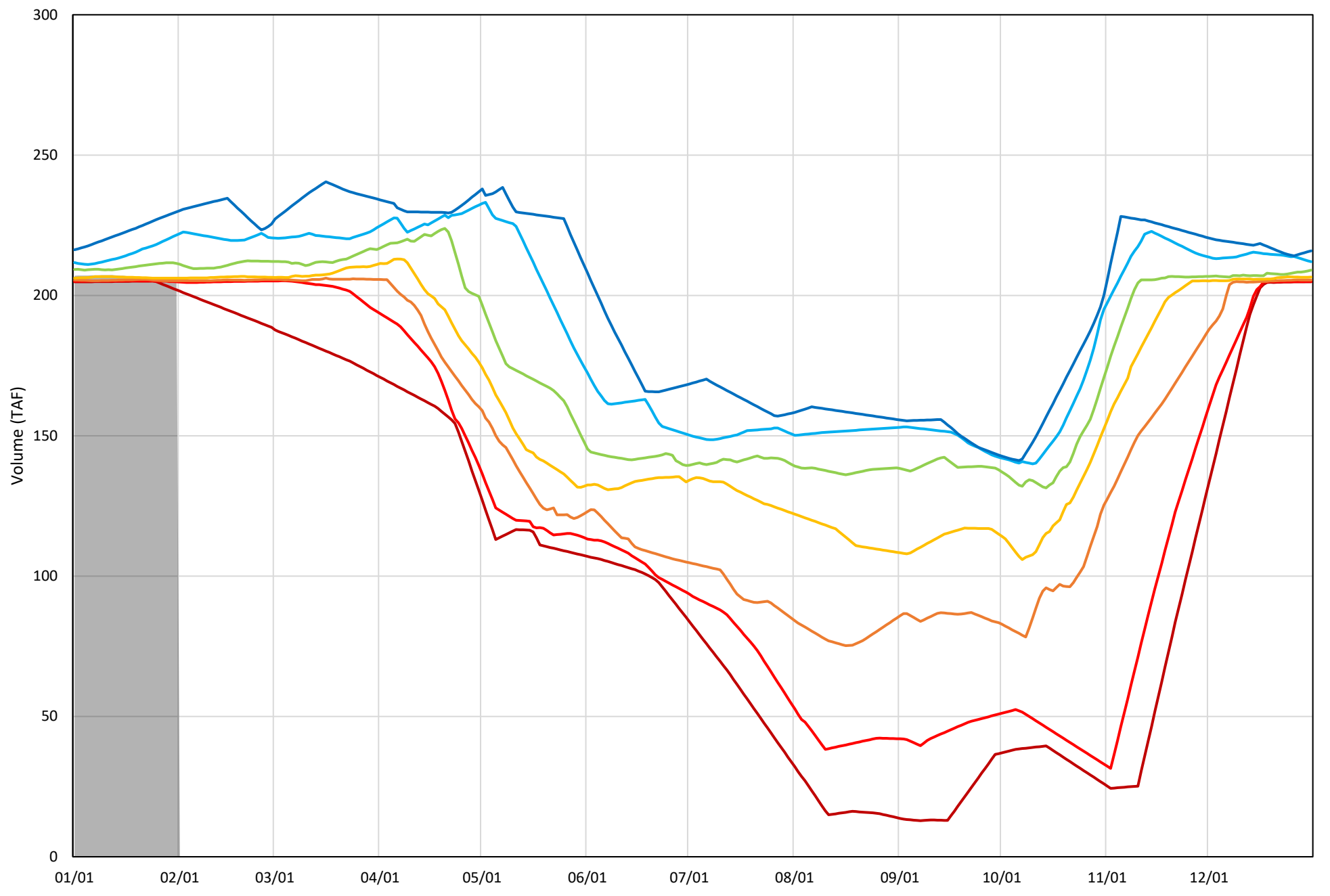
Whiskeytown Lake Cold Water Pool Volume  $\leq 60^{\circ}\text{F}$  - Percent Exceedances (2000-2021)

2022 95 90 75 50 25 10 5



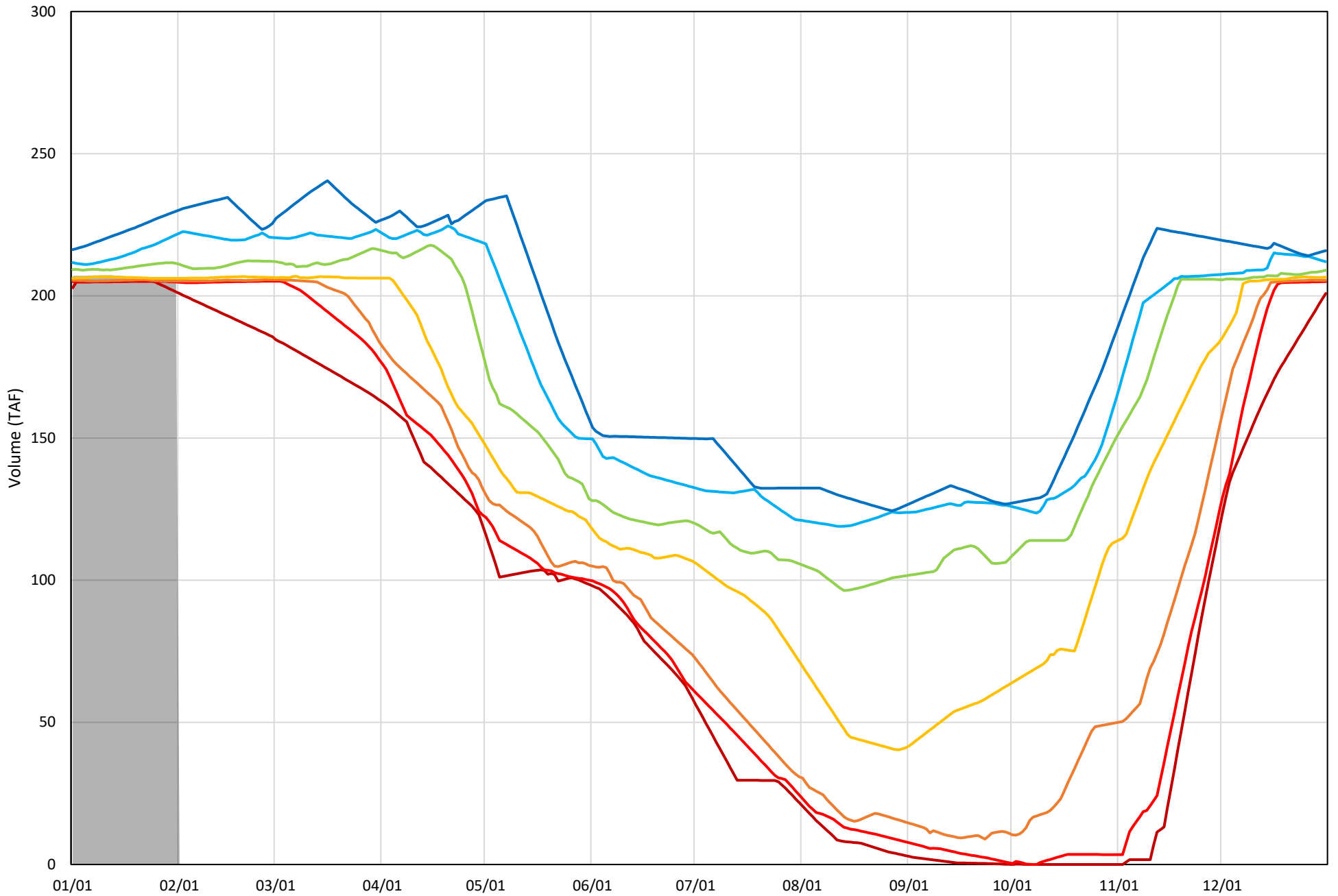
Whiskeytown Lake Cold Water Pool Volume  $\leq 58^{\circ}\text{F}$  - Percent Exceedances (2000-2021)

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)

Feb-01 2022	Δ TAF				% Δ			
	≤60°	≤58°	≤56°	Abs. Avg.	≤60°	≤58°	≤56°	Abs. Avg.
2000	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6
2001	10.4	10.4	10.4	10.4	5.0	5.0	5.0	5.0
2002	-0.6	-0.6	-0.6	0.6	-0.3	-0.3	-0.3	0.3
2003	0.5	0.5	0.5	0.5	0.2	0.2	0.2	0.2
2004	0.5	0.5	0.5	0.5	0.3	0.3	0.3	0.3
2005	6.3	6.3	6.3	6.3	3.0	3.0	3.0	3.0
2006	0.3	0.3	0.3	0.3	0.1	0.1	0.1	0.1
2007	-0.6	-0.6	-0.6	0.6	-0.3	-0.3	-0.3	0.3
2008	-0.3	-0.3	-0.3	0.3	-0.2	-0.2	-0.2	0.2
2009	2.9	2.9	2.9	2.9	1.4	1.4	1.4	1.4
2010	18.3	18.3	18.3	18.3	8.9	8.9	8.9	8.9
2011	-0.3	-0.3	-0.3	0.3	-0.2	-0.2	-0.2	0.2
2012	-3.7	-4.1	-4.8	4.2	-1.8	-2.0	-2.3	2.0
2013	-0.2	-0.2	-0.2	0.2	-0.1	-0.1	-0.1	0.1
2014	0.7	0.7	0.7	0.7	0.3	0.3	0.3	0.3
2015	-0.8	-0.8	-0.8	0.8	-0.4	-0.4	-0.4	0.4
2016	5.7	5.7	5.7	5.7	2.8	2.8	2.8	2.8
2017	25.2	25.2	25.2	25.2	12.3	12.3	12.3	12.3
2018	-0.3	-0.3	-0.3	0.3	-0.1	-0.1	-0.1	0.1
2019	7.2	7.2	7.2	7.2	3.5	3.5	3.5	3.5
2020	1.4	1.4	1.4	1.4	0.7	0.7	0.7	0.7
2021	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4
2022	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

}

Historic - Current

}

(Historic - Current) / Current