

Northern CVP Water Temperature Report

March - 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 ¹ | SHD | SPP ¹ | KWK | SAC ² | CCR | BSF | BND | RDB | IGO | LWS | DGC ³ | NFH | Shasta Generation | Spring Creek P.P. | Keswick Total | RDD | BSF | RDB |
| Feb | 48.0 | 47.3 | 46.9 | 47.3 | 47.2 | 47.5 | 47.6 | - | 47.0 | 45.4 | 43.6 | 41.7 | 42.3 | 2585 | 180 | 3307 | 46.7 | 44.2 | 45.9 |
| 03/01 | 47.1 | 46.5 | 45.5 | 46.4 | 46.2 | 46.5 | 44.5 | 43.8 ? | 43.9 | 44.5 | 43.2 | 40.4 | 40.2 | 2234 | 325 | 3325 | 42.0 | 40.3 | 41.8 |
| 03/02 | 47.1 | 46.5 | 45.4 | 46.2 | 46.4 | 47.0 | 46.3 | 45.8 | 45.7 | 45.4 | 43.3 ? | 41.9 ? | 42.4 | 2114 | 465 | 3324 | 51.5 | 45.1 | 46.2 |
| 03/03 | 46.9 | 46.6 | 45.5 | 46.2 | 46.3 | 46.9 | 47.4 | 47.5 | 47.6 | 45.6 | 43.3 | 42.1 | 42.9 | 1287 | 766 | 3318 | 46.5 | 45.9 | 46.1 |
| 03/04 | 46.9 ? | 46.3 | 45.6 | 46.4 | 46.3 | 46.4 | 47.6 | 47.8 | 48.0 | 45.3 ? | 42.9 | 41.4 | 41.5 | 2215 | 285 | 3319 | 46.5 | 45.4 | 46.0 |
| 03/05 | 46.9 ? | 46.2 | 46.1 | 46.6 | 46.5 | 46.8 | 47.1 | 46.7 | 46.9 | 45.0 ? | 42.9 | 41.0 ? | 41.0 | 2614 | 37 | 3326 | 45.0 | 43.6 | 44.7 |
| 03/06 | 46.9 ? | 46.1 | 45.6 | 46.6 | 46.3 | 46.1 | 46.9 | 46.1 | 46.1 | 44.0 | 44.3 | 41.2 | 41.5 | 2394 | 289 | 3330 | 37.5 | 36.1 | 39.5 |
| 03/07 | 46.7 | 46.2 | 45.4 | 46.3 | 46.2 | 46.4 | 46.2 | 45.2 | 45.4 | 44.7 | 45.7 | 41.5 | 41.8 | 2714 | 319 | 3321 | 43.5 | 42.5 | 44.0 |
| 03/08 | 46.7 | 46.4 | 45.5 | 46.3 | 46.5 | 46.8 | 46.3 | 46.0 | 46.4 | 45.1 ? | 46.0 | 41.8 ? | 42.3 | 2354 | 338 | 3321 | 45.5 | 46.5 | 48.0 |
| 03/09 | 46.6 | 46.0 | 45.2 ? | 46.0 | 45.3 | 45.3 | 46.3 | 46.7 | 46.7 ? | 43.9 ? | 45.8 ? | 40.7 ? | 41.9 | 1855 | 658 | 3329 | 40.0 | 40.3 | 44.0 |
| 03/10 | 46.5 | 46.9 | 45.1 | 46.1 | 45.0 | 45.9 ! | | 42.7 | 43.7 | 46.0 ? | 45.8 ? | 39.1 ? | 39.4 | 484 | 1683 | 3323 | 47.0 | 49.5 | 52.2 |
| 03/11 | 46.6 | 46.3 | 45.1 | 46.1 | 45.8 | 46.2 | 46.6 | 46.8 | 46.7 | 46.1 | 45.7 | 41.0 | 42.0 | 944 | 1641 | 3323 | 44.5 | 44.1 | 45.5 |
| 03/12 | 46.8 | 46.1 | 45.2 | 46.1 | 46.0 | 46.3 | 47.1 | 47.0 | 47.2 | 46.6 | 45.7 | 41.5 | 42.7 | 1687 | 314 | 3321 | 47.0 | 47.0 | 48.5 |
| 03/13 | 46.7 | 46.7 | 45.3 | 46.5 | 47.1 | 47.4 | 48.2 | 48.3 | 49.0 | 47.9 | 43.3 | 41.0 | 42.6 | 1982 | 337 | 3319 | 57.0 | 56.7 | 57.1 |
| 03/14 | 46.6 | 47.4 | 45.3 | 47.4 | 48.5 | 48.4 | 49.6 | 50.1 | 50.5 | 48.9 | 43.2 # | | 42.5 | 179 | 1345 | 4097 | 50.0 | 51.4 | 54.7 |
| 03/15 | 46.9 | 48.1 | 45.4 | 47.6 | 48.1 | 48.3 | 48.2 | 48.5 | 49.1 | 48.0 | 43.6 # | | 43.3 | 1306 | 1141 | 4858 | 49.5 | 48.9 | 51.3 |
| 03/16 | 46.8 | 46.8 | 45.4 | 47.6 | 48.1 | 48.6 | 48.9 | 48.9 | 49.3 | 47.6 | 43.8 # | | 44.2 | 1498 | 1703 | 4648 | 54.0 | 49.9 | 52.2 |
| 03/17 | 46.9 | 46.3 | 45.5 | 47.9 | 48.3 | 48.7 | 49.5 | 49.6 | 50.0 | 47.4 | 43.8 # | | 44.3 | 1629 | 1673 | 4444 | 52.5 | 50.5 | 52.5 |
| 03/18 | 46.8 | 46.1 | 45.6 | 47.6 | 47.9 | 48.4 | 49.5 | 50.0 | 50.4 | 47.1 | 43.8 # | | 44.2 | 2034 | 1717 | 4241 | 51.5 | 50.2 | 51.9 |
| 03/19 | 46.6 | 46.1 | 45.5 | 47.4 | 48.2 | 48.1 | 50.0 | 50.1 | 50.4 | 48.1 | 44.2 # | | 45.0 | 1658 | 1723 | 4042 | 51.5 | 51.5 | 51.8 |
| 03/20 | 46.8 | 46.3 | 45.4 | 47.4 | 48.7 | 49.0 | 50.2 | 50.3 | 50.8 | 49.1 | 45.4 # | | 45.3 | 837 | 1700 | 3936 | 51.0 | 52.2 | 52.3 |
| 03/21 | 46.7 | 46.2 | 45.6 | 47.3 | 47.6 | 47.9 | 49.4 | 50.2 ? | 50.6 | 47.9 | 46.6 # | | 45.4 | 1398 | 1698 | 3819 | 53.0 | 49.2 | 49.0 |
| 03/22 | 46.3 | 46.3 | 45.9 | 47.0 | 47.6 | 48.0 | 49.7 | 49.6 | 49.9 | 48.3 | 46.7 # | | 45.9 | 807 | 1687 | 3730 | 52.0 | 49.7 | 50.1 |
| 03/23 | 46.3 | 46.1 | 45.8 | 47.2 | 47.9 | 48.5 | 50.5 | 50.9 | 51.5 | 48.0 | 46.7 # | | 45.8 | 973 | 1681 | 3634 | 52.5 | 50.5 | 52.4 |
| 03/24 | 46.4 | 46.1 | 46.2 | 47.2 | 47.6 | 47.9 | 49.3 | 50.1 ? | 50.8 | 46.7 | 46.9 # | | 44.7 | 2100 | 660 | 3525 | 45.5 | 45.5 | 47.5 |
| 03/25 | 46.3 | 46.5 | 46.9 | 47.5 | 47.7 | 48.0 | 49.1 | 49.4 | 49.9 | 46.6 | 47.1 # | | 44.2 | 1734 | 906 | 3422 | 47.0 | 46.6 | 48.0 |
| 03/26 | 46.4 | 45.9 | 46.9 | 47.6 | 48.0 | 48.6 | 49.2 # | | 49.8 | 46.5 | 47.2 # | | 44.4 | 2202 | 323 | 3322 | 47.0 | 46.3 | 46.9 |
| 03/27 | 46.4 | 45.9 | 46.4 | 47.3 | 47.4 | 47.9 | 48.7 # | | 49.6 | 45.8 | 46.7 # | | 43.9 | 2109 | 322 | 3316 | 45.0 | 45.0 | 46.5 |
| 03/28 | 46.2 | 45.7 | 46.2 | 46.6 | 46.5 | 46.7 | 47.1 # | | 48.0 | 45.3 ? | 46.2 # | | 43.0 | 2343 | 238 | 3323 | ↓ 44.5 | 45.0 | 45.7 |
| 03/29 | 46.6 | 46.0 | 46.1 | 46.5 | 46.7 | 46.9 | 46.9 # | | 46.4 | 46.0 ? | 46.2 # | | 44.0 | 1951 | 467 | 3320 | ↓ 42.0 | 44.0 | 44.2 |
| 03/30 | 46.3 | 46.1 | 46.1 | 46.3 | 47.0 | 47.6 | 48.1 | 47.6 ? | 47.9 | 46.9 | 46.1 # | | 45.2 | 1947 | 491 | 3323 | ↓ 46.0 | 45.8 | 47.1 |
| 03/31 | 46.2 | 45.9 | 46.2 | 46.3 | 47.0 | 47.8 | 50.3 # | | 50.6 | 47.4 | 45.1 # | | 45.4 | 2029 | 449 | 3312 | 51.5 | 50.5 | 50.9 |
| Mar | 46.6 | 46.3 | 45.7 | 46.8 | 47.1 | 47.4 | 48.2 | 47.9 | 48.3 | 46.5 | 45.1 | 41.1 | 43.3 | 1729 | 883 | 3597 | 47.7 | 46.9 | 48.3 |
| | | | | Total CFS | | | 53612 | 27381 | | 111511 | | | | | | | | | |
| | | | | Total AF | | | 106337 | 54309 | | 221178 | | | | | | | | | |

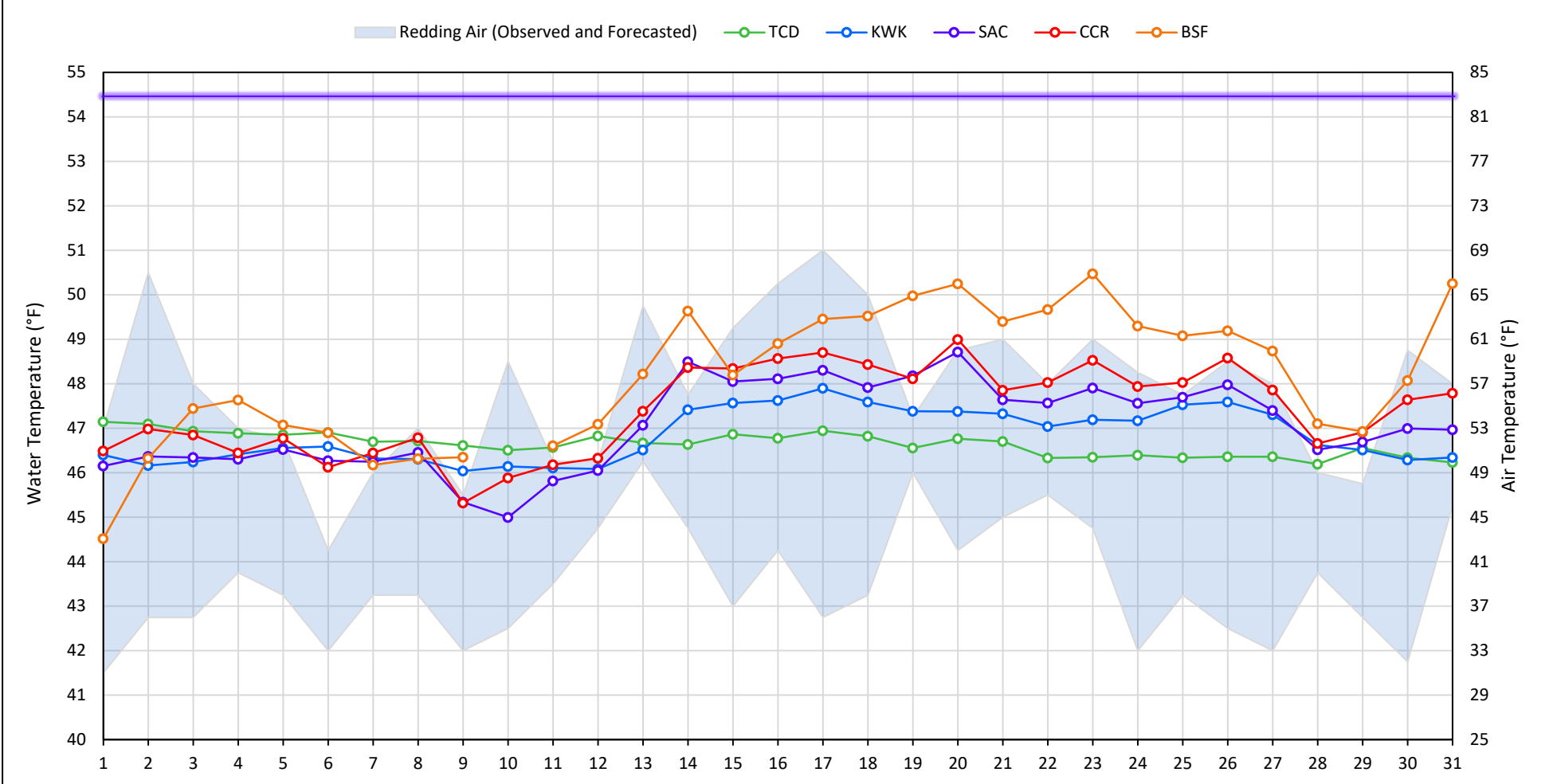
Legend

- ? = 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)
- ³ DGC reporting incorrect water temperatures due to probe being buried in fine sediment

Sacramento River Mean Daily Temperatures



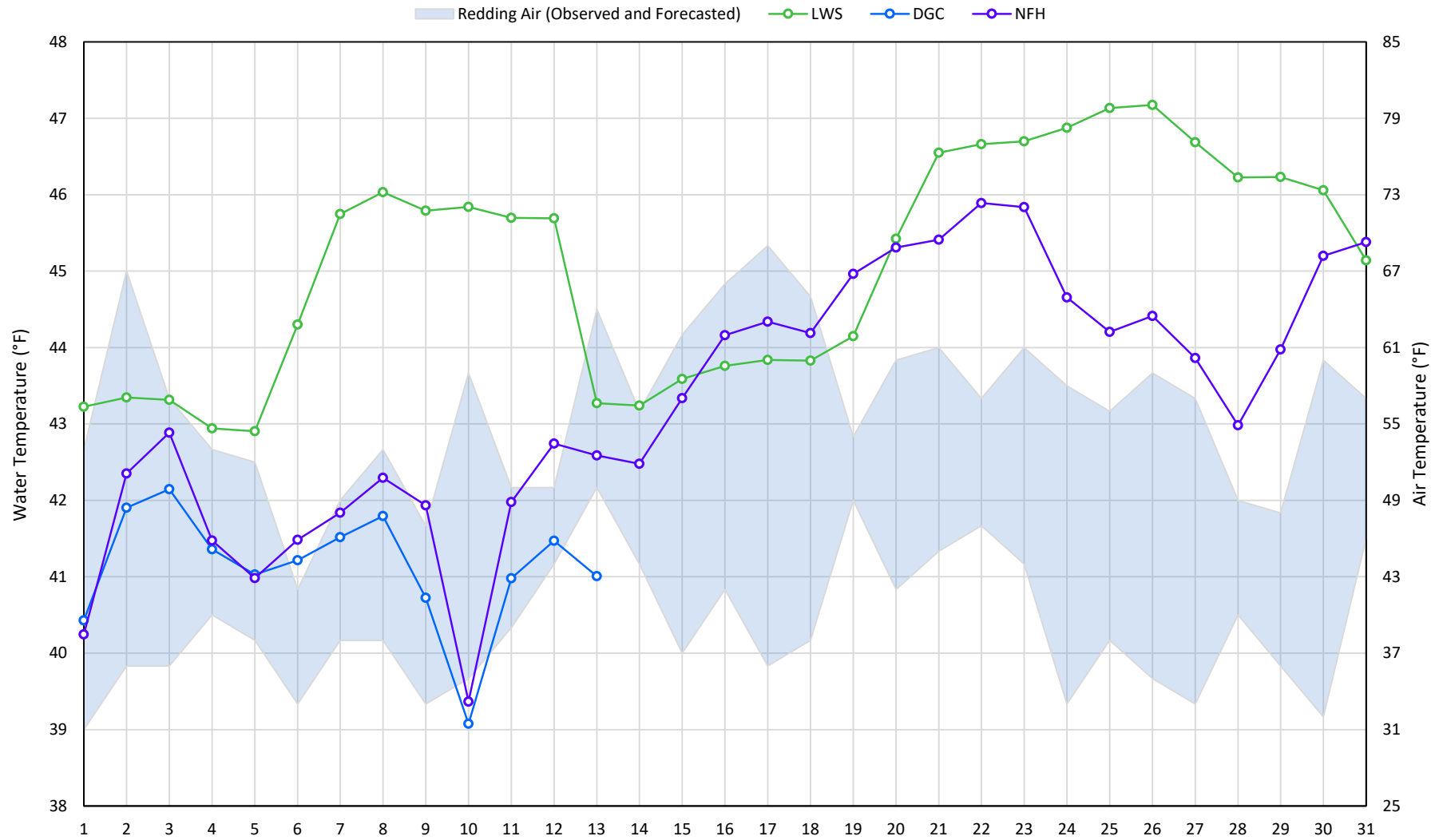
| Station Details | | | |
|-----------------|------------------|--|----------------------------|
| Code | Body of Water | Location ¹ | CDEC Link |
| TCD | N/A | Shasta Power Plant | N/A |
| SHD | Sacramento River | 0.3 miles downstream of Shasta Power Plant | Click Here |
| SPP | N/A | Spring Creek Power 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 ² | 56 | Sep-15 | Oct-01 |
| Trinity | NFH | 56 | Oct-01 | Dec-31 |

Notes

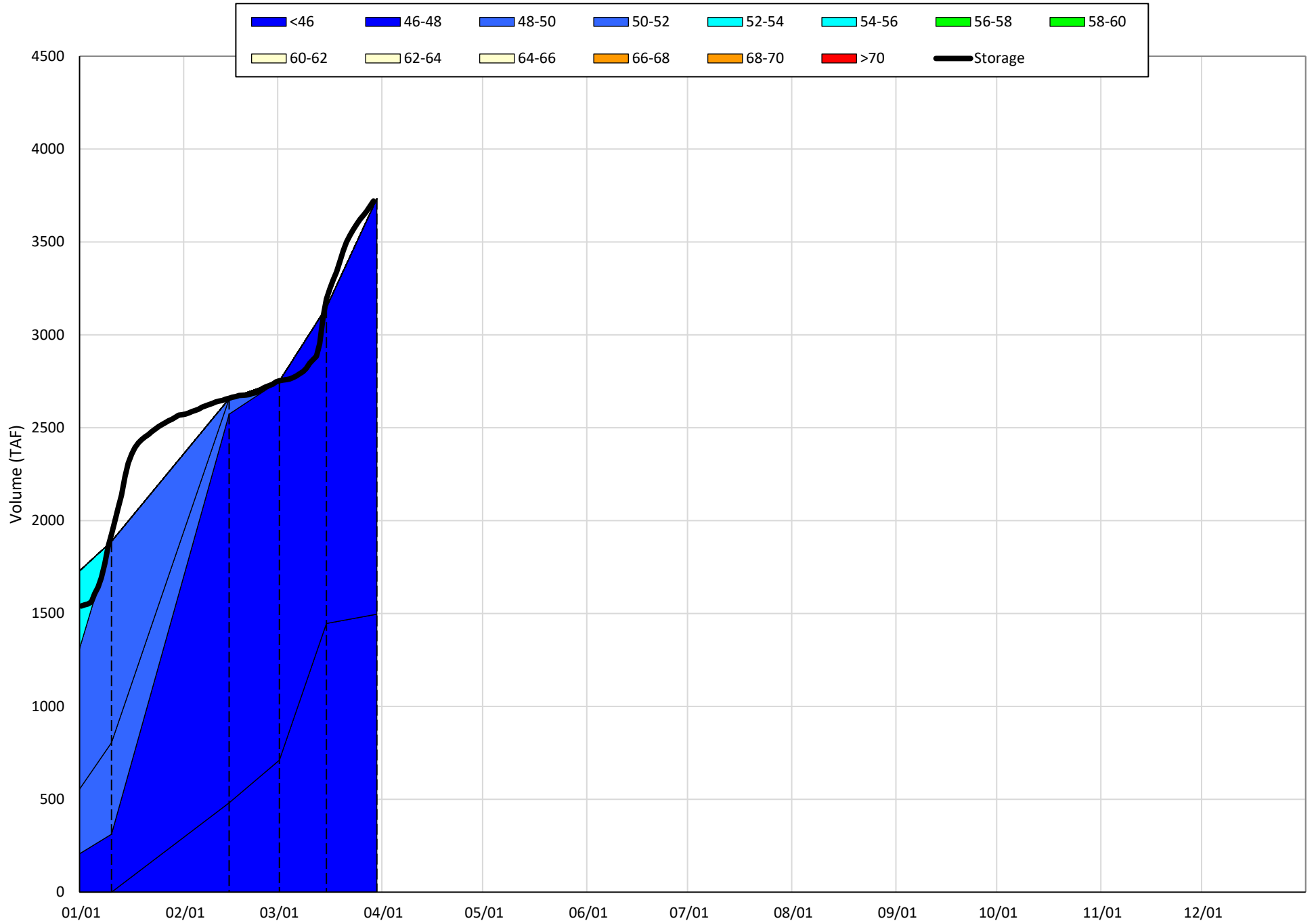
- ¹ Distances are approximate
- ² DGC reporting incorrect water temperatures due to probe being buried in fine sediment

Shasta Lake Isothermobaths & Cold Water Pool Statistics

2023

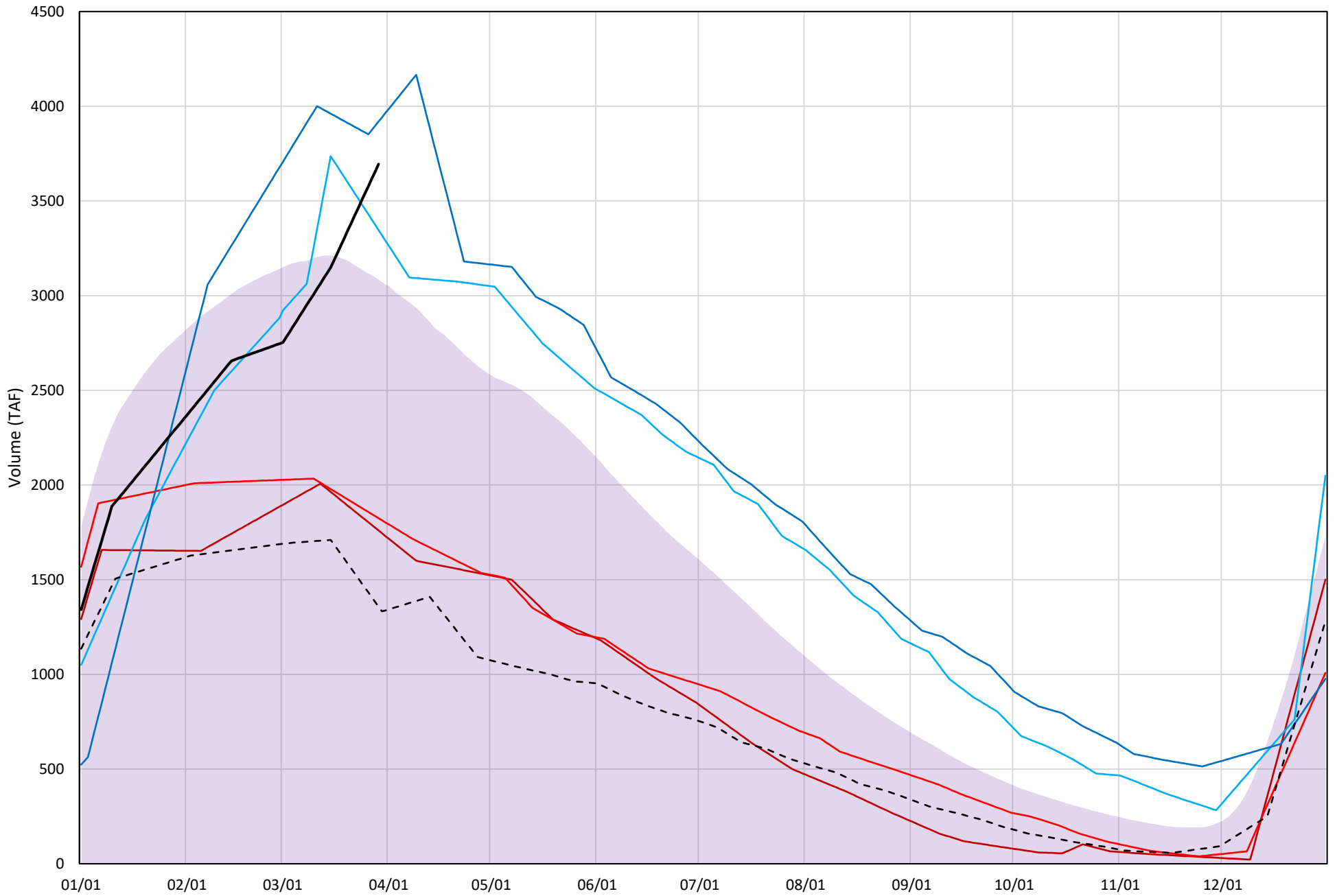
| Page | Description |
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| 8 | - Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ |
| 9 | - Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$ |
| 10 | - Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances |
| 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 - 2023



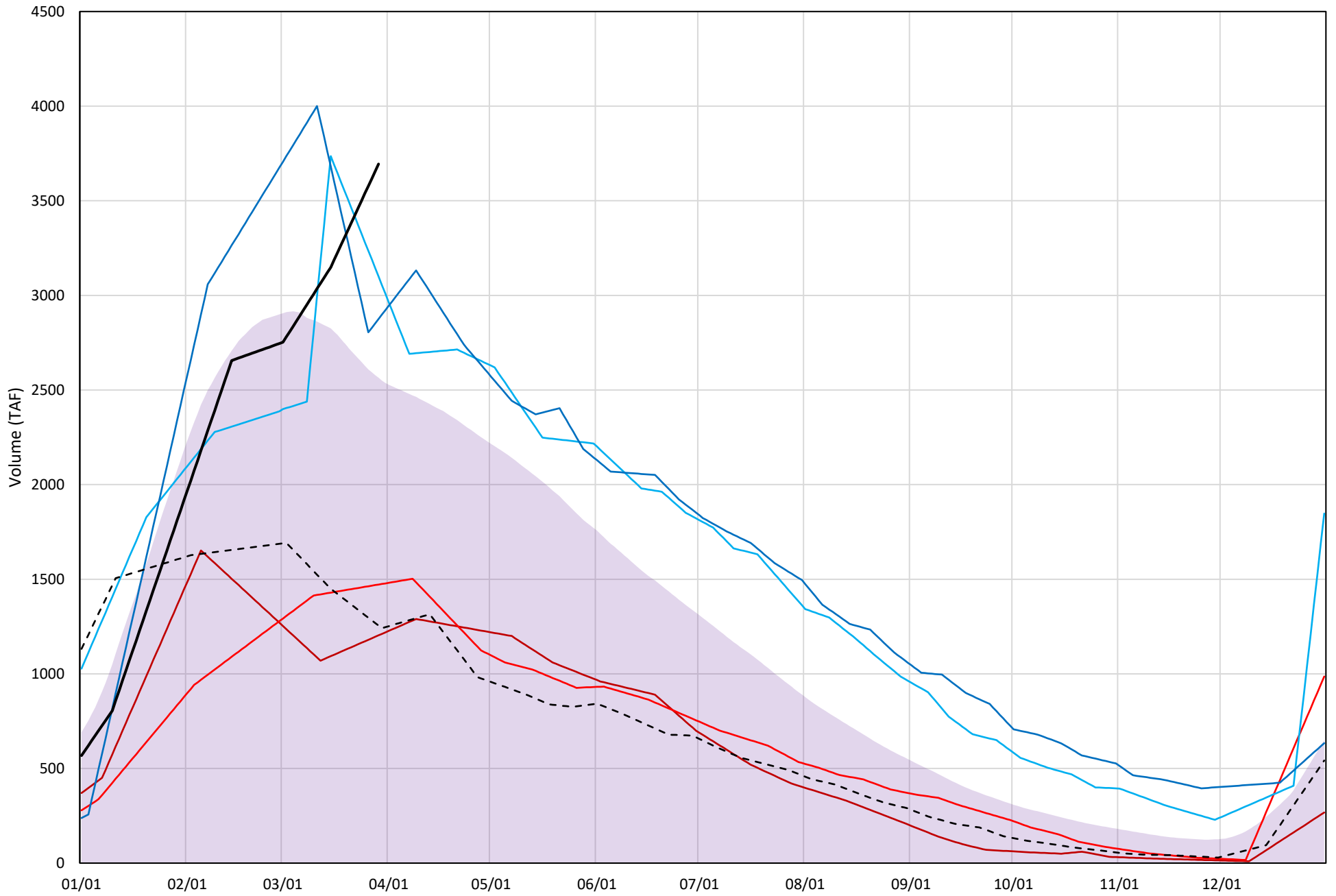
Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$

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



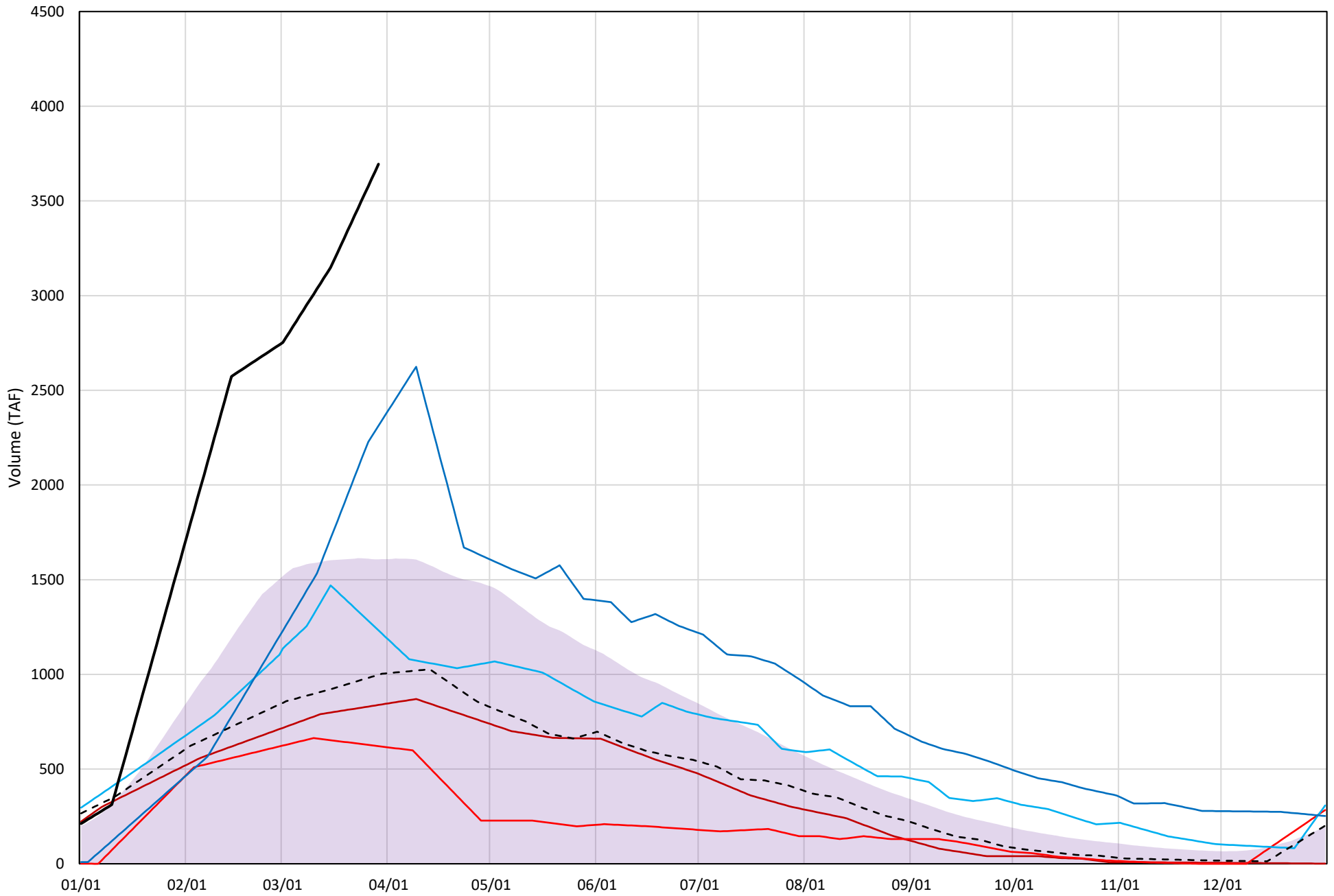
Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$

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

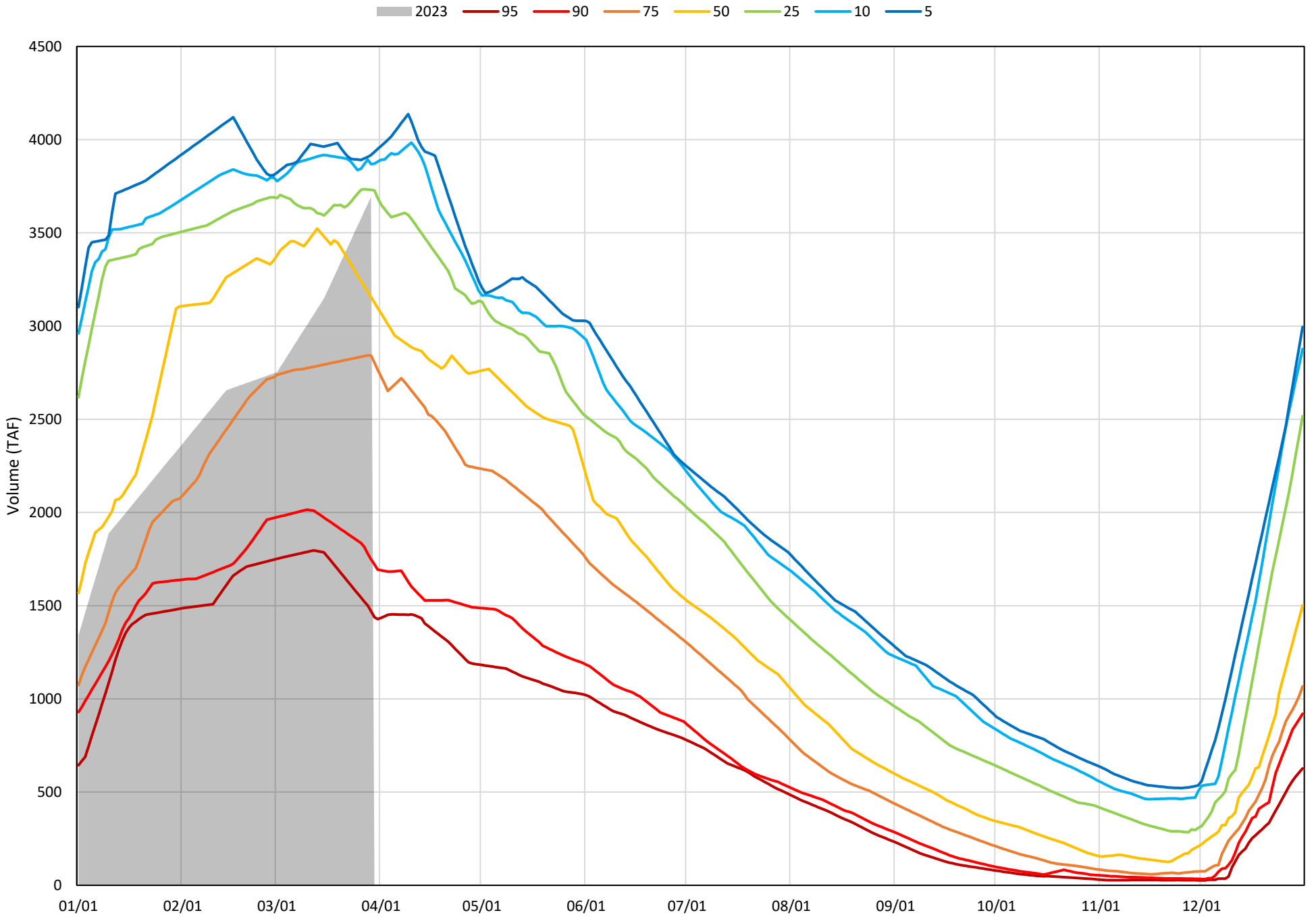


Shasta Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

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

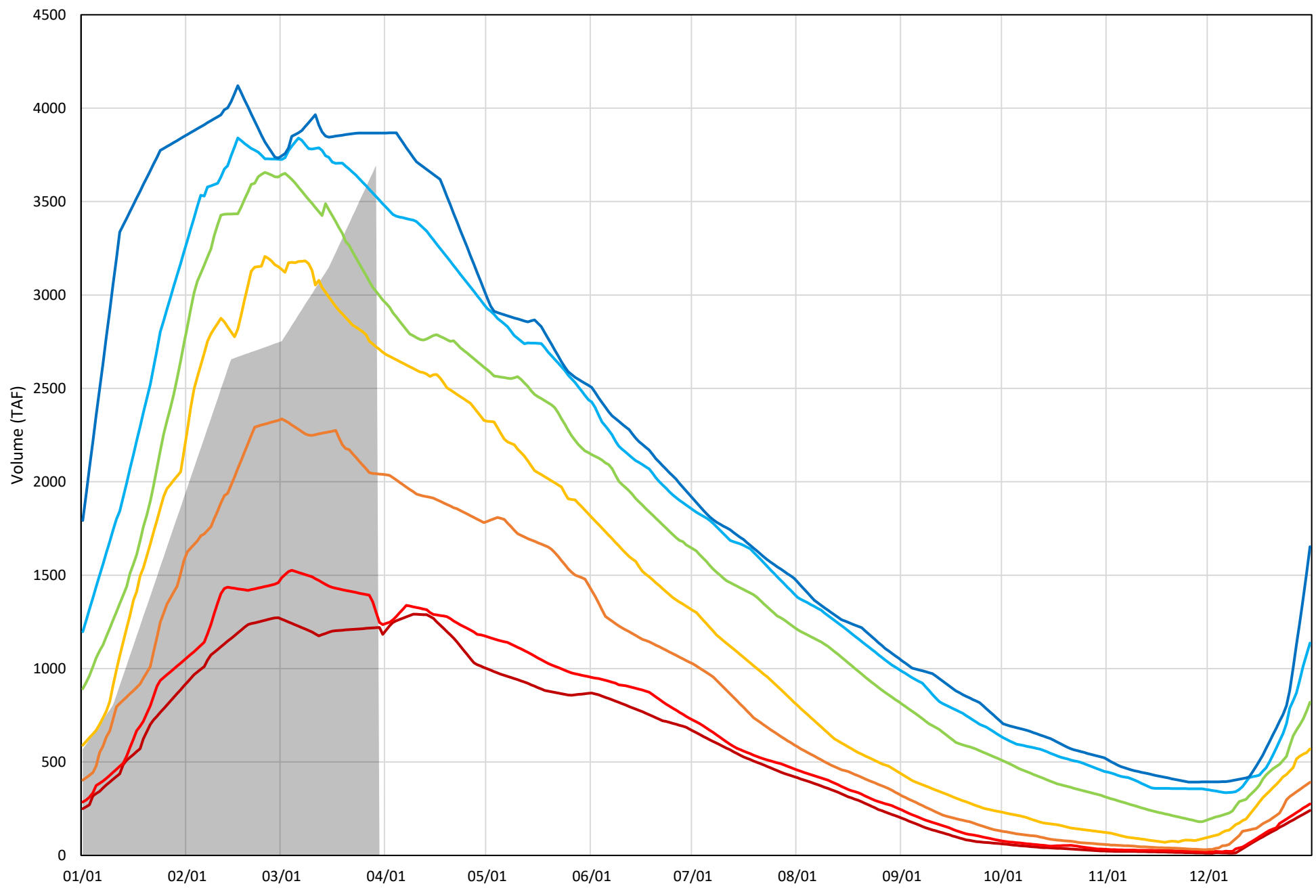


Shasta Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances (1998-2022)



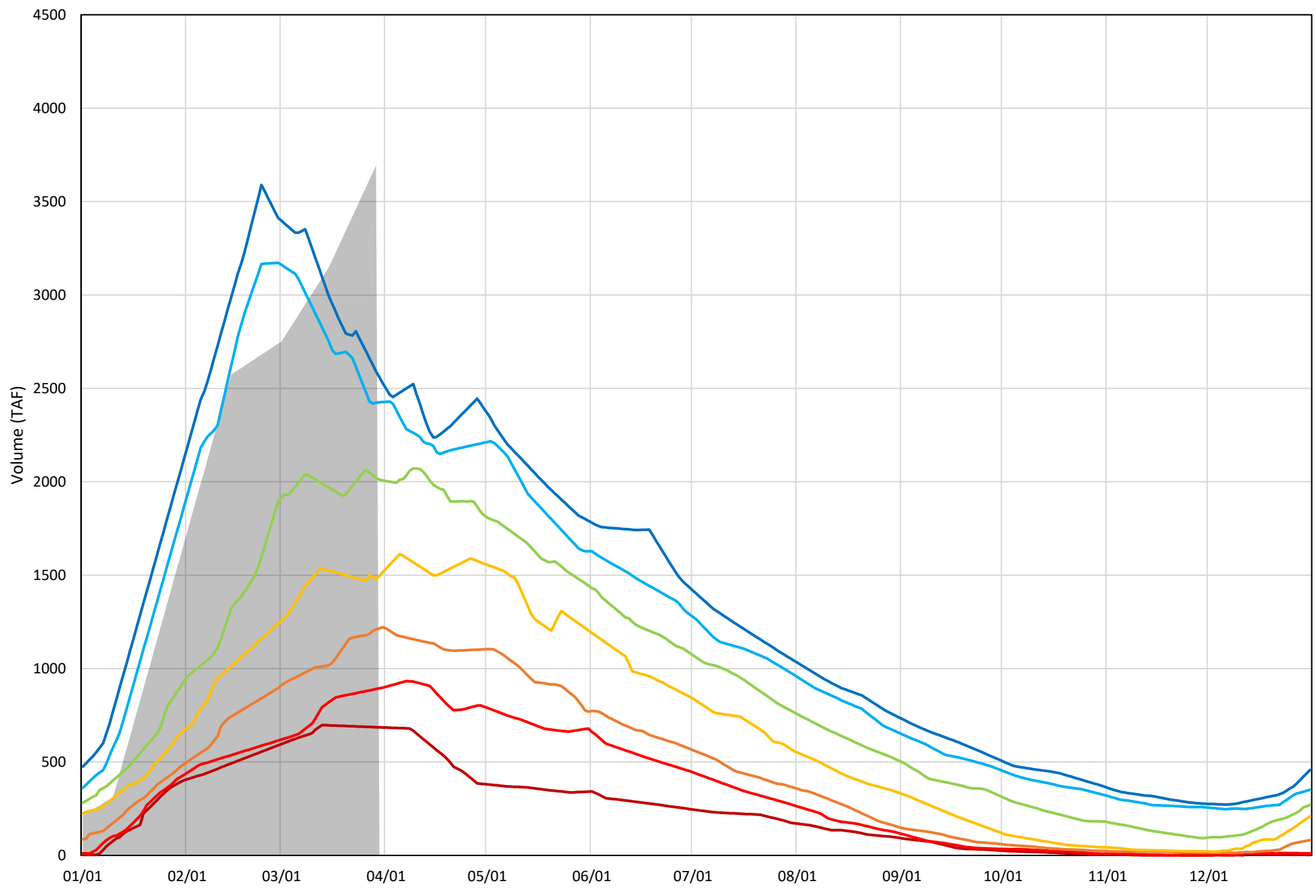
Shasta Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances (1998-2022)

2023 95 90 75 50 25 10 5



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

2023 95 90 75 50 25 10 5



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

| Mar-30 2023 | Δ TAF | | | | % Δ | | | |
|----------------|-------|-------|-------|-----------|------|------|------|-----------|
| | ≤52° | ≤50° | ≤48° | Abs. Avg. | ≤52° | ≤50° | ≤48° | Abs. Avg. |
| 1998 | -197 | -710 | -2094 | 1000 | -5 | -19 | -57 | 27 |
| 1999 | -92 | -455 | -1104 | 551 | -2 | -12 | -30 | 15 |
| 2000 | -592 | -1059 | -2445 | 1365 | -16 | -29 | -66 | 37 |
| 2001 | -644 | -938 | -1456 | 1013 | -17 | -25 | -39 | 27 |
| 2002 | 3 | -321 | -1817 | 714 | 0 | -9 | -49 | 19 |
| 2003 | -622 | -1274 | -2239 | 1379 | -17 | -34 | -61 | 37 |
| 2004 | -510 | -640 | -2358 | 1170 | -14 | -17 | -64 | 32 |
| 2005 | -964 | -1410 | -2427 | 1600 | -26 | -38 | -66 | 43 |
| 2006 | 129 | 64 | -1102 | 432 | 3 | 2 | -30 | 12 |
| 2007 | -538 | -730 | -1803 | 1024 | -15 | -20 | -49 | 28 |
| 2008 | -731 | -1719 | -2221 | 1557 | -20 | -47 | -60 | 42 |
| 2009 | -1428 | -1652 | -1963 | 1681 | -39 | -45 | -53 | 46 |
| 2010 | 133 | -887 | -1790 | 937 | 4 | -24 | -48 | 25 |
| 2011 | 220 | 220 | -1558 | 666 | 6 | 6 | -42 | 18 |
| 2012 | 71 | -838 | -2217 | 1042 | 2 | -23 | -60 | 28 |
| 2013 | -565 | -971 | -1797 | 1111 | -15 | -26 | -49 | 30 |
| 2014 | -1934 | -2491 | -2856 | 2427 | -52 | -67 | -77 | 66 |
| 2015 | -1869 | -2222 | -3073 | 2388 | -51 | -60 | -83 | 65 |
| 2016 | -348 | -594 | -2462 | 1135 | -9 | -16 | -67 | 31 |
| 2017 | 145 | -985 | -1461 | 864 | 4 | -27 | -40 | 23 |
| 2018 | -741 | -1357 | -2506 | 1535 | -20 | -37 | -68 | 42 |
| 2019 | 225 | -819 | -1382 | 808 | 6 | -22 | -37 | 22 |
| 2020 | -103 | -1650 | -2566 | 1440 | -3 | -45 | -69 | 39 |
| 2021 | -1960 | -2361 | -2769 | 2363 | -53 | -64 | -75 | 64 |
| 2022 | -2337 | -2439 | -2696 | 2490 | -63 | -66 | -73 | 67 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Historic - Current

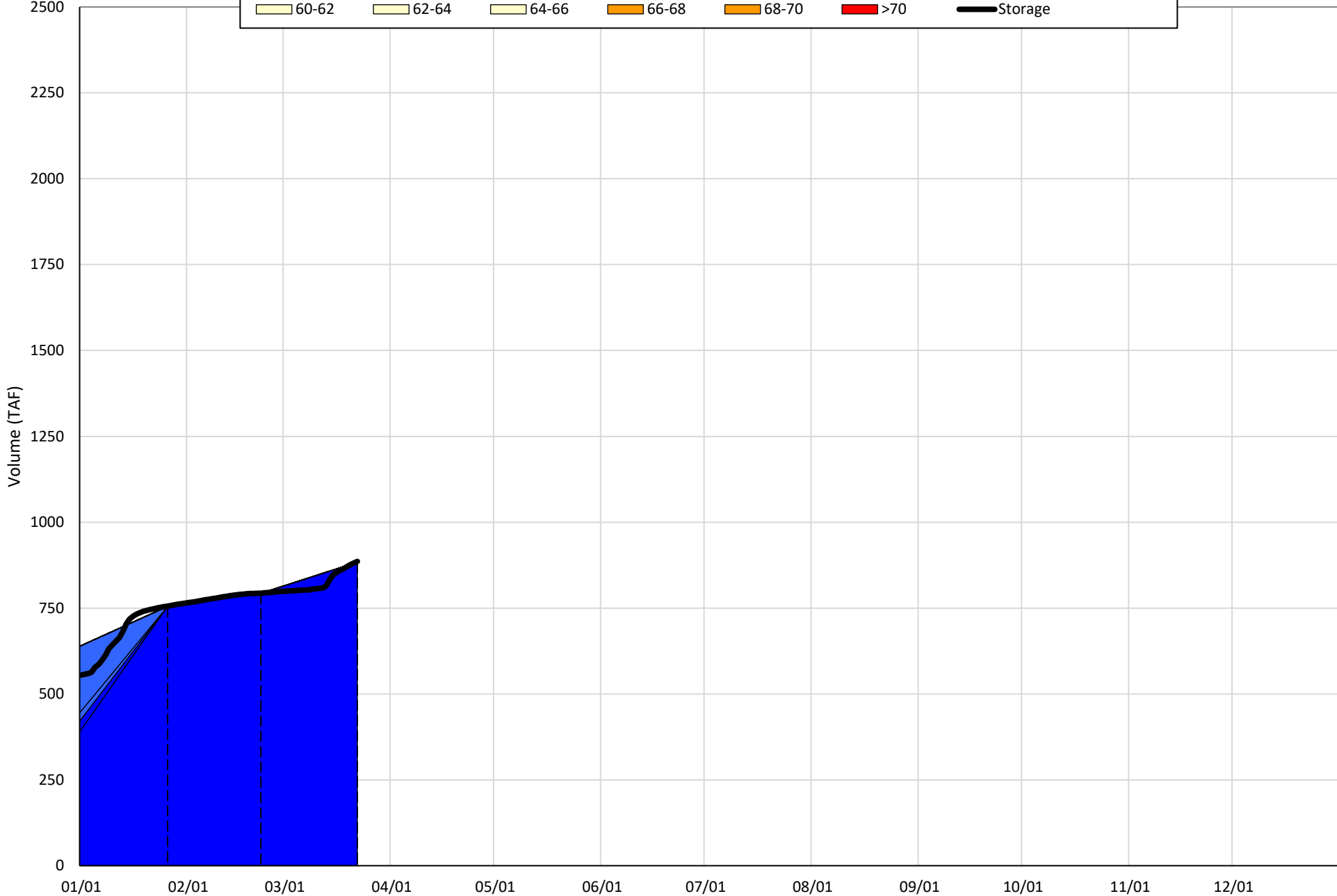
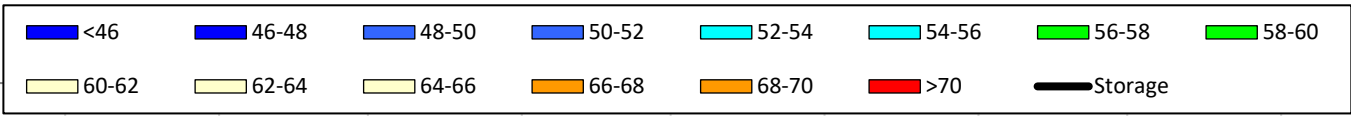
(Historic - Current) / Current

Trinity Lake Isothermobaths & Cold Water Pool Statistics

2023

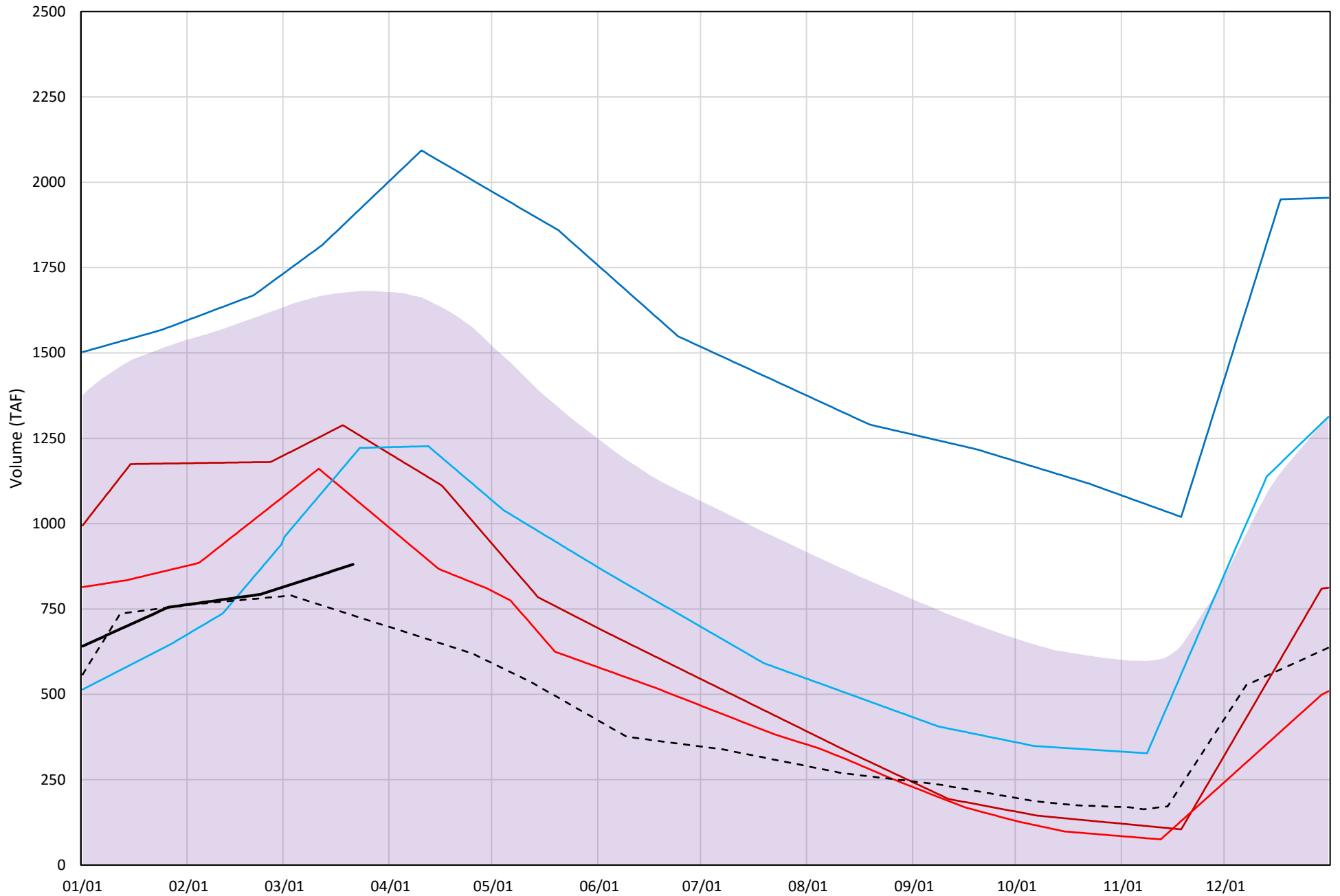
| Page | Description |
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| 19 | - Trinity Lake Cold Water Pool Volume $\leq 52^{\circ}\text{F}$ - Percent Exceedances |
| 20 | - Trinity Lake Cold Water Pool Volume $\leq 50^{\circ}\text{F}$ - Percent Exceedances |
| 21 | - Trinity Lake Cold Water Pool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

Trinity Lake Isothermobaths Plot - 2023



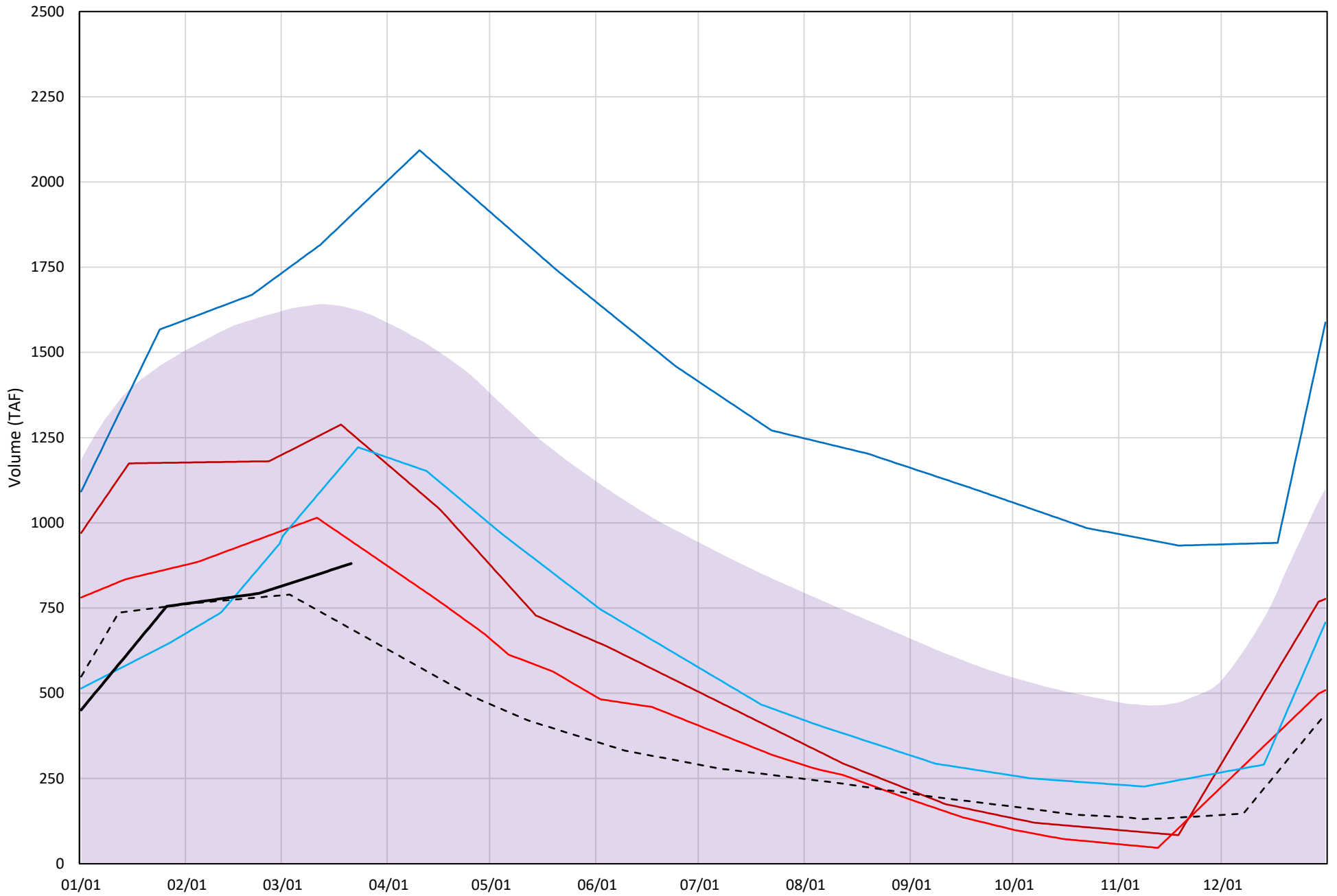
Trinity Lake Cold Water Pool Volume ≤52°F

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



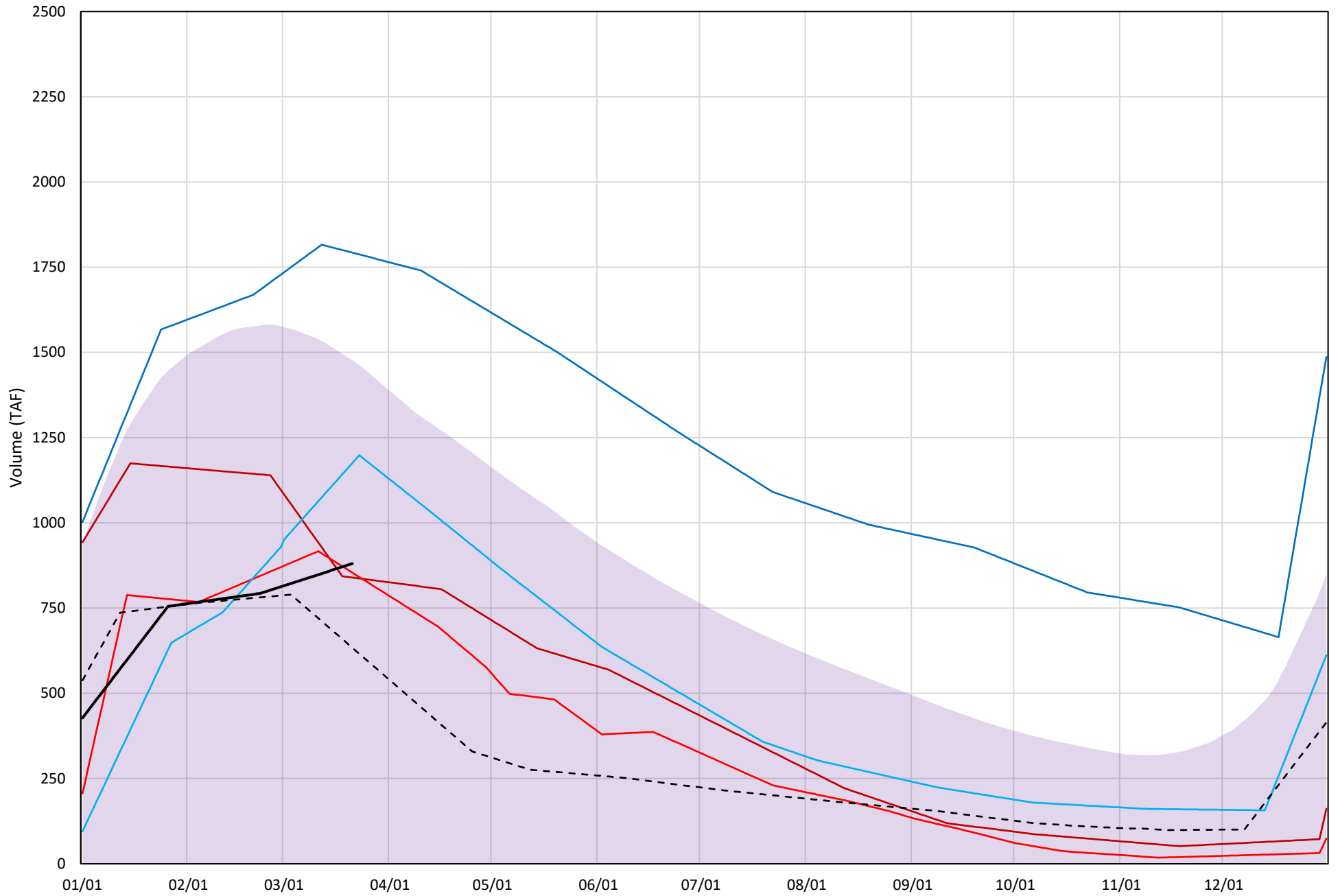
Trinity Lake Cold Water Pool Volume ≤50°F

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

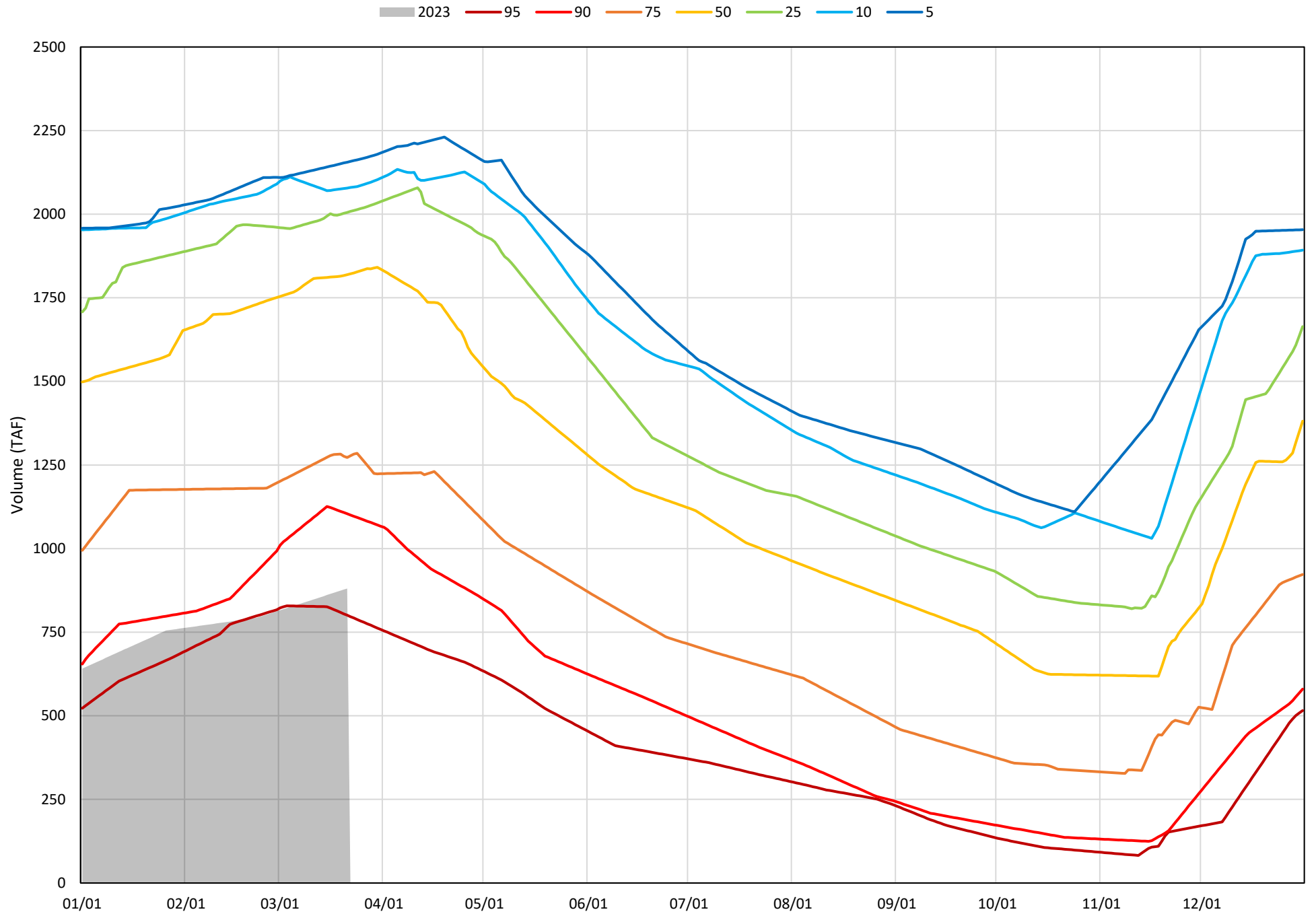


Trinity Lake Cold Water Pool Volume $\leq 48^{\circ}\text{F}$

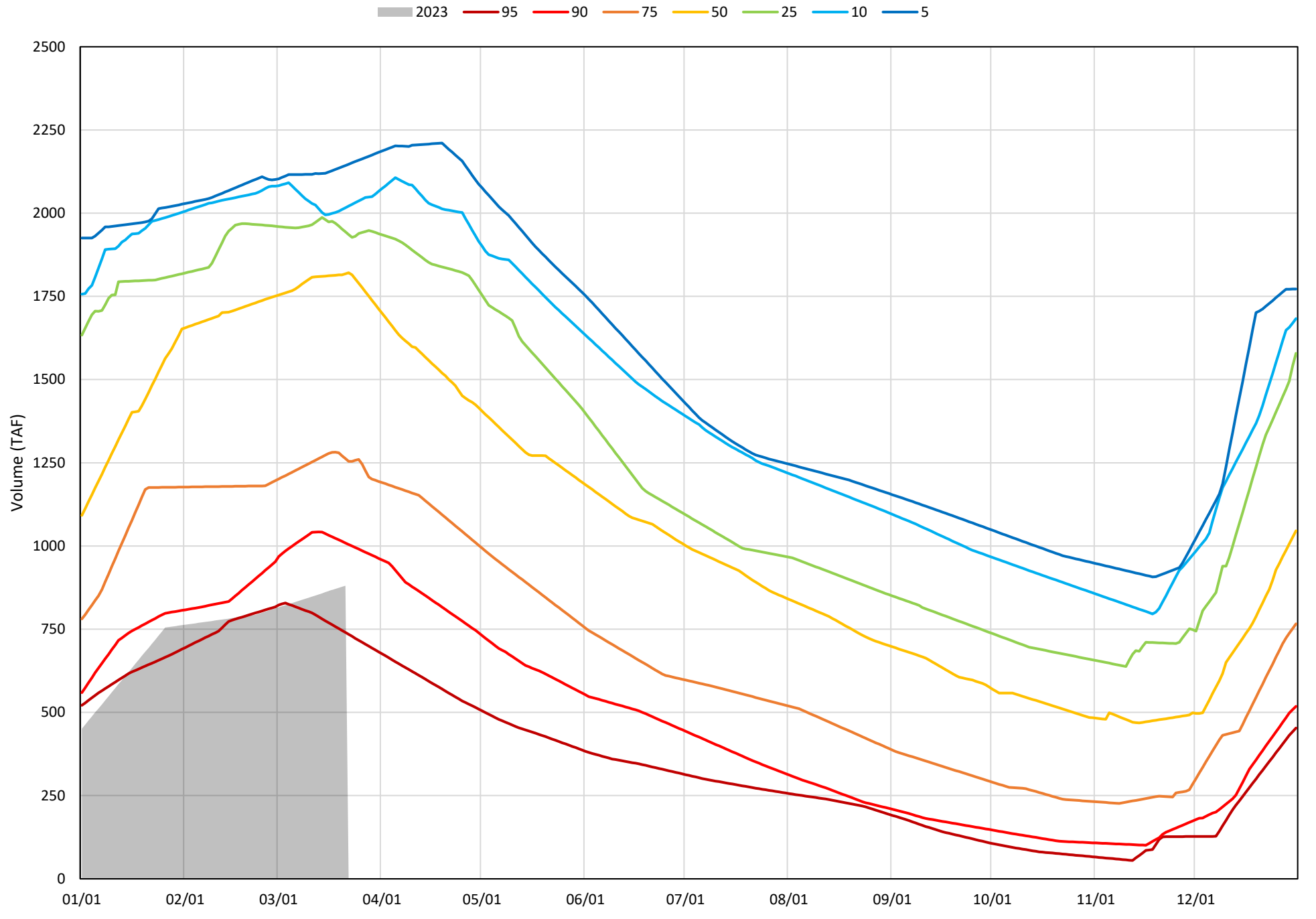
Avg (2000-2022) 2014 2015 2016 2019 2022 2023



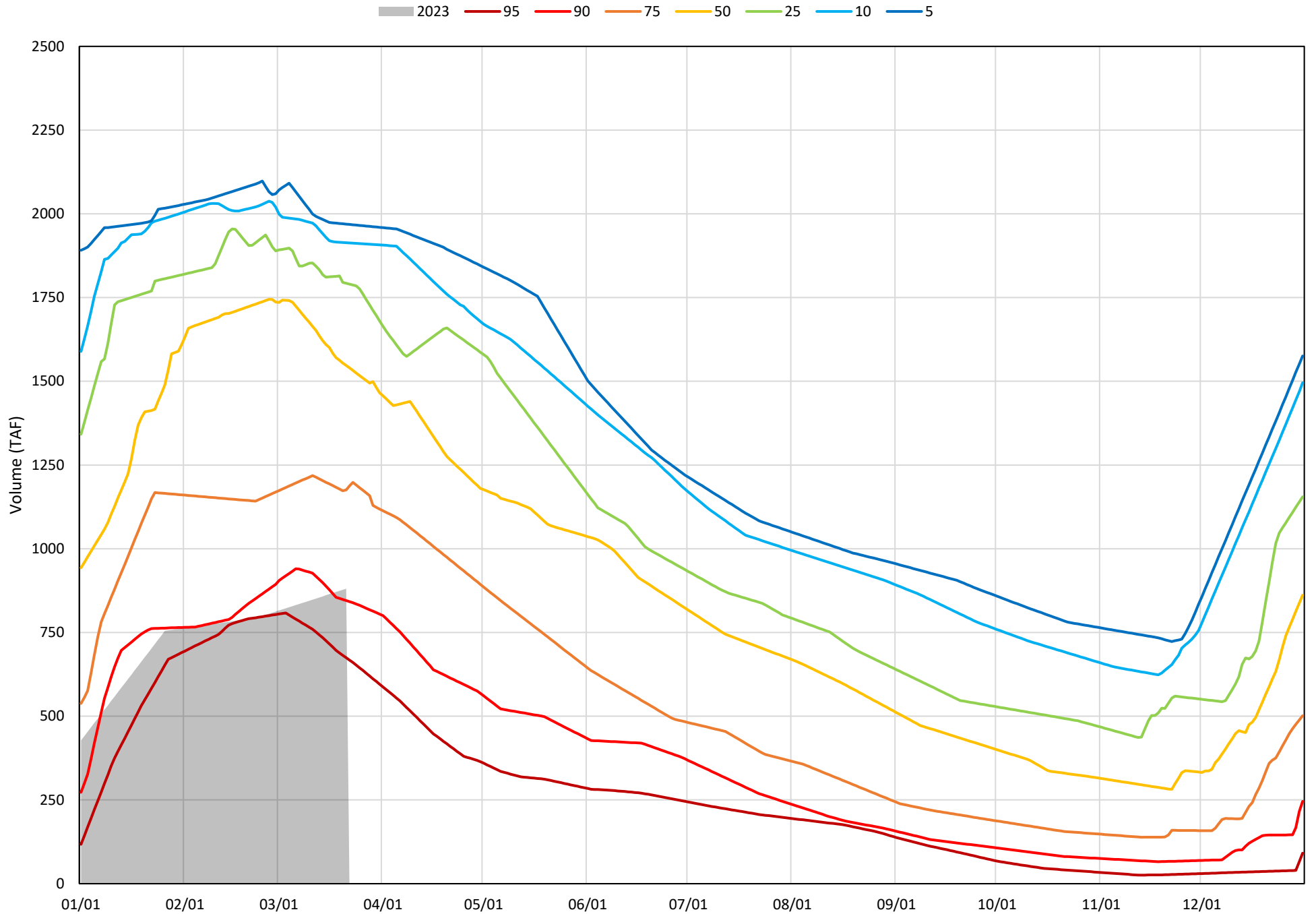
Trinity Lake Cold Water Pool Volume ≤52°F - Percent Exceedances (2000-2022)



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)

| Mar-22 2023 | Δ TAF | | | | % Δ | | | |
|----------------|-------|------|------|-----------|------|------|------|-----------|
| | ≤52° | ≤50° | ≤48° | Abs. Avg. | ≤52° | ≤50° | ≤48° | Abs. Avg. |
| 2000 | 1218 | 1074 | 649 | 980 | 138 | 122 | 74 | 111 |
| 2001 | 780 | 734 | 667 | 727 | 89 | 83 | 76 | 83 |
| 2002 | 937 | 937 | 851 | 909 | 106 | 106 | 97 | 103 |
| 2003 | 1125 | 1103 | 632 | 953 | 128 | 125 | 72 | 108 |
| 2004 | 1092 | 1028 | 960 | 1027 | 124 | 117 | 109 | 117 |
| 2005 | 847 | 545 | 390 | 594 | 96 | 62 | 44 | 67 |
| 2006 | 1289 | 1289 | 1099 | 1226 | 146 | 146 | 125 | 139 |
| 2007 | 1015 | 960 | 698 | 891 | 115 | 109 | 79 | 101 |
| 2008 | 677 | 677 | 677 | 677 | 77 | 77 | 77 | 77 |
| 2009 | 264 | 223 | 104 | 197 | 30 | 25 | 12 | 22 |
| 2010 | 392 | 368 | 288 | 349 | 44 | 42 | 33 | 40 |
| 2011 | 1158 | 1158 | 1047 | 1121 | 131 | 131 | 119 | 127 |
| 2012 | 1076 | 1036 | 1012 | 1041 | 122 | 118 | 115 | 118 |
| 2013 | 1167 | 1064 | 836 | 1022 | 132 | 121 | 95 | 116 |
| 2014 | 390 | 382 | -41 | 271 | 44 | 43 | -5 | 31 |
| 2015 | 197 | 66 | -27 | 96 | 22 | 7 | -3 | 11 |
| 2016 | 318 | 318 | 295 | 310 | 36 | 36 | 34 | 35 |
| 2017 | 1128 | 1091 | 971 | 1063 | 128 | 124 | 110 | 121 |
| 2018 | 939 | 913 | 894 | 915 | 107 | 104 | 101 | 104 |
| 2019 | 1021 | 1021 | 912 | 985 | 116 | 116 | 104 | 112 |
| 2020 | 1091 | 1016 | 634 | 914 | 124 | 115 | 72 | 104 |
| 2021 | 403 | 403 | 403 | 403 | 46 | 46 | 46 | 46 |
| 2022 | -149 | -192 | -247 | 196 | -17 | -22 | -28 | 22 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Historic - Current

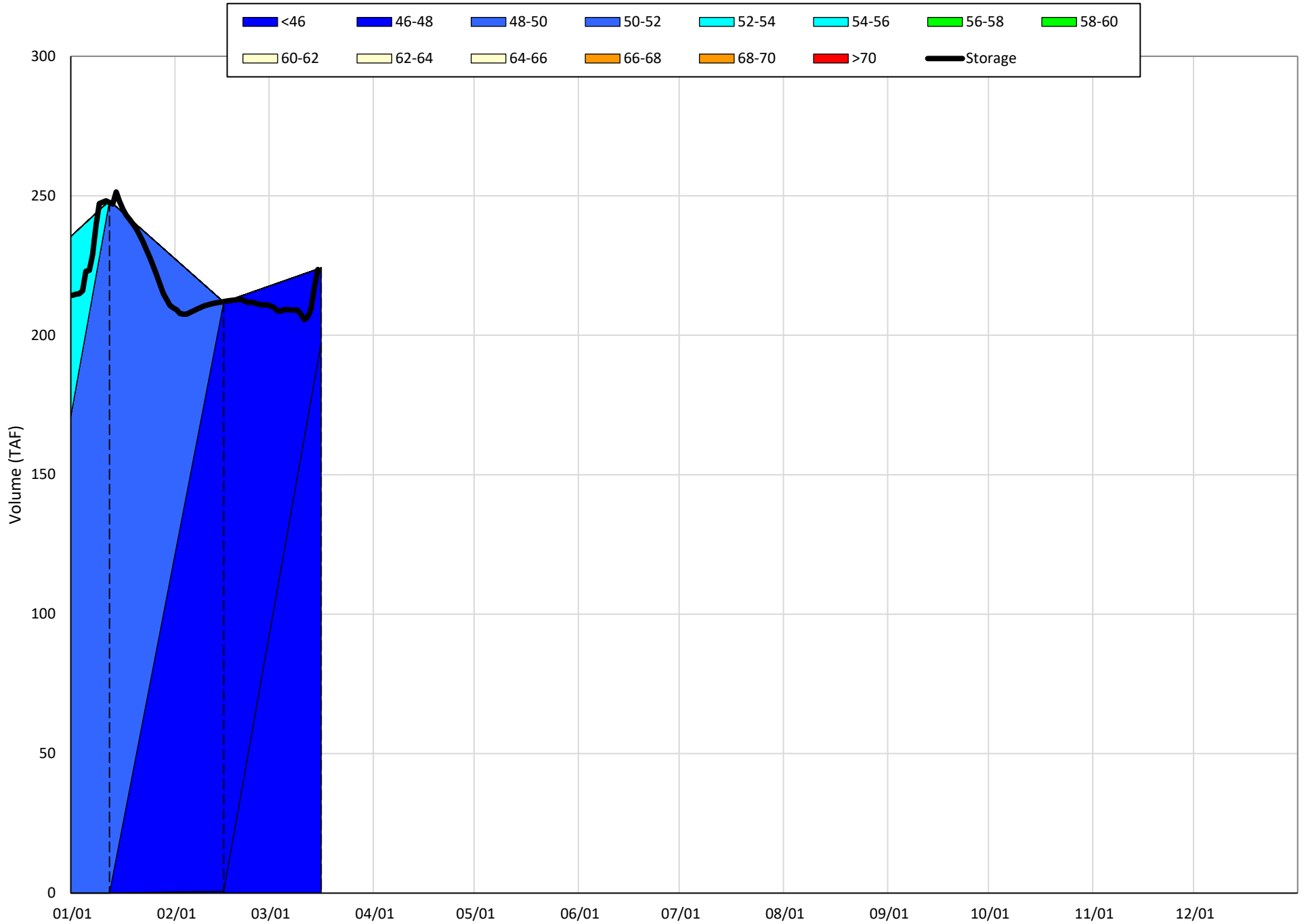
(Historic - Current) / Current

Whiskeytown Lake Isothermobaths & Cold Water Pool Statistics

2023

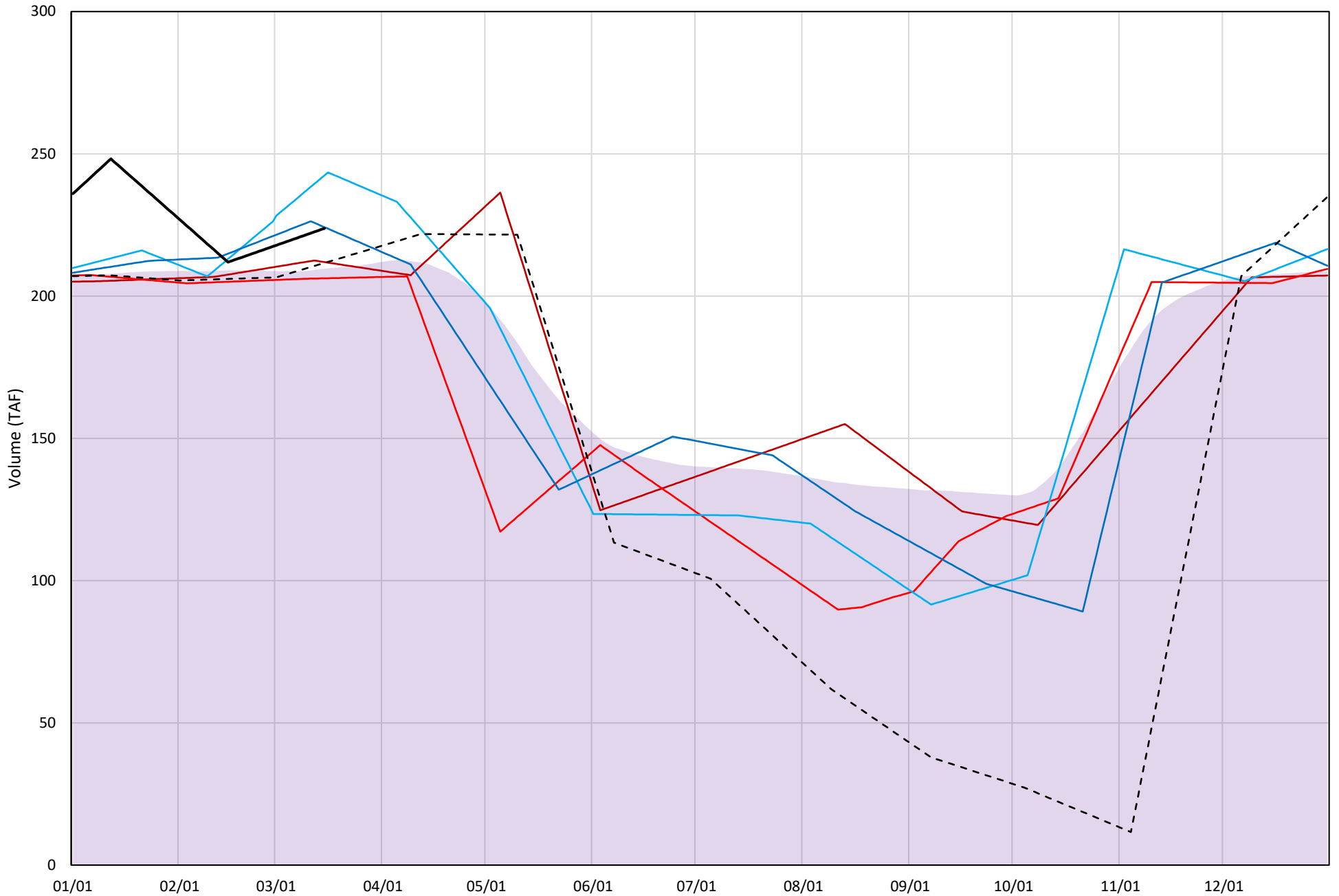
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| 27 | - Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$ |
| 28 | - Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$ - Percent Exceedances |
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| 30 | - Whiskeytown 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



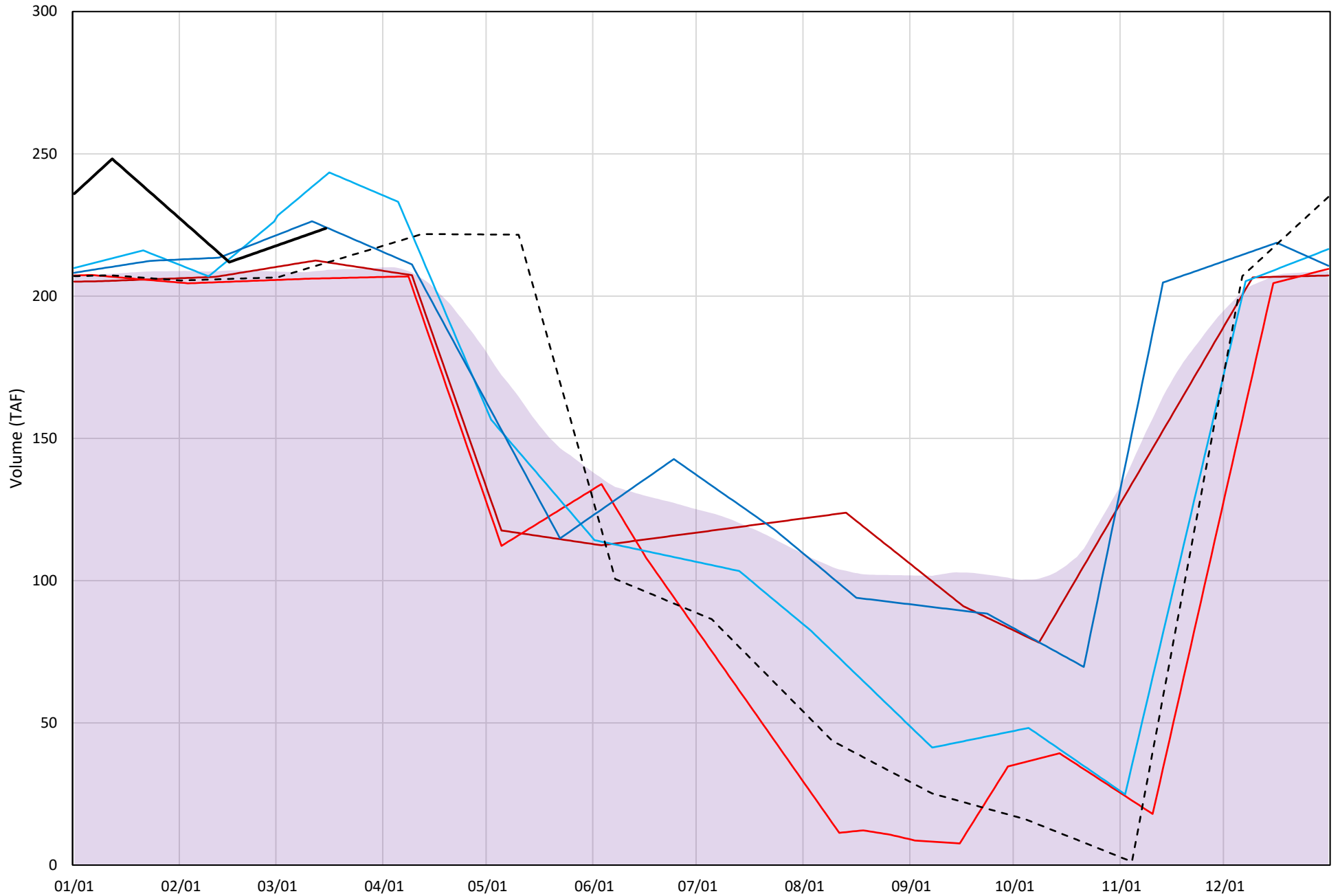
Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$

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



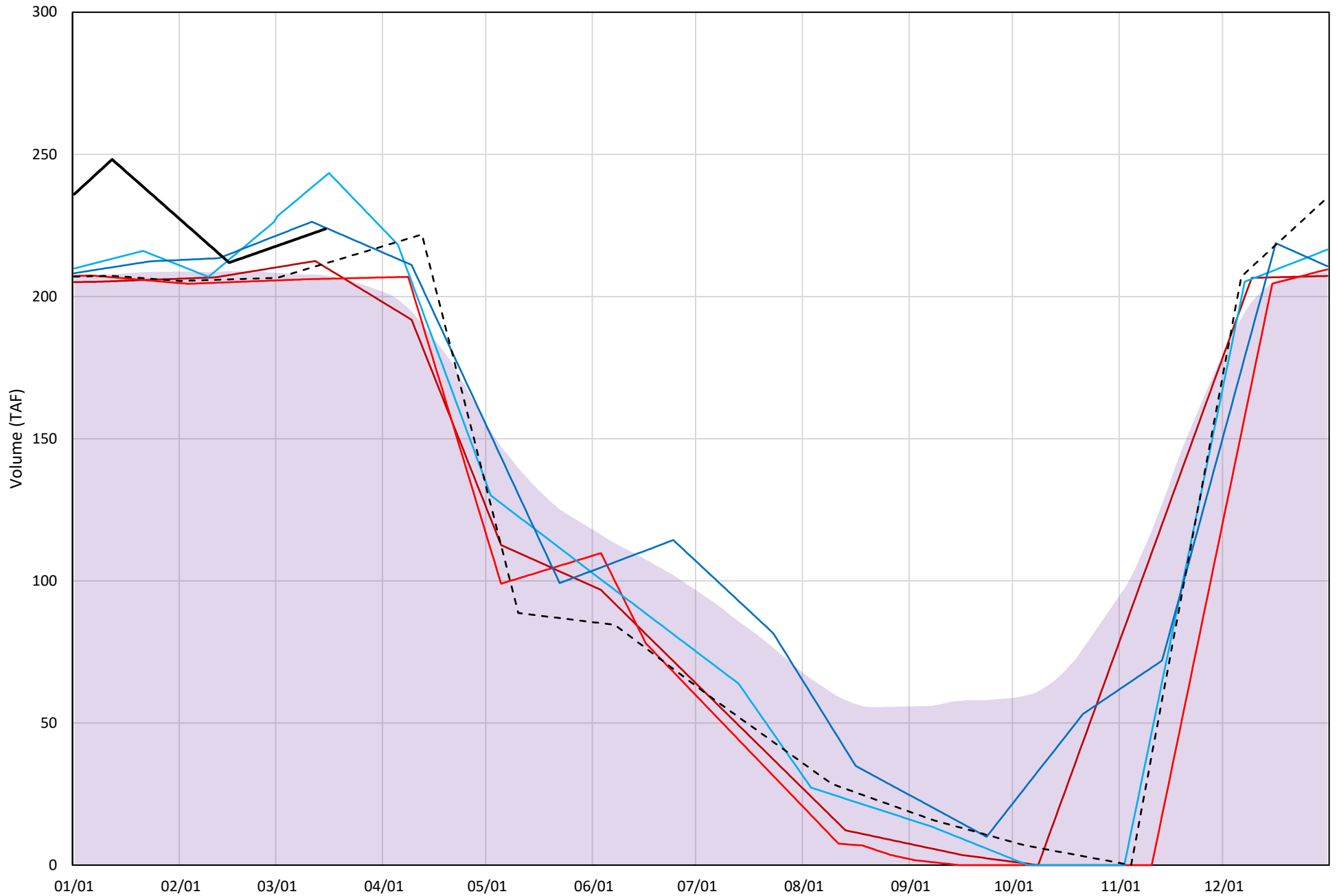
Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$

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

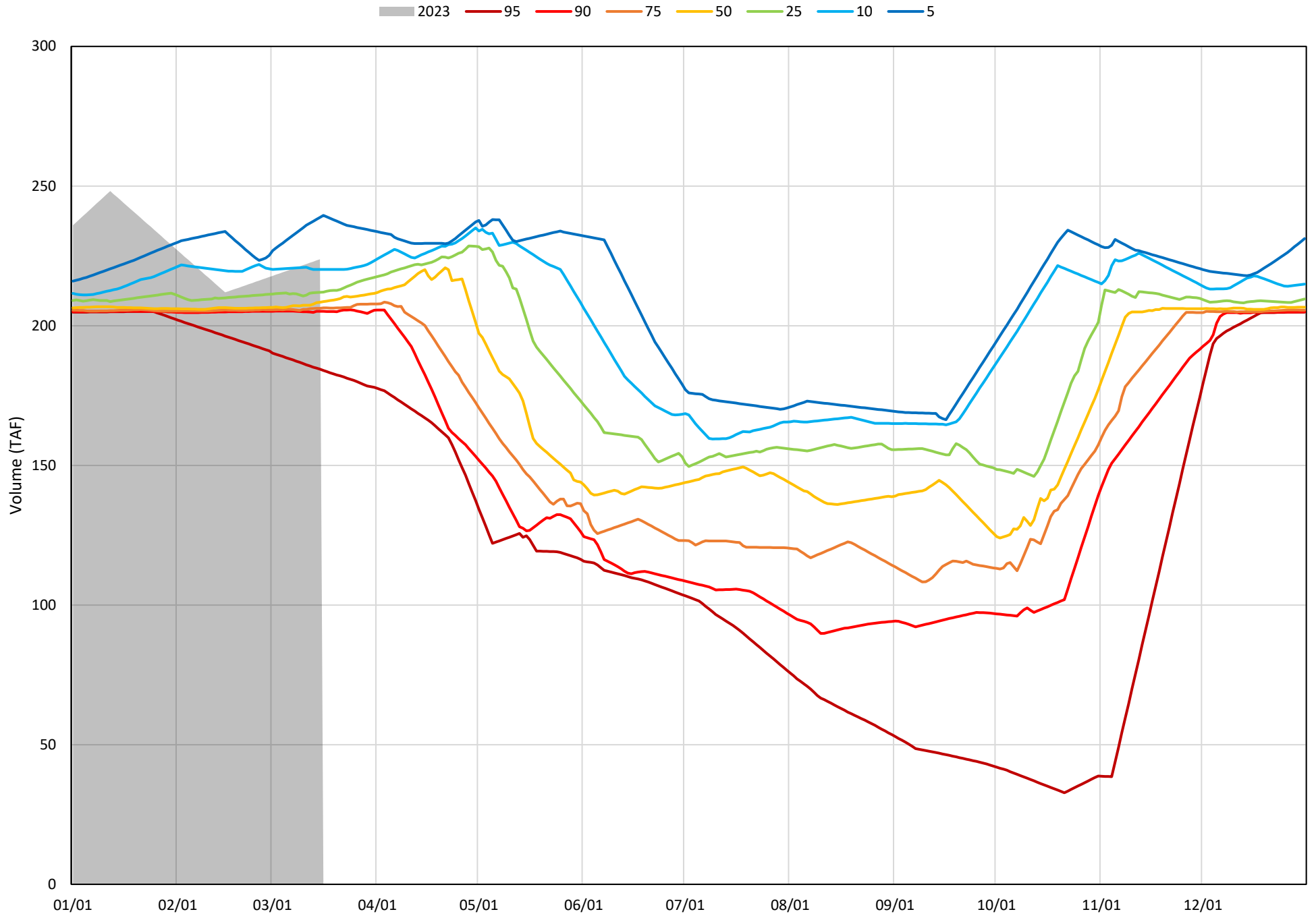


Whiskeytown Lake Cold Water Pool Volume $\leq 56^{\circ}\text{F}$

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

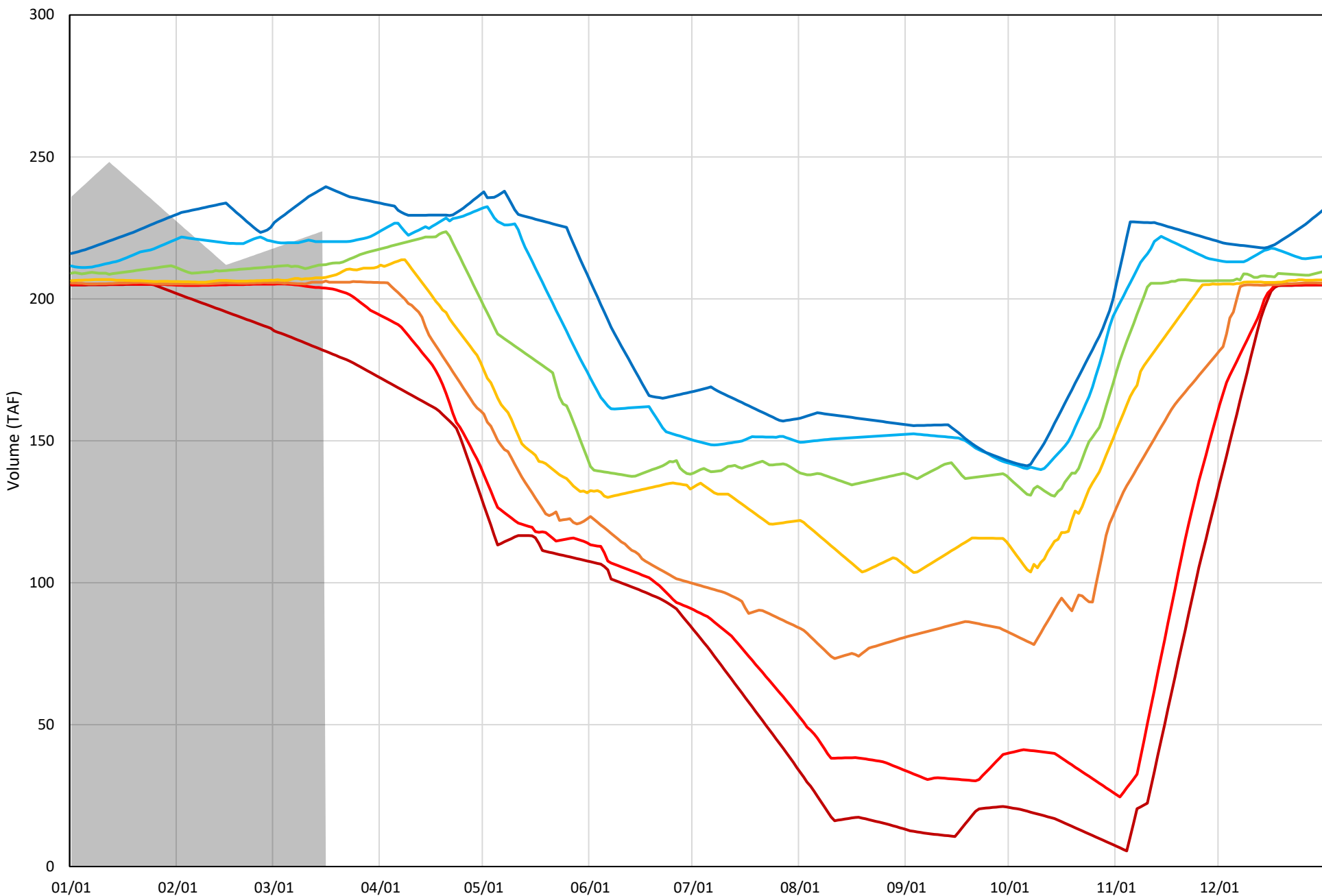


Whiskeytown Lake Cold Water Pool Volume $\leq 60^{\circ}\text{F}$ - Percent Exceedances (2000-2022)



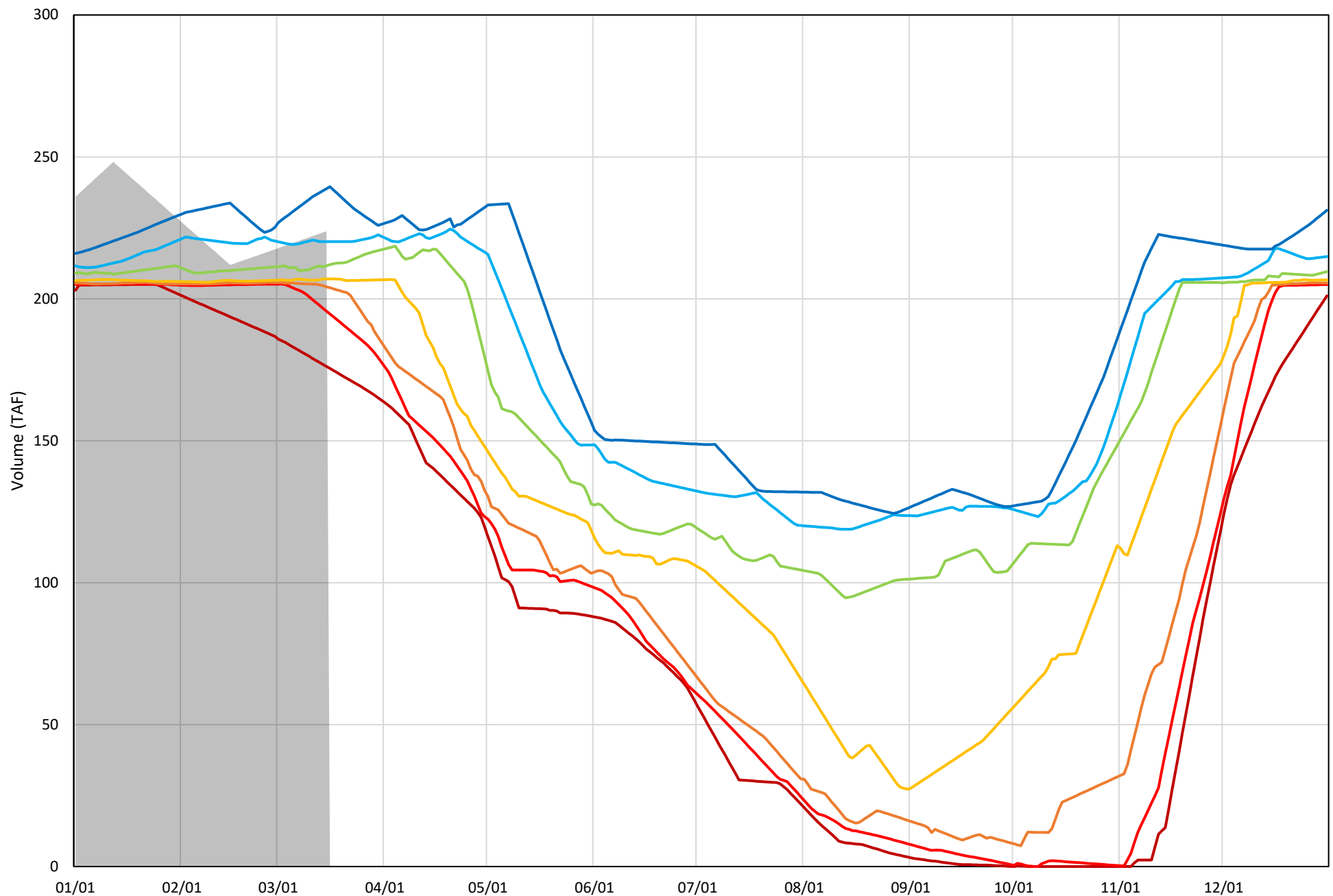
Whiskeytown Lake Cold Water Pool Volume $\leq 58^{\circ}\text{F}$ - Percent Exceedances (2000-2022)

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)

| Mar-16 2023 | Δ TAF | | | | % Δ | | | |
|----------------|-------|-------|-------|-----------|-------|-------|-------|-----------|
| | ≤60° | ≤58° | ≤56° | Abs. Avg. | ≤60° | ≤58° | ≤56° | Abs. Avg. |
| 2000 | -17.9 | -17.9 | -22.2 | 19.3 | -8.0 | -8.0 | -9.9 | 8.6 |
| 2001 | -13.0 | -16.6 | -26.3 | 18.6 | -5.8 | -7.4 | -11.8 | 8.3 |
| 2002 | -18.8 | -18.8 | -18.8 | 18.8 | -8.4 | -8.4 | -8.4 | 8.4 |
| 2003 | -16.5 | -16.5 | -16.5 | 16.5 | -7.4 | -7.4 | -7.4 | 7.4 |
| 2004 | -15.4 | -20.7 | -29.3 | 21.8 | -6.9 | -9.2 | -13.1 | 9.7 |
| 2005 | -15.0 | -15.0 | -15.0 | 15.0 | -6.7 | -6.7 | -6.7 | 6.7 |
| 2006 | -17.9 | -17.9 | -17.9 | 17.9 | -8.0 | -8.0 | -8.0 | 8.0 |
| 2007 | -16.4 | -16.4 | -19.0 | 17.3 | -7.3 | -7.3 | -8.5 | 7.7 |
| 2008 | -13.2 | -13.2 | -13.2 | 13.2 | -5.9 | -5.9 | -5.9 | 5.9 |
| 2009 | -11.3 | -11.3 | -11.3 | 11.3 | -5.0 | -5.0 | -5.0 | 5.0 |
| 2010 | -11.6 | -11.6 | -11.6 | 11.6 | -5.2 | -5.2 | -5.2 | 5.2 |
| 2011 | -9.8 | -9.8 | -9.8 | 9.8 | -4.4 | -4.4 | -4.4 | 4.4 |
| 2012 | -44.5 | -47.1 | -52.2 | 47.9 | -19.9 | -21.0 | -23.3 | 21.4 |
| 2013 | -18.5 | -18.5 | -19.5 | 18.8 | -8.2 | -8.2 | -8.7 | 8.4 |
| 2014 | -11.9 | -11.9 | -13.5 | 12.4 | -5.3 | -5.3 | -6.0 | 5.5 |
| 2015 | -17.6 | -17.6 | -17.6 | 17.6 | -7.8 | -7.8 | -7.8 | 7.8 |
| 2016 | 18.6 | 18.6 | 18.6 | 18.6 | 8.3 | 8.3 | 8.3 | 8.3 |
| 2017 | -13.9 | -13.9 | -13.9 | 13.9 | -6.2 | -6.2 | -6.2 | 6.2 |
| 2018 | -17.3 | -17.3 | -17.3 | 17.3 | -7.7 | -7.7 | -7.7 | 7.7 |
| 2019 | 0.4 | 0.4 | 0.4 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 |
| 2020 | -16.2 | -16.2 | -22.6 | 18.4 | -7.3 | -7.3 | -10.1 | 8.2 |
| 2021 | -16.8 | -16.8 | -16.8 | 16.8 | -7.5 | -7.5 | -7.5 | 7.5 |
| 2022 | -12.1 | -12.1 | -12.1 | 12.1 | -5.4 | -5.4 | -5.4 | 5.4 |
| 2023 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

}

Historic - Current

}

(Historic - Current) / Current