

# Appendix H1a2

## Sacramento Water Allocation Model Results for Revised Proposed Plan Amendments

---

### H1a2.1 Introduction

This appendix summarizes results from the Sacramento Water Allocation Model (SacWAM) for model scenarios that represent changes in hydrology and water supply that could occur as a result of the revised proposed Plan amendments described in Chapter 13, *Revised Proposed Plan Amendments*. Model scenarios presented in this appendix were built upon similar scenarios documented and analyzed in the *2023 Draft Staff Report/Substitute Environmental Document in Support of Potential Updates to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary for the Sacramento River and its Tributaries, Delta Eastside Tributaries, and Delta* (2023 Draft Staff Report), and reflect subsequent model updates and a new scenario described in Appendix H1a, *Sacramento Water Allocation Model Methods*.

New modeling to represent the starting point for the regulatory pathway is represented by the 55% unimpaired flow (UF) with water supply adjustments (WSAs) scenario, labeled “55 w/WSAs” in the summary of results that follows. Revised modeling to represent the voluntary agreement pathway is represented by the Voluntary Agreement scenario, labeled “VA” in the summary of results that follows. Additionally, results are presented for the baseline scenario, labeled “Baseline,” used throughout the Staff Report to represent hydrological and water supply conditions associated with the project baseline described in Chapter 6.2.1, *Baseline Conditions*, and Chapter 7.1.5.2, *Baseline, Evaluation Approach, and Modeling Tools*. Model results are also presented for two additional relevant points of comparison, the 2008-2009 Biological Opinions and the 2019 Biological Opinions, labeled “2008-2009 BiOps,” and “2019 BiOps,” respectively, in the summary of results that follows. Earlier modeling of the 2008-2009 Biological Opinions scenario was used as a point of reference for evaluating potential biological benefits of changes in hydrology in the *Scientific Basis Report in Support of Possible New and Modified Requirements for Inflows from the Sacramento River and Its Tributaries and Eastside Tributaries to the Delta, Delta Outflows, Cold Water Habitat, and Interior Delta Flows* (^SWRCB 2017) and *Scientific Basis Report Supplement in Support of proposed Voluntary Agreements for the Sacramento River, Delta, and Tributaries Update to the San Francisco Bay/Sacramento-San Joaquin Delta Water Quality Control Plan* (Appendix G2). The 2019 Biological Opinions scenario is the base modeling scenario on which the Voluntary Agreement scenario is built (see Appendix G3a) and is included here to allow the reader to evaluate the incremental effect of the VA relative to its base scenario.

In addition to the 55% UF with WSAs scenario, the regulatory pathway is represented by the range of effects analyzed for the 45, 55, and 65 scenarios in the 2023 Draft Staff Report and Chapter 13. Model results for updated unimpaired flow scenarios are presented in Appendix H1a3, *Sacramento Water Allocation Model Results for Updated Unimpaired Flow Scenarios*. Additionally, because a proposed new objective incorporating the San Joaquin River Inflow to Export (I:E) constraint was not retained in the revised proposed Plan amendments (see Chapter 13.3, *Revised Proposed Plan*

*Amendments*), model results evaluating the effects of removing that constraint are provided. Appendix H1a4, *Sacramento Water Allocation Model Results for CVP Export Constraint Sensitivity Analysis* provides results for scenarios in which the State Water Project (SWP) continues to operate to the I:E requirement but the Central Valley Project (CVP) does not. Appendix H1a5, *Sacramento Water Allocation Model Results for Export Constraint Sensitivity Analysis* provides results for scenarios in which neither the SWP nor CVP continues to operate to the I:E requirement.

Please refer to Chapter 6 and Appendix A1 for discussions of the approach to modeling baseline and percent unimpaired flow scenarios. Please refer to Chapter 9, Chapter 13.4.2, and Appendix G3a for discussions of the modeling approach to the 2008-2009 and 2019 Biological Opinions and Voluntary Agreement scenarios. Please refer to Appendix H1a for a discussion of model updates since the 2023 Draft Staff Report and to Chapter 13.4.2 and Appendix H1a for a description of model assumptions for the 55% UF with WSAs scenario.

All results presented in this appendix were produced using the model version SacWAM\_2025.08.28 using historical hydrology for the period of record of water years 1922 through 2021. Because the “Current Accounts” year of 1922 is identical for all years within a given version of SacWAM, results are reported for water years 1923 through 2021.

## H1a2.2 Streamflows

Simulated streamflow data are presented for each location where new SWRCB instream flow requirements were added to the model and for other locations that may be of interest along the Sacramento River. For each location, a monthly boxplot is presented followed by tables of cumulative distributions for each scenario and results summarized by water year type.

## H1a2.2.1 American River below Folsom Reservoir (SWRCB Folsom)

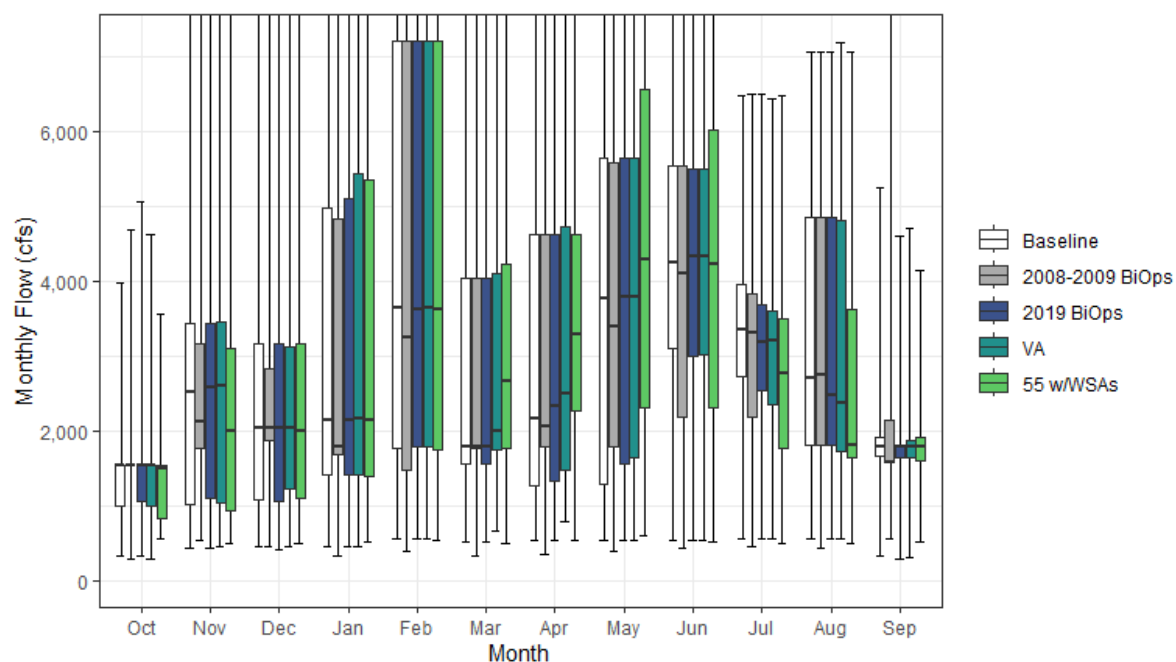


Figure H1a2-1. American River Streamflow below Folsom Reservoir Monthly Boxplot (cfs)

**Table H1a2-1. Cumulative Distribution of Monthly Flow (cfs) — American River below Folsom Reservoir (SWRCB Folsom)**

|                        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 317   | 426    | 461    | 461    | 563    | 524    | 534    | 538    | 544    | 559   | 549   | 319   | 477          |
| 10%                    | 760   | 690    | 672    | 626    | 1,374  | 1,080  | 986    | 994    | 1,050  | 1,600 | 1,572 | 1,532 | 1,128        |
| 25%                    | 1,000 | 1,017  | 1,069  | 1,411  | 1,755  | 1,563  | 1,257  | 1,294  | 3,094  | 2,720 | 1,798 | 1,660 | 1,469        |
| 50%                    | 1,539 | 2,510  | 2,031  | 2,132  | 3,633  | 1,780  | 2,159  | 3,774  | 4,246  | 3,354 | 2,694 | 1,791 | 2,036        |
| 75%                    | 1,541 | 3,424  | 3,170  | 4,979  | 7,203  | 4,030  | 4,619  | 5,640  | 5,533  | 3,948 | 4,843 | 1,914 | 3,296        |
| 90%                    | 1,776 | 4,561  | 8,885  | 9,650  | 11,266 | 8,402  | 6,938  | 8,666  | 7,900  | 4,761 | 5,459 | 2,660 | 4,306        |
| 100%                   | 3,978 | 16,784 | 20,728 | 26,148 | 31,620 | 14,563 | 15,497 | 13,635 | 14,215 | 6,483 | 7,059 | 5,236 | 6,983        |
| Mean                   | 1,422 | 2,751  | 3,483  | 4,077  | 5,195  | 3,424  | 3,280  | 4,136  | 4,547  | 3,257 | 3,142 | 1,972 | 2,448        |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 276   | 527    | 461    | 322    | 395    | 323    | 348    | 384    | 427    | 458   | 437   | 551   | 396          |
| 10%                    | 1,071 | 1,000  | 808    | 827    | 1,193  | 1,326  | 1,472  | 1,406  | 1,491  | 1,469 | 1,457 | 1,487 | 1,144        |
| 25%                    | 1,526 | 1,759  | 1,877  | 1,683  | 1,473  | 1,760  | 1,782  | 1,790  | 2,187  | 2,187 | 1,798 | 1,574 | 1,400        |
| 50%                    | 1,540 | 2,125  | 2,030  | 1,794  | 3,247  | 1,781  | 2,066  | 3,384  | 4,103  | 3,304 | 2,742 | 1,576 | 1,999        |
| 75%                    | 1,541 | 3,171  | 2,825  | 4,838  | 7,203  | 4,030  | 4,621  | 5,571  | 5,531  | 3,829 | 4,843 | 2,143 | 3,532        |
| 90%                    | 1,761 | 4,108  | 8,885  | 9,650  | 11,266 | 8,403  | 6,935  | 8,666  | 7,900  | 4,486 | 5,456 | 3,876 | 4,308        |
| 100%                   | 4,686 | 16,999 | 19,016 | 26,148 | 31,620 | 14,558 | 15,497 | 13,635 | 14,215 | 6,487 | 7,058 | 9,274 | 7,007        |
| Mean                   | 1,552 | 2,755  | 3,466  | 4,077  | 4,999  | 3,424  | 3,416  | 4,177  | 4,442  | 3,102 | 3,127 | 2,185 | 2,451        |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 317   | 426    | 414    | 461    | 563    | 524    | 534    | 538    | 544    | 559   | 549   | 284   | 480          |
| 10%                    | 761   | 690    | 672    | 626    | 1,374  | 1,081  | 987    | 995    | 1,188  | 1,552 | 1,587 | 1,442 | 1,162        |
| 25%                    | 1,058 | 1,106  | 1,049  | 1,410  | 1,776  | 1,563  | 1,318  | 1,552  | 2,994  | 2,538 | 1,798 | 1,638 | 1,413        |
| 50%                    | 1,539 | 2,583  | 2,031  | 2,132  | 3,623  | 1,780  | 2,318  | 3,778  | 4,321  | 3,191 | 2,466 | 1,791 | 2,043        |
| 75%                    | 1,541 | 3,443  | 3,170  | 5,095  | 7,203  | 4,028  | 4,617  | 5,642  | 5,494  | 3,683 | 4,843 | 1,811 | 3,306        |
| 90%                    | 1,795 | 4,649  | 8,885  | 9,650  | 11,266 | 8,402  | 6,936  | 8,666  | 7,900  | 4,233 | 5,456 | 2,463 | 4,271        |
| 100%                   | 5,066 | 16,783 | 20,813 | 26,148 | 31,621 | 14,563 | 15,493 | 13,635 | 14,215 | 6,487 | 7,060 | 4,593 | 7,033        |
| Mean                   | 1,434 | 2,830  | 3,486  | 4,086  | 5,187  | 3,426  | 3,322  | 4,298  | 4,533  | 3,065 | 3,126 | 1,891 | 2,448        |
| <b>VA</b>              |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 276   | 449    | 460    | 461    | 563    | 662    | 786    | 538    | 544    | 559   | 549   | 300   | 492          |
| 10%                    | 760   | 699    | 677    | 715    | 1,403  | 1,243  | 1,208  | 1,051  | 1,188  | 1,583 | 1,547 | 1,527 | 1,167        |
| 25%                    | 1,001 | 1,040  | 1,216  | 1,420  | 1,782  | 1,736  | 1,479  | 1,638  | 3,018  | 2,348 | 1,733 | 1,637 | 1,412        |
| 50%                    | 1,539 | 2,608  | 2,031  | 2,156  | 3,635  | 1,994  | 2,487  | 3,778  | 4,323  | 3,199 | 2,363 | 1,790 | 2,032        |
| 75%                    | 1,541 | 3,455  | 3,124  | 5,442  | 7,204  | 4,109  | 4,723  | 5,643  | 5,496  | 3,602 | 4,806 | 1,862 | 3,293        |
| 90%                    | 1,757 | 4,695  | 8,809  | 9,653  | 11,267 | 8,402  | 6,939  | 8,667  | 7,902  | 4,162 | 5,524 | 2,467 | 4,245        |
| 100%                   | 4,615 | 16,878 | 20,791 | 26,151 | 31,622 | 14,563 | 15,497 | 13,637 | 14,217 | 6,444 | 7,193 | 4,714 | 6,986        |
| Mean                   | 1,406 | 2,797  | 3,442  | 4,123  | 5,213  | 3,522  | 3,426  | 4,351  | 4,551  | 2,992 | 3,079 | 1,935 | 2,457        |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 550   | 497    | 485    | 522    | 531    | 497    | 544    | 608    | 504    | 504   | 504   | 513   | 423          |
| 10%                    | 673   | 660    | 744    | 788    | 1,391  | 1,331  | 1,509  | 1,319  | 1,087  | 1,551 | 1,332 | 1,438 | 1,109        |
| 25%                    | 829   | 936    | 1,101  | 1,392  | 1,750  | 1,771  | 2,265  | 2,315  | 2,300  | 1,765 | 1,640 | 1,600 | 1,425        |
| 50%                    | 1,503 | 2,001  | 1,999  | 2,131  | 3,629  | 2,664  | 3,288  | 4,283  | 4,215  | 2,774 | 1,801 | 1,791 | 2,091        |
| 75%                    | 1,540 | 3,096  | 3,160  | 5,352  | 7,203  | 4,225  | 4,617  | 6,557  | 6,009  | 3,502 | 3,610 | 1,915 | 3,306        |
| 90%                    | 1,792 | 4,100  | 8,873  | 9,649  | 11,266 | 8,402  | 6,925  | 8,987  | 8,233  | 4,307 | 5,389 | 2,979 | 4,267        |
| 100%                   | 3,556 | 13,935 | 20,158 | 26,148 | 31,620 | 14,563 | 15,497 | 13,631 | 14,215 | 6,483 | 7,059 | 4,140 | 6,997        |
| Mean                   | 1,371 | 2,431  | 3,418  | 4,097  | 5,227  | 3,698  | 3,917  | 4,678  | 4,584  | 2,816 | 2,683 | 1,892 | 2,455        |

**Table H1a2-2. Water Year Average of Monthly Flows (cfs) — American River below Folsom Reservoir (SWRCB Folsom)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,303 | 1,819 | 1,379 | 1,045 | 1,350 | 1,043 | 1,417 | 1,181 | 1,912 | 1,274 | 1,319 | 1,378 |
| D                      | 1,285 | 2,203 | 1,873 | 1,384 | 2,475 | 1,919 | 1,605 | 2,008 | 3,454 | 3,068 | 2,363 | 1,686 |
| BN                     | 1,382 | 2,526 | 2,441 | 2,223 | 4,049 | 2,397 | 2,730 | 3,494 | 3,903 | 3,804 | 2,838 | 1,892 |
| AN                     | 1,291 | 3,593 | 3,259 | 4,960 | 6,339 | 4,779 | 3,163 | 4,627 | 4,357 | 3,642 | 3,316 | 2,897 |
| W                      | 1,665 | 3,457 | 6,536 | 8,490 | 9,508 | 5,904 | 5,898 | 7,484 | 7,237 | 3,954 | 4,809 | 2,179 |
| All                    | 1,422 | 2,751 | 3,483 | 4,077 | 5,195 | 3,424 | 3,280 | 4,136 | 4,547 | 3,257 | 3,142 | 1,972 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,517 | 1,981 | 1,630 | 1,391 | 1,229 | 1,064 | 1,323 | 1,194 | 1,585 | 1,314 | 1,288 | 1,345 |
| D                      | 1,415 | 2,041 | 2,007 | 1,413 | 1,944 | 1,902 | 2,094 | 2,320 | 3,130 | 2,730 | 2,416 | 1,629 |
| BN                     | 1,430 | 2,553 | 2,476 | 2,388 | 3,829 | 2,433 | 2,865 | 3,393 | 4,000 | 3,433 | 2,692 | 1,652 |
| AN                     | 1,401 | 3,493 | 3,215 | 4,774 | 6,208 | 4,730 | 3,235 | 4,556 | 4,356 | 3,602 | 3,329 | 2,536 |
| W                      | 1,809 | 3,524 | 6,242 | 8,254 | 9,507 | 5,904 | 5,923 | 7,476 | 7,244 | 3,920 | 4,823 | 3,236 |
| All                    | 1,552 | 2,755 | 3,466 | 4,077 | 4,999 | 3,424 | 3,416 | 4,177 | 4,442 | 3,102 | 3,127 | 2,185 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,298 | 1,873 | 1,340 | 1,018 | 1,350 | 1,042 | 1,558 | 1,287 | 1,743 | 1,195 | 1,425 | 1,327 |
| D                      | 1,286 | 2,201 | 1,874 | 1,414 | 2,465 | 1,929 | 1,689 | 2,412 | 3,442 | 2,708 | 2,177 | 1,643 |
| BN                     | 1,425 | 2,648 | 2,462 | 2,221 | 4,019 | 2,397 | 2,734 | 3,733 | 3,942 | 3,371 | 2,869 | 1,767 |
| AN                     | 1,274 | 3,605 | 3,259 | 5,020 | 6,339 | 4,779 | 3,163 | 4,704 | 4,327 | 3,678 | 3,269 | 2,701 |
| W                      | 1,686 | 3,608 | 6,553 | 8,489 | 9,508 | 5,904 | 5,898 | 7,484 | 7,278 | 3,885 | 4,835 | 2,128 |
| All                    | 1,434 | 2,830 | 3,486 | 4,086 | 5,187 | 3,426 | 3,322 | 4,298 | 4,533 | 3,065 | 3,126 | 1,891 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,283 | 1,829 | 1,283 | 1,056 | 1,475 | 1,205 | 1,747 | 1,302 | 1,785 | 1,312 | 1,340 | 1,341 |
| D                      | 1,288 | 2,259 | 1,887 | 1,414 | 2,489 | 2,136 | 1,903 | 2,628 | 3,446 | 2,518 | 2,053 | 1,638 |
| BN                     | 1,364 | 2,643 | 2,380 | 2,326 | 4,020 | 2,474 | 2,814 | 3,734 | 3,960 | 3,317 | 2,778 | 1,798 |
| AN                     | 1,269 | 3,590 | 3,229 | 5,023 | 6,339 | 4,854 | 3,240 | 4,706 | 4,381 | 3,436 | 3,252 | 3,000 |
| W                      | 1,639 | 3,488 | 6,493 | 8,524 | 9,509 | 5,905 | 5,899 | 7,491 | 7,280 | 3,852 | 4,882 | 2,130 |
| All                    | 1,406 | 2,797 | 3,442 | 4,123 | 5,213 | 3,522 | 3,426 | 4,351 | 4,551 | 2,992 | 3,079 | 1,935 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,201 | 1,511 | 1,247 | 1,065 | 1,413 | 1,215 | 1,513 | 1,764 | 1,932 | 1,391 | 1,134 | 1,153 |
| D                      | 1,227 | 1,886 | 1,880 | 1,486 | 2,548 | 2,233 | 2,490 | 2,913 | 2,830 | 2,079 | 2,024 | 1,615 |
| BN                     | 1,419 | 2,262 | 2,349 | 2,228 | 4,100 | 2,870 | 3,766 | 4,191 | 3,903 | 3,174 | 2,298 | 1,822 |
| AN                     | 1,249 | 2,751 | 3,170 | 4,988 | 6,323 | 4,860 | 3,895 | 5,045 | 5,037 | 3,338 | 2,913 | 2,373 |
| W                      | 1,585 | 3,300 | 6,479 | 8,456 | 9,500 | 6,156 | 6,351 | 7,688 | 7,535 | 3,680 | 4,144 | 2,341 |
| All                    | 1,371 | 2,431 | 3,418 | 4,097 | 5,227 | 3,698 | 3,917 | 4,678 | 4,584 | 2,816 | 2,683 | 1,892 |

## H1a2.2.2 American River above Confluence with Sacramento River (SWRCB American River)

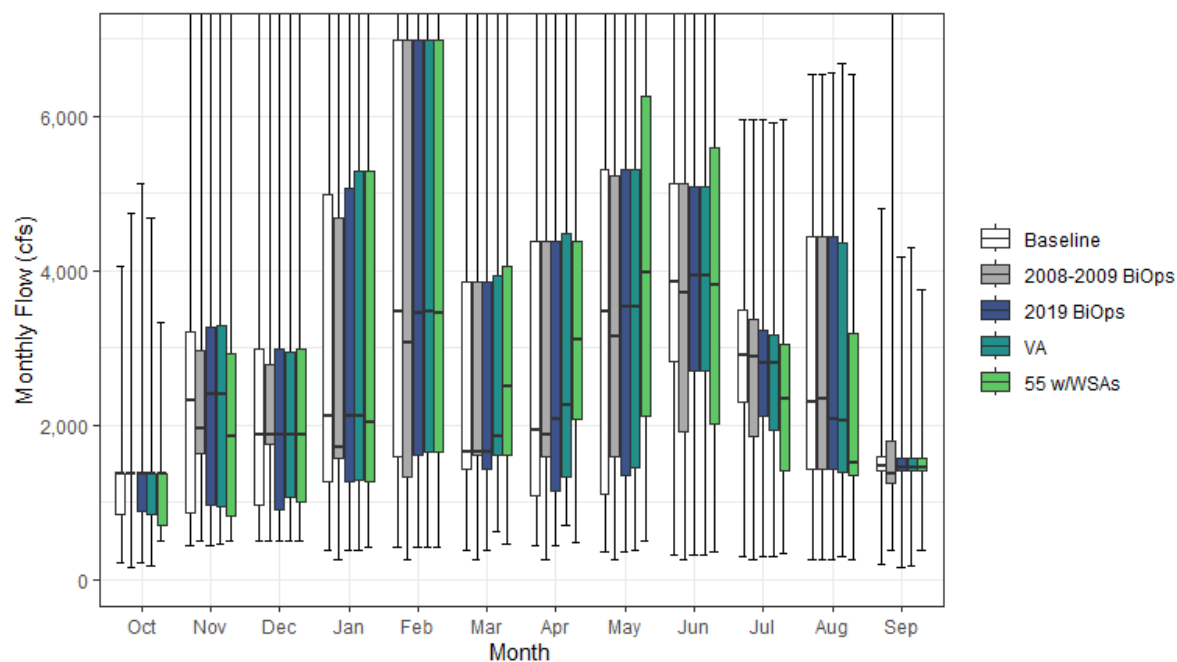


Figure H1a2-2. American River Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

**Table H1a2-3. Cumulative Distribution of Monthly Flow (cfs) — American River above Confluence with Sacramento River (SWRCB American River)**

|                        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 224   | 431    | 500    | 386    | 416    | 383    | 430    | 353    | 312    | 297   | 252   | 190   | 367          |
| 10%                    | 583   | 567    | 596    | 539    | 1,277  | 931    | 812    | 806    | 818    | 1,258 | 1,262 | 1,275 | 983          |
| 25%                    | 839   | 865    | 961    | 1,277  | 1,597  | 1,426  | 1,094  | 1,099  | 2,825  | 2,290 | 1,434 | 1,415 | 1,320        |
| 50%                    | 1,365 | 2,308  | 1,865  | 2,111  | 3,462  | 1,651  | 1,930  | 3,469  | 3,855  | 2,908 | 2,302 | 1,464 | 1,866        |
| 75%                    | 1,366 | 3,214  | 2,993  | 4,993  | 6,982  | 3,849  | 4,382  | 5,302  | 5,119  | 3,487 | 4,435 | 1,597 | 3,117        |
| 90%                    | 1,608 | 4,368  | 8,777  | 9,418  | 11,171 | 8,214  | 6,671  | 8,275  | 7,446  | 4,278 | 4,992 | 2,347 | 4,109        |
| 100%                   | 4,049 | 16,514 | 20,399 | 26,156 | 31,483 | 14,478 | 15,081 | 13,158 | 13,649 | 5,956 | 6,550 | 4,811 | 6,784        |
| Mean                   | 1,250 | 2,585  | 3,348  | 3,971  | 5,079  | 3,279  | 3,086  | 3,867  | 4,190  | 2,833 | 2,758 | 1,683 | 2,282        |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 155   | 500    | 500    | 250    | 251    | 250    | 250    | 250    | 250    | 250   | 250   | 375   | 286          |
| 10%                    | 892   | 849    | 713    | 767    | 1,088  | 1,169  | 1,274  | 1,199  | 1,245  | 1,083 | 1,168 | 1,243 | 1,002        |
| 25%                    | 1,365 | 1,624  | 1,755  | 1,572  | 1,325  | 1,617  | 1,595  | 1,589  | 1,906  | 1,850 | 1,426 | 1,245 | 1,249        |
| 50%                    | 1,366 | 1,954  | 1,865  | 1,702  | 3,071  | 1,653  | 1,872  | 3,156  | 3,713  | 2,879 | 2,347 | 1,359 | 1,824        |
| 75%                    | 1,367 | 2,957  | 2,787  | 4,682  | 6,982  | 3,849  | 4,384  | 5,235  | 5,117  | 3,370 | 4,435 | 1,798 | 3,341        |
| 90%                    | 1,557 | 3,892  | 8,775  | 9,418  | 11,171 | 8,215  | 6,667  | 8,275  | 7,446  | 4,011 | 4,989 | 3,485 | 4,115        |
| 100%                   | 4,744 | 16,726 | 18,716 | 26,156 | 31,483 | 14,474 | 15,081 | 13,157 | 13,649 | 5,960 | 6,550 | 8,743 | 6,808        |
| Mean                   | 1,377 | 2,589  | 3,331  | 3,972  | 4,885  | 3,280  | 3,220  | 3,907  | 4,088  | 2,682 | 2,743 | 1,890 | 2,284        |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 224   | 431    | 500    | 386    | 416    | 383    | 430    | 353    | 312    | 298   | 251   | 156   | 372          |
| 10%                    | 584   | 567    | 596    | 539    | 1,277  | 932    | 813    | 808    | 953    | 1,155 | 1,259 | 1,198 | 1,015        |
| 25%                    | 892   | 973    | 900    | 1,276  | 1,616  | 1,426  | 1,154  | 1,355  | 2,704  | 2,114 | 1,426 | 1,403 | 1,266        |
| 50%                    | 1,365 | 2,401  | 1,865  | 2,108  | 3,444  | 1,651  | 2,085  | 3,526  | 3,928  | 2,803 | 2,083 | 1,456 | 1,885        |
| 75%                    | 1,366 | 3,262  | 2,991  | 5,058  | 6,982  | 3,847  | 4,380  | 5,304  | 5,080  | 3,227 | 4,435 | 1,570 | 3,127        |
| 90%                    | 1,626 | 4,445  | 8,775  | 9,418  | 11,171 | 8,214  | 6,668  | 8,275  | 7,446  | 3,765 | 4,989 | 2,120 | 4,079        |
| 100%                   | 5,118 | 16,513 | 20,482 | 26,156 | 31,483 | 14,478 | 15,077 | 13,158 | 13,649 | 5,960 | 6,551 | 4,185 | 6,834        |
| Mean                   | 1,262 | 2,663  | 3,351  | 3,980  | 5,071  | 3,281  | 3,127  | 4,026  | 4,177  | 2,646 | 2,742 | 1,604 | 2,282        |
| <b>VA</b>              |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 184   | 454    | 500    | 387    | 417    | 613    | 699    | 381    | 313    | 297   | 295   | 174   | 389          |
| 10%                    | 584   | 583    | 628    | 578    | 1,279  | 1,146  | 1,060  | 865    | 954    | 1,165 | 1,187 | 1,262 | 1,034        |
| 25%                    | 845   | 936    | 1,066  | 1,278  | 1,647  | 1,619  | 1,320  | 1,439  | 2,705  | 1,928 | 1,393 | 1,405 | 1,258        |
| 50%                    | 1,366 | 2,405  | 1,866  | 2,112  | 3,464  | 1,853  | 2,248  | 3,527  | 3,931  | 2,805 | 2,053 | 1,457 | 1,866        |
| 75%                    | 1,368 | 3,290  | 2,947  | 5,290  | 6,983  | 3,930  | 4,488  | 5,306  | 5,084  | 3,165 | 4,357 | 1,573 | 3,115        |
| 90%                    | 1,609 | 4,492  | 8,701  | 9,422  | 11,173 | 8,215  | 6,672  | 8,277  | 7,448  | 3,696 | 5,056 | 2,116 | 4,054        |
| 100%                   | 4,675 | 16,607 | 20,460 | 26,160 | 31,485 | 14,480 | 15,082 | 13,160 | 13,651 | 5,918 | 6,683 | 4,303 | 6,788        |
| Mean                   | 1,235 | 2,630  | 3,308  | 4,018  | 5,098  | 3,384  | 3,237  | 4,088  | 4,195  | 2,575 | 2,698 | 1,648 | 2,292        |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 500   | 500    | 500    | 417    | 416    | 449    | 469    | 502    | 363    | 347   | 250   | 375   | 338          |
| 10%                    | 544   | 566    | 656    | 656    | 1,279  | 1,219  | 1,351  | 1,135  | 855    | 1,215 | 1,010 | 1,224 | 982          |
| 25%                    | 696   | 814    | 1,012  | 1,276  | 1,641  | 1,619  | 2,068  | 2,110  | 2,012  | 1,406 | 1,341 | 1,398 | 1,275        |
| 50%                    | 1,365 | 1,861  | 1,864  | 2,042  | 3,458  | 2,509  | 3,103  | 3,969  | 3,808  | 2,344 | 1,516 | 1,457 | 1,945        |
| 75%                    | 1,366 | 2,914  | 2,983  | 5,292  | 6,982  | 4,051  | 4,379  | 6,261  | 5,588  | 3,051 | 3,191 | 1,576 | 3,112        |
| 90%                    | 1,614 | 3,870  | 8,686  | 9,417  | 11,170 | 8,214  | 6,657  | 8,614  | 7,772  | 3,836 | 4,923 | 2,612 | 4,079        |
| 100%                   | 3,322 | 13,714 | 19,838 | 26,156 | 31,483 | 14,478 | 15,081 | 13,153 | 13,649 | 5,956 | 6,550 | 3,744 | 6,798        |
| Mean                   | 1,217 | 2,286  | 3,300  | 3,999  | 5,116  | 3,553  | 3,715  | 4,406  | 4,236  | 2,414 | 2,323 | 1,618 | 2,296        |

**Table H1a2-4. Water Year Average of Monthly Flows (cfs) — American River above Confluence with Sacramento River (SWRCB American River)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,123 | 1,661 | 1,259 | 923   | 1,250 | 919   | 1,238 | 982   | 1,631 | 958   | 1,012 | 1,143 |
| D                      | 1,116 | 2,039 | 1,763 | 1,263 | 2,350 | 1,778 | 1,434 | 1,794 | 3,142 | 2,647 | 2,015 | 1,445 |
| BN                     | 1,222 | 2,349 | 2,290 | 2,118 | 3,948 | 2,263 | 2,546 | 3,234 | 3,561 | 3,360 | 2,461 | 1,619 |
| AN                     | 1,125 | 3,425 | 3,119 | 4,915 | 6,243 | 4,621 | 2,961 | 4,340 | 3,998 | 3,189 | 2,913 | 2,552 |
| W                      | 1,485 | 3,293 | 6,386 | 8,378 | 9,372 | 5,746 | 5,677 | 7,138 | 6,797 | 3,494 | 4,359 | 1,837 |
| All                    | 1,250 | 2,585 | 3,348 | 3,971 | 5,079 | 3,279 | 3,086 | 3,867 | 4,190 | 2,833 | 2,758 | 1,683 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,331 | 1,820 | 1,506 | 1,266 | 1,130 | 939   | 1,146 | 994   | 1,315 | 996   | 983   | 1,112 |
| D                      | 1,246 | 1,880 | 1,895 | 1,292 | 1,826 | 1,761 | 1,914 | 2,101 | 2,823 | 2,317 | 2,067 | 1,390 |
| BN                     | 1,267 | 2,376 | 2,325 | 2,281 | 3,730 | 2,297 | 2,679 | 3,134 | 3,656 | 2,998 | 2,319 | 1,385 |
| AN                     | 1,229 | 3,325 | 3,076 | 4,732 | 6,113 | 4,572 | 3,032 | 4,271 | 3,997 | 3,150 | 2,926 | 2,200 |
| W                      | 1,626 | 3,360 | 6,096 | 8,146 | 9,372 | 5,746 | 5,702 | 7,130 | 6,804 | 3,461 | 4,373 | 2,866 |
| All                    | 1,377 | 2,589 | 3,331 | 3,972 | 4,885 | 3,280 | 3,220 | 3,907 | 4,088 | 2,682 | 2,743 | 1,890 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,118 | 1,714 | 1,220 | 897   | 1,250 | 918   | 1,374 | 1,084 | 1,468 | 883   | 1,115 | 1,094 |
| D                      | 1,117 | 2,037 | 1,764 | 1,293 | 2,340 | 1,788 | 1,516 | 2,191 | 3,130 | 2,296 | 1,834 | 1,404 |
| BN                     | 1,263 | 2,468 | 2,311 | 2,116 | 3,919 | 2,262 | 2,550 | 3,469 | 3,600 | 2,938 | 2,491 | 1,497 |
| AN                     | 1,108 | 3,438 | 3,119 | 4,975 | 6,243 | 4,620 | 2,961 | 4,416 | 3,968 | 3,224 | 2,867 | 2,361 |
| W                      | 1,506 | 3,442 | 6,402 | 8,377 | 9,372 | 5,746 | 5,677 | 7,138 | 6,837 | 3,427 | 4,384 | 1,787 |
| All                    | 1,262 | 2,663 | 3,351 | 3,980 | 5,071 | 3,281 | 3,127 | 4,026 | 4,177 | 2,646 | 2,742 | 1,604 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,104 | 1,670 | 1,165 | 936   | 1,374 | 1,090 | 1,572 | 1,116 | 1,509 | 994   | 1,036 | 1,109 |
| D                      | 1,120 | 2,093 | 1,777 | 1,295 | 2,365 | 2,012 | 1,751 | 2,434 | 3,134 | 2,111 | 1,714 | 1,400 |
| BN                     | 1,205 | 2,463 | 2,231 | 2,221 | 3,920 | 2,340 | 2,629 | 3,470 | 3,617 | 2,886 | 2,404 | 1,529 |
| AN                     | 1,105 | 3,423 | 3,090 | 4,979 | 6,244 | 4,696 | 3,038 | 4,418 | 4,022 | 2,988 | 2,853 | 2,653 |
| W                      | 1,461 | 3,325 | 6,343 | 8,413 | 9,374 | 5,749 | 5,678 | 7,146 | 6,840 | 3,395 | 4,431 | 1,790 |
| All                    | 1,235 | 2,630 | 3,308 | 4,018 | 5,098 | 3,384 | 3,237 | 4,088 | 4,195 | 2,575 | 2,698 | 1,648 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 1,046 | 1,378 | 1,153 | 961   | 1,329 | 1,102 | 1,347 | 1,576 | 1,686 | 1,119 | 877   | 961   |
| D                      | 1,083 | 1,745 | 1,793 | 1,378 | 2,433 | 2,091 | 2,305 | 2,697 | 2,545 | 1,701 | 1,705 | 1,397 |
| BN                     | 1,268 | 2,103 | 2,218 | 2,130 | 4,003 | 2,730 | 3,564 | 3,920 | 3,563 | 2,746 | 1,938 | 1,559 |
| AN                     | 1,095 | 2,613 | 3,049 | 4,944 | 6,227 | 4,700 | 3,681 | 4,751 | 4,666 | 2,893 | 2,521 | 2,050 |
| W                      | 1,424 | 3,151 | 6,336 | 8,347 | 9,364 | 5,995 | 6,122 | 7,339 | 7,090 | 3,228 | 3,711 | 1,995 |
| All                    | 1,217 | 2,286 | 3,300 | 3,999 | 5,116 | 3,553 | 3,715 | 4,406 | 4,236 | 2,414 | 2,323 | 1,618 |

### H1a2.2.3 Antelope Creek above Confluence with Sacramento River (SWRCB Antelope Creek)

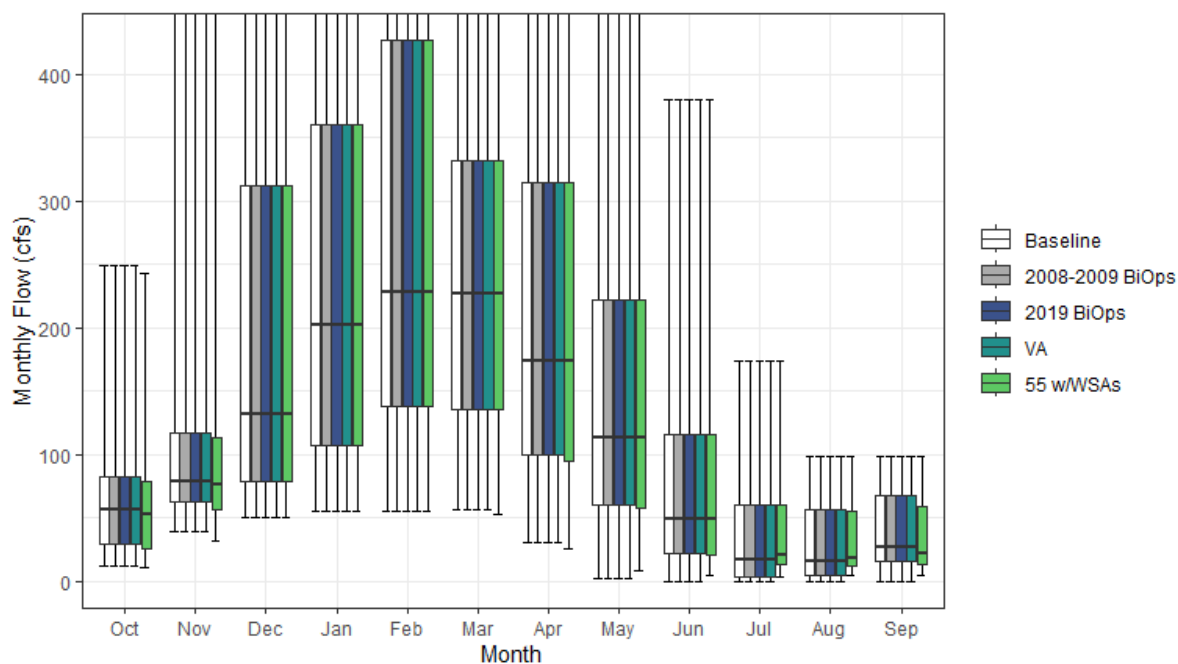


Figure H1a2-3. Antelope Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

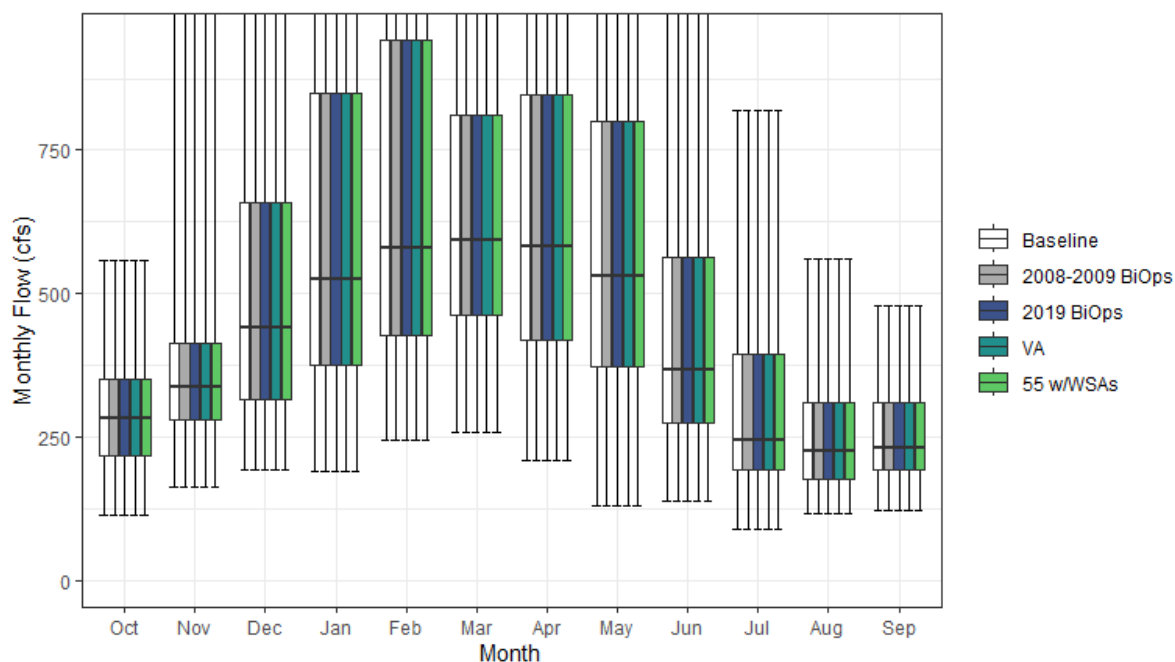
**Table H1a2-5. Cumulative Distribution of Monthly Flow (cfs) — Antelope Creek above Confluence with Sacramento River (SWRCB Antelope Creek)**

|                        | Oct | Nov | Dec | Jan   | Feb   | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-------|-------|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |       |       |     |     |     |     |     |     |     |              |
| 0%                     | 12  | 39  | 50  | 55    | 56    | 56  | 31  | 3   | 0   | 0   | 0   | 0   | 24           |
| 10%                    | 20  | 51  | 64  | 71    | 97    | 101 | 68  | 36  | 10  | 0   | 0   | 6   | 41           |
| 25%                    | 29  | 63  | 78  | 107   | 138   | 136 | 100 | 60  | 22  | 4   | 5   | 16  | 59           |
| 50%                    | 57  | 78  | 131 | 202   | 229   | 227 | 174 | 113 | 49  | 17  | 16  | 27  | 88           |
| 75%                    | 82  | 117 | 311 | 360   | 427   | 332 | 315 | 221 | 116 | 60  | 56  | 67  | 151          |
| 90%                    | 91  | 184 | 506 | 579   | 625   | 532 | 435 | 296 | 173 | 78  | 69  | 74  | 200          |
| 100%                   | 249 | 541 | 743 | 1,220 | 1,190 | 872 | 611 | 529 | 380 | 174 | 99  | 98  | 242          |
| Mean                   | 59  | 105 | 215 | 280   | 316   | 271 | 219 | 145 | 76  | 35  | 31  | 39  | 108          |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |     |     |     |     |     |     |     |              |
| 0%                     | 12  | 39  | 50  | 55    | 56    | 56  | 31  | 3   | 0   | 0   | 0   | 0   | 24           |
| 10%                    | 20  | 51  | 64  | 71    | 97    | 101 | 68  | 36  | 10  | 0   | 0   | 6   | 41           |
| 25%                    | 29  | 63  | 78  | 107   | 138   | 136 | 100 | 60  | 22  | 4   | 5   | 16  | 59           |
| 50%                    | 57  | 78  | 131 | 202   | 229   | 227 | 174 | 113 | 49  | 17  | 16  | 27  | 88           |
| 75%                    | 82  | 117 | 311 | 360   | 427   | 332 | 315 | 221 | 116 | 60  | 56  | 67  | 151          |
| 90%                    | 91  | 184 | 506 | 579   | 625   | 532 | 435 | 296 | 173 | 78  | 69  | 74  | 200          |
| 100%                   | 249 | 541 | 743 | 1,220 | 1,190 | 872 | 611 | 529 | 380 | 174 | 99  | 98  | 242          |
| Mean                   | 59  | 105 | 215 | 280   | 316   | 271 | 219 | 145 | 76  | 35  | 31  | 39  | 108          |
| <b>2019 BiOps</b>      |     |     |     |       |       |     |     |     |     |     |     |     |              |
| 0%                     | 12  | 39  | 50  | 55    | 56    | 56  | 31  | 3   | 0   | 0   | 0   | 0   | 24           |
| 10%                    | 20  | 51  | 64  | 71    | 97    | 101 | 68  | 36  | 10  | 0   | 0   | 6   | 41           |
| 25%                    | 29  | 63  | 78  | 107   | 138   | 136 | 100 | 60  | 22  | 4   | 5   | 16  | 59           |
| 50%                    | 57  | 78  | 131 | 202   | 229   | 227 | 174 | 113 | 49  | 17  | 16  | 27  | 88           |
| 75%                    | 82  | 117 | 311 | 360   | 427   | 332 | 315 | 221 | 116 | 60  | 56  | 67  | 151          |
| 90%                    | 91  | 184 | 506 | 579   | 625   | 532 | 435 | 296 | 173 | 78  | 69  | 74  | 200          |
| 100%                   | 249 | 541 | 743 | 1,220 | 1,190 | 872 | 611 | 529 | 380 | 174 | 99  | 98  | 242          |
| Mean                   | 59  | 105 | 215 | 280   | 316   | 271 | 219 | 145 | 76  | 35  | 31  | 39  | 108          |
| <b>VA</b>              |     |     |     |       |       |     |     |     |     |     |     |     |              |
| 0%                     | 12  | 39  | 50  | 55    | 56    | 56  | 31  | 3   | 0   | 0   | 0   | 0   | 24           |
| 10%                    | 20  | 51  | 64  | 71    | 97    | 101 | 68  | 36  | 10  | 0   | 0   | 6   | 41           |
| 25%                    | 29  | 63  | 78  | 107   | 138   | 136 | 100 | 60  | 22  | 4   | 5   | 16  | 59           |
| 50%                    | 57  | 78  | 131 | 202   | 229   | 227 | 174 | 113 | 49  | 17  | 16  | 27  | 88           |
| 75%                    | 82  | 117 | 311 | 360   | 427   | 332 | 315 | 221 | 116 | 60  | 56  | 67  | 151          |
| 90%                    | 91  | 184 | 506 | 579   | 625   | 532 | 435 | 296 | 173 | 78  | 69  | 74  | 200          |
| 100%                   | 249 | 541 | 743 | 1,220 | 1,190 | 872 | 611 | 529 | 380 | 174 | 99  | 98  | 242          |
| Mean                   | 59  | 105 | 215 | 280   | 316   | 271 | 219 | 145 | 76  | 35  | 31  | 39  | 108          |
| <b>55 w/WSAs</b>       |     |     |     |       |       |     |     |     |     |     |     |     |              |
| 0%                     | 11  | 31  | 50  | 55    | 56    | 52  | 25  | 9   | 5   | 4   | 4   | 5   | 25           |
| 10%                    | 18  | 45  | 64  | 71    | 96    | 100 | 67  | 34  | 11  | 8   | 8   | 8   | 42           |
| 25%                    | 26  | 57  | 78  | 107   | 138   | 136 | 94  | 58  | 21  | 13  | 12  | 14  | 59           |
| 50%                    | 52  | 76  | 131 | 202   | 229   | 227 | 173 | 113 | 49  | 20  | 19  | 21  | 87           |
| 75%                    | 78  | 113 | 311 | 360   | 427   | 332 | 315 | 221 | 116 | 60  | 56  | 58  | 151          |
| 90%                    | 85  | 182 | 506 | 579   | 625   | 532 | 435 | 296 | 173 | 82  | 67  | 69  | 199          |
| 100%                   | 243 | 540 | 743 | 1,220 | 1,190 | 872 | 611 | 529 | 380 | 174 | 98  | 98  | 241          |
| Mean                   | 54  | 101 | 215 | 280   | 316   | 271 | 218 | 145 | 76  | 39  | 32  | 36  | 107          |

**Table H1a2-6. Water Year Average of Monthly Flows (cfs) — Antelope Creek above Confluence with Sacramento River (SWRCB Antelope Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 35  | 56  | 99  | 99  | 116 | 114 | 64  | 35  | 9   | 0   | 1   | 6   |
| D                      | 51  | 85  | 142 | 127 | 188 | 202 | 123 | 69  | 23  | 6   | 7   | 18  |
| BN                     | 57  | 87  | 151 | 208 | 274 | 237 | 214 | 114 | 56  | 17  | 15  | 26  |
| AN                     | 58  | 105 | 180 | 361 | 416 | 355 | 262 | 185 | 97  | 51  | 49  | 59  |
| W                      | 78  | 156 | 384 | 502 | 504 | 395 | 359 | 262 | 156 | 81  | 67  | 73  |
| All                    | 59  | 105 | 215 | 280 | 316 | 271 | 219 | 145 | 76  | 35  | 31  | 39  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 35  | 56  | 99  | 99  | 116 | 114 | 64  | 35  | 9   | 0   | 1   | 6   |
| D                      | 51  | 85  | 142 | 127 | 188 | 202 | 123 | 69  | 23  | 6   | 7   | 18  |
| BN                     | 57  | 87  | 151 | 208 | 274 | 237 | 214 | 114 | 56  | 17  | 15  | 26  |
| AN                     | 58  | 105 | 180 | 361 | 416 | 355 | 262 | 185 | 97  | 51  | 49  | 59  |
| W                      | 78  | 156 | 384 | 502 | 504 | 395 | 359 | 262 | 156 | 81  | 67  | 73  |
| All                    | 59  | 105 | 215 | 280 | 316 | 271 | 219 | 145 | 76  | 35  | 31  | 39  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 35  | 56  | 99  | 99  | 116 | 114 | 64  | 35  | 9   | 0   | 1   | 6   |
| D                      | 51  | 85  | 142 | 127 | 188 | 202 | 123 | 69  | 23  | 6   | 7   | 18  |
| BN                     | 57  | 87  | 151 | 208 | 274 | 237 | 214 | 114 | 56  | 17  | 15  | 26  |
| AN                     | 58  | 105 | 180 | 361 | 416 | 355 | 262 | 185 | 97  | 51  | 49  | 59  |
| W                      | 78  | 156 | 384 | 502 | 504 | 395 | 359 | 262 | 156 | 81  | 67  | 73  |
| All                    | 59  | 105 | 215 | 280 | 316 | 271 | 219 | 145 | 76  | 35  | 31  | 39  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 35  | 56  | 99  | 99  | 116 | 114 | 64  | 35  | 9   | 0   | 1   | 6   |
| D                      | 51  | 85  | 142 | 127 | 188 | 202 | 123 | 69  | 23  | 6   | 7   | 18  |
| BN                     | 57  | 87  | 151 | 208 | 274 | 237 | 214 | 114 | 56  | 17  | 15  | 26  |
| AN                     | 58  | 105 | 180 | 361 | 416 | 355 | 262 | 185 | 97  | 51  | 49  | 59  |
| W                      | 78  | 156 | 384 | 502 | 504 | 395 | 359 | 262 | 156 | 81  | 67  | 73  |
| All                    | 59  | 105 | 215 | 280 | 316 | 271 | 219 | 145 | 76  | 35  | 31  | 39  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 31  | 53  | 99  | 99  | 116 | 113 | 61  | 34  | 12  | 7   | 7   | 9   |
| D                      | 47  | 81  | 142 | 127 | 187 | 202 | 122 | 69  | 23  | 13  | 12  | 15  |
| BN                     | 52  | 82  | 151 | 208 | 274 | 237 | 212 | 115 | 54  | 20  | 18  | 21  |
| AN                     | 52  | 100 | 180 | 361 | 416 | 355 | 262 | 185 | 96  | 50  | 46  | 54  |
| W                      | 73  | 154 | 384 | 502 | 504 | 395 | 359 | 262 | 156 | 81  | 64  | 67  |
| All                    | 54  | 101 | 215 | 280 | 316 | 271 | 218 | 145 | 76  | 39  | 32  | 36  |

## H1a2.2.4 Battle Creek above Confluence with Sacramento River (SWRCB Battle Creek)



**Figure H1a2-4. Battle Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-7. Cumulative Distribution of Monthly Flow (cfs) — Battle Creek above Confluence with Sacramento River (SWRCB Battle Creek)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 113 | 162   | 192   | 191   | 246   | 259   | 209   | 131   | 139   | 89  | 116 | 122 | 161          |
| 10%                    | 183 | 222   | 258   | 288   | 346   | 372   | 339   | 301   | 219   | 163 | 153 | 169 | 207          |
| 25%                    | 217 | 279   | 314   | 376   | 427   | 462   | 418   | 373   | 273   | 194 | 176 | 192 | 253          |
| 50%                    | 282 | 336   | 441   | 524   | 579   | 592   | 584   | 531   | 368   | 244 | 225 | 232 | 304          |
| 75%                    | 350 | 414   | 658   | 848   | 942   | 811   | 846   | 800   | 563   | 395 | 311 | 309 | 431          |
| 90%                    | 401 | 539   | 1,019 | 1,144 | 1,279 | 1,148 | 1,054 | 975   | 755   | 459 | 357 | 345 | 530          |
| 100%                   | 559 | 1,041 | 1,561 | 2,384 | 1,886 | 1,772 | 1,707 | 1,590 | 1,462 | 819 | 562 | 480 | 678          |
| Mean                   | 286 | 372   | 542   | 664   | 723   | 685   | 652   | 587   | 445   | 294 | 244 | 250 | 346          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 113 | 162   | 192   | 191   | 246   | 259   | 209   | 131   | 139   | 89  | 116 | 122 | 161          |
| 10%                    | 183 | 222   | 258   | 288   | 346   | 372   | 339   | 301   | 219   | 163 | 153 | 169 | 207          |
| 25%                    | 217 | 279   | 314   | 376   | 427   | 462   | 418   | 373   | 273   | 194 | 176 | 192 | 253          |
| 50%                    | 282 | 336   | 441   | 524   | 579   | 592   | 584   | 531   | 368   | 244 | 225 | 232 | 304          |
| 75%                    | 350 | 414   | 658   | 848   | 942   | 811   | 846   | 800   | 563   | 395 | 311 | 309 | 431          |
| 90%                    | 401 | 539   | 1,019 | 1,144 | 1,279 | 1,148 | 1,054 | 975   | 755   | 459 | 357 | 345 | 530          |
| 100%                   | 559 | 1,041 | 1,561 | 2,384 | 1,886 | 1,772 | 1,707 | 1,590 | 1,462 | 819 | 562 | 480 | 678          |
| Mean                   | 286 | 372   | 542   | 664   | 723   | 685   | 652   | 587   | 445   | 294 | 244 | 250 | 346          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 113 | 162   | 192   | 191   | 246   | 259   | 209   | 131   | 139   | 89  | 116 | 122 | 161          |
| 10%                    | 183 | 222   | 258   | 288   | 346   | 372   | 339   | 301   | 219   | 163 | 153 | 169 | 207          |
| 25%                    | 217 | 279   | 314   | 376   | 427   | 462   | 418   | 373   | 273   | 194 | 176 | 192 | 253          |
| 50%                    | 282 | 336   | 441   | 524   | 579   | 592   | 584   | 531   | 368   | 244 | 225 | 232 | 304          |
| 75%                    | 350 | 414   | 658   | 848   | 942   | 811   | 846   | 800   | 563   | 395 | 311 | 309 | 431          |
| 90%                    | 401 | 539   | 1,019 | 1,144 | 1,279 | 1,148 | 1,054 | 975   | 755   | 459 | 357 | 345 | 530          |
| 100%                   | 559 | 1,041 | 1,561 | 2,384 | 1,886 | 1,772 | 1,707 | 1,590 | 1,462 | 819 | 562 | 480 | 678          |
| Mean                   | 286 | 372   | 542   | 664   | 723   | 685   | 652   | 587   | 445   | 294 | 244 | 250 | 346          |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 113 | 162   | 192   | 191   | 246   | 259   | 209   | 131   | 139   | 89  | 116 | 122 | 161          |
| 10%                    | 183 | 222   | 258   | 288   | 346   | 372   | 339   | 301   | 219   | 163 | 153 | 169 | 207          |
| 25%                    | 217 | 279   | 314   | 376   | 427   | 462   | 418   | 373   | 273   | 194 | 176 | 192 | 253          |
| 50%                    | 282 | 336   | 441   | 524   | 579   | 592   | 584   | 531   | 368   | 244 | 225 | 232 | 304          |
| 75%                    | 350 | 414   | 658   | 848   | 942   | 811   | 846   | 800   | 563   | 395 | 311 | 309 | 431          |
| 90%                    | 401 | 539   | 1,019 | 1,144 | 1,279 | 1,148 | 1,054 | 975   | 755   | 459 | 357 | 345 | 530          |
| 100%                   | 559 | 1,041 | 1,561 | 2,384 | 1,886 | 1,772 | 1,707 | 1,590 | 1,462 | 819 | 562 | 480 | 678          |
| Mean                   | 286 | 372   | 542   | 664   | 723   | 685   | 652   | 587   | 445   | 294 | 244 | 250 | 346          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 113 | 162   | 192   | 191   | 246   | 259   | 209   | 131   | 139   | 89  | 116 | 122 | 161          |
| 10%                    | 183 | 222   | 258   | 288   | 346   | 372   | 339   | 301   | 219   | 163 | 153 | 169 | 207          |
| 25%                    | 217 | 279   | 314   | 376   | 427   | 462   | 418   | 373   | 273   | 194 | 176 | 192 | 253          |
| 50%                    | 282 | 336   | 441   | 524   | 579   | 592   | 584   | 531   | 368   | 244 | 225 | 232 | 304          |
| 75%                    | 350 | 414   | 658   | 848   | 942   | 811   | 846   | 800   | 563   | 395 | 311 | 309 | 431          |
| 90%                    | 401 | 539   | 1,019 | 1,144 | 1,279 | 1,148 | 1,054 | 975   | 755   | 459 | 357 | 345 | 530          |
| 100%                   | 559 | 1,041 | 1,561 | 2,384 | 1,886 | 1,772 | 1,707 | 1,590 | 1,462 | 819 | 562 | 480 | 678          |
| Mean                   | 286 | 372   | 542   | 664   | 723   | 685   | 652   | 587   | 445   | 294 | 244 | 250 | 346          |

**Table H1a2-8. Water Year Average of Monthly Flows (cfs) — Battle Creek above Confluence with Sacramento River (SWRCB Battle Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan   | Feb   | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-------|-------|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |       |       |     |     |     |     |     |     |     |
| C                      | 241 | 260 | 354 | 349   | 395   | 400 | 311 | 276 | 212 | 157 | 154 | 173 |
| D                      | 282 | 335 | 455 | 403   | 524   | 544 | 495 | 389 | 286 | 198 | 183 | 203 |
| BN                     | 269 | 323 | 421 | 541   | 620   | 591 | 639 | 521 | 385 | 243 | 206 | 215 |
| AN                     | 274 | 367 | 474 | 768   | 835   | 866 | 716 | 680 | 489 | 324 | 263 | 277 |
| W                      | 329 | 491 | 810 | 1,059 | 1,063 | 927 | 931 | 903 | 706 | 459 | 352 | 338 |
| All                    | 286 | 372 | 542 | 664   | 723   | 685 | 652 | 587 | 445 | 294 | 244 | 250 |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |     |     |     |     |     |     |     |
| C                      | 241 | 260 | 354 | 349   | 395   | 400 | 311 | 276 | 212 | 157 | 154 | 173 |
| D                      | 282 | 335 | 455 | 403   | 524   | 544 | 495 | 389 | 286 | 198 | 183 | 203 |
| BN                     | 269 | 323 | 421 | 541   | 620   | 591 | 639 | 521 | 385 | 243 | 206 | 215 |
| AN                     | 274 | 367 | 474 | 768   | 835   | 866 | 716 | 680 | 489 | 324 | 263 | 277 |
| W                      | 329 | 491 | 810 | 1,059 | 1,063 | 927 | 931 | 903 | 706 | 459 | 352 | 338 |
| All                    | 286 | 372 | 542 | 664   | 723   | 685 | 652 | 587 | 445 | 294 | 244 | 250 |
| <b>2019 BiOps</b>      |     |     |     |       |       |     |     |     |     |     |     |     |
| C                      | 241 | 260 | 354 | 349   | 395   | 400 | 311 | 276 | 212 | 157 | 154 | 173 |
| D                      | 282 | 335 | 455 | 403   | 524   | 544 | 495 | 389 | 286 | 198 | 183 | 203 |
| BN                     | 269 | 323 | 421 | 541   | 620   | 591 | 639 | 521 | 385 | 243 | 206 | 215 |
| AN                     | 274 | 367 | 474 | 768   | 835   | 866 | 716 | 680 | 489 | 324 | 263 | 277 |
| W                      | 329 | 491 | 810 | 1,059 | 1,063 | 927 | 931 | 903 | 706 | 459 | 352 | 338 |
| All                    | 286 | 372 | 542 | 664   | 723   | 685 | 652 | 587 | 445 | 294 | 244 | 250 |
| <b>VA</b>              |     |     |     |       |       |     |     |     |     |     |     |     |
| C                      | 241 | 260 | 354 | 349   | 395   | 400 | 311 | 276 | 212 | 157 | 154 | 173 |
| D                      | 282 | 335 | 455 | 403   | 524   | 544 | 495 | 389 | 286 | 198 | 183 | 203 |
| BN                     | 269 | 323 | 421 | 541   | 620   | 591 | 639 | 521 | 385 | 243 | 206 | 215 |
| AN                     | 274 | 367 | 474 | 768   | 835   | 866 | 716 | 680 | 489 | 324 | 263 | 277 |
| W                      | 329 | 491 | 810 | 1,059 | 1,063 | 927 | 931 | 903 | 706 | 459 | 352 | 338 |
| All                    | 286 | 372 | 542 | 664   | 723   | 685 | 652 | 587 | 445 | 294 | 244 | 250 |
| <b>55 w/WSAs</b>       |     |     |     |       |       |     |     |     |     |     |     |     |
| C                      | 241 | 260 | 354 | 349   | 395   | 400 | 311 | 276 | 212 | 157 | 155 | 173 |
| D                      | 282 | 335 | 455 | 403   | 524   | 544 | 495 | 389 | 286 | 198 | 183 | 203 |
| BN                     | 269 | 323 | 421 | 541   | 620   | 591 | 639 | 521 | 385 | 243 | 206 | 215 |
| AN                     | 274 | 367 | 474 | 768   | 835   | 866 | 716 | 680 | 489 | 324 | 263 | 277 |
| W                      | 329 | 491 | 810 | 1,059 | 1,063 | 927 | 931 | 903 | 706 | 459 | 352 | 338 |
| All                    | 286 | 372 | 542 | 664   | 723   | 685 | 652 | 587 | 445 | 294 | 244 | 250 |

## H1a2.2.5 Bear River below Camp Far West Reservoir (SWRCB Camp Far West)

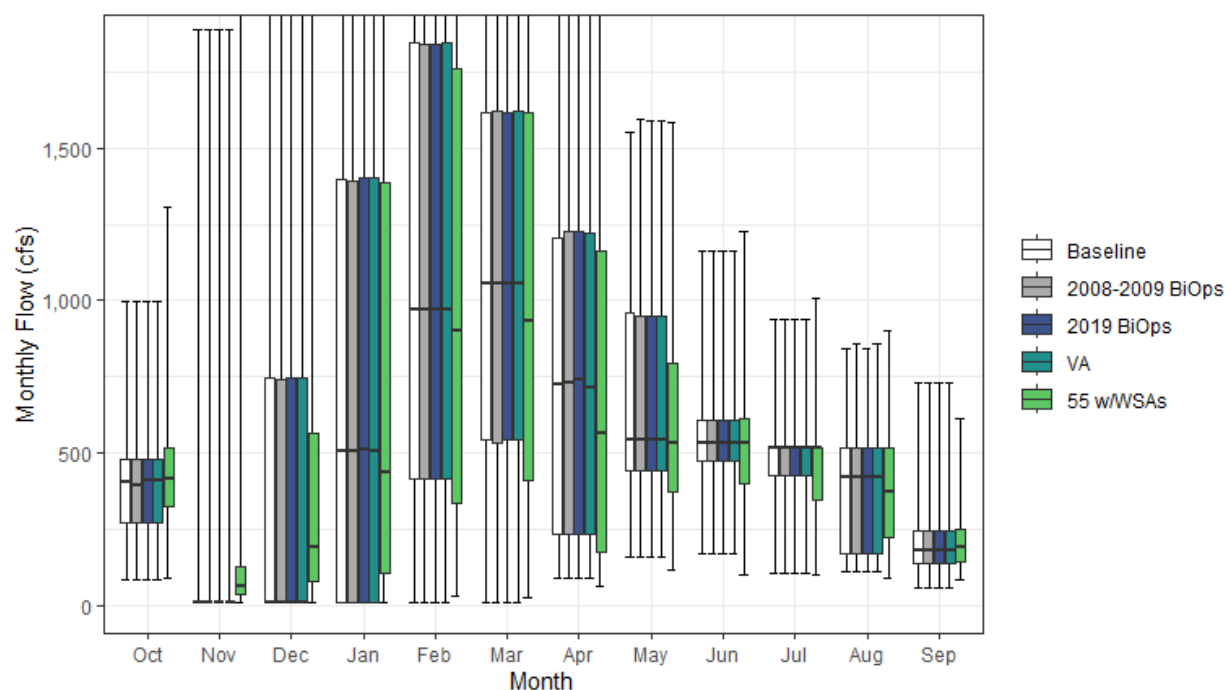


Figure H1a2-5. Bear River Streamflow below Camp Far West Reservoir Monthly Boxplot (cfs)

**Table H1a2-9. Cumulative Distribution of Monthly Flow (cfs) — Bear River below Camp Far West Reservoir (SWRCB Camp Far West)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug | Sep | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 85    | 10    | 10    | 10    | 10    | 10    | 88    | 158   | 172   | 106   | 109 | 56  | 69           |
| 10%                    | 217   | 10    | 10    | 10    | 10    | 117   | 126   | 310   | 314   | 291   | 124 | 106 | 144          |
| 25%                    | 272   | 10    | 10    | 10    | 417   | 541   | 236   | 441   | 472   | 426   | 171 | 135 | 223          |
| 50%                    | 402   | 10    | 10    | 506   | 972   | 1,059 | 727   | 542   | 530   | 515   | 418 | 178 | 401          |
| 75%                    | 477   | 10    | 745   | 1,395 | 1,846 | 1,616 | 1,204 | 958   | 609   | 523   | 515 | 242 | 681          |
| 90%                    | 515   | 449   | 2,198 | 2,680 | 3,029 | 2,592 | 1,678 | 1,228 | 885   | 694   | 554 | 304 | 867          |
| 100%                   | 997   | 1,891 | 3,993 | 4,748 | 6,332 | 4,154 | 3,723 | 1,551 | 1,162 | 939   | 841 | 733 | 1,228        |
| Mean                   | 380   | 157   | 590   | 986   | 1,303 | 1,194 | 868   | 685   | 564   | 493   | 376 | 199 | 469          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 85    | 10    | 10    | 10    | 10    | 10    | 88    | 158   | 172   | 106   | 109 | 56  | 69           |
| 10%                    | 217   | 10    | 10    | 10    | 10    | 105   | 126   | 310   | 314   | 291   | 124 | 106 | 143          |
| 25%                    | 272   | 10    | 10    | 10    | 417   | 534   | 236   | 440   | 472   | 426   | 171 | 135 | 223          |
| 50%                    | 393   | 10    | 10    | 505   | 972   | 1,059 | 730   | 542   | 530   | 515   | 418 | 178 | 401          |
| 75%                    | 477   | 10    | 738   | 1,395 | 1,841 | 1,623 | 1,224 | 947   | 609   | 523   | 515 | 242 | 682          |
| 90%                    | 515   | 449   | 2,198 | 2,680 | 3,029 | 2,604 | 1,699 | 1,228 | 885   | 694   | 554 | 304 | 867          |
| 100%                   | 997   | 1,891 | 3,993 | 4,748 | 6,332 | 4,139 | 3,723 | 1,596 | 1,162 | 939   | 856 | 733 | 1,231        |
| Mean                   | 379   | 158   | 589   | 987   | 1,302 | 1,193 | 869   | 687   | 564   | 493   | 376 | 199 | 469          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 85    | 10    | 10    | 10    | 10    | 10    | 88    | 158   | 172   | 106   | 109 | 56  | 69           |
| 10%                    | 217   | 10    | 10    | 10    | 10    | 117   | 126   | 310   | 314   | 291   | 124 | 106 | 144          |
| 25%                    | 272   | 10    | 10    | 10    | 417   | 541   | 236   | 441   | 472   | 426   | 171 | 135 | 223          |
| 50%                    | 410   | 10    | 10    | 513   | 972   | 1,059 | 740   | 542   | 530   | 515   | 418 | 178 | 400          |
| 75%                    | 477   | 10    | 745   | 1,402 | 1,840 | 1,615 | 1,224 | 947   | 609   | 524   | 515 | 242 | 680          |
| 90%                    | 515   | 452   | 2,198 | 2,680 | 3,029 | 2,604 | 1,688 | 1,228 | 885   | 694   | 554 | 304 | 866          |
| 100%                   | 997   | 1,891 | 3,993 | 4,748 | 6,332 | 4,154 | 3,723 | 1,588 | 1,162 | 939   | 841 | 733 | 1,231        |
| Mean                   | 380   | 158   | 590   | 987   | 1,302 | 1,194 | 870   | 687   | 564   | 493   | 376 | 199 | 469          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 85    | 10    | 10    | 10    | 10    | 10    | 88    | 158   | 172   | 106   | 109 | 56  | 69           |
| 10%                    | 217   | 10    | 10    | 10    | 10    | 118   | 126   | 310   | 314   | 291   | 124 | 106 | 142          |
| 25%                    | 272   | 10    | 10    | 10    | 417   | 541   | 236   | 441   | 472   | 426   | 172 | 135 | 225          |
| 50%                    | 410   | 10    | 10    | 508   | 972   | 1,056 | 714   | 542   | 530   | 515   | 418 | 178 | 400          |
| 75%                    | 477   | 10    | 745   | 1,402 | 1,846 | 1,623 | 1,224 | 948   | 609   | 524   | 515 | 242 | 681          |
| 90%                    | 515   | 452   | 2,198 | 2,680 | 3,029 | 2,604 | 1,693 | 1,228 | 885   | 697   | 554 | 304 | 867          |
| 100%                   | 997   | 1,891 | 3,993 | 4,735 | 6,332 | 4,139 | 3,736 | 1,590 | 1,162 | 940   | 856 | 733 | 1,232        |
| Mean                   | 380   | 158   | 590   | 987   | 1,302 | 1,194 | 871   | 684   | 564   | 493   | 376 | 199 | 469          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 91    | 10    | 10    | 10    | 33    | 25    | 60    | 117   | 102   | 102   | 90  | 81  | 78           |
| 10%                    | 252   | 16    | 31    | 51    | 124   | 134   | 112   | 248   | 280   | 255   | 152 | 112 | 146          |
| 25%                    | 323   | 33    | 80    | 106   | 334   | 412   | 174   | 372   | 400   | 345   | 222 | 144 | 214          |
| 50%                    | 414   | 65    | 189   | 436   | 904   | 931   | 565   | 530   | 530   | 515   | 370 | 189 | 372          |
| 75%                    | 515   | 128   | 564   | 1,388 | 1,760 | 1,619 | 1,164 | 795   | 611   | 515   | 515 | 251 | 655          |
| 90%                    | 549   | 521   | 2,086 | 2,670 | 3,024 | 2,604 | 1,676 | 1,085 | 906   | 655   | 527 | 300 | 844          |
| 100%                   | 1,306 | 2,813 | 3,868 | 4,643 | 6,332 | 4,154 | 3,764 | 1,586 | 1,226 | 1,009 | 901 | 613 | 1,231        |
| Mean                   | 418   | 215   | 574   | 954   | 1,272 | 1,154 | 805   | 598   | 542   | 477   | 359 | 207 | 455          |

**Table H1a2-10. Water Year Average of Monthly Flows (cfs) — Bear River below Camp Far West Reservoir (SWRCB Camp Far West)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 362 | 45  | 51    | 62    | 247   | 258   | 165   | 314 | 332 | 329 | 174 | 120 |
| D                      | 326 | 54  | 181   | 266   | 514   | 733   | 406   | 493 | 463 | 436 | 249 | 151 |
| BN                     | 360 | 43  | 328   | 497   | 1,112 | 1,099 | 800   | 601 | 542 | 475 | 389 | 180 |
| AN                     | 370 | 212 | 522   | 1,414 | 1,714 | 1,525 | 939   | 929 | 691 | 575 | 440 | 255 |
| W                      | 445 | 344 | 1,370 | 2,145 | 2,401 | 1,959 | 1,597 | 981 | 725 | 602 | 542 | 265 |
| All                    | 380 | 157 | 590   | 986   | 1,303 | 1,194 | 868   | 685 | 564 | 493 | 376 | 199 |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 362 | 45  | 51    | 62    | 246   | 258   | 165   | 314 | 332 | 329 | 174 | 120 |
| D                      | 326 | 55  | 180   | 268   | 514   | 729   | 406   | 492 | 463 | 436 | 249 | 151 |
| BN                     | 353 | 42  | 329   | 497   | 1,112 | 1,102 | 804   | 603 | 542 | 475 | 389 | 180 |
| AN                     | 376 | 214 | 522   | 1,414 | 1,710 | 1,522 | 950   | 933 | 691 | 574 | 440 | 255 |
| W                      | 445 | 346 | 1,368 | 2,146 | 2,402 | 1,959 | 1,594 | 982 | 725 | 602 | 542 | 266 |
| All                    | 379 | 158 | 589   | 987   | 1,302 | 1,193 | 869   | 687 | 564 | 493 | 376 | 199 |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 362 | 46  | 51    | 61    | 247   | 258   | 165   | 314 | 332 | 329 | 174 | 120 |
| D                      | 326 | 54  | 181   | 268   | 514   | 731   | 407   | 492 | 463 | 436 | 249 | 151 |
| BN                     | 360 | 43  | 328   | 499   | 1,111 | 1,099 | 804   | 602 | 542 | 475 | 389 | 180 |
| AN                     | 376 | 214 | 521   | 1,414 | 1,709 | 1,526 | 952   | 934 | 691 | 575 | 440 | 255 |
| W                      | 445 | 346 | 1,371 | 2,146 | 2,401 | 1,959 | 1,596 | 984 | 725 | 602 | 542 | 265 |
| All                    | 380 | 158 | 590   | 987   | 1,302 | 1,194 | 870   | 687 | 564 | 493 | 376 | 199 |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 362 | 46  | 51    | 61    | 244   | 260   | 165   | 314 | 332 | 329 | 174 | 120 |
| D                      | 326 | 55  | 181   | 268   | 514   | 734   | 409   | 492 | 463 | 436 | 249 | 151 |
| BN                     | 360 | 43  | 329   | 499   | 1,112 | 1,100 | 801   | 599 | 542 | 475 | 389 | 180 |
| AN                     | 376 | 214 | 522   | 1,414 | 1,710 | 1,521 | 950   | 921 | 690 | 575 | 440 | 255 |
| W                      | 445 | 344 | 1,369 | 2,145 | 2,401 | 1,959 | 1,599 | 981 | 725 | 602 | 545 | 266 |
| All                    | 380 | 158 | 590   | 987   | 1,302 | 1,194 | 871   | 684 | 564 | 493 | 376 | 199 |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 403 | 70  | 112   | 110   | 261   | 226   | 143   | 248 | 296 | 300 | 192 | 127 |
| D                      | 355 | 90  | 242   | 282   | 467   | 663   | 322   | 415 | 416 | 391 | 287 | 166 |
| BN                     | 389 | 79  | 319   | 471   | 1,037 | 1,054 | 692   | 510 | 518 | 472 | 383 | 202 |
| AN                     | 415 | 240 | 535   | 1,296 | 1,665 | 1,478 | 865   | 763 | 683 | 573 | 376 | 239 |
| W                      | 492 | 458 | 1,240 | 2,066 | 2,393 | 1,942 | 1,561 | 911 | 725 | 601 | 480 | 269 |
| All                    | 418 | 215 | 574   | 954   | 1,272 | 1,154 | 805   | 598 | 542 | 477 | 359 | 207 |

## H1a2.2.6 Bear River above Confluence with Feather River (SWRCB Bear River)

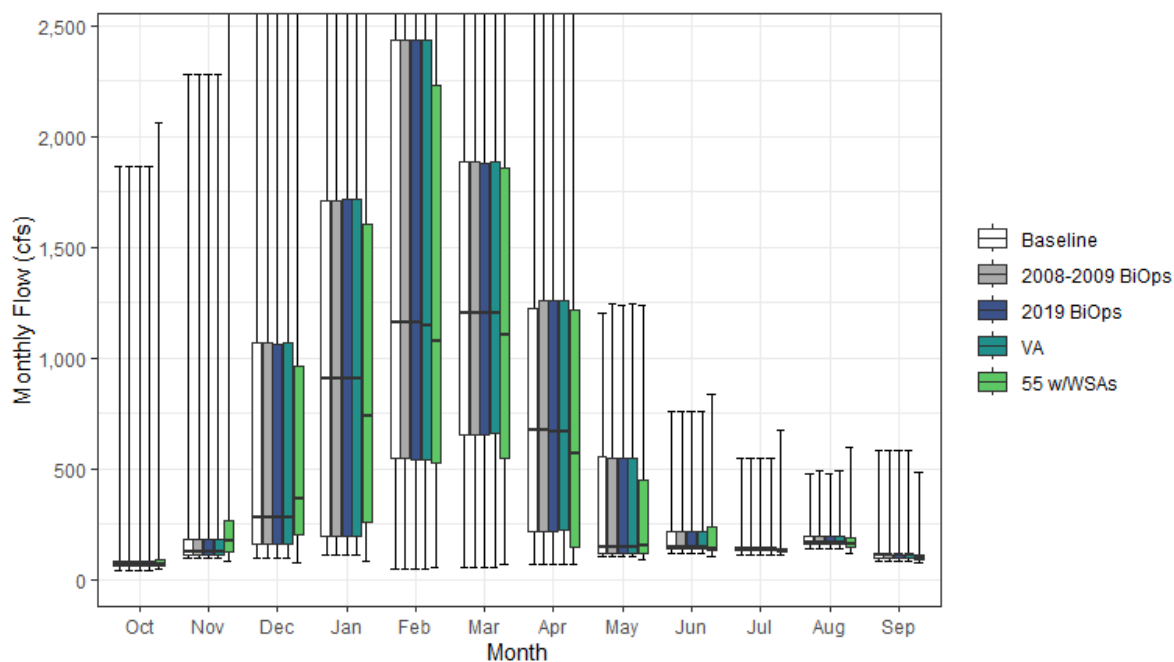


Figure H1a2-6. Bear River Streamflow above Confluence with Feather River Monthly Boxplot (cfs)

**Table H1a2-11. Cumulative Distribution of Monthly Flow (cfs) — Bear River above Confluence with Feather River (SWRCB Bear River)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 42    | 94    | 99    | 108   | 45    | 57    | 70    | 102   | 121 | 111 | 142 | 79  | 77           |
| 10%                    | 52    | 104   | 117   | 145   | 140   | 199   | 93    | 108   | 128 | 125 | 150 | 93  | 141          |
| 25%                    | 59    | 110   | 159   | 193   | 546   | 653   | 219   | 118   | 137 | 132 | 157 | 96  | 202          |
| 50%                    | 67    | 126   | 281   | 903   | 1,156 | 1,203 | 672   | 148   | 147 | 136 | 166 | 107 | 360          |
| 75%                    | 83    | 182   | 1,069 | 1,708 | 2,434 | 1,885 | 1,220 | 554   | 215 | 145 | 193 | 112 | 691          |
| 90%                    | 112   | 595   | 2,716 | 3,390 | 3,821 | 3,021 | 1,797 | 814   | 474 | 299 | 203 | 128 | 863          |
| 100%                   | 1,867 | 2,277 | 4,471 | 6,013 | 7,651 | 5,444 | 4,272 | 1,204 | 757 | 546 | 475 | 584 | 1,305        |
| Mean                   | 96    | 288   | 868   | 1,341 | 1,715 | 1,455 | 872   | 339   | 224 | 172 | 188 | 121 | 460          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 42    | 94    | 99    | 108   | 45    | 57    | 70    | 102   | 121 | 111 | 142 | 79  | 77           |
| 10%                    | 52    | 104   | 117   | 145   | 140   | 199   | 93    | 108   | 128 | 125 | 150 | 93  | 141          |
| 25%                    | 60    | 110   | 159   | 193   | 546   | 651   | 219   | 118   | 137 | 132 | 157 | 96  | 202          |
| 50%                    | 67    | 126   | 281   | 903   | 1,156 | 1,203 | 672   | 145   | 147 | 136 | 166 | 107 | 360          |
| 75%                    | 83    | 182   | 1,069 | 1,708 | 2,434 | 1,885 | 1,258 | 546   | 215 | 145 | 193 | 112 | 693          |
| 90%                    | 112   | 607   | 2,716 | 3,390 | 3,821 | 3,033 | 1,805 | 814   | 474 | 299 | 203 | 128 | 863          |
| 100%                   | 1,867 | 2,277 | 4,471 | 6,013 | 7,651 | 5,430 | 4,272 | 1,247 | 757 | 546 | 490 | 584 | 1,307        |
| Mean                   | 96    | 289   | 868   | 1,342 | 1,714 | 1,455 | 873   | 340   | 224 | 172 | 188 | 121 | 460          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 42    | 94    | 99    | 108   | 45    | 57    | 70    | 102   | 121 | 111 | 142 | 79  | 77           |
| 10%                    | 52    | 104   | 117   | 145   | 140   | 199   | 93    | 108   | 128 | 125 | 150 | 93  | 142          |
| 25%                    | 59    | 110   | 159   | 193   | 540   | 653   | 219   | 118   | 137 | 132 | 157 | 96  | 202          |
| 50%                    | 67    | 126   | 281   | 903   | 1,156 | 1,203 | 668   | 148   | 147 | 136 | 166 | 107 | 360          |
| 75%                    | 83    | 183   | 1,064 | 1,714 | 2,434 | 1,878 | 1,258 | 546   | 215 | 145 | 193 | 112 | 693          |
| 90%                    | 112   | 598   | 2,716 | 3,390 | 3,821 | 3,033 | 1,805 | 814   | 474 | 299 | 203 | 128 | 863          |
| 100%                   | 1,867 | 2,277 | 4,471 | 6,013 | 7,651 | 5,444 | 4,272 | 1,240 | 757 | 546 | 475 | 584 | 1,308        |
| Mean                   | 96    | 289   | 868   | 1,342 | 1,714 | 1,455 | 874   | 340   | 224 | 172 | 188 | 121 | 460          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 42    | 94    | 99    | 108   | 45    | 57    | 70    | 102   | 121 | 111 | 142 | 79  | 77           |
| 10%                    | 52    | 104   | 117   | 144   | 140   | 199   | 93    | 108   | 128 | 125 | 150 | 93  | 141          |
| 25%                    | 59    | 110   | 159   | 193   | 539   | 660   | 224   | 118   | 137 | 132 | 157 | 96  | 202          |
| 50%                    | 67    | 126   | 281   | 903   | 1,145 | 1,203 | 665   | 148   | 147 | 136 | 166 | 107 | 360          |
| 75%                    | 83    | 182   | 1,069 | 1,714 | 2,434 | 1,885 | 1,258 | 547   | 215 | 145 | 193 | 112 | 692          |
| 90%                    | 112   | 598   | 2,716 | 3,390 | 3,821 | 3,033 | 1,797 | 814   | 474 | 300 | 203 | 128 | 863          |
| 100%                   | 1,867 | 2,277 | 4,471 | 6,013 | 7,651 | 5,430 | 4,284 | 1,241 | 757 | 547 | 490 | 584 | 1,308        |
| Mean                   | 96    | 288   | 868   | 1,342 | 1,713 | 1,456 | 875   | 337   | 224 | 172 | 189 | 121 | 460          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 44    | 79    | 76    | 84    | 53    | 70    | 67    | 92    | 101 | 107 | 120 | 78  | 73           |
| 10%                    | 56    | 99    | 148   | 200   | 246   | 201   | 91    | 104   | 121 | 118 | 138 | 84  | 139          |
| 25%                    | 63    | 124   | 203   | 257   | 529   | 545   | 145   | 117   | 132 | 125 | 148 | 91  | 185          |
| 50%                    | 69    | 172   | 365   | 735   | 1,073 | 1,105 | 570   | 151   | 142 | 132 | 160 | 99  | 346          |
| 75%                    | 90    | 268   | 959   | 1,607 | 2,230 | 1,858 | 1,219 | 446   | 237 | 142 | 185 | 108 | 680          |
| 90%                    | 118   | 613   | 2,639 | 3,251 | 3,805 | 3,033 | 1,848 | 748   | 508 | 325 | 266 | 149 | 845          |
| 100%                   | 2,063 | 3,143 | 4,337 | 6,022 | 7,651 | 5,444 | 4,370 | 1,237 | 835 | 676 | 597 | 484 | 1,307        |
| Mean                   | 102   | 332   | 840   | 1,299 | 1,673 | 1,415 | 833   | 317   | 234 | 181 | 184 | 113 | 450          |

**Table H1a2-12. Water Year Average of Monthly Flows (cfs) — Bear River above Confluence with Feather River (SWRCB Bear River)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 74  | 146 | 230   | 237   | 426   | 380   | 144   | 111 | 136 | 141 | 188 | 110 |
| D                      | 70  | 172 | 407   | 452   | 745   | 920   | 387   | 169 | 141 | 154 | 193 | 117 |
| BN                     | 70  | 159 | 519   | 753   | 1,495 | 1,322 | 785   | 215 | 166 | 138 | 157 | 100 |
| AN                     | 72  | 354 | 767   | 1,923 | 2,290 | 1,839 | 923   | 533 | 295 | 195 | 189 | 154 |
| W                      | 152 | 504 | 1,808 | 2,721 | 3,021 | 2,352 | 1,651 | 585 | 341 | 213 | 204 | 130 |
| All                    | 96  | 288 | 868   | 1,341 | 1,715 | 1,455 | 872   | 339 | 224 | 172 | 188 | 121 |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 74  | 146 | 230   | 237   | 424   | 380   | 144   | 111 | 136 | 141 | 188 | 110 |
| D                      | 70  | 173 | 406   | 454   | 745   | 916   | 387   | 168 | 141 | 154 | 193 | 117 |
| BN                     | 70  | 158 | 520   | 754   | 1,494 | 1,325 | 789   | 217 | 166 | 138 | 157 | 100 |
| AN                     | 72  | 356 | 766   | 1,923 | 2,286 | 1,836 | 934   | 537 | 295 | 195 | 189 | 154 |
| W                      | 152 | 507 | 1,806 | 2,722 | 3,022 | 2,352 | 1,648 | 587 | 341 | 213 | 205 | 131 |
| All                    | 96  | 289 | 868   | 1,342 | 1,714 | 1,455 | 873   | 340 | 224 | 172 | 188 | 121 |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 74  | 147 | 230   | 236   | 426   | 380   | 144   | 111 | 136 | 141 | 188 | 110 |
| D                      | 70  | 172 | 407   | 454   | 745   | 919   | 388   | 168 | 141 | 154 | 193 | 117 |
| BN                     | 70  | 158 | 519   | 755   | 1,494 | 1,323 | 789   | 216 | 166 | 138 | 157 | 100 |
| AN                     | 72  | 356 | 766   | 1,923 | 2,285 | 1,840 | 936   | 537 | 295 | 195 | 189 | 154 |
| W                      | 152 | 506 | 1,809 | 2,722 | 3,021 | 2,352 | 1,650 | 588 | 341 | 213 | 204 | 130 |
| All                    | 96  | 289 | 868   | 1,342 | 1,714 | 1,455 | 874   | 340 | 224 | 172 | 188 | 121 |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 74  | 147 | 230   | 237   | 423   | 382   | 144   | 111 | 136 | 141 | 188 | 110 |
| D                      | 70  | 173 | 407   | 454   | 745   | 921   | 390   | 168 | 141 | 154 | 193 | 117 |
| BN                     | 70  | 159 | 520   | 755   | 1,494 | 1,324 | 785   | 213 | 166 | 138 | 157 | 100 |
| AN                     | 72  | 356 | 767   | 1,923 | 2,286 | 1,835 | 934   | 525 | 295 | 195 | 189 | 154 |
| W                      | 152 | 504 | 1,808 | 2,721 | 3,021 | 2,352 | 1,653 | 585 | 341 | 213 | 207 | 131 |
| All                    | 96  | 288 | 868   | 1,342 | 1,713 | 1,456 | 875   | 337 | 224 | 172 | 189 | 121 |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 75  | 159 | 274   | 270   | 426   | 346   | 124   | 108 | 127 | 131 | 168 | 97  |
| D                      | 71  | 196 | 451   | 456   | 683   | 851   | 317   | 165 | 133 | 143 | 180 | 109 |
| BN                     | 78  | 185 | 501   | 718   | 1,409 | 1,278 | 710   | 195 | 175 | 155 | 167 | 100 |
| AN                     | 76  | 368 | 763   | 1,789 | 2,230 | 1,793 | 892   | 449 | 326 | 218 | 190 | 119 |
| W                      | 164 | 604 | 1,672 | 2,639 | 3,008 | 2,336 | 1,644 | 564 | 365 | 237 | 204 | 132 |
| All                    | 102 | 332 | 840   | 1,299 | 1,673 | 1,415 | 833   | 317 | 234 | 181 | 184 | 113 |

## H1a2.2.7 Big Chico Creek above Confluence with Sacramento River (SWRCB Big Chico)

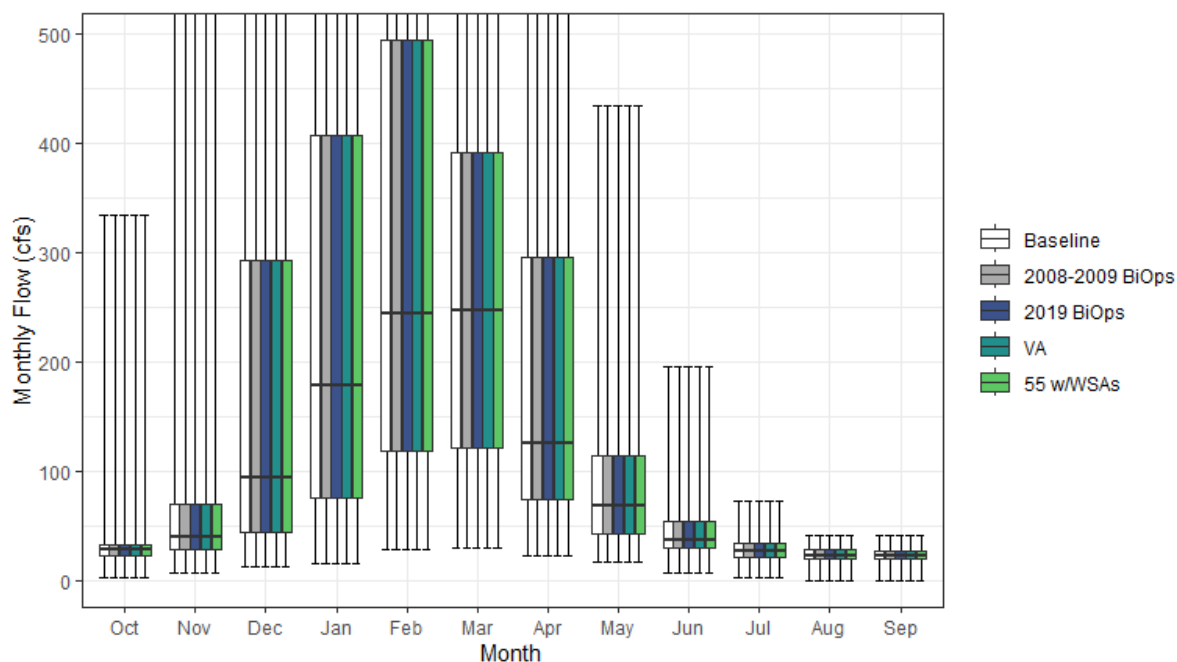


Figure H1a2-7. Big Chico Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

**Table H1a2-13. Cumulative Distribution of Monthly Flow (cfs) — Big Chico Creek above Confluence with Sacramento River (SWRCB Big Chico)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 3   | 7   | 12    | 16    | 27    | 29    | 22  | 17  | 7   | 2   | 0   | 0   | 18           |
| 10%                    | 18  | 23  | 28    | 42    | 70    | 79    | 51  | 31  | 23  | 16  | 14  | 14  | 37           |
| 25%                    | 23  | 28  | 44    | 76    | 118   | 120   | 74  | 43  | 29  | 21  | 19  | 20  | 53           |
| 50%                    | 28  | 40  | 94    | 178   | 244   | 247   | 125 | 68  | 37  | 27  | 23  | 23  | 83           |
| 75%                    | 32  | 69  | 293   | 407   | 494   | 391   | 296 | 114 | 54  | 35  | 28  | 27  | 134          |
| 90%                    | 42  | 137 | 483   | 718   | 789   | 646   | 414 | 185 | 74  | 42  | 33  | 31  | 198          |
| 100%                   | 334 | 651 | 1,006 | 1,503 | 1,421 | 1,332 | 892 | 434 | 196 | 72  | 41  | 40  | 246          |
| Mean                   | 32  | 68  | 185   | 292   | 357   | 311   | 201 | 92  | 45  | 28  | 23  | 23  | 99           |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 3   | 7   | 12    | 16    | 27    | 29    | 22  | 17  | 7   | 2   | 0   | 0   | 18           |
| 10%                    | 18  | 23  | 28    | 42    | 70    | 79    | 51  | 31  | 23  | 16  | 14  | 14  | 37           |
| 25%                    | 23  | 28  | 44    | 76    | 118   | 120   | 74  | 43  | 29  | 21  | 19  | 20  | 53           |
| 50%                    | 28  | 40  | 94    | 178   | 244   | 247   | 125 | 68  | 37  | 27  | 23  | 23  | 83           |
| 75%                    | 32  | 69  | 293   | 407   | 494   | 391   | 296 | 114 | 54  | 35  | 28  | 27  | 134          |
| 90%                    | 42  | 137 | 483   | 718   | 789   | 646   | 414 | 185 | 74  | 42  | 33  | 31  | 198          |
| 100%                   | 334 | 651 | 1,006 | 1,503 | 1,421 | 1,332 | 892 | 434 | 196 | 72  | 41  | 40  | 246          |
| Mean                   | 32  | 68  | 185   | 292   | 357   | 311   | 201 | 92  | 45  | 28  | 23  | 23  | 99           |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 3   | 7   | 12    | 16    | 27    | 29    | 22  | 17  | 7   | 2   | 0   | 0   | 18           |
| 10%                    | 18  | 23  | 28    | 42    | 70    | 79    | 51  | 31  | 23  | 16  | 14  | 14  | 37           |
| 25%                    | 23  | 28  | 44    | 76    | 118   | 120   | 74  | 43  | 29  | 21  | 19  | 20  | 53           |
| 50%                    | 28  | 40  | 94    | 178   | 244   | 247   | 125 | 68  | 37  | 27  | 23  | 23  | 83           |
| 75%                    | 32  | 69  | 293   | 407   | 494   | 391   | 296 | 114 | 54  | 35  | 28  | 27  | 134          |
| 90%                    | 42  | 137 | 483   | 718   | 789   | 646   | 414 | 185 | 74  | 42  | 33  | 31  | 198          |
| 100%                   | 334 | 651 | 1,006 | 1,503 | 1,421 | 1,332 | 892 | 434 | 196 | 72  | 41  | 40  | 246          |
| Mean                   | 32  | 68  | 185   | 292   | 357   | 311   | 201 | 92  | 45  | 28  | 23  | 23  | 99           |
| <b>VA</b>              |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 3   | 7   | 12    | 16    | 27    | 29    | 22  | 17  | 7   | 2   | 0   | 0   | 18           |
| 10%                    | 18  | 23  | 28    | 42    | 70    | 79    | 51  | 31  | 23  | 16  | 14  | 14  | 37           |
| 25%                    | 23  | 28  | 44    | 76    | 118   | 120   | 74  | 43  | 29  | 21  | 19  | 20  | 53           |
| 50%                    | 28  | 40  | 94    | 178   | 244   | 247   | 125 | 68  | 37  | 27  | 23  | 23  | 83           |
| 75%                    | 32  | 69  | 293   | 407   | 494   | 391   | 296 | 114 | 54  | 35  | 28  | 27  | 134          |
| 90%                    | 42  | 137 | 483   | 718   | 789   | 646   | 414 | 185 | 74  | 42  | 33  | 31  | 198          |
| 100%                   | 334 | 651 | 1,006 | 1,503 | 1,421 | 1,332 | 892 | 434 | 196 | 72  | 41  | 40  | 246          |
| Mean                   | 32  | 68  | 185   | 292   | 357   | 311   | 201 | 92  | 45  | 28  | 23  | 23  | 99           |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 3   | 7   | 12    | 16    | 27    | 29    | 22  | 17  | 7   | 2   | 0   | 0   | 18           |
| 10%                    | 18  | 23  | 28    | 42    | 70    | 79    | 51  | 31  | 23  | 16  | 14  | 14  | 37           |
| 25%                    | 23  | 28  | 44    | 76    | 118   | 120   | 74  | 43  | 29  | 21  | 19  | 20  | 53           |
| 50%                    | 28  | 40  | 94    | 178   | 244   | 247   | 125 | 68  | 37  | 27  | 23  | 23  | 83           |
| 75%                    | 32  | 69  | 293   | 407   | 494   | 391   | 296 | 114 | 54  | 35  | 28  | 27  | 134          |
| 90%                    | 42  | 137 | 483   | 718   | 789   | 646   | 414 | 185 | 74  | 42  | 33  | 31  | 198          |
| 100%                   | 334 | 651 | 1,006 | 1,503 | 1,421 | 1,332 | 892 | 434 | 196 | 72  | 41  | 40  | 246          |
| Mean                   | 32  | 68  | 185   | 292   | 357   | 311   | 201 | 92  | 45  | 28  | 23  | 23  | 99           |

**Table H1a2-14. Water Year Average of Monthly Flows (cfs) — Big Chico Creek above Confluence with Sacramento River (SWRCB Big Chico)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 25  | 68  | 80  | 129 | 116 | 57  | 36  | 26  | 14  | 12  | 12  |
| D                      | 27  | 51  | 114 | 101 | 181 | 203 | 107 | 56  | 31  | 22  | 19  | 21  |
| BN                     | 29  | 51  | 114 | 198 | 293 | 251 | 193 | 73  | 39  | 25  | 22  | 23  |
| AN                     | 32  | 68  | 135 | 417 | 490 | 373 | 218 | 122 | 53  | 33  | 26  | 25  |
| W                      | 42  | 116 | 365 | 555 | 596 | 507 | 343 | 147 | 67  | 40  | 30  | 28  |
| All                    | 32  | 68  | 185 | 292 | 357 | 311 | 201 | 92  | 45  | 28  | 23  | 23  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 25  | 68  | 80  | 129 | 116 | 57  | 36  | 26  | 14  | 12  | 12  |
| D                      | 27  | 51  | 114 | 101 | 181 | 203 | 107 | 56  | 31  | 22  | 19  | 21  |
| BN                     | 29  | 51  | 114 | 198 | 293 | 251 | 193 | 73  | 39  | 25  | 22  | 23  |
| AN                     | 32  | 68  | 135 | 417 | 490 | 373 | 218 | 122 | 53  | 33  | 26  | 25  |
| W                      | 42  | 116 | 365 | 555 | 596 | 507 | 343 | 147 | 67  | 40  | 30  | 28  |
| All                    | 32  | 68  | 185 | 292 | 357 | 311 | 201 | 92  | 45  | 28  | 23  | 23  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 25  | 68  | 80  | 129 | 116 | 57  | 36  | 26  | 14  | 12  | 12  |
| D                      | 27  | 51  | 114 | 101 | 181 | 203 | 107 | 56  | 31  | 22  | 19  | 21  |
| BN                     | 29  | 51  | 114 | 198 | 293 | 251 | 193 | 73  | 39  | 25  | 22  | 23  |
| AN                     | 32  | 68  | 135 | 417 | 490 | 373 | 218 | 122 | 53  | 33  | 26  | 25  |
| W                      | 42  | 116 | 365 | 555 | 596 | 507 | 343 | 147 | 67  | 40  | 30  | 28  |
| All                    | 32  | 68  | 185 | 292 | 357 | 311 | 201 | 92  | 45  | 28  | 23  | 23  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 25  | 68  | 80  | 129 | 116 | 57  | 36  | 26  | 14  | 12  | 12  |
| D                      | 27  | 51  | 114 | 101 | 181 | 203 | 107 | 56  | 31  | 22  | 19  | 21  |
| BN                     | 29  | 51  | 114 | 198 | 293 | 251 | 193 | 73  | 39  | 25  | 22  | 23  |
| AN                     | 32  | 68  | 135 | 417 | 490 | 373 | 218 | 122 | 53  | 33  | 26  | 25  |
| W                      | 42  | 116 | 365 | 555 | 596 | 507 | 343 | 147 | 67  | 40  | 30  | 28  |
| All                    | 32  | 68  | 185 | 292 | 357 | 311 | 201 | 92  | 45  | 28  | 23  | 23  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 25  | 68  | 80  | 129 | 116 | 57  | 36  | 26  | 14  | 12  | 12  |
| D                      | 27  | 51  | 114 | 101 | 181 | 203 | 107 | 56  | 31  | 22  | 19  | 21  |
| BN                     | 29  | 51  | 114 | 198 | 293 | 251 | 193 | 73  | 39  | 25  | 22  | 23  |
| AN                     | 32  | 68  | 135 | 417 | 490 | 373 | 218 | 122 | 53  | 33  | 26  | 25  |
| W                      | 42  | 116 | 365 | 555 | 596 | 507 | 343 | 147 | 67  | 40  | 30  | 28  |
| All                    | 32  | 68  | 185 | 292 | 357 | 311 | 201 | 92  | 45  | 28  | 23  | 23  |

## H1a2.2.8 Butte Creek above Butte Slough (SWRCB Butte Creek)

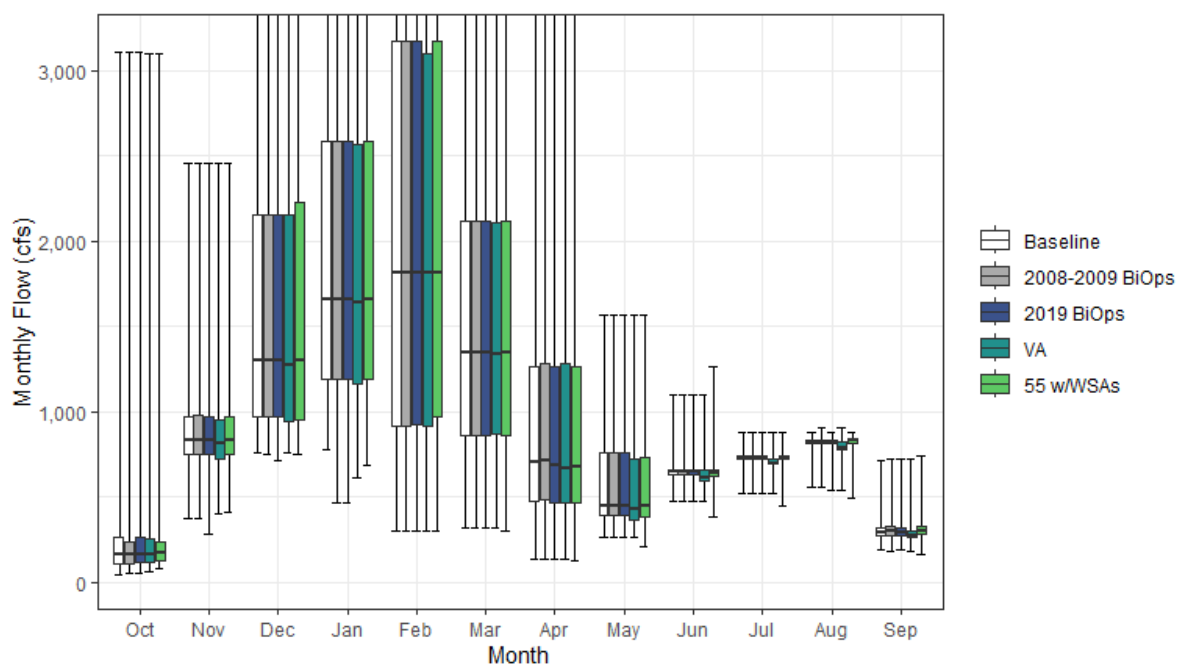


Figure H1a2-8. Butte Creek Streamflow above Butte Slough Monthly Boxplot (cfs)

**Table H1a2-15. Cumulative Distribution of Monthly Flow (cfs) — Butte Creek above Butte Slough (SWRCB Butte Creek)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 43    | 374   | 757   | 772   | 304   | 314   | 132   | 261   | 471   | 520 | 557 | 186 | 329          |
| 10%                    | 98    | 692   | 841   | 940   | 534   | 532   | 327   | 361   | 593   | 654 | 743 | 247 | 496          |
| 25%                    | 112   | 753   | 966   | 1,188 | 918   | 857   | 472   | 390   | 627   | 721 | 815 | 272 | 580          |
| 50%                    | 159   | 835   | 1,300 | 1,656 | 1,810 | 1,341 | 705   | 446   | 645   | 728 | 825 | 292 | 709          |
| 75%                    | 260   | 972   | 2,153 | 2,582 | 3,169 | 2,113 | 1,265 | 757   | 661   | 737 | 833 | 318 | 957          |
| 90%                    | 368   | 1,241 | 3,235 | 3,866 | 4,680 | 3,015 | 1,757 | 1,107 | 758   | 750 | 840 | 361 | 1,121        |
| 100%                   | 3,103 | 2,457 | 5,343 | 7,889 | 8,501 | 6,622 | 3,482 | 1,568 | 1,096 | 879 | 880 | 715 | 1,525        |
| Mean                   | 228   | 918   | 1,711 | 2,111 | 2,326 | 1,614 | 921   | 599   | 667   | 717 | 808 | 302 | 776          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 50    | 372   | 752   | 462   | 304   | 314   | 132   | 261   | 471   | 519 | 557 | 179 | 329          |
| 10%                    | 98    | 692   | 841   | 939   | 533   | 532   | 325   | 361   | 593   | 655 | 743 | 261 | 498          |
| 25%                    | 112   | 753   | 966   | 1,188 | 918   | 857   | 481   | 390   | 627   | 721 | 814 | 275 | 584          |
| 50%                    | 159   | 835   | 1,300 | 1,656 | 1,811 | 1,341 | 713   | 446   | 645   | 729 | 825 | 296 | 711          |
| 75%                    | 239   | 978   | 2,153 | 2,580 | 3,169 | 2,112 | 1,278 | 757   | 661   | 738 | 833 | 325 | 962          |
| 90%                    | 346   | 1,253 | 3,235 | 3,866 | 4,672 | 3,015 | 1,757 | 1,107 | 758   | 754 | 843 | 353 | 1,121        |
| 100%                   | 3,103 | 2,457 | 5,346 | 7,889 | 8,462 | 6,622 | 3,494 | 1,568 | 1,096 | 879 | 909 | 719 | 1,525        |
| Mean                   | 225   | 918   | 1,712 | 2,108 | 2,322 | 1,613 | 922   | 604   | 665   | 721 | 808 | 306 | 776          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 56    | 277   | 708   | 462   | 304   | 314   | 132   | 261   | 471   | 520 | 537 | 186 | 328          |
| 10%                    | 102   | 694   | 841   | 939   | 534   | 532   | 325   | 361   | 593   | 654 | 743 | 254 | 494          |
| 25%                    | 115   | 753   | 966   | 1,187 | 919   | 857   | 462   | 388   | 627   | 723 | 815 | 272 | 583          |
| 50%                    | 160   | 835   | 1,300 | 1,656 | 1,810 | 1,341 | 685   | 448   | 645   | 728 | 825 | 288 | 700          |
| 75%                    | 260   | 972   | 2,153 | 2,582 | 3,169 | 2,115 | 1,265 | 762   | 661   | 738 | 833 | 316 | 962          |
| 90%                    | 368   | 1,241 | 3,238 | 3,865 | 4,680 | 3,015 | 1,757 | 1,107 | 755   | 753 | 840 | 362 | 1,118        |
| 100%                   | 3,103 | 2,457 | 5,343 | 7,889 | 8,501 | 6,622 | 3,554 | 1,568 | 1,096 | 878 | 880 | 718 | 1,523        |
| Mean                   | 229   | 919   | 1,709 | 2,108 | 2,323 | 1,614 | 916   | 601   | 665   | 720 | 807 | 301 | 776          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 64    | 397   | 754   | 615   | 304   | 314   | 132   | 261   | 471   | 519 | 543 | 184 | 331          |
| 10%                    | 100   | 660   | 814   | 909   | 533   | 531   | 321   | 351   | 584   | 654 | 741 | 240 | 483          |
| 25%                    | 119   | 726   | 945   | 1,163 | 916   | 872   | 464   | 367   | 594   | 690 | 772 | 259 | 566          |
| 50%                    | 159   | 811   | 1,274 | 1,641 | 1,810 | 1,334 | 666   | 431   | 611   | 698 | 785 | 276 | 683          |
| 75%                    | 256   | 950   | 2,153 | 2,567 | 3,093 | 2,106 | 1,278 | 720   | 657   | 725 | 820 | 302 | 952          |
| 90%                    | 367   | 1,205 | 3,223 | 3,865 | 4,641 | 3,009 | 1,697 | 1,038 | 755   | 752 | 837 | 337 | 1,120        |
| 100%                   | 3,099 | 2,458 | 5,343 | 7,888 | 8,462 | 6,659 | 3,482 | 1,568 | 1,096 | 878 | 909 | 719 | 1,525        |
| Mean                   | 228   | 898   | 1,697 | 2,094 | 2,310 | 1,612 | 903   | 576   | 642   | 702 | 784 | 290 | 765          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 77    | 414   | 752   | 684   | 304   | 303   | 130   | 205   | 384   | 444 | 489 | 160 | 304          |
| 10%                    | 104   | 698   | 841   | 899   | 528   | 532   | 325   | 282   | 456   | 545 | 629 | 232 | 487          |
| 25%                    | 126   | 753   | 955   | 1,187 | 966   | 857   | 461   | 385   | 619   | 720 | 814 | 278 | 576          |
| 50%                    | 169   | 832   | 1,300 | 1,656 | 1,811 | 1,341 | 680   | 442   | 641   | 729 | 830 | 301 | 700          |
| 75%                    | 238   | 972   | 2,227 | 2,582 | 3,169 | 2,114 | 1,264 | 729   | 661   | 738 | 838 | 329 | 963          |
| 90%                    | 360   | 1,293 | 3,236 | 3,865 | 4,672 | 3,015 | 1,703 | 1,108 | 759   | 753 | 845 | 349 | 1,123        |
| 100%                   | 3,099 | 2,457 | 5,343 | 7,885 | 8,462 | 6,622 | 3,482 | 1,568 | 1,261 | 879 | 881 | 737 | 1,518        |
| Mean                   | 232   | 927   | 1,716 | 2,102 | 2,315 | 1,614 | 904   | 581   | 646   | 701 | 795 | 308 | 771          |

**Table H1a2-16. Water Year Average of Monthly Flows (cfs) — Butte Creek above Butte Slough (SWRCB Butte Creek)**

| Water Year Type        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |       |       |       |       |       |       |     |     |     |     |     |
| C                      | 150 | 737   | 1,213 | 1,221 | 1,149 | 888   | 313   | 348 | 565 | 626 | 705 | 235 |
| D                      | 170 | 844   | 1,428 | 1,239 | 1,413 | 1,213 | 611   | 424 | 639 | 730 | 828 | 341 |
| BN                     | 186 | 836   | 1,285 | 1,735 | 2,122 | 1,416 | 952   | 535 | 661 | 726 | 821 | 299 |
| AN                     | 206 | 880   | 1,559 | 2,717 | 3,111 | 1,884 | 1,037 | 695 | 678 | 730 | 824 | 323 |
| W                      | 348 | 1,137 | 2,515 | 3,219 | 3,439 | 2,313 | 1,408 | 863 | 741 | 746 | 832 | 303 |
| All                    | 228 | 918   | 1,711 | 2,111 | 2,326 | 1,614 | 921   | 599 | 667 | 717 | 808 | 302 |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |     |     |     |     |     |
| C                      | 150 | 736   | 1,213 | 1,201 | 1,136 | 885   | 313   | 348 | 564 | 627 | 705 | 241 |
| D                      | 163 | 838   | 1,426 | 1,240 | 1,413 | 1,210 | 608   | 424 | 639 | 730 | 826 | 344 |
| BN                     | 183 | 845   | 1,285 | 1,737 | 2,122 | 1,413 | 958   | 537 | 652 | 728 | 819 | 298 |
| AN                     | 199 | 885   | 1,574 | 2,720 | 3,111 | 1,886 | 1,048 | 725 | 678 | 729 | 824 | 315 |
| W                      | 347 | 1,134 | 2,514 | 3,219 | 3,434 | 2,313 | 1,403 | 869 | 741 | 757 | 837 | 313 |
| All                    | 225 | 918   | 1,712 | 2,108 | 2,322 | 1,613 | 922   | 604 | 665 | 721 | 808 | 306 |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |     |     |     |     |     |
| C                      | 146 | 737   | 1,213 | 1,201 | 1,136 | 885   | 313   | 348 | 564 | 626 | 703 | 237 |
| D                      | 165 | 849   | 1,420 | 1,239 | 1,409 | 1,213 | 592   | 423 | 639 | 729 | 826 | 342 |
| BN                     | 190 | 835   | 1,283 | 1,736 | 2,122 | 1,415 | 942   | 530 | 661 | 726 | 820 | 296 |
| AN                     | 215 | 876   | 1,558 | 2,717 | 3,111 | 1,886 | 1,038 | 737 | 659 | 733 | 824 | 325 |
| W                      | 350 | 1,137 | 2,516 | 3,219 | 3,437 | 2,313 | 1,409 | 858 | 742 | 754 | 834 | 300 |
| All                    | 229 | 919   | 1,709 | 2,108 | 2,323 | 1,614 | 916   | 601 | 665 | 720 | 807 | 301 |
| <b>VA</b>              |     |       |       |       |       |       |       |     |     |     |     |     |
| C                      | 147 | 737   | 1,213 | 1,222 | 1,149 | 897   | 317   | 348 | 564 | 627 | 703 | 236 |
| D                      | 166 | 803   | 1,391 | 1,193 | 1,379 | 1,207 | 578   | 397 | 600 | 695 | 782 | 321 |
| BN                     | 188 | 802   | 1,254 | 1,712 | 2,101 | 1,411 | 912   | 487 | 614 | 693 | 777 | 280 |
| AN                     | 211 | 844   | 1,556 | 2,699 | 3,079 | 1,880 | 995   | 635 | 620 | 696 | 777 | 297 |
| W                      | 349 | 1,135 | 2,516 | 3,219 | 3,436 | 2,312 | 1,410 | 862 | 741 | 754 | 836 | 300 |
| All                    | 228 | 898   | 1,697 | 2,094 | 2,310 | 1,612 | 903   | 576 | 642 | 702 | 784 | 290 |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |     |     |     |     |     |
| C                      | 152 | 749   | 1,204 | 1,194 | 1,122 | 883   | 312   | 294 | 469 | 534 | 621 | 221 |
| D                      | 169 | 868   | 1,445 | 1,222 | 1,397 | 1,211 | 588   | 412 | 606 | 714 | 815 | 341 |
| BN                     | 197 | 844   | 1,275 | 1,736 | 2,119 | 1,421 | 934   | 533 | 661 | 728 | 828 | 318 |
| AN                     | 216 | 895   | 1,601 | 2,724 | 3,106 | 1,884 | 1,011 | 680 | 678 | 736 | 834 | 347 |
| W                      | 348 | 1,132 | 2,513 | 3,215 | 3,433 | 2,313 | 1,390 | 850 | 747 | 748 | 837 | 308 |
| All                    | 232 | 927   | 1,716 | 2,102 | 2,315 | 1,614 | 904   | 581 | 646 | 701 | 795 | 308 |

## H1a2.2.9 Cache Creek below Clear Lake (SWRCB Clear Lake)

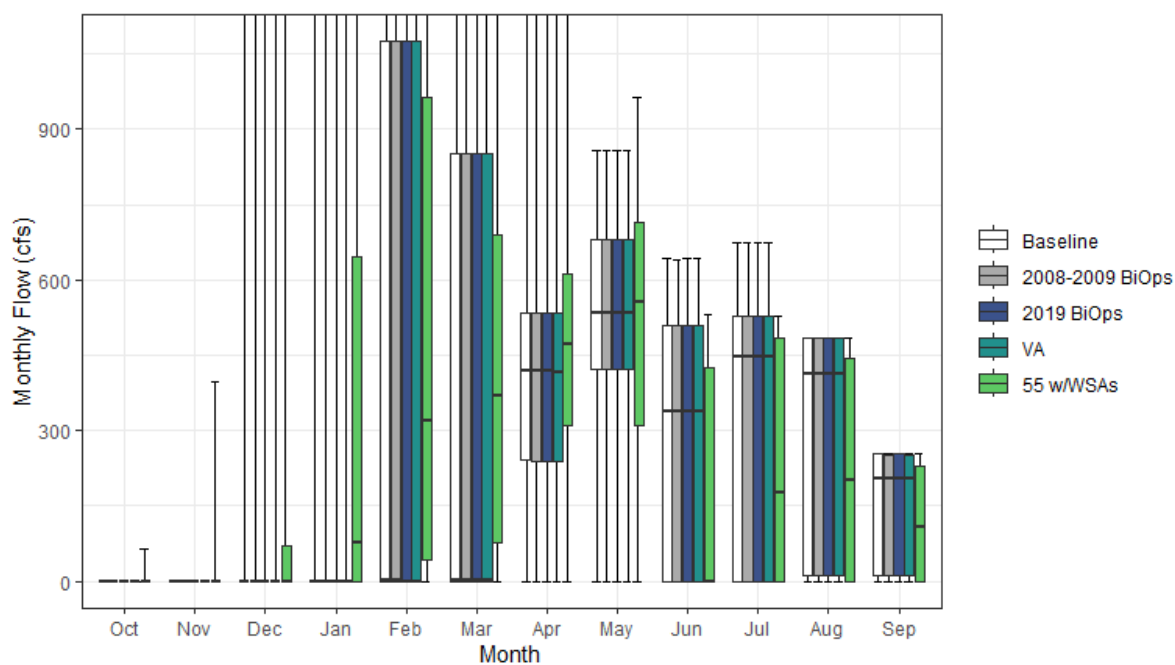


Figure H1a2-9. Cache Creek Streamflow below Clear Lake Monthly Boxplot (cfs)

**Table H1a2-17. Cumulative Distribution of Monthly Flow (cfs) — Cache Creek below Clear Lake (SWRCB Clear Lake)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0            |
| 10%                    | 0   | 0   | 0     | 0     | 0     | 0     | 82    | 132 | 0   | 0   | 0   | 0   | 17           |
| 25%                    | 0   | 0   | 0     | 0     | 0     | 0     | 240   | 423 | 0   | 0   | 11  | 11  | 61           |
| 50%                    | 0   | 0   | 0     | 0     | 1     | 1     | 418   | 534 | 340 | 448 | 413 | 206 | 165          |
| 75%                    | 0   | 0   | 0     | 1     | 1,075 | 851   | 536   | 681 | 510 | 529 | 485 | 253 | 368          |
| 90%                    | 1   | 1   | 1     | 1,644 | 3,366 | 2,150 | 1,288 | 795 | 510 | 529 | 485 | 253 | 563          |
| 100%                   | 1   | 1   | 3,077 | 5,209 | 7,686 | 6,042 | 3,128 | 857 | 642 | 674 | 485 | 253 | 970          |
| Mean                   | 0   | 0   | 55    | 432   | 806   | 641   | 537   | 515 | 267 | 309 | 290 | 150 | 240          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0            |
| 10%                    | 0   | 0   | 0     | 0     | 0     | 0     | 82    | 132 | 0   | 0   | 0   | 0   | 17           |
| 25%                    | 0   | 0   | 0     | 0     | 0     | 0     | 240   | 423 | 0   | 0   | 12  | 11  | 61           |
| 50%                    | 0   | 0   | 0     | 0     | 1     | 1     | 418   | 534 | 339 | 448 | 412 | 206 | 165          |
| 75%                    | 0   | 0   | 0     | 1     | 1,075 | 851   | 535   | 681 | 510 | 529 | 485 | 253 | 368          |
| 90%                    | 1   | 1   | 1     | 1,644 | 3,365 | 2,150 | 1,288 | 795 | 510 | 529 | 485 | 253 | 563          |
| 100%                   | 1   | 1   | 3,076 | 5,209 | 7,686 | 6,042 | 3,128 | 858 | 641 | 674 | 485 | 253 | 970          |
| Mean                   | 0   | 0   | 55    | 432   | 806   | 641   | 537   | 515 | 267 | 309 | 290 | 149 | 240          |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0            |
| 10%                    | 0   | 0   | 0     | 0     | 0     | 0     | 82    | 132 | 0   | 0   | 0   | 0   | 17           |
| 25%                    | 0   | 0   | 0     | 0     | 0     | 0     | 240   | 423 | 0   | 0   | 12  | 11  | 61           |
| 50%                    | 0   | 0   | 0     | 0     | 1     | 1     | 418   | 534 | 339 | 448 | 412 | 205 | 165          |
| 75%                    | 0   | 0   | 0     | 1     | 1,075 | 852   | 536   | 681 | 510 | 529 | 485 | 253 | 368          |
| 90%                    | 1   | 1   | 1     | 1,644 | 3,365 | 2,150 | 1,288 | 795 | 510 | 529 | 485 | 253 | 563          |
| 100%                   | 1   | 1   | 3,076 | 5,209 | 7,686 | 6,042 | 3,128 | 858 | 642 | 674 | 485 | 253 | 970          |
| Mean                   | 0   | 0   | 55    | 432   | 806   | 641   | 537   | 515 | 267 | 309 | 290 | 150 | 240          |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0            |
| 10%                    | 0   | 0   | 0     | 0     | 0     | 0     | 82    | 132 | 0   | 0   | 0   | 0   | 17           |
| 25%                    | 0   | 0   | 0     | 0     | 0     | 0     | 240   | 423 | 0   | 0   | 12  | 11  | 61           |
| 50%                    | 0   | 0   | 0     | 0     | 1     | 1     | 417   | 534 | 340 | 448 | 412 | 206 | 165          |
| 75%                    | 0   | 0   | 0     | 1     | 1,075 | 851   | 535   | 681 | 510 | 529 | 485 | 253 | 368          |
| 90%                    | 1   | 0   | 1     | 1,644 | 3,366 | 2,150 | 1,288 | 795 | 510 | 529 | 485 | 253 | 563          |
| 100%                   | 1   | 1   | 3,076 | 5,209 | 7,686 | 6,042 | 3,128 | 857 | 642 | 674 | 485 | 253 | 970          |
| Mean                   | 0   | 0   | 55    | 432   | 806   | 641   | 537   | 515 | 267 | 309 | 290 | 150 | 240          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0            |
| 10%                    | 0   | 0   | 0     | 0     | 0     | 1     | 103   | 103 | 0   | 0   | 0   | 0   | 17           |
| 25%                    | 0   | 0   | 0     | 0     | 42    | 78    | 309   | 310 | 0   | 0   | 0   | 0   | 66           |
| 50%                    | 0   | 0   | 0     | 77    | 321   | 370   | 472   | 555 | 0   | 176 | 202 | 109 | 149          |
| 75%                    | 0   | 0   | 70    | 646   | 965   | 689   | 613   | 715 | 426 | 486 | 445 | 229 | 365          |
| 90%                    | 1   | 1   | 387   | 1,331 | 2,641 | 2,059 | 1,142 | 849 | 510 | 529 | 485 | 253 | 572          |
| 100%                   | 64  | 396 | 2,358 | 5,209 | 7,331 | 6,042 | 3,128 | 963 | 531 | 530 | 485 | 253 | 999          |
| Mean                   | 1   | 8   | 131   | 499   | 828   | 698   | 586   | 517 | 190 | 231 | 219 | 117 | 241          |

**Table H1a2-18. Water Year Average of Monthly Flows (cfs) — Cache Creek below Clear Lake (SWRCB Clear Lake)**

| Water Year Type        | Oct | Nov | Dec | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 0   | 0   | 0   | 0     | 1     | 0     | 146 | 216 | 1   | 17  | 16  | 8   |
| D                      | 0   | 0   | 0   | 0     | 0     | 6     | 385 | 523 | 74  | 117 | 139 | 77  |
| BN                     | 0   | 0   | 10  | 58    | 276   | 121   | 360 | 595 | 228 | 309 | 291 | 153 |
| AN                     | 0   | 0   | 0   | 71    | 912   | 701   | 596 | 537 | 453 | 496 | 455 | 237 |
| W                      | 0   | 0   | 173 | 1,359 | 2,119 | 1,754 | 944 | 607 | 502 | 530 | 479 | 241 |
| All                    | 0   | 0   | 55  | 432   | 806   | 641   | 537 | 515 | 267 | 309 | 290 | 150 |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 0   | 0   | 0   | 0     | 1     | 0     | 146 | 216 | 1   | 17  | 16  | 8   |
| D                      | 0   | 0   | 0   | 0     | 0     | 6     | 385 | 523 | 74  | 117 | 139 | 77  |
| BN                     | 0   | 0   | 11  | 58    | 276   | 121   | 360 | 595 | 228 | 309 | 292 | 153 |
| AN                     | 0   | 0   | 0   | 71    | 912   | 701   | 596 | 537 | 453 | 496 | 455 | 237 |
| W                      | 0   | 0   | 173 | 1,359 | 2,119 | 1,754 | 944 | 607 | 502 | 530 | 479 | 241 |
| All                    | 0   | 0   | 55  | 432   | 806   | 641   | 537 | 515 | 267 | 309 | 290 | 149 |
| <b>2019 BiOps</b>      |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 0   | 0   | 0   | 0     | 1     | 0     | 146 | 216 | 1   | 17  | 16  | 8   |
| D                      | 0   | 0   | 0   | 0     | 0     | 6     | 386 | 523 | 74  | 117 | 139 | 77  |
| BN                     | 0   | 0   | 10  | 58    | 276   | 121   | 360 | 595 | 228 | 309 | 291 | 153 |
| AN                     | 0   | 0   | 0   | 71    | 912   | 701   | 596 | 537 | 453 | 496 | 455 | 237 |
| W                      | 0   | 0   | 173 | 1,359 | 2,119 | 1,754 | 944 | 607 | 502 | 530 | 479 | 241 |
| All                    | 0   | 0   | 55  | 432   | 806   | 641   | 537 | 515 | 267 | 309 | 290 | 150 |
| <b>VA</b>              |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 0   | 0   | 0   | 0     | 0     | 0     | 146 | 217 | 1   | 17  | 16  | 8   |
| D                      | 0   | 0   | 0   | 0     | 0     | 6     | 385 | 523 | 74  | 117 | 139 | 77  |
| BN                     | 0   | 0   | 10  | 57    | 276   | 121   | 360 | 595 | 228 | 309 | 291 | 153 |
| AN                     | 0   | 0   | 0   | 71    | 912   | 701   | 596 | 537 | 453 | 496 | 455 | 237 |
| W                      | 0   | 0   | 173 | 1,359 | 2,119 | 1,753 | 944 | 607 | 502 | 530 | 479 | 241 |
| All                    | 0   | 0   | 55  | 432   | 806   | 641   | 537 | 515 | 267 | 309 | 290 | 150 |
| <b>55 w/WSAs</b>       |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 0   | 0   | 0   | 48    | 65    | 36    | 132 | 173 | 0   | 0   | 0   | 0   |
| D                      | 0   | 1   | 21  | 40    | 162   | 229   | 392 | 465 | 25  | 47  | 53  | 34  |
| BN                     | 0   | 0   | 52  | 178   | 440   | 283   | 487 | 526 | 76  | 142 | 150 | 88  |
| AN                     | 0   | 1   | 62  | 339   | 939   | 670   | 678 | 604 | 266 | 362 | 342 | 182 |
| W                      | 3   | 25  | 359 | 1,343 | 1,926 | 1,668 | 996 | 700 | 455 | 494 | 452 | 232 |
| All                    | 1   | 8   | 131 | 499   | 828   | 698   | 586 | 517 | 190 | 231 | 219 | 117 |

## H1a2.2.10 Cache Creek above Yolo Bypass (SWRCB Cache Creek)

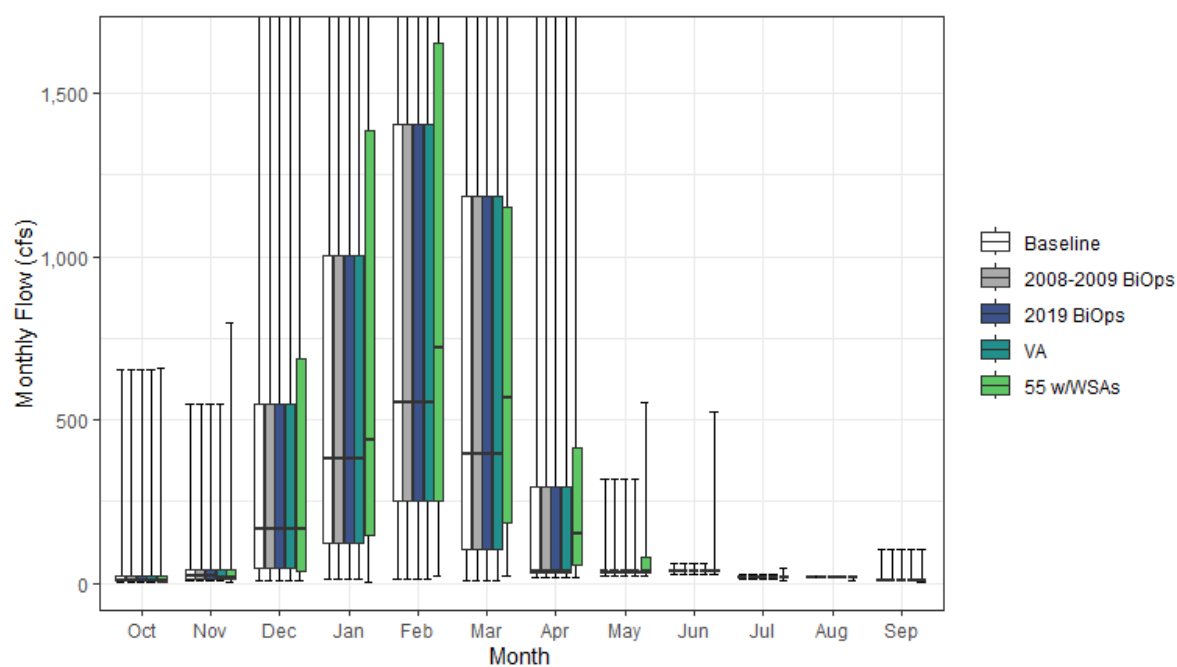


Figure H1a2-10. Cache Creek Streamflow above Yolo Bypass Monthly Boxplot (cfs)

**Table H1a2-19. Cumulative Distribution of Monthly Flow (cfs) — Cache Creek above Yolo Bypass (SWRCB Cache Creek)**

|                        | Oct | Nov | Dec   | Jan   | Feb    | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|--------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |        |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 8   | 9     | 11    | 12     | 10    | 20    | 24  | 27  | 15  | 16  | 7   | 16           |
| 10%                    | 5   | 10  | 18    | 42    | 45     | 39    | 23    | 28  | 30  | 16  | 17  | 9   | 39           |
| 25%                    | 6   | 12  | 46    | 123   | 251    | 105   | 31    | 33  | 36  | 17  | 18  | 9   | 65           |
| 50%                    | 9   | 20  | 165   | 380   | 554    | 395   | 36    | 35  | 37  | 18  | 19  | 9   | 123          |
| 75%                    | 23  | 40  | 550   | 1,004 | 1,404  | 1,184 | 293   | 37  | 39  | 19  | 20  | 10  | 366          |
| 90%                    | 35  | 123 | 896   | 2,445 | 4,344  | 2,510 | 1,385 | 51  | 40  | 19  | 20  | 11  | 630          |
| 100%                   | 656 | 548 | 4,636 | 6,823 | 11,644 | 8,616 | 3,815 | 320 | 60  | 26  | 23  | 103 | 1,247        |
| Mean                   | 26  | 47  | 381   | 947   | 1,389  | 946   | 367   | 47  | 37  | 18  | 18  | 11  | 252          |
| <b>2008-2009 BiOps</b> |     |     |       |       |        |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 8   | 9     | 11    | 12     | 10    | 20    | 24  | 27  | 15  | 16  | 7   | 16           |
| 10%                    | 5   | 10  | 18    | 42    | 46     | 38    | 23    | 28  | 30  | 16  | 17  | 9   | 39           |
| 25%                    | 6   | 12  | 46    | 123   | 250    | 105   | 30    | 33  | 36  | 17  | 18  | 9   | 65           |
| 50%                    | 10  | 20  | 165   | 380   | 554    | 394   | 36    | 35  | 37  | 18  | 19  | 9   | 124          |
| 75%                    | 23  | 41  | 550   | 1,005 | 1,404  | 1,184 | 293   | 37  | 39  | 19  | 19  | 10  | 366          |
| 90%                    | 35  | 124 | 896   | 2,445 | 4,344  | 2,510 | 1,385 | 51  | 40  | 19  | 20  | 11  | 630          |
| 100%                   | 656 | 547 | 4,636 | 6,823 | 11,644 | 8,616 | 3,815 | 320 | 60  | 26  | 23  | 103 | 1,247        |
| Mean                   | 26  | 47  | 381   | 947   | 1,389  | 946   | 367   | 47  | 37  | 18  | 18  | 11  | 252          |
| <b>2019 BiOps</b>      |     |     |       |       |        |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 8   | 9     | 11    | 12     | 10    | 20    | 24  | 27  | 15  | 16  | 6   | 16           |
| 10%                    | 5   | 10  | 18    | 42    | 45     | 38    | 23    | 28  | 30  | 16  | 17  | 9   | 39           |
| 25%                    | 6   | 12  | 46    | 123   | 250    | 105   | 31    | 33  | 36  | 17  | 18  | 9   | 65           |
| 50%                    | 10  | 20  | 165   | 380   | 555    | 395   | 36    | 35  | 37  | 18  | 19  | 9   | 123          |
| 75%                    | 23  | 41  | 550   | 1,004 | 1,404  | 1,184 | 293   | 37  | 39  | 19  | 19  | 10  | 366          |
| 90%                    | 35  | 124 | 897   | 2,446 | 4,344  | 2,510 | 1,385 | 51  | 40  | 19  | 20  | 11  | 630          |
| 100%                   | 656 | 548 | 4,635 | 6,823 | 11,644 | 8,616 | 3,815 | 320 | 60  | 26  | 23  | 103 | 1,247        |
| Mean                   | 26  | 47  | 381   | 947   | 1,389  | 946   | 367   | 47  | 37  | 18  | 18  | 11  | 252          |
| <b>VA</b>              |     |     |       |       |        |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 8   | 9     | 11    | 12     | 10    | 20    | 24  | 27  | 15  | 16  | 7   | 16           |
| 10%                    | 5   | 10  | 18    | 42    | 45     | 38    | 23    | 28  | 30  | 16  | 17  | 9   | 39           |
| 25%                    | 6   | 12  | 46    | 123   | 250    | 106   | 31    | 33  | 36  | 17  | 18  | 9   | 65           |
| 50%                    | 10  | 20  | 165   | 380   | 554    | 395   | 36    | 35  | 37  | 18  | 18  | 9   | 123          |
| 75%                    | 23  | 40  | 550   | 1,004 | 1,404  | 1,184 | 293   | 37  | 39  | 19  | 19  | 10  | 366          |
| 90%                    | 35  | 123 | 896   | 2,445 | 4,345  | 2,510 | 1,384 | 51  | 40  | 19  | 20  | 11  | 630          |
| 100%                   | 656 | 549 | 4,635 | 6,823 | 11,644 | 8,616 | 3,815 | 320 | 60  | 26  | 23  | 103 | 1,247        |
| Mean                   | 26  | 47  | 381   | 947   | 1,389  | 946   | 367   | 47  | 37  | 18  | 18  | 11  | 252          |
| <b>55 w/WSAs</b>       |     |     |       |       |        |       |       |     |     |     |     |     |              |
| 0%                     | 2   | 4   | 7     | 5     | 23     | 21    | 19    | 23  | 25  | 10  | 9   | 3   | 17           |
| 10%                    | 4   | 7   | 18    | 53    | 65     | 65    | 31    | 29  | 29  | 15  | 13  | 7   | 47           |
| 25%                    | 6   | 11  | 39    | 148   | 253    | 186   | 56    | 34  | 35  | 17  | 16  | 8   | 91           |
| 50%                    | 9   | 19  | 168   | 440   | 722    | 567   | 152   | 38  | 37  | 18  | 18  | 9   | 167          |
| 75%                    | 24  | 39  | 689   | 1,385 | 1,654  | 1,153 | 416   | 78  | 39  | 19  | 19  | 9   | 385          |
| 90%                    | 35  | 118 | 1,258 | 2,513 | 3,868  | 2,417 | 1,138 | 216 | 57  | 26  | 20  | 10  | 622          |
| 100%                   | 661 | 799 | 4,080 | 6,677 | 10,447 | 8,616 | 3,815 | 552 | 526 | 46  | 21  | 103 | 1,288        |
| Mean                   | 27  | 48  | 452   | 1,014 | 1,368  | 957   | 417   | 87  | 47  | 19  | 17  | 11  | 266          |

**Table H1a2-20. Water Year Average of Monthly Flows (cfs) — Cache Creek above Yolo Bypass (SWRCB Cache Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 13  | 13  | 151 | 217   | 242   | 130   | 26  | 30  | 29  | 18  | 19  | 10  |
| D                      | 10  | 32  | 248 | 187   | 335   | 194   | 98  | 39  | 38  | 18  | 18  | 12  |
| BN                     | 28  | 23  | 185 | 408   | 737   | 377   | 103 | 36  | 38  | 18  | 18  | 14  |
| AN                     | 26  | 57  | 350 | 920   | 1,717 | 1,003 | 300 | 57  | 38  | 17  | 19  | 10  |
| W                      | 44  | 89  | 738 | 2,246 | 3,056 | 2,270 | 939 | 64  | 38  | 18  | 19  | 9   |
| All                    | 26  | 47  | 381 | 947   | 1,389 | 946   | 367 | 47  | 37  | 18  | 18  | 11  |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 13  | 13  | 151 | 217   | 242   | 130   | 26  | 30  | 29  | 18  | 19  | 9   |
| D                      | 10  | 32  | 248 | 187   | 335   | 194   | 98  | 39  | 38  | 18  | 18  | 12  |
| BN                     | 28  | 23  | 185 | 407   | 737   | 377   | 103 | 36  | 38  | 18  | 18  | 14  |
| AN                     | 26  | 57  | 350 | 920   | 1,717 | 1,003 | 300 | 57  | 38  | 18  | 19  | 9   |
| W                      | 44  | 89  | 738 | 2,245 | 3,056 | 2,270 | 939 | 64  | 38  | 18  | 19  | 10  |
| All                    | 26  | 47  | 381 | 947   | 1,389 | 946   | 367 | 47  | 37  | 18  | 18  | 11  |
| <b>2019 BiOps</b>      |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 13  | 13  | 151 | 217   | 242   | 130   | 26  | 30  | 29  | 18  | 19  | 9   |
| D                      | 10  | 32  | 248 | 187   | 335   | 194   | 98  | 39  | 38  | 18  | 18  | 12  |
| BN                     | 28  | 23  | 185 | 407   | 737   | 377   | 103 | 36  | 38  | 18  | 18  | 14  |
| AN                     | 26  | 57  | 350 | 920   | 1,717 | 1,003 | 300 | 57  | 38  | 17  | 19  | 9   |
| W                      | 44  | 89  | 738 | 2,246 | 3,056 | 2,270 | 939 | 64  | 38  | 18  | 19  | 9   |
| All                    | 26  | 47  | 381 | 947   | 1,389 | 946   | 367 | 47  | 37  | 18  | 18  | 11  |
| <b>VA</b>              |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 13  | 13  | 151 | 217   | 242   | 130   | 26  | 30  | 29  | 18  | 19  | 9   |
| D                      | 10  | 32  | 248 | 187   | 335   | 194   | 98  | 39  | 38  | 18  | 18  | 12  |
| BN                     | 28  | 23  | 185 | 407   | 738   | 377   | 103 | 36  | 38  | 18  | 18  | 14  |
| AN                     | 26  | 57  | 350 | 920   | 1,718 | 1,003 | 300 | 57  | 38  | 18  | 19  | 9   |
| W                      | 44  | 89  | 738 | 2,246 | 3,056 | 2,270 | 939 | 64  | 38  | 18  | 18  | 10  |
| All                    | 26  | 47  | 381 | 947   | 1,389 | 946   | 367 | 47  | 37  | 18  | 18  | 11  |
| <b>55 w/WSAs</b>       |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 12  | 12  | 146 | 250   | 288   | 156   | 33  | 31  | 29  | 17  | 17  | 9   |
| D                      | 10  | 30  | 259 | 214   | 456   | 376   | 124 | 51  | 37  | 17  | 15  | 11  |
| BN                     | 27  | 21  | 223 | 497   | 861   | 498   | 242 | 49  | 64  | 17  | 15  | 13  |
| AN                     | 24  | 53  | 389 | 1,180 | 1,698 | 964   | 363 | 115 | 43  | 22  | 19  | 9   |
| W                      | 47  | 96  | 927 | 2,269 | 2,802 | 2,096 | 968 | 156 | 54  | 21  | 18  | 10  |
| All                    | 27  | 48  | 452 | 1,014 | 1,368 | 957   | 417 | 87  | 47  | 19  | 17  | 11  |

## H1a2.2.11 Calaveras River below New Hogan Reservoir (SWRCB New Hogan)

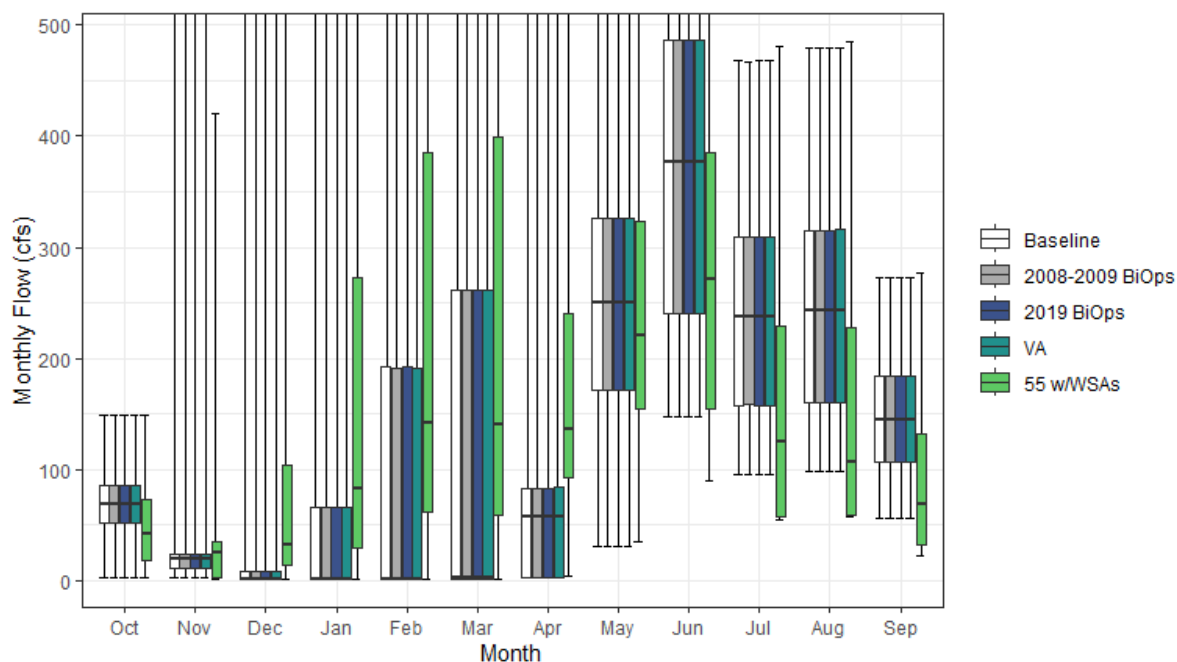


Figure H1a2-11. Calaveras River Streamflow below New Hogan Reservoir Monthly Boxplot (cfs)

**Table H1a2-21. Cumulative Distribution of Monthly Flow (cfs) — Calaveras River below New Hogan Reservoir (SWRCB New Hogan)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 2   | 1     | 1     | 1     | 2     | 2     | 30  | 147 | 95  | 98  | 56  | 36           |
| 10%                    | 35  | 2   | 1     | 1     | 1     | 2     | 2     | 121 | 175 | 115 | 116 | 78  | 48           |
| 25%                    | 51  | 11  | 1     | 1     | 1     | 2     | 3     | 171 | 240 | 158 | 160 | 107 | 63           |
| 50%                    | 68  | 19  | 1     | 1     | 2     | 2     | 58    | 250 | 377 | 237 | 243 | 144 | 94           |
| 75%                    | 85  | 24  | 8     | 65    | 192   | 262   | 83    | 326 | 486 | 309 | 315 | 184 | 207          |
| 90%                    | 113 | 31  | 141   | 787   | 1,267 | 1,116 | 104   | 384 | 561 | 362 | 361 | 234 | 294          |
| 100%                   | 149 | 862 | 1,411 | 3,005 | 3,679 | 2,697 | 1,370 | 542 | 749 | 467 | 479 | 273 | 539          |
| Mean                   | 71  | 36  | 83    | 209   | 327   | 278   | 85    | 250 | 379 | 242 | 245 | 149 | 142          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 2   | 1     | 1     | 1     | 2     | 2     | 30  | 147 | 95  | 98  | 56  | 36           |
| 10%                    | 35  | 2   | 1     | 1     | 1     | 2     | 2     | 121 | 175 | 115 | 116 | 79  | 48           |
| 25%                    | 51  | 11  | 1     | 1     | 1     | 2     | 3     | 171 | 240 | 158 | 160 | 107 | 63           |
| 50%                    | 68  | 19  | 2     | 1     | 2     | 2     | 58    | 250 | 377 | 237 | 243 | 144 | 94           |
| 75%                    | 85  | 24  | 8     | 66    | 192   | 262   | 83    | 326 | 486 | 309 | 315 | 184 | 207          |
| 90%                    | 113 | 31  | 142   | 787   | 1,266 | 1,116 | 104   | 384 | 560 | 362 | 361 | 234 | 294          |
| 100%                   | 149 | 861 | 1,411 | 3,005 | 3,679 | 2,697 | 1,370 | 542 | 749 | 467 | 479 | 273 | 539          |
| Mean                   | 71  | 36  | 83    | 209   | 327   | 278   | 85    | 250 | 379 | 242 | 245 | 149 | 142          |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 2   | 1     | 1     | 1     | 2     | 2     | 30  | 147 | 95  | 98  | 56  | 36           |
| 10%                    | 36  | 2   | 1     | 1     | 1     | 2     | 2     | 121 | 175 | 115 | 116 | 79  | 48           |
| 25%                    | 51  | 11  | 1     | 1     | 1     | 2     | 3     | 171 | 240 | 158 | 160 | 107 | 63           |
| 50%                    | 68  | 19  | 1     | 1     | 2     | 2     | 57    | 250 | 377 | 237 | 243 | 144 | 94           |
| 75%                    | 85  | 24  | 8     | 65    | 192   | 262   | 83    | 326 | 486 | 309 | 315 | 184 | 207          |
| 90%                    | 113 | 31  | 141   | 787   | 1,266 | 1,116 | 104   | 384 | 560 | 362 | 361 | 234 | 294          |
| 100%                   | 149 | 863 | 1,411 | 3,005 | 3,679 | 2,697 | 1,370 | 542 | 749 | 467 | 479 | 273 | 539          |
| Mean                   | 71  | 36  | 83    | 209   | 327   | 278   | 85    | 250 | 379 | 242 | 245 | 149 | 142          |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 3   | 2   | 1     | 1     | 1     | 2     | 2     | 30  | 147 | 95  | 98  | 56  | 36           |
| 10%                    | 36  | 2   | 1     | 1     | 1     | 2     | 2     | 121 | 175 | 115 | 116 | 78  | 48           |
| 25%                    | 51  | 11  | 1     | 1     | 1     | 2     | 3     | 171 | 240 | 158 | 160 | 107 | 63           |
| 50%                    | 68  | 19  | 1     | 1     | 2     | 2     | 58    | 250 | 377 | 237 | 243 | 144 | 94           |
| 75%                    | 85  | 24  | 8     | 65    | 191   | 261   | 83    | 326 | 486 | 309 | 316 | 184 | 207          |
| 90%                    | 113 | 31  | 141   | 786   | 1,266 | 1,116 | 104   | 384 | 561 | 362 | 361 | 234 | 294          |
| 100%                   | 149 | 862 | 1,412 | 3,005 | 3,679 | 2,697 | 1,370 | 542 | 749 | 468 | 479 | 273 | 539          |
| Mean                   | 71  | 36  | 83    | 209   | 327   | 278   | 85    | 251 | 379 | 242 | 245 | 149 | 142          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 2   | 1   | 1     | 1     | 1     | 1     | 4     | 35  | 89  | 54  | 57  | 22  | 21           |
| 10%                    | 14  | 2   | 5     | 14    | 21    | 29    | 71    | 89  | 91  | 57  | 59  | 32  | 36           |
| 25%                    | 17  | 3   | 14    | 29    | 61    | 58    | 93    | 154 | 154 | 57  | 59  | 32  | 55           |
| 50%                    | 41  | 24  | 32    | 82    | 141   | 141   | 135   | 221 | 271 | 125 | 107 | 69  | 92           |
| 75%                    | 73  | 34  | 103   | 273   | 385   | 399   | 240   | 324 | 385 | 229 | 227 | 132 | 209          |
| 90%                    | 89  | 52  | 279   | 681   | 1,101 | 1,004 | 393   | 386 | 506 | 312 | 295 | 172 | 304          |
| 100%                   | 149 | 420 | 1,348 | 3,005 | 3,679 | 2,697 | 1,505 | 636 | 798 | 480 | 485 | 277 | 547          |
| Mean                   | 47  | 31  | 126   | 275   | 392   | 343   | 211   | 244 | 288 | 163 | 154 | 88  | 142          |

**Table H1a2-22. Water Year Average of Monthly Flows (cfs) — Calaveras River below New Hogan Reservoir (SWRCB New Hogan)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 61  | 19  | 7   | 2   | 2   | 7   | 62  | 134 | 183 | 121 | 122 | 84  |
| D                      | 71  | 20  | 13  | 1   | 9   | 15  | 71  | 209 | 285 | 183 | 186 | 117 |
| BN                     | 76  | 17  | 33  | 28  | 171 | 102 | 41  | 264 | 376 | 238 | 243 | 143 |
| AN                     | 71  | 16  | 87  | 157 | 383 | 253 | 40  | 307 | 443 | 279 | 285 | 167 |
| W                      | 74  | 77  | 206 | 606 | 811 | 736 | 152 | 312 | 528 | 337 | 337 | 204 |
| All                    | 71  | 36  | 83  | 209 | 327 | 278 | 85  | 250 | 379 | 242 | 245 | 149 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 61  | 19  | 7   | 2   | 2   | 7   | 62  | 133 | 183 | 121 | 122 | 84  |
| D                      | 71  | 20  | 13  | 1   | 9   | 15  | 71  | 209 | 285 | 184 | 187 | 117 |
| BN                     | 76  | 17  | 33  | 28  | 170 | 102 | 41  | 264 | 376 | 238 | 243 | 143 |
| AN                     | 71  | 16  | 87  | 157 | 383 | 253 | 40  | 307 | 443 | 279 | 285 | 166 |
| W                      | 74  | 77  | 205 | 606 | 810 | 736 | 152 | 312 | 529 | 337 | 337 | 204 |
| All                    | 71  | 36  | 83  | 209 | 327 | 278 | 85  | 250 | 379 | 242 | 245 | 149 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 61  | 19  | 7   | 2   | 2   | 7   | 62  | 134 | 184 | 121 | 122 | 84  |
| D                      | 71  | 20  | 13  | 1   | 9   | 15  | 71  | 209 | 285 | 183 | 186 | 117 |
| BN                     | 76  | 17  | 33  | 28  | 171 | 102 | 41  | 264 | 376 | 238 | 243 | 143 |
| AN                     | 71  | 16  | 87  | 157 | 383 | 253 | 40  | 307 | 443 | 279 | 285 | 166 |
| W                      | 74  | 77  | 205 | 606 | 811 | 736 | 152 | 312 | 528 | 337 | 337 | 204 |
| All                    | 71  | 36  | 83  | 209 | 327 | 278 | 85  | 250 | 379 | 242 | 245 | 149 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 61  | 19  | 7   | 2   | 2   | 7   | 62  | 134 | 183 | 121 | 122 | 84  |
| D                      | 71  | 20  | 13  | 1   | 8   | 15  | 71  | 209 | 285 | 184 | 187 | 117 |
| BN                     | 76  | 17  | 33  | 28  | 171 | 102 | 41  | 264 | 376 | 238 | 243 | 143 |
| AN                     | 71  | 16  | 87  | 157 | 383 | 253 | 40  | 307 | 443 | 279 | 285 | 166 |
| W                      | 74  | 77  | 206 | 606 | 810 | 736 | 152 | 312 | 528 | 337 | 337 | 204 |
| All                    | 71  | 36  | 83  | 209 | 327 | 278 | 85  | 251 | 379 | 242 | 245 | 149 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 27  | 8   | 15  | 32  | 63  | 32  | 63  | 102 | 97  | 57  | 58  | 32  |
| D                      | 47  | 22  | 40  | 57  | 134 | 113 | 128 | 236 | 269 | 94  | 60  | 32  |
| BN                     | 53  | 24  | 67  | 117 | 303 | 210 | 151 | 183 | 223 | 141 | 135 | 78  |
| AN                     | 38  | 46  | 141 | 286 | 451 | 354 | 181 | 267 | 323 | 201 | 198 | 116 |
| W                      | 56  | 48  | 279 | 662 | 791 | 759 | 401 | 355 | 431 | 269 | 267 | 155 |
| All                    | 47  | 31  | 126 | 275 | 392 | 343 | 211 | 244 | 288 | 163 | 154 | 88  |

## H1a2.2.12 Calaveras River above Delta (SWRCB Calaveras River)

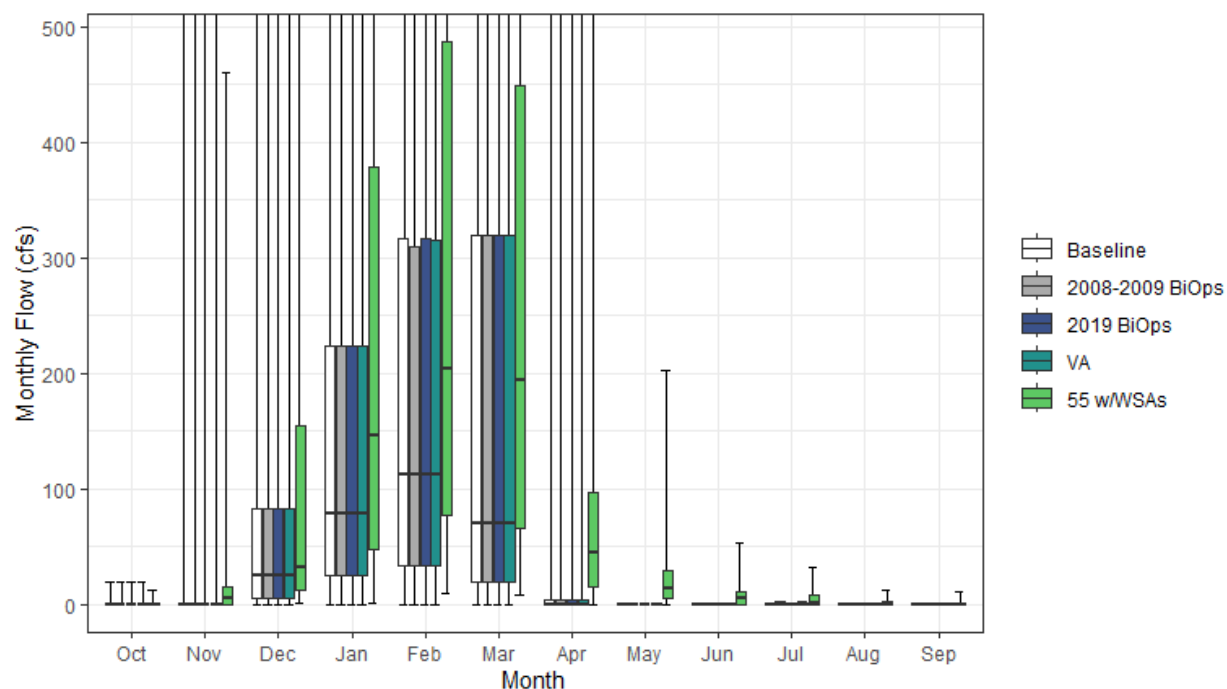


Figure H1a2-12. Calaveras River Streamflow above Delta Monthly Boxplot (cfs)

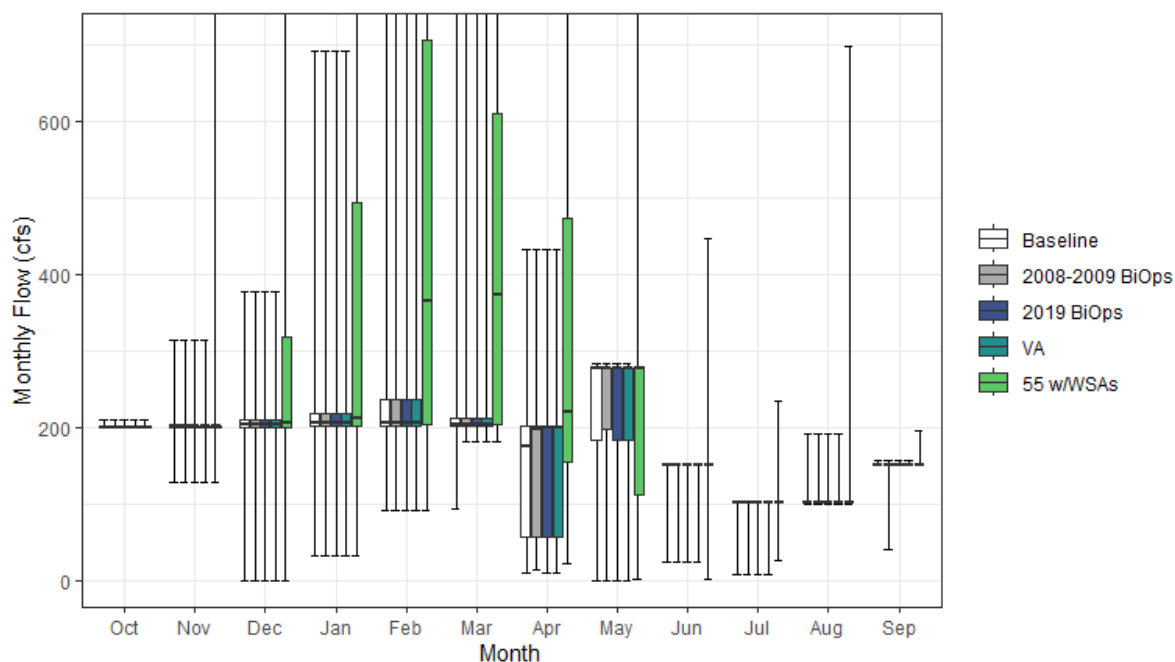
**Table H1a2-23. Cumulative Distribution of Monthly Flow (cfs) — Calaveras River above Delta (SWRCB Calaveras River)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 1            |
| 10%                    | 0   | 0   | 0     | 12    | 9     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 6            |
| 25%                    | 0   | 0   | 6     | 25    | 33    | 19    | 0   | 0   | 0   | 0   | 0   | 0   | 12           |
| 50%                    | 0   | 0   | 24    | 78    | 113   | 70    | 0   | 0   | 0   | 0   | 0   | 0   | 22           |
| 75%                    | 0   | 0   | 83    | 223   | 317   | 320   | 4   | 0   | 0   | 0   | 0   | 0   | 121          |
| 90%                    | 0   | 14  | 236   | 862   | 1,303 | 1,185 | 36  | 0   | 0   | 0   | 0   | 0   | 191          |
| 100%                   | 19  | 654 | 1,371 | 2,882 | 3,533 | 2,620 | 884 | 0   | 0   | 1   | 1   | 1   | 416          |
| Mean                   | 0   | 21  | 117   | 284   | 400   | 314   | 31  | 0   | 0   | 0   | 0   | 0   | 70           |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 1            |
| 10%                    | 0   | 0   | 0     | 12    | 9     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 6            |
| 25%                    | 0   | 0   | 6     | 25    | 33    | 19    | 0   | 0   | 0   | 0   | 0   | 0   | 12           |
| 50%                    | 0   | 0   | 24    | 78    | 113   | 70    | 0   | 0   | 0   | 0   | 0   | 0   | 22           |
| 75%                    | 0   | 0   | 83    | 223   | 309   | 320   | 4   | 0   | 0   | 0   | 0   | 0   | 121          |
| 90%                    | 0   | 14  | 236   | 863   | 1,303 | 1,185 | 35  | 0   | 0   | 0   | 0   | 0   | 191          |
| 100%                   | 19  | 652 | 1,371 | 2,882 | 3,533 | 2,619 | 884 | 0   | 0   | 1   | 1   | 0   | 416          |
| Mean                   | 0   | 21  | 117   | 284   | 400   | 314   | 31  | 0   | 0   | 0   | 0   | 0   | 70           |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 1            |
| 10%                    | 0   | 0   | 0     | 12    | 9     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 6            |
| 25%                    | 0   | 0   | 6     | 25    | 33    | 19    | 0   | 0   | 0   | 0   | 0   | 0   | 12           |
| 50%                    | 0   | 0   | 24    | 78    | 112   | 70    | 0   | 0   | 0   | 0   | 0   | 0   | 22           |
| 75%                    | 0   | 0   | 83    | 223   | 316   | 320   | 4   | 0   | 0   | 0   | 0   | 0   | 121          |
| 90%                    | 0   | 14  | 237   | 863   | 1,303 | 1,185 | 35  | 0   | 0   | 0   | 0   | 0   | 191          |
| 100%                   | 19  | 654 | 1,370 | 2,882 | 3,533 | 2,620 | 884 | 0   | 0   | 1   | 1   | 1   | 416          |
| Mean                   | 0   | 21  | 117   | 284   | 400   | 314   | 31  | 0   | 0   | 0   | 0   | 0   | 70           |
| <b>VA</b>              |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 1            |
| 10%                    | 0   | 0   | 0     | 12    | 9     | 0     | 0   | 0   | 0   | 0   | 0   | 0   | 6            |
| 25%                    | 0   | 0   | 6     | 25    | 33    | 19    | 0   | 0   | 0   | 0   | 0   | 0   | 12           |
| 50%                    | 0   | 0   | 24    | 78    | 112   | 70    | 0   | 0   | 0   | 0   | 0   | 0   | 22           |
| 75%                    | 0   | 0   | 83    | 223   | 316   | 320   | 4   | 0   | 0   | 0   | 0   | 0   | 121          |
| 90%                    | 0   | 14  | 236   | 862   | 1,303 | 1,185 | 36  | 0   | 0   | 0   | 0   | 0   | 191          |
| 100%                   | 19  | 654 | 1,371 | 2,882 | 3,533 | 2,620 | 884 | 0   | 0   | 1   | 1   | 1   | 416          |
| Mean                   | 0   | 21  | 117   | 284   | 400   | 314   | 31  | 0   | 0   | 0   | 0   | 0   | 70           |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 1     | 1     | 9     | 7     | 0   | 0   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 0   | 0   | 7     | 27    | 31    | 26    | 9   | 0   | 0   | 0   | 0   | 0   | 14           |
| 25%                    | 0   | 0   | 12    | 47    | 77    | 65    | 14  | 5   | 0   | 0   | 0   | 0   | 25           |
| 50%                    | 0   | 5   | 32    | 146   | 203   | 195   | 44  | 14  | 5   | 0   | 0   | 0   | 48           |
| 75%                    | 0   | 15  | 154   | 379   | 487   | 449   | 97  | 29  | 11  | 8   | 2   | 0   | 128          |
| 90%                    | 0   | 35  | 352   | 893   | 1,168 | 1,040 | 221 | 56  | 15  | 14  | 6   | 1   | 205          |
| 100%                   | 12  | 460 | 1,269 | 2,876 | 3,528 | 2,620 | 949 | 202 | 53  | 33  | 13  | 11  | 437          |
| Mean                   | 0   | 21  | 146   | 335   | 450   | 366   | 94  | 24  | 7   | 5   | 2   | 1   | 86           |

**Table H1a2-24. Water Year Average of Monthly Flows (cfs) — Calaveras River above Delta (SWRCB Calaveras River)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 1   | 1   | 22  | 41  | 58  | 28  | 0   | 0   | 0   | 0   | 0   | 0   |
| D                      | 0   | 2   | 42  | 50  | 81  | 62  | 1   | 0   | 0   | 0   | 0   | 0   |
| BN                     | 0   | 2   | 63  | 106 | 278 | 160 | 9   | 0   | 0   | 0   | 0   | 0   |
| AN                     | 0   | 14  | 125 | 302 | 476 | 324 | 7   | 0   | 0   | 0   | 0   | 0   |
| W                      | 0   | 62  | 255 | 693 | 864 | 745 | 93  | 0   | 0   | 0   | 0   | 0   |
| All                    | 0   | 21  | 117 | 284 | 400 | 314 | 31  | 0   | 0   | 0   | 0   | 0   |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 1   | 1   | 22  | 41  | 58  | 28  | 0   | 0   | 0   | 0   | 0   | 0   |
| D                      | 0   | 2   | 42  | 50  | 81  | 62  | 1   | 0   | 0   | 0   | 0   | 0   |
| BN                     | 0   | 2   | 63  | 106 | 277 | 160 | 9   | 0   | 0   | 0   | 0   | 0   |
| AN                     | 0   | 14  | 125 | 302 | 476 | 324 | 7   | 0   | 0   | 0   | 0   | 0   |
| W                      | 0   | 62  | 255 | 693 | 863 | 745 | 93  | 0   | 0   | 0   | 0   | 0   |
| All                    | 0   | 21  | 117 | 284 | 400 | 314 | 31  | 0   | 0   | 0   | 0   | 0   |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 1   | 1   | 22  | 41  | 58  | 28  | 0   | 0   | 0   | 0   | 0   | 0   |
| D                      | 0   | 2   | 42  | 50  | 81  | 62  | 1   | 0   | 0   | 0   | 0   | 0   |
| BN                     | 0   | 2   | 63  | 106 | 278 | 160 | 9   | 0   | 0   | 0   | 0   | 0   |
| AN                     | 0   | 14  | 125 | 302 | 476 | 324 | 7   | 0   | 0   | 0   | 0   | 0   |
| W                      | 0   | 62  | 255 | 693 | 864 | 745 | 93  | 0   | 0   | 0   | 0   | 0   |
| All                    | 0   | 21  | 117 | 284 | 400 | 314 | 31  | 0   | 0   | 0   | 0   | 0   |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 1   | 1   | 22  | 41  | 58  | 27  | 0   | 0   | 0   | 0   | 0   | 0   |
| D                      | 0   | 2   | 42  | 50  | 81  | 62  | 1   | 0   | 0   | 0   | 0   | 0   |
| BN                     | 0   | 2   | 63  | 106 | 277 | 160 | 9   | 0   | 0   | 0   | 0   | 0   |
| AN                     | 0   | 14  | 125 | 302 | 476 | 324 | 7   | 0   | 0   | 0   | 0   | 0   |
| W                      | 0   | 62  | 255 | 693 | 863 | 745 | 93  | 0   | 0   | 0   | 0   | 0   |
| All                    | 0   | 21  | 117 | 284 | 400 | 314 | 31  | 0   | 0   | 0   | 0   | 0   |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 1   | 2   | 30  | 63  | 105 | 49  | 8   | 1   | 0   | 0   | 0   | 0   |
| D                      | 0   | 8   | 57  | 91  | 180 | 140 | 26  | 7   | 1   | 0   | 0   | 0   |
| BN                     | 0   | 10  | 86  | 174 | 380 | 244 | 64  | 14  | 5   | 3   | 0   | 0   |
| AN                     | 0   | 42  | 161 | 401 | 529 | 403 | 80  | 26  | 8   | 5   | 3   | 0   |
| W                      | 1   | 39  | 304 | 734 | 845 | 761 | 214 | 53  | 16  | 11  | 5   | 2   |
| All                    | 0   | 21  | 146 | 335 | 450 | 366 | 94  | 24  | 7   | 5   | 2   | 1   |

### H1a2.2.13 Clear Creek above Confluence with Sacramento River (SWRCB Clear Creek)



**Figure H1a2-13. Clear Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-25. Cumulative Distribution of Monthly Flow (cfs) — Clear Creek above Confluence with Sacramento River (SWRCB Clear Creek)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 200 | 129 | 0     | 32    | 92    | 93    | 9     | 0   | 24  | 7   | 100 | 150 | 86           |
| 10%                    | 200 | 194 | 96    | 200   | 200   | 200   | 30    | 27  | 86  | 100 | 100 | 150 | 102          |
| 25%                    | 200 | 200 | 200   | 202   | 201   | 201   | 57    | 183 | 150 | 101 | 101 | 150 | 116          |
| 50%                    | 201 | 201 | 204   | 206   | 206   | 203   | 175   | 278 | 151 | 101 | 101 | 151 | 129          |
| 75%                    | 202 | 202 | 210   | 219   | 236   | 212   | 202   | 278 | 151 | 101 | 101 | 151 | 142          |
| 90%                    | 203 | 204 | 227   | 305   | 386   | 314   | 217   | 278 | 151 | 101 | 101 | 151 | 152          |
| 100%                   | 210 | 314 | 378   | 693   | 1,572 | 1,341 | 432   | 284 | 152 | 102 | 191 | 156 | 232          |
| Mean                   | 201 | 198 | 192   | 228   | 262   | 238   | 143   | 220 | 138 | 98  | 102 | 151 | 131          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 200 | 129 | 0     | 32    | 92    | 181   | 15    | 0   | 24  | 7   | 100 | 40  | 86           |
| 10%                    | 200 | 197 | 83    | 200   | 200   | 200   | 32    | 50  | 77  | 100 | 100 | 150 | 105          |
| 25%                    | 200 | 200 | 200   | 202   | 201   | 201   | 57    | 197 | 150 | 101 | 101 | 150 | 118          |
| 50%                    | 201 | 201 | 203   | 206   | 206   | 203   | 198   | 278 | 150 | 101 | 101 | 151 | 128          |
| 75%                    | 202 | 202 | 210   | 219   | 236   | 213   | 202   | 278 | 151 | 101 | 101 | 151 | 142          |
| 90%                    | 203 | 204 | 227   | 305   | 386   | 314   | 217   | 278 | 151 | 101 | 101 | 151 | 151          |
| 100%                   | 210 | 314 | 378   | 693   | 1,572 | 1,341 | 432   | 284 | 152 | 102 | 191 | 156 | 232          |
| Mean                   | 201 | 199 | 191   | 228   | 261   | 239   | 143   | 225 | 136 | 98  | 102 | 150 | 131          |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 200 | 129 | 0     | 32    | 92    | 181   | 9     | 0   | 24  | 7   | 100 | 150 | 82           |
| 10%                    | 200 | 194 | 84    | 200   | 200   | 200   | 30    | 27  | 86  | 100 | 100 | 150 | 102          |
| 25%                    | 200 | 200 | 200   | 202   | 201   | 201   | 57    | 183 | 150 | 101 | 101 | 150 | 117          |
| 50%                    | 201 | 201 | 204   | 207   | 206   | 203   | 200   | 278 | 151 | 101 | 101 | 151 | 129          |
| 75%                    | 202 | 202 | 210   | 219   | 236   | 212   | 202   | 278 | 151 | 101 | 101 | 151 | 142          |
| 90%                    | 203 | 204 | 227   | 305   | 386   | 314   | 217   | 278 | 151 | 101 | 101 | 151 | 152          |
| 100%                   | 210 | 314 | 378   | 693   | 1,572 | 1,341 | 432   | 284 | 152 | 102 | 191 | 156 | 232          |
| Mean                   | 201 | 198 | 191   | 228   | 262   | 239   | 144   | 220 | 138 | 98  | 102 | 151 | 131          |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 200 | 129 | 0     | 32    | 92    | 181   | 9     | 0   | 24  | 7   | 100 | 150 | 82           |
| 10%                    | 200 | 194 | 84    | 200   | 200   | 200   | 30    | 27  | 86  | 100 | 100 | 150 | 102          |
| 25%                    | 200 | 200 | 200   | 202   | 201   | 201   | 57    | 183 | 150 | 101 | 101 | 150 | 117          |
| 50%                    | 201 | 201 | 204   | 207   | 206   | 203   | 200   | 278 | 151 | 101 | 101 | 151 | 129          |
| 75%                    | 202 | 202 | 210   | 219   | 236   | 213   | 202   | 278 | 151 | 101 | 101 | 151 | 142          |
| 90%                    | 203 | 204 | 227   | 305   | 386   | 314   | 217   | 278 | 151 | 101 | 101 | 151 | 152          |
| 100%                   | 210 | 314 | 378   | 693   | 1,572 | 1,341 | 432   | 284 | 152 | 102 | 191 | 156 | 232          |
| Mean                   | 201 | 198 | 191   | 228   | 262   | 239   | 144   | 220 | 138 | 98  | 102 | 151 | 131          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 200 | 129 | 0     | 32    | 92    | 181   | 21    | 0   | 1   | 26  | 100 | 150 | 87           |
| 10%                    | 200 | 194 | 84    | 200   | 200   | 201   | 69    | 46  | 69  | 100 | 100 | 150 | 110          |
| 25%                    | 200 | 200 | 200   | 202   | 203   | 204   | 154   | 112 | 150 | 101 | 101 | 150 | 133          |
| 50%                    | 201 | 201 | 206   | 213   | 366   | 374   | 220   | 278 | 150 | 101 | 101 | 151 | 171          |
| 75%                    | 202 | 203 | 319   | 495   | 706   | 610   | 473   | 279 | 152 | 101 | 101 | 151 | 236          |
| 90%                    | 203 | 295 | 664   | 1,021 | 1,020 | 938   | 724   | 360 | 190 | 101 | 101 | 152 | 296          |
| 100%                   | 209 | 931 | 1,310 | 1,834 | 2,601 | 3,080 | 1,562 | 788 | 446 | 234 | 697 | 196 | 576          |
| Mean                   | 201 | 226 | 301   | 430   | 537   | 496   | 349   | 237 | 149 | 103 | 110 | 151 | 198          |

**Table H1a2-26. Water Year Average of Monthly Flows (cfs) — Clear Creek above Confluence with Sacramento River (SWRCB Clear Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 201 | 190 | 158 | 185 | 191 | 196 | 65  | 170 | 137 | 101 | 101 | 151 |
| D                      | 201 | 198 | 172 | 202 | 216 | 212 | 94  | 195 | 143 | 101 | 101 | 151 |
| BN                     | 201 | 192 | 161 | 200 | 218 | 210 | 132 | 194 | 129 | 95  | 101 | 151 |
| AN                     | 202 | 201 | 214 | 248 | 277 | 235 | 192 | 272 | 142 | 101 | 101 | 151 |
| W                      | 202 | 206 | 236 | 279 | 356 | 299 | 208 | 261 | 139 | 95  | 104 | 151 |
| All                    | 201 | 198 | 192 | 228 | 262 | 238 | 143 | 220 | 138 | 98  | 102 | 151 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 201 | 194 | 157 | 185 | 191 | 201 | 66  | 186 | 137 | 101 | 101 | 144 |
| D                      | 201 | 198 | 170 | 202 | 216 | 212 | 98  | 199 | 141 | 101 | 101 | 151 |
| BN                     | 201 | 192 | 161 | 200 | 212 | 210 | 132 | 200 | 122 | 95  | 101 | 151 |
| AN                     | 202 | 201 | 206 | 248 | 277 | 235 | 192 | 272 | 142 | 101 | 101 | 151 |
| W                      | 202 | 206 | 236 | 279 | 356 | 299 | 206 | 261 | 139 | 95  | 104 | 151 |
| All                    | 201 | 199 | 191 | 228 | 261 | 239 | 143 | 225 | 136 | 98  | 102 | 150 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 201 | 190 | 151 | 180 | 191 | 201 | 65  | 170 | 137 | 101 | 101 | 151 |
| D                      | 201 | 198 | 172 | 202 | 216 | 212 | 100 | 196 | 143 | 101 | 101 | 151 |
| BN                     | 201 | 192 | 161 | 205 | 221 | 210 | 132 | 194 | 129 | 95  | 101 | 151 |
| AN                     | 202 | 201 | 213 | 248 | 277 | 235 | 192 | 272 | 142 | 101 | 101 | 151 |
| W                      | 202 | 206 | 236 | 279 | 356 | 299 | 207 | 259 | 139 | 95  | 104 | 151 |
| All                    | 201 | 198 | 191 | 228 | 262 | 239 | 144 | 220 | 138 | 98  | 102 | 151 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 201 | 190 | 151 | 180 | 191 | 201 | 65  | 170 | 137 | 101 | 101 | 151 |
| D                      | 201 | 198 | 172 | 202 | 216 | 212 | 100 | 196 | 143 | 101 | 101 | 151 |
| BN                     | 201 | 192 | 161 | 205 | 221 | 210 | 132 | 194 | 129 | 95  | 101 | 151 |
| AN                     | 202 | 201 | 213 | 248 | 277 | 235 | 192 | 272 | 142 | 101 | 101 | 151 |
| W                      | 202 | 206 | 236 | 279 | 356 | 299 | 207 | 259 | 139 | 95  | 104 | 151 |
| All                    | 201 | 198 | 191 | 228 | 262 | 239 | 144 | 220 | 138 | 98  | 102 | 151 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 201 | 190 | 173 | 187 | 239 | 222 | 100 | 168 | 125 | 101 | 100 | 151 |
| D                      | 201 | 216 | 198 | 235 | 324 | 355 | 182 | 175 | 143 | 101 | 101 | 151 |
| BN                     | 201 | 211 | 198 | 318 | 405 | 338 | 269 | 169 | 128 | 99  | 101 | 151 |
| AN                     | 201 | 226 | 290 | 523 | 710 | 598 | 396 | 314 | 170 | 101 | 109 | 151 |
| W                      | 202 | 263 | 514 | 736 | 866 | 805 | 638 | 330 | 171 | 109 | 127 | 152 |
| All                    | 201 | 226 | 301 | 430 | 537 | 496 | 349 | 237 | 149 | 103 | 110 | 151 |

## H1a2.2.14 Cosumnes River above Confluence with Delta (SWRCB Cosumnes River)

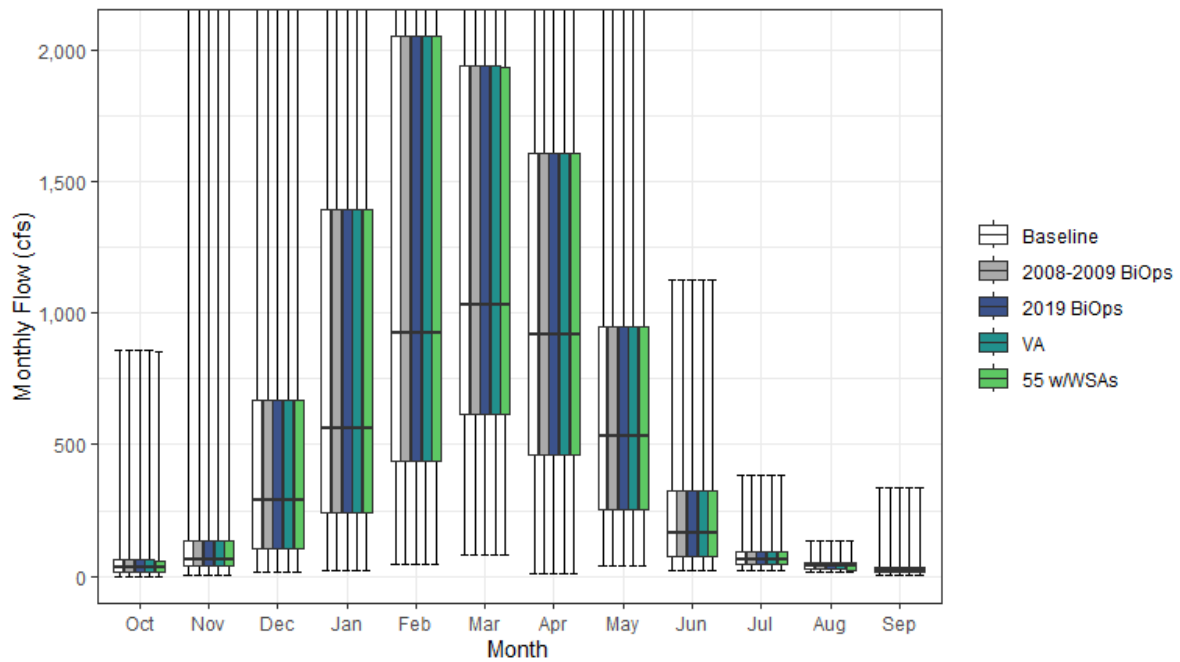


Figure H1a2-14. Cosumnes River Streamflow above Confluence with Delta Monthly Boxplot (cfs)

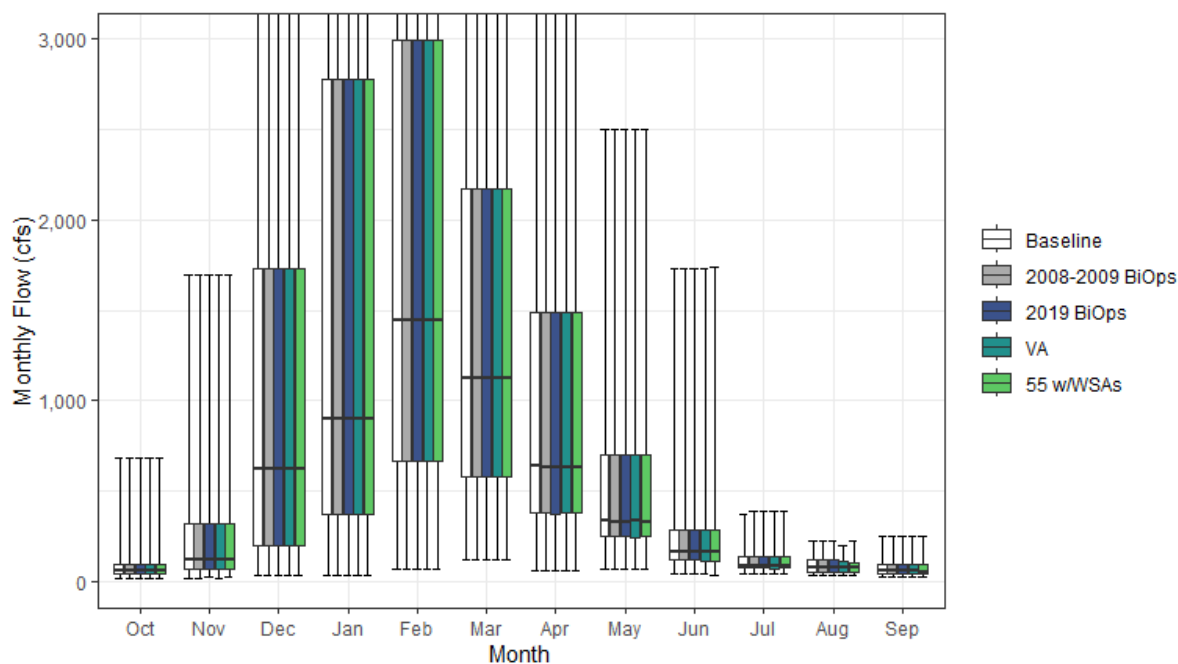
**Table H1a2-27. Cumulative Distribution of Monthly Flow (cfs) — Cosumnes River above Confluence with Delta (SWRCB Cosumnes River)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 1   | 3     | 13    | 22    | 48    | 79    | 10    | 39    | 21    | 24  | 18  | 5   | 23           |
| 10%                    | 11  | 23    | 59    | 136   | 210   | 337   | 241   | 96    | 51    | 31  | 22  | 14  | 121          |
| 25%                    | 19  | 38    | 103   | 242   | 438   | 618   | 463   | 252   | 77    | 44  | 26  | 18  | 188          |
| 50%                    | 33  | 65    | 291   | 565   | 923   | 1,029 | 921   | 535   | 165   | 62  | 38  | 24  | 366          |
| 75%                    | 62  | 135   | 671   | 1,392 | 2,052 | 1,937 | 1,609 | 946   | 325   | 91  | 50  | 35  | 617          |
| 90%                    | 134 | 325   | 1,888 | 3,219 | 3,749 | 3,057 | 2,212 | 1,426 | 582   | 141 | 64  | 48  | 874          |
| 100%                   | 862 | 2,873 | 4,651 | 8,844 | 9,471 | 6,484 | 5,808 | 2,404 | 1,126 | 386 | 136 | 337 | 1,531        |
| Mean                   | 60  | 168   | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249   | 81  | 41  | 32  | 437          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 1   | 3     | 13    | 22    | 48    | 79    | 10    | 39    | 21    | 24  | 18  | 5   | 23           |
| 10%                    | 11  | 23    | 59    | 136   | 210   | 337   | 241   | 96    | 51    | 31  | 22  | 14  | 121          |
| 25%                    | 19  | 38    | 103   | 242   | 438   | 618   | 463   | 252   | 77    | 44  | 26  | 17  | 188          |
| 50%                    | 33  | 66    | 291   | 565   | 923   | 1,029 | 921   | 535   | 165   | 62  | 38  | 24  | 366          |
| 75%                    | 62  | 135   | 671   | 1,392 | 2,052 | 1,937 | 1,609 | 946   | 325   | 91  | 50  | 35  | 617          |
| 90%                    | 134 | 325   | 1,888 | 3,219 | 3,749 | 3,057 | 2,212 | 1,426 | 582   | 141 | 64  | 48  | 874          |
| 100%                   | 862 | 2,876 | 4,651 | 8,844 | 9,471 | 6,484 | 5,808 | 2,404 | 1,126 | 386 | 136 | 337 | 1,531        |
| Mean                   | 60  | 168   | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249   | 81  | 41  | 32  | 437          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 1   | 3     | 13    | 22    | 48    | 79    | 10    | 39    | 21    | 24  | 18  | 5   | 23           |
| 10%                    | 11  | 23    | 59    | 136   | 210   | 337   | 241   | 96    | 51    | 31  | 22  | 14  | 121          |
| 25%                    | 18  | 38    | 103   | 242   | 438   | 618   | 463   | 252   | 77    | 44  | 26  | 18  | 188          |
| 50%                    | 33  | 65    | 291   | 565   | 923   | 1,029 | 921   | 535   | 165   | 62  | 38  | 24  | 366          |
| 75%                    | 62  | 135   | 671   | 1,392 | 2,052 | 1,937 | 1,609 | 946   | 325   | 91  | 50  | 35  | 617          |
| 90%                    | 134 | 325   | 1,888 | 3,219 | 3,749 | 3,057 | 2,212 | 1,426 | 582   | 141 | 64  | 48  | 874          |
| 100%                   | 862 | 2,875 | 4,651 | 8,844 | 9,471 | 6,484 | 5,808 | 2,404 | 1,126 | 386 | 136 | 337 | 1,531        |
| Mean                   | 60  | 168   | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249   | 81  | 41  | 32  | 437          |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 1   | 3     | 13    | 22    | 48    | 79    | 10    | 39    | 21    | 24  | 18  | 5   | 23           |
| 10%                    | 11  | 23    | 59    | 136   | 210   | 337   | 241   | 96    | 51    | 31  | 22  | 14  | 121          |
| 25%                    | 19  | 38    | 103   | 242   | 438   | 618   | 463   | 252   | 77    | 44  | 26  | 17  | 188          |
| 50%                    | 33  | 65    | 291   | 565   | 923   | 1,029 | 921   | 535   | 165   | 62  | 38  | 24  | 366          |
| 75%                    | 62  | 135   | 671   | 1,392 | 2,052 | 1,937 | 1,609 | 946   | 325   | 91  | 50  | 35  | 617          |
| 90%                    | 134 | 325   | 1,888 | 3,219 | 3,749 | 3,057 | 2,212 | 1,426 | 582   | 141 | 64  | 48  | 873          |
| 100%                   | 862 | 2,870 | 4,651 | 8,844 | 9,471 | 6,484 | 5,808 | 2,404 | 1,126 | 386 | 136 | 337 | 1,531        |
| Mean                   | 60  | 168   | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249   | 81  | 41  | 32  | 437          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 1   | 5     | 13    | 21    | 46    | 80    | 10    | 39    | 21    | 24  | 15  | 5   | 22           |
| 10%                    | 10  | 24    | 59    | 137   | 210   | 337   | 241   | 96    | 51    | 31  | 22  | 14  | 121          |
| 25%                    | 17  | 37    | 103   | 242   | 438   | 618   | 463   | 252   | 77    | 44  | 25  | 16  | 188          |
| 50%                    | 34  | 65    | 291   | 565   | 923   | 1,028 | 921   | 535   | 165   | 62  | 38  | 24  | 365          |
| 75%                    | 60  | 135   | 671   | 1,392 | 2,051 | 1,936 | 1,609 | 946   | 325   | 91  | 50  | 35  | 616          |
| 90%                    | 134 | 324   | 1,887 | 3,219 | 3,749 | 3,058 | 2,212 | 1,426 | 582   | 141 | 64  | 48  | 873          |
| 100%                   | 854 | 2,866 | 4,651 | 8,844 | 9,471 | 6,484 | 5,808 | 2,404 | 1,126 | 386 | 136 | 337 | 1,531        |
| Mean                   | 60  | 167   | 668   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249   | 81  | 41  | 32  | 437          |

**Table H1a2-28. Water Year Average of Monthly Flows (cfs) — Cosumnes River above Confluence with Delta (SWRCB Cosumnes River)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |     |     |     |     |
| C                      | 44  | 38  | 170   | 232   | 415   | 386   | 235   | 157   | 73  | 36  | 25  | 15  |
| D                      | 42  | 91  | 312   | 345   | 704   | 826   | 645   | 368   | 105 | 45  | 30  | 38  |
| BN                     | 41  | 104 | 412   | 648   | 1,255 | 1,222 | 1,217 | 594   | 210 | 66  | 36  | 28  |
| AN                     | 56  | 318 | 597   | 1,745 | 1,921 | 1,906 | 1,165 | 747   | 235 | 79  | 41  | 28  |
| W                      | 95  | 273 | 1,388 | 2,467 | 2,713 | 2,461 | 1,966 | 1,196 | 479 | 142 | 60  | 41  |
| All                    | 60  | 168 | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249 | 81  | 41  | 32  |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |     |     |     |     |
| C                      | 44  | 38  | 170   | 232   | 415   | 386   | 235   | 157   | 73  | 36  | 25  | 15  |
| D                      | 42  | 91  | 312   | 345   | 704   | 826   | 645   | 368   | 105 | 45  | 30  | 37  |
| BN                     | 41  | 104 | 412   | 648   | 1,255 | 1,222 | 1,217 | 594   | 210 | 66  | 36  | 28  |
| AN                     | 56  | 318 | 597   | 1,745 | 1,921 | 1,906 | 1,165 | 747   | 235 | 79  | 41  | 28  |
| W                      | 95  | 273 | 1,388 | 2,467 | 2,713 | 2,461 | 1,966 | 1,196 | 479 | 142 | 60  | 41  |
| All                    | 60  | 168 | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249 | 81  | 41  | 32  |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |     |     |     |     |
| C                      | 44  | 38  | 170   | 232   | 415   | 386   | 235   | 157   | 73  | 36  | 25  | 15  |
| D                      | 42  | 91  | 312   | 345   | 704   | 826   | 645   | 368   | 105 | 45  | 30  | 38  |
| BN                     | 41  | 104 | 412   | 648   | 1,255 | 1,222 | 1,217 | 594   | 210 | 66  | 36  | 28  |
| AN                     | 56  | 319 | 597   | 1,745 | 1,921 | 1,906 | 1,165 | 747   | 235 | 79  | 41  | 28  |
| W                      | 95  | 273 | 1,388 | 2,467 | 2,713 | 2,461 | 1,966 | 1,196 | 479 | 142 | 60  | 41  |
| All                    | 60  | 168 | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249 | 81  | 41  | 32  |
| <b>VA</b>              |     |     |       |       |       |       |       |       |     |     |     |     |
| C                      | 44  | 38  | 170   | 232   | 415   | 386   | 235   | 157   | 73  | 36  | 25  | 15  |
| D                      | 42  | 91  | 312   | 345   | 704   | 826   | 645   | 368   | 105 | 45  | 30  | 38  |
| BN                     | 41  | 104 | 412   | 648   | 1,255 | 1,222 | 1,217 | 594   | 210 | 66  | 36  | 28  |
| AN                     | 56  | 318 | 597   | 1,745 | 1,921 | 1,906 | 1,165 | 747   | 235 | 79  | 41  | 28  |
| W                      | 95  | 273 | 1,388 | 2,467 | 2,713 | 2,461 | 1,966 | 1,196 | 479 | 142 | 60  | 41  |
| All                    | 60  | 168 | 669   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249 | 81  | 41  | 32  |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |     |     |     |     |
| C                      | 43  | 38  | 168   | 230   | 414   | 387   | 235   | 156   | 73  | 36  | 24  | 15  |
| D                      | 42  | 91  | 311   | 344   | 703   | 825   | 644   | 368   | 105 | 44  | 30  | 37  |
| BN                     | 41  | 104 | 411   | 647   | 1,254 | 1,221 | 1,217 | 594   | 210 | 66  | 36  | 28  |
| AN                     | 56  | 317 | 595   | 1,744 | 1,921 | 1,906 | 1,165 | 746   | 235 | 79  | 41  | 28  |
| W                      | 95  | 272 | 1,388 | 2,466 | 2,713 | 2,461 | 1,966 | 1,196 | 479 | 142 | 60  | 41  |
| All                    | 60  | 167 | 668   | 1,197 | 1,519 | 1,457 | 1,152 | 674   | 249 | 81  | 41  | 32  |

## H1a2.2.15 Cottonwood Creek above Confluence with Sacramento River (SWRCB Cottonwood Creek)



**Figure H1a2-15. Cottonwood Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-29. Cumulative Distribution of Monthly Flow (cfs) — Cottonwood Creek above Confluence with Sacramento River (SWRCB Cottonwood Creek)**

|                        | Oct | Nov   | Dec   | Jan    | Feb    | Mar    | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|--------|--------|--------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |        |        |        |       |       |       |     |     |     |              |
| 0%                     | 14  | 17    | 34    | 28     | 63     | 116    | 54    | 66    | 39    | 40  | 36  | 20  | 51           |
| 10%                    | 27  | 47    | 79    | 197    | 265    | 296    | 202   | 151   | 80    | 53  | 46  | 32  | 146          |
| 25%                    | 41  | 70    | 192   | 370    | 666    | 577    | 380   | 245   | 115   | 72  | 52  | 40  | 251          |
| 50%                    | 59  | 122   | 617   | 899    | 1,444  | 1,123  | 635   | 337   | 162   | 87  | 75  | 54  | 423          |
| 75%                    | 94  | 315   | 1,726 | 2,776  | 2,994  | 2,173  | 1,491 | 699   | 280   | 135 | 117 | 92  | 767          |
| 90%                    | 150 | 647   | 3,161 | 4,389  | 5,082  | 3,571  | 2,081 | 976   | 410   | 184 | 135 | 110 | 1,062        |
| 100%                   | 686 | 1,693 | 5,158 | 10,169 | 12,295 | 10,471 | 4,887 | 2,499 | 1,733 | 367 | 221 | 250 | 1,896        |
| Mean                   | 89  | 270   | 1,186 | 1,835  | 2,180  | 1,653  | 980   | 521   | 233   | 110 | 84  | 69  | 551          |
| <b>2008-2009 BiOps</b> |     |       |       |        |        |        |       |       |       |     |     |     |              |
| 0%                     | 14  | 17    | 34    | 28     | 63     | 116    | 54    | 66    | 39    | 40  | 36  | 20  | 51           |
| 10%                    | 27  | 47    | 79    | 197    | 265    | 296    | 202   | 151   | 80    | 53  | 46  | 32  | 146          |
| 25%                    | 41  | 70    | 192   | 370    | 666    | 577    | 380   | 245   | 115   | 72  | 52  | 40  | 251          |
| 50%                    | 58  | 122   | 617   | 899    | 1,444  | 1,123  | 628   | 328   | 162   | 87  | 75  | 54  | 423          |
| 75%                    | 89  | 315   | 1,726 | 2,776  | 2,994  | 2,173  | 1,491 | 699   | 280   | 135 | 117 | 92  | 766          |
| 90%                    | 150 | 647   | 3,161 | 4,389  | 5,082  | 3,571  | 2,081 | 976   | 394   | 184 | 138 | 105 | 1,062        |
| 100%                   | 686 | 1,693 | 5,158 | 10,169 | 12,295 | 10,471 | 4,887 | 2,499 | 1,733 | 391 | 221 | 250 | 1,896        |
| Mean                   | 88  | 270   | 1,186 | 1,835  | 2,180  | 1,653  | 981   | 522   | 233   | 110 | 84  | 69  | 551          |
| <b>2019 BiOps</b>      |     |       |       |        |        |        |       |       |       |     |     |     |              |
| 0%                     | 12  | 20    | 34    | 28     | 63     | 116    | 54    | 66    | 39    | 40  | 36  | 20  | 51           |
| 10%                    | 27  | 47    | 79    | 197    | 265    | 296    | 202   | 151   | 80    | 53  | 46  | 32  | 146          |
| 25%                    | 41  | 70    | 192   | 370    | 666    | 577    | 373   | 245   | 115   | 72  | 52  | 40  | 251          |
| 50%                    | 59  | 122   | 617   | 899    | 1,444  | 1,123  | 627   | 328   | 162   | 87  | 75  | 54  | 423          |
| 75%                    | 94  | 315   | 1,726 | 2,776  | 2,994  | 2,173  | 1,491 | 698   | 280   | 135 | 117 | 92  | 767          |
| 90%                    | 150 | 647   | 3,161 | 4,389  | 5,082  | 3,571  | 2,081 | 976   | 410   | 184 | 138 | 110 | 1,062        |
| 100%                   | 686 | 1,693 | 5,158 | 10,169 | 12,295 | 10,471 | 4,887 | 2,499 | 1,733 | 391 | 221 | 250 | 1,895        |
| Mean                   | 89  | 270   | 1,186 | 1,835  | 2,180  | 1,653  | 979   | 521   | 233   | 111 | 84  | 69  | 551          |
| <b>VA</b>              |     |       |       |        |        |        |       |       |       |     |     |     |              |
| 0%                     | 13  | 17    | 34    | 28     | 63     | 116    | 54    | 66    | 39    | 40  | 36  | 19  | 52           |
| 10%                    | 26  | 47    | 79    | 197    | 265    | 296    | 202   | 149   | 78    | 51  | 43  | 32  | 146          |
| 25%                    | 39  | 70    | 192   | 370    | 666    | 577    | 381   | 243   | 114   | 70  | 49  | 38  | 250          |
| 50%                    | 59  | 122   | 618   | 899    | 1,444  | 1,123  | 626   | 337   | 160   | 83  | 71  | 54  | 422          |
| 75%                    | 94  | 315   | 1,726 | 2,776  | 2,994  | 2,173  | 1,491 | 697   | 280   | 134 | 113 | 93  | 768          |
| 90%                    | 150 | 647   | 3,161 | 4,389  | 5,082  | 3,571  | 2,081 | 976   | 394   | 184 | 135 | 109 | 1,062        |
| 100%                   | 686 | 1,693 | 5,158 | 10,169 | 12,295 | 10,471 | 4,887 | 2,499 | 1,733 | 391 | 198 | 248 | 1,894        |
| Mean                   | 88  | 270   | 1,186 | 1,835  | 2,180  | 1,653  | 979   | 519   | 231   | 109 | 82  | 68  | 551          |
| <b>55 w/WSAs</b>       |     |       |       |        |        |        |       |       |       |     |     |     |              |
| 0%                     | 15  | 20    | 34    | 28     | 63     | 116    | 54    | 65    | 32    | 41  | 34  | 20  | 50           |
| 10%                    | 27  | 47    | 79    | 197    | 265    | 296    | 202   | 151   | 80    | 53  | 46  | 32  | 146          |
| 25%                    | 41  | 70    | 192   | 370    | 666    | 577    | 378   | 245   | 114   | 72  | 52  | 39  | 251          |
| 50%                    | 59  | 122   | 617   | 899    | 1,444  | 1,123  | 627   | 328   | 162   | 87  | 75  | 47  | 423          |
| 75%                    | 88  | 315   | 1,726 | 2,776  | 2,994  | 2,173  | 1,491 | 699   | 280   | 135 | 104 | 93  | 767          |
| 90%                    | 150 | 647   | 3,161 | 4,389  | 5,082  | 3,571  | 2,081 | 984   | 410   | 178 | 130 | 110 | 1,064        |
| 100%                   | 686 | 1,693 | 5,158 | 10,169 | 12,295 | 10,471 | 4,887 | 2,500 | 1,738 | 391 | 221 | 250 | 1,896        |
| Mean                   | 88  | 270   | 1,186 | 1,835  | 2,180  | 1,653  | 979   | 520   | 232   | 110 | 83  | 69  | 551          |

**Table H1a2-30. Water Year Average of Monthly Flows (cfs) — Cottonwood Creek above Confluence with Sacramento River (SWRCB Cottonwood Creek)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 66  | 74  | 441   | 507   | 748   | 537   | 256   | 177 | 100 | 58  | 54  | 39  |
| D                      | 63  | 241 | 697   | 625   | 1,213 | 1,008 | 474   | 272 | 133 | 72  | 55  | 57  |
| BN                     | 70  | 180 | 615   | 1,320 | 1,595 | 1,087 | 795   | 374 | 181 | 82  | 61  | 46  |
| AN                     | 113 | 287 | 1,232 | 2,589 | 2,954 | 2,127 | 1,110 | 811 | 305 | 141 | 99  | 93  |
| W                      | 122 | 445 | 2,285 | 3,455 | 3,713 | 2,890 | 1,804 | 864 | 383 | 171 | 130 | 100 |
| All                    | 89  | 270 | 1,186 | 1,835 | 2,180 | 1,653 | 980   | 521 | 233 | 110 | 84  | 69  |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 65  | 74  | 441   | 507   | 748   | 538   | 256   | 177 | 100 | 58  | 54  | 39  |
| D                      | 62  | 241 | 697   | 625   | 1,213 | 1,008 | 473   | 272 | 133 | 72  | 55  | 57  |
| BN                     | 70  | 180 | 615   | 1,320 | 1,595 | 1,087 | 797   | 375 | 179 | 82  | 61  | 46  |
| AN                     | 111 | 287 | 1,232 | 2,589 | 2,954 | 2,127 | 1,110 | 816 | 305 | 141 | 99  | 93  |
| W                      | 120 | 445 | 2,285 | 3,455 | 3,713 | 2,890 | 1,804 | 865 | 383 | 172 | 130 | 98  |
| All                    | 88  | 270 | 1,186 | 1,835 | 2,180 | 1,653 | 981   | 522 | 233 | 110 | 84  | 69  |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 66  | 74  | 441   | 507   | 748   | 538   | 256   | 177 | 100 | 58  | 54  | 39  |
| D                      | 63  | 241 | 697   | 625   | 1,213 | 1,008 | 470   | 272 | 133 | 72  | 55  | 57  |
| BN                     | 70  | 180 | 615   | 1,320 | 1,595 | 1,087 | 794   | 374 | 181 | 82  | 61  | 46  |
| AN                     | 113 | 287 | 1,232 | 2,589 | 2,954 | 2,127 | 1,108 | 820 | 302 | 141 | 99  | 91  |
| W                      | 122 | 445 | 2,285 | 3,455 | 3,713 | 2,890 | 1,804 | 862 | 383 | 173 | 130 | 100 |
| All                    | 89  | 270 | 1,186 | 1,835 | 2,180 | 1,653 | 979   | 521 | 233 | 111 | 84  | 69  |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 63  | 74  | 441   | 507   | 748   | 541   | 255   | 178 | 98  | 60  | 52  | 41  |
| D                      | 62  | 241 | 697   | 625   | 1,213 | 1,008 | 470   | 270 | 130 | 69  | 52  | 54  |
| BN                     | 69  | 180 | 615   | 1,320 | 1,595 | 1,087 | 792   | 371 | 177 | 79  | 59  | 44  |
| AN                     | 112 | 287 | 1,232 | 2,589 | 2,954 | 2,127 | 1,108 | 808 | 300 | 137 | 92  | 89  |
| W                      | 123 | 445 | 2,285 | 3,455 | 3,713 | 2,890 | 1,806 | 863 | 383 | 173 | 130 | 99  |
| All                    | 88  | 270 | 1,186 | 1,835 | 2,180 | 1,653 | 979   | 519 | 231 | 109 | 82  | 68  |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 66  | 74  | 441   | 507   | 748   | 540   | 256   | 175 | 93  | 58  | 54  | 39  |
| D                      | 62  | 242 | 697   | 625   | 1,213 | 1,008 | 471   | 272 | 132 | 72  | 55  | 57  |
| BN                     | 71  | 180 | 615   | 1,319 | 1,595 | 1,087 | 792   | 374 | 181 | 82  | 61  | 46  |
| AN                     | 112 | 287 | 1,232 | 2,589 | 2,954 | 2,127 | 1,108 | 812 | 305 | 141 | 96  | 91  |
| W                      | 121 | 445 | 2,285 | 3,455 | 3,713 | 2,890 | 1,804 | 864 | 383 | 171 | 126 | 101 |
| All                    | 88  | 270 | 1,186 | 1,835 | 2,180 | 1,653 | 979   | 520 | 232 | 110 | 83  | 69  |

## H1a2.2.16 Cow Creek above Confluence with Sacramento River (SWRCB Cow Creek)

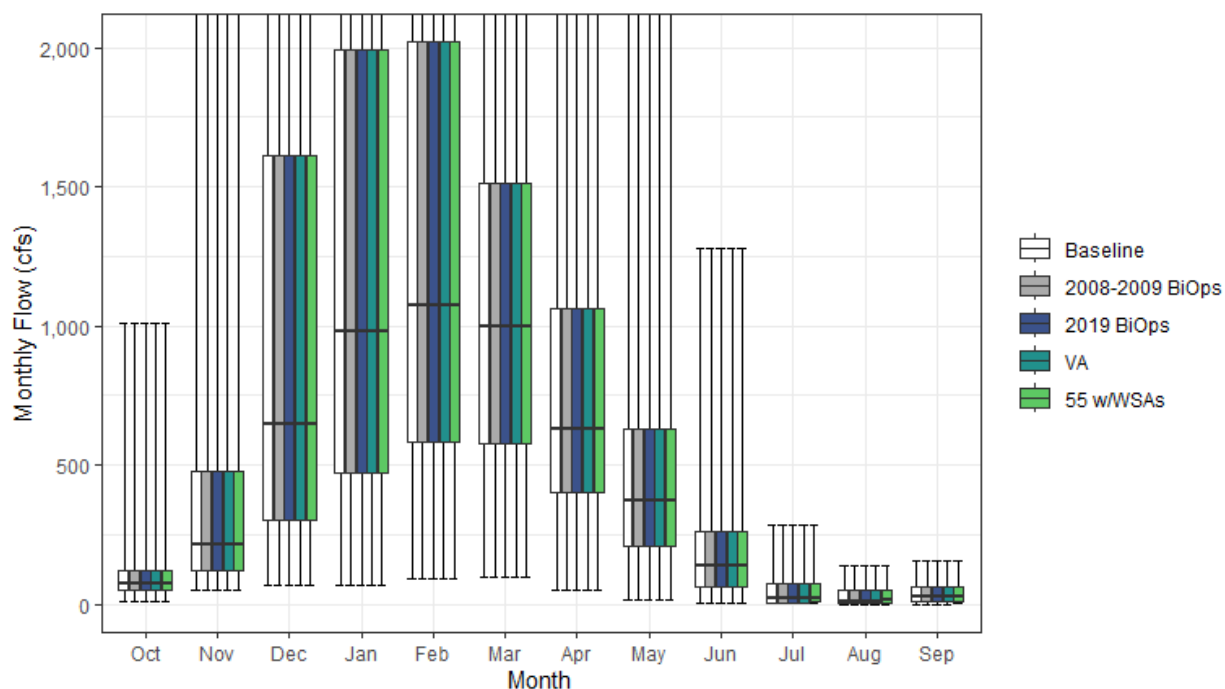


Figure H1a2-16. Cow Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

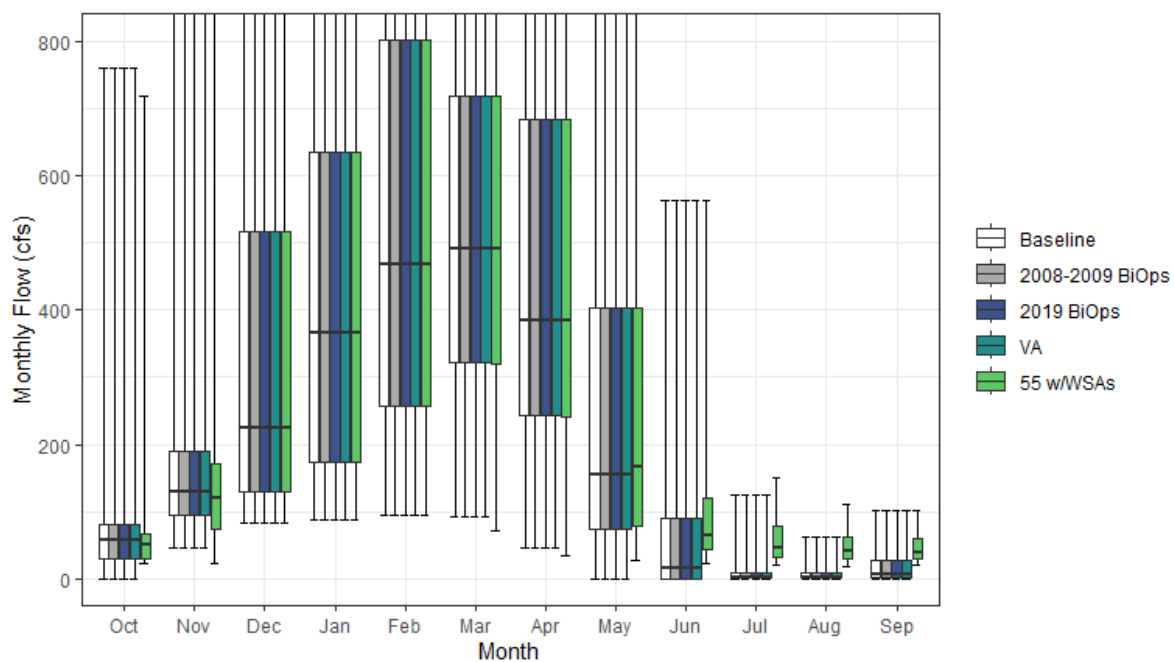
**Table H1a2-31. Cumulative Distribution of Monthly Flow (cfs) — Cow Creek above Confluence with Sacramento River (SWRCB Cow Creek)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 10    | 51    | 67    | 66    | 94    | 98    | 52    | 17    | 1     | 1   | 1   | 1   | 43           |
| 10%                    | 29    | 89    | 121   | 267   | 302   | 351   | 234   | 103   | 24    | 2   | 2   | 3   | 168          |
| 25%                    | 49    | 119   | 302   | 471   | 580   | 576   | 399   | 211   | 62    | 5   | 4   | 8   | 232          |
| 50%                    | 76    | 215   | 645   | 981   | 1,073 | 1,000 | 627   | 373   | 139   | 21  | 9   | 29  | 366          |
| 75%                    | 120   | 477   | 1,614 | 1,992 | 2,020 | 1,512 | 1,061 | 630   | 258   | 76  | 48  | 64  | 564          |
| 90%                    | 165   | 681   | 2,475 | 2,979 | 2,937 | 2,407 | 1,659 | 942   | 381   | 107 | 68  | 76  | 743          |
| 100%                   | 1,012 | 2,304 | 3,707 | 5,391 | 5,418 | 4,973 | 3,217 | 2,185 | 1,276 | 284 | 139 | 158 | 1,108        |
| Mean                   | 99    | 352   | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471   | 188   | 43  | 28  | 39  | 422          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 10    | 51    | 67    | 66    | 94    | 98    | 52    | 17    | 1     | 1   | 1   | 1   | 43           |
| 10%                    | 29    | 89    | 121   | 267   | 302   | 351   | 234   | 103   | 24    | 2   | 2   | 3   | 168          |
| 25%                    | 49    | 119   | 302   | 471   | 580   | 576   | 399   | 211   | 62    | 5   | 4   | 8   | 232          |
| 50%                    | 76    | 215   | 645   | 981   | 1,073 | 1,000 | 627   | 373   | 139   | 21  | 9   | 29  | 366          |
| 75%                    | 120   | 477   | 1,614 | 1,992 | 2,020 | 1,512 | 1,061 | 630   | 258   | 76  | 48  | 64  | 564          |
| 90%                    | 165   | 681   | 2,475 | 2,979 | 2,937 | 2,407 | 1,659 | 942   | 381   | 107 | 68  | 76  | 743          |
| 100%                   | 1,012 | 2,304 | 3,707 | 5,391 | 5,418 | 4,973 | 3,217 | 2,185 | 1,276 | 284 | 139 | 158 | 1,108        |
| Mean                   | 99    | 352   | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471   | 188   | 43  | 28  | 39  | 422          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 10    | 51    | 67    | 66    | 94    | 98    | 52    | 17    | 1     | 1   | 1   | 1   | 43           |
| 10%                    | 29    | 89    | 121   | 267   | 302   | 351   | 234   | 103   | 24    | 2   | 2   | 3   | 168          |
| 25%                    | 49    | 119   | 302   | 471   | 580   | 576   | 399   | 211   | 62    | 5   | 4   | 8   | 232          |
| 50%                    | 76    | 215   | 645   | 981   | 1,073 | 1,000 | 627   | 373   | 139   | 21  | 9   | 29  | 366          |
| 75%                    | 120   | 477   | 1,614 | 1,992 | 2,020 | 1,512 | 1,061 | 630   | 258   | 76  | 48  | 64  | 564          |
| 90%                    | 165   | 681   | 2,475 | 2,979 | 2,937 | 2,407 | 1,659 | 942   | 381   | 107 | 68  | 76  | 743          |
| 100%                   | 1,012 | 2,304 | 3,707 | 5,391 | 5,418 | 4,973 | 3,217 | 2,185 | 1,276 | 284 | 139 | 158 | 1,108        |
| Mean                   | 99    | 352   | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471   | 188   | 43  | 28  | 39  | 422          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 10    | 51    | 67    | 66    | 94    | 98    | 52    | 17    | 1     | 1   | 1   | 1   | 43           |
| 10%                    | 29    | 89    | 121   | 267   | 302   | 351   | 234   | 103   | 24    | 2   | 2   | 3   | 168          |
| 25%                    | 49    | 119   | 302   | 471   | 580   | 576   | 399   | 211   | 62    | 5   | 4   | 8   | 232          |
| 50%                    | 76    | 215   | 645   | 981   | 1,073 | 1,000 | 627   | 373   | 139   | 21  | 9   | 29  | 366          |
| 75%                    | 120   | 477   | 1,614 | 1,992 | 2,020 | 1,512 | 1,061 | 630   | 258   | 76  | 48  | 64  | 564          |
| 90%                    | 165   | 681   | 2,475 | 2,979 | 2,937 | 2,407 | 1,659 | 942   | 381   | 107 | 68  | 76  | 743          |
| 100%                   | 1,012 | 2,304 | 3,707 | 5,391 | 5,418 | 4,973 | 3,217 | 2,185 | 1,276 | 284 | 139 | 158 | 1,108        |
| Mean                   | 99    | 352   | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471   | 188   | 43  | 28  | 39  | 422          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 10    | 51    | 67    | 66    | 94    | 98    | 52    | 17    | 3     | 1   | 1   | 1   | 43           |
| 10%                    | 29    | 89    | 121   | 267   | 302   | 351   | 234   | 103   | 24    | 5   | 4   | 6   | 168          |
| 25%                    | 49    | 119   | 302   | 471   | 580   | 576   | 399   | 211   | 62    | 10  | 7   | 10  | 233          |
| 50%                    | 76    | 215   | 645   | 981   | 1,073 | 1,000 | 627   | 373   | 139   | 21  | 13  | 29  | 366          |
| 75%                    | 120   | 477   | 1,614 | 1,992 | 2,020 | 1,512 | 1,061 | 630   | 258   | 76  | 48  | 64  | 564          |
| 90%                    | 165   | 681   | 2,475 | 2,979 | 2,937 | 2,407 | 1,659 | 942   | 381   | 107 | 68  | 76  | 743          |
| 100%                   | 1,012 | 2,304 | 3,707 | 5,391 | 5,418 | 4,973 | 3,217 | 2,185 | 1,276 | 284 | 139 | 158 | 1,108        |
| Mean                   | 99    | 352   | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471   | 188   | 45  | 29  | 39  | 422          |

**Table H1a2-32. Water Year Average of Monthly Flows (cfs) — Cow Creek above Confluence with Sacramento River (SWRCB Cow Creek)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 83  | 122 | 440   | 460   | 614   | 487   | 232   | 155 | 52  | 6   | 6   | 7   |
| D                      | 74  | 322 | 731   | 572   | 912   | 844   | 507   | 249 | 72  | 7   | 5   | 21  |
| BN                     | 77  | 232 | 638   | 1,140 | 1,277 | 983   | 802   | 395 | 139 | 18  | 12  | 20  |
| AN                     | 108 | 317 | 969   | 1,851 | 1,804 | 1,575 | 880   | 638 | 228 | 53  | 39  | 63  |
| W                      | 135 | 587 | 1,839 | 2,379 | 2,205 | 1,789 | 1,282 | 783 | 360 | 101 | 62  | 71  |
| All                    | 99  | 352 | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471 | 188 | 43  | 28  | 39  |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 83  | 122 | 440   | 460   | 614   | 487   | 232   | 155 | 52  | 6   | 6   | 7   |
| D                      | 74  | 322 | 731   | 572   | 912   | 844   | 507   | 249 | 72  | 7   | 5   | 21  |
| BN                     | 77  | 232 | 638   | 1,140 | 1,277 | 983   | 802   | 395 | 139 | 18  | 12  | 20  |
| AN                     | 108 | 317 | 969   | 1,851 | 1,804 | 1,575 | 880   | 638 | 228 | 53  | 39  | 63  |
| W                      | 135 | 587 | 1,839 | 2,379 | 2,205 | 1,789 | 1,282 | 783 | 360 | 101 | 62  | 71  |
| All                    | 99  | 352 | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471 | 188 | 43  | 28  | 39  |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 83  | 122 | 440   | 460   | 614   | 487   | 232   | 155 | 52  | 6   | 6   | 7   |
| D                      | 74  | 322 | 731   | 572   | 912   | 844   | 507   | 249 | 72  | 7   | 5   | 21  |
| BN                     | 77  | 232 | 638   | 1,140 | 1,277 | 983   | 802   | 395 | 139 | 18  | 12  | 20  |
| AN                     | 108 | 317 | 969   | 1,851 | 1,804 | 1,575 | 880   | 638 | 228 | 53  | 39  | 63  |
| W                      | 135 | 587 | 1,839 | 2,379 | 2,205 | 1,789 | 1,282 | 783 | 360 | 101 | 62  | 71  |
| All                    | 99  | 352 | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471 | 188 | 43  | 28  | 39  |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 83  | 122 | 440   | 460   | 614   | 487   | 232   | 155 | 52  | 6   | 6   | 7   |
| D                      | 74  | 322 | 731   | 572   | 912   | 844   | 507   | 249 | 72  | 7   | 5   | 21  |
| BN                     | 77  | 232 | 638   | 1,140 | 1,277 | 983   | 802   | 395 | 139 | 18  | 12  | 20  |
| AN                     | 108 | 317 | 969   | 1,851 | 1,804 | 1,575 | 880   | 638 | 228 | 53  | 39  | 63  |
| W                      | 135 | 587 | 1,839 | 2,379 | 2,205 | 1,789 | 1,282 | 783 | 360 | 101 | 62  | 71  |
| All                    | 99  | 352 | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471 | 188 | 43  | 28  | 39  |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 83  | 122 | 440   | 460   | 614   | 487   | 232   | 155 | 52  | 8   | 7   | 9   |
| D                      | 74  | 322 | 731   | 572   | 912   | 844   | 507   | 249 | 72  | 11  | 7   | 22  |
| BN                     | 77  | 232 | 638   | 1,140 | 1,277 | 983   | 802   | 395 | 139 | 22  | 14  | 20  |
| AN                     | 108 | 317 | 969   | 1,851 | 1,804 | 1,575 | 880   | 638 | 228 | 53  | 39  | 63  |
| W                      | 135 | 587 | 1,839 | 2,379 | 2,205 | 1,789 | 1,282 | 783 | 360 | 101 | 62  | 71  |
| All                    | 99  | 352 | 1,031 | 1,365 | 1,434 | 1,188 | 799   | 471 | 188 | 45  | 29  | 39  |

## H1a2.2.17 Deer Creek above Confluence with Sacramento River (SWRCB Deer Creek)



**Figure H1a2-17. Deer Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

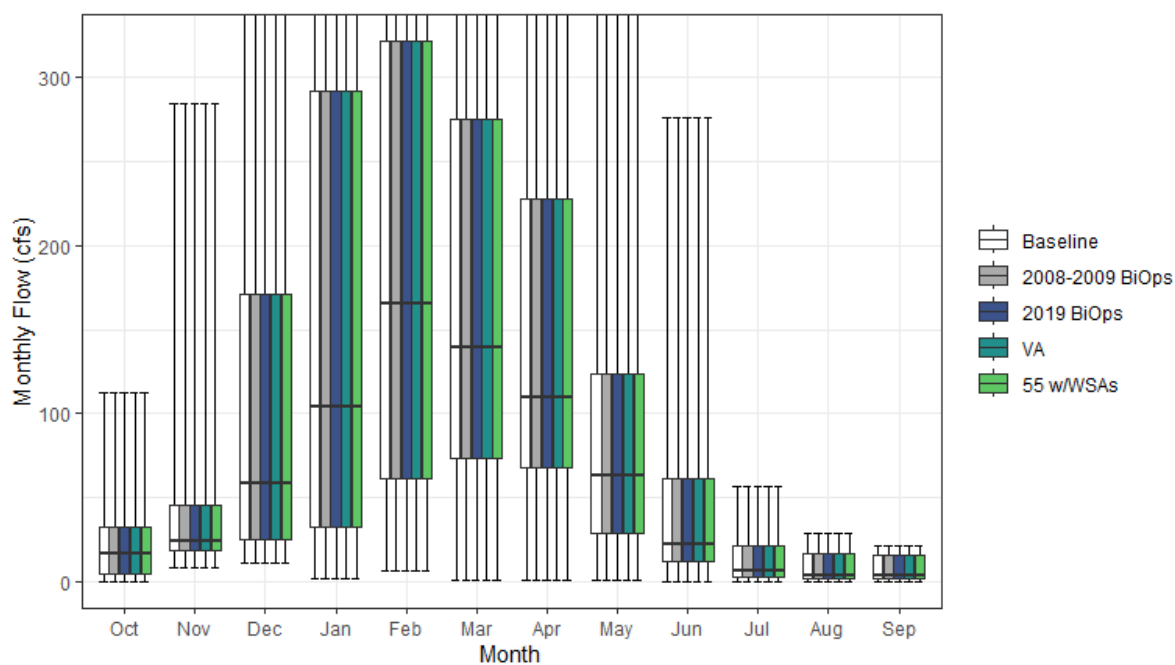
**Table H1a2-33. Cumulative Distribution of Monthly Flow (cfs) — Deer Creek above Confluence with Sacramento River (SWRCB Deer Creek)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 0   | 47  | 82    | 87    | 95    | 92    | 45    | 0     | 0   | 0   | 0   | 0   | 33           |
| 10%                    | 15  | 78  | 100   | 129   | 161   | 210   | 131   | 1     | 0   | 0   | 0   | 0   | 73           |
| 25%                    | 29  | 95  | 129   | 173   | 257   | 321   | 243   | 73    | 0   | 1   | 1   | 1   | 100          |
| 50%                    | 58  | 130 | 223   | 365   | 468   | 491   | 386   | 155   | 15  | 1   | 1   | 6   | 156          |
| 75%                    | 80  | 189 | 517   | 635   | 802   | 719   | 684   | 404   | 89  | 9   | 9   | 26  | 258          |
| 90%                    | 119 | 312 | 899   | 1,180 | 1,284 | 1,141 | 1,009 | 661   | 235 | 31  | 9   | 41  | 356          |
| 100%                   | 761 | 969 | 1,797 | 2,427 | 2,567 | 2,079 | 1,696 | 1,102 | 563 | 125 | 63  | 101 | 463          |
| Mean                   | 67  | 178 | 380   | 510   | 616   | 588   | 494   | 261   | 69  | 11  | 7   | 15  | 192          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 0   | 47  | 82    | 87    | 95    | 92    | 45    | 0     | 0   | 0   | 0   | 0   | 33           |
| 10%                    | 15  | 78  | 100   | 129   | 161   | 210   | 131   | 1     | 0   | 0   | 0   | 0   | 73           |
| 25%                    | 29  | 95  | 129   | 173   | 257   | 321   | 243   | 73    | 0   | 1   | 1   | 1   | 100          |
| 50%                    | 58  | 130 | 223   | 365   | 468   | 491   | 386   | 155   | 15  | 1   | 1   | 6   | 156          |
| 75%                    | 80  | 189 | 517   | 635   | 802   | 719   | 684   | 404   | 89  | 9   | 9   | 26  | 258          |
| 90%                    | 119 | 312 | 899   | 1,180 | 1,284 | 1,141 | 1,009 | 661   | 235 | 31  | 9   | 41  | 356          |
| 100%                   | 761 | 969 | 1,797 | 2,427 | 2,567 | 2,079 | 1,696 | 1,102 | 563 | 125 | 63  | 101 | 463          |
| Mean                   | 67  | 178 | 380   | 510   | 616   | 588   | 494   | 261   | 69  | 11  | 7   | 15  | 192          |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 0   | 47  | 82    | 87    | 95    | 92    | 45    | 0     | 0   | 0   | 0   | 0   | 33           |
| 10%                    | 15  | 78  | 100   | 129   | 161   | 210   | 131   | 1     | 0   | 0   | 0   | 0   | 73           |
| 25%                    | 29  | 95  | 129   | 173   | 257   | 321   | 243   | 73    | 0   | 1   | 1   | 1   | 100          |
| 50%                    | 58  | 130 | 223   | 365   | 468   | 491   | 386   | 155   | 15  | 1   | 1   | 6   | 156          |
| 75%                    | 80  | 189 | 517   | 635   | 802   | 719   | 684   | 404   | 89  | 9   | 9   | 26  | 258          |
| 90%                    | 119 | 312 | 899   | 1,180 | 1,284 | 1,141 | 1,009 | 661   | 235 | 31  | 9   | 41  | 356          |
| 100%                   | 761 | 969 | 1,797 | 2,427 | 2,567 | 2,079 | 1,696 | 1,102 | 563 | 125 | 63  | 101 | 463          |
| Mean                   | 67  | 178 | 380   | 510   | 616   | 588   | 494   | 261   | 69  | 11  | 7   | 15  | 192          |
| <b>VA</b>              |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 0   | 47  | 82    | 87    | 95    | 92    | 45    | 0     | 0   | 0   | 0   | 0   | 33           |
| 10%                    | 15  | 78  | 100   | 129   | 161   | 210   | 131   | 1     | 0   | 0   | 0   | 0   | 73           |
| 25%                    | 29  | 95  | 129   | 173   | 257   | 321   | 243   | 73    | 0   | 1   | 1   | 1   | 100          |
| 50%                    | 58  | 130 | 223   | 365   | 468   | 491   | 386   | 155   | 15  | 1   | 1   | 6   | 156          |
| 75%                    | 80  | 189 | 517   | 635   | 802   | 719   | 684   | 404   | 89  | 9   | 9   | 26  | 258          |
| 90%                    | 119 | 312 | 899   | 1,180 | 1,284 | 1,141 | 1,009 | 661   | 235 | 31  | 9   | 41  | 356          |
| 100%                   | 761 | 969 | 1,797 | 2,427 | 2,567 | 2,079 | 1,696 | 1,102 | 563 | 125 | 63  | 101 | 463          |
| Mean                   | 67  | 178 | 380   | 510   | 616   | 588   | 494   | 261   | 69  | 11  | 7   | 15  | 192          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 22  | 23  | 82    | 87    | 95    | 70    | 34    | 27    | 23  | 19  | 19  | 19  | 34           |
| 10%                    | 24  | 40  | 100   | 129   | 161   | 204   | 124   | 47    | 34  | 26  | 23  | 23  | 76           |
| 25%                    | 30  | 74  | 129   | 173   | 256   | 320   | 241   | 79    | 44  | 31  | 29  | 29  | 106          |
| 50%                    | 50  | 120 | 223   | 365   | 468   | 491   | 386   | 166   | 64  | 45  | 41  | 40  | 159          |
| 75%                    | 66  | 171 | 517   | 635   | 802   | 719   | 684   | 404   | 120 | 79  | 62  | 61  | 267          |
| 90%                    | 76  | 312 | 899   | 1,180 | 1,284 | 1,141 | 1,009 | 661   | 235 | 104 | 81  | 73  | 362          |
| 100%                   | 720 | 969 | 1,797 | 2,427 | 2,567 | 2,079 | 1,696 | 1,102 | 563 | 151 | 111 | 101 | 474          |
| Mean                   | 57  | 158 | 380   | 510   | 616   | 586   | 487   | 269   | 104 | 57  | 48  | 46  | 199          |

**Table H1a2-34. Water Year Average of Monthly Flows (cfs) — Deer Creek above Confluence with Sacramento River (SWRCB Deer Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb   | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |       |     |     |     |     |     |     |     |
| C                      | 41  | 90  | 168 | 170 | 242   | 246 | 131 | 37  | 0   | 0   | 0   | 1   |
| D                      | 51  | 148 | 256 | 212 | 354   | 415 | 297 | 95  | 3   | 1   | 1   | 6   |
| BN                     | 57  | 140 | 236 | 355 | 492   | 496 | 494 | 191 | 36  | 1   | 2   | 4   |
| AN                     | 69  | 182 | 312 | 642 | 800   | 748 | 553 | 310 | 55  | 8   | 9   | 17  |
| W                      | 98  | 269 | 703 | 956 | 1,012 | 892 | 808 | 527 | 181 | 31  | 17  | 35  |
| All                    | 67  | 178 | 380 | 510 | 616   | 588 | 494 | 261 | 69  | 11  | 7   | 15  |
| <b>2008-2009 BiOps</b> |     |     |     |     |       |     |     |     |     |     |     |     |
| C                      | 41  | 90  | 168 | 170 | 242   | 246 | 131 | 37  | 0   | 0   | 0   | 1   |
| D                      | 51  | 148 | 256 | 212 | 354   | 415 | 297 | 95  | 3   | 1   | 1   | 6   |
| BN                     | 57  | 140 | 236 | 355 | 492   | 496 | 494 | 191 | 36  | 1   | 2   | 4   |
| AN                     | 69  | 182 | 312 | 642 | 800   | 748 | 553 | 310 | 55  | 8   | 9   | 17  |
| W                      | 98  | 269 | 703 | 956 | 1,012 | 892 | 808 | 527 | 181 | 31  | 17  | 35  |
| All                    | 67  | 178 | 380 | 510 | 616   | 588 | 494 | 261 | 69  | 11  | 7   | 15  |
| <b>2019 BiOps</b>      |     |     |     |     |       |     |     |     |     |     |     |     |
| C                      | 41  | 90  | 168 | 170 | 242   | 246 | 131 | 37  | 0   | 0   | 0   | 1   |
| D                      | 51  | 148 | 256 | 212 | 354   | 415 | 297 | 95  | 3   | 1   | 1   | 6   |
| BN                     | 57  | 140 | 236 | 355 | 492   | 496 | 494 | 191 | 36  | 1   | 2   | 4   |
| AN                     | 69  | 182 | 312 | 642 | 800   | 748 | 553 | 310 | 55  | 8   | 9   | 17  |
| W                      | 98  | 269 | 703 | 956 | 1,012 | 892 | 808 | 527 | 181 | 31  | 17  | 35  |
| All                    | 67  | 178 | 380 | 510 | 616   | 588 | 494 | 261 | 69  | 11  | 7   | 15  |
| <b>VA</b>              |     |     |     |     |       |     |     |     |     |     |     |     |
| C                      | 41  | 90  | 168 | 170 | 242   | 246 | 131 | 37  | 0   | 0   | 0   | 1   |
| D                      | 51  | 148 | 256 | 212 | 354   | 415 | 297 | 95  | 3   | 1   | 1   | 6   |
| BN                     | 57  | 140 | 236 | 355 | 492   | 496 | 494 | 191 | 36  | 1   | 2   | 4   |
| AN                     | 69  | 182 | 312 | 642 | 800   | 748 | 553 | 310 | 55  | 8   | 9   | 17  |
| W                      | 98  | 269 | 703 | 956 | 1,012 | 892 | 808 | 527 | 181 | 31  | 17  | 35  |
| All                    | 67  | 178 | 380 | 510 | 616   | 588 | 494 | 261 | 69  | 11  | 7   | 15  |
| <b>55 w/WSAs</b>       |     |     |     |     |       |     |     |     |     |     |     |     |
| C                      | 38  | 69  | 168 | 170 | 242   | 241 | 117 | 52  | 33  | 25  | 23  | 23  |
| D                      | 48  | 129 | 256 | 212 | 353   | 411 | 289 | 110 | 46  | 34  | 31  | 31  |
| BN                     | 49  | 113 | 236 | 355 | 492   | 495 | 483 | 200 | 76  | 45  | 38  | 37  |
| AN                     | 49  | 153 | 312 | 642 | 800   | 748 | 550 | 308 | 100 | 62  | 53  | 53  |
| W                      | 84  | 256 | 703 | 956 | 1,012 | 892 | 808 | 528 | 204 | 98  | 77  | 70  |
| All                    | 57  | 158 | 380 | 510 | 616   | 586 | 487 | 269 | 104 | 57  | 48  | 46  |

## H1a2.2.18 Elder Creek above Confluence with Sacramento River



**Figure H1a2-18. Elder Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-35. Cumulative Distribution of Monthly Flow (cfs) — Elder Creek above Confluence with Sacramento River**

|                        | Oct | Nov | Dec | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 8   | 11  | 1     | 6     | 1     | 1   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 2   | 13  | 18  | 14    | 22    | 32    | 25  | 13  | 5   | 1   | 0   | 0   | 15           |
| 25%                    | 4   | 18  | 25  | 32    | 61    | 73    | 68  | 28  | 12  | 3   | 1   | 1   | 29           |
| 50%                    | 17  | 24  | 59  | 104   | 165   | 139   | 110 | 63  | 22  | 6   | 4   | 4   | 52           |
| 75%                    | 32  | 45  | 171 | 292   | 322   | 276   | 228 | 123 | 61  | 21  | 16  | 15  | 96           |
| 90%                    | 35  | 107 | 309 | 423   | 556   | 400   | 304 | 196 | 82  | 28  | 19  | 17  | 127          |
| 100%                   | 112 | 284 | 580 | 1,118 | 1,513 | 1,088 | 666 | 462 | 276 | 56  | 28  | 21  | 213          |
| Mean                   | 19  | 44  | 122 | 186   | 237   | 194   | 152 | 87  | 41  | 13  | 8   | 8   | 67           |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 8   | 11  | 1     | 6     | 1     | 1   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 2   | 13  | 18  | 14    | 22    | 32    | 25  | 13  | 5   | 1   | 0   | 0   | 15           |
| 25%                    | 4   | 18  | 25  | 32    | 61    | 73    | 68  | 28  | 12  | 3   | 1   | 1   | 29           |
| 50%                    | 17  | 24  | 59  | 104   | 165   | 139   | 110 | 63  | 22  | 6   | 4   | 4   | 52           |
| 75%                    | 32  | 45  | 171 | 292   | 322   | 276   | 228 | 123 | 61  | 21  | 16  | 15  | 96           |
| 90%                    | 35  | 107 | 309 | 423   | 556   | 400   | 304 | 196 | 82  | 28  | 19  | 17  | 127          |
| 100%                   | 112 | 284 | 580 | 1,118 | 1,513 | 1,088 | 666 | 462 | 276 | 56  | 28  | 21  | 213          |
| Mean                   | 19  | 44  | 122 | 186   | 237   | 194   | 152 | 87  | 41  | 13  | 8   | 8   | 67           |
| <b>2019 BiOps</b>      |     |     |     |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 8   | 11  | 1     | 6     | 1     | 1   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 2   | 13  | 18  | 14    | 22    | 32    | 25  | 13  | 5   | 1   | 0   | 0   | 15           |
| 25%                    | 4   | 18  | 25  | 32    | 61    | 73    | 68  | 28  | 12  | 3   | 1   | 1   | 29           |
| 50%                    | 17  | 24  | 59  | 104   | 165   | 139   | 110 | 63  | 22  | 6   | 4   | 4   | 52           |
| 75%                    | 32  | 45  | 171 | 292   | 322   | 276   | 228 | 123 | 61  | 21  | 16  | 15  | 96           |
| 90%                    | 35  | 107 | 309 | 423   | 556   | 400   | 304 | 196 | 82  | 28  | 19  | 17  | 127          |
| 100%                   | 112 | 284 | 580 | 1,118 | 1,513 | 1,088 | 666 | 462 | 276 | 56  | 28  | 21  | 213          |
| Mean                   | 19  | 44  | 122 | 186   | 237   | 194   | 152 | 87  | 41  | 13  | 8   | 8   | 67           |
| <b>VA</b>              |     |     |     |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 8   | 11  | 1     | 6     | 1     | 1   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 2   | 13  | 18  | 14    | 22    | 32    | 25  | 13  | 5   | 1   | 0   | 0   | 15           |
| 25%                    | 4   | 18  | 25  | 32    | 61    | 73    | 68  | 28  | 12  | 3   | 1   | 1   | 29           |
| 50%                    | 17  | 24  | 59  | 104   | 165   | 139   | 110 | 63  | 22  | 6   | 4   | 4   | 52           |
| 75%                    | 32  | 45  | 171 | 292   | 322   | 276   | 228 | 123 | 61  | 21  | 16  | 15  | 96           |
| 90%                    | 35  | 107 | 309 | 423   | 556   | 400   | 304 | 196 | 82  | 28  | 19  | 17  | 127          |
| 100%                   | 112 | 284 | 580 | 1,118 | 1,513 | 1,088 | 666 | 462 | 276 | 56  | 28  | 21  | 213          |
| Mean                   | 19  | 44  | 122 | 186   | 237   | 194   | 152 | 87  | 41  | 13  | 8   | 8   | 67           |
| <b>55 w/WSAs</b>       |     |     |     |       |       |       |     |     |     |     |     |     |              |
| 0%                     | 0   | 8   | 11  | 1     | 6     | 1     | 1   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 2   | 13  | 18  | 14    | 22    | 32    | 25  | 13  | 5   | 1   | 0   | 0   | 15           |
| 25%                    | 4   | 18  | 25  | 32    | 61    | 73    | 68  | 28  | 12  | 3   | 1   | 1   | 29           |
| 50%                    | 17  | 24  | 59  | 104   | 165   | 139   | 110 | 63  | 22  | 6   | 4   | 4   | 52           |
| 75%                    | 32  | 45  | 171 | 292   | 322   | 276   | 228 | 123 | 61  | 21  | 16  | 15  | 96           |
| 90%                    | 35  | 107 | 309 | 423   | 556   | 400   | 304 | 196 | 82  | 28  | 19  | 17  | 127          |
| 100%                   | 112 | 284 | 580 | 1,118 | 1,513 | 1,088 | 666 | 462 | 276 | 56  | 28  | 21  | 213          |
| Mean                   | 19  | 44  | 122 | 186   | 237   | 194   | 152 | 87  | 41  | 13  | 8   | 8   | 67           |

**Table H1a2-36. Water Year Average of Monthly Flows (cfs) — Elder Creek above Confluence with Sacramento River**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 9   | 15  | 51  | 44  | 71  | 71  | 42  | 25  | 8   | 2   | 0   | 0   |
| D                      | 17  | 38  | 71  | 68  | 127 | 127 | 72  | 36  | 13  | 4   | 2   | 2   |
| BN                     | 18  | 36  | 65  | 132 | 155 | 121 | 133 | 51  | 21  | 5   | 3   | 3   |
| AN                     | 20  | 51  | 134 | 288 | 364 | 258 | 186 | 137 | 65  | 20  | 14  | 14  |
| W                      | 26  | 67  | 227 | 342 | 409 | 329 | 268 | 162 | 83  | 26  | 18  | 16  |
| All                    | 19  | 44  | 122 | 186 | 237 | 194 | 152 | 87  | 41  | 13  | 8   | 8   |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 9   | 15  | 51  | 44  | 71  | 71  | 42  | 25  | 8   | 2   | 0   | 0   |
| D                      | 17  | 38  | 71  | 68  | 127 | 127 | 72  | 36  | 13  | 4   | 2   | 2   |
| BN                     | 18  | 36  | 65  | 132 | 155 | 121 | 133 | 51  | 21  | 5   | 3   | 3   |
| AN                     | 20  | 51  | 134 | 288 | 364 | 258 | 186 | 137 | 65  | 20  | 14  | 14  |
| W                      | 26  | 67  | 227 | 342 | 409 | 329 | 268 | 162 | 83  | 26  | 18  | 16  |
| All                    | 19  | 44  | 122 | 186 | 237 | 194 | 152 | 87  | 41  | 13  | 8   | 8   |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 9   | 15  | 51  | 44  | 71  | 71  | 42  | 25  | 8   | 2   | 0   | 0   |
| D                      | 17  | 38  | 71  | 68  | 127 | 127 | 72  | 36  | 13  | 4   | 2   | 2   |
| BN                     | 18  | 36  | 65  | 132 | 155 | 121 | 133 | 51  | 21  | 5   | 3   | 3   |
| AN                     | 20  | 51  | 134 | 288 | 364 | 258 | 186 | 137 | 65  | 20  | 14  | 14  |
| W                      | 26  | 67  | 227 | 342 | 409 | 329 | 268 | 162 | 83  | 26  | 18  | 16  |
| All                    | 19  | 44  | 122 | 186 | 237 | 194 | 152 | 87  | 41  | 13  | 8   | 8   |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 9   | 15  | 51  | 44  | 71  | 71  | 42  | 25  | 8   | 2   | 0   | 0   |
| D                      | 17  | 38  | 71  | 68  | 127 | 127 | 72  | 36  | 13  | 4   | 2   | 2   |
| BN                     | 18  | 36  | 65  | 132 | 155 | 121 | 133 | 51  | 21  | 5   | 3   | 3   |
| AN                     | 20  | 51  | 134 | 288 | 364 | 258 | 186 | 137 | 65  | 20  | 14  | 14  |
| W                      | 26  | 67  | 227 | 342 | 409 | 329 | 268 | 162 | 83  | 26  | 18  | 16  |
| All                    | 19  | 44  | 122 | 186 | 237 | 194 | 152 | 87  | 41  | 13  | 8   | 8   |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 9   | 15  | 51  | 44  | 71  | 71  | 42  | 25  | 8   | 2   | 0   | 0   |
| D                      | 17  | 38  | 71  | 68  | 127 | 127 | 72  | 36  | 13  | 4   | 2   | 2   |
| BN                     | 18  | 36  | 65  | 132 | 155 | 121 | 133 | 51  | 21  | 5   | 3   | 3   |
| AN                     | 20  | 51  | 134 | 288 | 364 | 258 | 186 | 137 | 65  | 20  | 14  | 14  |
| W                      | 26  | 67  | 227 | 342 | 409 | 329 | 268 | 162 | 83  | 26  | 18  | 16  |
| All                    | 19  | 44  | 122 | 186 | 237 | 194 | 152 | 87  | 41  | 13  | 8   | 8   |

## H1a2.2.19 Feather River below Oroville Reservoir (SWRCB Oroville)

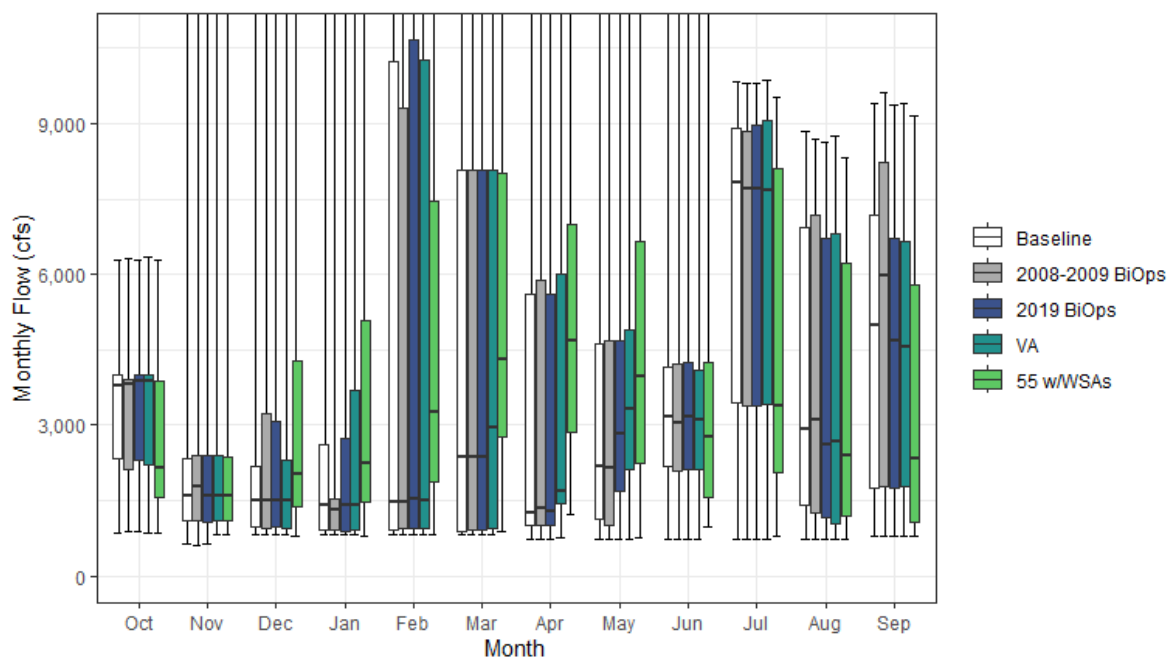


Figure H1a2-19. Feather River Streamflow below Oroville Reservoir Monthly Boxplot (cfs)

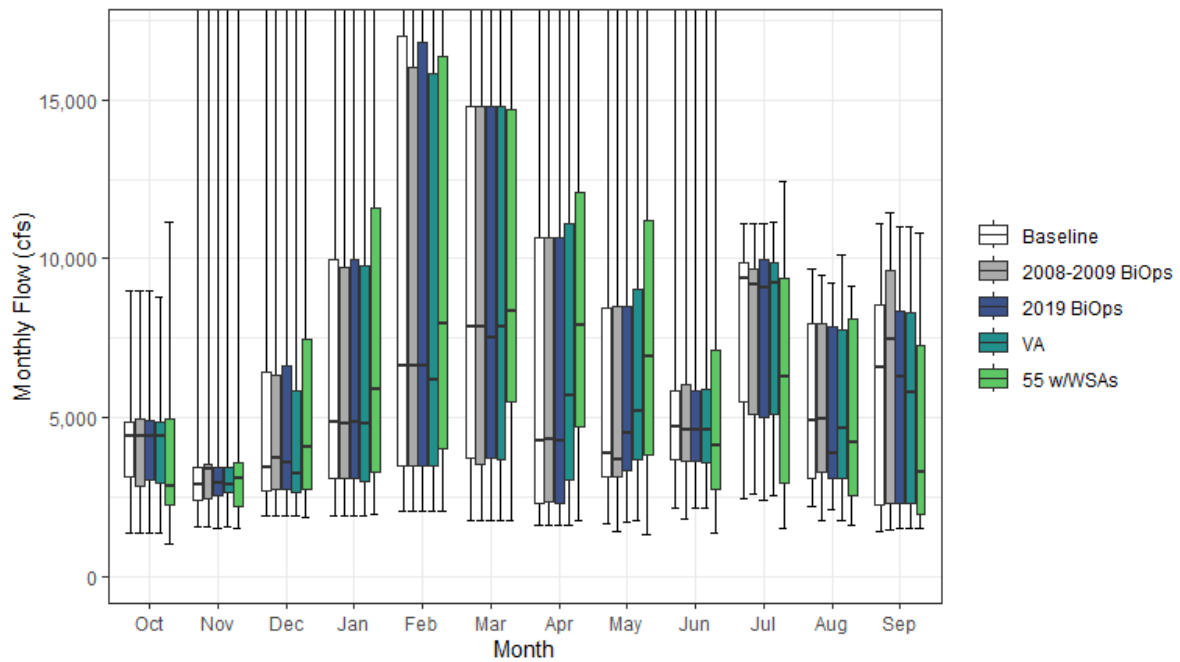
**Table H1a2-37. Cumulative Distribution of Monthly Flow (cfs) — Feather River below Oroville Reservoir (SWRCB Oroville)**

|                        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 868   | 635    | 812    | 811    | 815    | 811    | 718    | 726    | 732    | 717   | 716   | 788   | 685          |
| 10%                    | 1,399 | 829    | 841    | 823    | 840    | 821    | 763    | 981    | 1,422  | 2,287 | 719   | 959   | 1,387        |
| 25%                    | 2,342 | 1,094  | 973    | 912    | 930    | 889    | 995    | 1,122  | 2,182  | 3,435 | 1,417 | 1,749 | 1,866        |
| 50%                    | 3,789 | 1,592  | 1,494  | 1,410  | 1,469  | 2,355  | 1,266  | 2,183  | 3,160  | 7,833 | 2,908 | 5,000 | 2,603        |
| 75%                    | 4,007 | 2,327  | 2,186  | 2,598  | 10,249 | 8,083  | 5,603  | 4,621  | 4,151  | 8,919 | 6,918 | 7,194 | 4,140        |
| 90%                    | 4,730 | 2,404  | 8,355  | 12,174 | 17,893 | 17,071 | 11,069 | 9,726  | 6,629  | 9,400 | 8,082 | 8,886 | 5,548        |
| 100%                   | 6,299 | 15,494 | 24,353 | 38,957 | 47,868 | 37,169 | 22,208 | 21,120 | 13,401 | 9,821 | 8,833 | 9,406 | 8,218        |
| Mean                   | 3,333 | 1,965  | 3,158  | 4,205  | 6,081  | 6,204  | 3,938  | 3,925  | 3,700  | 6,425 | 3,959 | 4,786 | 3,116        |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 875   | 619    | 812    | 811    | 815    | 811    | 717    | 724    | 735    | 717   | 716   | 789   | 826          |
| 10%                    | 1,265 | 829    | 840    | 826    | 837    | 821    | 766    | 973    | 988    | 2,280 | 719   | 996   | 1,336        |
| 25%                    | 2,121 | 1,096  | 960    | 902    | 941    | 914    | 997    | 1,024  | 2,080  | 3,389 | 1,247 | 1,780 | 1,881        |
| 50%                    | 3,817 | 1,774  | 1,493  | 1,303  | 1,464  | 2,355  | 1,357  | 2,152  | 3,054  | 7,703 | 3,106 | 5,990 | 2,640        |
| 75%                    | 3,903 | 2,398  | 3,215  | 1,535  | 9,308  | 8,083  | 5,875  | 4,688  | 4,203  | 8,850 | 7,172 | 8,220 | 4,104        |
| 90%                    | 4,029 | 2,408  | 6,524  | 12,174 | 17,900 | 17,063 | 11,068 | 9,726  | 6,630  | 9,251 | 7,866 | 9,472 | 5,595        |
| 100%                   | 6,301 | 15,558 | 24,353 | 38,957 | 47,868 | 37,550 | 22,208 | 21,120 | 13,401 | 9,796 | 8,679 | 9,623 | 8,226        |
| Mean                   | 3,192 | 2,127  | 3,182  | 4,039  | 5,923  | 6,084  | 3,958  | 3,887  | 3,647  | 6,288 | 4,060 | 5,304 | 3,116        |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 875   | 635    | 813    | 810    | 816    | 811    | 717    | 724    | 738    | 717   | 717   | 788   | 693          |
| 10%                    | 1,425 | 827    | 840    | 826    | 838    | 820    | 769    | 981    | 990    | 1,869 | 719   | 958   | 1,362        |
| 25%                    | 2,298 | 1,083  | 978    | 901    | 940    | 913    | 1,001  | 1,682  | 2,119  | 3,382 | 1,174 | 1,759 | 1,903        |
| 50%                    | 3,868 | 1,595  | 1,505  | 1,409  | 1,528  | 2,355  | 1,300  | 2,819  | 3,161  | 7,705 | 2,605 | 4,666 | 2,600        |
| 75%                    | 4,007 | 2,390  | 3,077  | 2,741  | 10,664 | 8,083  | 5,604  | 4,688  | 4,236  | 8,961 | 6,703 | 6,724 | 4,080        |
| 90%                    | 4,730 | 2,405  | 8,658  | 12,174 | 18,114 | 17,071 | 11,068 | 9,726  | 6,629  | 9,406 | 7,825 | 8,620 | 5,545        |
| 100%                   | 6,299 | 15,494 | 24,353 | 38,957 | 47,870 | 37,630 | 22,154 | 21,120 | 13,401 | 9,814 | 8,625 | 9,378 | 8,218        |
| Mean                   | 3,350 | 1,998  | 3,428  | 4,269  | 6,146  | 6,236  | 3,953  | 4,233  | 3,658  | 6,190 | 3,770 | 4,457 | 3,117        |
| <b>VA</b>              |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 869   | 811    | 814    | 810    | 814    | 811    | 753    | 737    | 724    | 717   | 716   | 790   | 737          |
| 10%                    | 1,414 | 831    | 840    | 824    | 841    | 822    | 1,161  | 1,458  | 987    | 2,288 | 719   | 956   | 1,386        |
| 25%                    | 2,199 | 1,104  | 961    | 902    | 947    | 948    | 1,436  | 2,104  | 2,119  | 3,418 | 1,051 | 1,792 | 1,987        |
| 50%                    | 3,867 | 1,596  | 1,498  | 1,411  | 1,490  | 2,949  | 1,673  | 3,316  | 3,106  | 7,682 | 2,675 | 4,544 | 2,712        |
| 75%                    | 4,006 | 2,392  | 2,298  | 3,686  | 10,278 | 8,082  | 6,021  | 4,886  | 4,088  | 9,048 | 6,823 | 6,646 | 4,166        |
| 90%                    | 4,730 | 2,405  | 8,756  | 12,575 | 17,892 | 17,071 | 11,069 | 9,726  | 6,630  | 9,431 | 7,875 | 8,731 | 5,546        |
| 100%                   | 6,360 | 15,558 | 24,353 | 38,957 | 47,879 | 37,518 | 22,208 | 21,120 | 13,401 | 9,873 | 8,758 | 9,408 | 8,222        |
| Mean                   | 3,326 | 2,008  | 3,226  | 4,296  | 6,093  | 6,313  | 4,238  | 4,507  | 3,611  | 6,304 | 3,837 | 4,419 | 3,146        |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |        |       |       |       |              |
| 0%                     | 868   | 811    | 808    | 808    | 815    | 884    | 1,235  | 746    | 976    | 806   | 729   | 792   | 1,040        |
| 10%                    | 1,128 | 825    | 840    | 960    | 1,375  | 1,875  | 1,778  | 1,745  | 1,102  | 1,318 | 994   | 932   | 1,232        |
| 25%                    | 1,558 | 1,099  | 1,374  | 1,464  | 1,858  | 2,771  | 2,855  | 2,254  | 1,550  | 2,066 | 1,208 | 1,061 | 1,587        |
| 50%                    | 2,136 | 1,607  | 2,021  | 2,244  | 3,255  | 4,303  | 4,681  | 3,964  | 2,753  | 3,386 | 2,406 | 2,337 | 2,707        |
| 75%                    | 3,868 | 2,370  | 4,292  | 5,095  | 7,466  | 8,015  | 6,989  | 6,664  | 4,260  | 8,118 | 6,229 | 5,780 | 4,144        |
| 90%                    | 3,959 | 2,401  | 7,674  | 12,278 | 12,626 | 13,828 | 10,834 | 9,400  | 6,542  | 8,778 | 7,556 | 8,239 | 5,732        |
| 100%                   | 6,299 | 15,494 | 24,353 | 36,838 | 40,561 | 30,830 | 22,208 | 20,819 | 12,989 | 9,512 | 8,307 | 9,146 | 8,220        |
| Mean                   | 2,653 | 2,017  | 3,622  | 4,900  | 5,892  | 6,354  | 5,734  | 5,053  | 3,458  | 4,779 | 3,608 | 3,604 | 3,116        |

**Table H1a2-38. Water Year Average of Monthly Flows (cfs) — Feather River below Oroville Reservoir (SWRCB Oroville)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan    | Feb    | Mar    | Apr    | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |        |        |        |        |       |       |       |       |       |
| C                      | 3,291 | 1,658 | 1,254 | 1,047  | 999    | 1,081  | 1,378  | 1,886 | 2,995 | 4,031 | 3,037 | 1,996 |
| D                      | 3,186 | 1,573 | 1,473 | 1,222  | 1,649  | 1,517  | 963    | 1,860 | 3,351 | 7,959 | 5,583 | 2,189 |
| BN                     | 3,518 | 1,886 | 1,919 | 1,862  | 2,963  | 3,869  | 1,747  | 1,703 | 2,636 | 8,818 | 6,737 | 5,867 |
| AN                     | 3,027 | 1,573 | 2,573 | 2,991  | 7,361  | 7,554  | 3,577  | 3,186 | 2,680 | 7,743 | 4,083 | 8,703 |
| W                      | 3,470 | 2,624 | 6,429 | 10,045 | 13,503 | 13,313 | 9,017  | 8,228 | 5,414 | 4,535 | 1,452 | 5,927 |
| All                    | 3,333 | 1,965 | 3,158 | 4,205  | 6,081  | 6,204  | 3,938  | 3,925 | 3,700 | 6,425 | 3,959 | 4,786 |
| <b>2008-2009 BiOps</b> |       |       |       |        |        |        |        |       |       |       |       |       |
| C                      | 2,999 | 1,443 | 1,256 | 1,018  | 999    | 1,013  | 1,391  | 1,922 | 3,002 | 4,030 | 2,926 | 1,712 |
| D                      | 3,101 | 1,732 | 1,771 | 1,197  | 1,663  | 1,462  | 998    | 1,730 | 3,113 | 7,392 | 6,387 | 2,186 |
| BN                     | 3,101 | 2,122 | 2,340 | 1,326  | 2,913  | 3,495  | 1,750  | 1,621 | 2,624 | 8,723 | 6,556 | 6,137 |
| AN                     | 2,743 | 1,798 | 2,947 | 2,698  | 6,100  | 7,483  | 3,656  | 3,195 | 2,687 | 7,626 | 3,941 | 7,970 |
| W                      | 3,599 | 2,916 | 5,870 | 9,990  | 13,507 | 13,257 | 9,019  | 8,228 | 5,415 | 4,604 | 1,425 | 7,910 |
| All                    | 3,192 | 2,127 | 3,182 | 4,039  | 5,923  | 6,084  | 3,958  | 3,887 | 3,647 | 6,288 | 4,060 | 5,304 |
| <b>2019 BiOps</b>      |       |       |       |        |        |        |        |       |       |       |       |       |
| C                      | 3,307 | 1,695 | 1,350 | 1,016  | 1,041  | 1,082  | 1,385  | 2,279 | 2,920 | 4,021 | 2,935 | 1,666 |
| D                      | 3,186 | 1,593 | 1,493 | 1,222  | 1,738  | 1,614  | 1,014  | 2,434 | 3,397 | 7,844 | 5,434 | 2,122 |
| BN                     | 3,498 | 1,955 | 2,407 | 1,864  | 3,029  | 3,803  | 1,747  | 2,345 | 2,524 | 8,808 | 6,294 | 4,809 |
| AN                     | 3,071 | 1,603 | 2,682 | 3,191  | 7,297  | 7,482  | 3,600  | 3,139 | 2,465 | 7,095 | 4,072 | 8,388 |
| W                      | 3,509 | 2,641 | 6,901 | 10,193 | 13,616 | 13,417 | 9,016  | 8,229 | 5,440 | 4,115 | 1,275 | 5,864 |
| All                    | 3,350 | 1,998 | 3,428 | 4,269  | 6,146  | 6,236  | 3,953  | 4,233 | 3,658 | 6,190 | 3,770 | 4,457 |
| <b>VA</b>              |       |       |       |        |        |        |        |       |       |       |       |       |
| C                      | 3,310 | 1,629 | 1,127 | 986    | 999    | 1,101  | 1,437  | 2,285 | 2,856 | 4,039 | 2,990 | 1,673 |
| D                      | 3,162 | 1,579 | 1,466 | 1,224  | 1,651  | 1,559  | 1,528  | 2,964 | 3,346 | 8,031 | 5,507 | 2,058 |
| BN                     | 3,570 | 2,032 | 1,943 | 1,907  | 2,876  | 4,012  | 2,262  | 2,838 | 2,532 | 8,749 | 6,229 | 4,754 |
| AN                     | 2,811 | 1,475 | 2,652 | 3,138  | 7,414  | 7,800  | 4,114  | 3,632 | 2,246 | 7,644 | 4,501 | 8,408 |
| W                      | 3,508 | 2,725 | 6,679 | 10,289 | 13,575 | 13,440 | 9,021  | 8,230 | 5,437 | 4,161 | 1,284 | 5,808 |
| All                    | 3,326 | 2,008 | 3,226 | 4,296  | 6,093  | 6,313  | 4,238  | 4,507 | 3,611 | 6,304 | 3,837 | 4,419 |
| <b>55 w/WSAs</b>       |       |       |       |        |        |        |        |       |       |       |       |       |
| C                      | 2,466 | 1,301 | 1,429 | 1,197  | 1,515  | 1,874  | 1,753  | 1,577 | 1,565 | 1,868 | 2,130 | 1,756 |
| D                      | 2,475 | 1,765 | 2,221 | 1,571  | 2,638  | 3,253  | 3,165  | 2,625 | 1,638 | 2,962 | 3,009 | 1,631 |
| BN                     | 2,896 | 1,791 | 2,449 | 2,517  | 3,837  | 4,595  | 5,078  | 4,039 | 2,884 | 7,098 | 4,909 | 2,889 |
| AN                     | 2,235 | 1,682 | 2,991 | 4,806  | 6,296  | 7,071  | 5,757  | 5,356 | 3,573 | 6,565 | 5,059 | 6,297 |
| W                      | 2,896 | 2,861 | 6,816 | 10,862 | 11,753 | 11,846 | 10,149 | 9,210 | 6,119 | 5,481 | 3,431 | 5,412 |
| All                    | 2,653 | 2,017 | 3,622 | 4,900  | 5,892  | 6,354  | 5,734  | 5,053 | 3,458 | 4,779 | 3,608 | 3,604 |

## H1a2.2.20 Feather River above Confluence with Sacramento River (SWRCB Feather River)



**Figure H1a2-20. Feather River Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

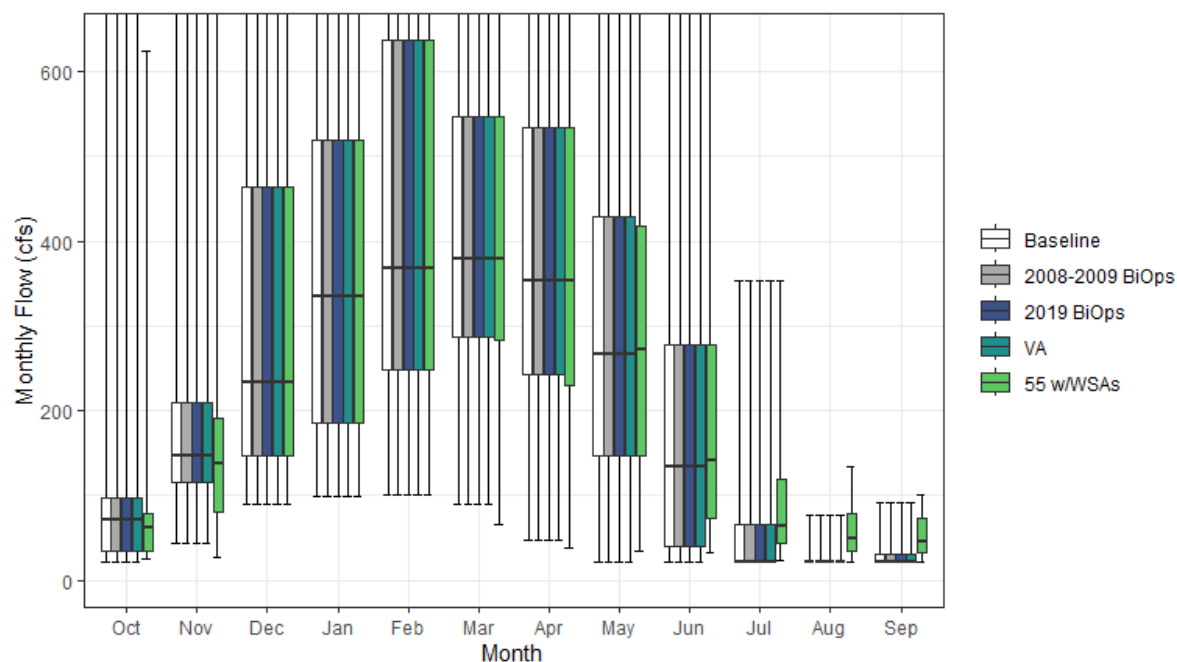
**Table H1a2-39. Cumulative Distribution of Monthly Flow (cfs) — Feather River above Confluence with Sacramento River (SWRCB Feather River)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 1,350  | 1,537  | 1,913  | 1,924  | 2,042  | 1,755  | 1,597  | 1,637  | 2,152  | 2,427  | 2,186  | 1,415  | 1,618        |
| 10%                    | 2,034  | 1,854  | 2,166  | 2,353  | 2,728  | 2,572  | 1,907  | 2,374  | 2,765  | 3,631  | 2,931  | 1,712  | 2,114        |
| 25%                    | 3,127  | 2,373  | 2,683  | 3,091  | 3,452  | 3,705  | 2,293  | 3,144  | 3,683  | 5,469  | 3,097  | 2,268  | 3,087        |
| 50%                    | 4,402  | 2,869  | 3,432  | 4,829  | 6,619  | 7,864  | 4,273  | 3,864  | 4,686  | 9,401  | 4,901  | 6,587  | 4,216        |
| 75%                    | 4,874  | 3,414  | 6,405  | 9,980  | 16,997 | 14,809 | 10,672 | 8,452  | 5,843  | 9,888  | 7,939  | 8,537  | 6,933        |
| 90%                    | 6,144  | 3,911  | 19,033 | 23,276 | 28,751 | 27,426 | 17,942 | 15,745 | 10,734 | 10,272 | 8,778  | 10,374 | 8,942        |
| 100%                   | 8,965  | 21,701 | 39,711 | 66,522 | 78,623 | 57,569 | 36,791 | 29,829 | 22,723 | 11,096 | 9,661  | 11,088 | 13,342       |
| Mean                   | 4,138  | 3,427  | 6,580  | 9,422  | 11,951 | 11,492 | 7,499  | 6,811  | 5,931  | 7,821  | 5,415  | 5,959  | 5,204        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 1,349  | 1,536  | 1,913  | 1,924  | 2,043  | 1,755  | 1,602  | 1,410  | 1,786  | 2,575  | 1,750  | 1,440  | 1,580        |
| 10%                    | 1,873  | 1,854  | 2,152  | 2,422  | 2,729  | 2,573  | 1,902  | 2,189  | 2,735  | 3,508  | 2,970  | 1,734  | 2,116        |
| 25%                    | 2,850  | 2,461  | 2,720  | 3,081  | 3,482  | 3,518  | 2,337  | 3,131  | 3,607  | 5,085  | 3,267  | 2,279  | 3,009        |
| 50%                    | 4,398  | 3,397  | 3,709  | 4,790  | 6,619  | 7,863  | 4,292  | 3,680  | 4,626  | 9,167  | 4,929  | 7,453  | 4,278        |
| 75%                    | 4,962  | 3,527  | 6,315  | 9,734  | 16,010 | 14,810 | 10,660 | 8,511  | 6,034  | 9,690  | 7,933  | 9,618  | 7,197        |
| 90%                    | 5,102  | 4,725  | 19,137 | 23,953 | 28,922 | 27,426 | 17,916 | 15,712 | 10,773 | 10,258 | 8,573  | 10,907 | 9,114        |
| 100%                   | 8,982  | 21,761 | 39,712 | 66,552 | 78,603 | 58,009 | 36,781 | 29,827 | 22,723 | 11,093 | 9,468  | 11,446 | 13,345       |
| Mean                   | 4,010  | 3,583  | 6,599  | 9,267  | 11,801 | 11,380 | 7,519  | 6,773  | 5,880  | 7,690  | 5,513  | 6,465  | 5,206        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 1,350  | 1,534  | 1,913  | 1,923  | 2,043  | 1,755  | 1,597  | 1,726  | 2,152  | 2,399  | 2,090  | 1,488  | 1,671        |
| 10%                    | 2,047  | 1,854  | 2,181  | 2,422  | 2,728  | 2,573  | 1,932  | 2,825  | 2,712  | 3,351  | 2,710  | 1,725  | 2,092        |
| 25%                    | 3,052  | 2,530  | 2,739  | 3,091  | 3,460  | 3,705  | 2,290  | 3,312  | 3,627  | 5,012  | 3,075  | 2,300  | 3,083        |
| 50%                    | 4,402  | 2,926  | 3,577  | 4,830  | 6,619  | 7,501  | 4,274  | 4,519  | 4,610  | 9,093  | 3,857  | 6,261  | 4,209        |
| 75%                    | 4,896  | 3,429  | 6,639  | 9,985  | 16,809 | 14,809 | 10,663 | 8,496  | 5,841  | 9,955  | 7,847  | 8,355  | 6,957        |
| 90%                    | 6,103  | 3,992  | 20,091 | 24,679 | 29,126 | 27,427 | 17,916 | 15,755 | 10,733 | 10,251 | 8,505  | 10,100 | 9,055        |
| 100%                   | 8,964  | 21,701 | 39,712 | 66,520 | 78,602 | 57,999 | 36,654 | 29,830 | 22,723 | 11,097 | 9,227  | 10,993 | 13,343       |
| Mean                   | 4,154  | 3,459  | 6,832  | 9,483  | 12,012 | 11,522 | 7,513  | 7,111  | 5,892  | 7,595  | 5,232  | 5,643  | 5,205        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 1,350  | 1,536  | 1,913  | 1,912  | 2,042  | 1,737  | 1,602  | 1,732  | 2,146  | 2,532  | 1,764  | 1,492  | 1,645        |
| 10%                    | 2,029  | 1,899  | 2,153  | 2,360  | 2,730  | 2,617  | 2,092  | 2,999  | 2,702  | 3,525  | 2,603  | 1,920  | 2,109        |
| 25%                    | 2,956  | 2,633  | 2,640  | 2,982  | 3,455  | 3,696  | 3,044  | 3,652  | 3,560  | 5,121  | 3,094  | 2,274  | 3,148        |
| 50%                    | 4,404  | 2,894  | 3,232  | 4,791  | 6,172  | 7,864  | 5,691  | 5,192  | 4,589  | 9,252  | 4,654  | 5,794  | 4,319        |
| 75%                    | 4,878  | 3,419  | 5,818  | 9,778  | 15,808 | 14,811 | 11,114 | 9,016  | 5,871  | 9,869  | 7,764  | 8,318  | 6,955        |
| 90%                    | 6,117  | 3,911  | 18,999 | 22,626 | 29,126 | 27,372 | 17,934 | 15,747 | 10,729 | 10,272 | 8,724  | 10,228 | 8,973        |
| 100%                   | 8,810  | 21,762 | 39,768 | 66,584 | 78,656 | 57,989 | 36,841 | 29,834 | 22,721 | 11,151 | 10,138 | 10,987 | 13,347       |
| Mean                   | 4,129  | 3,447  | 6,528  | 9,389  | 11,923 | 11,566 | 8,140  | 7,423  | 5,819  | 7,691  | 5,309  | 5,612  | 5,237        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 1,016  | 1,520  | 1,842  | 1,935  | 2,035  | 1,764  | 1,763  | 1,313  | 1,343  | 1,512  | 1,615  | 1,491  | 1,428        |
| 10%                    | 1,629  | 1,845  | 2,066  | 2,521  | 2,971  | 3,447  | 3,039  | 2,437  | 1,867  | 1,996  | 1,991  | 1,671  | 2,030        |
| 25%                    | 2,232  | 2,202  | 2,717  | 3,256  | 4,027  | 5,475  | 4,710  | 3,814  | 2,758  | 2,915  | 2,539  | 1,928  | 2,777        |
| 50%                    | 2,840  | 3,100  | 4,042  | 5,883  | 7,936  | 8,368  | 7,914  | 6,917  | 4,121  | 6,275  | 4,202  | 3,295  | 4,184        |
| 75%                    | 4,961  | 3,556  | 7,458  | 11,603 | 16,345 | 14,694 | 12,060 | 11,178 | 7,123  | 9,364  | 8,094  | 7,261  | 7,394        |
| 90%                    | 5,095  | 4,805  | 14,156 | 22,285 | 24,844 | 23,370 | 17,701 | 15,434 | 10,819 | 10,168 | 8,526  | 9,745  | 9,331        |
| 100%                   | 11,130 | 22,179 | 39,264 | 63,532 | 71,739 | 50,739 | 36,576 | 29,981 | 21,160 | 12,432 | 9,138  | 10,829 | 13,356       |
| Mean                   | 3,519  | 3,633  | 6,944  | 9,970  | 11,739 | 11,733 | 9,616  | 8,373  | 5,604  | 6,159  | 5,012  | 4,781  | 5,243        |

**Table H1a2-40. Water Year Average of Monthly Flows (cfs) — Feather River above Confluence with Sacramento River (SWRCB Feather River)**

| Water Year Type        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul   | Aug   | Sep    |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |        |       |       |        |
| C                      | 3,780 | 2,714 | 2,688  | 2,713  | 2,903  | 2,739  | 2,118  | 2,580  | 3,421  | 4,333 | 3,501 | 2,457  |
| D                      | 3,910 | 2,796 | 3,408  | 3,501  | 4,509  | 4,795  | 2,671  | 3,314  | 4,339  | 8,584 | 6,398 | 2,998  |
| BN                     | 4,246 | 3,045 | 3,943  | 5,365  | 7,852  | 8,102  | 5,191  | 4,122  | 4,448  | 9,688 | 7,837 | 6,763  |
| AN                     | 3,717 | 3,293 | 5,783  | 9,522  | 14,505 | 14,758 | 7,642  | 6,704  | 5,063  | 9,373 | 5,926 | 10,203 |
| W                      | 4,595 | 4,565 | 12,970 | 19,872 | 23,807 | 21,911 | 15,313 | 13,377 | 9,724  | 7,318 | 3,978 | 7,792  |
| All                    | 4,138 | 3,427 | 6,580  | 9,422  | 11,951 | 11,492 | 7,499  | 6,811  | 5,931  | 7,821 | 5,415 | 5,959  |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |        |       |       |        |
| C                      | 3,514 | 2,515 | 2,688  | 2,686  | 2,902  | 2,673  | 2,129  | 2,614  | 3,427  | 4,332 | 3,397 | 2,190  |
| D                      | 3,835 | 2,951 | 3,689  | 3,475  | 4,522  | 4,748  | 2,707  | 3,188  | 4,110  | 8,036 | 7,176 | 2,997  |
| BN                     | 3,861 | 3,273 | 4,336  | 4,861  | 7,805  | 7,751  | 5,193  | 4,040  | 4,435  | 9,598 | 7,664 | 7,026  |
| AN                     | 3,452 | 3,507 | 6,123  | 9,250  | 13,324 | 14,695 | 7,711  | 6,707  | 5,070  | 9,262 | 5,790 | 9,494  |
| W                      | 4,721 | 4,842 | 12,443 | 19,822 | 23,807 | 21,859 | 15,318 | 13,377 | 9,725  | 7,391 | 3,948 | 9,720  |
| All                    | 4,010 | 3,583 | 6,599  | 9,267  | 11,801 | 11,380 | 7,519  | 6,773  | 5,880  | 7,690 | 5,513 | 6,465  |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |        |       |       |        |
| C                      | 3,794 | 2,749 | 2,777  | 2,686  | 2,941  | 2,738  | 2,124  | 2,953  | 3,351  | 4,324 | 3,406 | 2,147  |
| D                      | 3,911 | 2,820 | 3,433  | 3,500  | 4,593  | 4,888  | 2,728  | 3,881  | 4,384  | 8,472 | 6,253 | 2,934  |
| BN                     | 4,231 | 3,109 | 4,399  | 5,366  | 7,913  | 8,040  | 5,193  | 4,748  | 4,336  | 9,679 | 7,408 | 5,740  |
| AN                     | 3,760 | 3,323 | 5,884  | 9,714  | 14,441 | 14,691 | 7,659  | 6,655  | 4,858  | 8,747 | 5,915 | 9,898  |
| W                      | 4,632 | 4,584 | 13,409 | 20,010 | 23,915 | 22,008 | 15,309 | 13,374 | 9,751  | 6,915 | 3,806 | 7,729  |
| All                    | 4,154 | 3,459 | 6,832  | 9,483  | 12,012 | 11,522 | 7,513  | 7,111  | 5,892  | 7,595 | 5,232 | 5,643  |
| <b>VA</b>              |       |       |        |        |        |        |        |        |        |       |       |        |
| C                      | 3,797 | 2,685 | 2,568  | 2,626  | 2,889  | 2,738  | 2,143  | 2,934  | 3,253  | 4,318 | 3,435 | 2,145  |
| D                      | 3,886 | 2,804 | 3,392  | 3,379  | 4,432  | 4,793  | 3,761  | 4,411  | 4,268  | 8,597 | 6,404 | 2,893  |
| BN                     | 4,297 | 3,182 | 3,901  | 5,220  | 7,716  | 8,210  | 6,478  | 5,395  | 4,293  | 9,578 | 7,317 | 5,690  |
| AN                     | 3,518 | 3,131 | 5,668  | 9,615  | 14,548 | 14,922 | 8,859  | 7,261  | 4,695  | 9,364 | 6,353 | 9,920  |
| W                      | 4,623 | 4,619 | 12,948 | 19,954 | 23,850 | 22,025 | 15,314 | 13,376 | 9,741  | 6,960 | 3,817 | 7,681  |
| All                    | 4,129 | 3,447 | 6,528  | 9,389  | 11,923 | 11,566 | 8,140  | 7,423  | 5,819  | 7,691 | 5,309 | 5,612  |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |        |       |       |        |
| C                      | 3,012 | 2,371 | 2,906  | 2,889  | 3,455  | 3,662  | 2,836  | 2,490  | 2,154  | 2,315 | 2,637 | 2,201  |
| D                      | 3,246 | 3,047 | 4,214  | 3,763  | 5,500  | 6,615  | 5,384  | 4,467  | 2,647  | 3,672 | 3,806 | 2,343  |
| BN                     | 3,680 | 3,014 | 4,441  | 5,929  | 8,535  | 8,995  | 8,748  | 6,824  | 4,605  | 7,891 | 5,982 | 3,888  |
| AN                     | 2,981 | 3,573 | 6,072  | 11,198 | 13,430 | 14,115 | 10,076 | 9,384  | 5,863  | 8,113 | 6,761 | 7,834  |
| W                      | 4,103 | 5,153 | 13,035 | 20,365 | 22,087 | 20,572 | 16,700 | 14,954 | 10,143 | 8,153 | 5,849 | 7,289  |
| All                    | 3,519 | 3,633 | 6,944  | 9,970  | 11,739 | 11,733 | 9,616  | 8,373  | 5,604  | 6,159 | 5,012 | 4,781  |

## H1a2.2.21 Mill Creek above Confluence with Sacramento River (SWRCB Mill Creek)



**Figure H1a2-21. Mill Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-41. Cumulative Distribution of Monthly Flow (cfs) — Mill Creek above Confluence with Sacramento River (SWRCB Mill Creek)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 21  | 43    | 90    | 100   | 101   | 90    | 48    | 21  | 21  | 21  | 21  | 21  | 39           |
| 10%                    | 21  | 93    | 119   | 142   | 176   | 191   | 166   | 70  | 21  | 21  | 21  | 21  | 88           |
| 25%                    | 34  | 115   | 147   | 185   | 247   | 287   | 243   | 147 | 40  | 21  | 21  | 21  | 109          |
| 50%                    | 71  | 147   | 234   | 334   | 368   | 378   | 354   | 266 | 135 | 21  | 21  | 21  | 147          |
| 75%                    | 98  | 209   | 464   | 519   | 637   | 547   | 533   | 429 | 277 | 66  | 21  | 31  | 239          |
| 90%                    | 134 | 314   | 776   | 895   | 873   | 795   | 716   | 598 | 401 | 139 | 29  | 52  | 301          |
| 100%                   | 671 | 1,026 | 1,345 | 1,816 | 1,725 | 1,266 | 1,101 | 804 | 668 | 353 | 77  | 91  | 383          |
| Mean                   | 79  | 192   | 349   | 422   | 476   | 448   | 399   | 304 | 175 | 56  | 25  | 29  | 177          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 21  | 43    | 90    | 100   | 101   | 90    | 48    | 21  | 21  | 21  | 21  | 21  | 39           |
| 10%                    | 21  | 93    | 119   | 142   | 176   | 191   | 166   | 70  | 21  | 21  | 21  | 21  | 88           |
| 25%                    | 34  | 115   | 147   | 185   | 247   | 287   | 243   | 147 | 40  | 21  | 21  | 21  | 109          |
| 50%                    | 71  | 147   | 234   | 334   | 368   | 378   | 354   | 266 | 135 | 21  | 21  | 21  | 147          |
| 75%                    | 98  | 209   | 464   | 519   | 637   | 547   | 533   | 429 | 277 | 66  | 21  | 31  | 239          |
| 90%                    | 134 | 314   | 776   | 895   | 873   | 795   | 716   | 598 | 401 | 139 | 29  | 52  | 301          |
| 100%                   | 671 | 1,026 | 1,345 | 1,816 | 1,725 | 1,266 | 1,101 | 804 | 668 | 353 | 77  | 91  | 383          |
| Mean                   | 79  | 192   | 349   | 422   | 476   | 448   | 399   | 304 | 175 | 56  | 25  | 29  | 177          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 21  | 43    | 90    | 100   | 101   | 90    | 48    | 21  | 21  | 21  | 21  | 21  | 39           |
| 10%                    | 21  | 93    | 119   | 142   | 176   | 191   | 166   | 70  | 21  | 21  | 21  | 21  | 88           |
| 25%                    | 34  | 115   | 147   | 185   | 247   | 287   | 243   | 147 | 40  | 21  | 21  | 21  | 109          |
| 50%                    | 71  | 147   | 234   | 334   | 368   | 378   | 354   | 266 | 135 | 21  | 21  | 21  | 147          |
| 75%                    | 98  | 209   | 464   | 519   | 637   | 547   | 533   | 429 | 277 | 66  | 21  | 31  | 239          |
| 90%                    | 134 | 314   | 776   | 895   | 873   | 795   | 716   | 598 | 401 | 139 | 29  | 52  | 301          |
| 100%                   | 671 | 1,026 | 1,345 | 1,816 | 1,725 | 1,266 | 1,101 | 804 | 668 | 353 | 77  | 91  | 383          |
| Mean                   | 79  | 192   | 349   | 422   | 476   | 448   | 399   | 304 | 175 | 56  | 25  | 29  | 177          |
| <b>VA</b>              |     |       |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 21  | 43    | 90    | 100   | 101   | 90    | 48    | 21  | 21  | 21  | 21  | 21  | 39           |
| 10%                    | 21  | 93    | 119   | 142   | 176   | 191   | 166   | 70  | 21  | 21  | 21  | 21  | 88           |
| 25%                    | 34  | 115   | 147   | 185   | 247   | 287   | 243   | 147 | 40  | 21  | 21  | 21  | 109          |
| 50%                    | 71  | 147   | 234   | 334   | 368   | 378   | 354   | 266 | 135 | 21  | 21  | 21  | 147          |
| 75%                    | 98  | 209   | 464   | 519   | 637   | 547   | 533   | 429 | 277 | 66  | 21  | 31  | 239          |
| 90%                    | 134 | 314   | 776   | 895   | 873   | 795   | 716   | 598 | 401 | 139 | 29  | 52  | 301          |
| 100%                   | 671 | 1,026 | 1,345 | 1,816 | 1,725 | 1,266 | 1,101 | 804 | 668 | 353 | 77  | 91  | 383          |
| Mean                   | 79  | 192   | 349   | 422   | 476   | 448   | 399   | 304 | 175 | 56  | 25  | 29  | 177          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 24  | 28    | 90    | 100   | 101   | 66    | 38    | 35  | 32  | 23  | 21  | 22  | 36           |
| 10%                    | 29  | 49    | 119   | 142   | 176   | 199   | 158   | 83  | 50  | 35  | 28  | 27  | 87           |
| 25%                    | 34  | 81    | 147   | 185   | 247   | 283   | 229   | 147 | 73  | 44  | 34  | 33  | 111          |
| 50%                    | 62  | 138   | 234   | 334   | 368   | 378   | 354   | 272 | 141 | 65  | 49  | 46  | 154          |
| 75%                    | 78  | 191   | 464   | 519   | 637   | 547   | 533   | 418 | 277 | 120 | 78  | 73  | 244          |
| 90%                    | 86  | 314   | 776   | 895   | 873   | 795   | 716   | 598 | 401 | 165 | 96  | 83  | 305          |
| 100%                   | 624 | 1,026 | 1,345 | 1,816 | 1,725 | 1,266 | 1,101 | 804 | 668 | 353 | 135 | 101 | 390          |
| Mean                   | 66  | 169   | 349   | 422   | 476   | 446   | 392   | 304 | 188 | 89  | 58  | 52  | 181          |

**Table H1a2-42. Water Year Average of Monthly Flows (cfs) — Mill Creek above Confluence with Sacramento River (SWRCB Mill Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 54  | 108 | 184 | 180 | 232 | 238 | 150 | 89  | 30  | 21  | 21  | 21  |
| D                      | 62  | 158 | 245 | 214 | 319 | 356 | 291 | 173 | 59  | 21  | 21  | 25  |
| BN                     | 69  | 154 | 235 | 334 | 399 | 397 | 412 | 260 | 143 | 28  | 21  | 21  |
| AN                     | 82  | 195 | 300 | 535 | 597 | 566 | 458 | 384 | 209 | 45  | 23  | 31  |
| W                      | 110 | 285 | 605 | 715 | 721 | 612 | 579 | 510 | 343 | 123 | 32  | 41  |
| All                    | 79  | 192 | 349 | 422 | 476 | 448 | 399 | 304 | 175 | 56  | 25  | 29  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 54  | 108 | 184 | 180 | 232 | 238 | 150 | 89  | 30  | 21  | 21  | 21  |
| D                      | 62  | 158 | 245 | 214 | 319 | 356 | 291 | 173 | 59  | 21  | 21  | 25  |
| BN                     | 69  | 154 | 235 | 334 | 399 | 397 | 412 | 260 | 143 | 28  | 21  | 21  |
| AN                     | 82  | 195 | 300 | 535 | 597 | 566 | 458 | 384 | 209 | 45  | 23  | 31  |
| W                      | 110 | 285 | 605 | 715 | 721 | 612 | 579 | 510 | 343 | 123 | 32  | 41  |
| All                    | 79  | 192 | 349 | 422 | 476 | 448 | 399 | 304 | 175 | 56  | 25  | 29  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 54  | 108 | 184 | 180 | 232 | 238 | 150 | 89  | 30  | 21  | 21  | 21  |
| D                      | 62  | 158 | 245 | 214 | 319 | 356 | 291 | 173 | 59  | 21  | 21  | 25  |
| BN                     | 69  | 154 | 235 | 334 | 399 | 397 | 412 | 260 | 143 | 28  | 21  | 21  |
| AN                     | 82  | 195 | 300 | 535 | 597 | 566 | 458 | 384 | 209 | 45  | 23  | 31  |
| W                      | 110 | 285 | 605 | 715 | 721 | 612 | 579 | 510 | 343 | 123 | 32  | 41  |
| All                    | 79  | 192 | 349 | 422 | 476 | 448 | 399 | 304 | 175 | 56  | 25  | 29  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 54  | 108 | 184 | 180 | 232 | 238 | 150 | 89  | 30  | 21  | 21  | 21  |
| D                      | 62  | 158 | 245 | 214 | 319 | 356 | 291 | 173 | 59  | 21  | 21  | 25  |
| BN                     | 69  | 154 | 235 | 334 | 399 | 397 | 412 | 260 | 143 | 28  | 21  | 21  |
| AN                     | 82  | 195 | 300 | 535 | 597 | 566 | 458 | 384 | 209 | 45  | 23  | 31  |
| W                      | 110 | 285 | 605 | 715 | 721 | 612 | 579 | 510 | 343 | 123 | 32  | 41  |
| All                    | 79  | 192 | 349 | 422 | 476 | 448 | 399 | 304 | 175 | 56  | 25  | 29  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 45  | 84  | 184 | 180 | 232 | 232 | 134 | 92  | 51  | 33  | 29  | 27  |
| D                      | 56  | 137 | 245 | 214 | 318 | 352 | 282 | 172 | 84  | 46  | 37  | 36  |
| BN                     | 58  | 123 | 235 | 334 | 399 | 395 | 400 | 265 | 156 | 66  | 47  | 43  |
| AN                     | 57  | 162 | 300 | 535 | 597 | 566 | 454 | 380 | 217 | 98  | 68  | 64  |
| W                      | 92  | 270 | 605 | 715 | 721 | 612 | 579 | 508 | 346 | 161 | 93  | 79  |
| All                    | 66  | 169 | 349 | 422 | 476 | 446 | 392 | 304 | 188 | 89  | 58  | 52  |

## H1a2.2.22 Mokelumne River above Pardee Reservoir (SWRCB Pardee Inflow)

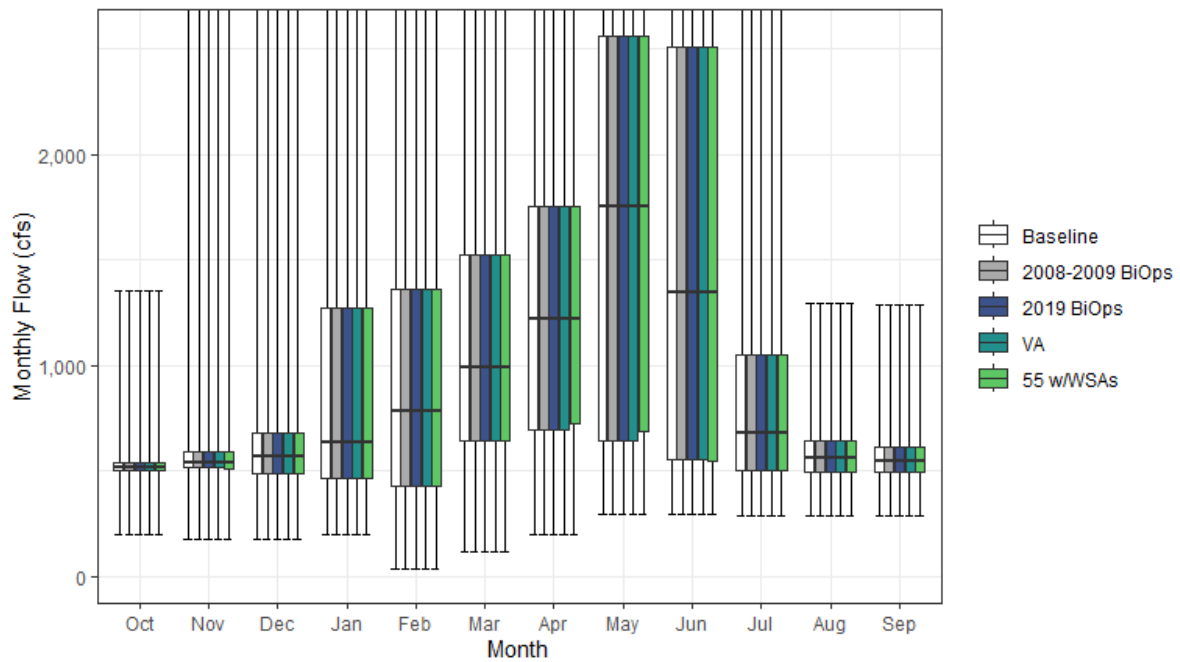


Figure H1a2-22. Mokelumne River Streamflow above Pardee Reservoir Monthly Boxplot (cfs)

**Table H1a2-43. Cumulative Distribution of Monthly Flow (cfs) — Mokelumne River above Pardee Reservoir (SWRCB Pardee Inflow)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 195   | 178   | 179   | 196   | 33    | 116   | 201   | 295   | 291   | 287   | 285   | 288   | 170          |
| 10%                    | 350   | 250   | 307   | 270   | 264   | 362   | 347   | 341   | 500   | 493   | 475   | 414   | 301          |
| 25%                    | 504   | 513   | 488   | 466   | 429   | 642   | 694   | 645   | 552   | 505   | 496   | 497   | 412          |
| 50%                    | 519   | 541   | 567   | 636   | 785   | 989   | 1,224 | 1,756 | 1,343 | 677   | 563   | 550   | 656          |
| 75%                    | 539   | 593   | 681   | 1,269 | 1,360 | 1,523 | 1,756 | 2,561 | 2,509 | 1,048 | 641   | 615   | 961          |
| 90%                    | 554   | 792   | 1,660 | 1,926 | 2,128 | 2,149 | 2,194 | 3,265 | 3,472 | 1,435 | 786   | 724   | 1,252        |
| 100%                   | 1,356 | 3,382 | 3,947 | 5,738 | 6,921 | 3,360 | 4,481 | 5,075 | 6,506 | 3,644 | 1,297 | 1,285 | 1,947        |
| Mean                   | 513   | 598   | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594   | 571   | 722          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 195   | 178   | 179   | 196   | 33    | 116   | 201   | 295   | 291   | 287   | 285   | 288   | 170          |
| 10%                    | 350   | 250   | 307   | 270   | 264   | 362   | 347   | 341   | 500   | 493   | 475   | 414   | 301          |
| 25%                    | 504   | 513   | 488   | 466   | 429   | 642   | 694   | 645   | 552   | 505   | 496   | 497   | 412          |
| 50%                    | 519   | 541   | 567   | 636   | 785   | 989   | 1,224 | 1,756 | 1,343 | 677   | 563   | 550   | 656          |
| 75%                    | 539   | 593   | 681   | 1,269 | 1,360 | 1,523 | 1,756 | 2,561 | 2,509 | 1,048 | 641   | 615   | 961          |
| 90%                    | 554   | 792   | 1,660 | 1,926 | 2,128 | 2,149 | 2,194 | 3,265 | 3,472 | 1,435 | 786   | 724   | 1,252        |
| 100%                   | 1,356 | 3,382 | 3,947 | 5,738 | 6,921 | 3,360 | 4,481 | 5,075 | 6,506 | 3,644 | 1,297 | 1,285 | 1,947        |
| Mean                   | 513   | 598   | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594   | 571   | 722          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 195   | 178   | 179   | 196   | 33    | 116   | 201   | 295   | 291   | 287   | 285   | 288   | 170          |
| 10%                    | 350   | 250   | 307   | 270   | 264   | 362   | 347   | 341   | 500   | 493   | 475   | 414   | 301          |
| 25%                    | 504   | 513   | 488   | 466   | 429   | 642   | 694   | 645   | 552   | 505   | 496   | 497   | 412          |
| 50%                    | 519   | 541   | 567   | 636   | 785   | 989   | 1,224 | 1,756 | 1,343 | 677   | 563   | 550   | 656          |
| 75%                    | 539   | 593   | 681   | 1,269 | 1,360 | 1,523 | 1,756 | 2,561 | 2,509 | 1,048 | 641   | 615   | 961          |
| 90%                    | 554   | 792   | 1,660 | 1,926 | 2,128 | 2,149 | 2,194 | 3,264 | 3,472 | 1,435 | 786   | 724   | 1,252        |
| 100%                   | 1,356 | 3,382 | 3,947 | 5,738 | 6,921 | 3,360 | 4,481 | 5,075 | 6,506 | 3,644 | 1,297 | 1,285 | 1,947        |
| Mean                   | 513   | 598   | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594   | 571   | 722          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 195   | 178   | 179   | 196   | 33    | 116   | 201   | 295   | 291   | 287   | 285   | 288   | 170          |
| 10%                    | 350   | 250   | 307   | 270   | 264   | 362   | 347   | 341   | 500   | 493   | 475   | 414   | 301          |
| 25%                    | 504   | 513   | 488   | 466   | 429   | 642   | 694   | 645   | 552   | 505   | 496   | 497   | 412          |
| 50%                    | 519   | 541   | 567   | 636   | 785   | 989   | 1,224 | 1,756 | 1,343 | 677   | 563   | 550   | 656          |
| 75%                    | 539   | 593   | 681   | 1,269 | 1,360 | 1,523 | 1,756 | 2,561 | 2,509 | 1,048 | 641   | 615   | 961          |
| 90%                    | 554   | 792   | 1,660 | 1,926 | 2,128 | 2,149 | 2,194 | 3,264 | 3,472 | 1,435 | 786   | 724   | 1,252        |
| 100%                   | 1,356 | 3,382 | 3,947 | 5,738 | 6,920 | 3,360 | 4,481 | 5,075 | 6,506 | 3,644 | 1,297 | 1,285 | 1,947        |
| Mean                   | 513   | 598   | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594   | 571   | 722          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 195   | 178   | 179   | 196   | 33    | 116   | 201   | 295   | 291   | 287   | 285   | 288   | 165          |
| 10%                    | 335   | 238   | 304   | 270   | 264   | 362   | 399   | 484   | 499   | 486   | 397   | 362   | 302          |
| 25%                    | 503   | 510   | 488   | 466   | 429   | 642   | 723   | 690   | 549   | 505   | 496   | 497   | 417          |
| 50%                    | 519   | 537   | 567   | 636   | 785   | 989   | 1,224 | 1,756 | 1,343 | 677   | 563   | 549   | 656          |
| 75%                    | 539   | 590   | 681   | 1,269 | 1,360 | 1,523 | 1,756 | 2,561 | 2,509 | 1,048 | 641   | 615   | 961          |
| 90%                    | 554   | 792   | 1,660 | 1,926 | 2,128 | 2,149 | 2,194 | 3,265 | 3,470 | 1,435 | 786   | 724   | 1,252        |
| 100%                   | 1,356 | 3,382 | 3,947 | 5,738 | 6,920 | 3,360 | 4,481 | 5,075 | 6,506 | 3,644 | 1,297 | 1,285 | 1,947        |
| Mean                   | 508   | 591   | 799   | 970   | 1,048 | 1,152 | 1,324 | 1,788 | 1,777 | 859   | 591   | 567   | 722          |

**Table H1a2-44. Water Year Average of Monthly Flows (cfs) — Mokelumne River above Pardee Reservoir (SWRCB Pardee Inflow)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 474 | 411 | 385   | 342   | 279   | 365   | 363   | 430   | 587   | 428   | 403 | 401 |
| D                      | 492 | 518 | 549   | 484   | 564   | 764   | 844   | 955   | 912   | 554   | 506 | 506 |
| BN                     | 494 | 549 | 606   | 662   | 893   | 1,018 | 1,254 | 1,514 | 1,440 | 704   | 563 | 545 |
| AN                     | 490 | 732 | 835   | 1,253 | 1,260 | 1,496 | 1,509 | 2,230 | 1,871 | 894   | 598 | 591 |
| W                      | 571 | 735 | 1,316 | 1,747 | 1,828 | 1,804 | 2,105 | 3,082 | 3,230 | 1,408 | 777 | 716 |
| All                    | 513 | 598 | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594 | 571 |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 474 | 411 | 385   | 342   | 279   | 365   | 363   | 430   | 587   | 428   | 403 | 401 |
| D                      | 492 | 518 | 549   | 484   | 564   | 764   | 844   | 955   | 912   | 554   | 506 | 506 |
| BN                     | 494 | 549 | 606   | 662   | 893   | 1,018 | 1,254 | 1,514 | 1,440 | 704   | 563 | 545 |
| AN                     | 490 | 732 | 835   | 1,253 | 1,260 | 1,496 | 1,509 | 2,230 | 1,871 | 894   | 598 | 591 |
| W                      | 571 | 735 | 1,316 | 1,747 | 1,828 | 1,804 | 2,105 | 3,082 | 3,230 | 1,408 | 777 | 716 |
| All                    | 513 | 598 | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594 | 571 |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 474 | 411 | 385   | 342   | 279   | 365   | 363   | 430   | 587   | 428   | 403 | 401 |
| D                      | 492 | 518 | 549   | 484   | 564   | 764   | 844   | 955   | 912   | 554   | 506 | 506 |
| BN                     | 494 | 549 | 606   | 662   | 893   | 1,018 | 1,254 | 1,514 | 1,440 | 704   | 563 | 545 |
| AN                     | 490 | 732 | 835   | 1,253 | 1,260 | 1,496 | 1,509 | 2,230 | 1,871 | 894   | 598 | 591 |
| W                      | 571 | 735 | 1,316 | 1,747 | 1,828 | 1,804 | 2,105 | 3,082 | 3,230 | 1,408 | 777 | 716 |
| All                    | 513 | 598 | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594 | 571 |
| <b>VA</b>              |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 474 | 411 | 385   | 342   | 279   | 365   | 363   | 430   | 587   | 428   | 403 | 401 |
| D                      | 492 | 518 | 549   | 484   | 564   | 764   | 844   | 955   | 912   | 554   | 506 | 506 |
| BN                     | 494 | 549 | 606   | 662   | 893   | 1,018 | 1,254 | 1,514 | 1,440 | 704   | 563 | 545 |
| AN                     | 490 | 732 | 835   | 1,253 | 1,260 | 1,497 | 1,509 | 2,230 | 1,871 | 894   | 598 | 591 |
| W                      | 571 | 735 | 1,316 | 1,747 | 1,828 | 1,804 | 2,105 | 3,082 | 3,230 | 1,408 | 777 | 716 |
| All                    | 513 | 598 | 801   | 971   | 1,049 | 1,152 | 1,308 | 1,777 | 1,779 | 862   | 594 | 571 |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 458 | 407 | 380   | 345   | 279   | 365   | 381   | 449   | 586   | 421   | 395 | 391 |
| D                      | 484 | 507 | 549   | 484   | 564   | 764   | 882   | 996   | 903   | 545   | 502 | 498 |
| BN                     | 494 | 540 | 604   | 662   | 892   | 1,018 | 1,271 | 1,517 | 1,440 | 704   | 563 | 545 |
| AN                     | 487 | 732 | 835   | 1,253 | 1,260 | 1,496 | 1,520 | 2,220 | 1,872 | 893   | 598 | 590 |
| W                      | 569 | 726 | 1,316 | 1,743 | 1,828 | 1,803 | 2,105 | 3,081 | 3,229 | 1,408 | 777 | 716 |
| All                    | 508 | 591 | 799   | 970   | 1,048 | 1,152 | 1,324 | 1,788 | 1,777 | 859   | 591 | 567 |

### H1a2.2.23 Mokelumne River below Camanche Reservoir (SWRCB Camanche)

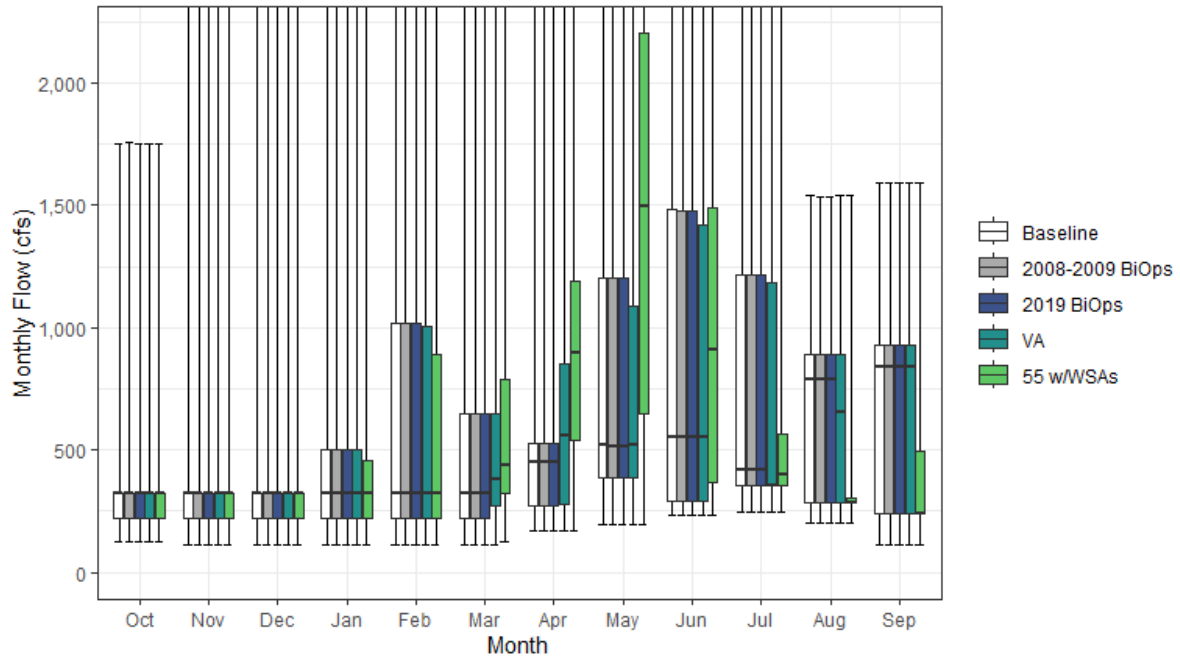


Figure H1a2-23. Mokelumne River Streamflow below Camanche Reservoir Monthly Boxplot (cfs)

**Table H1a2-45. Cumulative Distribution of Monthly Flow (cfs) — Mokelumne River below Camanche Reservoir (SWRCB Camanche)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 124   | 115   | 115   | 115   | 115   | 116   | 169   | 198   | 234   | 245   | 204   | 115   | 116          |
| 10%                    | 220   | 220   | 220   | 220   | 220   | 220   | 170   | 198   | 234   | 286   | 233   | 190   | 172          |
| 25%                    | 220   | 221   | 220   | 220   | 221   | 221   | 270   | 388   | 292   | 355   | 287   | 239   | 224          |
| 50%                    | 326   | 326   | 325   | 325   | 326   | 325   | 450   | 518   | 553   | 417   | 787   | 838   | 345          |
| 75%                    | 326   | 326   | 326   | 503   | 1,019 | 649   | 526   | 1,204 | 1,481 | 1,214 | 889   | 929   | 700          |
| 90%                    | 552   | 409   | 1,683 | 1,977 | 2,173 | 1,629 | 1,818 | 2,616 | 2,153 | 1,559 | 1,021 | 1,040 | 1,028        |
| 100%                   | 1,754 | 4,173 | 3,898 | 6,084 | 7,129 | 3,423 | 4,346 | 4,141 | 4,432 | 2,998 | 1,538 | 1,593 | 1,751        |
| Mean                   | 344   | 389   | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   | 490          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 124   | 115   | 115   | 115   | 115   | 116   | 169   | 198   | 234   | 245   | 204   | 115   | 116          |
| 10%                    | 220   | 220   | 220   | 220   | 220   | 220   | 170   | 198   | 234   | 286   | 233   | 190   | 172          |
| 25%                    | 220   | 220   | 220   | 220   | 221   | 221   | 270   | 388   | 292   | 355   | 287   | 239   | 224          |
| 50%                    | 326   | 326   | 325   | 325   | 326   | 326   | 450   | 518   | 553   | 419   | 787   | 838   | 345          |
| 75%                    | 326   | 326   | 326   | 503   | 1,019 | 648   | 526   | 1,203 | 1,480 | 1,214 | 889   | 929   | 700          |
| 90%                    | 552   | 409   | 1,683 | 1,977 | 2,173 | 1,630 | 1,819 | 2,616 | 2,153 | 1,559 | 1,022 | 1,040 | 1,028        |
| 100%                   | 1,755 | 4,173 | 3,898 | 6,084 | 7,129 | 3,424 | 4,347 | 4,141 | 4,433 | 2,999 | 1,537 | 1,592 | 1,751        |
| Mean                   | 344   | 389   | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   | 490          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 124   | 115   | 115   | 115   | 115   | 116   | 169   | 198   | 234   | 245   | 204   | 115   | 116          |
| 10%                    | 220   | 220   | 220   | 220   | 220   | 220   | 170   | 198   | 234   | 286   | 233   | 190   | 172          |
| 25%                    | 220   | 220   | 220   | 220   | 221   | 221   | 270   | 388   | 292   | 355   | 287   | 239   | 224          |
| 50%                    | 325   | 326   | 325   | 325   | 326   | 325   | 450   | 518   | 553   | 419   | 787   | 838   | 345          |
| 75%                    | 326   | 326   | 326   | 503   | 1,019 | 648   | 526   | 1,204 | 1,480 | 1,214 | 889   | 928   | 700          |
| 90%                    | 551   | 409   | 1,683 | 1,977 | 2,173 | 1,629 | 1,818 | 2,617 | 2,152 | 1,559 | 1,021 | 1,040 | 1,028        |
| 100%                   | 1,754 | 4,173 | 3,898 | 6,085 | 7,129 | 3,423 | 4,347 | 4,141 | 4,432 | 2,999 | 1,537 | 1,593 | 1,751        |
| Mean                   | 344   | 389   | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   | 490          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 124   | 115   | 115   | 115   | 115   | 116   | 169   | 198   | 234   | 245   | 204   | 115   | 116          |
| 10%                    | 220   | 220   | 220   | 220   | 220   | 220   | 170   | 199   | 234   | 286   | 233   | 190   | 175          |
| 25%                    | 220   | 221   | 220   | 220   | 220   | 275   | 277   | 388   | 292   | 355   | 287   | 239   | 230          |
| 50%                    | 326   | 326   | 325   | 325   | 325   | 380   | 558   | 518   | 553   | 356   | 653   | 838   | 345          |
| 75%                    | 326   | 326   | 326   | 502   | 1,004 | 649   | 850   | 1,086 | 1,418 | 1,186 | 889   | 929   | 700          |
| 90%                    | 551   | 409   | 1,683 | 1,976 | 2,173 | 1,630 | 1,819 | 2,616 | 2,153 | 1,559 | 1,022 | 1,040 | 1,027        |
| 100%                   | 1,754 | 4,173 | 3,898 | 6,084 | 7,128 | 3,438 | 4,348 | 4,137 | 4,432 | 2,998 | 1,539 | 1,592 | 1,751        |
| Mean                   | 342   | 389   | 590   | 722   | 791   | 643   | 727   | 954   | 941   | 797   | 612   | 624   | 490          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 124   | 115   | 115   | 115   | 115   | 127   | 169   | 198   | 234   | 245   | 204   | 116   | 150          |
| 10%                    | 220   | 220   | 220   | 220   | 220   | 220   | 244   | 333   | 234   | 286   | 233   | 190   | 172          |
| 25%                    | 220   | 220   | 220   | 220   | 221   | 325   | 539   | 649   | 368   | 355   | 287   | 239   | 279          |
| 50%                    | 326   | 325   | 325   | 325   | 325   | 437   | 899   | 1,497 | 912   | 401   | 288   | 240   | 379          |
| 75%                    | 326   | 326   | 326   | 458   | 893   | 792   | 1,191 | 2,204 | 1,488 | 566   | 307   | 493   | 692          |
| 90%                    | 546   | 331   | 1,530 | 1,950 | 1,892 | 1,630 | 1,877 | 2,790 | 2,549 | 1,146 | 997   | 1,040 | 1,006        |
| 100%                   | 1,754 | 3,887 | 3,898 | 6,085 | 7,129 | 3,412 | 4,345 | 4,140 | 4,432 | 2,998 | 1,538 | 1,592 | 1,684        |
| Mean                   | 327   | 369   | 553   | 698   | 753   | 687   | 979   | 1,558 | 1,079 | 585   | 422   | 429   | 509          |

**Table H1a2-46. Water Year Average of Monthly Flows (cfs) — Mokelumne River below Camanche Reservoir (SWRCB Camanche)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |       |       |       |       |
| C                      | 261 | 247 | 246   | 246   | 247   | 247   | 205   | 269   | 241   | 282   | 230   | 189   |
| D                      | 284 | 295 | 277   | 277   | 278   | 278   | 295   | 430   | 368   | 392   | 330   | 290   |
| BN                     | 351 | 328 | 388   | 337   | 435   | 377   | 465   | 606   | 725   | 635   | 548   | 631   |
| AN                     | 292 | 602 | 579   | 779   | 798   | 696   | 563   | 972   | 1,009 | 923   | 769   | 850   |
| W                      | 449 | 486 | 1,138 | 1,530 | 1,684 | 1,213 | 1,317 | 2,029 | 1,905 | 1,454 | 1,021 | 1,025 |
| All                    | 344 | 389 | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |       |       |       |       |
| C                      | 261 | 247 | 246   | 246   | 247   | 247   | 205   | 269   | 241   | 282   | 230   | 189   |
| D                      | 284 | 295 | 277   | 277   | 278   | 278   | 295   | 430   | 368   | 392   | 330   | 290   |
| BN                     | 351 | 328 | 388   | 337   | 435   | 377   | 465   | 606   | 725   | 635   | 548   | 631   |
| AN                     | 292 | 602 | 579   | 779   | 798   | 696   | 563   | 972   | 1,009 | 923   | 768   | 850   |
| W                      | 450 | 486 | 1,138 | 1,530 | 1,683 | 1,213 | 1,317 | 2,029 | 1,906 | 1,454 | 1,021 | 1,025 |
| All                    | 344 | 389 | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |       |       |       |       |
| C                      | 261 | 247 | 246   | 246   | 246   | 247   | 205   | 269   | 241   | 282   | 230   | 189   |
| D                      | 284 | 295 | 277   | 277   | 278   | 278   | 295   | 430   | 368   | 392   | 330   | 290   |
| BN                     | 351 | 328 | 388   | 337   | 435   | 377   | 465   | 606   | 725   | 635   | 548   | 631   |
| AN                     | 292 | 602 | 579   | 779   | 797   | 696   | 562   | 972   | 1,009 | 923   | 768   | 850   |
| W                      | 449 | 486 | 1,138 | 1,530 | 1,684 | 1,213 | 1,317 | 2,029 | 1,905 | 1,455 | 1,021 | 1,025 |
| All                    | 344 | 389 | 591   | 724   | 792   | 626   | 655   | 988   | 960   | 807   | 618   | 630   |
| <b>VA</b>              |     |     |       |       |       |       |       |       |       |       |       |       |
| C                      | 261 | 247 | 246   | 246   | 246   | 256   | 210   | 269   | 241   | 282   | 230   | 189   |
| D                      | 284 | 295 | 278   | 277   | 278   | 301   | 325   | 429   | 365   | 387   | 330   | 286   |
| BN                     | 351 | 328 | 388   | 336   | 433   | 402   | 516   | 599   | 690   | 629   | 544   | 614   |
| AN                     | 278 | 602 | 579   | 766   | 795   | 706   | 697   | 939   | 961   | 890   | 747   | 833   |
| W                      | 447 | 486 | 1,136 | 1,527 | 1,684 | 1,228 | 1,443 | 1,936 | 1,887 | 1,441 | 1,010 | 1,025 |
| All                    | 342 | 389 | 590   | 722   | 791   | 643   | 727   | 954   | 941   | 797   | 612   | 624   |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |       |       |       |       |
| C                      | 260 | 247 | 246   | 246   | 246   | 247   | 254   | 310   | 251   | 282   | 230   | 189   |
| D                      | 275 | 278 | 269   | 272   | 274   | 347   | 646   | 934   | 524   | 365   | 280   | 230   |
| BN                     | 340 | 309 | 369   | 321   | 427   | 489   | 970   | 1,390 | 882   | 417   | 290   | 272   |
| AN                     | 265 | 561 | 563   | 700   | 775   | 754   | 1,056 | 1,938 | 1,143 | 566   | 407   | 489   |
| W                      | 416 | 462 | 1,037 | 1,490 | 1,572 | 1,271 | 1,586 | 2,636 | 2,028 | 1,022 | 718   | 780   |
| All                    | 327 | 369 | 553   | 698   | 753   | 687   | 979   | 1,558 | 1,079 | 585   | 422   | 429   |

## H1a2.2.24 Mokelumne River above Confluence with Delta (SWRCB Mokelumne River)

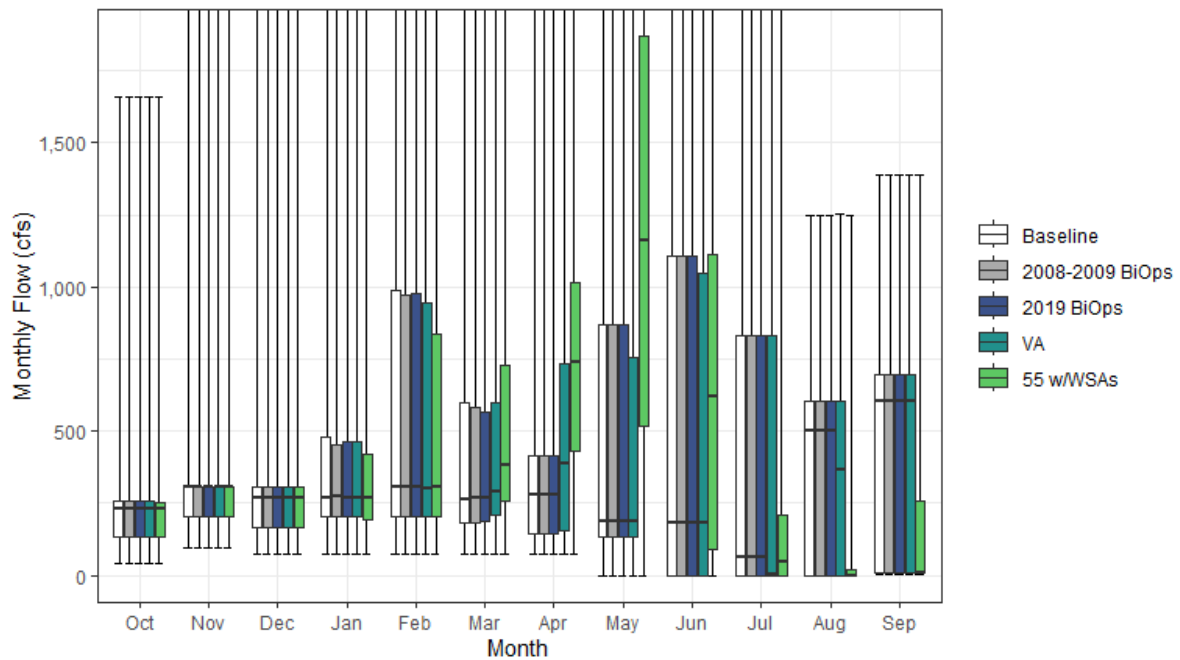


Figure H1a2-24. Mokelumne River Streamflow above Confluence with Delta Monthly Boxplot (cfs)

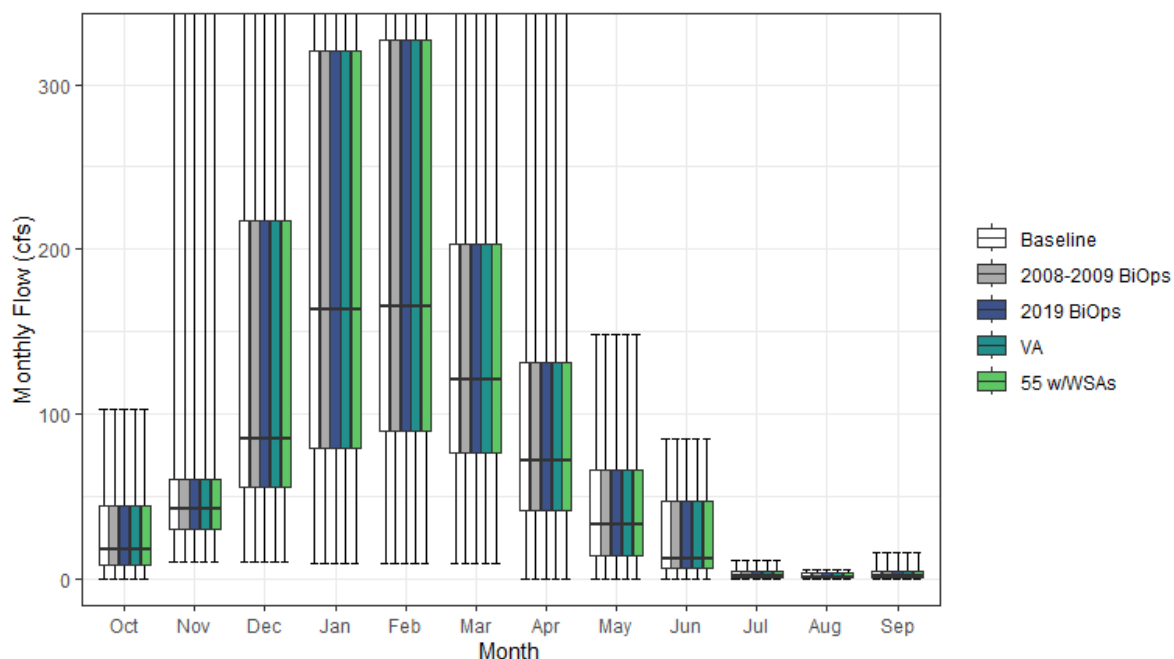
**Table H1a2-47. Cumulative Distribution of Monthly Flow (cfs) — Mokelumne River above Confluence with Delta (SWRCB Mokelumne River)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 42    | 97    | 75    | 75    | 75    | 75    | 72    | 0     | 0     | 0     | 0     | 2     | 35           |
| 10%                    | 125   | 185   | 162   | 163   | 164   | 156   | 73    | 1     | 0     | 0     | 0     | 7     | 78           |
| 25%                    | 136   | 202   | 164   | 205   | 205   | 184   | 147   | 135   | 1     | 1     | 0     | 7     | 116          |
| 50%                    | 231   | 305   | 267   | 268   | 308   | 264   | 279   | 186   | 182   | 62    | 499   | 605   | 229          |
| 75%                    | 260   | 306   | 308   | 481   | 988   | 596   | 415   | 871   | 1,108 | 830   | 602   | 699   | 578          |
| 90%                    | 473   | 387   | 1,635 | 1,932 | 2,134 | 1,557 | 1,707 | 2,300 | 1,779 | 1,123 | 734   | 828   | 903          |
| 100%                   | 1,658 | 4,108 | 3,879 | 6,063 | 7,106 | 3,328 | 4,241 | 3,806 | 4,057 | 2,560 | 1,250 | 1,390 | 1,629        |
| Mean                   | 257   | 361   | 549   | 683   | 759   | 559   | 529   | 687   | 636   | 450   | 342   | 413   | 375          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 42    | 98    | 75    | 75    | 75    | 75    | 72    | 0     | 0     | 0     | 0     | 2     | 33           |
| 10%                    | 125   | 164   | 162   | 163   | 164   | 153   | 73    | 1     | 0     | 0     | 0     | 7     | 79           |
| 25%                    | 136   | 202   | 164   | 204   | 205   | 182   | 147   | 135   | 1     | 1     | 0     | 7     | 117          |
| 50%                    | 231   | 305   | 267   | 276   | 307   | 266   | 279   | 185   | 182   | 63    | 499   | 605   | 227          |
| 75%                    | 260   | 306   | 308   | 452   | 970   | 585   | 415   | 870   | 1,108 | 830   | 602   | 699   | 575          |
| 90%                    | 473   | 377   | 1,633 | 1,931 | 2,140 | 1,569 | 1,707 | 2,300 | 1,779 | 1,123 | 735   | 828   | 902          |
| 100%                   | 1,659 | 4,108 | 3,879 | 6,064 | 7,106 | 3,369 | 4,242 | 3,806 | 4,057 | 2,561 | 1,250 | 1,390 | 1,627        |
| Mean                   | 257   | 362   | 548   | 685   | 757   | 561   | 529   | 687   | 636   | 450   | 342   | 413   | 375          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 42    | 98    | 75    | 75    | 75    | 75    | 72    | 0     | 0     | 0     | 0     | 2     | 33           |
| 10%                    | 125   | 200   | 162   | 163   | 164   | 149   | 73    | 1     | 0     | 0     | 0     | 7     | 78           |
| 25%                    | 136   | 202   | 164   | 204   | 204   | 187   | 147   | 135   | 1     | 1     | 0     | 7     | 116          |
| 50%                    | 231   | 305   | 267   | 268   | 308   | 266   | 280   | 185   | 182   | 64    | 499   | 605   | 228          |
| 75%                    | 260   | 306   | 308   | 465   | 978   | 568   | 415   | 871   | 1,108 | 830   | 602   | 698   | 578          |
| 90%                    | 472   | 357   | 1,629 | 1,932 | 2,134 | 1,556 | 1,707 | 2,301 | 1,779 | 1,123 | 734   | 828   | 901          |
| 100%                   | 1,658 | 4,108 | 3,878 | 6,064 | 7,106 | 3,368 | 4,242 | 3,806 | 4,057 | 2,561 | 1,250 | 1,390 | 1,627        |
| Mean                   | 257   | 361   | 549   | 683   | 758   | 559   | 528   | 687   | 636   | 450   | 342   | 413   | 375          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 42    | 97    | 75    | 75    | 75    | 75    | 72    | 0     | 0     | 0     | 0     | 2     | 35           |
| 10%                    | 125   | 200   | 162   | 163   | 174   | 147   | 73    | 1     | 0     | 0     | 0     | 7     | 78           |
| 25%                    | 136   | 202   | 164   | 202   | 204   | 211   | 154   | 135   | 1     | 0     | 0     | 7     | 118          |
| 50%                    | 231   | 305   | 267   | 268   | 303   | 291   | 387   | 186   | 181   | 2     | 366   | 605   | 227          |
| 75%                    | 260   | 306   | 308   | 464   | 947   | 597   | 733   | 753   | 1,046 | 830   | 602   | 698   | 579          |
| 90%                    | 472   | 350   | 1,648 | 1,926 | 2,133 | 1,555 | 1,707 | 2,300 | 1,780 | 1,123 | 734   | 828   | 900          |
| 100%                   | 1,658 | 4,108 | 3,879 | 6,063 | 7,105 | 3,383 | 4,243 | 3,802 | 4,057 | 2,560 | 1,251 | 1,390 | 1,628        |
| Mean                   | 255   | 359   | 550   | 678   | 757   | 575   | 600   | 654   | 618   | 440   | 336   | 407   | 375          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 42    | 98    | 75    | 75    | 75    | 75    | 72    | 0     | 0     | 0     | 0     | 2     | 64           |
| 10%                    | 125   | 200   | 162   | 163   | 168   | 158   | 147   | 135   | 0     | 0     | 0     | 7     | 79           |
| 25%                    | 133   | 201   | 164   | 192   | 205   | 258   | 429   | 519   | 92    | 1     | 0     | 7     | 178          |
| 50%                    | 231   | 305   | 267   | 268   | 306   | 382   | 742   | 1,164 | 620   | 46    | 1     | 8     | 268          |
| 75%                    | 251   | 306   | 308   | 419   | 835   | 730   | 1,017 | 1,870 | 1,115 | 210   | 20    | 260   | 566          |
| 90%                    | 465   | 312   | 1,504 | 1,914 | 1,863 | 1,567 | 1,725 | 2,455 | 2,175 | 718   | 709   | 828   | 881          |
| 100%                   | 1,658 | 3,822 | 3,871 | 6,064 | 7,106 | 3,329 | 4,240 | 3,805 | 4,057 | 2,560 | 1,250 | 1,390 | 1,560        |
| Mean                   | 239   | 346   | 515   | 656   | 718   | 627   | 853   | 1,275 | 771   | 236   | 146   | 211   | 397          |

**Table H1a2-48. Water Year Average of Monthly Flows (cfs) — Mokelumne River above Confluence with Delta (SWRCB Mokelumne River)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 174 | 227 | 203   | 200   | 214   | 204   | 105   | 59    | 0     | 1     | 2   | 6   |
| D                      | 197 | 268 | 232   | 236   | 251   | 209   | 156   | 138   | 77    | 47    | 51  | 71  |
| BN                     | 267 | 304 | 347   | 296   | 401   | 308   | 320   | 287   | 387   | 279   | 261 | 404 |
| AN                     | 204 | 571 | 541   | 732   | 765   | 621   | 436   | 639   | 657   | 541   | 481 | 629 |
| W                      | 361 | 452 | 1,099 | 1,492 | 1,648 | 1,140 | 1,197 | 1,698 | 1,533 | 1,055 | 734 | 800 |
| All                    | 257 | 361 | 549   | 683   | 759   | 559   | 529   | 687   | 636   | 450   | 342 | 413 |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 174 | 227 | 200   | 206   | 211   | 203   | 105   | 59    | 0     | 1     | 2   | 6   |
| D                      | 197 | 269 | 233   | 237   | 246   | 213   | 156   | 138   | 78    | 47    | 50  | 71  |
| BN                     | 267 | 304 | 349   | 297   | 409   | 305   | 320   | 286   | 387   | 279   | 261 | 404 |
| AN                     | 204 | 573 | 541   | 737   | 758   | 628   | 435   | 639   | 657   | 541   | 481 | 628 |
| W                      | 361 | 454 | 1,096 | 1,493 | 1,643 | 1,141 | 1,197 | 1,698 | 1,533 | 1,055 | 734 | 800 |
| All                    | 257 | 362 | 548   | 685   | 757   | 561   | 529   | 687   | 636   | 450   | 342 | 413 |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 174 | 227 | 203   | 202   | 213   | 203   | 105   | 59    | 0     | 1     | 2   | 6   |
| D                      | 197 | 270 | 232   | 232   | 251   | 210   | 156   | 138   | 77    | 47    | 51  | 71  |
| BN                     | 267 | 306 | 344   | 298   | 401   | 308   | 320   | 287   | 387   | 279   | 261 | 404 |
| AN                     | 204 | 566 | 544   | 735   | 754   | 623   | 435   | 639   | 657   | 541   | 481 | 629 |
| W                      | 361 | 452 | 1,098 | 1,493 | 1,647 | 1,138 | 1,197 | 1,698 | 1,532 | 1,056 | 734 | 800 |
| All                    | 257 | 361 | 549   | 683   | 758   | 559   | 528   | 687   | 636   | 450   | 342 | 413 |
| <b>VA</b>              |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 174 | 225 | 203   | 197   | 213   | 205   | 110   | 59    | 0     | 1     | 2   | 6   |
| D                      | 197 | 268 | 233   | 237   | 249   | 227   | 186   | 137   | 74    | 41    | 51  | 67  |
| BN                     | 267 | 298 | 349   | 289   | 397   | 329   | 371   | 279   | 356   | 273   | 257 | 387 |
| AN                     | 190 | 570 | 545   | 722   | 757   | 641   | 570   | 606   | 609   | 508   | 460 | 612 |
| W                      | 358 | 452 | 1,098 | 1,487 | 1,646 | 1,156 | 1,323 | 1,606 | 1,517 | 1,044 | 723 | 800 |
| All                    | 255 | 359 | 550   | 678   | 757   | 575   | 600   | 654   | 618   | 440   | 336 | 407 |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |       |       |     |     |
| C                      | 172 | 227 | 207   | 197   | 213   | 201   | 153   | 117   | 10    | 1     | 2   | 6   |
| D                      | 187 | 258 | 234   | 235   | 239   | 286   | 516   | 690   | 236   | 19    | 0   | 7   |
| BN                     | 255 | 285 | 335   | 270   | 397   | 427   | 818   | 1,091 | 577   | 62    | 4   | 42  |
| AN                     | 178 | 538 | 526   | 665   | 741   | 691   | 923   | 1,604 | 824   | 204   | 120 | 268 |
| W                      | 327 | 436 | 994   | 1,449 | 1,532 | 1,206 | 1,466 | 2,305 | 1,670 | 642   | 430 | 553 |
| All                    | 239 | 346 | 515   | 656   | 718   | 627   | 853   | 1,275 | 771   | 236   | 146 | 211 |

## H1a2.2.25 Paynes Creek above Confluence with Sacramento River



**Figure H1a2-25. Paynes Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)**

**Table H1a2-49. Cumulative Distribution of Monthly Flow (cfs) — Paynes Creek above Confluence with Sacramento River**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 10  | 10  | 9   | 9   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 5   | 22  | 36  | 49  | 64  | 50  | 23  | 8   | 3   | 0   | 0   | 0   | 23           |
| 25%                    | 8   | 30  | 55  | 79  | 90  | 76  | 41  | 13  | 6   | 1   | 1   | 1   | 35           |
| 50%                    | 17  | 43  | 84  | 164 | 165 | 121 | 71  | 33  | 12  | 2   | 1   | 2   | 52           |
| 75%                    | 44  | 60  | 217 | 321 | 327 | 203 | 131 | 66  | 47  | 4   | 4   | 5   | 85           |
| 90%                    | 48  | 100 | 371 | 466 | 477 | 337 | 183 | 91  | 53  | 5   | 4   | 5   | 110          |
| 100%                   | 102 | 381 | 572 | 934 | 900 | 594 | 430 | 148 | 84  | 11  | 5   | 16  | 139          |
| Mean                   | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   | 61           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 10  | 10  | 9   | 9   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 5   | 22  | 36  | 49  | 64  | 50  | 23  | 8   | 3   | 0   | 0   | 0   | 23           |
| 25%                    | 8   | 30  | 55  | 79  | 90  | 76  | 41  | 13  | 6   | 1   | 1   | 1   | 35           |
| 50%                    | 17  | 43  | 84  | 164 | 165 | 121 | 71  | 33  | 12  | 2   | 1   | 2   | 52           |
| 75%                    | 44  | 60  | 217 | 321 | 327 | 203 | 131 | 66  | 47  | 4   | 4   | 5   | 85           |
| 90%                    | 48  | 100 | 371 | 466 | 477 | 337 | 183 | 91  | 53  | 5   | 4   | 5   | 110          |
| 100%                   | 102 | 381 | 572 | 934 | 900 | 594 | 430 | 148 | 84  | 11  | 5   | 16  | 139          |
| Mean                   | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   | 61           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 10  | 10  | 9   | 9   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 5   | 22  | 36  | 49  | 64  | 50  | 23  | 8   | 3   | 0   | 0   | 0   | 23           |
| 25%                    | 8   | 30  | 55  | 79  | 90  | 76  | 41  | 13  | 6   | 1   | 1   | 1   | 35           |
| 50%                    | 17  | 43  | 84  | 164 | 165 | 121 | 71  | 33  | 12  | 2   | 1   | 2   | 52           |
| 75%                    | 44  | 60  | 217 | 321 | 327 | 203 | 131 | 66  | 47  | 4   | 4   | 5   | 85           |
| 90%                    | 48  | 100 | 371 | 466 | 477 | 337 | 183 | 91  | 53  | 5   | 4   | 5   | 110          |
| 100%                   | 102 | 381 | 572 | 934 | 900 | 594 | 430 | 148 | 84  | 11  | 5   | 16  | 139          |
| Mean                   | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   | 61           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 10  | 10  | 9   | 9   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 5   | 22  | 36  | 49  | 64  | 50  | 23  | 8   | 3   | 0   | 0   | 0   | 23           |
| 25%                    | 8   | 30  | 55  | 79  | 90  | 76  | 41  | 13  | 6   | 1   | 1   | 1   | 35           |
| 50%                    | 17  | 43  | 84  | 164 | 165 | 121 | 71  | 33  | 12  | 2   | 1   | 2   | 52           |
| 75%                    | 44  | 60  | 217 | 321 | 327 | 203 | 131 | 66  | 47  | 4   | 4   | 5   | 85           |
| 90%                    | 48  | 100 | 371 | 466 | 477 | 337 | 183 | 91  | 53  | 5   | 4   | 5   | 110          |
| 100%                   | 102 | 381 | 572 | 934 | 900 | 594 | 430 | 148 | 84  | 11  | 5   | 16  | 139          |
| Mean                   | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   | 61           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 10  | 10  | 9   | 9   | 9   | 0   | 0   | 0   | 0   | 0   | 0   | 3            |
| 10%                    | 5   | 22  | 36  | 49  | 64  | 50  | 23  | 8   | 3   | 0   | 0   | 0   | 23           |
| 25%                    | 8   | 30  | 55  | 79  | 90  | 76  | 41  | 13  | 6   | 1   | 1   | 1   | 35           |
| 50%                    | 17  | 43  | 84  | 164 | 165 | 121 | 71  | 33  | 12  | 2   | 1   | 2   | 52           |
| 75%                    | 44  | 60  | 217 | 321 | 327 | 203 | 131 | 66  | 47  | 4   | 4   | 5   | 85           |
| 90%                    | 48  | 100 | 371 | 466 | 477 | 337 | 183 | 91  | 53  | 5   | 4   | 5   | 110          |
| 100%                   | 102 | 381 | 572 | 934 | 900 | 594 | 430 | 148 | 84  | 11  | 5   | 16  | 139          |
| Mean                   | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   | 61           |

**Table H1a2-50. Water Year Average of Monthly Flows (cfs) — Paynes Creek above Confluence with Sacramento River**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 14  | 31  | 61  | 63  | 70  | 57  | 22  | 8   | 2   | 1   | 0   | 0   |
| D                      | 24  | 51  | 104 | 95  | 145 | 117 | 47  | 18  | 7   | 1   | 1   | 1   |
| BN                     | 25  | 44  | 102 | 161 | 220 | 152 | 97  | 31  | 12  | 1   | 1   | 2   |
| AN                     | 23  | 51  | 119 | 280 | 294 | 205 | 105 | 63  | 40  | 4   | 3   | 5   |
| W                      | 36  | 86  | 275 | 397 | 370 | 237 | 162 | 84  | 54  | 5   | 4   | 5   |
| All                    | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 14  | 31  | 61  | 63  | 70  | 57  | 22  | 8   | 2   | 1   | 0   | 0   |
| D                      | 24  | 51  | 104 | 95  | 145 | 117 | 47  | 18  | 7   | 1   | 1   | 1   |
| BN                     | 25  | 44  | 102 | 161 | 220 | 152 | 97  | 31  | 12  | 1   | 1   | 2   |
| AN                     | 23  | 51  | 119 | 280 | 294 | 205 | 105 | 63  | 40  | 4   | 3   | 5   |
| W                      | 36  | 86  | 275 | 397 | 370 | 237 | 162 | 84  | 54  | 5   | 4   | 5   |
| All                    | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 14  | 31  | 61  | 63  | 70  | 57  | 22  | 8   | 2   | 1   | 0   | 0   |
| D                      | 24  | 51  | 104 | 95  | 145 | 117 | 47  | 18  | 7   | 1   | 1   | 1   |
| BN                     | 25  | 44  | 102 | 161 | 220 | 152 | 97  | 31  | 12  | 1   | 1   | 2   |
| AN                     | 23  | 51  | 119 | 280 | 294 | 205 | 105 | 63  | 40  | 4   | 3   | 5   |
| W                      | 36  | 86  | 275 | 397 | 370 | 237 | 162 | 84  | 54  | 5   | 4   | 5   |
| All                    | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 14  | 31  | 61  | 63  | 70  | 57  | 22  | 8   | 2   | 1   | 0   | 0   |
| D                      | 24  | 51  | 104 | 95  | 145 | 117 | 47  | 18  | 7   | 1   | 1   | 1   |
| BN                     | 25  | 44  | 102 | 161 | 220 | 152 | 97  | 31  | 12  | 1   | 1   | 2   |
| AN                     | 23  | 51  | 119 | 280 | 294 | 205 | 105 | 63  | 40  | 4   | 3   | 5   |
| W                      | 36  | 86  | 275 | 397 | 370 | 237 | 162 | 84  | 54  | 5   | 4   | 5   |
| All                    | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 14  | 31  | 61  | 63  | 70  | 57  | 22  | 8   | 2   | 1   | 0   | 0   |
| D                      | 24  | 51  | 104 | 95  | 145 | 117 | 47  | 18  | 7   | 1   | 1   | 1   |
| BN                     | 25  | 44  | 102 | 161 | 220 | 152 | 97  | 31  | 12  | 1   | 1   | 2   |
| AN                     | 23  | 51  | 119 | 280 | 294 | 205 | 105 | 63  | 40  | 4   | 3   | 5   |
| W                      | 36  | 86  | 275 | 397 | 370 | 237 | 162 | 84  | 54  | 5   | 4   | 5   |
| All                    | 26  | 57  | 150 | 216 | 234 | 161 | 94  | 44  | 25  | 3   | 2   | 3   |

## H1a2.2.26 Putah Creek below Lake Berryessa (SWRCB Lake Berryessa)

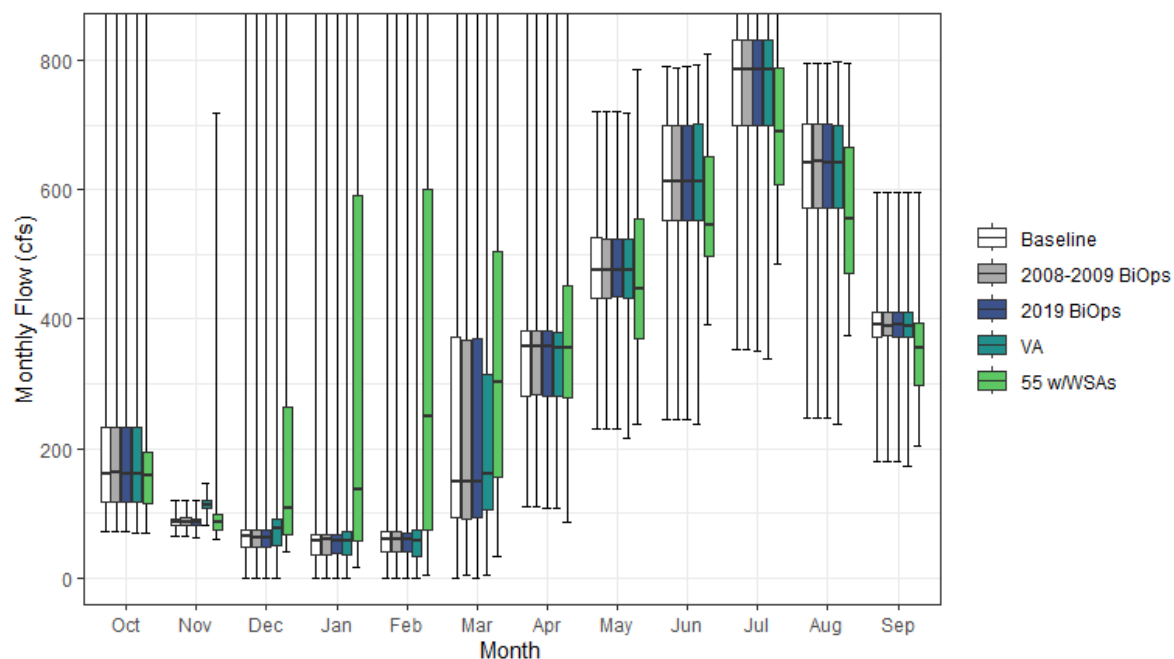


Figure H1a2-26. Putah Creek Streamflow below Lake Berryessa Monthly Boxplot (cfs)

**Table H1a2-51. Cumulative Distribution of Monthly Flow (cfs) — Putah Creek below Lake Berryessa (SWRCB Lake Berryessa)**

|                        | Oct   | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-------|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |       |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 71    | 63  | 0     | 0     | 0     | 0     | 110   | 229 | 245 | 352 | 246 | 180 | 112          |
| 10%                    | 110   | 77  | 22    | 2     | 4     | 68    | 143   | 397 | 526 | 660 | 535 | 337 | 218          |
| 25%                    | 117   | 81  | 47    | 36    | 40    | 93    | 280   | 433 | 552 | 700 | 572 | 373 | 225          |
| 50%                    | 161   | 85  | 64    | 57    | 59    | 148   | 357   | 475 | 613 | 786 | 642 | 390 | 233          |
| 75%                    | 232   | 92  | 74    | 67    | 71    | 372   | 382   | 526 | 700 | 831 | 701 | 410 | 252          |
| 90%                    | 266   | 102 | 79    | 127   | 713   | 1,057 | 693   | 597 | 752 | 860 | 731 | 431 | 474          |
| 100%                   | 1,246 | 120 | 2,006 | 5,183 | 6,718 | 6,316 | 3,624 | 720 | 792 | 955 | 794 | 596 | 1,050        |
| Mean                   | 182   | 87  | 77    | 214   | 375   | 462   | 475   | 481 | 626 | 765 | 630 | 388 | 288          |
| <b>2008-2009 BiOps</b> |       |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 71    | 63  | 0     | 0     | 0     | 4     | 111   | 229 | 245 | 352 | 246 | 180 | 112          |
| 10%                    | 110   | 78  | 20    | 3     | 4     | 67    | 140   | 398 | 527 | 658 | 536 | 337 | 218          |
| 25%                    | 118   | 81  | 47    | 36    | 39    | 92    | 282   | 433 | 552 | 700 | 572 | 374 | 225          |
| 50%                    | 162   | 85  | 63    | 59    | 60    | 148   | 357   | 474 | 613 | 786 | 643 | 390 | 233          |
| 75%                    | 233   | 92  | 74    | 67    | 70    | 368   | 381   | 524 | 699 | 831 | 701 | 410 | 251          |
| 90%                    | 266   | 102 | 79    | 129   | 713   | 1,057 | 693   | 599 | 752 | 860 | 731 | 433 | 473          |
| 100%                   | 1,246 | 120 | 2,003 | 5,174 | 6,710 | 6,316 | 3,624 | 720 | 789 | 955 | 794 | 596 | 1,050        |
| Mean                   | 183   | 87  | 77    | 214   | 375   | 462   | 475   | 481 | 626 | 765 | 630 | 389 | 288          |
| <b>2019 BiOps</b>      |       |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 71    | 62  | 0     | 0     | 0     | 0     | 107   | 229 | 244 | 352 | 246 | 180 | 112          |
| 10%                    | 110   | 78  | 20    | 2     | 4     | 67    | 140   | 397 | 526 | 660 | 535 | 338 | 218          |
| 25%                    | 117   | 81  | 47    | 37    | 40    | 93    | 280   | 434 | 552 | 699 | 572 | 373 | 225          |
| 50%                    | 161   | 85  | 62    | 57    | 59    | 148   | 357   | 474 | 613 | 786 | 642 | 391 | 233          |
| 75%                    | 233   | 91  | 74    | 67    | 69    | 369   | 381   | 524 | 700 | 831 | 701 | 410 | 252          |
| 90%                    | 266   | 102 | 79    | 127   | 713   | 1,057 | 693   | 600 | 753 | 861 | 731 | 431 | 474          |
| 100%                   | 1,246 | 120 | 2,001 | 5,184 | 6,724 | 6,316 | 3,624 | 720 | 791 | 955 | 794 | 596 | 1,050        |
| Mean                   | 182   | 87  | 77    | 214   | 375   | 462   | 475   | 481 | 626 | 765 | 631 | 388 | 288          |
| <b>VA</b>              |       |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 70    | 82  | 0     | 0     | 0     | 4     | 107   | 216 | 236 | 339 | 237 | 174 | 109          |
| 10%                    | 110   | 103 | 22    | 4     | 4     | 71    | 142   | 397 | 527 | 659 | 535 | 342 | 221          |
| 25%                    | 117   | 107 | 49    | 35    | 33    | 105   | 280   | 433 | 551 | 700 | 572 | 373 | 228          |
| 50%                    | 161   | 113 | 76    | 57    | 58    | 160   | 354   | 474 | 613 | 786 | 643 | 390 | 236          |
| 75%                    | 232   | 118 | 92    | 71    | 74    | 314   | 380   | 524 | 701 | 831 | 699 | 410 | 253          |
| 90%                    | 265   | 130 | 98    | 119   | 713   | 947   | 693   | 600 | 752 | 861 | 733 | 431 | 455          |
| 100%                   | 1,246 | 147 | 1,973 | 5,155 | 6,664 | 6,316 | 3,624 | 718 | 792 | 955 | 799 | 596 | 1,050        |
| Mean                   | 182   | 114 | 87    | 211   | 368   | 447   | 474   | 481 | 625 | 764 | 630 | 388 | 288          |
| <b>55 w/WSAs</b>       |       |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 69    | 60  | 40    | 16    | 4     | 32    | 85    | 238 | 390 | 484 | 375 | 205 | 166          |
| 10%                    | 92    | 67  | 54    | 43    | 47    | 82    | 225   | 322 | 433 | 535 | 441 | 286 | 178          |
| 25%                    | 116   | 74  | 67    | 57    | 74    | 156   | 278   | 371 | 498 | 608 | 471 | 299 | 208          |
| 50%                    | 158   | 86  | 107   | 136   | 249   | 303   | 354   | 448 | 545 | 690 | 555 | 354 | 260          |
| 75%                    | 194   | 97  | 263   | 590   | 601   | 503   | 452   | 554 | 651 | 789 | 666 | 395 | 331          |
| 90%                    | 238   | 167 | 716   | 750   | 750   | 750   | 680   | 630 | 731 | 838 | 711 | 424 | 422          |
| 100%                   | 1,254 | 717 | 1,186 | 2,698 | 5,464 | 6,316 | 2,516 | 786 | 811 | 935 | 794 | 596 | 1,001        |
| Mean                   | 167   | 112 | 224   | 324   | 451   | 442   | 416   | 464 | 569 | 690 | 570 | 351 | 289          |

**Table H1a2-52. Water Year Average of Monthly Flows (cfs) — Putah Creek below Lake Berryessa (SWRCB Lake Berryessa)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-------|-------|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |       |       |     |     |     |     |     |     |
| C                      | 154 | 90  | 64  | 53  | 83    | 208   | 307 | 462 | 582 | 689 | 598 | 373 |
| D                      | 176 | 89  | 58  | 59  | 62    | 149   | 330 | 469 | 649 | 766 | 604 | 378 |
| BN                     | 183 | 85  | 65  | 46  | 173   | 151   | 303 | 476 | 642 | 775 | 625 | 382 |
| AN                     | 171 | 89  | 59  | 33  | 38    | 257   | 317 | 459 | 676 | 750 | 662 | 400 |
| W                      | 207 | 85  | 112 | 594 | 1,021 | 1,105 | 844 | 512 | 601 | 803 | 658 | 404 |
| All                    | 182 | 87  | 77  | 214 | 375   | 462   | 475 | 481 | 626 | 765 | 630 | 388 |
| <b>2008-2009 BiOps</b> |     |     |     |     |       |       |     |     |     |     |     |     |
| C                      | 154 | 90  | 64  | 53  | 83    | 208   | 307 | 462 | 582 | 689 | 597 | 373 |
| D                      | 176 | 89  | 59  | 58  | 62    | 148   | 331 | 469 | 649 | 766 | 604 | 378 |
| BN                     | 183 | 85  | 65  | 45  | 173   | 150   | 302 | 475 | 642 | 775 | 625 | 381 |
| AN                     | 172 | 90  | 59  | 32  | 38    | 259   | 317 | 458 | 675 | 750 | 662 | 400 |
| W                      | 207 | 85  | 112 | 594 | 1,021 | 1,105 | 845 | 511 | 601 | 803 | 658 | 405 |
| All                    | 183 | 87  | 77  | 214 | 375   | 462   | 475 | 481 | 626 | 765 | 630 | 389 |
| <b>2019 BiOps</b>      |     |     |     |     |       |       |     |     |     |     |     |     |
| C                      | 154 | 90  | 64  | 53  | 83    | 208   | 307 | 462 | 582 | 689 | 597 | 373 |
| D                      | 176 | 89  | 59  | 58  | 62    | 149   | 331 | 470 | 649 | 766 | 604 | 378 |
| BN                     | 183 | 85  | 65  | 45  | 173   | 151   | 303 | 476 | 642 | 775 | 625 | 382 |
| AN                     | 171 | 89  | 59  | 33  | 38    | 258   | 316 | 458 | 676 | 750 | 663 | 400 |
| W                      | 207 | 85  | 112 | 594 | 1,022 | 1,105 | 844 | 511 | 601 | 803 | 658 | 404 |
| All                    | 182 | 87  | 77  | 214 | 375   | 462   | 475 | 481 | 626 | 765 | 631 | 388 |
| <b>VA</b>              |     |     |     |     |       |       |     |     |     |     |     |     |
| C                      | 152 | 116 | 77  | 54  | 84    | 217   | 306 | 461 | 580 | 686 | 595 | 371 |
| D                      | 176 | 116 | 70  | 60  | 64    | 161   | 329 | 469 | 648 | 765 | 603 | 377 |
| BN                     | 182 | 112 | 78  | 45  | 166   | 161   | 303 | 476 | 642 | 775 | 625 | 381 |
| AN                     | 171 | 116 | 68  | 33  | 38    | 236   | 316 | 459 | 676 | 750 | 663 | 400 |
| W                      | 207 | 112 | 117 | 583 | 1,001 | 1,045 | 841 | 511 | 602 | 803 | 658 | 405 |
| All                    | 182 | 114 | 87  | 211 | 368   | 447   | 474 | 481 | 625 | 764 | 630 | 388 |
| <b>55 w/WSAs</b>       |     |     |     |     |       |       |     |     |     |     |     |     |
| C                      | 143 | 81  | 88  | 123 | 106   | 190   | 274 | 408 | 518 | 615 | 526 | 331 |
| D                      | 154 | 99  | 155 | 150 | 213   | 231   | 333 | 448 | 611 | 719 | 570 | 355 |
| BN                     | 165 | 87  | 162 | 197 | 260   | 219   | 293 | 397 | 524 | 630 | 510 | 310 |
| AN                     | 157 | 107 | 219 | 324 | 433   | 409   | 411 | 426 | 599 | 660 | 587 | 352 |
| W                      | 194 | 158 | 390 | 640 | 937   | 886   | 631 | 564 | 583 | 758 | 624 | 383 |
| All                    | 167 | 112 | 224 | 324 | 451   | 442   | 416 | 464 | 569 | 690 | 570 | 351 |

## H1a2.2.27 Putah Creek above Yolo Bypass (SWRCB Putah Creek)

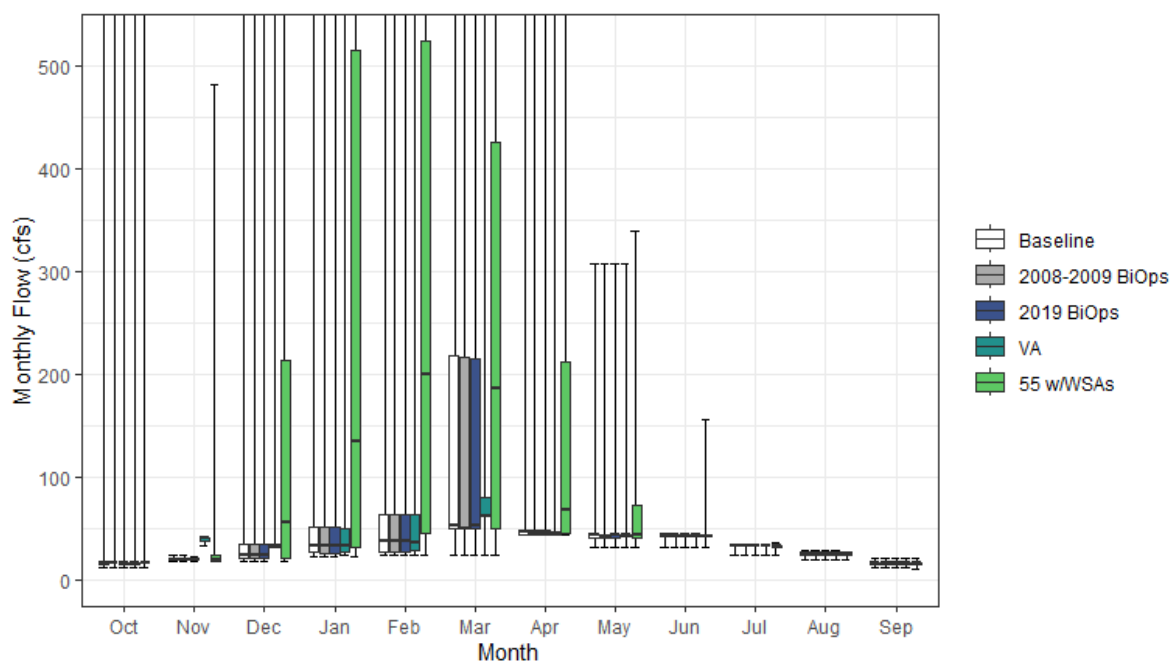


Figure H1a2-27. Putah Creek Streamflow above Yolo Bypass Monthly Boxplot (cfs)

**Table H1a2-53. Cumulative Distribution of Monthly Flow (cfs) — Putah Creek above Yolo Bypass (SWRCB Putah Creek)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 11  | 18  | 18    | 22    | 23    | 24    | 43    | 31  | 31  | 24  | 19  | 11  | 18           |
| 10%                    | 14  | 18  | 20    | 24    | 23    | 50    | 43    | 33  | 33  | 25  | 20  | 12  | 21           |
| 25%                    | 15  | 19  | 21    | 26    | 26    | 50    | 44    | 40  | 42  | 32  | 25  | 14  | 23           |
| 50%                    | 16  | 20  | 24    | 32    | 37    | 52    | 46    | 43  | 43  | 33  | 26  | 16  | 24           |
| 75%                    | 17  | 20  | 34    | 51    | 63    | 218   | 48    | 44  | 44  | 34  | 27  | 17  | 49           |
| 90%                    | 17  | 21  | 51    | 250   | 600   | 934   | 392   | 45  | 44  | 34  | 27  | 17  | 268          |
| 100%                   | 942 | 23  | 1,491 | 4,834 | 6,207 | 5,724 | 3,391 | 307 | 45  | 34  | 28  | 21  | 773          |
| Mean                   | 26  | 20  | 47    | 198   | 333   | 351   | 226   | 46  | 42  | 32  | 25  | 15  | 81           |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 11  | 18  | 18    | 22    | 23    | 24    | 43    | 31  | 31  | 24  | 19  | 11  | 18           |
| 10%                    | 14  | 18  | 20    | 23    | 23    | 50    | 43    | 33  | 33  | 25  | 20  | 12  | 21           |
| 25%                    | 16  | 19  | 21    | 26    | 27    | 50    | 44    | 40  | 41  | 32  | 25  | 14  | 23           |
| 50%                    | 16  | 20  | 24    | 32    | 37    | 50    | 46    | 43  | 43  | 33  | 26  | 16  | 24           |
| 75%                    | 17  | 21  | 34    | 52    | 63    | 217   | 47    | 43  | 44  | 33  | 27  | 17  | 49           |
| 90%                    | 17  | 21  | 50    | 251   | 600   | 934   | 392   | 44  | 44  | 34  | 27  | 17  | 267          |
| 100%                   | 942 | 23  | 1,490 | 4,826 | 6,200 | 5,724 | 3,391 | 307 | 45  | 34  | 28  | 21  | 773          |
| Mean                   | 26  | 20  | 47    | 197   | 333   | 351   | 226   | 45  | 42  | 32  | 25  | 16  | 81           |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 11  | 18  | 18    | 22    | 23    | 24    | 43    | 32  | 31  | 24  | 19  | 11  | 18           |
| 10%                    | 14  | 18  | 20    | 23    | 23    | 50    | 43    | 33  | 33  | 25  | 20  | 12  | 21           |
| 25%                    | 15  | 19  | 21    | 25    | 26    | 50    | 44    | 40  | 42  | 32  | 25  | 14  | 23           |
| 50%                    | 16  | 20  | 24    | 32    | 37    | 52    | 46    | 43  | 43  | 33  | 26  | 16  | 24           |
| 75%                    | 17  | 20  | 34    | 51    | 63    | 216   | 47    | 44  | 44  | 33  | 27  | 16  | 49           |
| 90%                    | 17  | 21  | 50    | 251   | 600   | 934   | 392   | 45  | 44  | 34  | 27  | 17  | 268          |
| 100%                   | 942 | 23  | 1,488 | 4,835 | 6,213 | 5,724 | 3,391 | 307 | 45  | 34  | 28  | 21  | 773          |
| Mean                   | 26  | 20  | 47    | 198   | 333   | 351   | 226   | 46  | 42  | 32  | 25  | 15  | 81           |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 11  | 33  | 32    | 24    | 23    | 24    | 43    | 31  | 31  | 24  | 19  | 11  | 19           |
| 10%                    | 14  | 37  | 32    | 27    | 28    | 62    | 43    | 39  | 39  | 30  | 24  | 14  | 24           |
| 25%                    | 15  | 38  | 32    | 27    | 29    | 62    | 43    | 42  | 42  | 32  | 25  | 14  | 25           |
| 50%                    | 16  | 40  | 33    | 32    | 36    | 62    | 46    | 43  | 43  | 33  | 26  | 16  | 26           |
| 75%                    | 17  | 40  | 35    | 50    | 63    | 80    | 47    | 44  | 44  | 34  | 27  | 17  | 42           |
| 90%                    | 17  | 41  | 50    | 250   | 600   | 827   | 392   | 45  | 44  | 34  | 27  | 17  | 241          |
| 100%                   | 942 | 42  | 1,468 | 4,810 | 6,159 | 5,724 | 3,391 | 307 | 45  | 34  | 28  | 21  | 773          |
| Mean                   | 26  | 39  | 54    | 195   | 327   | 338   | 225   | 46  | 42  | 32  | 25  | 15  | 81           |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |              |
| 0%                     | 11  | 18  | 18    | 22    | 23    | 24    | 43    | 31  | 31  | 24  | 19  | 11  | 19           |
| 10%                    | 14  | 18  | 19    | 23    | 28    | 50    | 43    | 40  | 40  | 31  | 25  | 14  | 22           |
| 25%                    | 16  | 18  | 21    | 31    | 46    | 50    | 44    | 40  | 42  | 31  | 25  | 15  | 30           |
| 50%                    | 16  | 20  | 55    | 134   | 200   | 186   | 68    | 43  | 42  | 32  | 25  | 16  | 70           |
| 75%                    | 17  | 24  | 214   | 516   | 524   | 426   | 212   | 72  | 44  | 33  | 26  | 16  | 127          |
| 90%                    | 17  | 83  | 531   | 692   | 746   | 683   | 508   | 155 | 50  | 34  | 27  | 17  | 189          |
| 100%                   | 960 | 481 | 900   | 2,610 | 5,085 | 5,724 | 2,324 | 339 | 156 | 36  | 28  | 21  | 723          |
| Mean                   | 26  | 43  | 157   | 300   | 406   | 341   | 193   | 72  | 46  | 32  | 25  | 15  | 99           |

**Table H1a2-54. Water Year Average of Monthly Flows (cfs) — Putah Creek above Yolo Bypass (SWRCB Putah Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 20  | 27  | 35  | 34  | 48  | 45  | 39  | 39  | 30  | 24  | 14  |
| D                      | 16  | 20  | 29  | 29  | 35  | 49  | 46  | 42  | 42  | 32  | 26  | 16  |
| BN                     | 17  | 20  | 24  | 37  | 143 | 78  | 46  | 41  | 41  | 32  | 25  | 16  |
| AN                     | 16  | 19  | 36  | 57  | 54  | 190 | 47  | 65  | 43  | 33  | 26  | 16  |
| W                      | 48  | 20  | 90  | 565 | 942 | 971 | 640 | 47  | 43  | 33  | 26  | 15  |
| All                    | 26  | 20  | 47  | 198 | 333 | 351 | 226 | 46  | 42  | 32  | 25  | 15  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 20  | 27  | 35  | 35  | 48  | 45  | 39  | 39  | 30  | 24  | 14  |
| D                      | 16  | 20  | 29  | 29  | 35  | 49  | 46  | 42  | 42  | 32  | 26  | 16  |
| BN                     | 17  | 20  | 24  | 37  | 144 | 78  | 45  | 40  | 41  | 32  | 25  | 15  |
| AN                     | 16  | 20  | 36  | 57  | 54  | 193 | 47  | 64  | 42  | 33  | 26  | 16  |
| W                      | 49  | 20  | 90  | 565 | 942 | 970 | 640 | 47  | 43  | 33  | 26  | 16  |
| All                    | 26  | 20  | 47  | 197 | 333 | 351 | 226 | 45  | 42  | 32  | 25  | 16  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 20  | 27  | 36  | 34  | 48  | 45  | 39  | 39  | 30  | 24  | 14  |
| D                      | 16  | 20  | 29  | 29  | 35  | 49  | 46  | 42  | 42  | 32  | 26  | 16  |
| BN                     | 17  | 19  | 24  | 37  | 143 | 78  | 46  | 41  | 41  | 32  | 25  | 16  |
| AN                     | 16  | 19  | 36  | 57  | 54  | 191 | 46  | 64  | 43  | 33  | 26  | 16  |
| W                      | 48  | 20  | 90  | 566 | 943 | 970 | 640 | 47  | 43  | 33  | 26  | 15  |
| All                    | 26  | 20  | 47  | 198 | 333 | 351 | 226 | 46  | 42  | 32  | 25  | 15  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 39  | 37  | 37  | 36  | 56  | 46  | 40  | 39  | 30  | 23  | 14  |
| D                      | 16  | 40  | 37  | 30  | 37  | 60  | 45  | 43  | 42  | 32  | 26  | 16  |
| BN                     | 17  | 39  | 33  | 37  | 137 | 87  | 46  | 42  | 41  | 32  | 25  | 15  |
| AN                     | 15  | 38  | 42  | 57  | 54  | 171 | 46  | 65  | 43  | 33  | 26  | 16  |
| W                      | 48  | 39  | 94  | 555 | 924 | 917 | 636 | 47  | 43  | 33  | 26  | 16  |
| All                    | 26  | 39  | 54  | 195 | 327 | 338 | 225 | 46  | 42  | 32  | 25  | 15  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 19  | 48  | 103 | 63  | 50  | 44  | 39  | 39  | 30  | 24  | 14  |
| D                      | 16  | 33  | 103 | 116 | 174 | 133 | 63  | 44  | 41  | 31  | 25  | 15  |
| BN                     | 17  | 26  | 98  | 177 | 228 | 144 | 83  | 44  | 41  | 31  | 25  | 15  |
| AN                     | 17  | 37  | 155 | 321 | 412 | 331 | 166 | 80  | 43  | 33  | 26  | 16  |
| W                      | 50  | 76  | 293 | 610 | 870 | 778 | 448 | 124 | 56  | 33  | 26  | 16  |
| All                    | 26  | 43  | 157 | 300 | 406 | 341 | 193 | 72  | 46  | 32  | 25  | 15  |

## H1a2.2.28 Sacramento River below Shasta Reservoir (SWRCB Shasta)

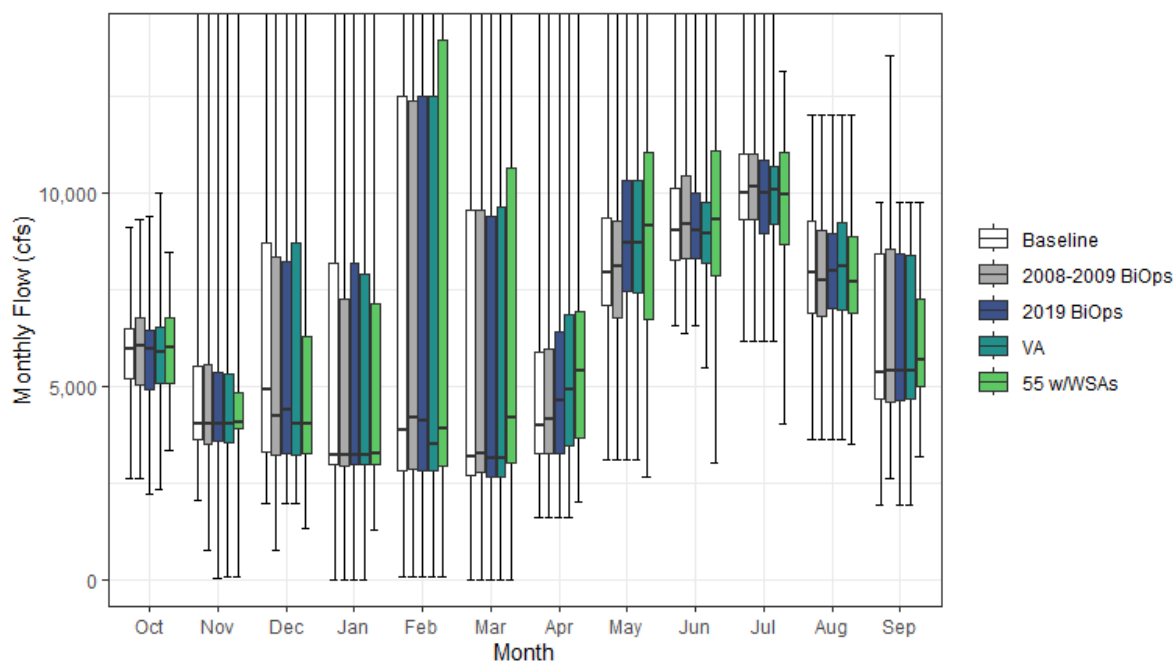


Figure H1a2-28. Sacramento River Streamflow below Shasta Reservoir Monthly Boxplot (cfs)

**Table H1a2-55. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River below Shasta Reservoir (SWRCB Shasta)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 2,612  | 2,042  | 1,959  | 0      | 55     | 0      | 1,594  | 3,107  | 6,578  | 6,144  | 3,628  | 1,943  | 3,186        |
| 10%                    | 4,518  | 3,251  | 2,971  | 2,327  | 2,014  | 2,143  | 3,195  | 5,770  | 7,681  | 8,434  | 5,794  | 3,809  | 3,750        |
| 25%                    | 5,185  | 3,630  | 3,283  | 2,977  | 2,821  | 2,680  | 3,253  | 7,108  | 8,250  | 9,328  | 6,879  | 4,668  | 4,111        |
| 50%                    | 5,972  | 4,035  | 4,899  | 3,228  | 3,877  | 3,194  | 3,999  | 7,951  | 9,026  | 10,010 | 7,923  | 5,360  | 4,865        |
| 75%                    | 6,465  | 5,510  | 8,702  | 8,198  | 12,512 | 9,533  | 5,873  | 9,363  | 10,108 | 11,024 | 9,288  | 8,413  | 6,472        |
| 90%                    | 7,021  | 7,312  | 16,111 | 18,606 | 28,490 | 17,885 | 10,673 | 10,992 | 11,976 | 12,756 | 10,844 | 8,873  | 8,283        |
| 100%                   | 9,119  | 26,467 | 27,665 | 48,623 | 50,384 | 44,066 | 28,864 | 17,628 | 29,676 | 16,013 | 12,022 | 9,772  | 10,669       |
| Mean                   | 5,802  | 4,954  | 7,089  | 7,392  | 9,734  | 7,499  | 5,845  | 8,327  | 9,521  | 10,257 | 8,090  | 6,209  | 5,473        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 2,612  | 737    | 767    | 0      | 55     | 0      | 1,594  | 3,104  | 6,371  | 6,144  | 3,628  | 2,590  | 3,186        |
| 10%                    | 4,323  | 3,187  | 2,924  | 2,368  | 2,023  | 2,084  | 3,157  | 5,841  | 7,874  | 8,379  | 5,802  | 4,014  | 3,815        |
| 25%                    | 5,038  | 3,518  | 3,224  | 2,942  | 2,850  | 2,762  | 3,253  | 6,772  | 8,307  | 9,313  | 6,809  | 4,590  | 4,086        |
| 50%                    | 6,027  | 4,026  | 4,224  | 3,209  | 4,187  | 3,267  | 4,155  | 8,092  | 9,182  | 10,144 | 7,755  | 5,395  | 4,861        |
| 75%                    | 6,781  | 5,566  | 8,346  | 7,259  | 12,380 | 9,533  | 5,944  | 9,278  | 10,433 | 10,993 | 9,040  | 8,527  | 6,483        |
| 90%                    | 7,344  | 7,881  | 15,752 | 18,606 | 28,490 | 17,885 | 10,673 | 10,992 | 12,230 | 12,182 | 10,747 | 8,979  | 8,306        |
| 100%                   | 9,296  | 26,467 | 27,648 | 48,623 | 49,891 | 44,066 | 28,864 | 17,628 | 29,676 | 15,254 | 12,022 | 13,564 | 10,669       |
| Mean                   | 5,891  | 5,109  | 6,852  | 7,240  | 9,663  | 7,514  | 5,814  | 8,298  | 9,762  | 10,209 | 8,035  | 6,341  | 5,473        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 2,226  | 18     | 1,959  | 0      | 55     | 0      | 1,594  | 3,086  | 6,577  | 6,144  | 3,629  | 1,943  | 3,085        |
| 10%                    | 4,205  | 3,246  | 2,973  | 2,348  | 1,953  | 2,063  | 3,171  | 5,693  | 7,808  | 8,249  | 5,812  | 3,949  | 3,758        |
| 25%                    | 4,900  | 3,560  | 3,260  | 2,977  | 2,831  | 2,642  | 3,265  | 7,457  | 8,282  | 8,957  | 7,001  | 4,635  | 4,116        |
| 50%                    | 5,952  | 4,028  | 4,380  | 3,236  | 4,100  | 3,148  | 4,638  | 8,711  | 9,035  | 10,015 | 7,996  | 5,403  | 4,843        |
| 75%                    | 6,443  | 5,367  | 8,205  | 8,198  | 12,512 | 9,401  | 6,399  | 10,311 | 9,982  | 10,829 | 8,961  | 8,404  | 6,479        |
| 90%                    | 7,021  | 7,152  | 16,111 | 18,606 | 28,490 | 17,885 | 10,673 | 11,633 | 11,500 | 12,525 | 10,747 | 8,841  | 8,117        |
| 100%                   | 9,380  | 26,467 | 27,665 | 48,623 | 49,683 | 44,066 | 28,864 | 17,628 | 29,676 | 15,452 | 12,022 | 9,772  | 10,669       |
| Mean                   | 5,696  | 4,835  | 6,896  | 7,399  | 9,703  | 7,480  | 6,136  | 8,646  | 9,514  | 10,171 | 8,071  | 6,174  | 5,473        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 2,317  | 70     | 1,959  | 0      | 55     | 0      | 1,594  | 3,089  | 5,478  | 6,144  | 3,628  | 1,943  | 3,078        |
| 10%                    | 4,382  | 3,247  | 2,965  | 2,327  | 1,918  | 2,019  | 3,195  | 5,686  | 7,512  | 8,077  | 5,997  | 3,897  | 3,784        |
| 25%                    | 5,086  | 3,528  | 3,224  | 2,977  | 2,831  | 2,642  | 3,476  | 7,414  | 8,160  | 9,183  | 6,987  | 4,686  | 4,093        |
| 50%                    | 5,867  | 4,022  | 4,043  | 3,232  | 3,499  | 3,148  | 4,893  | 8,711  | 8,940  | 10,066 | 8,116  | 5,392  | 4,881        |
| 75%                    | 6,512  | 5,323  | 8,705  | 7,885  | 12,512 | 9,617  | 6,846  | 10,316 | 9,771  | 10,681 | 9,243  | 8,378  | 6,491        |
| 90%                    | 6,998  | 6,551  | 16,111 | 18,611 | 28,494 | 17,885 | 12,122 | 11,595 | 11,466 | 12,170 | 10,747 | 8,979  | 8,067        |
| 100%                   | 10,002 | 26,068 | 27,665 | 48,623 | 49,683 | 44,080 | 28,864 | 20,582 | 29,676 | 14,683 | 12,022 | 9,772  | 10,669       |
| Mean                   | 5,770  | 4,764  | 6,785  | 7,325  | 9,634  | 7,448  | 6,447  | 8,770  | 9,376  | 10,087 | 8,143  | 6,177  | 5,473        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,334  | 85     | 1,332  | 1,298  | 55     | 0      | 1,986  | 2,667  | 2,996  | 4,036  | 3,502  | 3,187  | 2,880        |
| 10%                    | 4,078  | 3,352  | 3,022  | 2,425  | 2,315  | 2,699  | 3,252  | 5,547  | 6,625  | 5,921  | 5,978  | 4,484  | 3,516        |
| 25%                    | 5,075  | 3,888  | 3,261  | 2,985  | 2,919  | 3,000  | 3,671  | 6,738  | 7,859  | 8,674  | 6,885  | 5,002  | 4,153        |
| 50%                    | 6,015  | 4,068  | 4,011  | 3,249  | 3,902  | 4,197  | 5,393  | 9,167  | 9,309  | 9,935  | 7,695  | 5,672  | 4,807        |
| 75%                    | 6,778  | 4,842  | 6,282  | 7,143  | 13,947 | 10,637 | 6,919  | 11,059 | 11,075 | 11,034 | 8,877  | 7,232  | 6,558        |
| 90%                    | 7,269  | 5,773  | 14,366 | 18,434 | 28,708 | 18,031 | 10,673 | 12,173 | 12,035 | 11,787 | 9,743  | 8,617  | 8,063        |
| 100%                   | 8,471  | 24,203 | 27,665 | 48,623 | 49,683 | 44,066 | 28,864 | 17,628 | 29,676 | 13,142 | 12,022 | 9,772  | 10,669       |
| Mean                   | 5,893  | 4,582  | 6,341  | 7,252  | 9,811  | 8,030  | 6,584  | 9,062  | 9,506  | 9,464  | 7,884  | 6,230  | 5,467        |

**Table H1a2-56. Water Year Average of Monthly Flows (cfs) — Sacramento River below Shasta Reservoir (SWRCB Shasta)**

| Water Year Type        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug   | Sep   |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |        |        |       |       |
| C                      | 5,189 | 4,062 | 4,462  | 3,704  | 2,615  | 3,395  | 4,153  | 7,594  | 9,076  | 8,773  | 7,457 | 4,999 |
| D                      | 6,058 | 4,385 | 4,745  | 3,324  | 2,919  | 3,566  | 3,975  | 7,933  | 10,336 | 10,000 | 7,385 | 4,434 |
| BN                     | 5,715 | 4,516 | 5,226  | 3,422  | 7,516  | 3,617  | 4,284  | 7,725  | 9,754  | 11,521 | 7,699 | 5,027 |
| AN                     | 5,604 | 5,320 | 5,651  | 6,910  | 13,926 | 8,677  | 4,934  | 9,173  | 8,687  | 11,669 | 7,199 | 7,354 |
| W                      | 6,077 | 5,979 | 11,964 | 15,049 | 18,255 | 14,559 | 9,474  | 9,049  | 9,348  | 9,873  | 9,549 | 8,445 |
| All                    | 5,802 | 4,954 | 7,089  | 7,392  | 9,734  | 7,499  | 5,845  | 8,327  | 9,521  | 10,257 | 8,090 | 6,209 |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |        |        |       |       |
| C                      | 5,441 | 3,862 | 4,228  | 3,248  | 2,784  | 3,469  | 4,318  | 7,610  | 9,689  | 8,705  | 7,396 | 5,041 |
| D                      | 6,123 | 4,641 | 4,581  | 3,299  | 3,009  | 3,432  | 3,796  | 7,813  | 10,999 | 10,234 | 7,149 | 4,543 |
| BN                     | 5,729 | 4,576 | 5,077  | 3,360  | 7,315  | 3,719  | 4,186  | 7,700  | 9,701  | 11,348 | 7,641 | 4,975 |
| AN                     | 5,671 | 6,342 | 5,154  | 6,731  | 13,332 | 8,799  | 4,933  | 9,190  | 8,749  | 11,278 | 7,254 | 7,368 |
| W                      | 6,153 | 5,962 | 11,722 | 14,919 | 18,230 | 14,554 | 9,474  | 9,042  | 9,339  | 9,843  | 9,586 | 8,806 |
| All                    | 5,891 | 5,109 | 6,852  | 7,240  | 9,663  | 7,514  | 5,814  | 8,298  | 9,762  | 10,209 | 8,035 | 6,341 |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |        |        |       |       |
| C                      | 5,108 | 3,880 | 3,994  | 3,552  | 2,747  | 3,437  | 4,443  | 8,097  | 9,142  | 8,493  | 7,453 | 5,003 |
| D                      | 6,023 | 4,243 | 4,602  | 3,360  | 2,812  | 3,457  | 4,809  | 8,866  | 10,264 | 9,824  | 7,277 | 4,374 |
| BN                     | 5,737 | 4,424 | 5,179  | 3,756  | 7,492  | 3,617  | 4,466  | 7,868  | 9,659  | 11,441 | 7,644 | 5,000 |
| AN                     | 5,577 | 5,268 | 5,387  | 6,897  | 13,991 | 8,693  | 5,118  | 9,197  | 8,777  | 11,867 | 7,205 | 7,241 |
| W                      | 5,791 | 5,866 | 11,816 | 14,921 | 18,152 | 14,546 | 9,476  | 9,051  | 9,366  | 9,839  | 9,601 | 8,437 |
| All                    | 5,696 | 4,835 | 6,896  | 7,399  | 9,703  | 7,480  | 6,136  | 8,646  | 9,514  | 10,171 | 8,071 | 6,174 |
| <b>VA</b>              |       |       |        |        |        |        |        |        |        |        |       |       |
| C                      | 5,291 | 3,855 | 3,975  | 3,457  | 2,465  | 3,138  | 4,088  | 7,841  | 8,969  | 8,590  | 7,602 | 5,026 |
| D                      | 5,926 | 4,295 | 4,646  | 3,328  | 2,881  | 3,464  | 5,044  | 8,797  | 10,375 | 10,162 | 7,800 | 4,650 |
| BN                     | 5,819 | 4,210 | 4,967  | 3,431  | 7,405  | 3,616  | 5,320  | 8,459  | 9,354  | 10,951 | 7,610 | 4,688 |
| AN                     | 5,686 | 5,098 | 5,271  | 6,901  | 14,007 | 8,820  | 6,386  | 9,751  | 8,151  | 11,153 | 6,753 | 7,116 |
| W                      | 5,914 | 5,809 | 11,610 | 14,954 | 18,073 | 14,546 | 9,472  | 9,050  | 9,364  | 9,858  | 9,577 | 8,477 |
| All                    | 5,770 | 4,764 | 6,785  | 7,325  | 9,634  | 7,448  | 6,447  | 8,770  | 9,376  | 10,087 | 8,143 | 6,177 |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |        |        |       |       |
| C                      | 5,712 | 3,951 | 3,395  | 3,151  | 2,839  | 3,527  | 3,775  | 5,701  | 6,473  | 5,606  | 7,064 | 5,720 |
| D                      | 5,567 | 4,271 | 4,418  | 3,508  | 2,972  | 4,173  | 5,414  | 8,169  | 8,370  | 9,795  | 7,666 | 5,119 |
| BN                     | 6,029 | 4,243 | 5,064  | 3,429  | 7,392  | 4,839  | 5,370  | 9,466  | 10,305 | 10,882 | 7,907 | 5,154 |
| AN                     | 5,756 | 4,141 | 5,334  | 6,772  | 15,124 | 9,273  | 5,540  | 11,188 | 10,608 | 10,368 | 6,955 | 7,250 |
| W                      | 6,196 | 5,537 | 10,535 | 14,797 | 17,951 | 14,783 | 10,128 | 10,404 | 11,009 | 10,019 | 8,839 | 7,589 |
| All                    | 5,893 | 4,582 | 6,341  | 7,252  | 9,811  | 8,030  | 6,584  | 9,062  | 9,506  | 9,464  | 7,884 | 6,230 |

## H1a2.2.29 Sacramento River above Bend Bridge (SWRCB Sac Abv Bend Bridge)

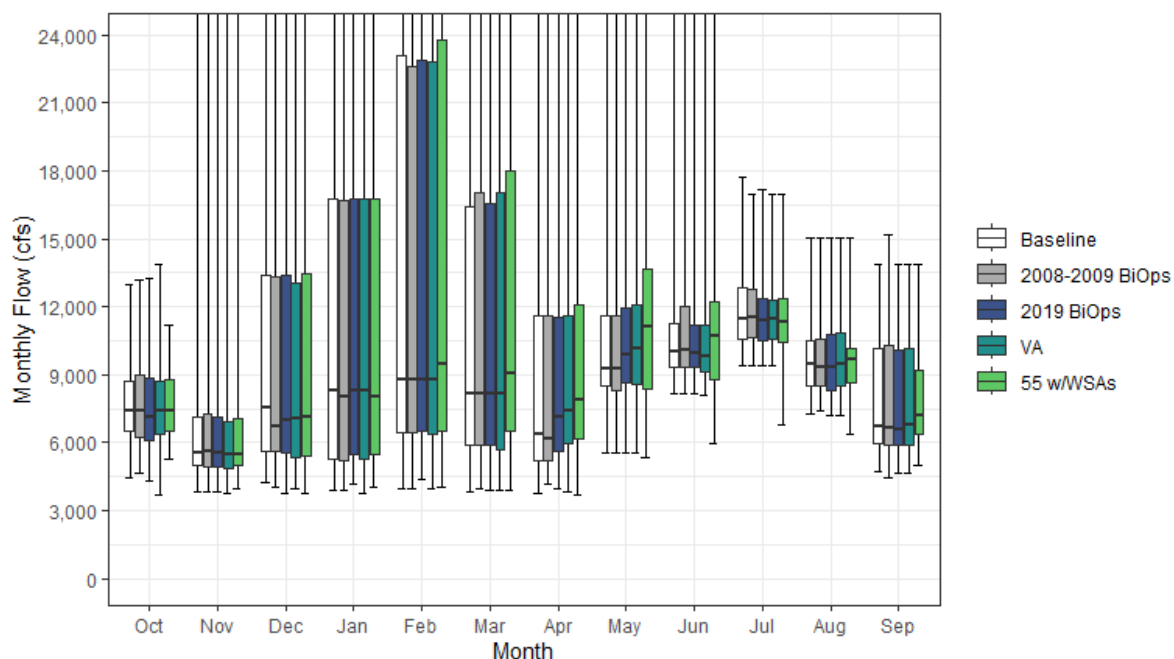


Figure H1a2-29. Sacramento River Streamflow above Bend Bridge Monthly Boxplot (cfs)

**Table H1a2-57. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River above Bend Bridge (SWRCB Sac Abv Bend Bridge)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 4,484  | 3,837  | 4,236  | 3,880  | 3,997  | 3,829  | 3,775  | 5,573  | 8,181  | 9,428  | 7,298  | 4,703  | 4,264        |
| 10%                    | 5,393  | 4,236  | 4,778  | 4,564  | 5,401  | 5,057  | 4,734  | 7,414  | 8,916  | 10,097 | 8,058  | 5,353  | 5,086        |
| 25%                    | 6,537  | 4,987  | 5,607  | 5,272  | 6,470  | 5,872  | 5,236  | 8,488  | 9,348  | 10,555 | 8,515  | 5,952  | 5,591        |
| 50%                    | 7,399  | 5,544  | 7,524  | 8,330  | 8,793  | 8,168  | 6,354  | 9,234  | 10,000 | 11,494 | 9,477  | 6,687  | 7,053        |
| 75%                    | 8,733  | 7,109  | 13,395 | 16,801 | 23,091 | 16,446 | 11,593 | 11,636 | 11,266 | 12,814 | 10,477 | 10,172 | 9,755        |
| 90%                    | 9,698  | 10,422 | 26,946 | 33,909 | 43,532 | 29,990 | 18,217 | 14,815 | 13,540 | 14,688 | 12,638 | 11,341 | 12,594       |
| 100%                   | 13,016 | 35,458 | 42,071 | 74,705 | 83,601 | 73,277 | 44,397 | 26,534 | 30,912 | 17,710 | 15,072 | 13,888 | 17,709       |
| Mean                   | 7,588  | 6,879  | 11,768 | 14,214 | 17,690 | 13,930 | 9,608  | 10,399 | 10,755 | 11,927 | 9,892  | 7,916  | 7,985        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 4,643  | 3,837  | 4,032  | 3,882  | 4,001  | 3,935  | 4,166  | 5,571  | 8,181  | 9,428  | 7,417  | 4,475  | 4,268        |
| 10%                    | 5,385  | 4,261  | 4,975  | 4,524  | 5,205  | 5,127  | 4,778  | 7,404  | 8,884  | 10,060 | 7,987  | 5,353  | 5,200        |
| 25%                    | 6,269  | 4,935  | 5,592  | 5,219  | 6,473  | 5,900  | 5,224  | 8,317  | 9,361  | 10,637 | 8,498  | 5,908  | 5,636        |
| 50%                    | 7,422  | 5,602  | 6,710  | 8,046  | 8,792  | 8,168  | 6,170  | 9,277  | 10,072 | 11,549 | 9,326  | 6,656  | 6,843        |
| 75%                    | 9,001  | 7,301  | 13,339 | 16,674 | 22,634 | 17,070 | 11,577 | 11,636 | 12,033 | 12,745 | 10,548 | 10,291 | 9,742        |
| 90%                    | 10,242 | 11,839 | 26,999 | 33,909 | 43,532 | 29,990 | 18,218 | 14,815 | 13,185 | 14,335 | 12,628 | 11,611 | 12,598       |
| 100%                   | 13,189 | 35,458 | 42,071 | 74,705 | 83,601 | 73,277 | 44,397 | 26,534 | 30,912 | 16,967 | 15,072 | 15,160 | 17,709       |
| Mean                   | 7,629  | 7,076  | 11,606 | 14,061 | 17,604 | 13,933 | 9,580  | 10,375 | 10,953 | 11,914 | 9,864  | 8,021  | 7,988        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 4,332  | 3,837  | 3,753  | 4,169  | 4,355  | 3,927  | 3,983  | 5,582  | 8,188  | 9,428  | 7,177  | 4,680  | 4,269        |
| 10%                    | 5,289  | 4,153  | 4,631  | 4,564  | 5,404  | 5,055  | 4,850  | 7,617  | 8,898  | 10,094 | 7,961  | 5,374  | 5,154        |
| 25%                    | 6,114  | 4,963  | 5,520  | 5,482  | 6,529  | 5,872  | 5,647  | 8,629  | 9,344  | 10,482 | 8,329  | 5,924  | 5,675        |
| 50%                    | 7,147  | 5,521  | 7,022  | 8,330  | 8,793  | 8,168  | 7,143  | 9,905  | 9,978  | 11,419 | 9,362  | 6,609  | 6,976        |
| 75%                    | 8,825  | 7,143  | 13,395 | 16,801 | 22,917 | 16,586 | 11,507 | 11,969 | 11,205 | 12,335 | 10,802 | 10,111 | 9,710        |
| 90%                    | 9,758  | 10,333 | 26,713 | 33,909 | 43,531 | 29,990 | 18,217 | 14,513 | 13,087 | 14,693 | 12,628 | 11,341 | 12,434       |
| 100%                   | 13,272 | 35,458 | 42,071 | 74,705 | 83,601 | 73,277 | 44,397 | 26,534 | 30,912 | 17,159 | 15,072 | 13,888 | 17,709       |
| Mean                   | 7,465  | 6,810  | 11,578 | 14,218 | 17,665 | 13,909 | 9,900  | 10,709 | 10,728 | 11,864 | 9,825  | 7,895  | 7,985        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,670  | 3,743  | 3,956  | 3,782  | 3,986  | 3,914  | 3,821  | 5,522  | 8,066  | 9,428  | 7,178  | 4,648  | 4,281        |
| 10%                    | 5,467  | 4,096  | 4,618  | 4,544  | 4,925  | 5,039  | 4,626  | 7,452  | 8,729  | 10,107 | 8,020  | 5,371  | 5,179        |
| 25%                    | 6,348  | 4,885  | 5,352  | 5,293  | 6,405  | 5,713  | 5,952  | 8,602  | 9,144  | 10,563 | 8,478  | 5,926  | 5,707        |
| 50%                    | 7,432  | 5,484  | 7,068  | 8,330  | 8,793  | 8,169  | 7,433  | 10,160 | 9,818  | 11,467 | 9,442  | 6,788  | 6,872        |
| 75%                    | 8,702  | 6,962  | 13,067 | 16,801 | 22,820 | 17,070 | 11,608 | 12,077 | 11,184 | 12,328 | 10,835 | 10,173 | 9,690        |
| 90%                    | 9,700  | 10,329 | 26,929 | 33,913 | 43,536 | 29,990 | 18,868 | 14,850 | 12,923 | 14,160 | 12,623 | 11,349 | 12,374       |
| 100%                   | 13,884 | 35,066 | 42,104 | 74,705 | 83,601 | 73,277 | 44,397 | 29,440 | 30,912 | 16,959 | 15,073 | 13,888 | 17,709       |
| Mean                   | 7,541  | 6,740  | 11,469 | 14,145 | 17,597 | 13,876 | 10,206 | 10,836 | 10,601 | 11,790 | 9,902  | 7,902  | 7,987        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 5,277  | 3,947  | 3,754  | 4,063  | 4,009  | 3,932  | 3,689  | 5,340  | 5,983  | 6,809  | 6,352  | 4,995  | 3,904        |
| 10%                    | 5,733  | 4,793  | 4,515  | 4,619  | 5,426  | 5,297  | 4,680  | 6,538  | 7,246  | 7,697  | 7,896  | 6,143  | 4,763        |
| 25%                    | 6,517  | 4,995  | 5,421  | 5,476  | 6,545  | 6,521  | 6,150  | 8,350  | 8,785  | 10,428 | 8,646  | 6,350  | 5,665        |
| 50%                    | 7,422  | 5,478  | 7,128  | 8,046  | 9,499  | 9,082  | 7,884  | 11,101 | 10,706 | 11,328 | 9,660  | 7,237  | 7,173        |
| 75%                    | 8,771  | 7,099  | 13,463 | 16,801 | 23,780 | 18,004 | 12,082 | 13,703 | 12,236 | 12,395 | 10,137 | 9,229  | 9,781        |
| 90%                    | 9,707  | 8,987  | 25,093 | 33,909 | 43,638 | 29,978 | 18,218 | 15,006 | 13,251 | 13,706 | 11,617 | 11,061 | 12,611       |
| 100%                   | 11,202 | 33,234 | 42,071 | 74,705 | 83,601 | 73,277 | 44,397 | 26,489 | 30,912 | 16,959 | 15,072 | 13,888 | 17,709       |
| Mean                   | 7,653  | 6,560  | 11,033 | 14,073 | 17,771 | 14,449 | 10,385 | 11,107 | 10,733 | 11,187 | 9,648  | 7,950  | 7,983        |

**Table H1a2-58. Water Year Average of Monthly Flows (cfs) — Sacramento River above Bend Bridge (SWRCB Sac Abv Bend Bridge)**

| Water Year Type        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |        |        |        |        |
| C                      | 6,499 | 5,024 | 6,550  | 6,006  | 6,010  | 5,808  | 4,960  | 8,285  | 9,689  | 10,535 | 8,714  | 5,650  |
| D                      | 7,662 | 6,115 | 7,838  | 6,100  | 8,425  | 8,039  | 5,725  | 8,886  | 11,149 | 11,458 | 9,195  | 6,054  |
| BN                     | 7,517 | 5,935 | 8,004  | 9,012  | 13,716 | 8,656  | 7,660  | 9,205  | 10,689 | 12,575 | 9,237  | 6,470  |
| AN                     | 7,478 | 7,179 | 10,268 | 16,332 | 23,598 | 17,138 | 9,576  | 12,164 | 10,039 | 13,352 | 9,214  | 9,380  |
| W                      | 8,202 | 8,908 | 20,416 | 26,989 | 30,867 | 24,639 | 16,183 | 12,686 | 11,364 | 12,032 | 11,717 | 10,819 |
| All                    | 7,588 | 6,879 | 11,768 | 14,214 | 17,690 | 13,930 | 9,608  | 10,399 | 10,755 | 11,927 | 9,892  | 7,916  |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |        |        |        |        |
| C                      | 6,566 | 5,040 | 6,320  | 5,547  | 6,052  | 5,827  | 5,115  | 8,313  | 10,147 | 10,616 | 8,711  | 5,737  |
| D                      | 7,658 | 6,427 | 7,789  | 6,087  | 8,568  | 7,932  | 5,553  | 8,771  | 11,792 | 11,747 | 9,064  | 6,032  |
| BN                     | 7,553 | 5,994 | 7,863  | 9,024  | 13,482 | 8,715  | 7,583  | 9,190  | 10,601 | 12,405 | 9,184  | 6,419  |
| AN                     | 7,502 | 8,233 | 10,156 | 16,017 | 23,013 | 17,253 | 9,571  | 12,180 | 10,038 | 12,969 | 9,227  | 9,352  |
| W                      | 8,273 | 8,861 | 20,175 | 26,859 | 30,837 | 24,634 | 16,182 | 12,680 | 11,356 | 11,997 | 11,753 | 11,181 |
| All                    | 7,629 | 7,076 | 11,606 | 14,061 | 17,604 | 13,933 | 9,580  | 10,375 | 10,953 | 11,914 | 9,864  | 8,021  |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |        |        |        |        |
| C                      | 6,420 | 4,861 | 6,083  | 5,851  | 6,139  | 5,804  | 5,241  | 8,753  | 9,722  | 10,427 | 8,485  | 5,768  |
| D                      | 7,616 | 6,035 | 7,698  | 6,125  | 8,333  | 7,927  | 6,554  | 9,809  | 11,078 | 11,263 | 9,052  | 5,988  |
| BN                     | 7,474 | 5,997 | 7,958  | 9,341  | 13,692 | 8,655  | 7,840  | 9,346  | 10,596 | 12,496 | 9,182  | 6,417  |
| AN                     | 7,422 | 7,168 | 10,016 | 16,319 | 23,661 | 17,154 | 9,795  | 12,187 | 10,065 | 13,546 | 9,220  | 9,269  |
| W                      | 7,922 | 8,789 | 20,270 | 26,864 | 30,774 | 24,646 | 16,184 | 12,686 | 11,358 | 11,999 | 11,756 | 10,813 |
| All                    | 7,465 | 6,810 | 11,578 | 14,218 | 17,665 | 13,909 | 9,900  | 10,709 | 10,728 | 11,864 | 9,825  | 7,895  |
| <b>VA</b>              |       |       |        |        |        |        |        |        |        |        |        |        |
| C                      | 6,612 | 4,836 | 6,066  | 5,758  | 5,862  | 5,503  | 4,897  | 8,506  | 9,559  | 10,519 | 8,631  | 5,788  |
| D                      | 7,525 | 6,086 | 7,741  | 6,093  | 8,401  | 7,934  | 6,783  | 9,749  | 11,201 | 11,609 | 9,578  | 6,273  |
| BN                     | 7,558 | 5,788 | 7,750  | 9,021  | 13,607 | 8,655  | 8,679  | 9,936  | 10,311 | 12,034 | 9,161  | 6,120  |
| AN                     | 7,533 | 7,001 | 9,902  | 16,323 | 23,677 | 17,279 | 11,043 | 12,739 | 9,464  | 12,864 | 8,790  | 9,156  |
| W                      | 8,039 | 8,733 | 20,067 | 26,896 | 30,696 | 24,646 | 16,181 | 12,685 | 11,356 | 12,017 | 11,732 | 10,852 |
| All                    | 7,541 | 6,740 | 11,469 | 14,145 | 17,597 | 13,876 | 10,206 | 10,836 | 10,601 | 11,790 | 9,902  | 7,902  |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |        |        |        |        |
| C                      | 7,007 | 4,930 | 5,495  | 5,457  | 6,230  | 5,887  | 4,625  | 6,450  | 7,188  | 7,701  | 8,150  | 6,484  |
| D                      | 7,171 | 6,060 | 7,516  | 6,270  | 8,490  | 8,631  | 7,200  | 9,102  | 9,223  | 11,247 | 9,438  | 6,717  |
| BN                     | 7,746 | 5,819 | 7,845  | 9,018  | 13,594 | 9,858  | 8,788  | 10,884 | 11,220 | 11,939 | 9,442  | 6,568  |
| AN                     | 7,588 | 6,061 | 9,964  | 16,195 | 24,777 | 17,724 | 10,246 | 14,114 | 11,867 | 12,076 | 8,975  | 9,278  |
| W                      | 8,319 | 8,466 | 19,011 | 26,741 | 30,577 | 24,879 | 16,859 | 14,000 | 12,970 | 12,171 | 11,001 | 9,981  |
| All                    | 7,653 | 6,560 | 11,033 | 14,073 | 17,771 | 14,449 | 10,385 | 11,107 | 10,733 | 11,187 | 9,648  | 7,950  |

## H1a2.2.30 Sacramento River below Wilkins Slough (SWRCB Sac Blw Wilkins Slough)

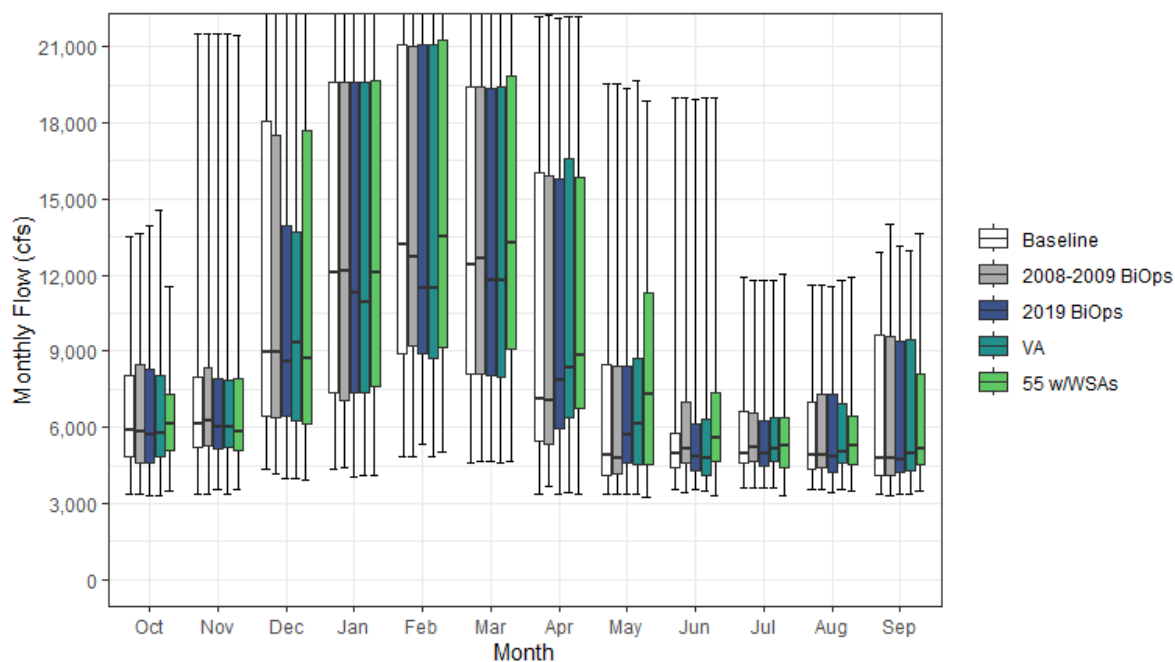


Figure H1a2-30. Sacramento River Streamflow below Wilkins Slough Monthly Boxplot (cfs)

**Table H1a2-59. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River below Wilkins Slough (SWRCB Sac Blw Wilkins Slough)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,335  | 3,351  | 4,351  | 4,353  | 4,818  | 4,576  | 3,361  | 3,357  | 3,518  | 3,604  | 3,520  | 3,348  | 3,229        |
| 10%                    | 3,723  | 4,146  | 5,592  | 5,688  | 6,952  | 6,700  | 4,693  | 3,562  | 3,753  | 3,789  | 3,706  | 3,460  | 3,955        |
| 25%                    | 4,834  | 5,193  | 6,467  | 7,335  | 8,875  | 8,105  | 5,475  | 4,117  | 4,379  | 4,588  | 4,355  | 4,126  | 4,813        |
| 50%                    | 5,873  | 6,155  | 8,959  | 12,105 | 13,174 | 12,415 | 7,104  | 4,900  | 4,950  | 4,987  | 4,873  | 4,793  | 6,062        |
| 75%                    | 8,066  | 7,973  | 18,038 | 19,590 | 21,102 | 19,385 | 16,018 | 8,485  | 5,778  | 6,641  | 6,998  | 9,647  | 8,076        |
| 90%                    | 9,422  | 12,080 | 21,238 | 21,856 | 22,473 | 21,584 | 19,734 | 13,778 | 7,909  | 8,701  | 9,042  | 10,164 | 9,298        |
| 100%                   | 13,488 | 21,521 | 22,570 | 23,658 | 24,653 | 23,824 | 22,181 | 19,529 | 19,010 | 11,921 | 11,623 | 12,893 | 11,890       |
| Mean                   | 6,501  | 7,405  | 11,568 | 13,393 | 14,659 | 13,653 | 9,956  | 7,001  | 5,666  | 5,698  | 5,715  | 6,507  | 6,485        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,335  | 3,356  | 4,148  | 4,415  | 4,823  | 4,677  | 3,643  | 3,357  | 3,454  | 3,605  | 3,518  | 3,275  | 3,244        |
| 10%                    | 3,791  | 4,348  | 5,561  | 5,604  | 6,704  | 6,778  | 4,650  | 3,562  | 3,750  | 3,827  | 3,712  | 3,586  | 4,031        |
| 25%                    | 4,604  | 5,295  | 6,403  | 7,049  | 9,175  | 8,110  | 5,327  | 4,149  | 4,585  | 4,673  | 4,379  | 4,106  | 4,791        |
| 50%                    | 5,844  | 6,242  | 8,970  | 12,133 | 12,724 | 12,664 | 7,022  | 4,801  | 5,158  | 5,182  | 4,873  | 4,763  | 6,045        |
| 75%                    | 8,488  | 8,318  | 17,530 | 19,588 | 21,035 | 19,384 | 15,893 | 8,427  | 6,995  | 6,585  | 7,298  | 9,548  | 8,051        |
| 90%                    | 9,787  | 12,339 | 21,252 | 21,856 | 22,472 | 21,585 | 19,770 | 13,860 | 8,236  | 8,329  | 8,958  | 10,611 | 9,291        |
| 100%                   | 13,652 | 21,489 | 22,620 | 23,609 | 24,651 | 23,823 | 22,230 | 19,529 | 19,010 | 11,762 | 11,623 | 14,025 | 11,878       |
| Mean                   | 6,525  | 7,577  | 11,434 | 13,299 | 14,631 | 13,668 | 9,929  | 6,968  | 5,900  | 5,689  | 5,697  | 6,602  | 6,496        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,324  | 3,538  | 3,950  | 4,030  | 5,313  | 4,669  | 3,359  | 3,357  | 3,518  | 3,637  | 3,403  | 3,375  | 3,226        |
| 10%                    | 3,725  | 4,266  | 5,421  | 5,790  | 6,851  | 6,774  | 4,879  | 3,562  | 3,685  | 3,771  | 3,654  | 3,572  | 3,984        |
| 25%                    | 4,583  | 5,138  | 6,425  | 7,336  | 8,874  | 8,062  | 5,969  | 4,613  | 4,311  | 4,460  | 4,250  | 4,226  | 4,767        |
| 50%                    | 5,704  | 6,002  | 8,618  | 11,294 | 11,460 | 11,784 | 7,853  | 5,724  | 4,858  | 4,956  | 4,858  | 4,736  | 5,952        |
| 75%                    | 8,274  | 7,942  | 13,912 | 19,620 | 21,072 | 19,322 | 15,788 | 8,425  | 6,120  | 6,225  | 7,288  | 9,394  | 7,850        |
| 90%                    | 9,521  | 12,041 | 21,254 | 21,867 | 22,483 | 21,589 | 19,734 | 13,511 | 7,761  | 8,746  | 9,017  | 10,164 | 9,250        |
| 100%                   | 13,930 | 21,489 | 22,630 | 23,619 | 24,661 | 23,829 | 22,135 | 19,374 | 18,947 | 11,762 | 11,541 | 13,160 | 11,925       |
| Mean                   | 6,419  | 7,334  | 11,038 | 12,784 | 14,157 | 13,310 | 10,249 | 7,300  | 5,649  | 5,649  | 5,677  | 6,488  | 6,385        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,325  | 3,350  | 3,957  | 4,127  | 4,808  | 4,622  | 3,417  | 3,357  | 3,516  | 3,637  | 3,518  | 3,375  | 3,124        |
| 10%                    | 4,050  | 4,156  | 5,328  | 5,730  | 6,453  | 6,673  | 4,787  | 3,703  | 3,877  | 3,789  | 3,927  | 3,619  | 4,018        |
| 25%                    | 4,818  | 5,194  | 6,265  | 7,352  | 8,712  | 7,964  | 6,361  | 4,539  | 4,119  | 4,678  | 4,590  | 4,257  | 4,863        |
| 50%                    | 5,770  | 5,981  | 9,356  | 10,911 | 11,460 | 11,760 | 8,363  | 6,140  | 4,766  | 5,149  | 5,026  | 4,945  | 5,979        |
| 75%                    | 8,028  | 7,831  | 13,693 | 19,598 | 21,105 | 19,384 | 16,610 | 8,723  | 6,294  | 6,406  | 6,951  | 9,457  | 7,941        |
| 90%                    | 9,614  | 12,105 | 21,297 | 21,868 | 22,483 | 21,590 | 19,771 | 13,760 | 7,825  | 8,332  | 9,034  | 10,309 | 9,243        |
| 100%                   | 14,560 | 21,476 | 22,632 | 23,619 | 24,661 | 23,829 | 22,181 | 19,687 | 18,991 | 11,762 | 11,781 | 12,939 | 11,913       |
| Mean                   | 6,521  | 7,312  | 10,968 | 12,724 | 14,093 | 13,272 | 10,495 | 7,598  | 5,677  | 5,709  | 5,858  | 6,521  | 6,427        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,517  | 3,529  | 3,937  | 4,080  | 5,010  | 4,631  | 3,347  | 3,266  | 3,291  | 3,287  | 3,498  | 3,464  | 3,188        |
| 10%                    | 4,610  | 4,344  | 4,937  | 5,677  | 7,313  | 7,053  | 4,642  | 3,684  | 3,771  | 3,774  | 3,866  | 4,161  | 4,186        |
| 25%                    | 5,108  | 5,107  | 6,159  | 7,576  | 9,155  | 9,094  | 6,740  | 4,517  | 4,632  | 4,427  | 4,523  | 4,531  | 4,935        |
| 50%                    | 6,157  | 5,836  | 8,727  | 12,101 | 13,484 | 13,251 | 8,816  | 7,296  | 5,584  | 5,269  | 5,292  | 5,136  | 6,297        |
| 75%                    | 7,277  | 7,884  | 17,698 | 19,632 | 21,254 | 19,839 | 15,824 | 11,302 | 7,336  | 6,372  | 6,416  | 8,079  | 8,348        |
| 90%                    | 9,645  | 9,963  | 21,120 | 21,882 | 22,511 | 21,585 | 19,773 | 13,318 | 9,258  | 7,311  | 8,341  | 10,117 | 9,362        |
| 100%                   | 11,563 | 21,447 | 22,568 | 23,608 | 24,651 | 23,824 | 22,181 | 18,846 | 19,005 | 12,046 | 11,910 | 13,634 | 11,992       |
| Mean                   | 6,535  | 6,975  | 11,252 | 13,279 | 14,825 | 14,060 | 10,770 | 8,145  | 6,330  | 5,558  | 5,734  | 6,504  | 6,620        |

**Table H1a2-60. Water Year Average of Monthly Flows (cfs) — Sacramento River below Wilkins Slough (SWRCB Sac Blw Wilkins Slough)**

| Water Year Type        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun   | Jul   | Aug   | Sep    |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,864 | 5,012 | 7,602  | 7,823  | 8,257  | 7,506  | 4,585  | 3,942  | 4,431 | 3,980 | 4,065 | 3,613  |
| D                      | 6,334 | 6,682 | 9,340  | 8,146  | 11,169 | 10,524 | 5,899  | 4,514  | 5,399 | 4,723 | 4,594 | 4,328  |
| BN                     | 6,471 | 6,536 | 8,432  | 12,733 | 14,044 | 12,291 | 9,136  | 5,444  | 5,218 | 5,772 | 4,623 | 4,776  |
| AN                     | 6,513 | 8,048 | 11,286 | 17,508 | 18,594 | 18,140 | 12,078 | 8,652  | 5,214 | 7,447 | 5,508 | 8,479  |
| W                      | 7,509 | 9,504 | 17,415 | 18,983 | 19,448 | 18,294 | 15,466 | 10,782 | 6,985 | 6,583 | 8,190 | 9,957  |
| All                    | 6,501 | 7,405 | 11,568 | 13,393 | 14,659 | 13,653 | 9,956  | 7,001  | 5,666 | 5,698 | 5,715 | 6,507  |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,948 | 5,080 | 7,391  | 7,415  | 8,296  | 7,536  | 4,785  | 4,032  | 4,833 | 4,056 | 4,045 | 3,702  |
| D                      | 6,308 | 6,986 | 9,158  | 8,087  | 11,296 | 10,501 | 5,731  | 4,400  | 6,165 | 5,026 | 4,445 | 4,326  |
| BN                     | 6,478 | 6,536 | 8,352  | 12,728 | 14,049 | 12,370 | 9,017  | 5,387  | 5,198 | 5,580 | 4,661 | 4,697  |
| AN                     | 6,449 | 9,021 | 11,203 | 17,369 | 18,086 | 18,162 | 12,062 | 8,605  | 5,199 | 7,090 | 5,609 | 8,457  |
| W                      | 7,585 | 9,424 | 17,304 | 18,994 | 19,443 | 18,286 | 15,476 | 10,764 | 7,000 | 6,554 | 8,187 | 10,280 |
| All                    | 6,525 | 7,577 | 11,434 | 13,299 | 14,631 | 13,668 | 9,929  | 6,968  | 5,900 | 5,689 | 5,697 | 6,602  |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,821 | 4,909 | 7,088  | 7,353  | 8,088  | 7,477  | 4,856  | 4,413  | 4,465 | 3,871 | 3,967 | 3,680  |
| D                      | 6,270 | 6,581 | 8,873  | 8,047  | 10,472 | 10,185 | 6,740  | 5,435  | 5,310 | 4,570 | 4,416 | 4,304  |
| BN                     | 6,530 | 6,501 | 8,308  | 11,548 | 13,513 | 11,645 | 9,371  | 5,521  | 5,218 | 5,666 | 4,658 | 4,711  |
| AN                     | 6,502 | 7,919 | 10,715 | 16,723 | 18,161 | 17,563 | 12,228 | 8,667  | 5,125 | 7,642 | 5,518 | 8,377  |
| W                      | 7,276 | 9,474 | 16,589 | 18,362 | 18,901 | 18,067 | 15,462 | 10,786 | 7,012 | 6,579 | 8,224 | 9,958  |
| All                    | 6,419 | 7,334 | 11,038 | 12,784 | 14,157 | 13,310 | 10,249 | 7,300  | 5,649 | 5,649 | 5,677 | 6,488  |
| <b>VA</b>              |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,990 | 4,887 | 6,986  | 7,210  | 7,806  | 7,173  | 4,539  | 4,196  | 4,270 | 3,931 | 4,094 | 3,708  |
| D                      | 6,293 | 6,683 | 8,887  | 8,043  | 10,481 | 10,177 | 6,964  | 5,607  | 5,677 | 5,140 | 5,049 | 4,642  |
| BN                     | 6,643 | 6,379 | 8,158  | 11,369 | 13,391 | 11,657 | 10,119 | 6,463  | 5,319 | 5,541 | 4,832 | 4,479  |
| AN                     | 6,645 | 7,843 | 10,692 | 16,750 | 18,182 | 17,640 | 13,107 | 9,503  | 4,786 | 7,196 | 5,424 | 8,292  |
| W                      | 7,378 | 9,446 | 16,509 | 18,347 | 18,904 | 18,068 | 15,455 | 10,828 | 7,010 | 6,586 | 8,215 | 9,983  |
| All                    | 6,521 | 7,312 | 10,968 | 12,724 | 14,093 | 13,272 | 10,495 | 7,598  | 5,677 | 5,709 | 5,858 | 6,521  |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 5,373 | 4,737 | 6,584  | 7,255  | 8,589  | 7,688  | 4,467  | 3,909  | 4,279 | 4,011 | 4,907 | 4,107  |
| D                      | 5,956 | 6,403 | 9,192  | 8,259  | 11,413 | 11,080 | 7,463  | 5,135  | 4,602 | 4,841 | 4,725 | 4,849  |
| BN                     | 6,627 | 6,168 | 8,306  | 12,659 | 14,102 | 13,165 | 10,362 | 7,134  | 6,006 | 5,219 | 4,804 | 4,824  |
| AN                     | 6,378 | 6,646 | 11,024 | 17,179 | 18,786 | 18,152 | 12,745 | 10,673 | 6,936 | 6,297 | 5,459 | 8,339  |
| W                      | 7,582 | 9,232 | 17,209 | 19,007 | 19,528 | 18,573 | 16,025 | 12,240 | 8,654 | 6,830 | 7,615 | 9,324  |
| All                    | 6,535 | 6,975 | 11,252 | 13,279 | 14,825 | 14,060 | 10,770 | 8,145  | 6,330 | 5,558 | 5,734 | 6,504  |

### H1a2.2.31 Sacramento River at Knights Landing (SWRCB Sac at Knights Landing)

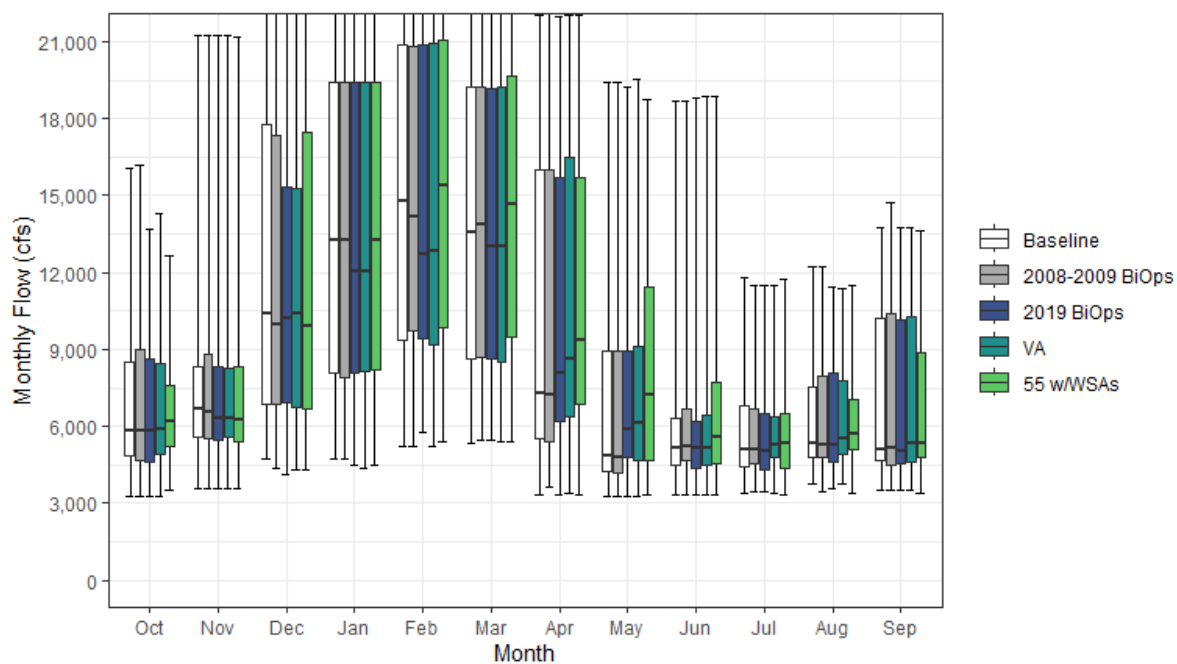


Figure H1a2-31. Sacramento River Streamflow at Knights Landing Monthly Boxplot (cfs)

**Table H1a2-61. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River at Knights Landing (SWRCB Sac at Knights Landing)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,260  | 3,598  | 4,704  | 4,704  | 5,224  | 5,354  | 3,356  | 3,284  | 3,354  | 3,402  | 3,785  | 3,532  | 3,361        |
| 10%                    | 3,802  | 4,411  | 5,941  | 6,596  | 7,509  | 7,014  | 4,785  | 3,490  | 3,646  | 3,567  | 4,153  | 3,716  | 4,294        |
| 25%                    | 4,871  | 5,556  | 6,848  | 8,101  | 9,345  | 8,627  | 5,549  | 4,271  | 4,479  | 4,443  | 4,774  | 4,647  | 5,092        |
| 50%                    | 5,852  | 6,662  | 10,396 | 13,232 | 14,787 | 13,585 | 7,313  | 4,848  | 5,148  | 5,093  | 5,342  | 5,110  | 6,220        |
| 75%                    | 8,503  | 8,323  | 17,776 | 19,397 | 20,901 | 19,208 | 16,011 | 8,905  | 6,333  | 6,831  | 7,540  | 10,231 | 8,384        |
| 90%                    | 9,982  | 12,459 | 20,956 | 21,628 | 22,250 | 21,375 | 19,607 | 13,539 | 7,772  | 8,652  | 9,911  | 10,925 | 9,438        |
| 100%                   | 16,048 | 21,267 | 22,301 | 23,406 | 24,394 | 23,579 | 22,041 | 19,405 | 18,660 | 11,779 | 12,246 | 13,717 | 12,001       |
| Mean                   | 6,784  | 7,723  | 12,072 | 13,869 | 15,111 | 13,996 | 10,114 | 7,040  | 5,742  | 5,697  | 6,250  | 7,020  | 6,708        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,261  | 3,604  | 4,387  | 4,705  | 5,232  | 5,448  | 3,663  | 3,284  | 3,321  | 3,423  | 3,440  | 3,533  | 3,379        |
| 10%                    | 3,774  | 4,608  | 6,106  | 6,375  | 7,469  | 7,140  | 4,658  | 3,518  | 3,730  | 3,628  | 4,044  | 3,782  | 4,330        |
| 25%                    | 4,664  | 5,518  | 6,838  | 7,914  | 9,720  | 8,718  | 5,390  | 4,200  | 4,700  | 4,565  | 4,779  | 4,515  | 5,094        |
| 50%                    | 5,822  | 6,532  | 9,950  | 13,267 | 14,163 | 13,841 | 7,219  | 4,813  | 5,247  | 5,115  | 5,264  | 5,182  | 6,183        |
| 75%                    | 9,009  | 8,835  | 17,323 | 19,395 | 20,835 | 19,207 | 16,009 | 8,907  | 6,655  | 6,682  | 7,981  | 10,378 | 8,368        |
| 90%                    | 10,389 | 12,798 | 20,999 | 21,628 | 22,249 | 21,377 | 19,642 | 13,765 | 7,996  | 8,295  | 9,826  | 11,387 | 9,434        |
| 100%                   | 16,208 | 21,235 | 22,350 | 23,357 | 24,392 | 23,577 | 22,090 | 19,405 | 18,660 | 11,465 | 12,246 | 14,694 | 12,014       |
| Mean                   | 6,817  | 7,893  | 11,946 | 13,768 | 15,099 | 14,011 | 10,085 | 7,021  | 5,954  | 5,702  | 6,227  | 7,123  | 6,721        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,260  | 3,591  | 4,120  | 4,467  | 5,778  | 5,447  | 3,354  | 3,284  | 3,321  | 3,422  | 3,589  | 3,533  | 3,338        |
| 10%                    | 3,659  | 4,425  | 5,852  | 6,506  | 7,539  | 7,234  | 4,873  | 3,505  | 3,576  | 3,594  | 4,124  | 3,796  | 4,199        |
| 25%                    | 4,626  | 5,440  | 6,942  | 8,102  | 9,431  | 8,644  | 6,178  | 4,787  | 4,382  | 4,328  | 4,627  | 4,552  | 5,051        |
| 50%                    | 5,841  | 6,294  | 10,197 | 12,043 | 12,728 | 13,019 | 8,097  | 5,867  | 5,149  | 5,054  | 5,277  | 5,046  | 6,082        |
| 75%                    | 8,647  | 8,329  | 15,320 | 19,408 | 20,872 | 19,149 | 15,678 | 8,905  | 6,194  | 6,491  | 8,065  | 10,135 | 8,145        |
| 90%                    | 10,063 | 12,435 | 20,971 | 21,638 | 22,259 | 21,380 | 19,606 | 13,417 | 7,610  | 8,574  | 9,832  | 10,916 | 9,415        |
| 100%                   | 13,692 | 21,235 | 22,360 | 23,368 | 24,402 | 23,584 | 21,995 | 19,251 | 18,818 | 11,465 | 11,427 | 13,717 | 11,947       |
| Mean                   | 6,676  | 7,649  | 11,611 | 13,393 | 14,719 | 13,692 | 10,395 | 7,308  | 5,707  | 5,639  | 6,210  | 6,991  | 6,622        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,248  | 3,596  | 4,317  | 4,373  | 5,216  | 5,401  | 3,412  | 3,284  | 3,321  | 3,392  | 3,777  | 3,528  | 3,234        |
| 10%                    | 3,886  | 4,465  | 5,763  | 6,501  | 7,059  | 6,942  | 4,762  | 3,565  | 3,631  | 3,600  | 4,144  | 3,807  | 4,173        |
| 25%                    | 4,918  | 5,559  | 6,716  | 8,114  | 9,184  | 8,495  | 6,363  | 4,662  | 4,512  | 4,792  | 4,896  | 4,608  | 5,165        |
| 50%                    | 5,904  | 6,340  | 10,400 | 12,022 | 12,822 | 13,020 | 8,649  | 6,147  | 5,142  | 5,263  | 5,498  | 5,332  | 6,230        |
| 75%                    | 8,459  | 8,238  | 15,263 | 19,405 | 20,904 | 19,211 | 16,506 | 9,106  | 6,442  | 6,372  | 7,799  | 10,277 | 8,184        |
| 90%                    | 10,092 | 12,477 | 21,014 | 21,639 | 22,260 | 21,382 | 19,643 | 13,665 | 7,959  | 8,415  | 9,742  | 11,000 | 9,406        |
| 100%                   | 14,310 | 21,222 | 22,362 | 23,368 | 24,402 | 23,584 | 22,041 | 19,548 | 18,862 | 11,465 | 11,387 | 13,763 | 11,944       |
| Mean                   | 6,776  | 7,636  | 11,585 | 13,334 | 14,642 | 13,652 | 10,624 | 7,622  | 5,787  | 5,724  | 6,316  | 7,043  | 6,668        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 3,536  | 3,573  | 4,314  | 4,510  | 5,410  | 5,404  | 3,342  | 3,304  | 3,349  | 3,343  | 3,388  | 3,373  | 3,312        |
| 10%                    | 4,682  | 4,566  | 5,463  | 6,529  | 7,869  | 7,458  | 4,610  | 3,590  | 3,665  | 3,722  | 4,206  | 4,342  | 4,444        |
| 25%                    | 5,222  | 5,430  | 6,687  | 8,219  | 9,853  | 9,462  | 6,877  | 4,663  | 4,572  | 4,350  | 5,101  | 4,767  | 5,154        |
| 50%                    | 6,224  | 6,239  | 9,883  | 13,235 | 15,413 | 14,685 | 9,366  | 7,241  | 5,575  | 5,318  | 5,697  | 5,341  | 6,493        |
| 75%                    | 7,601  | 8,327  | 17,489 | 19,398 | 21,051 | 19,659 | 15,701 | 11,457 | 7,686  | 6,497  | 7,046  | 8,873  | 8,595        |
| 90%                    | 10,202 | 10,308 | 20,828 | 21,656 | 22,287 | 21,376 | 19,645 | 13,433 | 9,818  | 7,484  | 8,825  | 10,896 | 9,541        |
| 100%                   | 12,653 | 21,194 | 22,299 | 23,357 | 24,392 | 23,579 | 22,041 | 18,726 | 18,855 | 11,745 | 11,514 | 13,652 | 11,960       |
| Mean                   | 6,776  | 7,297  | 11,746 | 13,725 | 15,243 | 14,382 | 10,915 | 8,199  | 6,466  | 5,583  | 6,188  | 6,944  | 6,831        |

**Table H1a2-62. Water Year Average of Monthly Flows (cfs) — Sacramento River at Knights Landing (SWRCB Sac at Knights Landing)**

| Water Year Type        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun   | Jul   | Aug   | Sep    |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|--------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,969 | 5,331 | 8,211  | 8,589  | 9,338  | 8,113  | 4,564  | 3,741  | 4,155 | 3,734 | 4,242 | 3,801  |
| D                      | 6,526 | 7,007 | 10,149 | 8,954  | 11,857 | 11,115 | 6,043  | 4,500  | 5,316 | 4,581 | 5,012 | 4,777  |
| BN                     | 6,757 | 6,910 | 9,019  | 13,447 | 14,603 | 12,880 | 9,374  | 5,432  | 5,210 | 5,613 | 5,042 | 5,138  |
| AN                     | 6,710 | 8,337 | 11,979 | 17,683 | 18,803 | 18,114 | 12,310 | 8,907  | 5,508 | 7,576 | 6,279 | 9,168  |
| W                      | 7,987 | 9,793 | 17,511 | 19,031 | 19,423 | 18,307 | 15,650 | 10,934 | 7,332 | 6,865 | 8,981 | 10,715 |
| All                    | 6,784 | 7,723 | 12,072 | 13,869 | 15,111 | 13,996 | 10,114 | 7,040  | 5,742 | 5,697 | 6,250 | 7,020  |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 5,036 | 5,359 | 7,981  | 8,187  | 9,377  | 8,138  | 4,756  | 3,806  | 4,580 | 3,816 | 4,258 | 3,879  |
| D                      | 6,524 | 7,276 | 10,008 | 8,885  | 11,982 | 11,093 | 5,879  | 4,391  | 5,967 | 4,873 | 4,846 | 4,762  |
| BN                     | 6,787 | 6,886 | 8,931  | 13,447 | 14,607 | 12,958 | 9,252  | 5,409  | 5,164 | 5,467 | 5,020 | 5,129  |
| AN                     | 6,686 | 9,275 | 11,909 | 17,552 | 18,427 | 18,137 | 12,282 | 8,902  | 5,492 | 7,293 | 6,327 | 9,147  |
| W                      | 8,054 | 9,784 | 17,405 | 19,017 | 19,418 | 18,300 | 15,661 | 10,934 | 7,362 | 6,829 | 9,015 | 11,039 |
| All                    | 6,817 | 7,893 | 11,946 | 13,768 | 15,099 | 14,011 | 10,085 | 7,021  | 5,954 | 5,702 | 6,227 | 7,123  |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 4,907 | 5,176 | 7,684  | 8,387  | 9,172  | 8,086  | 4,835  | 4,201  | 4,166 | 3,653 | 4,168 | 3,843  |
| D                      | 6,510 | 6,936 | 9,718  | 8,845  | 11,392 | 10,781 | 6,865  | 5,342  | 5,222 | 4,406 | 4,878 | 4,694  |
| BN                     | 6,829 | 6,834 | 8,879  | 12,409 | 14,198 | 12,356 | 9,609  | 5,567  | 5,150 | 5,545 | 5,042 | 5,107  |
| AN                     | 6,706 | 8,233 | 11,429 | 17,014 | 18,499 | 17,547 | 12,466 | 8,879  | 5,539 | 7,798 | 6,310 | 9,075  |
| W                      | 7,631 | 9,774 | 16,897 | 18,572 | 18,935 | 18,119 | 15,620 | 10,881 | 7,306 | 6,800 | 8,975 | 10,714 |
| All                    | 6,676 | 7,649 | 11,611 | 13,393 | 14,719 | 13,692 | 10,395 | 7,308  | 5,707 | 5,639 | 6,210 | 6,991  |
| <b>VA</b>              |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 5,079 | 5,197 | 7,613  | 8,232  | 8,894  | 7,784  | 4,502  | 3,981  | 4,016 | 3,709 | 4,266 | 3,897  |
| D                      | 6,520 | 7,010 | 9,859  | 8,848  | 11,343 | 10,771 | 7,058  | 5,653  | 5,715 | 5,080 | 5,453 | 5,032  |
| BN                     | 6,926 | 6,748 | 8,746  | 12,235 | 14,072 | 12,366 | 10,336 | 6,485  | 5,217 | 5,418 | 5,155 | 4,906  |
| AN                     | 6,872 | 8,146 | 11,426 | 17,046 | 18,517 | 17,624 | 13,313 | 9,699  | 5,275 | 7,425 | 6,017 | 9,034  |
| W                      | 7,735 | 9,756 | 16,830 | 18,556 | 18,938 | 18,120 | 15,609 | 10,896 | 7,350 | 6,786 | 8,899 | 10,752 |
| All                    | 6,776 | 7,636 | 11,585 | 13,334 | 14,642 | 13,652 | 10,624 | 7,622  | 5,787 | 5,724 | 6,316 | 7,043  |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |       |       |       |        |
| C                      | 5,420 | 5,009 | 7,188  | 8,023  | 9,647  | 8,294  | 4,465  | 3,869  | 4,226 | 3,996 | 4,784 | 4,078  |
| D                      | 6,104 | 6,703 | 10,000 | 9,018  | 12,090 | 11,653 | 7,607  | 5,133  | 4,615 | 4,683 | 5,086 | 5,178  |
| BN                     | 6,883 | 6,511 | 8,896  | 13,245 | 14,547 | 13,637 | 10,580 | 7,120  | 5,918 | 5,064 | 5,378 | 5,174  |
| AN                     | 6,560 | 6,989 | 11,726 | 17,468 | 18,991 | 18,218 | 12,958 | 10,915 | 7,409 | 6,508 | 6,116 | 9,040  |
| W                      | 8,011 | 9,574 | 17,270 | 19,025 | 19,481 | 18,569 | 16,174 | 12,353 | 8,989 | 7,050 | 8,289 | 10,050 |
| All                    | 6,776 | 7,297 | 11,746 | 13,725 | 15,243 | 14,382 | 10,915 | 8,199  | 6,466 | 5,583 | 6,188 | 6,944  |

## H1a2.2.32 Sacramento River at Freeport (SWRCB Sac at Freeport)

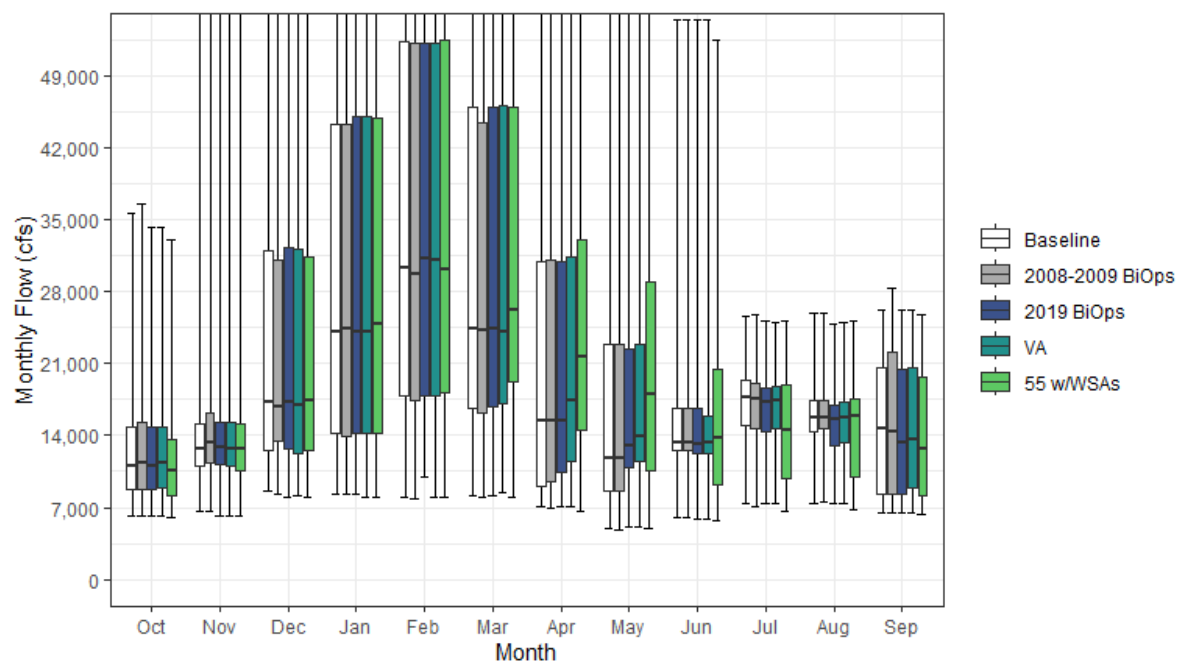


Figure H1a2-32. Sacramento River Streamflow at Freeport Monthly Boxplot (cfs)

**Table H1a2-63. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River at Freeport (SWRCB Sac at Freeport)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 6,203  | 6,571  | 8,552  | 8,255  | 8,052  | 8,084  | 7,013  | 4,895  | 5,952  | 7,387  | 7,427  | 6,537  | 5,899        |
| 10%                    | 6,729  | 8,542  | 11,505 | 11,372 | 12,755 | 11,985 | 8,095  | 7,837  | 9,922  | 8,295  | 9,417  | 6,948  | 7,935        |
| 25%                    | 8,781  | 11,072 | 12,499 | 14,178 | 17,804 | 16,598 | 9,100  | 8,556  | 12,507 | 14,953 | 14,387 | 8,299  | 10,024       |
| 50%                    | 11,078 | 12,748 | 17,296 | 24,151 | 30,337 | 24,353 | 15,426 | 11,728 | 13,277 | 17,651 | 15,733 | 14,689 | 12,870       |
| 75%                    | 14,821 | 15,148 | 31,929 | 44,205 | 52,222 | 45,885 | 30,886 | 22,805 | 16,690 | 19,397 | 17,468 | 20,660 | 19,837       |
| 90%                    | 17,388 | 23,172 | 53,741 | 60,496 | 66,611 | 57,080 | 50,784 | 40,543 | 25,840 | 21,686 | 18,918 | 22,588 | 24,216       |
| 100%                   | 35,589 | 56,904 | 72,293 | 75,591 | 77,015 | 74,297 | 70,682 | 55,797 | 54,413 | 25,593 | 25,828 | 26,223 | 32,365       |
| Mean                   | 12,098 | 15,026 | 25,072 | 30,493 | 35,214 | 30,671 | 22,016 | 17,828 | 16,190 | 16,664 | 15,225 | 14,873 | 15,129       |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 6,132  | 6,684  | 8,308  | 8,309  | 7,891  | 7,974  | 7,006  | 4,843  | 5,947  | 7,151  | 7,610  | 6,540  | 5,955        |
| 10%                    | 6,729  | 8,204  | 11,518 | 11,735 | 13,054 | 11,990 | 8,246  | 8,008  | 9,915  | 8,581  | 9,273  | 7,008  | 8,023        |
| 25%                    | 8,723  | 11,364 | 13,417 | 13,902 | 17,470 | 16,114 | 9,586  | 8,582  | 12,514 | 14,728 | 14,653 | 8,295  | 10,196       |
| 50%                    | 11,361 | 13,340 | 16,743 | 24,344 | 29,762 | 24,156 | 15,426 | 11,748 | 13,309 | 17,585 | 15,694 | 14,369 | 12,769       |
| 75%                    | 15,207 | 16,114 | 30,997 | 44,205 | 52,220 | 44,388 | 31,004 | 22,813 | 16,595 | 19,034 | 17,340 | 22,043 | 20,060       |
| 90%                    | 16,852 | 21,849 | 53,859 | 60,427 | 65,542 | 57,038 | 50,777 | 40,695 | 25,781 | 20,905 | 18,973 | 25,297 | 24,292       |
| 100%                   | 36,458 | 56,905 | 72,295 | 75,592 | 77,015 | 74,296 | 70,681 | 55,807 | 54,414 | 25,736 | 25,828 | 28,400 | 32,371       |
| Mean                   | 12,139 | 15,366 | 24,989 | 30,230 | 34,958 | 30,578 | 22,141 | 17,799 | 16,242 | 16,399 | 15,287 | 15,679 | 15,154       |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 6,191  | 6,182  | 7,924  | 8,270  | 10,017 | 8,174  | 7,010  | 5,121  | 5,868  | 7,388  | 7,428  | 6,539  | 5,990        |
| 10%                    | 6,730  | 8,460  | 11,152 | 11,415 | 12,725 | 12,020 | 8,660  | 8,950  | 9,914  | 8,117  | 9,370  | 7,000  | 7,914        |
| 25%                    | 8,825  | 11,233 | 12,652 | 14,261 | 17,798 | 16,790 | 10,464 | 10,816 | 12,252 | 14,419 | 13,064 | 8,282  | 10,241       |
| 50%                    | 11,064 | 12,884 | 17,287 | 24,037 | 31,216 | 24,338 | 15,437 | 12,985 | 13,181 | 17,189 | 15,546 | 13,289 | 12,981       |
| 75%                    | 14,809 | 15,348 | 32,256 | 44,964 | 52,213 | 45,896 | 30,876 | 22,451 | 16,654 | 18,656 | 16,918 | 20,460 | 19,664       |
| 90%                    | 17,133 | 23,054 | 53,645 | 60,497 | 66,649 | 57,060 | 50,777 | 39,917 | 25,742 | 21,040 | 18,920 | 22,233 | 24,133       |
| 100%                   | 34,176 | 56,904 | 72,295 | 75,591 | 77,015 | 74,297 | 70,659 | 55,798 | 54,413 | 25,141 | 24,840 | 26,223 | 32,275       |
| Mean                   | 12,013 | 15,052 | 25,130 | 30,654 | 35,330 | 30,688 | 22,354 | 18,582 | 16,104 | 16,189 | 14,970 | 14,456 | 15,137       |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 6,153  | 6,248  | 8,185  | 7,980  | 8,022  | 8,400  | 7,086  | 5,066  | 5,865  | 7,382  | 7,441  | 6,536  | 6,062        |
| 10%                    | 6,733  | 8,228  | 11,095 | 11,373 | 12,404 | 11,858 | 8,902  | 8,493  | 9,478  | 8,279  | 9,262  | 6,986  | 7,886        |
| 25%                    | 8,898  | 11,035 | 12,313 | 14,218 | 17,797 | 17,027 | 11,418 | 11,535 | 12,253 | 14,614 | 13,354 | 8,858  | 10,406       |
| 50%                    | 11,262 | 12,763 | 16,903 | 24,076 | 31,125 | 24,024 | 17,348 | 13,850 | 13,337 | 17,365 | 15,663 | 13,625 | 13,041       |
| 75%                    | 14,759 | 15,248 | 32,047 | 44,970 | 52,200 | 46,021 | 31,367 | 22,798 | 15,944 | 18,740 | 17,177 | 20,560 | 19,665       |
| 90%                    | 17,363 | 23,129 | 53,656 | 60,498 | 66,647 | 57,126 | 50,780 | 39,982 | 25,778 | 20,382 | 18,995 | 22,342 | 24,199       |
| 100%                   | 34,185 | 56,933 | 72,261 | 75,595 | 77,017 | 74,297 | 70,696 | 55,818 | 54,415 | 25,060 | 25,011 | 26,212 | 32,279       |
| Mean                   | 12,063 | 14,930 | 24,840 | 30,526 | 35,237 | 30,789 | 23,355 | 19,278 | 16,104 | 16,280 | 15,091 | 14,495 | 15,226       |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | 6,044  | 6,108  | 7,989  | 8,017  | 7,940  | 7,945  | 6,689  | 4,947  | 5,741  | 6,615  | 6,779  | 6,398  | 5,559        |
| 10%                    | 6,625  | 7,858  | 10,136 | 11,479 | 13,678 | 13,369 | 8,996  | 8,086  | 8,460  | 7,392  | 9,127  | 7,330  | 8,085        |
| 25%                    | 8,172  | 10,518 | 12,484 | 14,277 | 18,096 | 19,214 | 14,544 | 10,554 | 9,203  | 9,743  | 9,955  | 8,175  | 9,871        |
| 50%                    | 10,506 | 12,650 | 17,459 | 24,765 | 30,105 | 26,210 | 21,635 | 18,008 | 13,781 | 14,510 | 15,925 | 12,731 | 13,486       |
| 75%                    | 13,625 | 15,149 | 31,353 | 44,915 | 52,437 | 45,899 | 32,964 | 28,932 | 20,445 | 18,977 | 17,504 | 19,633 | 20,494       |
| 90%                    | 16,504 | 20,564 | 52,971 | 59,903 | 64,723 | 56,623 | 50,825 | 40,271 | 27,360 | 20,280 | 18,491 | 21,038 | 24,187       |
| 100%                   | 33,001 | 57,001 | 72,174 | 75,504 | 76,816 | 74,296 | 70,616 | 55,579 | 52,487 | 25,204 | 25,082 | 25,752 | 32,256       |
| Mean                   | 11,419 | 14,380 | 24,801 | 30,660 | 35,580 | 31,909 | 25,470 | 21,064 | 16,593 | 14,437 | 14,203 | 13,575 | 15,290       |

**Table H1a2-64. Water Year Average of Monthly Flows (cfs) — Sacramento River at Freeport (SWRCB Sac at Freeport)**

| Water Year Type        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 9,576  | 10,624 | 14,128 | 14,137 | 15,403 | 12,983 | 8,103  | 7,068  | 9,239  | 8,874  | 9,116  | 7,234  |
| D                      | 11,356 | 12,858 | 17,890 | 15,824 | 21,623 | 19,940 | 10,710 | 9,437  | 13,037 | 16,098 | 14,221 | 9,472  |
| BN                     | 12,086 | 13,278 | 17,856 | 23,917 | 31,659 | 25,369 | 18,221 | 12,686 | 13,444 | 18,909 | 16,176 | 13,706 |
| AN                     | 11,444 | 16,059 | 23,356 | 40,122 | 46,611 | 40,884 | 24,243 | 20,483 | 14,839 | 20,598 | 16,116 | 22,211 |
| W                      | 14,256 | 19,658 | 41,431 | 50,288 | 53,439 | 47,246 | 39,241 | 31,913 | 24,490 | 18,237 | 18,262 | 20,711 |
| All                    | 12,098 | 15,026 | 25,072 | 30,493 | 35,214 | 30,671 | 22,016 | 17,828 | 16,190 | 16,664 | 15,225 | 14,873 |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 9,598  | 10,577 | 14,149 | 14,005 | 15,303 | 12,947 | 8,164  | 7,154  | 9,358  | 9,000  | 9,008  | 7,016  |
| D                      | 11,418 | 13,096 | 18,247 | 15,798 | 21,243 | 19,780 | 11,068 | 9,474  | 13,135 | 15,518 | 14,878 | 9,394  |
| BN                     | 11,771 | 13,585 | 18,133 | 23,594 | 31,322 | 25,111 | 18,281 | 12,496 | 13,467 | 18,358 | 15,830 | 13,699 |
| AN                     | 11,292 | 17,135 | 23,589 | 39,426 | 45,556 | 40,988 | 24,374 | 20,425 | 14,849 | 20,139 | 16,011 | 21,141 |
| W                      | 14,597 | 20,003 | 40,615 | 49,991 | 53,562 | 47,198 | 39,268 | 31,889 | 24,507 | 18,255 | 18,302 | 23,978 |
| All                    | 12,139 | 15,366 | 24,989 | 30,230 | 34,958 | 30,578 | 22,141 | 17,799 | 16,242 | 16,399 | 15,287 | 15,679 |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 9,520  | 10,548 | 13,751 | 14,182 | 15,537 | 12,975 | 8,512  | 7,998  | 9,029  | 8,724  | 9,048  | 6,934  |
| D                      | 11,318 | 12,833 | 17,827 | 15,858 | 21,816 | 19,934 | 11,664 | 11,298 | 12,976 | 15,450 | 13,741 | 9,303  |
| BN                     | 12,168 | 13,412 | 18,127 | 24,316 | 31,736 | 25,404 | 18,416 | 13,726 | 13,318 | 18,430 | 15,729 | 12,543 |
| AN                     | 11,473 | 16,037 | 23,277 | 40,353 | 46,642 | 40,861 | 24,477 | 20,562 | 14,641 | 20,206 | 16,076 | 21,617 |
| W                      | 13,969 | 19,725 | 41,732 | 50,423 | 53,549 | 47,298 | 39,220 | 31,853 | 24,521 | 17,688 | 18,105 | 20,593 |
| All                    | 12,013 | 15,052 | 25,130 | 30,654 | 35,330 | 30,688 | 22,354 | 18,582 | 16,104 | 16,189 | 14,970 | 14,456 |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 9,676  | 10,439 | 13,488 | 14,072 | 15,372 | 12,875 | 8,394  | 7,778  | 8,815  | 8,886  | 9,091  | 6,995  |
| D                      | 11,312 | 12,864 | 17,892 | 15,673 | 21,615 | 20,078 | 13,086 | 12,382 | 13,284 | 15,994 | 14,290 | 9,536  |
| BN                     | 12,287 | 13,343 | 17,464 | 23,969 | 31,493 | 25,644 | 20,556 | 15,266 | 13,338 | 18,119 | 15,612 | 12,289 |
| AN                     | 11,401 | 15,677 | 23,014 | 40,323 | 46,683 | 41,183 | 26,919 | 22,098 | 14,267 | 20,214 | 16,192 | 21,847 |
| W                      | 14,010 | 19,547 | 41,391 | 50,427 | 53,614 | 47,300 | 39,213 | 31,882 | 24,546 | 17,694 | 18,109 | 20,586 |
| All                    | 12,063 | 14,930 | 24,840 | 30,526 | 35,237 | 30,789 | 23,355 | 19,278 | 16,104 | 16,280 | 15,091 | 14,495 |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 9,164  | 9,643  | 13,150 | 13,673 | 16,219 | 14,216 | 8,738  | 7,556  | 7,913  | 7,220  | 8,394  | 7,030  |
| D                      | 10,204 | 12,453 | 18,323 | 16,181 | 22,621 | 22,371 | 15,774 | 12,134 | 9,922  | 10,347 | 11,312 | 9,179  |
| BN                     | 11,668 | 12,585 | 17,876 | 24,192 | 31,757 | 27,310 | 23,911 | 17,795 | 14,278 | 15,982 | 14,045 | 10,923 |
| AN                     | 10,505 | 14,205 | 23,513 | 40,467 | 46,865 | 41,615 | 28,024 | 25,528 | 18,202 | 17,969 | 16,273 | 19,288 |
| W                      | 13,722 | 19,528 | 40,667 | 50,512 | 53,316 | 47,370 | 41,470 | 35,103 | 26,937 | 18,894 | 18,694 | 19,683 |
| All                    | 11,419 | 14,380 | 24,801 | 30,660 | 35,580 | 31,909 | 25,470 | 21,064 | 16,593 | 14,437 | 14,203 | 13,575 |

## H1a2.2.33 Sacramento River at Rio Vista (SWRCB Sac at Rio Vista)

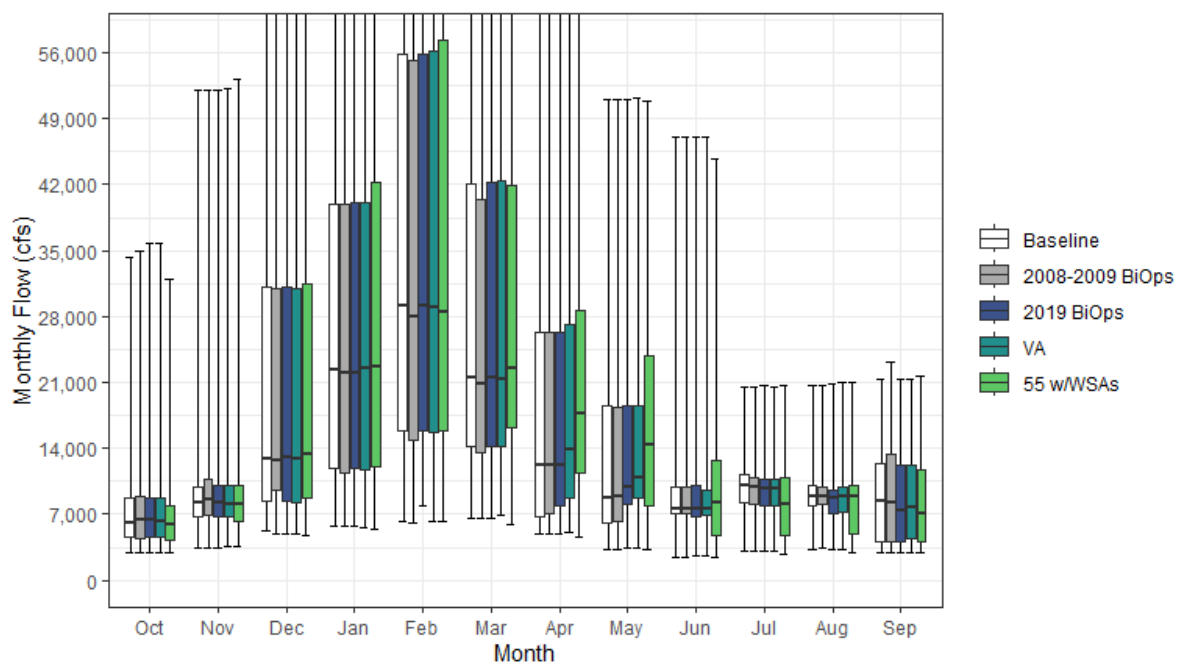


Figure H1a2-33. Sacramento River Streamflow at Rio Vista Monthly Boxplot (cfs)

**Table H1a2-65. Cumulative Distribution of Monthly Flow (cfs) — Sacramento River at Rio Vista (SWRCB Sac at Rio Vista)**

|                        | Oct    | Nov    | Dec     | Jan     | Feb     | Mar     | Apr     | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,000  | 3,511  | 5,184   | 5,751   | 6,278   | 6,599   | 4,867   | 3,233  | 2,506  | 3,143  | 3,295  | 3,001  | 3,619        |
| 10%                    | 3,125  | 4,781  | 7,714   | 8,786   | 10,392  | 9,765   | 5,927   | 5,579  | 5,290  | 3,690  | 4,595  | 3,143  | 5,787        |
| 25%                    | 4,576  | 6,713  | 8,435   | 11,862  | 15,806  | 14,177  | 6,699   | 6,113  | 7,024  | 8,254  | 7,978  | 4,074  | 6,939        |
| 50%                    | 6,075  | 8,264  | 12,903  | 22,266  | 29,088  | 21,591  | 12,182  | 8,817  | 7,639  | 10,058 | 8,832  | 8,332  | 9,542        |
| 75%                    | 8,739  | 9,967  | 31,170  | 40,001  | 55,918  | 42,041  | 26,295  | 18,538 | 9,975  | 11,174 | 10,030 | 12,377 | 18,595       |
| 90%                    | 10,281 | 15,944 | 55,573  | 79,702  | 105,307 | 73,060  | 46,410  | 33,734 | 20,740 | 12,673 | 10,985 | 13,729 | 25,496       |
| 100%                   | 34,269 | 52,117 | 121,047 | 177,089 | 201,265 | 175,683 | 108,681 | 51,048 | 47,062 | 20,501 | 20,732 | 21,353 | 39,775       |
| Mean                   | 7,019  | 10,390 | 23,920  | 34,836  | 43,873  | 33,267  | 20,194  | 14,332 | 10,445 | 9,418  | 8,568  | 8,567  | 13,485       |
| <b>2008-2009 BiOps</b> |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,000  | 3,504  | 4,995   | 5,732   | 6,141   | 6,505   | 4,873   | 3,194  | 2,504  | 3,035  | 3,419  | 3,001  | 3,658        |
| 10%                    | 3,145  | 4,524  | 7,930   | 9,006   | 10,520  | 9,599   | 5,992   | 5,632  | 5,283  | 3,925  | 4,509  | 3,211  | 5,662        |
| 25%                    | 4,442  | 6,833  | 9,595   | 11,400  | 14,862  | 13,620  | 7,114   | 6,221  | 7,053  | 8,047  | 8,137  | 4,049  | 7,113        |
| 50%                    | 6,430  | 8,572  | 12,714  | 21,972  | 28,030  | 20,876  | 12,182  | 8,887  | 7,649  | 9,921  | 8,834  | 8,189  | 9,451        |
| 75%                    | 8,836  | 10,767 | 30,913  | 39,946  | 55,246  | 40,432  | 26,264  | 18,419 | 9,961  | 10,937 | 9,954  | 13,353 | 18,580       |
| 90%                    | 10,021 | 15,103 | 54,655  | 79,754  | 105,472 | 72,407  | 46,393  | 33,785 | 20,689 | 12,206 | 11,035 | 20,570 | 25,545       |
| 100%                   | 35,014 | 52,118 | 121,048 | 177,088 | 201,267 | 175,660 | 108,673 | 51,086 | 47,063 | 20,541 | 20,731 | 23,159 | 39,775       |
| Mean                   | 7,051  | 10,577 | 23,772  | 34,575  | 43,482  | 33,172  | 20,304  | 14,317 | 10,477 | 9,226  | 8,611  | 9,707  | 13,511       |
| <b>2019 BiOps</b>      |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,000  | 3,501  | 4,933   | 5,698   | 7,971   | 6,632   | 4,870   | 3,504  | 2,526  | 3,144  | 3,295  | 3,001  | 3,726        |
| 10%                    | 3,121  | 4,777  | 7,459   | 8,778   | 10,396  | 9,805   | 6,498   | 6,529  | 5,370  | 3,614  | 4,549  | 3,164  | 5,779        |
| 25%                    | 4,583  | 6,726  | 8,357   | 11,818  | 15,806  | 14,150  | 7,906   | 8,092  | 6,827  | 7,857  | 7,079  | 4,102  | 7,135        |
| 50%                    | 6,376  | 8,260  | 13,066  | 21,929  | 29,088  | 21,575  | 12,194  | 9,912  | 7,622  | 9,688  | 8,741  | 7,442  | 9,500        |
| 75%                    | 8,803  | 10,060 | 31,156  | 40,127  | 55,830  | 42,266  | 26,294  | 18,509 | 9,998  | 10,741 | 9,604  | 12,298 | 18,625       |
| 90%                    | 10,209 | 15,984 | 58,507  | 80,553  | 104,886 | 72,750  | 46,393  | 33,817 | 20,727 | 12,313 | 10,985 | 13,486 | 25,316       |
| 100%                   | 35,847 | 52,118 | 121,046 | 177,088 | 201,267 | 175,683 | 108,592 | 51,048 | 47,062 | 20,625 | 20,891 | 21,353 | 39,792       |
| Mean                   | 6,987  | 10,377 | 23,981  | 34,868  | 43,871  | 33,269  | 20,498  | 15,017 | 10,397 | 9,158  | 8,410  | 8,286  | 13,503       |
| <b>VA</b>              |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,000  | 3,541  | 4,913   | 5,644   | 6,251   | 6,835   | 5,081   | 3,389  | 2,526  | 3,139  | 3,257  | 3,000  | 3,761        |
| 10%                    | 3,157  | 4,584  | 7,313   | 8,734   | 9,966   | 9,438   | 6,683   | 6,182  | 5,066  | 3,688  | 4,507  | 3,151  | 5,677        |
| 25%                    | 4,670  | 6,721  | 8,285   | 11,697  | 15,770  | 14,276  | 8,800   | 8,685  | 6,874  | 7,967  | 7,241  | 4,461  | 7,340        |
| 50%                    | 6,286  | 8,073  | 12,917  | 22,528  | 28,923  | 21,322  | 13,965  | 10,902 | 7,630  | 9,752  | 8,839  | 7,662  | 9,725        |
| 75%                    | 8,698  | 10,137 | 30,970  | 40,132  | 56,190  | 42,357  | 27,110  | 18,522 | 9,492  | 10,744 | 9,876  | 12,304 | 18,646       |
| 90%                    | 10,304 | 16,002 | 56,873  | 81,318  | 104,235 | 73,483  | 46,398  | 33,874 | 20,686 | 11,763 | 11,049 | 13,596 | 25,257       |
| 100%                   | 35,849 | 52,166 | 121,078 | 177,161 | 200,973 | 175,683 | 108,730 | 51,129 | 47,061 | 20,553 | 21,040 | 21,357 | 39,795       |
| Mean                   | 7,031  | 10,306 | 23,577  | 34,753  | 43,729  | 33,359  | 21,369  | 15,611 | 10,381 | 9,169  | 8,538  | 8,314  | 13,565       |
| <b>55 w/WSAs</b>       |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,000  | 3,537  | 4,726   | 5,451   | 6,183   | 5,896   | 4,526   | 3,191  | 2,431  | 2,735  | 2,914  | 3,003  | 3,361        |
| 10%                    | 3,089  | 4,332  | 6,863   | 8,756   | 11,175  | 10,795  | 6,615   | 5,636  | 4,422  | 3,114  | 4,488  | 3,439  | 5,647        |
| 25%                    | 4,187  | 6,223  | 8,657   | 12,084  | 15,864  | 16,192  | 11,446  | 7,933  | 4,812  | 4,770  | 4,990  | 4,018  | 7,069        |
| 50%                    | 5,909  | 8,062  | 13,467  | 22,700  | 28,484  | 22,561  | 17,732  | 14,441 | 8,204  | 8,076  | 8,979  | 7,002  | 10,356       |
| 75%                    | 7,953  | 9,997  | 31,471  | 42,304  | 57,330  | 41,892  | 28,607  | 23,840 | 12,689 | 10,973 | 10,105 | 11,704 | 19,049       |
| 90%                    | 9,784  | 14,082 | 53,645  | 79,410  | 99,293  | 67,839  | 46,667  | 34,302 | 22,216 | 11,767 | 10,794 | 12,690 | 25,778       |
| 100%                   | 32,020 | 53,121 | 119,429 | 171,374 | 194,702 | 175,670 | 106,466 | 50,863 | 44,761 | 20,689 | 21,067 | 21,737 | 39,831       |
| Mean                   | 6,559  | 9,829  | 23,607  | 35,233  | 43,761  | 34,167  | 23,253  | 17,191 | 10,795 | 7,969  | 7,971  | 7,714  | 13,680       |

**Table H1a2-66. Water Year Average of Monthly Flows (cfs) — Sacramento River at Rio Vista (SWRCB Sac at Rio Vista)**

| Water Year Type        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 5,105 | 6,331  | 10,837 | 12,213 | 13,622 | 10,784 | 5,895  | 4,919  | 4,827  | 4,116  | 4,399  | 3,354  |
| D                      | 6,302 | 8,354  | 14,365 | 13,270 | 19,796 | 17,150 | 8,302  | 6,911  | 7,489  | 8,993  | 7,817  | 4,870  |
| BN                     | 6,868 | 8,413  | 14,727 | 21,563 | 31,661 | 22,271 | 14,890 | 9,712  | 7,730  | 10,880 | 9,160  | 7,751  |
| AN                     | 6,476 | 11,197 | 21,062 | 41,909 | 55,745 | 41,745 | 20,409 | 16,600 | 8,700  | 12,010 | 9,156  | 13,470 |
| W                      | 8,878 | 14,976 | 44,870 | 68,295 | 80,650 | 60,650 | 39,813 | 26,815 | 18,027 | 10,596 | 10,732 | 12,613 |
| All                    | 7,019 | 10,390 | 23,920 | 34,836 | 43,873 | 33,267 | 20,194 | 14,332 | 10,445 | 9,418  | 8,568  | 8,567  |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 5,119 | 6,325  | 10,873 | 12,097 | 13,536 | 10,756 | 5,957  | 4,980  | 4,912  | 4,180  | 4,303  | 3,208  |
| D                      | 6,346 | 8,393  | 14,649 | 13,261 | 19,467 | 17,015 | 8,610  | 6,962  | 7,560  | 8,600  | 8,311  | 4,834  |
| BN                     | 6,660 | 8,666  | 14,945 | 21,283 | 31,230 | 22,049 | 14,943 | 9,556  | 7,743  | 10,487 | 8,919  | 7,741  |
| AN                     | 6,376 | 12,039 | 21,209 | 41,269 | 54,049 | 41,721 | 20,525 | 16,558 | 8,707  | 11,669 | 9,089  | 12,748 |
| W                      | 9,116 | 15,073 | 43,958 | 67,934 | 80,595 | 60,600 | 39,837 | 26,809 | 18,022 | 10,600 | 10,742 | 16,776 |
| All                    | 7,051 | 10,577 | 23,772 | 34,575 | 43,482 | 33,172 | 20,304 | 14,317 | 10,477 | 9,226  | 8,611  | 9,707  |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 5,068 | 6,291  | 10,547 | 11,974 | 13,736 | 10,776 | 6,247  | 5,720  | 4,691  | 3,993  | 4,326  | 3,150  |
| D                      | 6,275 | 8,316  | 14,256 | 13,313 | 19,736 | 17,145 | 9,148  | 8,570  | 7,470  | 8,564  | 7,519  | 4,764  |
| BN                     | 6,924 | 8,545  | 15,092 | 21,777 | 31,648 | 22,189 | 15,062 | 10,610 | 7,627  | 10,530 | 8,853  | 6,961  |
| AN                     | 6,496 | 11,176 | 20,939 | 42,094 | 55,722 | 41,685 | 20,609 | 16,677 | 8,558  | 12,148 | 9,135  | 13,072 |
| W                      | 8,769 | 14,908 | 45,123 | 68,284 | 80,643 | 60,741 | 39,821 | 26,830 | 18,076 | 10,284 | 10,672 | 12,534 |
| All                    | 6,987 | 10,377 | 23,981 | 34,868 | 43,871 | 33,269 | 20,498 | 15,017 | 10,397 | 9,158  | 8,410  | 8,286  |
| <b>VA</b>              |       |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 5,179 | 6,214  | 10,340 | 11,912 | 13,597 | 10,701 | 6,161  | 5,531  | 4,542  | 4,116  | 4,356  | 3,190  |
| D                      | 6,275 | 8,375  | 14,242 | 13,145 | 19,645 | 17,280 | 10,379 | 9,453  | 7,645  | 8,889  | 7,974  | 4,925  |
| BN                     | 7,012 | 8,466  | 14,476 | 21,480 | 31,361 | 22,404 | 16,919 | 11,963 | 7,632  | 10,333 | 8,829  | 6,795  |
| AN                     | 6,462 | 10,914 | 20,485 | 42,004 | 55,776 | 42,031 | 22,732 | 18,005 | 8,289  | 11,727 | 9,258  | 13,227 |
| W                      | 8,812 | 14,827 | 44,484 | 68,285 | 80,477 | 60,705 | 39,813 | 26,855 | 18,079 | 10,308 | 10,710 | 12,529 |
| All                    | 7,031 | 10,306 | 23,577 | 34,753 | 43,729 | 33,359 | 21,369 | 15,611 | 10,381 | 9,169  | 8,538  | 8,314  |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |        |        |        |        |
| C                      | 4,827 | 5,610  | 10,079 | 11,891 | 14,372 | 11,851 | 6,435  | 5,335  | 3,934  | 3,059  | 4,056  | 3,306  |
| D                      | 5,529 | 7,861  | 14,807 | 13,707 | 21,012 | 19,856 | 12,698 | 9,286  | 5,347  | 5,161  | 5,973  | 4,698  |
| BN                     | 6,584 | 7,896  | 14,966 | 22,113 | 32,498 | 24,784 | 19,980 | 14,148 | 8,336  | 8,920  | 7,694  | 5,867  |
| AN                     | 5,853 | 9,737  | 20,707 | 43,695 | 55,965 | 41,767 | 23,846 | 21,011 | 11,060 | 10,250 | 9,315  | 11,497 |
| W                      | 8,504 | 14,783 | 43,909 | 68,391 | 78,369 | 59,465 | 41,799 | 29,711 | 19,900 | 11,133 | 11,160 | 11,934 |
| All                    | 6,559 | 9,829  | 23,607 | 35,233 | 43,761 | 34,167 | 23,253 | 17,191 | 10,795 | 7,969  | 7,971  | 7,714  |

## H1a2.2.34 Stony Creek below Black Butte Reservoir (SWRCB Black Butte)

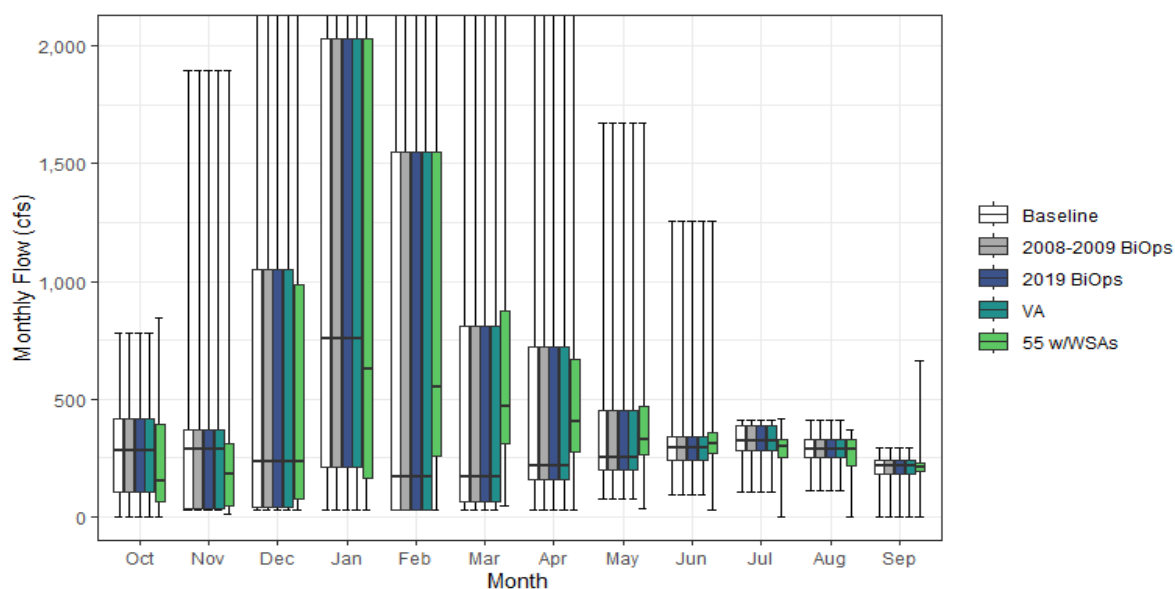


Figure H1a2-34. Stony Creek Streamflow below Black Butte Reservoir Monthly Boxplot (cfs)

**Table H1a2-67. Cumulative Distribution of Monthly Flow (cfs) — Stony Creek below Black Butte Reservoir (SWRCB Black Butte)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 30    | 30    | 30    | 30    | 30    | 30    | 73    | 94    | 104 | 108 | 0   | 44           |
| 10%                    | 53  | 30    | 30    | 64    | 30    | 54    | 89    | 182   | 211   | 248 | 219 | 112 | 125          |
| 25%                    | 102 | 31    | 42    | 209   | 30    | 61    | 159   | 199   | 238   | 279 | 248 | 182 | 165          |
| 50%                    | 279 | 284   | 231   | 755   | 169   | 167   | 213   | 248   | 293   | 320 | 284 | 213 | 283          |
| 75%                    | 416 | 366   | 1,052 | 2,031 | 1,549 | 809   | 724   | 451   | 342   | 384 | 326 | 239 | 590          |
| 90%                    | 532 | 680   | 2,192 | 3,933 | 3,202 | 1,744 | 1,336 | 888   | 383   | 410 | 385 | 255 | 753          |
| 100%                   | 778 | 1,895 | 4,949 | 8,485 | 9,018 | 6,740 | 3,880 | 1,672 | 1,254 | 410 | 410 | 294 | 1,396        |
| Mean                   | 284 | 320   | 776   | 1,384 | 1,096 | 686   | 569   | 400   | 306   | 324 | 289 | 199 | 399          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 30    | 30    | 30    | 30    | 30    | 30    | 73    | 94    | 104 | 108 | 0   | 44           |
| 10%                    | 53  | 30    | 30    | 64    | 30    | 54    | 89    | 182   | 211   | 248 | 219 | 112 | 125          |
| 25%                    | 102 | 31    | 42    | 209   | 30    | 61    | 159   | 199   | 239   | 279 | 248 | 182 | 165          |
| 50%                    | 279 | 284   | 231   | 755   | 169   | 167   | 213   | 248   | 293   | 320 | 284 | 213 | 283          |
| 75%                    | 416 | 366   | 1,052 | 2,031 | 1,549 | 809   | 724   | 451   | 342   | 384 | 326 | 239 | 590          |
| 90%                    | 532 | 680   | 2,192 | 3,933 | 3,202 | 1,744 | 1,336 | 888   | 383   | 410 | 385 | 255 | 753          |
| 100%                   | 778 | 1,895 | 4,949 | 8,485 | 9,018 | 6,740 | 3,880 | 1,672 | 1,254 | 410 | 410 | 294 | 1,396        |
| Mean                   | 284 | 320   | 776   | 1,384 | 1,096 | 687   | 569   | 400   | 306   | 324 | 289 | 199 | 399          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 30    | 30    | 30    | 30    | 30    | 30    | 73    | 94    | 104 | 108 | 0   | 44           |
| 10%                    | 53  | 30    | 30    | 64    | 30    | 54    | 89    | 182   | 211   | 248 | 219 | 112 | 125          |
| 25%                    | 102 | 31    | 42    | 209   | 30    | 61    | 159   | 199   | 238   | 279 | 248 | 182 | 165          |
| 50%                    | 279 | 284   | 231   | 755   | 169   | 167   | 213   | 248   | 293   | 320 | 284 | 213 | 283          |
| 75%                    | 416 | 366   | 1,052 | 2,031 | 1,549 | 809   | 724   | 451   | 342   | 384 | 326 | 239 | 590          |
| 90%                    | 531 | 679   | 2,192 | 3,933 | 3,202 | 1,744 | 1,336 | 888   | 383   | 410 | 385 | 255 | 753          |
| 100%                   | 778 | 1,895 | 4,949 | 8,485 | 9,018 | 6,740 | 3,880 | 1,672 | 1,254 | 410 | 410 | 294 | 1,396        |
| Mean                   | 284 | 320   | 776   | 1,384 | 1,096 | 686   | 569   | 400   | 306   | 324 | 289 | 199 | 399          |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 30    | 30    | 30    | 30    | 30    | 30    | 73    | 94    | 104 | 108 | 0   | 44           |
| 10%                    | 53  | 30    | 30    | 64    | 30    | 54    | 89    | 182   | 211   | 248 | 219 | 112 | 125          |
| 25%                    | 102 | 31    | 42    | 209   | 30    | 61    | 159   | 199   | 238   | 279 | 248 | 182 | 165          |
| 50%                    | 279 | 284   | 231   | 755   | 169   | 167   | 213   | 248   | 293   | 320 | 285 | 213 | 283          |
| 75%                    | 416 | 366   | 1,052 | 2,031 | 1,549 | 809   | 724   | 451   | 342   | 384 | 326 | 239 | 590          |
| 90%                    | 531 | 679   | 2,192 | 3,933 | 3,202 | 1,744 | 1,336 | 888   | 383   | 410 | 385 | 255 | 753          |
| 100%                   | 778 | 1,895 | 4,949 | 8,485 | 9,018 | 6,740 | 3,880 | 1,672 | 1,254 | 410 | 410 | 294 | 1,396        |
| Mean                   | 284 | 320   | 776   | 1,384 | 1,096 | 686   | 569   | 400   | 306   | 324 | 289 | 199 | 399          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 8     | 30    | 30    | 30    | 43    | 30    | 33    | 30    | 0   | 0   | 0   | 20           |
| 10%                    | 34  | 31    | 45    | 89    | 135   | 203   | 209   | 209   | 219   | 188 | 93  | 146 | 153          |
| 25%                    | 64  | 48    | 73    | 164   | 256   | 308   | 277   | 261   | 271   | 251 | 217 | 190 | 194          |
| 50%                    | 150 | 182   | 234   | 629   | 551   | 470   | 405   | 327   | 307   | 299 | 285 | 209 | 298          |
| 75%                    | 393 | 313   | 988   | 2,031 | 1,549 | 875   | 669   | 468   | 356   | 329 | 325 | 229 | 607          |
| 90%                    | 765 | 446   | 2,097 | 3,825 | 3,202 | 1,621 | 1,271 | 729   | 399   | 357 | 338 | 255 | 729          |
| 100%                   | 847 | 1,895 | 4,949 | 7,937 | 9,018 | 6,740 | 3,880 | 1,672 | 1,254 | 418 | 369 | 660 | 1,398        |
| Mean                   | 247 | 239   | 727   | 1,312 | 1,231 | 828   | 622   | 427   | 318   | 279 | 255 | 220 | 403          |

**Table H1a2-68. Water Year Average of Monthly Flows (cfs) — Stony Creek below Black Butte Reservoir (SWRCB Black Butte)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 162 | 111 | 153   | 292   | 123   | 134   | 135   | 187 | 227 | 285 | 246 | 155 |
| D                      | 255 | 270 | 373   | 385   | 236   | 184   | 210   | 251 | 274 | 317 | 268 | 182 |
| BN                     | 305 | 289 | 404   | 786   | 538   | 259   | 345   | 269 | 290 | 305 | 299 | 210 |
| AN                     | 282 | 341 | 848   | 2,077 | 1,734 | 855   | 556   | 475 | 314 | 350 | 299 | 221 |
| W                      | 358 | 478 | 1,611 | 2,801 | 2,345 | 1,553 | 1,212 | 676 | 378 | 353 | 317 | 220 |
| All                    | 284 | 320 | 776   | 1,384 | 1,096 | 686   | 569   | 400 | 306 | 324 | 289 | 199 |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 162 | 111 | 153   | 292   | 123   | 134   | 135   | 187 | 227 | 285 | 246 | 155 |
| D                      | 255 | 270 | 373   | 385   | 236   | 184   | 210   | 251 | 274 | 317 | 268 | 182 |
| BN                     | 305 | 289 | 404   | 786   | 538   | 259   | 345   | 269 | 290 | 305 | 299 | 210 |
| AN                     | 282 | 341 | 848   | 2,077 | 1,734 | 855   | 556   | 475 | 314 | 350 | 299 | 221 |
| W                      | 358 | 478 | 1,611 | 2,801 | 2,345 | 1,553 | 1,212 | 676 | 378 | 353 | 317 | 220 |
| All                    | 284 | 320 | 776   | 1,384 | 1,096 | 687   | 569   | 400 | 306 | 324 | 289 | 199 |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 162 | 111 | 153   | 292   | 123   | 134   | 135   | 187 | 227 | 285 | 246 | 155 |
| D                      | 255 | 270 | 373   | 385   | 236   | 184   | 210   | 251 | 274 | 317 | 268 | 182 |
| BN                     | 305 | 289 | 404   | 786   | 538   | 259   | 345   | 269 | 290 | 305 | 299 | 210 |
| AN                     | 282 | 341 | 848   | 2,077 | 1,734 | 855   | 556   | 475 | 314 | 350 | 299 | 221 |
| W                      | 358 | 478 | 1,611 | 2,801 | 2,345 | 1,553 | 1,212 | 676 | 378 | 353 | 317 | 219 |
| All                    | 284 | 320 | 776   | 1,384 | 1,096 | 686   | 569   | 400 | 306 | 324 | 289 | 199 |
| <b>VA</b>              |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 162 | 111 | 153   | 292   | 123   | 134   | 135   | 187 | 227 | 285 | 246 | 155 |
| D                      | 255 | 270 | 373   | 385   | 236   | 184   | 210   | 251 | 274 | 317 | 268 | 182 |
| BN                     | 305 | 289 | 404   | 786   | 538   | 259   | 345   | 269 | 290 | 305 | 299 | 210 |
| AN                     | 282 | 341 | 848   | 2,077 | 1,734 | 855   | 556   | 475 | 314 | 350 | 299 | 221 |
| W                      | 358 | 478 | 1,611 | 2,801 | 2,345 | 1,553 | 1,212 | 676 | 378 | 353 | 317 | 220 |
| All                    | 284 | 320 | 776   | 1,384 | 1,096 | 686   | 569   | 400 | 306 | 324 | 289 | 199 |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |     |     |     |     |     |
| C                      | 124 | 81  | 142   | 228   | 260   | 258   | 197   | 214 | 214 | 252 | 190 | 105 |
| D                      | 260 | 203 | 342   | 374   | 403   | 397   | 311   | 293 | 282 | 306 | 282 | 194 |
| BN                     | 250 | 177 | 377   | 679   | 692   | 457   | 449   | 323 | 310 | 310 | 306 | 210 |
| AN                     | 128 | 178 | 735   | 1,947 | 1,794 | 937   | 580   | 485 | 350 | 318 | 297 | 226 |
| W                      | 350 | 412 | 1,541 | 2,724 | 2,471 | 1,638 | 1,202 | 683 | 393 | 239 | 222 | 305 |
| All                    | 247 | 239 | 727   | 1,312 | 1,231 | 828   | 622   | 427 | 318 | 279 | 255 | 220 |

### H1a2.2.35 Stony Creek above Confluence with Sacramento River (SWRCB Stony Creek)

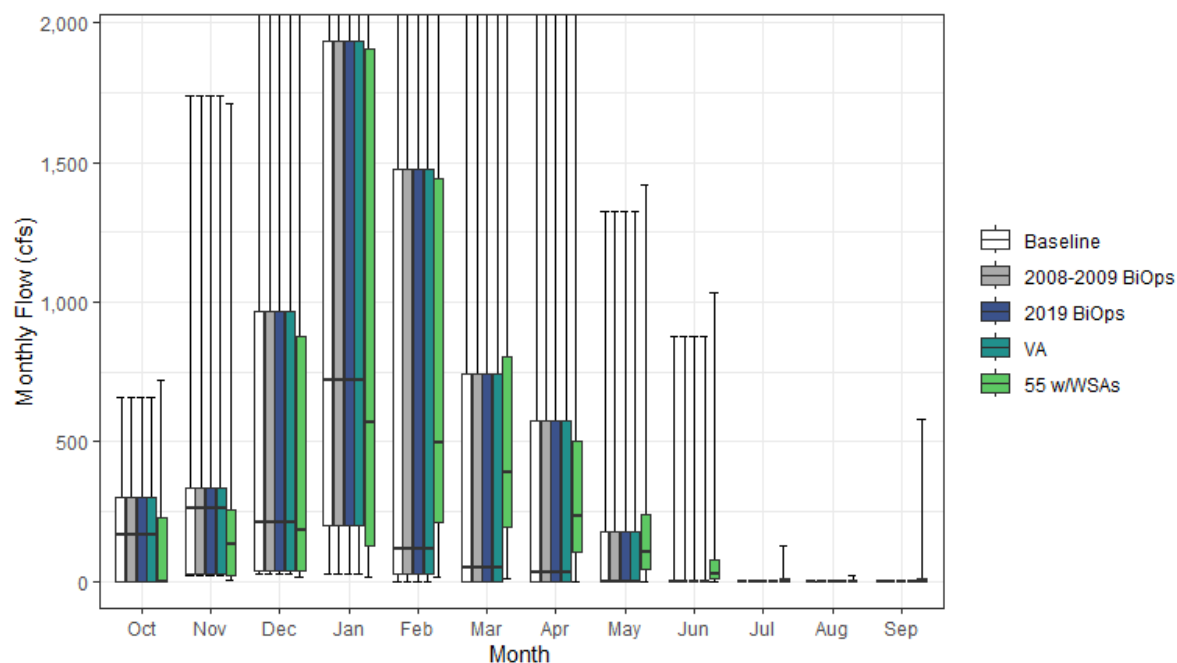


Figure H1a2-35. Stony Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

**Table H1a2-69. Cumulative Distribution of Monthly Flow (cfs) — Stony Creek above Confluence with Sacramento River (SWRCB Stony Creek)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 23    | 27    | 29    | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 5            |
| 10%                    | 0   | 27    | 27    | 61    | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 30           |
| 25%                    | 0   | 28    | 37    | 199   | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 63           |
| 50%                    | 169 | 260   | 211   | 719   | 115   | 49    | 34    | 1     | 0     | 0   | 0   | 0   | 180          |
| 75%                    | 302 | 335   | 964   | 1,934 | 1,475 | 741   | 573   | 177   | 1     | 0   | 0   | 0   | 455          |
| 90%                    | 433 | 622   | 2,010 | 3,745 | 3,048 | 1,632 | 1,111 | 536   | 3     | 0   | 0   | 0   | 606          |
| 100%                   | 658 | 1,738 | 4,538 | 8,078 | 8,586 | 6,389 | 3,344 | 1,325 | 874   | 0   | 0   | 0   | 1,204        |
| Mean                   | 182 | 292   | 711   | 1,318 | 1,040 | 598   | 394   | 156   | 21    | 0   | 0   | 0   | 283          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 23    | 27    | 29    | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 5            |
| 10%                    | 0   | 27    | 27    | 61    | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 30           |
| 25%                    | 0   | 28    | 37    | 199   | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 63           |
| 50%                    | 169 | 260   | 211   | 719   | 115   | 49    | 34    | 1     | 0     | 0   | 0   | 0   | 180          |
| 75%                    | 302 | 335   | 964   | 1,934 | 1,474 | 741   | 573   | 177   | 1     | 0   | 0   | 0   | 455          |
| 90%                    | 433 | 622   | 2,010 | 3,745 | 3,048 | 1,632 | 1,111 | 536   | 3     | 0   | 0   | 0   | 606          |
| 100%                   | 658 | 1,738 | 4,538 | 8,078 | 8,586 | 6,389 | 3,344 | 1,325 | 874   | 0   | 0   | 0   | 1,204        |
| Mean                   | 182 | 292   | 711   | 1,318 | 1,040 | 598   | 394   | 156   | 21    | 0   | 0   | 0   | 283          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 23    | 27    | 29    | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 5            |
| 10%                    | 0   | 27    | 27    | 61    | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 30           |
| 25%                    | 0   | 28    | 37    | 199   | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 63           |
| 50%                    | 169 | 260   | 211   | 719   | 115   | 49    | 34    | 1     | 0     | 0   | 0   | 0   | 180          |
| 75%                    | 302 | 335   | 964   | 1,934 | 1,475 | 741   | 573   | 177   | 1     | 0   | 0   | 0   | 455          |
| 90%                    | 433 | 622   | 2,010 | 3,745 | 3,048 | 1,632 | 1,111 | 536   | 3     | 0   | 0   | 0   | 606          |
| 100%                   | 658 | 1,738 | 4,538 | 8,078 | 8,586 | 6,389 | 3,344 | 1,325 | 874   | 0   | 0   | 0   | 1,205        |
| Mean                   | 182 | 292   | 711   | 1,318 | 1,040 | 598   | 394   | 156   | 21    | 0   | 0   | 0   | 283          |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 23    | 27    | 29    | 0     | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 5            |
| 10%                    | 0   | 27    | 27    | 61    | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 30           |
| 25%                    | 0   | 28    | 37    | 199   | 29    | 0     | 0     | 0     | 0     | 0   | 0   | 0   | 63           |
| 50%                    | 169 | 260   | 211   | 719   | 115   | 49    | 34    | 1     | 0     | 0   | 0   | 0   | 180          |
| 75%                    | 302 | 335   | 964   | 1,934 | 1,475 | 741   | 573   | 177   | 1     | 0   | 0   | 0   | 455          |
| 90%                    | 433 | 622   | 2,010 | 3,745 | 3,048 | 1,632 | 1,111 | 536   | 3     | 0   | 0   | 0   | 606          |
| 100%                   | 658 | 1,738 | 4,538 | 8,078 | 8,586 | 6,389 | 3,344 | 1,325 | 874   | 2   | 0   | 0   | 1,205        |
| Mean                   | 182 | 292   | 711   | 1,318 | 1,040 | 598   | 394   | 156   | 21    | 0   | 0   | 0   | 283          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 0   | 5     | 15    | 15    | 15    | 7     | 1     | 1     | 0     | 0   | 0   | 0   | 6            |
| 10%                    | 0   | 15    | 20    | 55    | 90    | 93    | 44    | 19    | 1     | 0   | 0   | 0   | 48           |
| 25%                    | 0   | 23    | 37    | 126   | 209   | 194   | 105   | 43    | 8     | 0   | 0   | 1   | 83           |
| 50%                    | 0   | 134   | 184   | 569   | 494   | 392   | 231   | 103   | 28    | 0   | 0   | 3   | 181          |
| 75%                    | 226 | 254   | 876   | 1,904 | 1,444 | 803   | 500   | 239   | 75    | 12  | 0   | 8   | 468          |
| 90%                    | 587 | 371   | 1,893 | 3,612 | 3,018 | 1,508 | 1,062 | 513   | 153   | 23  | 4   | 23  | 602          |
| 100%                   | 721 | 1,708 | 4,508 | 7,526 | 8,556 | 6,387 | 3,340 | 1,422 | 1,036 | 129 | 23  | 578 | 1,274        |
| Mean                   | 138 | 192   | 639   | 1,219 | 1,138 | 728   | 437   | 215   | 70    | 9   | 1   | 42  | 289          |

**Table H1a2-70. Water Year Average of Monthly Flows (cfs) — Stony Creek above Confluence with Sacramento River (SWRCB Stony Creek)**

| Water Year Type        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|-------|-------|-------|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |       |       |       |     |     |     |     |     |     |
| C                      | 82  | 101 | 140   | 278   | 103   | 25    | 2   | 4   | 1   | 0   | 0   | 0   |
| D                      | 157 | 246 | 342   | 366   | 222   | 103   | 67  | 35  | 0   | 0   | 0   | 0   |
| BN                     | 192 | 263 | 370   | 748   | 507   | 201   | 179 | 43  | 1   | 0   | 0   | 0   |
| AN                     | 187 | 312 | 777   | 1,978 | 1,651 | 779   | 397 | 212 | 8   | 0   | 0   | 0   |
| W                      | 247 | 438 | 1,477 | 2,667 | 2,232 | 1,445 | 976 | 375 | 64  | 0   | 0   | 0   |
| All                    | 182 | 292 | 711   | 1,318 | 1,040 | 598   | 394 | 156 | 21  | 0   | 0   | 0   |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |     |     |     |     |     |     |
| C                      | 82  | 101 | 140   | 278   | 103   | 25    | 2   | 4   | 1   | 0   | 0   | 0   |
| D                      | 157 | 246 | 342   | 366   | 222   | 103   | 67  | 35  | 0   | 0   | 0   | 0   |
| BN                     | 192 | 263 | 370   | 748   | 507   | 201   | 179 | 43  | 1   | 0   | 0   | 0   |
| AN                     | 187 | 312 | 777   | 1,978 | 1,651 | 779   | 397 | 212 | 8   | 0   | 0   | 0   |
| W                      | 247 | 438 | 1,477 | 2,667 | 2,232 | 1,445 | 976 | 375 | 64  | 0   | 0   | 0   |
| All                    | 182 | 292 | 711   | 1,318 | 1,040 | 598   | 394 | 156 | 21  | 0   | 0   | 0   |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |     |     |     |     |     |     |
| C                      | 82  | 101 | 140   | 278   | 103   | 25    | 2   | 4   | 1   | 0   | 0   | 0   |
| D                      | 157 | 246 | 342   | 366   | 222   | 103   | 67  | 35  | 0   | 0   | 0   | 0   |
| BN                     | 192 | 263 | 370   | 748   | 507   | 201   | 179 | 43  | 1   | 0   | 0   | 0   |
| AN                     | 187 | 312 | 777   | 1,978 | 1,651 | 779   | 397 | 212 | 8   | 0   | 0   | 0   |
| W                      | 247 | 438 | 1,477 | 2,667 | 2,232 | 1,445 | 976 | 375 | 64  | 0   | 0   | 0   |
| All                    | 182 | 292 | 711   | 1,318 | 1,040 | 598   | 394 | 156 | 21  | 0   | 0   | 0   |
| <b>VA</b>              |     |     |       |       |       |       |     |     |     |     |     |     |
| C                      | 82  | 101 | 140   | 278   | 103   | 25    | 2   | 4   | 1   | 0   | 0   | 0   |
| D                      | 157 | 246 | 342   | 366   | 222   | 103   | 67  | 35  | 0   | 0   | 0   | 0   |
| BN                     | 192 | 263 | 370   | 748   | 507   | 201   | 179 | 43  | 1   | 0   | 0   | 0   |
| AN                     | 187 | 312 | 777   | 1,978 | 1,651 | 779   | 397 | 212 | 8   | 0   | 0   | 0   |
| W                      | 247 | 438 | 1,477 | 2,667 | 2,232 | 1,445 | 976 | 375 | 64  | 0   | 0   | 0   |
| All                    | 182 | 292 | 711   | 1,318 | 1,040 | 598   | 394 | 156 | 21  | 0   | 0   | 0   |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |     |     |     |     |     |     |
| C                      | 55  | 57  | 108   | 191   | 203   | 148   | 52  | 27  | 9   | 0   | 0   | 2   |
| D                      | 137 | 159 | 284   | 326   | 350   | 298   | 136 | 73  | 14  | 2   | 1   | 3   |
| BN                     | 131 | 134 | 319   | 616   | 624   | 378   | 267 | 107 | 31  | 3   | 0   | 2   |
| AN                     | 31  | 137 | 643   | 1,823 | 1,678 | 857   | 424 | 258 | 67  | 10  | 1   | 5   |
| W                      | 231 | 347 | 1,383 | 2,563 | 2,322 | 1,524 | 977 | 469 | 168 | 22  | 4   | 130 |
| All                    | 138 | 192 | 639   | 1,219 | 1,138 | 728   | 437 | 215 | 70  | 9   | 1   | 42  |

## H1a2.2.36 Sutter Bypass near Karnak

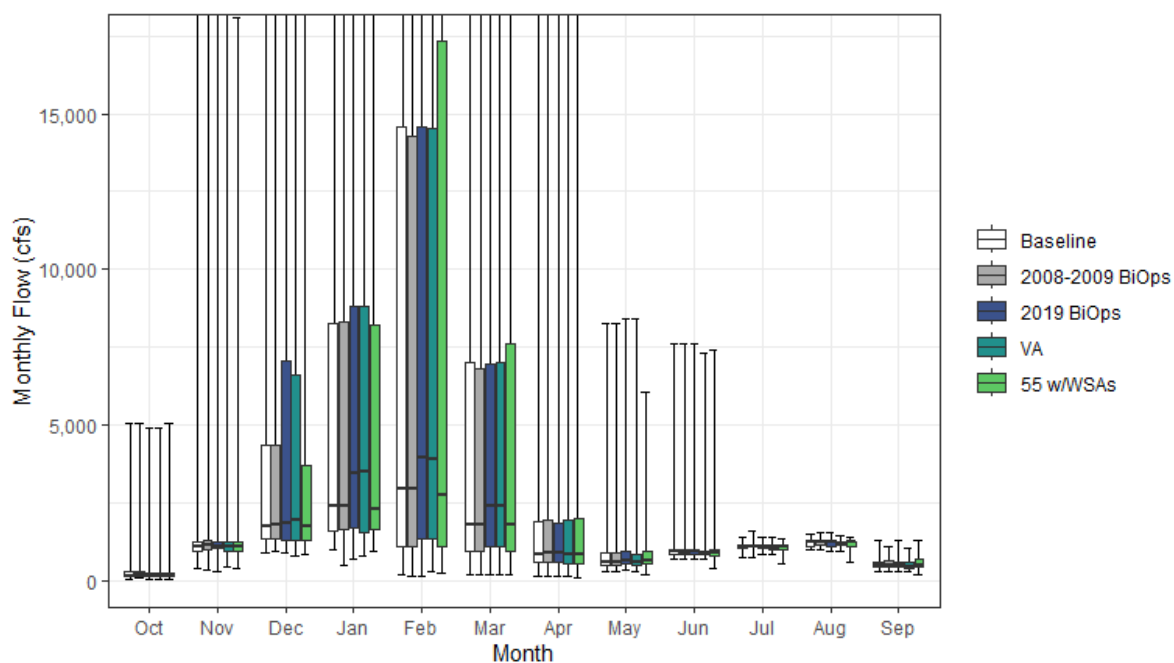


Figure H1a2-36. Sutter Bypass Streamflow near Karnak Monthly Boxplot (cfs)

**Table H1a2-71. Cumulative Distribution of Monthly Flow (cfs) — Sutter Bypass near Karnak**

|                        | Oct   | Nov    | Dec    | Jan    | Feb     | Mar    | Apr    | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|--------|--------|--------|---------|--------|--------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |        |        |        |         |        |        |       |       |       |       |       |              |
| 0%                     | 59    | 396    | 908    | 997    | 174     | 177    | 132    | 283   | 673   | 741   | 975   | 292   | 472          |
| 10%                    | 104   | 843    | 1,145  | 1,233  | 587     | 577    | 363    | 355   | 775   | 877   | 1,061 | 363   | 676          |
| 25%                    | 122   | 962    | 1,333  | 1,569  | 1,091   | 927    | 569    | 473   | 829   | 1,060 | 1,098 | 436   | 835          |
| 50%                    | 155   | 1,100  | 1,729  | 2,372  | 2,945   | 1,769  | 836    | 603   | 922   | 1,097 | 1,248 | 481   | 1,391        |
| 75%                    | 264   | 1,248  | 4,352  | 8,277  | 14,606  | 7,008  | 1,905  | 910   | 1,000 | 1,152 | 1,291 | 605   | 3,569        |
| 90%                    | 539   | 1,495  | 17,897 | 27,589 | 38,972  | 21,497 | 7,847  | 1,177 | 1,106 | 1,223 | 1,443 | 689   | 6,432        |
| 100%                   | 5,072 | 20,109 | 41,198 | 71,772 | 103,813 | 74,776 | 37,338 | 8,274 | 7,619 | 1,390 | 1,503 | 1,265 | 10,125       |
| Mean                   | 288   | 1,419  | 5,393  | 9,117  | 12,378  | 7,065  | 2,941  | 864   | 1,044 | 1,092 | 1,229 | 521   | 2,586        |
| <b>2008-2009 BiOps</b> |       |        |        |        |         |        |        |       |       |       |       |       |              |
| 0%                     | 64    | 360    | 928    | 476    | 127     | 173    | 132    | 283   | 673   | 740   | 976   | 285   | 483          |
| 10%                    | 105   | 845    | 1,144  | 1,259  | 682     | 568    | 321    | 355   | 775   | 913   | 1,060 | 387   | 673          |
| 25%                    | 121   | 993    | 1,315  | 1,655  | 1,091   | 939    | 569    | 465   | 819   | 1,069 | 1,116 | 437   | 839          |
| 50%                    | 160   | 1,115  | 1,810  | 2,370  | 2,936   | 1,769  | 890    | 592   | 908   | 1,106 | 1,256 | 493   | 1,405        |
| 75%                    | 303   | 1,282  | 4,324  | 8,313  | 14,258  | 6,791  | 1,932  | 910   | 986   | 1,156 | 1,302 | 615   | 3,537        |
| 90%                    | 538   | 1,565  | 17,652 | 27,590 | 38,971  | 21,498 | 7,771  | 1,184 | 1,107 | 1,277 | 1,392 | 699   | 6,419        |
| 100%                   | 5,072 | 20,139 | 41,151 | 71,819 | 103,815 | 74,742 | 37,290 | 8,274 | 7,619 | 1,588 | 1,542 | 1,071 | 10,114       |
| Mean                   | 296   | 1,443  | 5,369  | 9,060  | 12,319  | 7,052  | 2,942  | 852   | 1,040 | 1,102 | 1,232 | 526   | 2,579        |
| <b>2019 BiOps</b>      |       |        |        |        |         |        |        |       |       |       |       |       |              |
| 0%                     | 56    | 278    | 908    | 664    | 127     | 177    | 134    | 325   | 673   | 820   | 936   | 292   | 515          |
| 10%                    | 105   | 852    | 1,053  | 1,211  | 682     | 576    | 370    | 453   | 775   | 887   | 1,061 | 375   | 686          |
| 25%                    | 122   | 1,020  | 1,301  | 1,668  | 1,347   | 1,078  | 568    | 551   | 842   | 1,056 | 1,089 | 443   | 902          |
| 50%                    | 150   | 1,103  | 1,819  | 3,466  | 3,939   | 2,386  | 891    | 634   | 927   | 1,095 | 1,238 | 497   | 1,483        |
| 75%                    | 259   | 1,253  | 7,043  | 8,799  | 14,560  | 6,980  | 1,861  | 932   | 995   | 1,142 | 1,280 | 599   | 3,793        |
| 90%                    | 526   | 1,500  | 16,927 | 27,579 | 38,962  | 21,493 | 7,853  | 1,154 | 1,082 | 1,176 | 1,308 | 666   | 6,436        |
| 100%                   | 4,882 | 20,142 | 41,141 | 71,818 | 103,806 | 74,771 | 37,433 | 8,427 | 7,618 | 1,389 | 1,515 | 1,268 | 10,086       |
| Mean                   | 279   | 1,414  | 5,731  | 9,705  | 12,835  | 7,375  | 2,943  | 899   | 1,045 | 1,081 | 1,205 | 520   | 2,687        |
| <b>VA</b>              |       |        |        |        |         |        |        |       |       |       |       |       |              |
| 0%                     | 56    | 430    | 796    | 804    | 310     | 170    | 127    | 296   | 664   | 818   | 951   | 292   | 517          |
| 10%                    | 101   | 822    | 1,081  | 1,128  | 656     | 572    | 342    | 440   | 780   | 875   | 1,066 | 352   | 661          |
| 25%                    | 119   | 917    | 1,288  | 1,518  | 1,341   | 1,090  | 521    | 493   | 813   | 1,003 | 1,125 | 399   | 869          |
| 50%                    | 148   | 1,083  | 1,948  | 3,488  | 3,904   | 2,377  | 822    | 587   | 864   | 1,030 | 1,179 | 452   | 1,434        |
| 75%                    | 252   | 1,234  | 6,625  | 8,792  | 14,532  | 6,986  | 1,951  | 856   | 914   | 1,143 | 1,231 | 592   | 3,744        |
| 90%                    | 531   | 1,470  | 16,444 | 27,601 | 38,916  | 21,491 | 7,777  | 1,195 | 987   | 1,187 | 1,345 | 659   | 6,350        |
| 100%                   | 4,880 | 19,788 | 41,169 | 71,810 | 103,810 | 74,736 | 37,337 | 8,426 | 7,328 | 1,389 | 1,435 | 1,053 | 10,086       |
| Mean                   | 277   | 1,359  | 5,687  | 9,682  | 12,816  | 7,379  | 2,981  | 881   | 998   | 1,053 | 1,186 | 492   | 2,672        |
| <b>55 w/WSAs</b>       |       |        |        |        |         |        |        |       |       |       |       |       |              |
| 0%                     | 47    | 406    | 848    | 924    | 228     | 163    | 95     | 189   | 392   | 524   | 589   | 201   | 384          |
| 10%                    | 97    | 818    | 1,120  | 1,187  | 568     | 572    | 352    | 295   | 534   | 782   | 894   | 380   | 626          |
| 25%                    | 114   | 938    | 1,277  | 1,635  | 1,111   | 930    | 527    | 515   | 809   | 1,004 | 1,068 | 450   | 780          |
| 50%                    | 144   | 1,075  | 1,726  | 2,315  | 2,743   | 1,783  | 841    | 637   | 905   | 1,080 | 1,214 | 504   | 1,356        |
| 75%                    | 253   | 1,245  | 3,700  | 8,235  | 17,336  | 7,597  | 1,986  | 952   | 1,004 | 1,120 | 1,255 | 663   | 3,556        |
| 90%                    | 547   | 1,541  | 15,645 | 26,980 | 38,828  | 21,479 | 7,787  | 1,177 | 1,169 | 1,167 | 1,289 | 713   | 6,173        |
| 100%                   | 5,037 | 18,095 | 41,170 | 71,746 | 103,702 | 74,774 | 37,335 | 6,074 | 7,403 | 1,328 | 1,396 | 1,280 | 10,075       |
| Mean                   | 276   | 1,345  | 4,928  | 8,977  | 12,349  | 7,254  | 2,950  | 865   | 1,006 | 1,028 | 1,143 | 554   | 2,545        |

**Table H1a2-72. Water Year Average of Monthly Flows (cfs) — Sutter Bypass near Karnak**

| Water Year Type        | Oct | Nov   | Dec    | Jan    | Feb    | Mar    | Apr   | May   | Jun   | Jul   | Aug   | Sep |
|------------------------|-----|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-----|
| <b>Baseline</b>        |     |       |        |        |        |        |       |       |       |       |       |     |
| C                      | 157 | 994   | 1,895  | 1,764  | 1,634  | 1,161  | 405   | 526   | 815   | 918   | 1,108 | 379 |
| D                      | 221 | 1,095 | 2,550  | 1,958  | 2,794  | 2,132  | 705   | 543   | 957   | 1,119 | 1,296 | 528 |
| BN                     | 240 | 1,037 | 3,238  | 2,805  | 6,766  | 1,994  | 1,256 | 584   | 905   | 1,095 | 1,316 | 501 |
| AN                     | 258 | 1,041 | 3,782  | 10,790 | 16,743 | 8,154  | 1,570 | 1,222 | 936   | 1,167 | 1,257 | 589 |
| W                      | 450 | 2,276 | 11,354 | 21,616 | 26,945 | 16,607 | 7,548 | 1,315 | 1,362 | 1,134 | 1,177 | 577 |
| All                    | 288 | 1,419 | 5,393  | 9,117  | 12,378 | 7,065  | 2,941 | 864   | 1,044 | 1,092 | 1,229 | 521 |
| <b>2008-2009 BiOps</b> |     |       |        |        |        |        |       |       |       |       |       |     |
| C                      | 162 | 954   | 1,894  | 1,710  | 1,615  | 1,145  | 358   | 501   | 827   | 930   | 1,114 | 370 |
| D                      | 228 | 1,077 | 2,664  | 1,997  | 2,801  | 2,057  | 711   | 506   | 957   | 1,119 | 1,302 | 521 |
| BN                     | 229 | 1,121 | 3,181  | 2,817  | 6,545  | 1,971  | 1,303 | 599   | 892   | 1,136 | 1,302 | 479 |
| AN                     | 287 | 1,095 | 3,766  | 10,631 | 16,695 | 8,234  | 1,589 | 1,234 | 955   | 1,131 | 1,225 | 583 |
| W                      | 461 | 2,316 | 11,234 | 21,484 | 26,915 | 16,610 | 7,535 | 1,301 | 1,342 | 1,148 | 1,201 | 618 |
| All                    | 296 | 1,443 | 5,369  | 9,060  | 12,319 | 7,052  | 2,942 | 852   | 1,040 | 1,102 | 1,232 | 526 |
| <b>2019 BiOps</b>      |     |       |        |        |        |        |       |       |       |       |       |     |
| C                      | 150 | 981   | 1,985  | 2,065  | 1,897  | 1,180  | 407   | 533   | 827   | 929   | 1,093 | 383 |
| D                      | 198 | 1,117 | 2,856  | 2,073  | 3,378  | 2,357  | 705   | 611   | 958   | 1,101 | 1,268 | 545 |
| BN                     | 218 | 1,069 | 3,318  | 4,250  | 7,255  | 2,617  | 1,213 | 635   | 910   | 1,113 | 1,256 | 489 |
| AN                     | 257 | 1,086 | 4,087  | 11,529 | 17,219 | 8,725  | 1,633 | 1,301 | 941   | 1,133 | 1,243 | 574 |
| W                      | 453 | 2,211 | 12,024 | 22,102 | 27,385 | 16,833 | 7,557 | 1,311 | 1,353 | 1,107 | 1,169 | 572 |
| All                    | 279 | 1,414 | 5,731  | 9,705  | 12,835 | 7,375  | 2,943 | 899   | 1,045 | 1,081 | 1,205 | 520 |
| <b>VA</b>              |     |       |        |        |        |        |       |       |       |       |       |     |
| C                      | 150 | 958   | 2,052  | 2,128  | 1,933  | 1,197  | 385   | 499   | 816   | 931   | 1,096 | 380 |
| D                      | 190 | 1,030 | 2,847  | 1,998  | 3,389  | 2,366  | 653   | 547   | 849   | 1,025 | 1,218 | 490 |
| BN                     | 232 | 1,008 | 3,251  | 4,107  | 7,265  | 2,600  | 1,279 | 581   | 849   | 1,051 | 1,195 | 443 |
| AN                     | 254 | 1,007 | 4,029  | 11,497 | 17,171 | 8,756  | 1,971 | 1,381 | 896   | 1,116 | 1,222 | 528 |
| W                      | 447 | 2,176 | 11,914 | 22,148 | 27,308 | 16,829 | 7,555 | 1,318 | 1,341 | 1,115 | 1,189 | 571 |
| All                    | 277 | 1,359 | 5,687  | 9,682  | 12,816 | 7,379  | 2,981 | 881   | 998   | 1,053 | 1,186 | 492 |
| <b>55 w/WSAs</b>       |     |       |        |        |        |        |       |       |       |       |       |     |
| C                      | 150 | 997   | 1,854  | 1,682  | 1,560  | 1,128  | 333   | 346   | 567   | 740   | 844   | 365 |
| D                      | 185 | 1,087 | 2,316  | 1,931  | 2,698  | 2,297  | 670   | 572   | 814   | 1,047 | 1,217 | 588 |
| BN                     | 227 | 1,040 | 3,121  | 2,741  | 6,687  | 2,420  | 1,223 | 680   | 906   | 1,099 | 1,243 | 590 |
| AN                     | 245 | 1,084 | 3,621  | 10,799 | 17,631 | 8,738  | 1,590 | 1,228 | 984   | 1,129 | 1,212 | 642 |
| W                      | 454 | 2,017 | 10,151 | 21,256 | 26,655 | 16,625 | 7,654 | 1,328 | 1,453 | 1,082 | 1,158 | 571 |
| All                    | 276 | 1,345 | 4,928  | 8,977  | 12,349 | 7,254  | 2,950 | 865   | 1,006 | 1,028 | 1,143 | 554 |

## H1a2.2.37 Thomes Creek above Confluence with Sacramento River (SWRCB Thomes Creek)

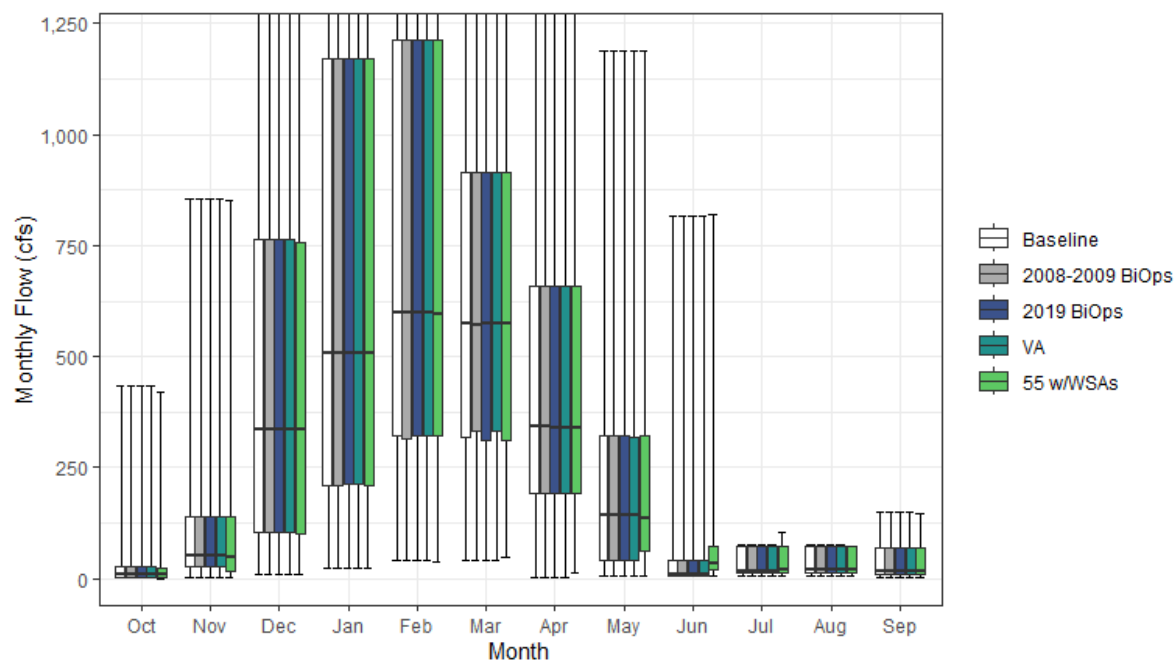


Figure H1a2-37. Thomes Creek Streamflow above Confluence with Sacramento River Monthly Boxplot (cfs)

**Table H1a2-73. Cumulative Distribution of Monthly Flow (cfs) — Thomes Creek above Confluence with Sacramento River (SWRCB Thomes Creek)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 1   | 4   | 9     | 25    | 39    | 43    | 3     | 5     | 6   | 6   | 5   | 4   | 20           |
| 10%                    | 2   | 12  | 37    | 115   | 152   | 193   | 85    | 14    | 6   | 8   | 7   | 5   | 73           |
| 25%                    | 3   | 27  | 102   | 211   | 320   | 318   | 191   | 42    | 7   | 14  | 14  | 11  | 128          |
| 50%                    | 10  | 52  | 335   | 509   | 600   | 576   | 342   | 144   | 9   | 18  | 19  | 17  | 195          |
| 75%                    | 25  | 140 | 762   | 1,170 | 1,213 | 914   | 660   | 321   | 41  | 71  | 71  | 69  | 331          |
| 90%                    | 64  | 286 | 1,241 | 1,784 | 2,097 | 1,471 | 920   | 609   | 137 | 73  | 73  | 70  | 450          |
| 100%                   | 435 | 854 | 2,757 | 4,180 | 5,326 | 2,975 | 2,054 | 1,187 | 816 | 75  | 75  | 148 | 700          |
| Mean                   | 29  | 120 | 519   | 781   | 931   | 702   | 463   | 242   | 50  | 37  | 37  | 37  | 236          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 1   | 4   | 9     | 25    | 39    | 43    | 3     | 5     | 6   | 6   | 5   | 4   | 20           |
| 10%                    | 2   | 12  | 37    | 115   | 152   | 174   | 85    | 14    | 6   | 8   | 7   | 5   | 73           |
| 25%                    | 3   | 27  | 102   | 211   | 316   | 331   | 191   | 42    | 7   | 14  | 14  | 11  | 128          |
| 50%                    | 10  | 52  | 335   | 509   | 600   | 572   | 342   | 144   | 9   | 18  | 19  | 17  | 195          |
| 75%                    | 25  | 140 | 762   | 1,170 | 1,213 | 914   | 660   | 321   | 41  | 71  | 71  | 69  | 331          |
| 90%                    | 64  | 285 | 1,241 | 1,784 | 2,097 | 1,471 | 920   | 609   | 137 | 73  | 73  | 70  | 449          |
| 100%                   | 435 | 854 | 2,757 | 4,180 | 5,326 | 2,975 | 2,054 | 1,190 | 816 | 75  | 75  | 148 | 699          |
| Mean                   | 29  | 120 | 519   | 781   | 930   | 701   | 463   | 242   | 50  | 37  | 37  | 37  | 236          |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 1   | 4   | 9     | 25    | 39    | 43    | 3     | 5     | 6   | 6   | 5   | 4   | 20           |
| 10%                    | 2   | 12  | 37    | 115   | 152   | 193   | 85    | 14    | 6   | 8   | 7   | 5   | 73           |
| 25%                    | 3   | 27  | 102   | 211   | 320   | 312   | 191   | 42    | 7   | 14  | 14  | 11  | 128          |
| 50%                    | 10  | 52  | 335   | 509   | 600   | 576   | 341   | 144   | 9   | 18  | 19  | 17  | 195          |
| 75%                    | 25  | 140 | 762   | 1,170 | 1,213 | 914   | 660   | 321   | 41  | 71  | 71  | 69  | 331          |
| 90%                    | 64  | 286 | 1,241 | 1,784 | 2,097 | 1,471 | 920   | 609   | 137 | 73  | 73  | 70  | 450          |
| 100%                   | 435 | 854 | 2,757 | 4,180 | 5,326 | 2,975 | 2,055 | 1,187 | 816 | 75  | 75  | 148 | 700          |
| Mean                   | 29  | 120 | 519   | 781   | 931   | 702   | 463   | 242   | 50  | 37  | 37  | 37  | 236          |
| <b>VA</b>              |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 1   | 4   | 9     | 25    | 39    | 43    | 3     | 5     | 6   | 6   | 5   | 4   | 24           |
| 10%                    | 2   | 12  | 37    | 115   | 152   | 193   | 85    | 14    | 6   | 8   | 7   | 5   | 74           |
| 25%                    | 3   | 27  | 102   | 211   | 320   | 331   | 191   | 42    | 7   | 14  | 14  | 11  | 128          |
| 50%                    | 10  | 52  | 335   | 509   | 600   | 576   | 341   | 144   | 9   | 18  | 19  | 17  | 195          |
| 75%                    | 25  | 140 | 762   | 1,170 | 1,213 | 914   | 659   | 320   | 41  | 71  | 71  | 69  | 331          |
| 90%                    | 64  | 286 | 1,241 | 1,784 | 2,097 | 1,471 | 920   | 609   | 137 | 73  | 73  | 70  | 450          |
| 100%                   | 435 | 854 | 2,757 | 4,180 | 5,326 | 2,975 | 2,054 | 1,187 | 816 | 75  | 75  | 148 | 700          |
| Mean                   | 29  | 120 | 519   | 781   | 931   | 706   | 463   | 242   | 50  | 37  | 37  | 37  | 237          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |     |     |     |     |              |
| 0%                     | 1   | 3   | 10    | 22    | 39    | 48    | 14    | 7     | 6   | 6   | 6   | 4   | 22           |
| 10%                    | 3   | 11  | 35    | 114   | 151   | 193   | 81    | 37    | 13  | 8   | 7   | 5   | 72           |
| 25%                    | 4   | 16  | 100   | 211   | 320   | 310   | 191   | 63    | 21  | 14  | 14  | 11  | 129          |
| 50%                    | 10  | 48  | 335   | 509   | 597   | 575   | 341   | 136   | 35  | 19  | 18  | 17  | 198          |
| 75%                    | 25  | 139 | 759   | 1,170 | 1,213 | 914   | 660   | 320   | 71  | 72  | 71  | 69  | 332          |
| 90%                    | 58  | 282 | 1,240 | 1,784 | 2,096 | 1,471 | 918   | 609   | 137 | 73  | 73  | 69  | 453          |
| 100%                   | 419 | 853 | 2,756 | 4,180 | 5,326 | 2,975 | 2,054 | 1,187 | 820 | 103 | 74  | 147 | 700          |
| Mean                   | 28  | 116 | 517   | 780   | 929   | 700   | 461   | 246   | 68  | 38  | 37  | 37  | 237          |

**Table H1a2-74. Water Year Average of Monthly Flows (cfs) — Thomes Creek above Confluence with Sacramento River (SWRCB Thomes Creek)**

| Water Year Type        | Oct | Nov | Dec | Jan   | Feb   | Mar   | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-------|-------|-------|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 17  | 25  | 253 | 295   | 402   | 296   | 119 | 48  | 14  | 7   | 7   | 6   |
| D                      | 14  | 107 | 336 | 286   | 583   | 485   | 258 | 104 | 9   | 14  | 14  | 19  |
| BN                     | 23  | 66  | 268 | 631   | 634   | 558   | 462 | 147 | 26  | 18  | 19  | 20  |
| AN                     | 34  | 129 | 556 | 1,116 | 1,246 | 896   | 500 | 337 | 55  | 61  | 60  | 59  |
| W                      | 49  | 211 | 940 | 1,363 | 1,530 | 1,091 | 781 | 468 | 112 | 72  | 72  | 69  |
| All                    | 29  | 120 | 519 | 781   | 931   | 702   | 463 | 242 | 50  | 37  | 37  | 37  |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 17  | 25  | 253 | 295   | 399   | 299   | 119 | 48  | 14  | 7   | 7   | 6   |
| D                      | 14  | 107 | 336 | 286   | 583   | 478   | 258 | 104 | 9   | 14  | 14  | 19  |
| BN                     | 23  | 66  | 268 | 631   | 634   | 558   | 462 | 147 | 25  | 18  | 19  | 20  |
| AN                     | 34  | 129 | 556 | 1,116 | 1,246 | 896   | 500 | 338 | 55  | 61  | 60  | 59  |
| W                      | 49  | 210 | 940 | 1,363 | 1,530 | 1,091 | 781 | 468 | 112 | 72  | 72  | 69  |
| All                    | 29  | 120 | 519 | 781   | 930   | 701   | 463 | 242 | 50  | 37  | 37  | 37  |
| <b>2019 BiOps</b>      |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 17  | 25  | 253 | 295   | 402   | 299   | 119 | 48  | 14  | 7   | 7   | 6   |
| D                      | 14  | 107 | 336 | 286   | 583   | 484   | 258 | 104 | 9   | 14  | 14  | 19  |
| BN                     | 23  | 67  | 268 | 631   | 634   | 559   | 462 | 147 | 26  | 18  | 19  | 20  |
| AN                     | 34  | 129 | 556 | 1,116 | 1,246 | 896   | 500 | 338 | 55  | 61  | 60  | 59  |
| W                      | 49  | 211 | 940 | 1,363 | 1,530 | 1,091 | 781 | 468 | 113 | 72  | 72  | 69  |
| All                    | 29  | 120 | 519 | 781   | 931   | 702   | 463 | 242 | 50  | 37  | 37  | 37  |
| <b>VA</b>              |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 17  | 25  | 253 | 295   | 402   | 312   | 119 | 48  | 14  | 7   | 7   | 6   |
| D                      | 14  | 107 | 336 | 286   | 583   | 488   | 258 | 104 | 9   | 14  | 14  | 19  |
| BN                     | 23  | 67  | 268 | 631   | 634   | 560   | 462 | 146 | 25  | 18  | 19  | 20  |
| AN                     | 34  | 129 | 556 | 1,116 | 1,246 | 896   | 499 | 336 | 55  | 61  | 60  | 59  |
| W                      | 49  | 211 | 940 | 1,363 | 1,530 | 1,092 | 782 | 468 | 112 | 72  | 72  | 69  |
| All                    | 29  | 120 | 519 | 781   | 931   | 706   | 463 | 242 | 50  | 37  | 37  | 37  |
| <b>55 w/WSAs</b>       |     |     |     |       |       |       |     |     |     |     |     |     |
| C                      | 15  | 20  | 251 | 293   | 401   | 296   | 119 | 55  | 17  | 8   | 7   | 6   |
| D                      | 14  | 101 | 334 | 285   | 579   | 479   | 251 | 111 | 26  | 16  | 14  | 19  |
| BN                     | 22  | 64  | 267 | 630   | 632   | 556   | 461 | 151 | 43  | 19  | 19  | 20  |
| AN                     | 33  | 127 | 554 | 1,115 | 1,246 | 896   | 498 | 337 | 83  | 61  | 60  | 59  |
| W                      | 47  | 207 | 938 | 1,363 | 1,529 | 1,091 | 781 | 471 | 136 | 75  | 72  | 69  |
| All                    | 28  | 116 | 517 | 780   | 929   | 700   | 461 | 246 | 68  | 38  | 37  | 37  |

## H1a2.2.38 Trinity River below Lewiston Reservoir (SWRCB Trinity)

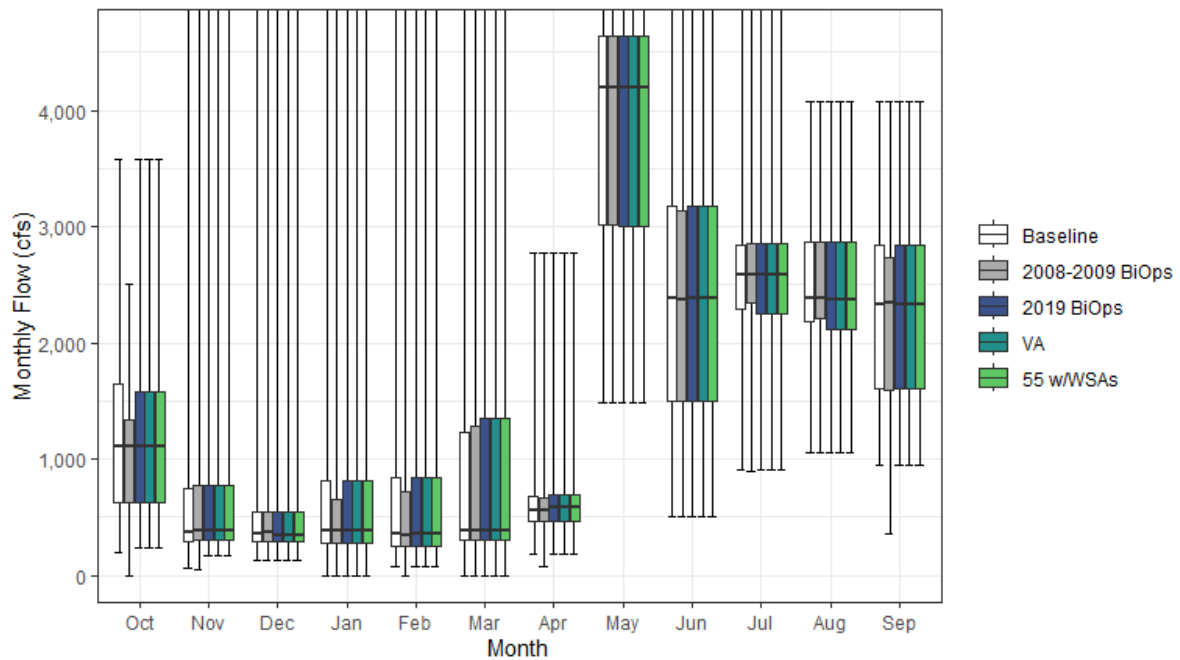


Figure H1a2-38. Trinity River Streamflow below Lewiston Reservoir Monthly Boxplot (cfs)

**Table H1a2-75. Cumulative Distribution of Monthly Flow (cfs) — Trinity River below Lewiston Reservoir (SWRCB Trinity)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 199   | 59    | 134   | 0     | 74    | 0     | 177   | 1,481 | 511   | 904   | 1,060 | 954   | 657          |
| 10%                    | 375   | 277   | 243   | 225   | 175   | 230   | 389   | 2,779 | 1,005 | 1,112 | 1,868 | 1,175 | 810          |
| 25%                    | 625   | 297   | 288   | 281   | 253   | 301   | 463   | 3,010 | 1,505 | 2,295 | 2,184 | 1,601 | 941          |
| 50%                    | 1,112 | 378   | 357   | 384   | 355   | 381   | 565   | 4,193 | 2,379 | 2,580 | 2,378 | 2,335 | 1,091        |
| 75%                    | 1,649 | 749   | 550   | 818   | 840   | 1,236 | 680   | 4,638 | 3,181 | 2,842 | 2,866 | 2,836 | 1,339        |
| 90%                    | 2,199 | 801   | 1,859 | 2,036 | 2,692 | 2,133 | 1,005 | 4,808 | 4,448 | 3,836 | 3,568 | 2,897 | 1,663        |
| 100%                   | 3,576 | 6,095 | 5,637 | 7,952 | 9,461 | 6,170 | 2,779 | 8,633 | 7,808 | 6,611 | 4,079 | 4,075 | 2,824        |
| Mean                   | 1,204 | 588   | 758   | 883   | 894   | 920   | 722   | 3,944 | 2,509 | 2,612 | 2,523 | 2,188 | 1,197        |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 1     | 52    | 134   | 0     | 0     | 0     | 80    | 1,481 | 511   | 896   | 1,060 | 357   | 670          |
| 10%                    | 376   | 275   | 232   | 224   | 181   | 230   | 377   | 2,779 | 999   | 1,112 | 1,868 | 1,175 | 808          |
| 25%                    | 626   | 298   | 288   | 275   | 253   | 301   | 463   | 3,021 | 1,503 | 2,340 | 2,207 | 1,599 | 951          |
| 50%                    | 1,109 | 387   | 366   | 382   | 351   | 381   | 564   | 4,193 | 2,370 | 2,581 | 2,378 | 2,340 | 1,091        |
| 75%                    | 1,336 | 769   | 549   | 658   | 723   | 1,287 | 660   | 4,638 | 3,135 | 2,858 | 2,866 | 2,738 | 1,333        |
| 90%                    | 2,190 | 801   | 2,313 | 2,098 | 2,691 | 2,106 | 1,286 | 4,808 | 4,448 | 4,052 | 3,696 | 2,879 | 1,663        |
| 100%                   | 2,501 | 6,095 | 5,507 | 7,952 | 9,461 | 6,170 | 2,779 | 8,633 | 7,808 | 6,611 | 4,079 | 4,075 | 2,824        |
| Mean                   | 1,156 | 633   | 822   | 870   | 860   | 904   | 721   | 3,950 | 2,468 | 2,648 | 2,551 | 2,159 | 1,197        |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 239   | 165   | 134   | 0     | 74    | 0     | 177   | 1,481 | 511   | 904   | 1,060 | 954   | 661          |
| 10%                    | 375   | 282   | 243   | 225   | 175   | 230   | 404   | 2,696 | 1,005 | 1,112 | 1,840 | 1,160 | 812          |
| 25%                    | 625   | 300   | 288   | 281   | 252   | 301   | 467   | 3,000 | 1,505 | 2,251 | 2,121 | 1,607 | 946          |
| 50%                    | 1,112 | 387   | 347   | 382   | 355   | 380   | 580   | 4,193 | 2,379 | 2,580 | 2,378 | 2,337 | 1,091        |
| 75%                    | 1,573 | 772   | 550   | 818   | 840   | 1,357 | 689   | 4,638 | 3,181 | 2,856 | 2,866 | 2,844 | 1,339        |
| 90%                    | 2,190 | 801   | 1,859 | 2,036 | 2,692 | 2,068 | 1,004 | 4,808 | 4,448 | 4,052 | 3,409 | 2,926 | 1,663        |
| 100%                   | 3,576 | 6,095 | 5,637 | 7,952 | 9,461 | 6,170 | 2,779 | 8,633 | 7,808 | 6,611 | 4,079 | 4,075 | 2,824        |
| Mean                   | 1,185 | 638   | 758   | 880   | 897   | 919   | 729   | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 | 1,197        |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 239   | 165   | 134   | 0     | 74    | 0     | 177   | 1,481 | 511   | 904   | 1,060 | 954   | 661          |
| 10%                    | 375   | 282   | 243   | 225   | 175   | 230   | 404   | 2,696 | 1,005 | 1,112 | 1,840 | 1,160 | 812          |
| 25%                    | 625   | 300   | 288   | 281   | 252   | 301   | 467   | 3,000 | 1,505 | 2,251 | 2,121 | 1,607 | 946          |
| 50%                    | 1,112 | 387   | 347   | 382   | 355   | 380   | 580   | 4,193 | 2,379 | 2,580 | 2,378 | 2,337 | 1,091        |
| 75%                    | 1,573 | 772   | 550   | 818   | 840   | 1,357 | 689   | 4,638 | 3,181 | 2,856 | 2,866 | 2,844 | 1,339        |
| 90%                    | 2,190 | 801   | 1,859 | 2,036 | 2,692 | 2,068 | 1,004 | 4,808 | 4,448 | 4,052 | 3,409 | 2,926 | 1,663        |
| 100%                   | 3,576 | 6,095 | 5,637 | 7,952 | 9,461 | 6,170 | 2,779 | 8,633 | 7,808 | 6,611 | 4,079 | 4,075 | 2,824        |
| Mean                   | 1,185 | 638   | 758   | 880   | 897   | 919   | 729   | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 | 1,197        |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 239   | 165   | 134   | 0     | 74    | 0     | 177   | 1,481 | 511   | 904   | 1,060 | 954   | 661          |
| 10%                    | 375   | 282   | 243   | 225   | 175   | 230   | 404   | 2,696 | 1,005 | 1,112 | 1,840 | 1,160 | 812          |
| 25%                    | 625   | 300   | 288   | 281   | 252   | 301   | 467   | 3,000 | 1,505 | 2,251 | 2,121 | 1,607 | 946          |
| 50%                    | 1,112 | 387   | 347   | 382   | 355   | 380   | 580   | 4,193 | 2,379 | 2,580 | 2,378 | 2,337 | 1,091        |
| 75%                    | 1,573 | 772   | 550   | 818   | 840   | 1,357 | 689   | 4,638 | 3,181 | 2,856 | 2,866 | 2,844 | 1,339        |
| 90%                    | 2,190 | 801   | 1,859 | 2,036 | 2,692 | 2,068 | 1,004 | 4,808 | 4,448 | 4,052 | 3,409 | 2,926 | 1,663        |
| 100%                   | 3,576 | 6,095 | 5,637 | 7,952 | 9,461 | 6,170 | 2,779 | 8,633 | 7,808 | 6,611 | 4,079 | 4,075 | 2,824        |
| Mean                   | 1,185 | 638   | 758   | 880   | 897   | 919   | 729   | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 | 1,197        |

**Table H1a2-76. Water Year Average of Monthly Flows (cfs) — Trinity River below Lewiston Reservoir (SWRCB Trinity)**

| Water Year Type        | Oct   | Nov | Dec   | Jan   | Feb   | Mar   | Apr | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-----|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |     |       |       |       |       |     |       |       |       |       |       |
| C                      | 961   | 429 | 407   | 423   | 820   | 582   | 684 | 2,499 | 1,541 | 3,093 | 2,524 | 1,628 |
| D                      | 1,122 | 520 | 433   | 422   | 941   | 520   | 555 | 3,306 | 1,858 | 2,648 | 2,877 | 2,360 |
| BN                     | 1,306 | 431 | 465   | 703   | 662   | 820   | 648 | 3,939 | 2,405 | 2,253 | 2,515 | 2,168 |
| AN                     | 1,230 | 530 | 530   | 601   | 796   | 619   | 792 | 4,575 | 2,734 | 2,421 | 2,459 | 2,247 |
| W                      | 1,319 | 845 | 1,461 | 1,694 | 1,085 | 1,578 | 882 | 4,932 | 3,480 | 2,632 | 2,295 | 2,351 |
| All                    | 1,204 | 588 | 758   | 883   | 894   | 920   | 722 | 3,944 | 2,509 | 2,612 | 2,523 | 2,188 |
| <b>2008-2009 BiOps</b> |       |     |       |       |       |       |     |       |       |       |       |       |
| C                      | 776   | 645 | 407   | 411   | 693   | 526   | 676 | 2,519 | 1,395 | 3,247 | 2,583 | 1,646 |
| D                      | 1,052 | 582 | 547   | 433   | 996   | 544   | 554 | 3,312 | 1,847 | 2,708 | 2,979 | 2,228 |
| BN                     | 1,320 | 431 | 471   | 776   | 626   | 779   | 673 | 3,944 | 2,365 | 2,253 | 2,519 | 2,168 |
| AN                     | 1,193 | 582 | 913   | 410   | 605   | 613   | 781 | 4,575 | 2,671 | 2,421 | 2,417 | 2,206 |
| W                      | 1,315 | 813 | 1,430 | 1,678 | 1,101 | 1,564 | 875 | 4,934 | 3,480 | 2,626 | 2,295 | 2,358 |
| All                    | 1,156 | 633 | 822   | 870   | 860   | 904   | 721 | 3,950 | 2,468 | 2,648 | 2,551 | 2,159 |
| <b>2019 BiOps</b>      |       |     |       |       |       |       |     |       |       |       |       |       |
| C                      | 961   | 445 | 401   | 417   | 819   | 534   | 673 | 2,486 | 1,512 | 3,262 | 2,288 | 1,750 |
| D                      | 1,111 | 580 | 433   | 411   | 954   | 514   | 564 | 3,312 | 1,858 | 2,625 | 2,840 | 2,353 |
| BN                     | 1,237 | 595 | 465   | 703   | 662   | 820   | 648 | 3,939 | 2,405 | 2,253 | 2,515 | 2,142 |
| AN                     | 1,201 | 572 | 537   | 601   | 777   | 597   | 831 | 4,575 | 2,671 | 2,421 | 2,459 | 2,247 |
| W                      | 1,319 | 836 | 1,461 | 1,696 | 1,093 | 1,613 | 891 | 4,932 | 3,455 | 2,632 | 2,283 | 2,352 |
| All                    | 1,185 | 638 | 758   | 880   | 897   | 919   | 729 | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 |
| <b>VA</b>              |       |     |       |       |       |       |     |       |       |       |       |       |
| C                      | 961   | 445 | 401   | 417   | 819   | 534   | 673 | 2,486 | 1,512 | 3,262 | 2,288 | 1,750 |
| D                      | 1,111 | 580 | 433   | 411   | 954   | 514   | 564 | 3,312 | 1,858 | 2,625 | 2,840 | 2,353 |
| BN                     | 1,237 | 595 | 465   | 703   | 662   | 820   | 648 | 3,939 | 2,405 | 2,253 | 2,515 | 2,142 |
| AN                     | 1,201 | 572 | 537   | 601   | 777   | 597   | 831 | 4,575 | 2,671 | 2,421 | 2,459 | 2,247 |
| W                      | 1,319 | 836 | 1,461 | 1,696 | 1,093 | 1,613 | 891 | 4,932 | 3,455 | 2,632 | 2,283 | 2,352 |
| All                    | 1,185 | 638 | 758   | 880   | 897   | 919   | 729 | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 |
| <b>55 w/WSAs</b>       |       |     |       |       |       |       |     |       |       |       |       |       |
| C                      | 961   | 445 | 401   | 417   | 819   | 534   | 673 | 2,486 | 1,512 | 3,262 | 2,288 | 1,750 |
| D                      | 1,111 | 580 | 433   | 411   | 954   | 514   | 564 | 3,312 | 1,858 | 2,625 | 2,840 | 2,353 |
| BN                     | 1,237 | 595 | 465   | 703   | 662   | 820   | 648 | 3,939 | 2,405 | 2,253 | 2,515 | 2,142 |
| AN                     | 1,201 | 572 | 537   | 601   | 777   | 597   | 831 | 4,575 | 2,671 | 2,421 | 2,459 | 2,247 |
| W                      | 1,319 | 836 | 1,461 | 1,696 | 1,093 | 1,613 | 891 | 4,932 | 3,455 | 2,632 | 2,283 | 2,352 |
| All                    | 1,185 | 638 | 758   | 880   | 897   | 919   | 729 | 3,943 | 2,489 | 2,634 | 2,473 | 2,202 |

## H1a2.2.39 Yolo Bypass below Putah Creek Inflow

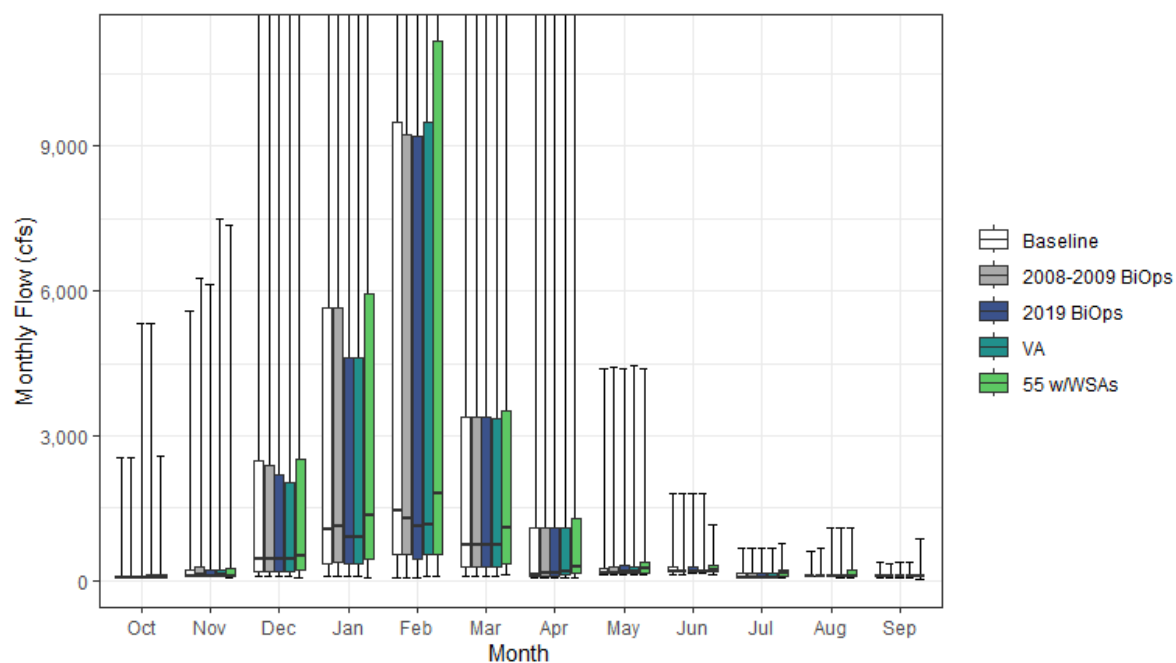


Figure H1a2-39. Yolo Bypass Streamflow below Putah Creek Inflow Monthly Boxplot (cfs)

**Table H1a2-77. Cumulative Distribution of Monthly Flow (cfs) — Yolo Bypass below Putah Creek Inflow**

|                        | Oct   | Nov   | Dec    | Jan     | Feb     | Mar     | Apr    | May   | Jun   | Jul | Aug   | Sep | Annual (TAF) |
|------------------------|-------|-------|--------|---------|---------|---------|--------|-------|-------|-----|-------|-----|--------------|
| <b>Baseline</b>        |       |       |        |         |         |         |        |       |       |     |       |     |              |
| 0%                     | 47    | 75    | 76     | 82      | 66      | 89      | 65     | 109   | 132   | 58  | 71    | 64  | 85           |
| 10%                    | 51    | 78    | 95     | 152     | 132     | 126     | 83     | 147   | 171   | 66  | 76    | 72  | 138          |
| 25%                    | 54    | 81    | 193    | 338     | 526     | 281     | 93     | 152   | 179   | 68  | 77    | 83  | 216          |
| 50%                    | 61    | 92    | 447    | 1,062   | 1,451   | 736     | 127    | 161   | 188   | 69  | 80    | 91  | 532          |
| 75%                    | 97    | 220   | 2,491  | 5,655   | 9,499   | 3,389   | 1,084  | 264   | 273   | 162 | 98    | 97  | 2,880        |
| 90%                    | 137   | 450   | 10,879 | 29,017  | 48,867  | 24,497  | 4,071  | 848   | 314   | 192 | 111   | 107 | 7,797        |
| 100%                   | 2,537 | 5,581 | 57,995 | 109,107 | 132,376 | 109,902 | 48,449 | 4,380 | 1,806 | 656 | 606   | 363 | 12,286       |
| Mean                   | 114   | 287   | 3,827  | 8,831   | 13,382  | 7,381   | 2,318  | 366   | 244   | 118 | 105   | 96  | 2,199        |
| <b>2008-2009 BiOps</b> |       |       |        |         |         |         |        |       |       |     |       |     |              |
| 0%                     | 47    | 74    | 77     | 82      | 66      | 90      | 66     | 109   | 125   | 58  | 71    | 64  | 99           |
| 10%                    | 51    | 79    | 98     | 150     | 133     | 129     | 82     | 145   | 172   | 61  | 76    | 75  | 146          |
| 25%                    | 54    | 81    | 173    | 367     | 526     | 281     | 94     | 152   | 179   | 68  | 77    | 86  | 202          |
| 50%                    | 61    | 106   | 447    | 1,119   | 1,297   | 736     | 145    | 161   | 186   | 69  | 79    | 91  | 527          |
| 75%                    | 97    | 297   | 2,397  | 5,654   | 9,238   | 3,391   | 1,084  | 293   | 198   | 144 | 94    | 97  | 2,724        |
| 90%                    | 139   | 365   | 9,882  | 29,025  | 48,817  | 24,339  | 4,060  | 851   | 324   | 191 | 109   | 107 | 7,767        |
| 100%                   | 2,537 | 6,250 | 57,995 | 109,106 | 132,377 | 109,879 | 48,442 | 4,409 | 1,805 | 656 | 665   | 349 | 12,280       |
| Mean                   | 114   | 296   | 3,763  | 8,795   | 13,210  | 7,365   | 2,320  | 375   | 239   | 102 | 106   | 97  | 2,182        |
| <b>2019 BiOps</b>      |       |       |        |         |         |         |        |       |       |     |       |     |              |
| 0%                     | 47    | 74    | 76     | 82      | 66      | 89      | 65     | 111   | 140   | 58  | 71    | 64  | 85           |
| 10%                    | 51    | 78    | 95     | 151     | 132     | 128     | 83     | 146   | 171   | 67  | 76    | 73  | 135          |
| 25%                    | 54    | 81    | 179    | 338     | 449     | 281     | 96     | 154   | 180   | 68  | 78    | 81  | 195          |
| 50%                    | 62    | 92    | 427    | 910     | 1,135   | 736     | 153    | 172   | 189   | 69  | 79    | 91  | 531          |
| 75%                    | 97    | 229   | 2,177  | 4,615   | 9,214   | 3,389   | 1,084  | 308   | 281   | 158 | 96    | 97  | 2,852        |
| 90%                    | 139   | 342   | 12,783 | 30,194  | 48,531  | 24,503  | 4,059  | 865   | 319   | 204 | 112   | 107 | 7,854        |
| 100%                   | 5,328 | 6,146 | 57,993 | 109,107 | 132,378 | 109,902 | 48,380 | 4,379 | 1,805 | 667 | 1,091 | 363 | 12,380       |
| Mean                   | 143   | 290   | 3,836  | 8,725   | 13,280  | 7,369   | 2,331  | 401   | 256   | 128 | 122   | 95  | 2,194        |
| <b>VA</b>              |       |       |        |         |         |         |        |       |       |     |       |     |              |
| 0%                     | 47    | 90    | 91     | 87      | 71      | 89      | 66     | 124   | 154   | 57  | 68    | 67  | 88           |
| 10%                    | 51    | 97    | 106    | 184     | 138     | 154     | 87     | 147   | 173   | 65  | 75    | 73  | 150          |
| 25%                    | 54    | 99    | 181    | 339     | 531     | 291     | 109    | 154   | 178   | 66  | 77    | 86  | 208          |
| 50%                    | 63    | 108   | 434    | 905     | 1,156   | 747     | 192    | 192   | 185   | 69  | 86    | 92  | 530          |
| 75%                    | 105   | 215   | 2,041  | 4,619   | 9,516   | 3,349   | 1,087  | 274   | 197   | 152 | 113   | 97  | 2,886        |
| 90%                    | 157   | 396   | 11,467 | 30,682  | 48,010  | 24,335  | 4,062  | 867   | 287   | 197 | 562   | 105 | 7,858        |
| 100%                   | 5,323 | 7,496 | 58,039 | 109,171 | 132,082 | 109,901 | 48,486 | 4,442 | 1,803 | 667 | 1,106 | 362 | 12,380       |
| Mean                   | 150   | 315   | 3,689  | 8,719   | 13,218  | 7,372   | 2,345  | 398   | 240   | 128 | 165   | 96  | 2,186        |
| <b>55 w/WSAs</b>       |       |       |        |         |         |         |        |       |       |     |       |     |              |
| 0%                     | 47    | 63    | 69     | 68      | 81      | 113     | 65     | 109   | 127   | 56  | 56    | 34  | 111          |
| 10%                    | 51    | 70    | 91     | 189     | 168     | 162     | 109    | 147   | 174   | 66  | 66    | 68  | 171          |
| 25%                    | 54    | 78    | 211    | 431     | 547     | 335     | 160    | 159   | 181   | 79  | 75    | 78  | 279          |
| 50%                    | 70    | 91    | 508    | 1,344   | 1,791   | 1,080   | 283    | 258   | 217   | 159 | 90    | 88  | 644          |
| 75%                    | 108   | 240   | 2,513  | 5,950   | 11,180  | 3,508   | 1,273  | 367   | 299   | 212 | 225   | 100 | 2,873        |
| 90%                    | 161   | 387   | 10,292 | 27,839  | 44,151  | 21,510  | 3,958  | 1,157 | 349   | 242 | 556   | 204 | 7,657        |
| 100%                   | 2,566 | 7,369 | 56,480 | 104,761 | 125,995 | 109,888 | 46,291 | 4,382 | 1,163 | 757 | 1,076 | 876 | 12,435       |
| Mean                   | 123   | 296   | 3,754  | 9,095   | 12,964  | 7,222   | 2,415  | 452   | 276   | 169 | 196   | 116 | 2,202        |

**Table H1a2-78. Water Year Average of Monthly Flows (cfs) — Yolo Bypass below Putah Creek Inflow**

| Water Year Type        | Oct | Nov | Dec   | Jan    | Feb    | Mar    | Apr   | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-------|--------|--------|--------|-------|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |       |        |        |        |       |     |     |     |     |     |
| C                      | 72  | 103 | 699   | 829    | 593    | 333    | 104   | 170 | 170 | 88  | 107 | 85  |
| D                      | 66  | 175 | 919   | 511    | 1,362  | 663    | 208   | 173 | 235 | 120 | 95  | 101 |
| BN                     | 110 | 115 | 1,305 | 1,432  | 4,336  | 999    | 308   | 186 | 223 | 135 | 114 | 109 |
| AN                     | 105 | 228 | 2,602 | 6,970  | 15,121 | 7,058  | 661   | 372 | 212 | 119 | 123 | 98  |
| W                      | 177 | 602 | 9,713 | 24,630 | 34,050 | 20,238 | 6,982 | 725 | 316 | 120 | 98  | 90  |
| All                    | 114 | 287 | 3,827 | 8,831  | 13,382 | 7,381  | 2,318 | 366 | 244 | 118 | 105 | 96  |
| <b>2008-2009 BiOps</b> |     |     |       |        |        |        |       |     |     |     |     |     |
| C                      | 72  | 131 | 714   | 825    | 592    | 336    | 111   | 157 | 171 | 66  | 82  | 79  |
| D                      | 67  | 205 | 916   | 525    | 1,359  | 663    | 206   | 194 | 237 | 116 | 148 | 112 |
| BN                     | 110 | 140 | 1,318 | 1,427  | 4,194  | 998    | 309   | 193 | 220 | 111 | 107 | 103 |
| AN                     | 105 | 271 | 2,573 | 6,928  | 14,331 | 6,944  | 665   | 379 | 212 | 88  | 127 | 97  |
| W                      | 178 | 558 | 9,500 | 24,525 | 33,890 | 20,229 | 6,983 | 739 | 300 | 112 | 80  | 93  |
| All                    | 114 | 296 | 3,763 | 8,795  | 13,210 | 7,365  | 2,320 | 375 | 239 | 102 | 106 | 97  |
| <b>2019 BiOps</b>      |     |     |       |        |        |        |       |     |     |     |     |     |
| C                      | 76  | 119 | 703   | 553    | 591    | 332    | 103   | 171 | 180 | 66  | 82  | 80  |
| D                      | 66  | 154 | 861   | 525    | 1,137  | 663    | 229   | 231 | 258 | 127 | 123 | 106 |
| BN                     | 110 | 148 | 1,457 | 1,303  | 4,257  | 886    | 310   | 188 | 206 | 110 | 108 | 102 |
| AN                     | 106 | 230 | 2,543 | 6,958  | 15,073 | 7,018  | 661   | 379 | 205 | 108 | 129 | 100 |
| W                      | 270 | 595 | 9,713 | 24,504 | 33,949 | 20,284 | 7,008 | 791 | 346 | 182 | 149 | 89  |
| All                    | 143 | 290 | 3,836 | 8,725  | 13,280 | 7,369  | 2,331 | 401 | 256 | 128 | 122 | 95  |
| <b>VA</b>              |     |     |       |        |        |        |       |     |     |     |     |     |
| C                      | 77  | 122 | 699   | 584    | 593    | 344    | 120   | 175 | 181 | 83  | 82  | 79  |
| D                      | 69  | 191 | 795   | 517    | 1,219  | 675    | 249   | 186 | 217 | 86  | 199 | 106 |
| BN                     | 115 | 120 | 1,358 | 1,304  | 4,178  | 896    | 332   | 220 | 196 | 120 | 163 | 107 |
| AN                     | 115 | 247 | 2,494 | 6,893  | 15,091 | 7,086  | 687   | 385 | 197 | 93  | 172 | 100 |
| W                      | 285 | 658 | 9,361 | 24,500 | 33,728 | 20,246 | 7,006 | 790 | 333 | 202 | 185 | 90  |
| All                    | 150 | 315 | 3,689 | 8,719  | 13,218 | 7,372  | 2,345 | 398 | 240 | 128 | 165 | 96  |
| <b>55 w/WSAs</b>       |     |     |       |        |        |        |       |     |     |     |     |     |
| C                      | 83  | 112 | 699   | 921    | 659    | 356    | 117   | 190 | 222 | 162 | 272 | 183 |
| D                      | 81  | 157 | 931   | 653    | 1,730  | 1,285  | 255   | 230 | 260 | 145 | 190 | 110 |
| BN                     | 113 | 116 | 1,527 | 1,759  | 5,098  | 1,848  | 513   | 242 | 252 | 148 | 79  | 96  |
| AN                     | 116 | 212 | 2,343 | 8,468  | 15,128 | 6,453  | 854   | 460 | 225 | 133 | 178 | 94  |
| W                      | 185 | 643 | 9,429 | 24,542 | 31,881 | 18,949 | 7,055 | 884 | 351 | 219 | 240 | 107 |
| All                    | 123 | 296 | 3,754 | 9,095  | 12,964 | 7,222  | 2,415 | 452 | 276 | 169 | 196 | 116 |

## H1a2.2.40 Yuba River, North Fork above New Bullards Bar Reservoir (SWRCB New Bullards Bar Inflow)

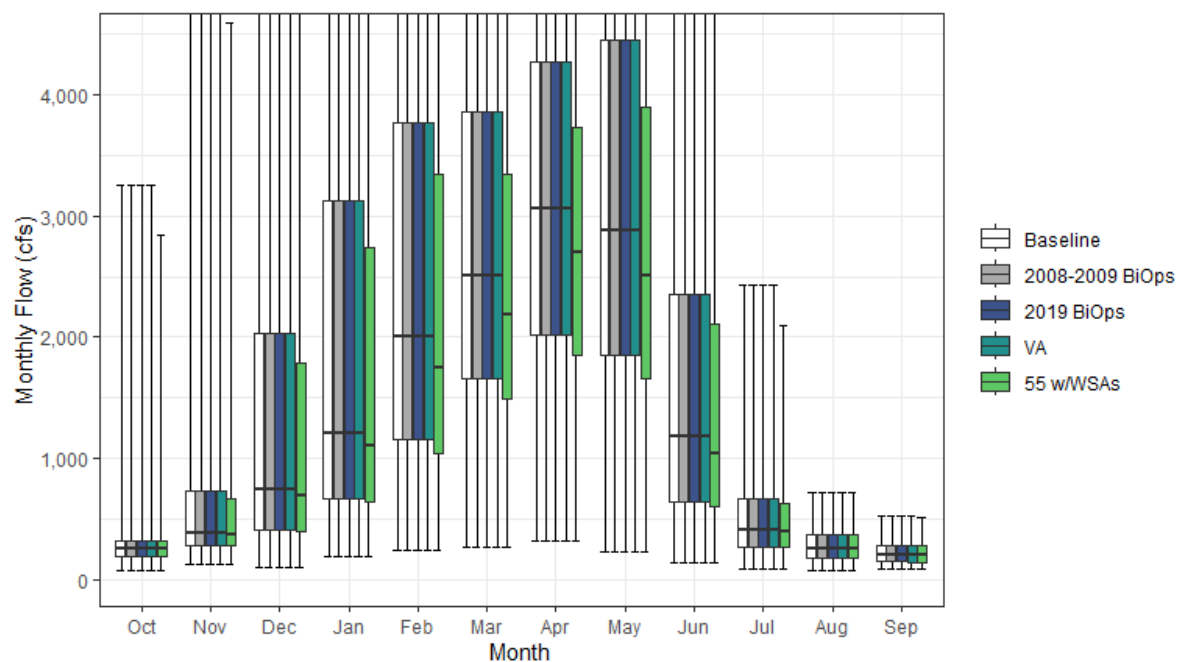


Figure H1a2-40. Yuba River, North Fork Streamflow above New Bullards Bar Reservoir Monthly Boxplot (cfs)

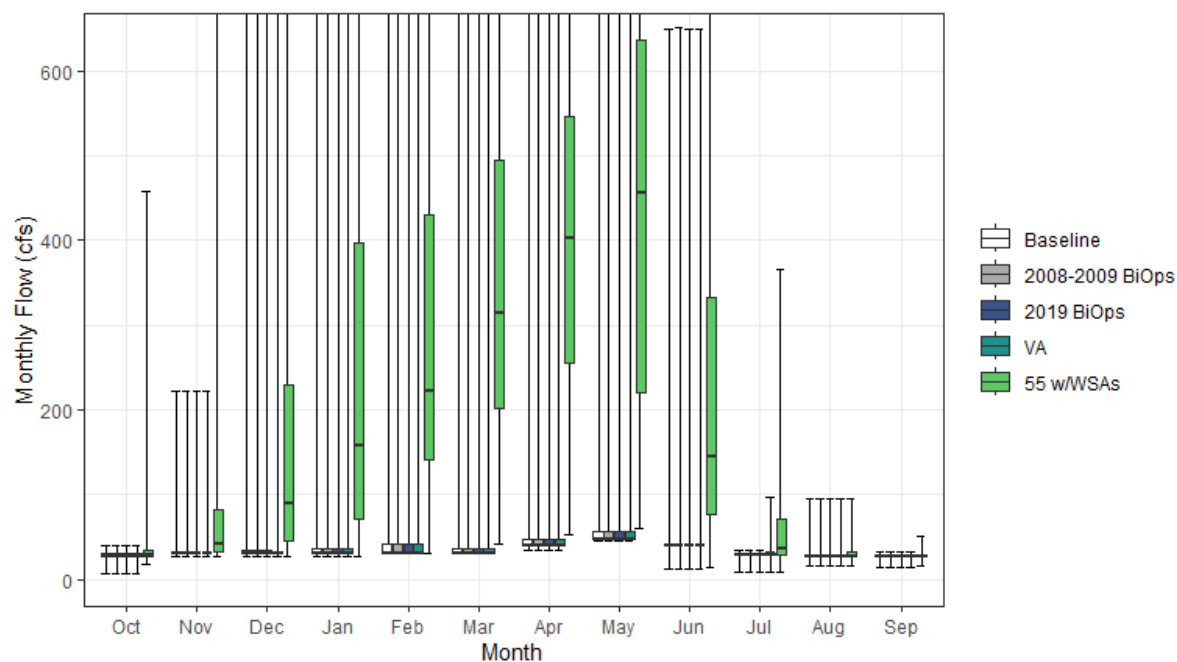
**Table H1a2-79. Cumulative Distribution of Monthly Flow (cfs) — Yuba River, North Fork above New Bullards Bar Reservoir (SWRCB New Bullards Bar Inflow)**

|                        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar   | Apr   | May   | Jun   | Jul   | Aug | Sep | Annual (TAF) |
|------------------------|-------|-------|--------|--------|--------|-------|-------|-------|-------|-------|-----|-----|--------------|
| <b>Baseline</b>        |       |       |        |        |        |       |       |       |       |       |     |     |              |
| 0%                     | 73    | 128   | 102    | 194    | 241    | 271   | 317   | 233   | 142   | 83    | 67  | 85  | 141          |
| 10%                    | 159   | 213   | 280    | 360    | 678    | 1,047 | 1,353 | 706   | 257   | 157   | 130 | 119 | 422          |
| 25%                    | 192   | 281   | 406    | 670    | 1,152  | 1,652 | 2,018 | 1,847 | 641   | 263   | 180 | 144 | 662          |
| 50%                    | 260   | 379   | 740    | 1,212  | 2,004  | 2,503 | 3,065 | 2,876 | 1,187 | 404   | 250 | 204 | 1,082        |
| 75%                    | 316   | 725   | 2,027  | 3,132  | 3,772  | 3,866 | 4,279 | 4,453 | 2,355 | 665   | 371 | 275 | 1,681        |
| 90%                    | 447   | 1,367 | 4,692  | 5,517  | 5,365  | 5,527 | 5,330 | 5,892 | 3,596 | 1,030 | 465 | 325 | 1,937        |
| 100%                   | 3,262 | 5,150 | 9,325  | 11,384 | 13,205 | 7,964 | 7,314 | 7,518 | 6,164 | 2,430 | 712 | 529 | 2,970        |
| Mean                   | 306   | 701   | 1,659  | 2,186  | 2,685  | 2,894 | 3,245 | 3,182 | 1,669 | 539   | 277 | 218 | 1,177        |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |       |       |       |       |       |     |     |              |
| 0%                     | 73    | 128   | 102    | 194    | 241    | 271   | 317   | 233   | 142   | 83    | 67  | 85  | 141          |
| 10%                    | 159   | 213   | 280    | 360    | 678    | 1,047 | 1,353 | 706   | 257   | 157   | 130 | 119 | 422          |
| 25%                    | 192   | 281   | 406    | 670    | 1,152  | 1,652 | 2,018 | 1,847 | 642   | 263   | 180 | 144 | 662          |
| 50%                    | 260   | 379   | 741    | 1,212  | 2,004  | 2,503 | 3,065 | 2,876 | 1,187 | 404   | 250 | 204 | 1,082        |
| 75%                    | 315   | 725   | 2,027  | 3,132  | 3,772  | 3,866 | 4,279 | 4,453 | 2,355 | 665   | 371 | 275 | 1,681        |
| 90%                    | 447   | 1,367 | 4,692  | 5,517  | 5,366  | 5,527 | 5,329 | 5,892 | 3,596 | 1,030 | 465 | 325 | 1,937        |
| 100%                   | 3,262 | 5,150 | 9,325  | 11,384 | 13,205 | 7,964 | 7,314 | 7,518 | 6,164 | 2,430 | 712 | 529 | 2,970        |
| Mean                   | 306   | 701   | 1,659  | 2,186  | 2,685  | 2,895 | 3,245 | 3,182 | 1,669 | 539   | 277 | 218 | 1,177        |
| <b>2019 BiOps</b>      |       |       |        |        |        |       |       |       |       |       |     |     |              |
| 0%                     | 73    | 128   | 102    | 194    | 241    | 271   | 317   | 233   | 142   | 83    | 67  | 85  | 141          |
| 10%                    | 159   | 213   | 280    | 360    | 678    | 1,047 | 1,353 | 706   | 257   | 157   | 130 | 119 | 422          |
| 25%                    | 192   | 281   | 406    | 670    | 1,152  | 1,652 | 2,018 | 1,847 | 641   | 263   | 180 | 144 | 662          |
| 50%                    | 260   | 379   | 741    | 1,212  | 2,004  | 2,503 | 3,065 | 2,876 | 1,187 | 404   | 250 | 204 | 1,082        |
| 75%                    | 316   | 725   | 2,027  | 3,132  | 3,772  | 3,866 | 4,279 | 4,453 | 2,355 | 665   | 371 | 275 | 1,681        |
| 90%                    | 447   | 1,367 | 4,692  | 5,517  | 5,366  | 5,527 | 5,330 | 5,892 | 3,596 | 1,030 | 465 | 325 | 1,937        |
| 100%                   | 3,262 | 5,150 | 9,325  | 11,384 | 13,205 | 7,964 | 7,314 | 7,518 | 6,164 | 2,430 | 712 | 529 | 2,970        |
| Mean                   | 306   | 701   | 1,659  | 2,186  | 2,685  | 2,894 | 3,245 | 3,182 | 1,669 | 539   | 277 | 218 | 1,177        |
| <b>VA</b>              |       |       |        |        |        |       |       |       |       |       |     |     |              |
| 0%                     | 73    | 128   | 102    | 194    | 241    | 271   | 317   | 233   | 142   | 83    | 67  | 85  | 141          |
| 10%                    | 159   | 213   | 280    | 360    | 678    | 1,047 | 1,353 | 706   | 257   | 157   | 130 | 119 | 422          |
| 25%                    | 192   | 281   | 406    | 670    | 1,152  | 1,652 | 2,017 | 1,847 | 641   | 262   | 180 | 144 | 662          |
| 50%                    | 260   | 379   | 741    | 1,212  | 2,004  | 2,503 | 3,065 | 2,876 | 1,187 | 404   | 250 | 204 | 1,082        |
| 75%                    | 316   | 725   | 2,027  | 3,132  | 3,772  | 3,866 | 4,279 | 4,453 | 2,355 | 663   | 371 | 275 | 1,683        |
| 90%                    | 447   | 1,367 | 4,692  | 5,517  | 5,365  | 5,527 | 5,330 | 5,892 | 3,595 | 1,030 | 465 | 325 | 1,952        |
| 100%                   | 3,262 | 5,150 | 9,325  | 11,384 | 13,205 | 7,964 | 7,315 | 7,518 | 6,164 | 2,430 | 712 | 530 | 2,970        |
| Mean                   | 306   | 701   | 1,664  | 2,193  | 2,685  | 2,895 | 3,244 | 3,182 | 1,669 | 538   | 277 | 218 | 1,177        |
| <b>55 w/WSAs</b>       |       |       |        |        |        |       |       |       |       |       |     |     |              |
| 0%                     | 73    | 128   | 102    | 194    | 241    | 271   | 317   | 233   | 142   | 83    | 67  | 85  | 141          |
| 10%                    | 159   | 213   | 280    | 355    | 611    | 942   | 1,231 | 670   | 257   | 157   | 130 | 119 | 394          |
| 25%                    | 192   | 277   | 401    | 639    | 1,043  | 1,493 | 1,845 | 1,661 | 603   | 262   | 180 | 144 | 608          |
| 50%                    | 260   | 372   | 693    | 1,100  | 1,747  | 2,190 | 2,699 | 2,507 | 1,046 | 392   | 250 | 204 | 968          |
| 75%                    | 313   | 664   | 1,783  | 2,741  | 3,352  | 3,347 | 3,735 | 3,896 | 2,104 | 628   | 368 | 275 | 1,528        |
| 90%                    | 429   | 1,173 | 4,314  | 5,092  | 4,958  | 5,095 | 4,782 | 5,298 | 3,089 | 946   | 454 | 325 | 1,823        |
| 100%                   | 2,843 | 4,598 | 10,043 | 11,384 | 13,205 | 8,210 | 7,648 | 6,910 | 5,426 | 2,095 | 712 | 509 | 2,777        |
| Mean                   | 297   | 645   | 1,565  | 2,043  | 2,469  | 2,639 | 2,899 | 2,807 | 1,479 | 506   | 275 | 217 | 1,073        |

**Table H1a2-80. Water Year Average of Monthly Flows (cfs) — Yuba River, North Fork above New Bullards Bar Reservoir (SWRCB New Bullards Bar Inflow)**

| Water Year Type        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |     |     |     |
| C                      | 240 | 288   | 516   | 509   | 886   | 1,229 | 1,288 | 1,038 | 472   | 172 | 128 | 114 |
| D                      | 237 | 517   | 920   | 779   | 1,623 | 2,172 | 2,496 | 2,065 | 793   | 283 | 187 | 164 |
| BN                     | 257 | 492   | 874   | 1,441 | 2,152 | 2,659 | 3,656 | 3,110 | 1,402 | 426 | 258 | 202 |
| AN                     | 295 | 889   | 1,311 | 3,079 | 3,282 | 4,050 | 3,469 | 3,764 | 1,567 | 530 | 312 | 249 |
| W                      | 428 | 1,113 | 3,445 | 4,228 | 4,521 | 3,999 | 4,489 | 4,956 | 3,161 | 998 | 421 | 310 |
| All                    | 306 | 701   | 1,659 | 2,186 | 2,685 | 2,894 | 3,245 | 3,182 | 1,669 | 539 | 277 | 218 |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |     |     |     |
| C                      | 240 | 288   | 516   | 509   | 886   | 1,229 | 1,288 | 1,038 | 472   | 172 | 128 | 114 |
| D                      | 237 | 517   | 920   | 779   | 1,623 | 2,172 | 2,496 | 2,065 | 793   | 283 | 187 | 164 |
| BN                     | 257 | 492   | 874   | 1,441 | 2,151 | 2,659 | 3,656 | 3,110 | 1,402 | 426 | 258 | 202 |
| AN                     | 295 | 889   | 1,311 | 3,079 | 3,282 | 4,050 | 3,469 | 3,764 | 1,567 | 530 | 312 | 249 |
| W                      | 428 | 1,112 | 3,445 | 4,228 | 4,521 | 4,000 | 4,489 | 4,956 | 3,161 | 998 | 421 | 310 |
| All                    | 306 | 701   | 1,659 | 2,186 | 2,685 | 2,895 | 3,245 | 3,182 | 1,669 | 539 | 277 | 218 |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |     |     |     |
| C                      | 240 | 288   | 516   | 509   | 886   | 1,229 | 1,288 | 1,038 | 472   | 172 | 128 | 114 |
| D                      | 237 | 517   | 920   | 779   | 1,623 | 2,172 | 2,496 | 2,065 | 793   | 283 | 187 | 164 |
| BN                     | 257 | 492   | 874   | 1,441 | 2,152 | 2,659 | 3,656 | 3,110 | 1,402 | 426 | 258 | 202 |
| AN                     | 295 | 889   | 1,311 | 3,079 | 3,282 | 4,050 | 3,469 | 3,764 | 1,567 | 530 | 312 | 249 |
| W                      | 428 | 1,113 | 3,445 | 4,228 | 4,521 | 3,999 | 4,489 | 4,956 | 3,161 | 998 | 421 | 310 |
| All                    | 306 | 701   | 1,659 | 2,186 | 2,685 | 2,894 | 3,245 | 3,182 | 1,669 | 539 | 277 | 218 |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |     |     |     |
| C                      | 240 | 288   | 516   | 509   | 886   | 1,229 | 1,288 | 1,038 | 472   | 172 | 128 | 114 |
| D                      | 237 | 517   | 920   | 779   | 1,623 | 2,172 | 2,496 | 2,065 | 793   | 283 | 187 | 164 |
| BN                     | 257 | 492   | 874   | 1,441 | 2,152 | 2,659 | 3,656 | 3,110 | 1,402 | 426 | 258 | 202 |
| AN                     | 295 | 889   | 1,311 | 3,114 | 3,282 | 4,050 | 3,458 | 3,764 | 1,567 | 524 | 312 | 249 |
| W                      | 428 | 1,113 | 3,464 | 4,236 | 4,521 | 4,002 | 4,489 | 4,956 | 3,161 | 998 | 421 | 310 |
| All                    | 306 | 701   | 1,664 | 2,193 | 2,685 | 2,895 | 3,244 | 3,182 | 1,669 | 538 | 277 | 218 |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |     |     |     |
| C                      | 236 | 283   | 489   | 485   | 819   | 1,125 | 1,179 | 957   | 445   | 172 | 128 | 114 |
| D                      | 236 | 486   | 854   | 719   | 1,475 | 1,981 | 2,238 | 1,846 | 737   | 281 | 187 | 164 |
| BN                     | 255 | 464   | 805   | 1,300 | 1,944 | 2,394 | 3,271 | 2,752 | 1,272 | 417 | 258 | 202 |
| AN                     | 292 | 814   | 1,303 | 2,838 | 3,024 | 3,807 | 3,041 | 3,279 | 1,386 | 505 | 311 | 248 |
| W                      | 404 | 1,003 | 3,247 | 3,997 | 4,189 | 3,615 | 4,010 | 4,344 | 2,741 | 905 | 414 | 307 |
| All                    | 297 | 645   | 1,565 | 2,043 | 2,469 | 2,639 | 2,899 | 2,807 | 1,479 | 506 | 275 | 217 |

## H1a2.2.41 Yuba River, Middle Fork above Confluence with North Fork Yuba (SWRCB M Yuba Inflow)



**Figure H1a2-41. Yuba River, Middle Fork Streamflow above Confluence with North Fork Yuba Monthly Boxplot (cfs)**

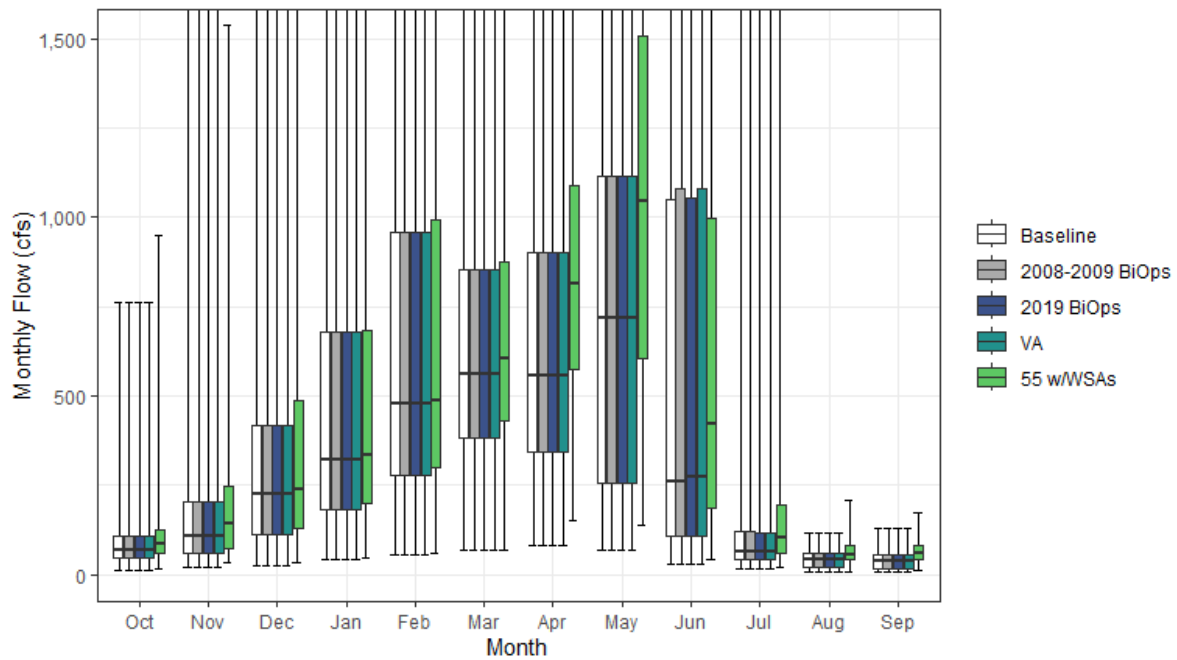
**Table H1a2-81. Cumulative Distribution of Monthly Flow (cfs) — Yuba River, Middle Fork above Confluence with North Fork Yuba (SWRCB M Yuba Inflow)**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 7   | 27  | 28    | 28    | 31    | 31    | 35    | 46    | 12    | 8   | 16  | 13  | 23           |
| 10%                    | 27  | 29  | 31    | 31    | 31    | 31    | 40    | 47    | 38    | 27  | 25  | 23  | 23           |
| 25%                    | 28  | 31  | 31    | 31    | 31    | 31    | 40    | 47    | 39    | 28  | 27  | 26  | 24           |
| 50%                    | 29  | 31  | 31    | 31    | 31    | 31    | 40    | 48    | 39    | 30  | 28  | 27  | 26           |
| 75%                    | 31  | 31  | 34    | 36    | 42    | 36    | 47    | 56    | 39    | 31  | 28  | 28  | 58           |
| 90%                    | 31  | 36  | 103   | 331   | 363   | 244   | 157   | 174   | 44    | 31  | 30  | 29  | 161          |
| 100%                   | 41  | 222 | 2,933 | 3,087 | 3,806 | 2,173 | 2,132 | 718   | 650   | 35  | 96  | 33  | 385          |
| Mean                   | 29  | 35  | 144   | 206   | 183   | 153   | 97    | 84    | 48    | 29  | 29  | 27  | 64           |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 7   | 27  | 28    | 28    | 31    | 31    | 35    | 46    | 12    | 8   | 16  | 13  | 23           |
| 10%                    | 27  | 29  | 31    | 31    | 31    | 31    | 40    | 47    | 38    | 27  | 25  | 23  | 23           |
| 25%                    | 28  | 31  | 31    | 31    | 31    | 31    | 40    | 47    | 39    | 28  | 27  | 26  | 24           |
| 50%                    | 29  | 31  | 31    | 31    | 31    | 31    | 40    | 48    | 39    | 30  | 28  | 27  | 26           |
| 75%                    | 31  | 31  | 34    | 36    | 42    | 36    | 47    | 56    | 39    | 31  | 28  | 28  | 58           |
| 90%                    | 31  | 36  | 103   | 331   | 363   | 244   | 157   | 174   | 44    | 31  | 30  | 29  | 161          |
| 100%                   | 41  | 222 | 2,933 | 3,087 | 3,806 | 2,173 | 2,132 | 718   | 650   | 35  | 96  | 33  | 385          |
| Mean                   | 29  | 35  | 144   | 206   | 183   | 153   | 97    | 84    | 48    | 29  | 29  | 27  | 64           |
| <b>2019 BiOps</b>      |     |     |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 7   | 27  | 28    | 28    | 31    | 31    | 35    | 46    | 12    | 8   | 16  | 13  | 23           |
| 10%                    | 27  | 29  | 31    | 31    | 31    | 31    | 40    | 47    | 38    | 27  | 25  | 23  | 23           |
| 25%                    | 28  | 31  | 31    | 31    | 31    | 31    | 40    | 47    | 39    | 28  | 27  | 26  | 24           |
| 50%                    | 29  | 31  | 31    | 31    | 31    | 31    | 40    | 48    | 39    | 30  | 28  | 27  | 26           |
| 75%                    | 31  | 31  | 34    | 36    | 42    | 36    | 47    | 56    | 39    | 31  | 28  | 28  | 58           |
| 90%                    | 31  | 36  | 103   | 331   | 363   | 244   | 157   | 174   | 44    | 31  | 30  | 29  | 161          |
| 100%                   | 41  | 222 | 2,933 | 3,087 | 3,806 | 2,173 | 2,132 | 718   | 650   | 35  | 96  | 33  | 385          |
| Mean                   | 29  | 35  | 144   | 206   | 183   | 153   | 97    | 84    | 48    | 29  | 29  | 27  | 64           |
| <b>VA</b>              |     |     |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 7   | 27  | 28    | 28    | 31    | 31    | 35    | 46    | 12    | 8   | 16  | 13  | 23           |
| 10%                    | 27  | 29  | 31    | 31    | 31    | 31    | 40    | 47    | 38    | 27  | 25  | 23  | 23           |
| 25%                    | 28  | 31  | 31    | 31    | 31    | 31    | 40    | 47    | 39    | 29  | 27  | 26  | 24           |
| 50%                    | 29  | 31  | 31    | 31    | 31    | 31    | 40    | 48    | 39    | 30  | 27  | 27  | 26           |
| 75%                    | 31  | 31  | 33    | 36    | 42    | 36    | 47    | 56    | 39    | 31  | 28  | 28  | 58           |
| 90%                    | 31  | 36  | 53    | 331   | 363   | 244   | 178   | 174   | 44    | 31  | 30  | 29  | 152          |
| 100%                   | 41  | 222 | 2,933 | 3,087 | 3,806 | 2,173 | 2,132 | 718   | 650   | 97  | 96  | 33  | 385          |
| Mean                   | 29  | 35  | 138   | 200   | 183   | 153   | 99    | 84    | 48    | 30  | 29  | 27  | 63           |
| <b>55 w/WSAs</b>       |     |     |       |       |       |       |       |       |       |     |     |     |              |
| 0%                     | 18  | 27  | 28    | 28    | 31    | 42    | 53    | 60    | 15    | 9   | 16  | 16  | 27           |
| 10%                    | 27  | 29  | 31    | 39    | 87    | 133   | 165   | 99    | 43    | 28  | 25  | 23  | 56           |
| 25%                    | 28  | 32  | 46    | 72    | 142   | 202   | 255   | 220   | 76    | 29  | 27  | 26  | 86           |
| 50%                    | 29  | 42  | 90    | 158   | 221   | 314   | 403   | 455   | 146   | 37  | 28  | 27  | 125          |
| 75%                    | 34  | 83  | 230   | 397   | 430   | 495   | 546   | 636   | 333   | 72  | 32  | 28  | 240          |
| 90%                    | 42  | 188 | 584   | 713   | 754   | 686   | 741   | 838   | 537   | 114 | 39  | 32  | 331          |
| 100%                   | 457 | 788 | 2,216 | 3,087 | 3,806 | 2,173 | 2,132 | 1,236 | 1,149 | 366 | 96  | 51  | 585          |
| Mean                   | 38  | 91  | 237   | 350   | 399   | 408   | 447   | 469   | 240   | 63  | 31  | 28  | 168          |

**Table H1a2-82. Water Year Average of Monthly Flows (cfs) — Yuba River, Middle Fork above Confluence with North Fork Yuba (SWRCB M Yuba Inflow)**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 29  | 31  | 31  | 32  | 37  | 37  | 48  | 57  | 41  | 28  | 24  | 23  |
| D                      | 30  | 32  | 32  | 32  | 47  | 65  | 42  | 49  | 40  | 29  | 27  | 27  |
| BN                     | 28  | 31  | 35  | 32  | 49  | 63  | 77  | 47  | 39  | 29  | 27  | 27  |
| AN                     | 29  | 48  | 174 | 165 | 147 | 302 | 40  | 66  | 39  | 29  | 27  | 28  |
| W                      | 28  | 37  | 342 | 554 | 461 | 275 | 201 | 153 | 69  | 30  | 34  | 28  |
| All                    | 29  | 35  | 144 | 206 | 183 | 153 | 97  | 84  | 48  | 29  | 29  | 27  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 29  | 31  | 31  | 32  | 37  | 37  | 48  | 57  | 41  | 28  | 24  | 23  |
| D                      | 30  | 32  | 32  | 32  | 47  | 65  | 42  | 49  | 40  | 29  | 27  | 27  |
| BN                     | 28  | 31  | 35  | 32  | 49  | 63  | 77  | 48  | 39  | 29  | 27  | 27  |
| AN                     | 29  | 48  | 174 | 165 | 147 | 302 | 40  | 66  | 39  | 29  | 27  | 28  |
| W                      | 28  | 37  | 342 | 554 | 461 | 275 | 201 | 153 | 69  | 30  | 34  | 28  |
| All                    | 29  | 35  | 144 | 206 | 183 | 153 | 97  | 84  | 48  | 29  | 29  | 27  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 29  | 31  | 31  | 32  | 37  | 37  | 48  | 57  | 41  | 28  | 24  | 23  |
| D                      | 30  | 32  | 32  | 32  | 47  | 65  | 42  | 49  | 40  | 29  | 27  | 27  |
| BN                     | 28  | 31  | 35  | 32  | 49  | 63  | 77  | 47  | 39  | 29  | 27  | 27  |
| AN                     | 29  | 48  | 174 | 165 | 147 | 302 | 40  | 66  | 39  | 29  | 27  | 28  |
| W                      | 28  | 37  | 342 | 554 | 461 | 275 | 201 | 153 | 69  | 30  | 34  | 28  |
| All                    | 29  | 35  | 144 | 206 | 183 | 153 | 97  | 84  | 48  | 29  | 29  | 27  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 29  | 31  | 31  | 32  | 37  | 37  | 48  | 57  | 41  | 28  | 24  | 23  |
| D                      | 30  | 32  | 32  | 32  | 47  | 65  | 42  | 49  | 40  | 30  | 27  | 27  |
| BN                     | 28  | 31  | 35  | 32  | 49  | 63  | 77  | 48  | 39  | 29  | 27  | 27  |
| AN                     | 29  | 48  | 174 | 130 | 147 | 302 | 51  | 66  | 39  | 35  | 27  | 28  |
| W                      | 28  | 37  | 323 | 546 | 461 | 275 | 201 | 153 | 69  | 30  | 34  | 28  |
| All                    | 29  | 35  | 138 | 200 | 183 | 153 | 99  | 84  | 48  | 30  | 29  | 27  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 33  | 36  | 59  | 56  | 104 | 141 | 157 | 138 | 69  | 28  | 24  | 23  |
| D                      | 31  | 63  | 98  | 92  | 194 | 256 | 300 | 268 | 96  | 31  | 27  | 27  |
| BN                     | 30  | 59  | 104 | 173 | 256 | 328 | 462 | 405 | 169 | 38  | 27  | 27  |
| AN                     | 33  | 123 | 183 | 406 | 405 | 545 | 468 | 562 | 228 | 54  | 28  | 29  |
| W                      | 52  | 147 | 540 | 785 | 793 | 659 | 691 | 797 | 487 | 125 | 42  | 31  |
| All                    | 38  | 91  | 237 | 350 | 399 | 408 | 447 | 469 | 240 | 63  | 31  | 28  |

## H1a2.2.42 Yuba River, South Fork above Confluence with Yuba River (SWRCB S Yuba Inflow)



**Figure H1a2-42. Yuba River, South Fork Streamflow above Confluence with Yuba River Monthly Boxplot (cfs)**

**Table H1a2-83. Cumulative Distribution of Monthly Flow (cfs) — Yuba River, South Fork above Confluence with Yuba River (SWRCB S Yuba Inflow)**

|                        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug | Sep | Annual (TAF) |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|--------------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 10  | 20    | 26    | 42    | 53    | 68    | 83    | 70    | 30    | 18    | 9   | 9   | 35           |
| 10%                    | 23  | 45    | 62    | 98    | 144   | 232   | 208   | 118   | 59    | 30    | 16  | 13  | 91           |
| 25%                    | 44  | 61    | 111   | 183   | 277   | 382   | 342   | 258   | 109   | 42    | 22  | 18  | 142          |
| 50%                    | 67  | 109   | 225   | 323   | 478   | 563   | 555   | 717   | 262   | 63    | 40  | 38  | 244          |
| 75%                    | 108 | 204   | 416   | 677   | 958   | 853   | 902   | 1,115 | 1,051 | 119   | 58  | 56  | 450          |
| 90%                    | 143 | 342   | 1,128 | 1,383 | 1,445 | 1,581 | 1,161 | 1,973 | 1,929 | 190   | 79  | 74  | 597          |
| 100%                   | 762 | 1,595 | 2,691 | 3,971 | 5,772 | 2,450 | 3,153 | 3,682 | 3,835 | 1,644 | 117 | 128 | 1,241        |
| Mean                   | 82  | 183   | 414   | 573   | 700   | 713   | 681   | 871   | 732   | 149   | 43  | 41  | 312          |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 10  | 20    | 26    | 42    | 53    | 68    | 83    | 70    | 30    | 18    | 9   | 9   | 35           |
| 10%                    | 23  | 45    | 62    | 98    | 144   | 232   | 208   | 118   | 59    | 30    | 16  | 13  | 91           |
| 25%                    | 44  | 61    | 111   | 183   | 277   | 382   | 342   | 258   | 109   | 42    | 22  | 18  | 142          |
| 50%                    | 67  | 109   | 225   | 323   | 478   | 563   | 555   | 717   | 262   | 63    | 40  | 38  | 244          |
| 75%                    | 108 | 204   | 416   | 677   | 958   | 853   | 902   | 1,115 | 1,078 | 119   | 58  | 56  | 450          |
| 90%                    | 143 | 342   | 1,128 | 1,383 | 1,445 | 1,581 | 1,165 | 1,963 | 1,968 | 190   | 79  | 74  | 595          |
| 100%                   | 762 | 1,599 | 2,680 | 4,002 | 5,751 | 2,451 | 3,174 | 3,784 | 3,835 | 1,644 | 117 | 128 | 1,245        |
| Mean                   | 82  | 183   | 413   | 574   | 699   | 713   | 682   | 871   | 732   | 151   | 43  | 41  | 312          |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 10  | 20    | 26    | 42    | 53    | 68    | 83    | 70    | 30    | 18    | 9   | 9   | 35           |
| 10%                    | 23  | 45    | 62    | 98    | 144   | 232   | 208   | 118   | 59    | 30    | 16  | 13  | 91           |
| 25%                    | 44  | 61    | 111   | 183   | 277   | 382   | 342   | 258   | 109   | 42    | 22  | 18  | 142          |
| 50%                    | 67  | 109   | 225   | 323   | 478   | 563   | 555   | 717   | 272   | 63    | 40  | 38  | 244          |
| 75%                    | 108 | 204   | 416   | 677   | 958   | 853   | 901   | 1,115 | 1,053 | 116   | 58  | 56  | 448          |
| 90%                    | 143 | 342   | 1,128 | 1,383 | 1,445 | 1,581 | 1,142 | 1,972 | 1,934 | 190   | 79  | 74  | 597          |
| 100%                   | 762 | 1,640 | 2,663 | 3,969 | 5,748 | 2,450 | 3,128 | 3,668 | 3,835 | 1,644 | 117 | 128 | 1,244        |
| Mean                   | 82  | 184   | 413   | 574   | 701   | 713   | 680   | 870   | 733   | 150   | 43  | 41  | 312          |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 10  | 20    | 26    | 42    | 53    | 68    | 83    | 70    | 30    | 18    | 9   | 9   | 35           |
| 10%                    | 23  | 45    | 62    | 98    | 144   | 232   | 208   | 118   | 59    | 30    | 16  | 13  | 91           |
| 25%                    | 44  | 61    | 111   | 183   | 277   | 382   | 342   | 258   | 109   | 42    | 22  | 18  | 142          |
| 50%                    | 67  | 109   | 225   | 323   | 478   | 563   | 555   | 717   | 275   | 63    | 40  | 38  | 244          |
| 75%                    | 108 | 204   | 416   | 677   | 958   | 853   | 902   | 1,115 | 1,078 | 116   | 58  | 56  | 453          |
| 90%                    | 143 | 342   | 1,128 | 1,383 | 1,445 | 1,581 | 1,153 | 1,969 | 1,932 | 207   | 79  | 74  | 596          |
| 100%                   | 763 | 1,625 | 2,688 | 4,037 | 5,797 | 2,410 | 3,144 | 3,673 | 3,833 | 1,645 | 117 | 128 | 1,243        |
| Mean                   | 82  | 184   | 415   | 575   | 700   | 712   | 681   | 870   | 731   | 151   | 43  | 41  | 312          |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |       |     |     |              |
| 0%                     | 16  | 34    | 34    | 46    | 61    | 68    | 150   | 139   | 41    | 22    | 9   | 14  | 52           |
| 10%                    | 40  | 55    | 74    | 100   | 175   | 267   | 420   | 305   | 90    | 46    | 27  | 33  | 120          |
| 25%                    | 59  | 73    | 130   | 198   | 297   | 430   | 576   | 605   | 188   | 59    | 41  | 42  | 198          |
| 50%                    | 84  | 142   | 237   | 336   | 489   | 606   | 816   | 1,047 | 420   | 102   | 57  | 62  | 301          |
| 75%                    | 124 | 246   | 487   | 685   | 995   | 877   | 1,089 | 1,507 | 996   | 194   | 82  | 81  | 514          |
| 90%                    | 162 | 404   | 1,129 | 1,380 | 1,457 | 1,581 | 1,424 | 2,187 | 1,519 | 337   | 107 | 99  | 624          |
| 100%                   | 951 | 1,540 | 2,656 | 3,390 | 5,711 | 2,432 | 3,195 | 3,710 | 3,264 | 1,637 | 206 | 173 | 1,264        |
| Mean                   | 108 | 221   | 448   | 580   | 716   | 757   | 900   | 1,160 | 705   | 193   | 65  | 64  | 356          |

**Table H1a2-84. Water Year Average of Monthly Flows (cfs) — Yuba River, South Fork above Confluence with Yuba River (SWRCB S Yuba Inflow)**

| Water Year Type        | Oct | Nov | Dec | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-------|-------|-------|-------|-------|-------|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |       |       |       |       |       |       |     |     |     |
| C                      | 70  | 63  | 116 | 139   | 228   | 265   | 225   | 177   | 89    | 45  | 35  | 32  |
| D                      | 74  | 170 | 240 | 196   | 370   | 491   | 407   | 394   | 196   | 64  | 41  | 35  |
| BN                     | 80  | 129 | 230 | 351   | 528   | 585   | 707   | 634   | 466   | 74  | 45  | 36  |
| AN                     | 70  | 245 | 442 | 783   | 852   | 972   | 712   | 1,127 | 652   | 81  | 35  | 46  |
| W                      | 101 | 267 | 806 | 1,139 | 1,243 | 1,093 | 1,096 | 1,639 | 1,669 | 342 | 50  | 51  |
| All                    | 82  | 183 | 414 | 573   | 700   | 713   | 681   | 871   | 732   | 149 | 43  | 41  |
| <b>2008-2009 BiOps</b> |     |     |     |       |       |       |       |       |       |     |     |     |
| C                      | 70  | 63  | 116 | 139   | 228   | 265   | 225   | 177   | 89    | 45  | 35  | 32  |
| D                      | 74  | 170 | 240 | 196   | 370   | 491   | 407   | 394   | 196   | 64  | 41  | 35  |
| BN                     | 80  | 129 | 230 | 351   | 528   | 585   | 707   | 634   | 463   | 74  | 45  | 36  |
| AN                     | 70  | 246 | 442 | 786   | 852   | 972   | 712   | 1,124 | 657   | 81  | 35  | 46  |
| W                      | 101 | 267 | 803 | 1,141 | 1,239 | 1,093 | 1,098 | 1,639 | 1,669 | 347 | 50  | 51  |
| All                    | 82  | 183 | 413 | 574   | 699   | 713   | 682   | 871   | 732   | 151 | 43  | 41  |
| <b>2019 BiOps</b>      |     |     |     |       |       |       |       |       |       |     |     |     |
| C                      | 70  | 63  | 116 | 139   | 228   | 265   | 225   | 177   | 89    | 45  | 35  | 32  |
| D                      | 74  | 170 | 240 | 196   | 370   | 491   | 407   | 394   | 196   | 64  | 41  | 35  |
| BN                     | 80  | 129 | 230 | 351   | 528   | 585   | 705   | 634   | 462   | 74  | 45  | 36  |
| AN                     | 70  | 249 | 442 | 788   | 852   | 972   | 712   | 1,122 | 653   | 81  | 35  | 46  |
| W                      | 101 | 267 | 804 | 1,139 | 1,245 | 1,093 | 1,094 | 1,639 | 1,673 | 343 | 50  | 51  |
| All                    | 82  | 184 | 413 | 574   | 701   | 713   | 680   | 870   | 733   | 150 | 43  | 41  |
| <b>VA</b>              |     |     |     |       |       |       |       |       |       |     |     |     |
| C                      | 70  | 63  | 116 | 139   | 228   | 265   | 225   | 177   | 89    | 45  | 35  | 32  |
| D                      | 74  | 170 | 240 | 196   | 370   | 491   | 407   | 394   | 196   | 64  | 41  | 35  |
| BN                     | 80  | 129 | 230 | 351   | 528   | 585   | 706   | 634   | 466   | 74  | 45  | 36  |
| AN                     | 70  | 248 | 443 | 782   | 858   | 972   | 712   | 1,128 | 658   | 81  | 35  | 46  |
| W                      | 101 | 267 | 809 | 1,143 | 1,240 | 1,089 | 1,098 | 1,635 | 1,662 | 346 | 50  | 51  |
| All                    | 82  | 184 | 415 | 575   | 700   | 712   | 681   | 870   | 731   | 151 | 43  | 41  |
| <b>55 w/WSAs</b>       |     |     |     |       |       |       |       |       |       |     |     |     |
| C                      | 88  | 80  | 125 | 144   | 238   | 308   | 385   | 358   | 152   | 61  | 41  | 40  |
| D                      | 88  | 189 | 258 | 204   | 393   | 531   | 641   | 689   | 270   | 76  | 47  | 51  |
| BN                     | 94  | 162 | 235 | 374   | 548   | 650   | 969   | 976   | 502   | 109 | 64  | 61  |
| AN                     | 99  | 277 | 469 | 806   | 877   | 1,000 | 960   | 1,395 | 693   | 145 | 61  | 68  |
| W                      | 146 | 334 | 884 | 1,129 | 1,249 | 1,132 | 1,295 | 1,956 | 1,454 | 421 | 94  | 87  |
| All                    | 108 | 221 | 448 | 580   | 716   | 757   | 900   | 1,160 | 705   | 193 | 65  | 64  |

### H1a2.2.43 Yuba River below Englebright Reservoir (SWRCB Englebright)

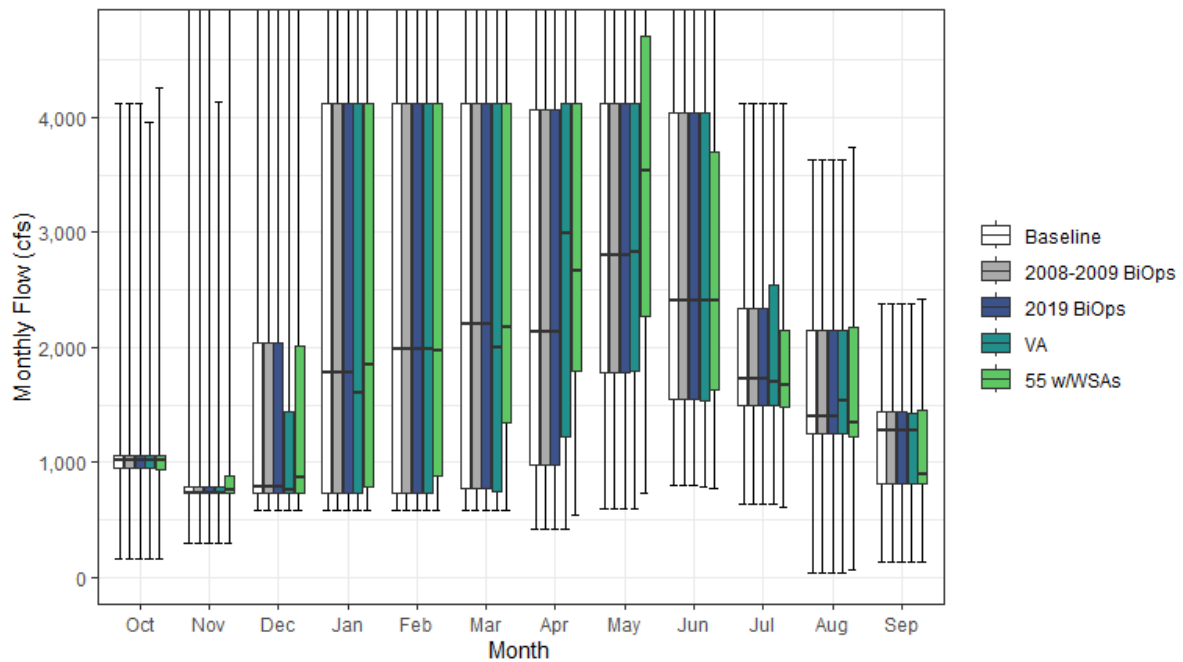


Figure H1a2-43. Yuba River Streamflow below Englebright Reservoir Monthly Boxplot (cfs)

**Table H1a2-85. Cumulative Distribution of Monthly Flow (cfs) — Yuba River below Englebright Reservoir (SWRCB Englebright)**

|                        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |        |       |       |       |       |              |
| 0%                     | 156   | 295   | 580    | 580    | 580    | 580    | 412    | 593    | 804   | 640   | 41    | 133   | 424          |
| 10%                    | 903   | 730   | 731    | 731    | 731    | 731    | 865    | 1,660  | 1,313 | 1,404 | 1,167 | 742   | 744          |
| 25%                    | 954   | 731   | 731    | 731    | 731    | 769    | 976    | 1,787  | 1,554 | 1,501 | 1,244 | 818   | 904          |
| 50%                    | 1,019 | 731   | 780    | 1,778  | 1,988  | 2,204  | 2,137  | 2,807  | 2,411 | 1,724 | 1,405 | 1,270 | 1,395        |
| 75%                    | 1,062 | 792   | 2,038  | 4,121  | 4,121  | 4,129  | 4,068  | 4,120  | 4,045 | 2,337 | 2,151 | 1,435 | 2,296        |
| 90%                    | 1,100 | 908   | 4,121  | 5,566  | 5,654  | 6,618  | 4,999  | 6,504  | 5,366 | 3,269 | 2,254 | 1,552 | 2,966        |
| 100%                   | 4,120 | 5,034 | 15,018 | 20,108 | 22,897 | 13,509 | 10,513 | 9,628  | 9,922 | 4,120 | 3,630 | 2,378 | 4,502        |
| Mean                   | 1,026 | 934   | 1,998  | 2,976  | 3,027  | 3,072  | 2,624  | 3,389  | 2,979 | 2,067 | 1,705 | 1,161 | 1,626        |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |        |       |       |       |       |              |
| 0%                     | 156   | 295   | 580    | 580    | 580    | 580    | 412    | 593    | 804   | 640   | 41    | 133   | 424          |
| 10%                    | 903   | 730   | 730    | 731    | 731    | 731    | 864    | 1,660  | 1,313 | 1,404 | 1,167 | 742   | 744          |
| 25%                    | 954   | 731   | 731    | 731    | 731    | 769    | 976    | 1,787  | 1,554 | 1,501 | 1,244 | 818   | 904          |
| 50%                    | 1,019 | 731   | 780    | 1,780  | 1,988  | 2,204  | 2,137  | 2,807  | 2,411 | 1,724 | 1,404 | 1,270 | 1,395        |
| 75%                    | 1,062 | 792   | 2,038  | 4,121  | 4,121  | 4,129  | 4,068  | 4,120  | 4,045 | 2,337 | 2,151 | 1,435 | 2,294        |
| 90%                    | 1,100 | 908   | 4,121  | 5,567  | 5,654  | 6,618  | 4,999  | 6,501  | 5,407 | 3,274 | 2,254 | 1,552 | 2,965        |
| 100%                   | 4,120 | 5,038 | 15,007 | 20,140 | 22,876 | 13,590 | 10,548 | 9,670  | 9,922 | 4,120 | 3,630 | 2,378 | 4,506        |
| Mean                   | 1,026 | 934   | 1,997  | 2,977  | 3,027  | 3,072  | 2,624  | 3,389  | 2,979 | 2,068 | 1,704 | 1,162 | 1,626        |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |        |       |       |       |       |              |
| 0%                     | 156   | 295   | 580    | 580    | 580    | 580    | 412    | 593    | 804   | 640   | 41    | 133   | 424          |
| 10%                    | 903   | 730   | 731    | 731    | 731    | 731    | 864    | 1,660  | 1,313 | 1,404 | 1,167 | 742   | 744          |
| 25%                    | 954   | 731   | 731    | 731    | 731    | 769    | 976    | 1,787  | 1,554 | 1,501 | 1,244 | 818   | 904          |
| 50%                    | 1,019 | 731   | 780    | 1,779  | 1,988  | 2,204  | 2,137  | 2,807  | 2,411 | 1,724 | 1,398 | 1,270 | 1,395        |
| 75%                    | 1,062 | 792   | 2,038  | 4,121  | 4,121  | 4,129  | 4,068  | 4,120  | 4,044 | 2,337 | 2,151 | 1,435 | 2,294        |
| 90%                    | 1,100 | 908   | 4,121  | 5,566  | 5,654  | 6,618  | 4,999  | 6,501  | 5,366 | 3,272 | 2,254 | 1,552 | 2,966        |
| 100%                   | 4,120 | 5,079 | 14,991 | 20,106 | 22,873 | 13,509 | 10,510 | 9,629  | 9,922 | 4,120 | 3,630 | 2,378 | 4,505        |
| Mean                   | 1,026 | 934   | 1,997  | 2,976  | 3,028  | 3,072  | 2,623  | 3,388  | 2,980 | 2,068 | 1,704 | 1,161 | 1,626        |
| <b>VA</b>              |       |       |        |        |        |        |        |        |       |       |       |       |              |
| 0%                     | 156   | 295   | 580    | 580    | 580    | 580    | 412    | 593    | 785   | 640   | 41    | 133   | 424          |
| 10%                    | 903   | 730   | 730    | 731    | 731    | 731    | 824    | 1,562  | 1,294 | 1,385 | 1,132 | 736   | 717          |
| 25%                    | 945   | 731   | 731    | 731    | 731    | 744    | 1,226  | 1,790  | 1,536 | 1,489 | 1,254 | 818   | 930          |
| 50%                    | 1,018 | 731   | 763    | 1,602  | 1,983  | 1,999  | 2,991  | 2,835  | 2,402 | 1,699 | 1,529 | 1,271 | 1,419        |
| 75%                    | 1,062 | 789   | 1,437  | 4,121  | 4,122  | 4,129  | 4,121  | 4,120  | 4,043 | 2,550 | 2,145 | 1,433 | 2,292        |
| 90%                    | 1,100 | 886   | 4,121  | 5,359  | 5,654  | 6,618  | 4,999  | 6,077  | 5,363 | 3,312 | 2,272 | 1,558 | 2,921        |
| 100%                   | 3,955 | 4,141 | 14,123 | 20,174 | 22,922 | 13,590 | 10,479 | 9,684  | 9,920 | 4,120 | 3,630 | 2,379 | 4,435        |
| Mean                   | 1,022 | 912   | 1,874  | 2,852  | 2,988  | 3,046  | 2,989  | 3,428  | 2,945 | 2,049 | 1,708 | 1,164 | 1,626        |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |        |       |       |       |       |              |
| 0%                     | 156   | 295   | 580    | 581    | 580    | 581    | 538    | 725    | 771   | 609   | 65    | 133   | 420          |
| 10%                    | 903   | 730   | 730    | 731    | 731    | 855    | 1,241  | 1,560  | 1,206 | 1,341 | 1,115 | 755   | 785          |
| 25%                    | 939   | 731   | 731    | 780    | 876    | 1,343  | 1,800  | 2,275  | 1,628 | 1,477 | 1,219 | 817   | 999          |
| 50%                    | 1,019 | 757   | 870    | 1,843  | 1,975  | 2,176  | 2,672  | 3,533  | 2,408 | 1,675 | 1,338 | 896   | 1,392        |
| 75%                    | 1,065 | 881   | 2,017  | 4,121  | 4,121  | 4,122  | 4,121  | 4,709  | 3,700 | 2,146 | 2,173 | 1,457 | 2,351        |
| 90%                    | 1,107 | 1,520 | 4,121  | 5,359  | 5,629  | 6,458  | 4,999  | 6,701  | 4,859 | 3,357 | 2,291 | 1,586 | 2,975        |
| 100%                   | 4,265 | 6,575 | 13,250 | 19,527 | 22,836 | 13,509 | 10,789 | 10,103 | 8,653 | 4,121 | 3,739 | 2,420 | 4,542        |
| Mean                   | 1,028 | 1,071 | 1,963  | 2,923  | 3,042  | 3,223  | 3,054  | 3,864  | 2,843 | 1,952 | 1,631 | 1,137 | 1,672        |

**Table H1a2-86. Water Year Average of Monthly Flows (cfs) — Yuba River below Englebright Reservoir (SWRCB Englebright)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 996   | 764   | 766   | 802   | 753   | 754   | 789   | 1,407 | 1,237 | 1,272 | 996   | 723   |
| D                      | 1,007 | 824   | 953   | 1,212 | 1,146 | 1,475 | 1,382 | 2,101 | 1,823 | 1,601 | 1,355 | 956   |
| BN                     | 1,010 | 784   | 1,074 | 1,934 | 2,111 | 2,030 | 2,566 | 3,008 | 2,608 | 1,877 | 1,689 | 1,150 |
| AN                     | 942   | 1,065 | 1,963 | 3,276 | 3,458 | 4,514 | 2,996 | 3,738 | 2,990 | 2,058 | 1,794 | 1,317 |
| W                      | 1,101 | 1,147 | 4,021 | 5,968 | 6,027 | 5,563 | 4,401 | 5,492 | 4,988 | 2,957 | 2,313 | 1,489 |
| All                    | 1,026 | 934   | 1,998 | 2,976 | 3,027 | 3,072 | 2,624 | 3,389 | 2,979 | 2,067 | 1,705 | 1,161 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 996   | 764   | 766   | 802   | 753   | 754   | 789   | 1,407 | 1,237 | 1,272 | 996   | 724   |
| D                      | 1,007 | 824   | 953   | 1,213 | 1,146 | 1,475 | 1,382 | 2,101 | 1,823 | 1,601 | 1,356 | 956   |
| BN                     | 1,010 | 784   | 1,074 | 1,934 | 2,111 | 2,030 | 2,566 | 3,008 | 2,605 | 1,877 | 1,689 | 1,150 |
| AN                     | 942   | 1,066 | 1,963 | 3,279 | 3,458 | 4,514 | 2,996 | 3,736 | 2,994 | 2,059 | 1,794 | 1,317 |
| W                      | 1,101 | 1,148 | 4,018 | 5,969 | 6,025 | 5,563 | 4,403 | 5,493 | 4,987 | 2,960 | 2,311 | 1,493 |
| All                    | 1,026 | 934   | 1,997 | 2,977 | 3,027 | 3,072 | 2,624 | 3,389 | 2,979 | 2,068 | 1,704 | 1,162 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 996   | 764   | 766   | 802   | 753   | 754   | 789   | 1,407 | 1,237 | 1,272 | 996   | 724   |
| D                      | 1,007 | 824   | 953   | 1,212 | 1,146 | 1,475 | 1,382 | 2,101 | 1,823 | 1,601 | 1,355 | 956   |
| BN                     | 1,010 | 784   | 1,074 | 1,934 | 2,111 | 2,030 | 2,566 | 3,008 | 2,604 | 1,877 | 1,689 | 1,150 |
| AN                     | 942   | 1,069 | 1,963 | 3,281 | 3,458 | 4,514 | 2,996 | 3,735 | 2,990 | 2,059 | 1,793 | 1,317 |
| W                      | 1,101 | 1,148 | 4,018 | 5,967 | 6,029 | 5,563 | 4,399 | 5,491 | 4,992 | 2,958 | 2,312 | 1,490 |
| All                    | 1,026 | 934   | 1,997 | 2,976 | 3,028 | 3,072 | 2,623 | 3,388 | 2,980 | 2,068 | 1,704 | 1,161 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 996   | 764   | 765   | 771   | 742   | 742   | 754   | 1,369 | 1,191 | 1,238 | 966   | 712   |
| D                      | 998   | 824   | 936   | 1,083 | 1,064 | 1,434 | 1,948 | 2,109 | 1,752 | 1,538 | 1,428 | 973   |
| BN                     | 1,010 | 784   | 1,007 | 1,742 | 2,056 | 2,006 | 3,379 | 3,169 | 2,541 | 1,827 | 1,646 | 1,148 |
| AN                     | 942   | 991   | 1,768 | 3,229 | 3,456 | 4,438 | 3,722 | 3,849 | 3,021 | 2,144 | 1,800 | 1,317 |
| W                      | 1,092 | 1,104 | 3,744 | 5,811 | 6,001 | 5,559 | 4,403 | 5,490 | 4,981 | 2,959 | 2,311 | 1,493 |
| All                    | 1,022 | 912   | 1,874 | 2,852 | 2,988 | 3,046 | 2,989 | 3,428 | 2,945 | 2,049 | 1,708 | 1,164 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 967   | 766   | 802   | 824   | 838   | 983   | 1,176 | 1,476 | 1,221 | 1,171 | 957   | 723   |
| D                      | 999   | 885   | 1,027 | 1,150 | 1,295 | 1,760 | 2,052 | 2,494 | 1,762 | 1,514 | 1,259 | 853   |
| BN                     | 1,004 | 827   | 1,103 | 1,940 | 2,068 | 2,310 | 2,987 | 3,486 | 2,507 | 1,719 | 1,587 | 1,154 |
| AN                     | 923   | 1,265 | 1,890 | 3,411 | 3,440 | 4,360 | 3,363 | 4,424 | 2,894 | 1,911 | 1,680 | 1,309 |
| W                      | 1,139 | 1,446 | 3,844 | 5,770 | 5,956 | 5,614 | 4,708 | 6,156 | 4,694 | 2,853 | 2,272 | 1,486 |
| All                    | 1,028 | 1,071 | 1,963 | 2,923 | 3,042 | 3,223 | 3,054 | 3,864 | 2,843 | 1,952 | 1,631 | 1,137 |

## H1a2.2.44 Yuba River above Confluence with Feather River (SWRCB Yuba River)

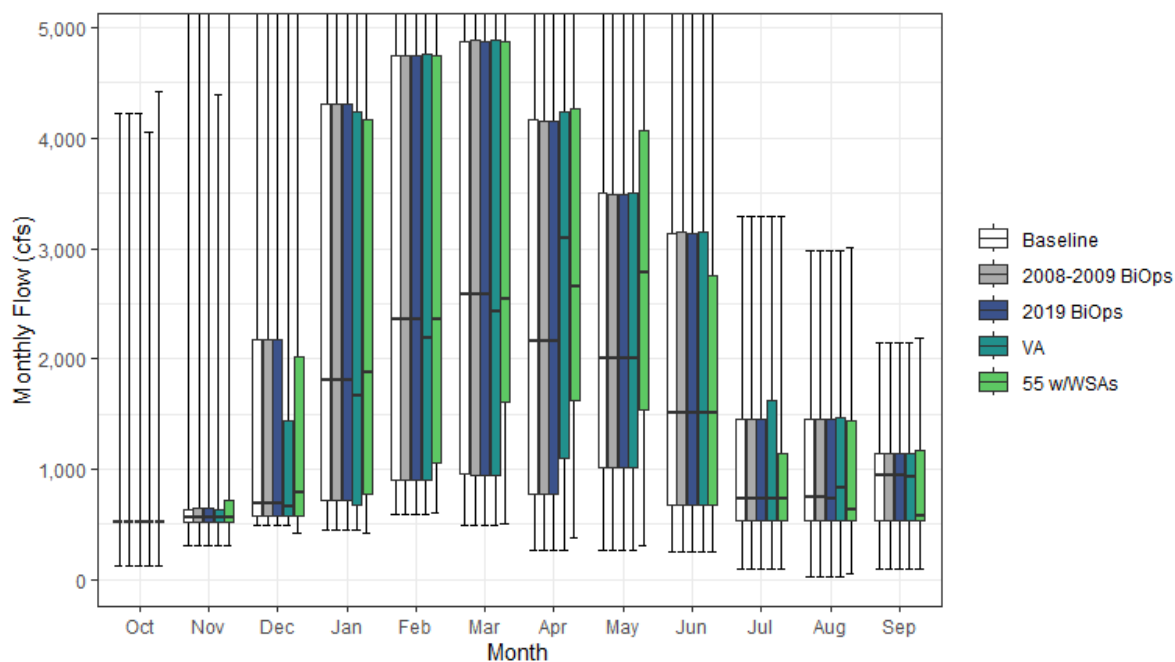


Figure H1a2-44. Yuba River Streamflow above Confluence with Feather River Monthly Boxplot (cfs)

**Table H1a2-87. Cumulative Distribution of Monthly Flow (cfs) — Yuba River above Confluence with Feather River (SWRCB Yuba River)**

|                        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 124   | 312   | 484    | 452    | 587    | 495    | 269    | 270   | 250   | 99    | 27    | 99    | 247          |
| 10%                    | 517   | 523   | 524    | 618    | 781    | 799    | 715    | 909   | 519   | 525   | 524   | 524   | 465          |
| 25%                    | 520   | 524   | 569    | 718    | 901    | 953    | 772    | 1,018 | 673   | 528   | 528   | 528   | 638          |
| 50%                    | 523   | 557   | 688    | 1,801  | 2,358  | 2,581  | 2,163  | 2,006 | 1,513 | 727   | 740   | 946   | 1,192        |
| 75%                    | 524   | 636   | 2,166  | 4,309  | 4,753  | 4,878  | 4,166  | 3,501 | 3,140 | 1,454 | 1,459 | 1,147 | 2,176        |
| 90%                    | 524   | 808   | 4,540  | 6,366  | 6,824  | 7,738  | 5,518  | 5,884 | 4,469 | 2,295 | 1,628 | 1,280 | 2,882        |
| 100%                   | 4,222 | 5,193 | 15,465 | 22,405 | 25,564 | 15,576 | 11,592 | 9,150 | 9,089 | 3,294 | 2,976 | 2,144 | 4,556        |
| Mean                   | 547   | 779   | 2,001  | 3,180  | 3,535  | 3,527  | 2,677  | 2,662 | 2,108 | 1,127 | 1,035 | 874   | 1,447        |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 124   | 312   | 484    | 452    | 590    | 495    | 269    | 270   | 250   | 99    | 27    | 99    | 247          |
| 10%                    | 517   | 523   | 524    | 617    | 781    | 802    | 715    | 909   | 519   | 525   | 524   | 525   | 465          |
| 25%                    | 523   | 523   | 569    | 710    | 901    | 948    | 772    | 1,015 | 673   | 528   | 528   | 528   | 638          |
| 50%                    | 523   | 557   | 686    | 1,802  | 2,357  | 2,580  | 2,163  | 2,007 | 1,513 | 727   | 739   | 946   | 1,192        |
| 75%                    | 524   | 640   | 2,166  | 4,309  | 4,753  | 4,887  | 4,149  | 3,483 | 3,145 | 1,454 | 1,459 | 1,147 | 2,174        |
| 90%                    | 524   | 806   | 4,540  | 6,368  | 6,824  | 7,726  | 5,516  | 5,852 | 4,509 | 2,300 | 1,628 | 1,280 | 2,879        |
| 100%                   | 4,222 | 5,196 | 15,454 | 22,436 | 25,543 | 15,675 | 11,627 | 9,191 | 9,089 | 3,294 | 2,976 | 2,144 | 4,560        |
| Mean                   | 547   | 779   | 2,000  | 3,180  | 3,534  | 3,528  | 2,676  | 2,660 | 2,107 | 1,129 | 1,034 | 876   | 1,446        |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 124   | 312   | 484    | 452    | 587    | 495    | 269    | 270   | 250   | 99    | 27    | 99    | 247          |
| 10%                    | 517   | 523   | 524    | 618    | 780    | 799    | 715    | 910   | 519   | 524   | 524   | 525   | 465          |
| 25%                    | 520   | 524   | 569    | 710    | 901    | 949    | 772    | 1,018 | 673   | 528   | 528   | 528   | 638          |
| 50%                    | 523   | 557   | 688    | 1,801  | 2,357  | 2,581  | 2,159  | 2,007 | 1,513 | 727   | 725   | 946   | 1,193        |
| 75%                    | 524   | 640   | 2,166  | 4,309  | 4,753  | 4,878  | 4,149  | 3,491 | 3,140 | 1,454 | 1,459 | 1,147 | 2,173        |
| 90%                    | 524   | 802   | 4,540  | 6,366  | 6,824  | 7,721  | 5,516  | 5,867 | 4,468 | 2,296 | 1,628 | 1,280 | 2,879        |
| 100%                   | 4,222 | 5,237 | 15,438 | 22,402 | 25,540 | 15,576 | 11,589 | 9,151 | 9,089 | 3,294 | 2,982 | 2,144 | 4,559        |
| Mean                   | 547   | 779   | 2,000  | 3,179  | 3,536  | 3,527  | 2,674  | 2,659 | 2,108 | 1,128 | 1,034 | 874   | 1,446        |
| <b>VA</b>              |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 124   | 312   | 484    | 450    | 587    | 493    | 269    | 270   | 250   | 99    | 27    | 99    | 247          |
| 10%                    | 498   | 523   | 524    | 612    | 781    | 781    | 713    | 770   | 425   | 428   | 428   | 441   | 447          |
| 25%                    | 520   | 523   | 569    | 673    | 896    | 939    | 1,095  | 1,018 | 673   | 528   | 528   | 527   | 659          |
| 50%                    | 523   | 556   | 664    | 1,660  | 2,193  | 2,427  | 3,087  | 2,007 | 1,512 | 727   | 825   | 924   | 1,193        |
| 75%                    | 524   | 634   | 1,433  | 4,241  | 4,761  | 4,887  | 4,240  | 3,502 | 3,143 | 1,617 | 1,460 | 1,147 | 2,155        |
| 90%                    | 524   | 745   | 4,468  | 6,311  | 6,824  | 7,722  | 5,516  | 5,586 | 4,465 | 2,375 | 1,645 | 1,299 | 2,860        |
| 100%                   | 4,059 | 4,394 | 14,582 | 22,469 | 25,588 | 15,675 | 11,540 | 9,205 | 9,087 | 3,294 | 2,976 | 2,145 | 4,489        |
| Mean                   | 543   | 756   | 1,878  | 3,057  | 3,497  | 3,500  | 3,035  | 2,704 | 2,076 | 1,111 | 1,039 | 877   | 1,448        |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 124   | 312   | 424    | 426    | 601    | 504    | 373    | 307   | 250   | 99    | 51    | 99    | 250          |
| 10%                    | 425   | 523   | 524    | 623    | 771    | 945    | 1,128  | 890   | 425   | 428   | 428   | 428   | 529          |
| 25%                    | 520   | 524   | 570    | 771    | 1,054  | 1,601  | 1,619  | 1,539 | 674   | 528   | 527   | 527   | 749          |
| 50%                    | 523   | 557   | 793    | 1,875  | 2,353  | 2,545  | 2,653  | 2,784 | 1,513 | 727   | 627   | 572   | 1,189        |
| 75%                    | 524   | 718   | 2,012  | 4,166  | 4,753  | 4,870  | 4,263  | 4,069 | 2,750 | 1,140 | 1,432 | 1,175 | 2,234        |
| 90%                    | 524   | 1,444 | 4,541  | 6,166  | 6,834  | 7,412  | 5,528  | 5,981 | 3,968 | 2,360 | 1,648 | 1,328 | 2,897        |
| 100%                   | 4,418 | 6,720 | 13,721 | 21,829 | 25,504 | 15,576 | 11,815 | 9,347 | 7,835 | 3,294 | 3,008 | 2,186 | 4,591        |
| Mean                   | 557   | 910   | 1,966  | 3,127  | 3,547  | 3,675  | 3,112  | 3,158 | 1,986 | 1,027 | 964   | 843   | 1,496        |

**Table H1a2-88. Water Year Average of Monthly Flows (cfs) — Yuba River above Confluence with Feather River (SWRCB Yuba River)**

| Water Year Type        | Oct | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |     |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 506 | 535   | 628   | 724   | 876   | 841   | 620   | 705   | 459   | 402   | 398   | 453   |
| D                      | 506 | 644   | 886   | 1,145 | 1,336 | 1,718 | 1,267 | 1,336 | 918   | 650   | 666   | 660   |
| BN                     | 510 | 608   | 973   | 1,953 | 2,507 | 2,390 | 2,580 | 2,268 | 1,721 | 904   | 998   | 853   |
| AN                     | 489 | 951   | 1,911 | 3,585 | 4,083 | 5,145 | 3,101 | 3,017 | 2,116 | 1,095 | 1,139 | 1,031 |
| W                      | 646 | 1,047 | 4,236 | 6,596 | 6,996 | 6,359 | 4,700 | 4,785 | 4,102 | 2,018 | 1,626 | 1,207 |
| All                    | 547 | 779   | 2,001 | 3,180 | 3,535 | 3,527 | 2,677 | 2,662 | 2,108 | 1,127 | 1,035 | 874   |
| <b>2008-2009 BiOps</b> |     |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 506 | 535   | 628   | 724   | 876   | 841   | 620   | 705   | 459   | 402   | 398   | 453   |
| D                      | 506 | 643   | 887   | 1,143 | 1,337 | 1,723 | 1,267 | 1,337 | 918   | 650   | 666   | 660   |
| BN                     | 510 | 609   | 972   | 1,952 | 2,508 | 2,386 | 2,575 | 2,265 | 1,718 | 904   | 998   | 853   |
| AN                     | 490 | 950   | 1,911 | 3,588 | 4,084 | 5,148 | 3,087 | 3,008 | 2,119 | 1,096 | 1,139 | 1,031 |
| W                      | 646 | 1,047 | 4,234 | 6,597 | 6,993 | 6,358 | 4,706 | 4,784 | 4,101 | 2,022 | 1,624 | 1,212 |
| All                    | 547 | 779   | 2,000 | 3,180 | 3,534 | 3,528 | 2,676 | 2,660 | 2,107 | 1,129 | 1,034 | 876   |
| <b>2019 BiOps</b>      |     |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 506 | 534   | 628   | 726   | 875   | 841   | 621   | 705   | 459   | 403   | 398   | 453   |
| D                      | 506 | 644   | 886   | 1,143 | 1,336 | 1,720 | 1,267 | 1,339 | 918   | 650   | 666   | 660   |
| BN                     | 510 | 608   | 973   | 1,950 | 2,509 | 2,389 | 2,575 | 2,267 | 1,717 | 904   | 998   | 853   |
| AN                     | 489 | 953   | 1,913 | 3,590 | 4,084 | 5,143 | 3,085 | 3,005 | 2,115 | 1,096 | 1,137 | 1,031 |
| W                      | 646 | 1,047 | 4,233 | 6,595 | 6,998 | 6,358 | 4,698 | 4,779 | 4,105 | 2,020 | 1,626 | 1,207 |
| All                    | 547 | 779   | 2,000 | 3,179 | 3,536 | 3,527 | 2,674 | 2,659 | 2,108 | 1,128 | 1,034 | 874   |
| <b>VA</b>              |     |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 506 | 534   | 628   | 694   | 866   | 825   | 591   | 680   | 424   | 381   | 376   | 444   |
| D                      | 502 | 644   | 870   | 1,016 | 1,256 | 1,675 | 1,823 | 1,346 | 848   | 587   | 738   | 678   |
| BN                     | 510 | 607   | 905   | 1,760 | 2,453 | 2,363 | 3,383 | 2,429 | 1,655 | 854   | 956   | 851   |
| AN                     | 489 | 876   | 1,719 | 3,539 | 4,081 | 5,075 | 3,805 | 3,128 | 2,147 | 1,180 | 1,144 | 1,031 |
| W                      | 637 | 1,004 | 3,965 | 6,442 | 6,970 | 6,355 | 4,699 | 4,783 | 4,095 | 2,020 | 1,624 | 1,211 |
| All                    | 543 | 756   | 1,878 | 3,057 | 3,497 | 3,500 | 3,035 | 2,704 | 2,076 | 1,111 | 1,039 | 877   |
| <b>55 w/WSAs</b>       |     |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 505 | 524   | 660   | 746   | 959   | 1,072 | 1,027 | 886   | 504   | 376   | 373   | 422   |
| D                      | 501 | 699   | 960   | 1,085 | 1,482 | 1,999 | 1,940 | 1,749 | 870   | 572   | 571   | 549   |
| BN                     | 512 | 646   | 1,002 | 1,956 | 2,462 | 2,663 | 3,001 | 2,740 | 1,622 | 747   | 897   | 856   |
| AN                     | 484 | 1,145 | 1,838 | 3,719 | 4,065 | 4,991 | 3,469 | 3,701 | 2,020 | 949   | 1,026 | 1,023 |
| W                      | 683 | 1,345 | 4,063 | 6,398 | 6,922 | 6,408 | 5,010 | 5,450 | 3,810 | 1,915 | 1,585 | 1,204 |
| All                    | 557 | 910   | 1,966 | 3,127 | 3,547 | 3,675 | 3,112 | 3,158 | 1,986 | 1,027 | 964   | 843   |

## H1a2.2.45 Total Delta Inflow

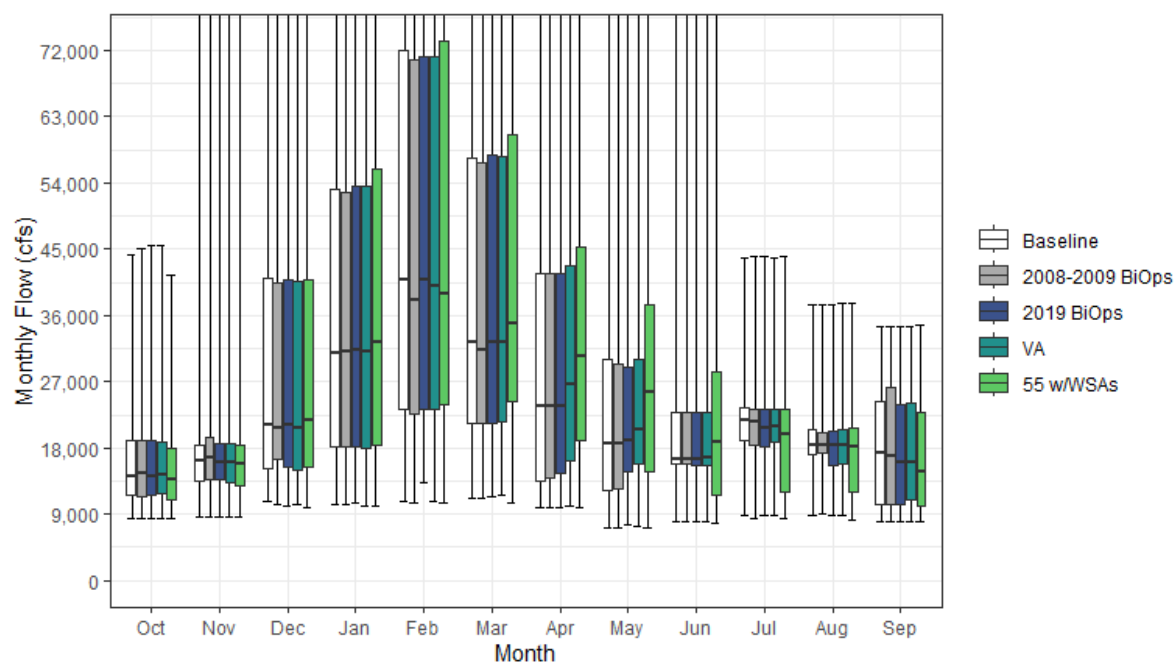


Figure H1a2-45. Total Delta Inflow Monthly Boxplot (cfs)

**Table H1a2-89. Cumulative Distribution of Monthly Flow (cfs) — Total Delta Inflow**

|                        | Oct    | Nov    | Dec     | Jan     | Feb     | Mar     | Apr     | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 8,449  | 8,698  | 10,656  | 10,257  | 10,723  | 11,231  | 9,919   | 7,201  | 7,988  | 8,754  | 8,811  | 7,991  | 7,497        |
| 10%                    | 9,351  | 11,013 | 14,240  | 14,586  | 16,218  | 15,538  | 11,881  | 10,752 | 12,317 | 10,047 | 11,254 | 8,817  | 10,268       |
| 25%                    | 11,588 | 13,485 | 15,111  | 18,071  | 23,231  | 21,250  | 13,435  | 12,247 | 15,914 | 19,041 | 17,100 | 10,382 | 12,742       |
| 50%                    | 14,145 | 16,154 | 21,059  | 30,915  | 40,827  | 32,373  | 23,761  | 18,681 | 16,527 | 21,833 | 18,399 | 17,299 | 16,953       |
| 75%                    | 18,939 | 18,292 | 40,954  | 53,219  | 71,924  | 57,327  | 41,669  | 30,093 | 22,865 | 23,421 | 20,409 | 24,277 | 28,742       |
| 90%                    | 21,477 | 26,830 | 74,924  | 103,296 | 132,470 | 98,037  | 72,132  | 55,184 | 41,408 | 25,810 | 25,117 | 26,014 | 38,848       |
| 100%                   | 44,167 | 78,537 | 158,487 | 260,670 | 266,590 | 244,758 | 154,302 | 84,626 | 81,888 | 43,865 | 37,468 | 34,419 | 63,400       |
| Mean                   | 15,761 | 18,571 | 34,150  | 47,197  | 58,758  | 47,554  | 33,370  | 25,403 | 22,217 | 20,693 | 18,361 | 17,734 | 21,617       |
| <b>2008-2009 BiOps</b> |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 8,464  | 8,686  | 10,411  | 10,390  | 10,563  | 11,121  | 9,918   | 7,149  | 7,984  | 8,517  | 8,994  | 7,994  | 7,551        |
| 10%                    | 9,318  | 10,542 | 14,221  | 14,449  | 16,402  | 15,502  | 11,993  | 10,763 | 12,710 | 10,212 | 11,178 | 8,638  | 10,245       |
| 25%                    | 11,415 | 13,728 | 16,447  | 18,194  | 22,609  | 21,268  | 13,835  | 12,410 | 15,897 | 18,441 | 17,250 | 10,329 | 12,648       |
| 50%                    | 14,527 | 16,619 | 20,623  | 31,048  | 38,010  | 31,369  | 23,761  | 18,682 | 16,527 | 21,452 | 18,341 | 16,826 | 16,975       |
| 75%                    | 18,935 | 19,453 | 40,374  | 52,625  | 70,717  | 56,676  | 41,675  | 29,482 | 22,806 | 23,308 | 20,041 | 26,261 | 28,845       |
| 90%                    | 21,480 | 26,433 | 74,989  | 103,638 | 130,414 | 97,840  | 72,105  | 55,175 | 41,441 | 25,019 | 25,093 | 28,920 | 39,059       |
| 100%                   | 45,035 | 78,561 | 158,489 | 260,669 | 266,591 | 244,694 | 154,295 | 84,665 | 81,888 | 43,927 | 37,467 | 34,393 | 63,398       |
| Mean                   | 15,803 | 18,920 | 34,005  | 46,901  | 58,328  | 47,447  | 33,497  | 25,384 | 22,265 | 20,414 | 18,425 | 18,542 | 21,626       |
| <b>2019 BiOps</b>      |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 8,452  | 8,581  | 10,044  | 10,465  | 13,300  | 11,320  | 9,920   | 7,498  | 7,982  | 8,755  | 8,812  | 7,993  | 7,597        |
| 10%                    | 9,341  | 10,948 | 13,691  | 14,588  | 16,188  | 15,566  | 12,380  | 11,540 | 12,052 | 9,797  | 11,194 | 8,817  | 10,248       |
| 25%                    | 11,549 | 13,782 | 15,452  | 18,252  | 23,225  | 21,262  | 14,620  | 14,669 | 15,617 | 18,220 | 15,558 | 10,334 | 12,754       |
| 50%                    | 14,219 | 16,121 | 21,062  | 31,301  | 40,770  | 32,268  | 23,775  | 19,081 | 16,504 | 20,784 | 18,285 | 16,037 | 16,777       |
| 75%                    | 18,973 | 18,483 | 40,904  | 53,492  | 71,190  | 57,876  | 41,669  | 28,901 | 22,870 | 23,295 | 20,190 | 23,977 | 28,610       |
| 90%                    | 21,436 | 26,612 | 76,958  | 104,513 | 133,112 | 97,961  | 72,105  | 55,175 | 41,408 | 26,224 | 25,138 | 25,549 | 38,692       |
| 100%                   | 45,545 | 78,538 | 158,487 | 260,670 | 266,591 | 244,758 | 154,211 | 84,626 | 81,888 | 43,927 | 37,486 | 34,419 | 63,404       |
| Mean                   | 15,704 | 18,600 | 34,217  | 47,252  | 58,772  | 47,559  | 33,720  | 26,192 | 22,142 | 20,229 | 18,124 | 17,317 | 21,620       |
| <b>VA</b>              |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 8,454  | 8,665  | 10,302  | 10,131  | 10,717  | 11,513  | 10,046  | 7,373  | 7,979  | 8,748  | 8,787  | 7,990  | 7,668        |
| 10%                    | 9,396  | 10,584 | 13,527  | 14,189  | 15,716  | 15,360  | 12,217  | 11,151 | 11,617 | 9,985  | 11,171 | 8,784  | 10,242       |
| 25%                    | 11,747 | 13,391 | 15,090  | 17,926  | 23,225  | 21,536  | 16,241  | 15,840 | 15,591 | 18,791 | 15,735 | 11,062 | 12,957       |
| 50%                    | 14,253 | 16,141 | 20,613  | 31,001  | 40,012  | 32,467  | 26,567  | 20,464 | 16,677 | 20,854 | 18,399 | 16,038 | 17,173       |
| 75%                    | 18,883 | 18,580 | 40,654  | 53,497  | 71,179  | 57,566  | 42,737  | 29,985 | 22,890 | 23,266 | 20,469 | 24,115 | 28,640       |
| 90%                    | 21,531 | 26,672 | 74,745  | 103,302 | 133,077 | 97,788  | 72,122  | 55,175 | 41,487 | 24,506 | 25,043 | 25,849 | 38,685       |
| 100%                   | 45,548 | 78,630 | 158,499 | 260,736 | 266,297 | 244,758 | 154,355 | 84,705 | 81,888 | 43,842 | 37,662 | 34,421 | 63,406       |
| Mean                   | 15,760 | 18,501 | 33,781  | 47,113  | 58,615  | 47,679  | 34,808  | 26,852 | 22,110 | 20,310 | 18,281 | 17,350 | 21,701       |
| <b>55 w/WSAs</b>       |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 8,513  | 8,579  | 9,872   | 10,150  | 10,617  | 10,616  | 9,898   | 7,243  | 7,771  | 8,489  | 8,201  | 7,947  | 7,142        |
| 10%                    | 9,131  | 10,364 | 12,567  | 14,472  | 17,239  | 17,036  | 12,358  | 10,969 | 11,019 | 8,813  | 10,881 | 9,081  | 10,172       |
| 25%                    | 10,943 | 12,827 | 15,407  | 18,279  | 23,977  | 24,230  | 18,958  | 14,729 | 11,572 | 11,977 | 12,024 | 10,167 | 12,753       |
| 50%                    | 13,622 | 15,934 | 21,715  | 32,274  | 38,907  | 34,955  | 30,431  | 25,638 | 18,786 | 19,757 | 18,250 | 14,866 | 17,212       |
| 75%                    | 17,896 | 18,301 | 40,908  | 55,899  | 73,262  | 60,489  | 45,205  | 37,455 | 28,377 | 23,190 | 20,724 | 22,871 | 29,199       |
| 90%                    | 21,085 | 24,929 | 72,844  | 104,443 | 128,366 | 92,045  | 73,689  | 55,704 | 41,323 | 25,701 | 23,895 | 24,124 | 38,926       |
| 100%                   | 41,440 | 79,176 | 156,828 | 254,917 | 259,985 | 244,744 | 152,134 | 84,607 | 80,630 | 44,019 | 37,707 | 34,744 | 63,459       |
| Mean                   | 15,050 | 17,889 | 33,754  | 47,620  | 58,688  | 48,737  | 37,288  | 29,315 | 22,772 | 18,288 | 17,213 | 16,230 | 21,802       |

**Table H1a2-90. Water Year Average of Monthly Flows (cfs) — Total Delta Inflow**

| Water Year Type        | Oct    | Nov    | Dec    | Jan    | Feb     | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    |
|------------------------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|
| <b>Baseline</b>        |        |        |        |        |         |        |        |        |        |        |        |        |
| C                      | 12,614 | 13,091 | 17,577 | 18,359 | 20,139  | 16,942 | 11,403 | 9,781  | 11,374 | 10,478 | 10,700 | 8,838  |
| D                      | 14,700 | 15,788 | 22,377 | 19,979 | 27,756  | 25,191 | 15,537 | 13,373 | 15,926 | 18,342 | 16,316 | 11,525 |
| BN                     | 15,808 | 16,405 | 22,874 | 30,305 | 44,024  | 33,298 | 25,973 | 18,456 | 17,448 | 21,776 | 18,717 | 16,274 |
| AN                     | 14,780 | 19,833 | 31,057 | 56,184 | 73,304  | 58,297 | 34,165 | 28,317 | 20,657 | 24,630 | 19,250 | 25,226 |
| W                      | 18,579 | 24,401 | 60,001 | 89,640 | 105,604 | 85,012 | 62,529 | 45,790 | 36,258 | 25,606 | 23,367 | 24,960 |
| All                    | 15,761 | 18,571 | 34,150 | 47,197 | 58,758  | 47,554 | 33,370 | 25,403 | 22,217 | 20,693 | 18,361 | 17,734 |
| <b>2008-2009 BiOps</b> |        |        |        |        |         |        |        |        |        |        |        |        |
| C                      | 12,636 | 13,071 | 17,612 | 18,230 | 20,035  | 16,908 | 11,471 | 9,854  | 11,495 | 10,582 | 10,567 | 8,615  |
| D                      | 14,762 | 16,060 | 22,734 | 19,968 | 27,369  | 25,036 | 15,894 | 13,432 | 16,029 | 17,758 | 17,025 | 11,458 |
| BN                     | 15,494 | 16,739 | 23,168 | 29,980 | 43,553  | 33,036 | 26,035 | 18,273 | 17,468 | 21,201 | 18,366 | 16,261 |
| AN                     | 14,629 | 20,957 | 31,266 | 55,451 | 71,452  | 58,295 | 34,300 | 28,266 | 20,668 | 24,139 | 19,152 | 24,155 |
| W                      | 18,920 | 24,704 | 58,972 | 89,240 | 105,562 | 84,956 | 62,557 | 45,781 | 36,259 | 25,616 | 23,390 | 28,230 |
| All                    | 15,803 | 18,920 | 34,005 | 46,901 | 58,328  | 47,447 | 33,497 | 25,384 | 22,265 | 20,414 | 18,425 | 18,542 |
| <b>2019 BiOps</b>      |        |        |        |        |         |        |        |        |        |        |        |        |
| C                      | 12,562 | 13,032 | 17,204 | 18,130 | 20,270  | 16,933 | 11,811 | 10,711 | 11,174 | 10,306 | 10,607 | 8,534  |
| D                      | 14,661 | 15,745 | 22,255 | 20,024 | 27,725  | 25,187 | 16,513 | 15,292 | 15,888 | 17,700 | 15,864 | 11,362 |
| BN                     | 15,891 | 16,575 | 23,294 | 30,577 | 44,024  | 33,221 | 26,171 | 19,498 | 17,304 | 21,270 | 18,265 | 15,104 |
| AN                     | 14,810 | 19,808 | 30,922 | 56,405 | 73,275  | 58,237 | 34,399 | 28,402 | 20,453 | 24,225 | 19,220 | 24,635 |
| W                      | 18,385 | 24,461 | 60,300 | 89,649 | 105,612 | 85,108 | 62,533 | 45,797 | 36,319 | 25,118 | 23,262 | 24,842 |
| All                    | 15,704 | 18,600 | 34,217 | 47,252 | 58,772  | 47,559 | 33,720 | 26,192 | 22,142 | 20,229 | 18,124 | 17,317 |
| <b>VA</b>              |        |        |        |        |         |        |        |        |        |        |        |        |
| C                      | 12,719 | 12,922 | 16,937 | 18,046 | 20,108  | 16,847 | 11,715 | 10,495 | 10,962 | 10,484 | 10,649 | 8,594  |
| D                      | 14,659 | 15,811 | 22,256 | 19,835 | 27,602  | 25,359 | 17,984 | 16,330 | 16,154 | 18,198 | 16,489 | 11,589 |
| BN                     | 16,015 | 16,472 | 22,537 | 30,222 | 43,696  | 33,491 | 28,384 | 21,063 | 17,286 | 20,964 | 18,199 | 14,838 |
| AN                     | 14,734 | 19,467 | 30,611 | 56,298 | 73,337  | 58,645 | 37,003 | 29,912 | 20,022 | 24,187 | 19,352 | 24,847 |
| W                      | 18,437 | 24,348 | 59,606 | 89,644 | 105,453 | 85,091 | 62,651 | 45,733 | 36,315 | 25,133 | 23,289 | 24,836 |
| All                    | 15,760 | 18,501 | 33,781 | 47,113 | 58,615  | 47,679 | 34,808 | 26,852 | 22,110 | 20,310 | 18,281 | 17,350 |
| <b>55 w/WSAs</b>       |        |        |        |        |         |        |        |        |        |        |        |        |
| C                      | 12,179 | 12,091 | 16,567 | 17,970 | 21,031  | 18,180 | 12,078 | 10,289 | 10,039 | 8,822  | 10,070 | 8,671  |
| D                      | 13,526 | 15,335 | 22,787 | 20,487 | 29,177  | 28,379 | 21,011 | 16,652 | 12,966 | 12,557 | 13,414 | 11,137 |
| BN                     | 15,362 | 15,681 | 23,085 | 30,912 | 44,950  | 36,283 | 32,396 | 24,429 | 18,495 | 18,646 | 16,283 | 13,097 |
| AN                     | 13,806 | 17,931 | 30,928 | 58,026 | 73,570  | 58,561 | 38,696 | 34,438 | 24,203 | 21,679 | 19,101 | 21,926 |
| W                      | 18,000 | 24,237 | 58,851 | 89,750 | 103,160 | 83,922 | 65,205 | 49,795 | 38,891 | 25,957 | 23,641 | 23,703 |
| All                    | 15,050 | 17,889 | 33,754 | 47,620 | 58,688  | 48,737 | 37,288 | 29,315 | 22,772 | 18,288 | 17,213 | 16,230 |

## H1a2.2.46 Delta Outflow (SWRCB Delta)

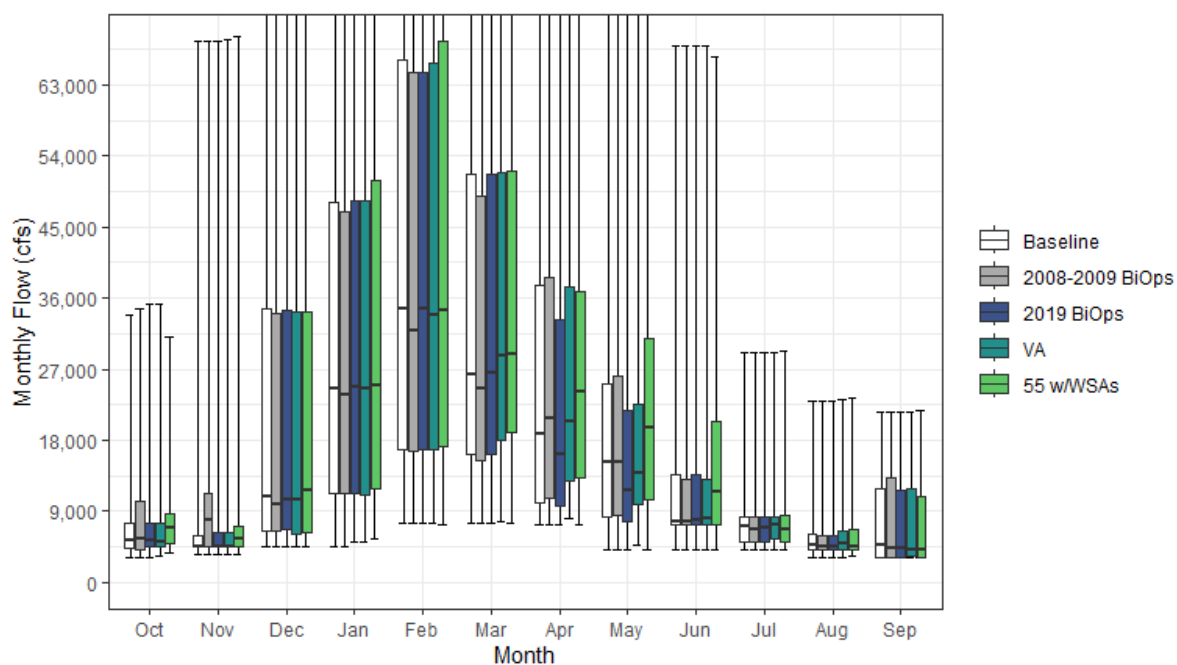


Figure H1a2-46. Delta Outflow, including Postprocessed VA Flows Monthly Boxplot (cfs)

**Table H1a2-91. Cumulative Distribution of Monthly Flow (cfs) — Delta Outflow (SWRCB Delta)**

|                        | Oct    | Nov    | Dec     | Jan     | Feb     | Mar     | Apr     | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,094  | 3,508  | 4,507   | 4,518   | 7,406   | 7,518   | 7,208   | 4,163  | 4,160  | 4,186  | 3,164  | 3,068  | 4,081        |
| 10%                    | 4,021  | 3,558  | 4,567   | 7,647   | 9,527   | 10,094  | 8,388   | 7,275  | 7,255  | 4,215  | 3,678  | 3,096  | 5,600        |
| 25%                    | 4,267  | 4,517  | 6,568   | 11,283  | 16,852  | 16,163  | 10,117  | 8,282  | 7,294  | 5,191  | 4,181  | 3,123  | 7,103        |
| 50%                    | 5,295  | 4,559  | 10,774  | 24,464  | 34,686  | 26,334  | 18,759  | 15,145 | 7,686  | 7,130  | 4,740  | 4,697  | 10,854       |
| 75%                    | 7,398  | 5,838  | 34,578  | 48,138  | 66,161  | 51,786  | 37,709  | 25,102 | 13,595 | 8,232  | 6,132  | 11,880 | 21,790       |
| 90%                    | 9,042  | 14,873 | 67,829  | 96,697  | 126,929 | 90,430  | 61,203  | 45,246 | 28,685 | 10,951 | 10,992 | 12,917 | 31,162       |
| 100%                   | 33,783 | 68,575 | 149,425 | 252,997 | 259,252 | 239,630 | 146,210 | 71,971 | 67,870 | 29,042 | 23,016 | 21,506 | 55,256       |
| Mean                   | 6,523  | 8,214  | 25,355  | 40,501  | 52,240  | 41,497  | 29,001  | 20,433 | 13,372 | 7,727  | 6,004  | 7,292  | 15,472       |
| <b>2008-2009 BiOps</b> |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,094  | 3,508  | 4,519   | 4,518   | 7,430   | 7,518   | 7,208   | 4,163  | 4,160  | 4,186  | 3,178  | 3,068  | 4,094        |
| 10%                    | 4,021  | 3,558  | 4,674   | 7,294   | 9,582   | 9,843   | 8,834   | 7,275  | 7,255  | 4,215  | 3,678  | 3,095  | 5,622        |
| 25%                    | 4,197  | 4,520  | 6,490   | 11,178  | 16,517  | 15,378  | 10,617  | 8,388  | 7,296  | 5,191  | 4,165  | 3,111  | 7,104        |
| 50%                    | 5,517  | 7,806  | 9,934   | 23,654  | 31,785  | 24,562  | 20,711  | 15,219 | 7,686  | 6,727  | 4,487  | 4,241  | 10,531       |
| 75%                    | 10,160 | 11,173 | 33,958  | 46,865  | 64,506  | 48,996  | 38,675  | 26,204 | 13,037 | 8,230  | 5,981  | 13,139 | 22,108       |
| 90%                    | 12,101 | 15,397 | 66,642  | 97,102  | 124,864 | 89,618  | 67,406  | 51,141 | 28,585 | 10,644 | 10,834 | 16,349 | 32,174       |
| 100%                   | 34,651 | 68,599 | 149,425 | 252,997 | 259,252 | 237,432 | 146,193 | 78,589 | 67,870 | 29,104 | 23,014 | 21,480 | 55,049       |
| Mean                   | 7,281  | 10,071 | 25,059  | 40,232  | 51,809  | 40,542  | 30,222  | 21,272 | 13,243 | 7,577  | 5,923  | 8,181  | 15,666       |
| <b>2019 BiOps</b>      |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,094  | 3,508  | 4,507   | 5,008   | 7,407   | 7,518   | 7,208   | 4,163  | 4,160  | 4,186  | 3,177  | 3,068  | 4,222        |
| 10%                    | 4,028  | 3,558  | 4,567   | 7,567   | 10,899  | 10,090  | 8,115   | 7,287  | 7,255  | 4,215  | 3,675  | 3,097  | 5,553        |
| 25%                    | 4,402  | 4,517  | 6,618   | 11,260  | 16,852  | 16,176  | 9,689   | 7,709  | 7,276  | 5,191  | 4,162  | 3,111  | 6,916        |
| 50%                    | 5,194  | 4,550  | 10,392  | 24,630  | 34,629  | 26,416  | 16,298  | 11,610 | 7,811  | 6,967  | 4,487  | 4,316  | 10,447       |
| 75%                    | 7,394  | 6,189  | 34,528  | 48,411  | 64,668  | 51,609  | 33,251  | 21,705 | 13,670 | 8,234  | 5,975  | 11,634 | 21,279       |
| 90%                    | 9,011  | 14,703 | 68,634  | 97,977  | 126,024 | 90,355  | 60,859  | 45,246 | 28,685 | 11,797 | 10,992 | 12,877 | 30,936       |
| 100%                   | 35,161 | 68,576 | 149,425 | 252,997 | 259,252 | 239,629 | 146,112 | 71,971 | 67,870 | 29,104 | 23,034 | 21,506 | 55,306       |
| Mean                   | 6,576  | 8,241  | 25,421  | 40,580  | 52,305  | 41,495  | 26,838  | 18,680 | 13,419 | 7,764  | 5,884  | 7,215  | 15,246       |
| <b>VA</b>              |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,405  | 3,508  | 4,507   | 5,008   | 7,408   | 7,724   | 8,007   | 4,692  | 4,160  | 4,186  | 3,164  | 3,068  | 4,283        |
| 10%                    | 4,025  | 3,558  | 4,567   | 7,187   | 9,689   | 10,703  | 9,615   | 7,803  | 7,257  | 4,215  | 4,032  | 3,109  | 5,617        |
| 25%                    | 4,435  | 4,516  | 6,136   | 11,135  | 16,829  | 18,063  | 12,911  | 9,896  | 7,313  | 5,548  | 4,191  | 3,296  | 7,362        |
| 50%                    | 5,122  | 4,547  | 10,383  | 24,554  | 33,872  | 28,608  | 20,455  | 13,865 | 8,123  | 7,323  | 4,815  | 4,126  | 11,106       |
| 75%                    | 7,540  | 6,291  | 34,278  | 48,416  | 65,729  | 51,923  | 37,513  | 22,555 | 13,060 | 8,238  | 6,479  | 11,752 | 21,898       |
| 90%                    | 9,106  | 14,623 | 67,650  | 97,263  | 125,864 | 90,203  | 62,389  | 46,246 | 28,706 | 10,482 | 10,898 | 13,209 | 31,157       |
| 100%                   | 35,164 | 68,668 | 149,459 | 253,072 | 259,255 | 239,629 | 147,744 | 73,055 | 67,870 | 29,019 | 23,209 | 21,508 | 55,458       |
| Mean                   | 6,583  | 8,180  | 25,052  | 40,502  | 52,202  | 42,618  | 30,093  | 20,306 | 13,473 | 7,812  | 6,101  | 7,246  | 15,593       |
| <b>55 w/WSAs</b>       |        |        |         |         |         |         |         |        |        |        |        |        |              |
| 0%                     | 3,649  | 3,500  | 4,500   | 5,589   | 7,226   | 7,506   | 7,202   | 4,159  | 4,147  | 4,175  | 3,341  | 3,057  | 4,118        |
| 10%                    | 4,410  | 3,763  | 5,106   | 7,751   | 11,044  | 10,980  | 9,079   | 7,484  | 7,245  | 4,200  | 3,652  | 3,089  | 5,852        |
| 25%                    | 4,897  | 4,509  | 6,252   | 11,849  | 17,203  | 18,947  | 13,271  | 10,519 | 7,309  | 5,188  | 4,074  | 3,101  | 7,647        |
| 50%                    | 6,919  | 5,465  | 11,727  | 24,896  | 34,397  | 28,932  | 24,055  | 19,511 | 11,463 | 6,718  | 4,590  | 4,171  | 11,193       |
| 75%                    | 8,574  | 7,084  | 34,226  | 50,834  | 68,537  | 52,126  | 36,818  | 30,857 | 20,367 | 8,488  | 6,705  | 10,842 | 22,456       |
| 90%                    | 9,626  | 14,148 | 65,613  | 97,628  | 119,757 | 83,895  | 62,840  | 46,414 | 29,277 | 10,650 | 9,787  | 11,558 | 31,700       |
| 100%                   | 31,146 | 69,213 | 147,766 | 247,245 | 252,708 | 237,806 | 144,049 | 71,953 | 66,611 | 29,196 | 23,254 | 21,831 | 55,154       |
| Mean                   | 7,306  | 8,575  | 25,231  | 41,152  | 52,189  | 42,604  | 31,276  | 23,324 | 15,374 | 7,693  | 5,917  | 6,813  | 16,036       |

**Table H1a2-92. Water Year Average of Monthly Flows (cfs) — Delta Outflow (SWRCB Delta)**

| Water Year Type        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug   | Sep    |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |        |        |       |        |
| C                      | 5,237 | 4,389  | 9,657  | 12,197 | 14,358 | 12,045 | 8,411  | 6,219  | 6,277  | 4,340  | 4,018 | 3,378  |
| D                      | 5,640 | 5,733  | 13,276 | 12,705 | 21,842 | 20,244 | 12,345 | 9,494  | 7,707  | 5,199  | 4,588 | 3,254  |
| BN                     | 6,555 | 6,121  | 13,520 | 23,618 | 37,646 | 27,623 | 23,144 | 14,753 | 8,525  | 7,282  | 4,838 | 4,363  |
| AN                     | 5,691 | 9,633  | 21,493 | 50,398 | 66,860 | 52,085 | 30,323 | 24,675 | 11,037 | 9,900  | 5,099 | 12,502 |
| W                      | 8,168 | 12,832 | 51,624 | 82,713 | 98,133 | 77,344 | 55,377 | 37,935 | 25,313 | 10,801 | 9,201 | 12,111 |
| All                    | 6,523 | 8,214  | 25,355 | 40,501 | 52,240 | 41,497 | 29,001 | 20,433 | 13,372 | 7,727  | 6,004 | 7,292  |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |        |        |       |        |
| C                      | 5,167 | 5,365  | 9,826  | 12,046 | 14,216 | 12,034 | 8,482  | 6,249  | 6,272  | 4,335  | 3,930 | 3,357  |
| D                      | 6,551 | 7,664  | 13,177 | 12,692 | 21,485 | 19,177 | 12,737 | 9,530  | 7,714  | 5,199  | 4,647 | 3,299  |
| BN                     | 7,133 | 8,048  | 13,714 | 23,399 | 37,271 | 26,183 | 23,203 | 14,553 | 8,462  | 6,895  | 4,496 | 4,147  |
| AN                     | 6,683 | 11,750 | 21,272 | 49,687 | 65,017 | 50,903 | 31,271 | 24,469 | 10,913 | 9,301  | 4,924 | 11,373 |
| W                      | 9,275 | 14,957 | 50,596 | 82,338 | 98,020 | 76,364 | 58,665 | 40,871 | 24,976 | 10,790 | 9,224 | 15,613 |
| All                    | 7,281 | 10,071 | 25,059 | 40,232 | 51,809 | 40,542 | 30,222 | 21,272 | 13,243 | 7,577  | 5,923 | 8,181  |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |        |        |       |        |
| C                      | 5,317 | 4,389  | 9,414  | 12,052 | 14,672 | 12,022 | 8,428  | 6,396  | 6,246  | 4,342  | 3,984 | 3,329  |
| D                      | 5,743 | 5,723  | 13,040 | 12,749 | 21,818 | 20,265 | 10,944 | 8,710  | 7,734  | 5,198  | 4,327 | 3,238  |
| BN                     | 6,554 | 6,128  | 14,029 | 23,951 | 37,637 | 27,545 | 19,160 | 12,285 | 8,634  | 7,358  | 4,595 | 4,047  |
| AN                     | 5,721 | 9,663  | 21,277 | 50,619 | 66,964 | 51,950 | 26,277 | 20,351 | 11,079 | 10,320 | 5,060 | 12,519 |
| W                      | 8,213 | 12,912 | 51,912 | 82,722 | 98,159 | 77,435 | 53,401 | 35,924 | 25,379 | 10,705 | 9,184 | 12,088 |
| All                    | 6,576 | 8,241  | 25,421 | 40,580 | 52,305 | 41,495 | 26,838 | 18,680 | 13,419 | 7,764  | 5,884 | 7,215  |
| <b>VA</b>              |       |        |        |        |        |        |        |        |        |        |       |        |
| C                      | 5,361 | 4,400  | 9,193  | 12,177 | 14,645 | 12,135 | 9,227  | 6,878  | 6,234  | 4,338  | 4,015 | 3,359  |
| D                      | 5,721 | 5,717  | 13,185 | 12,578 | 21,755 | 22,379 | 14,994 | 11,079 | 8,119  | 5,557  | 4,936 | 3,463  |
| BN                     | 6,604 | 6,172  | 13,319 | 23,706 | 37,392 | 30,389 | 22,825 | 14,430 | 8,675  | 7,314  | 4,864 | 3,874  |
| AN                     | 5,683 | 9,420  | 20,968 | 50,512 | 67,026 | 52,587 | 34,612 | 23,044 | 10,784 | 10,130 | 5,189 | 12,628 |
| W                      | 8,215 | 12,780 | 51,277 | 82,719 | 98,010 | 77,475 | 55,090 | 36,861 | 25,375 | 10,707 | 9,215 | 12,078 |
| All                    | 6,583 | 8,180  | 25,052 | 40,502 | 52,202 | 42,618 | 30,093 | 20,306 | 13,473 | 7,812  | 6,101 | 7,246  |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |        |        |       |        |
| C                      | 5,739 | 4,431  | 9,136  | 12,585 | 15,208 | 12,898 | 8,758  | 7,075  | 6,216  | 4,341  | 4,227 | 3,218  |
| D                      | 6,530 | 6,274  | 13,800 | 13,520 | 23,215 | 23,340 | 15,545 | 12,420 | 8,066  | 5,192  | 3,799 | 3,469  |
| BN                     | 7,076 | 6,239  | 14,221 | 24,381 | 38,627 | 30,623 | 26,904 | 18,782 | 11,138 | 6,712  | 4,372 | 3,764  |
| AN                     | 6,750 | 9,088  | 21,580 | 52,268 | 67,430 | 52,404 | 32,394 | 28,187 | 14,967 | 8,514  | 5,553 | 11,494 |
| W                      | 9,079 | 13,747 | 50,631 | 82,828 | 95,652 | 76,241 | 57,144 | 40,917 | 28,464 | 11,608 | 9,496 | 11,241 |
| All                    | 7,306 | 8,575  | 25,231 | 41,152 | 52,189 | 42,604 | 31,276 | 23,324 | 15,374 | 7,693  | 5,917 | 6,813  |

## H1a2.3 Delta Interior Flows

### H1a2.3.1 Delta Cross Channel

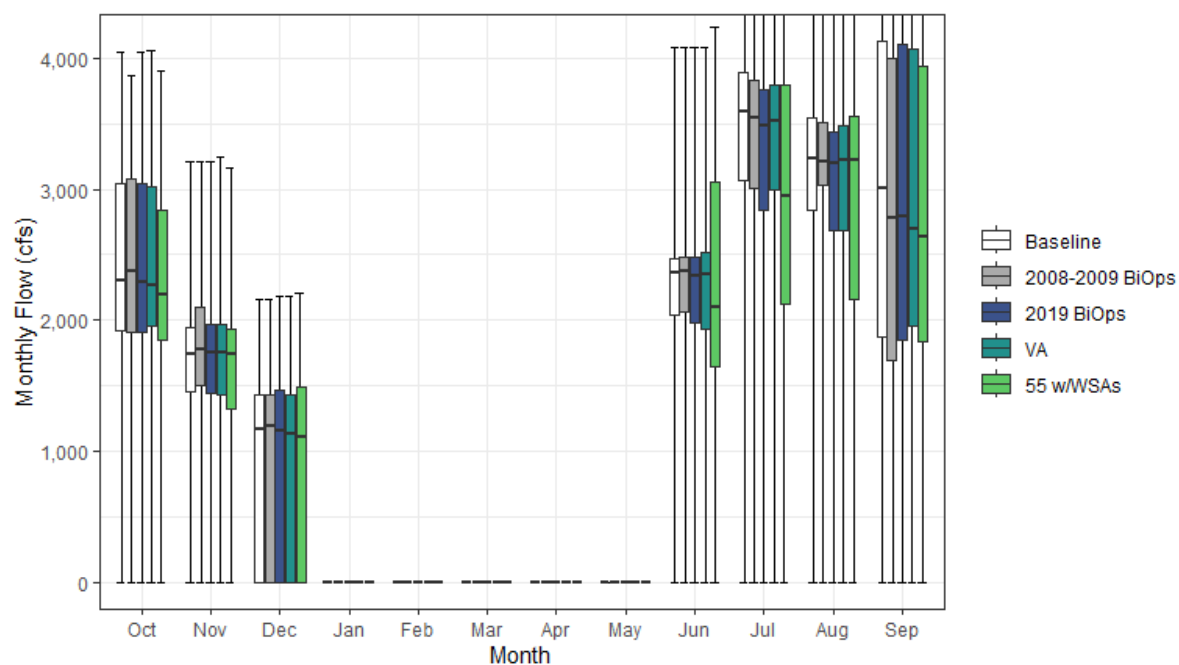


Figure H1a2-47. Delta Cross Channel Monthly Boxplot (cfs)

**Table H1a2-93. Cumulative Distribution of Monthly Flow (cfs) — Delta Cross Channel**

|                        | Oct   | Nov   | Dec   | Jan | Feb | Mar | Apr | May | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-----|-----|-----|-----|-----|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |     |     |     |     |     |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0            |
| 10%                    | 1,553 | 1,046 | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 1,827 | 2,047 | 1,611 | 734          |
| 25%                    | 1,925 | 1,456 | 0     | 0   | 0   | 0   | 0   | 0   | 2,035 | 3,063 | 2,837 | 1,867 | 936          |
| 50%                    | 2,299 | 1,738 | 1,172 | 0   | 0   | 0   | 0   | 0   | 2,365 | 3,590 | 3,229 | 3,008 | 1,051        |
| 75%                    | 3,038 | 1,947 | 1,428 | 0   | 0   | 0   | 0   | 0   | 2,471 | 3,890 | 3,544 | 4,130 | 1,134        |
| 90%                    | 3,369 | 2,266 | 1,784 | 0   | 0   | 0   | 0   | 0   | 3,136 | 4,301 | 3,811 | 4,494 | 1,207        |
| 100%                   | 4,044 | 3,211 | 2,164 | 0   | 0   | 0   | 0   | 0   | 4,081 | 4,895 | 4,700 | 4,711 | 1,358        |
| Mean                   | 2,457 | 1,634 | 959   | 0   | 0   | 0   | 0   | 0   | 2,137 | 3,357 | 3,095 | 3,034 | 1,012        |
| <b>2008-2009 BiOps</b> |       |       |       |     |     |     |     |     |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0            |
| 10%                    | 1,553 | 1,102 | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 1,880 | 2,027 | 0     | 718          |
| 25%                    | 1,907 | 1,497 | 0     | 0   | 0   | 0   | 0   | 0   | 2,059 | 3,011 | 3,032 | 1,697 | 883          |
| 50%                    | 2,374 | 1,779 | 1,192 | 0   | 0   | 0   | 0   | 0   | 2,373 | 3,550 | 3,207 | 2,780 | 1,019        |
| 75%                    | 3,076 | 2,104 | 1,427 | 0   | 0   | 0   | 0   | 0   | 2,479 | 3,836 | 3,514 | 4,005 | 1,116        |
| 90%                    | 3,419 | 2,589 | 1,710 | 0   | 0   | 0   | 0   | 0   | 3,141 | 4,135 | 3,829 | 4,481 | 1,197        |
| 100%                   | 3,871 | 3,210 | 2,164 | 0   | 0   | 0   | 0   | 0   | 4,087 | 4,787 | 4,700 | 4,846 | 1,342        |
| Mean                   | 2,464 | 1,749 | 971   | 0   | 0   | 0   | 0   | 0   | 2,145 | 3,308 | 3,106 | 2,590 | 991          |
| <b>2019 BiOps</b>      |       |       |       |     |     |     |     |     |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0            |
| 10%                    | 1,553 | 1,064 | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 1,811 | 2,037 | 1,611 | 737          |
| 25%                    | 1,912 | 1,439 | 0     | 0   | 0   | 0   | 0   | 0   | 1,980 | 2,845 | 2,685 | 1,854 | 938          |
| 50%                    | 2,288 | 1,749 | 1,152 | 0   | 0   | 0   | 0   | 0   | 2,337 | 3,489 | 3,198 | 2,789 | 1,041        |
| 75%                    | 3,040 | 1,970 | 1,462 | 0   | 0   | 0   | 0   | 0   | 2,487 | 3,763 | 3,441 | 4,107 | 1,115        |
| 90%                    | 3,380 | 2,339 | 1,803 | 0   | 0   | 0   | 0   | 0   | 3,145 | 4,083 | 3,811 | 4,432 | 1,173        |
| 100%                   | 4,053 | 3,211 | 2,188 | 0   | 0   | 0   | 0   | 0   | 4,079 | 4,761 | 4,553 | 4,658 | 1,325        |
| Mean                   | 2,444 | 1,672 | 958   | 0   | 0   | 0   | 0   | 0   | 2,124 | 3,221 | 3,049 | 2,957 | 997          |
| <b>VA</b>              |       |       |       |     |     |     |     |     |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0            |
| 10%                    | 1,569 | 1,074 | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 1,842 | 2,019 | 1,612 | 736          |
| 25%                    | 1,961 | 1,428 | 0     | 0   | 0   | 0   | 0   | 0   | 1,934 | 2,997 | 2,680 | 1,961 | 949          |
| 50%                    | 2,271 | 1,756 | 1,135 | 0   | 0   | 0   | 0   | 0   | 2,355 | 3,519 | 3,221 | 2,701 | 1,041        |
| 75%                    | 3,018 | 1,973 | 1,436 | 0   | 0   | 0   | 0   | 0   | 2,517 | 3,791 | 3,484 | 4,070 | 1,119        |
| 90%                    | 3,400 | 2,344 | 1,841 | 0   | 0   | 0   | 0   | 0   | 3,140 | 4,043 | 3,829 | 4,463 | 1,191        |
| 100%                   | 4,060 | 3,241 | 2,185 | 0   | 0   | 0   | 0   | 0   | 4,088 | 4,850 | 4,556 | 4,682 | 1,327        |
| Mean                   | 2,454 | 1,663 | 966   | 0   | 0   | 0   | 0   | 0   | 2,124 | 3,287 | 3,071 | 2,964 | 1,003        |
| <b>55 w/WSAs</b>       |       |       |       |     |     |     |     |     |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 0     | 0     | 0     | 0            |
| 10%                    | 1,544 | 1,064 | 0     | 0   | 0   | 0   | 0   | 0   | 0     | 1,681 | 1,939 | 1,570 | 685          |
| 25%                    | 1,845 | 1,326 | 0     | 0   | 0   | 0   | 0   | 0   | 1,649 | 2,119 | 2,158 | 1,839 | 801          |
| 50%                    | 2,191 | 1,743 | 1,111 | 0   | 0   | 0   | 0   | 0   | 2,094 | 2,950 | 3,218 | 2,643 | 964          |
| 75%                    | 2,845 | 1,931 | 1,491 | 0   | 0   | 0   | 0   | 0   | 3,052 | 3,799 | 3,560 | 3,941 | 1,111        |
| 90%                    | 3,337 | 2,224 | 1,780 | 0   | 0   | 0   | 0   | 0   | 3,665 | 4,068 | 3,712 | 4,205 | 1,200        |
| 100%                   | 3,900 | 3,165 | 2,201 | 0   | 0   | 0   | 0   | 0   | 4,239 | 4,694 | 4,574 | 4,552 | 1,366        |
| Mean                   | 2,335 | 1,641 | 952   | 0   | 0   | 0   | 0   | 0   | 2,162 | 2,946 | 2,906 | 2,794 | 954          |

**Table H1a2-94. Water Year Average of Monthly Flows (cfs) — Delta Cross Channel**

| Water Year Type        | Oct   | Nov   | Dec   | Jan | Feb | Mar | Apr | May | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-----|-----|-----|-----|-----|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |     |     |     |     |     |       |       |       |       |
| C                      | 2,110 | 1,530 | 1,153 | 0   | 0   | 0   | 0   | 0   | 1,768 | 1,970 | 2,018 | 1,675 |
| D                      | 2,439 | 1,638 | 1,323 | 0   | 0   | 0   | 0   | 0   | 2,375 | 3,304 | 2,961 | 2,090 |
| BN                     | 2,575 | 1,858 | 1,085 | 0   | 0   | 0   | 0   | 0   | 2,440 | 3,823 | 3,322 | 2,872 |
| AN                     | 2,459 | 1,737 | 1,106 | 0   | 0   | 0   | 0   | 0   | 2,664 | 4,134 | 3,311 | 4,440 |
| W                      | 2,581 | 1,504 | 451   | 0   | 0   | 0   | 0   | 0   | 1,755 | 3,531 | 3,537 | 3,991 |
| All                    | 2,457 | 1,634 | 959   | 0   | 0   | 0   | 0   | 0   | 2,137 | 3,357 | 3,095 | 3,034 |
| <b>2008-2009 BiOps</b> |       |       |       |     |     |     |     |     |       |       |       |       |
| C                      | 2,114 | 1,524 | 1,149 | 0   | 0   | 0   | 0   | 0   | 1,787 | 1,993 | 1,998 | 1,635 |
| D                      | 2,451 | 1,837 | 1,342 | 0   | 0   | 0   | 0   | 0   | 2,391 | 3,197 | 3,082 | 2,076 |
| BN                     | 2,517 | 1,896 | 1,116 | 0   | 0   | 0   | 0   | 0   | 2,444 | 3,721 | 3,258 | 2,871 |
| AN                     | 2,431 | 1,867 | 1,129 | 0   | 0   | 0   | 0   | 0   | 2,665 | 4,049 | 3,292 | 4,243 |
| W                      | 2,639 | 1,663 | 449   | 0   | 0   | 0   | 0   | 0   | 1,759 | 3,533 | 3,544 | 2,638 |
| All                    | 2,464 | 1,749 | 971   | 0   | 0   | 0   | 0   | 0   | 2,145 | 3,308 | 3,106 | 2,590 |
| <b>2019 BiOps</b>      |       |       |       |     |     |     |     |     |       |       |       |       |
| C                      | 2,100 | 1,521 | 1,122 | 0   | 0   | 0   | 0   | 0   | 1,734 | 1,942 | 2,006 | 1,620 |
| D                      | 2,432 | 1,635 | 1,321 | 0   | 0   | 0   | 0   | 0   | 2,365 | 3,184 | 2,872 | 2,059 |
| BN                     | 2,590 | 1,875 | 1,104 | 0   | 0   | 0   | 0   | 0   | 2,420 | 3,734 | 3,239 | 2,657 |
| AN                     | 2,464 | 1,740 | 1,101 | 0   | 0   | 0   | 0   | 0   | 2,632 | 3,649 | 3,303 | 4,331 |
| W                      | 2,537 | 1,623 | 455   | 0   | 0   | 0   | 0   | 0   | 1,764 | 3,432 | 3,514 | 3,969 |
| All                    | 2,444 | 1,672 | 958   | 0   | 0   | 0   | 0   | 0   | 2,124 | 3,221 | 3,049 | 2,957 |
| <b>VA</b>              |       |       |       |     |     |     |     |     |       |       |       |       |
| C                      | 2,129 | 1,507 | 1,100 | 0   | 0   | 0   | 0   | 0   | 1,700 | 1,972 | 2,013 | 1,631 |
| D                      | 2,431 | 1,639 | 1,324 | 0   | 0   | 0   | 0   | 0   | 2,415 | 3,285 | 2,974 | 2,102 |
| BN                     | 2,612 | 1,866 | 1,054 | 0   | 0   | 0   | 0   | 0   | 2,423 | 3,677 | 3,218 | 2,610 |
| AN                     | 2,451 | 1,711 | 1,281 | 0   | 0   | 0   | 0   | 0   | 2,572 | 4,063 | 3,325 | 4,373 |
| W                      | 2,544 | 1,616 | 450   | 0   | 0   | 0   | 0   | 0   | 1,769 | 3,434 | 3,514 | 3,968 |
| All                    | 2,454 | 1,663 | 966   | 0   | 0   | 0   | 0   | 0   | 2,124 | 3,287 | 3,071 | 2,964 |
| <b>55 w/WSAs</b>       |       |       |       |     |     |     |     |     |       |       |       |       |
| C                      | 2,032 | 1,408 | 1,054 | 0   | 0   | 0   | 0   | 0   | 1,551 | 1,659 | 1,880 | 1,633 |
| D                      | 2,224 | 1,757 | 1,247 | 0   | 0   | 0   | 0   | 0   | 1,874 | 2,241 | 2,422 | 2,034 |
| BN                     | 2,497 | 1,772 | 1,073 | 0   | 0   | 0   | 0   | 0   | 2,573 | 3,282 | 2,928 | 2,357 |
| AN                     | 2,284 | 1,580 | 1,319 | 0   | 0   | 0   | 0   | 0   | 3,202 | 3,649 | 3,340 | 3,900 |
| W                      | 2,496 | 1,623 | 458   | 0   | 0   | 0   | 0   | 0   | 2,022 | 3,654 | 3,621 | 3,804 |
| All                    | 2,335 | 1,641 | 952   | 0   | 0   | 0   | 0   | 0   | 2,162 | 2,946 | 2,906 | 2,794 |

## H1a2.3.2 Georgiana Slough

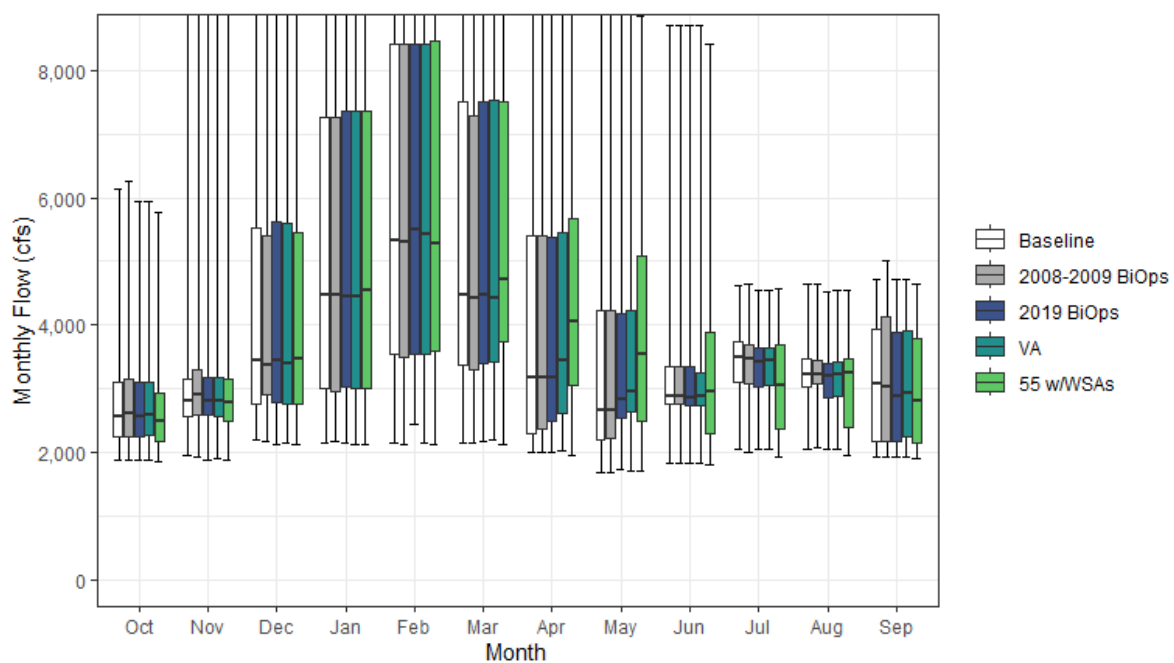


Figure H1a2-48. Georgiana Slough Monthly Boxplot (cfs)

**Table H1a2-95. Cumulative Distribution of Monthly Flow (cfs) — Georgiana Slough**

|                        | Oct   | Nov   | Dec    | Jan    | Feb    | Mar    | Apr    | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 1,878 | 1,940 | 2,198  | 2,157  | 2,151  | 2,151  | 1,997  | 1,692 | 1,836 | 2,040 | 2,048 | 1,925 | 1,557        |
| 10%                    | 1,951 | 2,218 | 2,625  | 2,608  | 2,818  | 2,703  | 2,147  | 2,108 | 2,398 | 2,166 | 2,328 | 1,982 | 1,853        |
| 25%                    | 2,241 | 2,567 | 2,763  | 3,005  | 3,549  | 3,366  | 2,293  | 2,207 | 2,765 | 3,110 | 3,032 | 2,174 | 2,146        |
| 50%                    | 2,566 | 2,797 | 3,435  | 4,468  | 5,334  | 4,471  | 3,183  | 2,655 | 2,872 | 3,491 | 3,221 | 3,077 | 2,552        |
| 75%                    | 3,098 | 3,159 | 5,529  | 7,258  | 8,406  | 7,500  | 5,391  | 4,222 | 3,357 | 3,739 | 3,468 | 3,923 | 3,534        |
| 90%                    | 3,459 | 4,283 | 8,678  | 9,617  | 10,479 | 9,106  | 8,186  | 6,734 | 4,651 | 4,061 | 3,673 | 4,196 | 4,159        |
| 100%                   | 6,144 | 9,090 | 11,306 | 11,830 | 12,021 | 11,608 | 11,013 | 8,894 | 8,697 | 4,615 | 4,651 | 4,710 | 5,323        |
| Mean                   | 2,715 | 3,128 | 4,562  | 5,336  | 6,021  | 5,357  | 4,123  | 3,520 | 3,286 | 3,351 | 3,150 | 3,104 | 2,870        |
| <b>2008-2009 BiOps</b> |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 1,868 | 1,938 | 2,164  | 2,164  | 2,128  | 2,136  | 1,997  | 1,685 | 1,836 | 2,006 | 2,074 | 1,926 | 1,565        |
| 10%                    | 1,954 | 2,151 | 2,627  | 2,658  | 2,858  | 2,702  | 2,165  | 2,129 | 2,397 | 2,207 | 2,308 | 1,991 | 1,865        |
| 25%                    | 2,233 | 2,599 | 2,894  | 2,964  | 3,488  | 3,287  | 2,355  | 2,211 | 2,766 | 3,077 | 3,069 | 2,173 | 2,169        |
| 50%                    | 2,617 | 2,902 | 3,374  | 4,481  | 5,303  | 4,424  | 3,183  | 2,658 | 2,878 | 3,481 | 3,217 | 3,033 | 2,534        |
| 75%                    | 3,151 | 3,297 | 5,414  | 7,258  | 8,406  | 7,294  | 5,396  | 4,223 | 3,343 | 3,686 | 3,450 | 4,118 | 3,566        |
| 90%                    | 3,385 | 4,099 | 8,695  | 9,607  | 10,373 | 9,100  | 8,185  | 6,755 | 4,642 | 3,951 | 3,680 | 4,579 | 4,172        |
| 100%                   | 6,267 | 9,090 | 11,284 | 11,830 | 12,021 | 11,610 | 11,013 | 8,895 | 8,697 | 4,635 | 4,651 | 5,017 | 5,324        |
| Mean                   | 2,721 | 3,176 | 4,550  | 5,299  | 5,984  | 5,344  | 4,140  | 3,516 | 3,293 | 3,314 | 3,159 | 3,218 | 2,874        |
| <b>2019 BiOps</b>      |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 1,876 | 1,887 | 2,114  | 2,158  | 2,431  | 2,164  | 1,998  | 1,724 | 1,824 | 2,040 | 2,048 | 1,926 | 1,570        |
| 10%                    | 1,951 | 2,206 | 2,568  | 2,612  | 2,814  | 2,708  | 2,232  | 2,263 | 2,399 | 2,142 | 2,321 | 1,990 | 1,850        |
| 25%                    | 2,249 | 2,581 | 2,778  | 3,016  | 3,543  | 3,394  | 2,481  | 2,526 | 2,728 | 3,034 | 2,845 | 2,172 | 2,176        |
| 50%                    | 2,564 | 2,819 | 3,450  | 4,440  | 5,509  | 4,469  | 3,185  | 2,832 | 2,861 | 3,425 | 3,196 | 2,879 | 2,565        |
| 75%                    | 3,103 | 3,179 | 5,624  | 7,365  | 8,405  | 7,506  | 5,389  | 4,183 | 3,351 | 3,641 | 3,390 | 3,894 | 3,511        |
| 90%                    | 3,425 | 4,264 | 8,651  | 9,617  | 10,485 | 9,103  | 8,185  | 6,645 | 4,637 | 3,970 | 3,673 | 4,146 | 4,148        |
| 100%                   | 5,944 | 9,090 | 11,284 | 11,830 | 12,021 | 11,610 | 11,010 | 8,894 | 8,697 | 4,551 | 4,511 | 4,710 | 5,310        |
| Mean                   | 2,703 | 3,131 | 4,570  | 5,359  | 6,037  | 5,359  | 4,170  | 3,627 | 3,274 | 3,284 | 3,114 | 3,045 | 2,871        |
| <b>VA</b>              |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 1,879 | 1,896 | 2,147  | 2,117  | 2,146  | 2,196  | 2,015  | 1,716 | 1,824 | 2,039 | 2,050 | 1,925 | 1,580        |
| 10%                    | 1,952 | 2,156 | 2,561  | 2,604  | 2,766  | 2,685  | 2,272  | 2,199 | 2,337 | 2,165 | 2,306 | 1,987 | 1,847        |
| 25%                    | 2,269 | 2,557 | 2,753  | 3,010  | 3,549  | 3,423  | 2,615  | 2,627 | 2,728 | 3,061 | 2,885 | 2,254 | 2,199        |
| 50%                    | 2,594 | 2,797 | 3,396  | 4,458  | 5,424  | 4,424  | 3,456  | 2,955 | 2,881 | 3,450 | 3,212 | 2,928 | 2,573        |
| 75%                    | 3,090 | 3,176 | 5,594  | 7,366  | 8,403  | 7,524  | 5,454  | 4,221 | 3,251 | 3,646 | 3,426 | 3,908 | 3,511        |
| 90%                    | 3,457 | 4,274 | 8,666  | 9,617  | 10,485 | 9,113  | 8,185  | 6,654 | 4,642 | 3,876 | 3,684 | 4,162 | 4,159        |
| 100%                   | 5,945 | 9,094 | 11,279 | 11,830 | 12,022 | 11,610 | 11,015 | 8,897 | 8,697 | 4,540 | 4,535 | 4,709 | 5,310        |
| Mean                   | 2,710 | 3,114 | 4,529  | 5,341  | 6,024  | 5,374  | 4,312  | 3,725 | 3,274 | 3,297 | 3,131 | 3,051 | 2,884        |
| <b>55 w/WSAs</b>       |       |       |        |        |        |        |        |       |       |       |       |       |              |
| 0%                     | 1,852 | 1,875 | 2,117  | 2,120  | 2,132  | 2,127  | 1,941  | 1,695 | 1,804 | 1,925 | 1,949 | 1,904 | 1,507        |
| 10%                    | 1,934 | 2,099 | 2,427  | 2,623  | 2,947  | 2,898  | 2,271  | 2,136 | 2,187 | 2,032 | 2,285 | 2,033 | 1,874        |
| 25%                    | 2,162 | 2,483 | 2,765  | 3,013  | 3,579  | 3,735  | 3,056  | 2,486 | 2,293 | 2,371 | 2,402 | 2,155 | 2,123        |
| 50%                    | 2,487 | 2,789 | 3,479  | 4,553  | 5,286  | 4,716  | 4,062  | 3,545 | 2,946 | 3,048 | 3,250 | 2,800 | 2,635        |
| 75%                    | 2,927 | 3,142 | 5,460  | 7,358  | 8,460  | 7,507  | 5,680  | 5,091 | 3,889 | 3,678 | 3,473 | 3,776 | 3,628        |
| 90%                    | 3,335 | 3,914 | 8,521  | 9,487  | 10,268 | 9,046  | 8,191  | 6,695 | 4,868 | 3,864 | 3,613 | 3,976 | 4,156        |
| 100%                   | 5,778 | 9,103 | 11,267 | 11,818 | 11,993 | 11,592 | 11,004 | 8,863 | 8,424 | 4,560 | 4,545 | 4,644 | 5,307        |
| Mean                   | 2,618 | 3,035 | 4,522  | 5,359  | 6,072  | 5,532  | 4,611  | 3,977 | 3,341 | 3,035 | 3,005 | 2,919 | 2,892        |

**Table H1a2-96. Water Year Average of Monthly Flows (cfs) — Georgiana Slough**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,356 | 2,498 | 3,004 | 3,004 | 3,208 | 2,848 | 2,149 | 1,997 | 2,302 | 2,249 | 2,286 | 2,023 |
| D                      | 2,608 | 2,817 | 3,543 | 3,243 | 4,085 | 3,834 | 2,520 | 2,332 | 2,839 | 3,271 | 3,008 | 2,341 |
| BN                     | 2,712 | 2,875 | 3,529 | 4,398 | 5,517 | 4,606 | 3,585 | 2,792 | 2,897 | 3,669 | 3,285 | 2,940 |
| AN                     | 2,623 | 3,277 | 4,315 | 6,721 | 7,642 | 6,804 | 4,435 | 3,896 | 3,094 | 3,908 | 3,276 | 4,142 |
| W                      | 3,023 | 3,792 | 6,892 | 8,154 | 8,610 | 7,709 | 6,566 | 5,515 | 4,461 | 3,574 | 3,580 | 3,930 |
| All                    | 2,715 | 3,128 | 4,562 | 5,336 | 6,021 | 5,357 | 4,123 | 3,520 | 3,286 | 3,351 | 3,150 | 3,104 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,359 | 2,491 | 3,007 | 2,985 | 3,194 | 2,843 | 2,158 | 2,009 | 2,319 | 2,266 | 2,270 | 1,992 |
| D                      | 2,617 | 2,851 | 3,594 | 3,240 | 4,032 | 3,812 | 2,570 | 2,337 | 2,853 | 3,189 | 3,101 | 2,330 |
| BN                     | 2,668 | 2,918 | 3,568 | 4,353 | 5,470 | 4,570 | 3,593 | 2,765 | 2,900 | 3,591 | 3,236 | 2,939 |
| AN                     | 2,602 | 3,429 | 4,347 | 6,622 | 7,493 | 6,818 | 4,453 | 3,888 | 3,096 | 3,843 | 3,262 | 3,991 |
| W                      | 3,072 | 3,840 | 6,777 | 8,112 | 8,627 | 7,702 | 6,570 | 5,512 | 4,463 | 3,577 | 3,586 | 4,392 |
| All                    | 2,721 | 3,176 | 4,550 | 5,299 | 5,984 | 5,344 | 4,140 | 3,516 | 3,293 | 3,314 | 3,159 | 3,218 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,348 | 2,487 | 2,950 | 3,010 | 3,227 | 2,846 | 2,207 | 2,128 | 2,273 | 2,227 | 2,276 | 1,980 |
| D                      | 2,603 | 2,813 | 3,535 | 3,248 | 4,113 | 3,833 | 2,655 | 2,595 | 2,831 | 3,179 | 2,940 | 2,317 |
| BN                     | 2,724 | 2,894 | 3,567 | 4,455 | 5,528 | 4,611 | 3,613 | 2,939 | 2,879 | 3,601 | 3,221 | 2,775 |
| AN                     | 2,627 | 3,273 | 4,303 | 6,754 | 7,647 | 6,800 | 4,468 | 3,907 | 3,066 | 3,852 | 3,271 | 4,058 |
| W                      | 2,983 | 3,801 | 6,935 | 8,173 | 8,626 | 7,716 | 6,563 | 5,507 | 4,465 | 3,496 | 3,558 | 3,913 |
| All                    | 2,703 | 3,131 | 4,570 | 5,359 | 6,037 | 5,359 | 4,170 | 3,627 | 3,274 | 3,284 | 3,114 | 3,045 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,370 | 2,471 | 2,913 | 2,995 | 3,204 | 2,832 | 2,190 | 2,097 | 2,242 | 2,250 | 2,282 | 1,989 |
| D                      | 2,602 | 2,818 | 3,544 | 3,222 | 4,084 | 3,854 | 2,856 | 2,748 | 2,874 | 3,256 | 3,018 | 2,350 |
| BN                     | 2,741 | 2,884 | 3,473 | 4,405 | 5,494 | 4,645 | 3,915 | 3,157 | 2,882 | 3,557 | 3,205 | 2,739 |
| AN                     | 2,617 | 3,222 | 4,266 | 6,749 | 7,653 | 6,846 | 4,814 | 4,124 | 3,013 | 3,853 | 3,287 | 4,091 |
| W                      | 2,989 | 3,776 | 6,886 | 8,174 | 8,635 | 7,716 | 6,562 | 5,511 | 4,469 | 3,497 | 3,558 | 3,912 |
| All                    | 2,710 | 3,114 | 4,529 | 5,341 | 6,024 | 5,374 | 4,312 | 3,725 | 3,274 | 3,297 | 3,131 | 3,051 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,296 | 2,357 | 2,864 | 2,936 | 3,322 | 3,021 | 2,237 | 2,062 | 2,110 | 2,010 | 2,179 | 1,990 |
| D                      | 2,444 | 2,758 | 3,603 | 3,292 | 4,226 | 4,178 | 3,236 | 2,711 | 2,396 | 2,456 | 2,595 | 2,297 |
| BN                     | 2,652 | 2,776 | 3,530 | 4,436 | 5,531 | 4,881 | 4,390 | 3,515 | 3,015 | 3,255 | 2,983 | 2,545 |
| AN                     | 2,489 | 3,013 | 4,335 | 6,770 | 7,678 | 6,907 | 4,970 | 4,610 | 3,570 | 3,536 | 3,299 | 3,728 |
| W                      | 2,947 | 3,772 | 6,783 | 8,186 | 8,593 | 7,726 | 6,882 | 5,967 | 4,807 | 3,667 | 3,641 | 3,785 |
| All                    | 2,618 | 3,035 | 4,522 | 5,359 | 6,072 | 5,532 | 4,611 | 3,977 | 3,341 | 3,035 | 3,005 | 2,919 |

### H1a2.3.3 San Joaquin River at Jersey Point (QWEST)

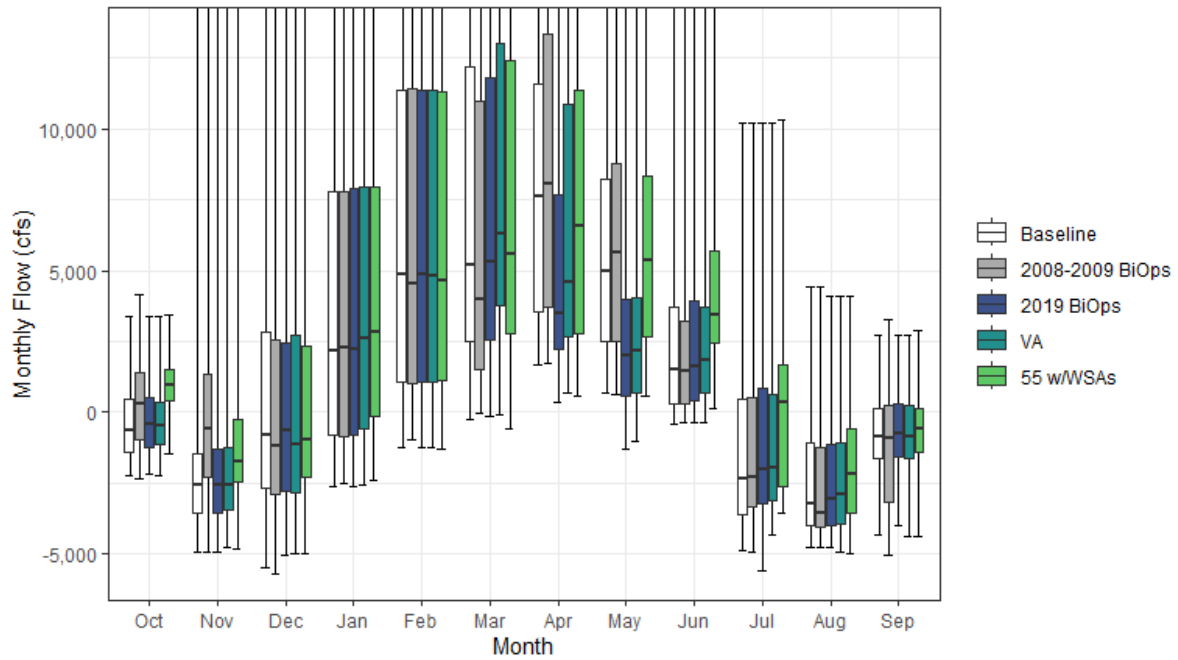


Figure H1a2-49. San Joaquin River at Jersey Point (QWEST) Monthly Boxplot (cfs)

**Table H1a2-97. Cumulative Distribution of Monthly Flow (cfs) — San Joaquin River at Jersey Point (QWEST)**

|                        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul    | Aug    | Sep    | Annual (TAF) |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | -2,216 | -4,918 | -5,494 | -2,604 | -1,215 | -268   | 1,656  | 672    | -386   | -4,880 | -4,751 | -4,332 | -767         |
| 10%                    | -1,696 | -4,095 | -3,695 | -1,613 | -439   | 892    | 2,597  | 1,515  | -5     | -4,163 | -4,258 | -3,710 | -294         |
| 25%                    | -1,410 | -3,544 | -2,653 | -792   | 1,083  | 2,515  | 3,555  | 2,519  | 321    | -3,604 | -3,988 | -1,647 | 166          |
| 50%                    | -658   | -2,564 | -786   | 2,200  | 4,857  | 5,192  | 7,596  | 5,005  | 1,538  | -2,356 | -3,220 | -875   | 1,113        |
| 75%                    | 485    | -1,478 | 2,818  | 7,783  | 11,340 | 12,201 | 11,565 | 8,236  | 3,727  | 494    | -1,046 | 117    | 3,382        |
| 90%                    | 1,235  | 42     | 8,815  | 16,005 | 21,027 | 18,881 | 16,394 | 12,600 | 9,747  | 1,773  | 1,106  | 461    | 5,603        |
| 100%                   | 3,404  | 16,374 | 28,117 | 75,267 | 57,186 | 63,141 | 37,264 | 26,669 | 25,245 | 10,183 | 4,424  | 2,742  | 15,469       |
| Mean                   | -380   | -2,048 | 1,462  | 5,635  | 8,244  | 8,217  | 8,940  | 6,336  | 3,223  | -1,373 | -2,285 | -1,065 | 2,083        |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | -2,355 | -4,918 | -5,676 | -2,485 | -985   | -3     | 1,757  | 655    | -380   | -4,918 | -4,762 | -5,035 | -591         |
| 10%                    | -1,568 | -3,434 | -4,787 | -1,564 | -490   | 351    | 2,620  | 1,513  | -24    | -4,144 | -4,370 | -4,020 | -64          |
| 25%                    | -942   | -2,305 | -2,894 | -866   | 1,038  | 1,509  | 3,695  | 2,499  | 315    | -3,347 | -4,047 | -3,186 | 238          |
| 50%                    | 280    | -595   | -1,161 | 2,280  | 4,547  | 3,970  | 8,053  | 5,638  | 1,465  | -2,277 | -3,570 | -901   | 1,162        |
| 75%                    | 1,385  | 1,350  | 2,550  | 7,792  | 11,407 | 10,967 | 13,334 | 8,788  | 3,221  | 549    | -1,223 | 275    | 3,382        |
| 90%                    | 2,580  | 2,595  | 8,820  | 16,034 | 21,026 | 18,354 | 22,375 | 18,126 | 9,207  | 1,722  | 1,023  | 833    | 6,307        |
| 100%                   | 4,170  | 16,397 | 28,116 | 75,268 | 57,185 | 60,967 | 37,255 | 27,628 | 25,246 | 10,183 | 4,424  | 3,284  | 15,262       |
| Mean                   | 349    | -376   | 1,313  | 5,627  | 8,205  | 7,358  | 10,051 | 7,190  | 3,062  | -1,332 | -2,409 | -1,316 | 2,252        |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | -2,195 | -4,917 | -5,034 | -2,603 | -1,215 | -119   | 338    | -1,280 | -347   | -5,607 | -4,731 | -4,014 | -978         |
| 10%                    | -1,766 | -4,085 | -3,672 | -1,630 | -368   | 845    | 1,292  | -166   | 29     | -3,843 | -4,253 | -3,209 | -540         |
| 25%                    | -1,211 | -3,545 | -2,789 | -792   | 1,095  | 2,535  | 2,225  | 594    | 395    | -3,199 | -4,010 | -1,547 | -51          |
| 50%                    | -423   | -2,552 | -620   | 2,201  | 4,857  | 5,286  | 3,507  | 2,013  | 1,636  | -1,997 | -3,056 | -732   | 689          |
| 75%                    | 506    | -1,285 | 2,451  | 7,906  | 11,343 | 11,795 | 7,688  | 4,014  | 3,915  | 825    | -1,118 | 277    | 2,963        |
| 90%                    | 1,235  | 109    | 8,907  | 16,023 | 21,025 | 18,879 | 15,558 | 11,466 | 9,782  | 1,887  | 1,106  | 690    | 5,503        |
| 100%                   | 3,404  | 16,374 | 28,118 | 75,268 | 57,185 | 63,138 | 37,255 | 26,681 | 25,245 | 10,183 | 4,094  | 2,745  | 15,502       |
| Mean                   | -295   | -2,009 | 1,468  | 5,683  | 8,311  | 8,213  | 6,473  | 3,897  | 3,317  | -1,076 | -2,248 | -862   | 1,839        |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | -2,246 | -4,771 | -4,999 | -2,575 | -1,215 | -108   | 711    | -1,031 | -332   | -4,317 | -4,897 | -4,357 | -694         |
| 10%                    | -1,749 | -4,162 | -3,668 | -1,607 | -337   | 1,696  | 2,283  | 8      | 117    | -3,777 | -4,244 | -2,825 | -282         |
| 25%                    | -1,128 | -3,438 | -2,834 | -605   | 1,096  | 3,752  | 2,686  | 687    | 668    | -3,121 | -3,918 | -1,612 | 219          |
| 50%                    | -486   | -2,553 | -1,126 | 2,588  | 4,813  | 6,316  | 4,606  | 2,174  | 1,866  | -1,961 | -2,868 | -827   | 921          |
| 75%                    | 375    | -1,241 | 2,748  | 7,945  | 11,336 | 12,993 | 10,838 | 4,046  | 3,727  | 657    | -1,077 | 273    | 3,101        |
| 90%                    | 1,256  | 69     | 8,853  | 16,064 | 21,025 | 18,908 | 16,013 | 11,460 | 9,475  | 1,766  | 1,083  | 751    | 5,544        |
| 100%                   | 3,404  | 16,418 | 28,120 | 75,269 | 57,482 | 63,138 | 37,715 | 26,680 | 25,245 | 10,183 | 4,091  | 2,746  | 15,528       |
| Mean                   | -332   | -1,999 | 1,502  | 5,720  | 8,350  | 9,210  | 7,722  | 4,011  | 3,388  | -1,039 | -2,158 | -858   | 1,998        |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |        |        |        |              |
| 0%                     | -1,473 | -4,803 | -5,002 | -2,399 | -1,285 | -574   | 593    | 596    | 141    | -3,551 | -4,990 | -4,381 | -120         |
| 10%                    | -604   | -2,887 | -2,932 | -1,519 | -394   | 949    | 2,257  | 1,846  | 1,765  | -3,118 | -4,191 | -2,324 | 396          |
| 25%                    | 395    | -2,438 | -2,289 | -145   | 1,140  | 2,772  | 2,789  | 2,678  | 2,458  | -2,603 | -3,526 | -1,410 | 646          |
| 50%                    | 950    | -1,716 | -958   | 2,858  | 4,623  | 5,558  | 6,590  | 5,363  | 3,427  | 378    | -2,176 | -602   | 1,318        |
| 75%                    | 1,503  | -238   | 2,351  | 7,925  | 11,292 | 12,411 | 11,331 | 8,323  | 5,670  | 1,681  | -576   | 163    | 3,693        |
| 90%                    | 1,910  | 261    | 8,957  | 15,818 | 20,762 | 18,770 | 15,910 | 12,339 | 10,233 | 2,270  | 1,539  | 933    | 5,858        |
| 100%                   | 3,426  | 16,008 | 28,076 | 75,230 | 57,207 | 61,330 | 37,318 | 26,934 | 25,075 | 10,287 | 4,083  | 2,862  | 15,311       |
| Mean                   | 866    | -1,127 | 1,651  | 5,890  | 8,305  | 8,424  | 8,156  | 6,368  | 4,876  | 42     | -1,774 | -692   | 2,452        |

**Table H1a2-98. Water Year Average of Monthly Flows (cfs) — San Joaquin River at Jersey Point (QWEST)**

| Water Year Type        | Oct   | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun   | Jul    | Aug    | Sep    |
|------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|
| <b>Baseline</b>        |       |        |        |        |        |        |        |        |       |        |        |        |
| C                      | 260   | -1,783 | -1,096 | 64     | 734    | 1,332  | 2,705  | 1,538  | 1,741 | 544    | -102   | 237    |
| D                      | -544  | -2,482 | -1,037 | -489   | 2,005  | 3,139  | 4,215  | 2,830  | 520   | -3,476 | -2,951 | -1,408 |
| BN                     | -191  | -2,157 | -1,141 | 2,079  | 5,889  | 5,369  | 8,404  | 5,284  | 1,099 | -3,279 | -4,041 | -3,179 |
| AN                     | -674  | -1,449 | 459    | 8,364  | 10,935 | 10,301 | 10,050 | 8,309  | 2,639 | -1,797 | -3,781 | -761   |
| W                      | -603  | -2,041 | 6,708  | 14,257 | 17,241 | 16,584 | 15,625 | 11,341 | 7,572 | 523    | -1,251 | -292   |
| All                    | -380  | -2,048 | 1,462  | 5,635  | 8,244  | 8,217  | 8,940  | 6,336  | 3,223 | -1,373 | -2,285 | -1,065 |
| <b>2008-2009 BiOps</b> |       |        |        |        |        |        |        |        |       |        |        |        |
| C                      | 176   | -799   | -964   | 31     | 678    | 1,350  | 2,714  | 1,507  | 1,650 | 475    | -94    | 363    |
| D                      | 329   | -588   | -1,421 | -494   | 1,978  | 2,208  | 4,299  | 2,815  | 456   | -3,083 | -3,385 | -1,326 |
| BN                     | 599   | -481   | -1,167 | 2,141  | 5,946  | 4,152  | 8,410  | 5,240  | 1,023 | -3,273 | -4,142 | -3,385 |
| AN                     | 420   | -173   | 87     | 8,291  | 10,787 | 9,143  | 10,882 | 8,145  | 2,508 | -2,052 | -3,890 | -1,168 |
| W                      | 269   | -11    | 6,592  | 14,242 | 17,183 | 15,653 | 18,889 | 14,284 | 7,240 | 507    | -1,237 | -952   |
| All                    | 349   | -376   | 1,313  | 5,627  | 8,205  | 7,358  | 10,051 | 7,190  | 3,062 | -1,332 | -2,409 | -1,316 |
| <b>2019 BiOps</b>      |       |        |        |        |        |        |        |        |       |        |        |        |
| C                      | 377   | -1,742 | -1,049 | 160    | 934    | 1,317  | 2,370  | 914    | 1,846 | 670    | -64    | 392    |
| D                      | -414  | -2,457 | -1,163 | -489   | 2,041  | 3,166  | 1,968  | 381    | 566   | -3,049 | -2,914 | -1,318 |
| BN                     | -248  | -2,282 | -998   | 2,198  | 5,893  | 5,373  | 4,248  | 1,915  | 1,310 | -2,854 | -3,977 | -2,706 |
| AN                     | -665  | -1,401 | 365    | 8,400  | 11,062 | 10,226 | 5,804  | 3,908  | 2,823 | -1,511 | -3,802 | -345   |
| W                      | -449  | -1,894 | 6,742  | 14,277 | 17,275 | 16,583 | 13,641 | 9,316  | 7,590 | 738    | -1,207 | -236   |
| All                    | -295  | -2,009 | 1,468  | 5,683  | 8,311  | 8,213  | 6,473  | 3,897  | 3,317 | -1,076 | -2,248 | -862   |
| <b>VA</b>              |       |        |        |        |        |        |        |        |       |        |        |        |
| C                      | 311   | -1,654 | -1,064 | 346    | 1,046  | 1,480  | 2,595  | 1,056  | 1,982 | 543    | -62    | 382    |
| D                      | -437  | -2,522 | -1,006 | -492   | 2,069  | 5,107  | 3,119  | 583    | 776   | -3,015 | -2,760 | -1,254 |
| BN                     | -289  | -2,160 | -1,091 | 2,250  | 5,935  | 7,954  | 5,197  | 2,139  | 1,346 | -2,702 | -3,683 | -2,713 |
| AN                     | -670  | -1,382 | 510    | 8,383  | 11,070 | 10,473 | 10,697 | 4,159  | 2,797 | -1,282 | -3,793 | -391   |
| W                      | -491  | -1,945 | 6,748  | 14,272 | 17,292 | 16,631 | 14,240 | 9,228  | 7,582 | 716    | -1,216 | -240   |
| All                    | -332  | -1,999 | 1,502  | 5,720  | 8,350  | 9,210  | 7,722  | 4,011  | 3,388 | -1,039 | -2,158 | -858   |
| <b>55 w/WSAs</b>       |       |        |        |        |        |        |        |        |       |        |        |        |
| C                      | 1,041 | -1,020 | -859   | 775    | 833    | 1,117  | 2,512  | 1,978  | 2,573 | 1,603  | 450    | 125    |
| D                      | 1,125 | -1,448 | -954   | -112   | 2,162  | 3,530  | 3,019  | 3,380  | 3,024 | 350    | -1,896 | -1,021 |
| BN                     | 616   | -1,525 | -679   | 2,293  | 6,034  | 5,856  | 7,074  | 4,877  | 3,107 | -1,889 | -3,042 | -1,895 |
| AN                     | 1,006 | -537   | 901    | 8,446  | 11,285 | 10,598 | 8,684  | 7,409  | 4,209 | -1,420 | -3,487 | 205    |
| W                      | 684   | -933   | 6,676  | 14,275 | 17,042 | 16,665 | 15,406 | 11,428 | 8,851 | 793    | -1,383 | -483   |
| All                    | 866   | -1,127 | 1,651  | 5,890  | 8,305  | 8,424  | 8,156  | 6,368  | 4,876 | 42     | -1,774 | -692   |

## H1a2.3.4 Old and Middle Rivers Net Flow

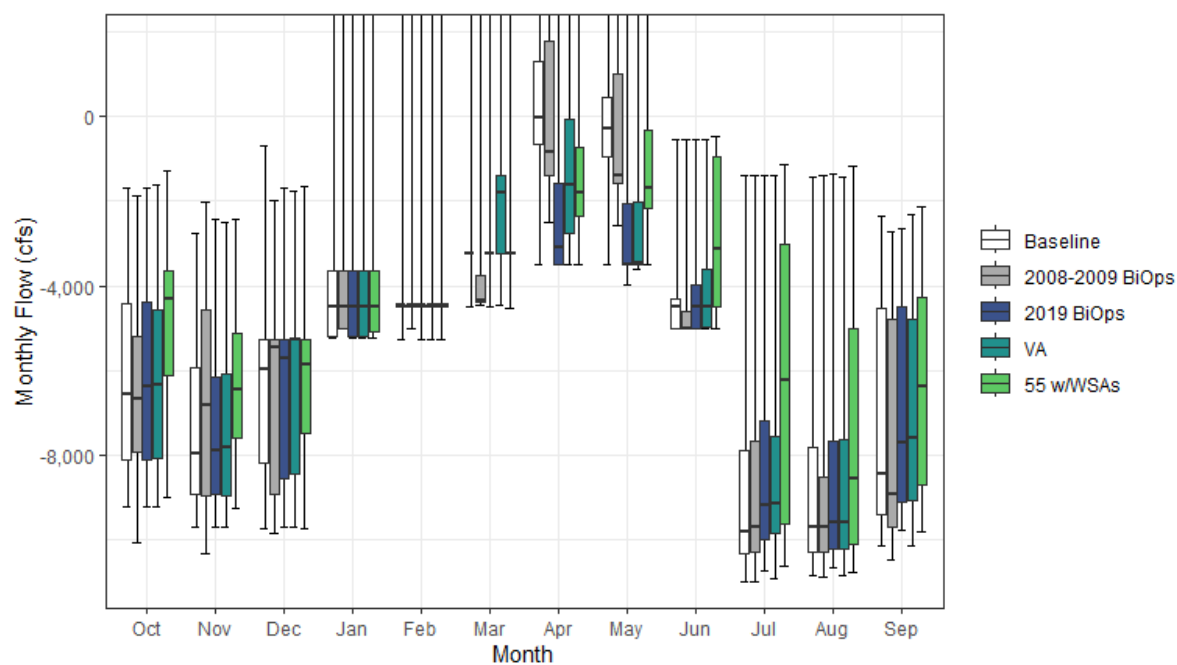


Figure H1a2-50. Old and Middle Rivers Net Flow Monthly Boxplot (cfs)

**Table H1a2-99. Cumulative Distribution of Monthly Flow (cfs) — Old and Middle Rivers Net Flow**

|                        | Oct     | Nov     | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul     | Aug     | Sep     | Annual (TAF) |
|------------------------|---------|---------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|--------------|
| <b>Baseline</b>        |         |         |        |        |        |        |        |        |        |         |         |         |              |
| 0%                     | -9,246  | -9,736  | -9,765 | -5,242 | -5,268 | -4,505 | -3,500 | -3,500 | -5,000 | -11,004 | -10,863 | -10,151 | -4,649       |
| 10%                    | -8,550  | -9,260  | -9,368 | -5,242 | -5,000 | -3,500 | -2,637 | -3,482 | -5,000 | -10,656 | -10,496 | -9,742  | -4,314       |
| 25%                    | -8,138  | -8,951  | -8,203 | -5,205 | -4,483 | -3,258 | -651   | -935   | -5,000 | -10,356 | -10,319 | -9,409  | -4,224       |
| 50%                    | -6,588  | -7,970  | -5,980 | -4,516 | -4,464 | -3,258 | -32    | -291   | -4,500 | -9,822  | -9,722  | -8,459  | -3,861       |
| 75%                    | -4,417  | -5,932  | -5,267 | -3,645 | -4,447 | -3,224 | 1,314  | 460    | -4,297 | -7,904  | -7,814  | -4,523  | -3,381       |
| 90%                    | -3,526  | -3,966  | -4,104 | -3,545 | -3,671 | -2,294 | 1,756  | 1,194  | -1,666 | -2,426  | -4,827  | -2,861  | -2,261       |
| 100%                   | -1,688  | -2,769  | -696   | 19,185 | 6,005  | 16,817 | 7,518  | 3,502  | -542   | -1,399  | -1,418  | -2,359  | -202         |
| Mean                   | -6,220  | -7,260  | -6,449 | -4,157 | -4,073 | -2,859 | 37     | -397   | -4,163 | -8,374  | -8,579  | -7,252  | -3,614       |
| <b>2008-2009 BiOps</b> |         |         |        |        |        |        |        |        |        |         |         |         |              |
| 0%                     | -10,082 | -10,365 | -9,860 | -5,000 | -5,000 | -4,452 | -2,509 | -2,590 | -5,000 | -11,004 | -10,919 | -10,503 | -4,683       |
| 10%                    | -9,012  | -9,913  | -9,696 | -5,000 | -5,000 | -4,371 | -1,728 | -1,810 | -5,000 | -10,653 | -10,503 | -10,075 | -4,450       |
| 25%                    | -7,960  | -8,985  | -8,951 | -5,000 | -4,501 | -4,371 | -1,390 | -1,563 | -5,000 | -10,320 | -10,308 | -9,723  | -4,199       |
| 50%                    | -6,702  | -6,836  | -5,451 | -4,516 | -4,464 | -4,355 | -841   | -1,391 | -5,000 | -9,714  | -9,731  | -8,943  | -3,858       |
| 75%                    | -5,191  | -4,584  | -5,265 | -3,645 | -4,448 | -3,744 | 1,792  | 1,019  | -4,600 | -7,700  | -8,546  | -4,802  | -3,263       |
| 90%                    | -3,792  | -3,598  | -3,929 | -3,620 | -3,637 | -2,291 | 2,954  | 1,930  | -1,997 | -2,698  | -4,598  | -3,121  | -2,533       |
| 100%                   | -1,852  | -2,012  | -1,989 | 19,185 | 6,004  | 14,811 | 7,183  | 5,135  | -542   | -1,402  | -1,403  | -2,737  | -712         |
| Mean                   | -6,474  | -6,676  | -6,582 | -4,132 | -4,074 | -3,633 | 407    | -385   | -4,325 | -8,255  | -8,711  | -7,536  | -3,654       |
| <b>2019 BiOps</b>      |         |         |        |        |        |        |        |        |        |         |         |         |              |
| 0%                     | -9,246  | -9,736  | -9,727 | -5,242 | -5,268 | -4,505 | -3,500 | -3,980 | -5,000 | -10,764 | -10,694 | -9,777  | -4,905       |
| 10%                    | -8,550  | -9,260  | -9,353 | -5,242 | -5,000 | -3,500 | -3,500 | -3,500 | -5,000 | -10,244 | -10,400 | -9,425  | -4,650       |
| 25%                    | -8,138  | -8,951  | -8,563 | -5,205 | -4,483 | -3,258 | -3,500 | -3,500 | -5,000 | -10,029 | -10,254 | -9,131  | -4,514       |
| 50%                    | -6,378  | -7,912  | -5,721 | -4,516 | -4,464 | -3,258 | -3,082 | -3,485 | -4,500 | -9,193  | -9,599  | -7,737  | -4,169       |
| 75%                    | -4,399  | -6,167  | -5,269 | -3,645 | -4,444 | -3,232 | -1,565 | -2,046 | -3,996 | -7,200  | -7,669  | -4,497  | -3,506       |
| 90%                    | -3,036  | -3,786  | -4,054 | -3,254 | -3,412 | -2,292 | 1      | -1,175 | -1,622 | -2,320  | -4,901  | -2,860  | -2,391       |
| 100%                   | -1,677  | -2,417  | -1,701 | 19,185 | 6,004  | 16,814 | 7,529  | 3,515  | -542   | -1,401  | -1,353  | -2,645  | -159         |
| Mean                   | -6,120  | -7,261  | -6,450 | -4,134 | -4,025 | -2,865 | -2,254 | -2,715 | -4,053 | -7,912  | -8,468  | -6,942  | -3,823       |
| <b>VA</b>              |         |         |        |        |        |        |        |        |        |         |         |         |              |
| 0%                     | -9,246  | -9,736  | -9,727 | -5,242 | -5,268 | -4,461 | -3,500 | -3,600 | -5,000 | -10,939 | -10,861 | -10,151 | -4,880       |
| 10%                    | -8,550  | -9,224  | -9,368 | -5,242 | -5,000 | -3,258 | -3,087 | -3,500 | -5,000 | -10,263 | -10,437 | -9,645  | -4,492       |
| 25%                    | -8,089  | -8,974  | -8,445 | -5,197 | -4,483 | -3,258 | -2,774 | -3,500 | -4,989 | -9,851  | -10,252 | -9,082  | -4,342       |
| 50%                    | -6,349  | -7,847  | -5,290 | -4,516 | -4,464 | -1,793 | -1,625 | -3,478 | -4,500 | -9,179  | -9,593  | -7,604  | -3,983       |
| 75%                    | -4,576  | -6,091  | -5,251 | -3,645 | -4,440 | -1,385 | -55    | -2,024 | -3,600 | -7,581  | -7,661  | -4,799  | -3,403       |
| 90%                    | -3,364  | -3,563  | -4,138 | -2,971 | -2,754 | -788   | 563    | -1,090 | -1,495 | -2,432  | -3,966  | -2,860  | -2,240       |
| 100%                   | -1,598  | -2,494  | -1,756 | 19,186 | 6,283  | 16,814 | 7,956  | 3,515  | -542   | -1,382  | -1,416  | -2,306  | -134         |
| Mean                   | -6,165  | -7,226  | -6,389 | -4,080 | -3,976 | -1,984 | -1,310 | -2,669 | -3,971 | -7,941  | -8,417  | -6,944  | -3,695       |
| <b>55 w/WSAs</b>       |         |         |        |        |        |        |        |        |        |         |         |         |              |
| 0%                     | -9,006  | -9,293  | -9,774 | -5,242 | -5,268 | -4,541 | -3,500 | -3,500 | -5,000 | -10,653 | -10,811 | -9,847  | -4,484       |
| 10%                    | -8,136  | -8,580  | -9,028 | -5,233 | -5,000 | -3,500 | -2,840 | -2,640 | -5,000 | -10,075 | -10,413 | -9,331  | -4,229       |
| 25%                    | -6,134  | -7,611  | -7,489 | -5,084 | -4,483 | -3,258 | -2,335 | -2,153 | -4,499 | -9,634  | -10,117 | -8,717  | -3,917       |
| 50%                    | -4,307  | -6,468  | -5,877 | -4,515 | -4,464 | -3,258 | -1,793 | -1,682 | -3,124 | -6,231  | -8,585  | -6,396  | -3,278       |
| 75%                    | -3,661  | -5,132  | -5,263 | -3,637 | -4,440 | -3,234 | -708   | -308   | -955   | -3,006  | -5,022  | -4,281  | -2,826       |
| 90%                    | -2,470  | -3,173  | -4,270 | -2,329 | -3,872 | -2,325 | 15     | -21    | -763   | -1,447  | -4,335  | -3,234  | -2,058       |
| 100%                   | -1,261  | -2,437  | -1,649 | 19,185 | 6,071  | 15,114 | 7,617  | 3,491  | -471   | -1,128  | -1,164  | -2,140  | -346         |
| Mean                   | -4,863  | -6,288  | -6,194 | -3,949 | -4,060 | -2,933 | -1,459 | -1,326 | -2,836 | -6,168  | -7,599  | -6,337  | -3,265       |

**Table H1a2-100. Water Year Average of Monthly Flows (cfs) — Old and Middle Rivers Net Flow**

| Water Year Type        | Oct    | Nov    | Dec    | Jan    | Feb    | Mar    | Apr    | May    | Jun    | Jul     | Aug     | Sep    |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| <b>Baseline</b>        |        |        |        |        |        |        |        |        |        |         |         |        |
| C                      | -4,731 | -5,669 | -5,707 | -3,926 | -4,371 | -3,064 | -355   | -736   | -2,088 | -2,945  | -3,878  | -3,100 |
| D                      | -6,071 | -7,016 | -6,879 | -4,914 | -4,643 | -3,214 | -270   | -540   | -4,573 | -9,145  | -8,334  | -5,517 |
| BN                     | -6,143 | -7,111 | -6,934 | -4,603 | -4,520 | -3,280 | 784    | 231    | -4,858 | -10,205 | -10,236 | -8,825 |
| AN                     | -6,289 | -7,319 | -7,105 | -4,173 | -4,161 | -3,187 | 622    | 843    | -4,871 | -9,982  | -10,295 | -9,386 |
| W                      | -7,143 | -8,357 | -5,959 | -3,437 | -3,176 | -2,091 | -237   | -1,004 | -4,244 | -8,900  | -9,529  | -8,888 |
| All                    | -6,220 | -7,260 | -6,449 | -4,157 | -4,073 | -2,859 | 37     | -397   | -4,163 | -8,374  | -8,579  | -7,252 |
| <b>2008-2009 BiOps</b> |        |        |        |        |        |        |        |        |        |         |         |        |
| C                      | -5,592 | -5,399 | -5,582 | -3,946 | -4,406 | -3,044 | -1,336 | -1,537 | -2,205 | -3,046  | -3,838  | -3,134 |
| D                      | -6,165 | -6,222 | -7,291 | -4,916 | -4,615 | -4,046 | -1,460 | -1,699 | -4,659 | -8,607  | -8,934  | -5,699 |
| BN                     | -6,254 | -6,437 | -7,021 | -4,506 | -4,432 | -4,353 | 140    | -833   | -4,935 | -10,034 | -10,224 | -9,347 |
| AN                     | -6,085 | -7,185 | -7,492 | -4,153 | -4,153 | -4,261 | 962    | 50     | -4,996 | -10,082 | -10,360 | -9,813 |
| W                      | -7,468 | -7,638 | -5,955 | -3,413 | -3,242 | -2,936 | 2,653  | 1,303  | -4,557 | -8,918  | -9,529  | -9,172 |
| All                    | -6,474 | -6,676 | -6,582 | -4,132 | -4,074 | -3,633 | 407    | -385   | -4,325 | -8,255  | -8,711  | -7,536 |
| <b>2019 BiOps</b>      |        |        |        |        |        |        |        |        |        |         |         |        |
| C                      | -4,608 | -5,615 | -5,588 | -3,848 | -4,204 | -3,076 | -714   | -1,424 | -1,933 | -2,783  | -3,822  | -2,870 |
| D                      | -5,942 | -6,986 | -6,984 | -4,915 | -4,635 | -3,190 | -2,440 | -3,007 | -4,515 | -8,556  | -8,156  | -5,384 |
| BN                     | -6,219 | -7,259 | -6,853 | -4,548 | -4,527 | -3,280 | -3,027 | -2,970 | -4,629 | -9,668  | -10,042 | -8,048 |
| AN                     | -6,289 | -7,268 | -7,179 | -4,173 | -4,035 | -3,254 | -3,276 | -3,177 | -4,647 | -9,224  | -10,296 | -8,831 |
| W                      | -6,926 | -8,339 | -5,970 | -3,437 | -3,159 | -2,096 | -2,041 | -2,841 | -4,242 | -8,539  | -9,448  | -8,801 |
| All                    | -6,120 | -7,261 | -6,450 | -4,134 | -4,025 | -2,865 | -2,254 | -2,715 | -4,053 | -7,912  | -8,468  | -6,942 |
| <b>VA</b>              |        |        |        |        |        |        |        |        |        |         |         |        |
| C                      | -4,715 | -5,506 | -5,547 | -3,658 | -4,082 | -2,917 | -498   | -1,267 | -1,747 | -2,949  | -3,834  | -2,897 |
| D                      | -5,960 | -7,052 | -6,853 | -4,898 | -4,581 | -1,456 | -1,601 | -2,962 | -4,402 | -8,683  | -8,179  | -5,391 |
| BN                     | -6,290 | -7,123 | -6,811 | -4,447 | -4,453 | -980   | -2,485 | -2,959 | -4,569 | -9,426  | -9,733  | -7,963 |
| AN                     | -6,258 | -7,181 | -7,178 | -4,173 | -4,035 | -3,086 | 744    | -3,116 | -4,522 | -9,362  | -10,311 | -8,925 |
| W                      | -6,973 | -8,355 | -5,916 | -3,436 | -3,149 | -2,069 | -1,605 | -2,841 | -4,241 | -8,551  | -9,445  | -8,805 |
| All                    | -6,165 | -7,226 | -6,389 | -4,080 | -3,976 | -1,984 | -1,310 | -2,669 | -3,971 | -7,941  | -8,417  | -6,944 |
| <b>55 w/WSAs</b>       |        |        |        |        |        |        |        |        |        |         |         |        |
| C                      | -3,887 | -4,722 | -5,266 | -3,223 | -4,411 | -3,417 | -664   | -456   | -939   | -1,442  | -3,120  | -3,125 |
| D                      | -4,207 | -6,079 | -6,772 | -4,632 | -4,689 | -3,299 | -2,347 | -883   | -1,530 | -3,761  | -6,380  | -5,006 |
| BN                     | -5,263 | -6,324 | -6,478 | -4,460 | -4,477 | -3,278 | -1,637 | -1,525 | -3,410 | -7,803  | -8,412  | -6,492 |
| AN                     | -4,431 | -6,059 | -6,906 | -4,152 | -3,900 | -3,136 | -1,602 | -1,485 | -4,517 | -8,526  | -9,780  | -7,301 |
| W                      | -5,783 | -7,346 | -5,798 | -3,429 | -3,212 | -2,105 | -1,061 | -1,925 | -3,770 | -8,476  | -9,496  | -8,541 |
| All                    | -4,863 | -6,288 | -6,194 | -3,949 | -4,060 | -2,933 | -1,459 | -1,326 | -2,836 | -6,168  | -7,599  | -6,337 |

### H1a2.3.5 Jones Pumping Plant (CVP)

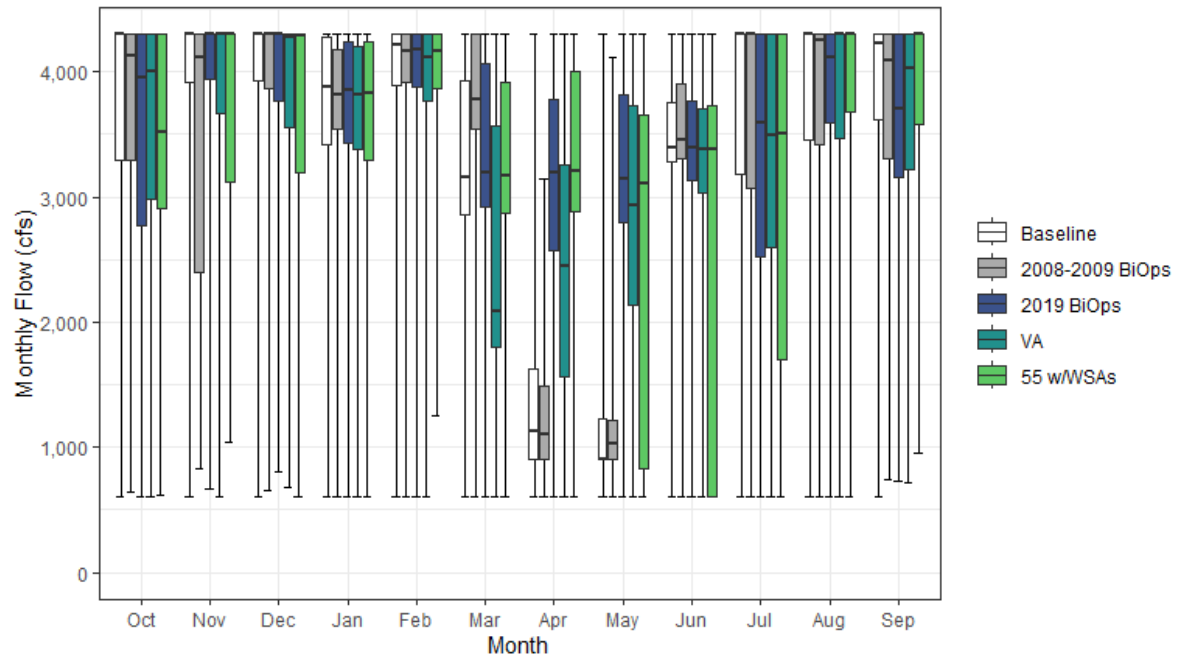


Figure H1a2-51. Jones Pumping Plant (CVP) Monthly Boxplot (cfs)

**Table H1a2-101. Cumulative Distribution of Monthly Flow (cfs) — Jones Pumping Plant (CVP)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 600   | 600   | 600   | 600   | 600   | 600   | 600   | 608   | 604   | 604   | 600   | 606   | 1,047        |
| 10%                    | 2,529 | 2,068 | 2,878 | 2,790 | 3,641 | 2,338 | 602   | 898   | 2,022 | 1,888 | 2,887 | 2,787 | 1,811        |
| 25%                    | 3,296 | 3,918 | 3,929 | 3,424 | 3,895 | 2,858 | 898   | 899   | 3,279 | 3,187 | 3,450 | 3,611 | 2,272        |
| 50%                    | 4,297 | 4,298 | 4,297 | 3,880 | 4,214 | 3,151 | 1,132 | 908   | 3,395 | 4,300 | 4,300 | 4,227 | 2,469        |
| 75%                    | 4,300 | 4,300 | 4,298 | 4,273 | 4,297 | 3,931 | 1,628 | 1,230 | 3,758 | 4,300 | 4,300 | 4,300 | 2,638        |
| 90%                    | 4,300 | 4,300 | 4,300 | 4,298 | 4,298 | 4,297 | 3,336 | 4,110 | 4,299 | 4,300 | 4,300 | 4,300 | 2,913        |
| 100%                   | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,299 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 3,089        |
| Mean                   | 3,662 | 3,824 | 3,920 | 3,660 | 4,001 | 3,173 | 1,568 | 1,537 | 3,314 | 3,566 | 3,764 | 3,768 | 2,398        |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 647   | 825   | 651   | 600   | 600   | 600   | 600   | 608   | 605   | 602   | 600   | 742   | 1,039        |
| 10%                    | 2,045 | 1,803 | 2,592 | 3,026 | 3,636 | 2,391 | 603   | 899   | 2,398 | 2,062 | 2,876 | 2,560 | 1,832        |
| 25%                    | 3,292 | 2,399 | 3,868 | 3,545 | 3,918 | 3,541 | 899   | 899   | 3,302 | 3,073 | 3,415 | 3,307 | 2,268        |
| 50%                    | 4,123 | 4,118 | 4,298 | 3,819 | 4,162 | 3,780 | 1,100 | 1,030 | 3,452 | 4,299 | 4,249 | 4,086 | 2,463        |
| 75%                    | 4,299 | 4,298 | 4,300 | 4,182 | 4,297 | 4,297 | 1,483 | 1,217 | 3,899 | 4,300 | 4,300 | 4,300 | 2,598        |
| 90%                    | 4,300 | 4,300 | 4,300 | 4,298 | 4,298 | 4,298 | 2,093 | 1,616 | 4,299 | 4,300 | 4,300 | 4,300 | 2,678        |
| 100%                   | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 3,141 | 4,111 | 4,300 | 4,300 | 4,300 | 4,300 | 3,032        |
| Mean                   | 3,616 | 3,440 | 3,909 | 3,653 | 4,000 | 3,568 | 1,261 | 1,205 | 3,380 | 3,544 | 3,759 | 3,689 | 2,354        |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 609   | 664   | 809   | 601   | 600   | 600   | 600   | 608   | 604   | 602   | 600   | 729   | 811          |
| 10%                    | 2,190 | 2,070 | 2,502 | 2,771 | 3,194 | 1,975 | 606   | 2,067 | 1,761 | 1,585 | 2,125 | 2,701 | 1,835        |
| 25%                    | 2,770 | 3,944 | 3,767 | 3,424 | 3,882 | 2,919 | 2,573 | 2,794 | 3,131 | 2,521 | 3,588 | 3,158 | 2,404        |
| 50%                    | 3,951 | 4,298 | 4,295 | 3,852 | 4,180 | 3,194 | 3,193 | 3,139 | 3,393 | 3,587 | 4,118 | 3,708 | 2,651        |
| 75%                    | 4,300 | 4,300 | 4,298 | 4,241 | 4,297 | 4,064 | 3,782 | 3,820 | 3,767 | 4,300 | 4,300 | 4,300 | 2,843        |
| 90%                    | 4,300 | 4,300 | 4,300 | 4,298 | 4,298 | 4,297 | 4,296 | 4,120 | 4,299 | 4,300 | 4,300 | 4,300 | 2,955        |
| 100%                   | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,299 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 3,070        |
| Mean                   | 3,431 | 3,776 | 3,788 | 3,648 | 3,937 | 3,239 | 2,985 | 3,137 | 3,260 | 3,295 | 3,646 | 3,583 | 2,517        |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 600   | 605   | 677   | 600   | 600   | 600   | 600   | 600   | 606   | 602   | 603   | 718   | 934          |
| 10%                    | 2,185 | 2,082 | 2,553 | 2,535 | 3,061 | 1,797 | 704   | 1,481 | 1,266 | 1,848 | 2,620 | 2,633 | 1,757        |
| 25%                    | 2,987 | 3,665 | 3,559 | 3,385 | 3,764 | 1,797 | 1,560 | 2,139 | 3,029 | 2,602 | 3,473 | 3,213 | 2,262        |
| 50%                    | 4,008 | 4,298 | 4,280 | 3,817 | 4,111 | 2,092 | 2,448 | 2,935 | 3,378 | 3,491 | 4,300 | 4,029 | 2,519        |
| 75%                    | 4,300 | 4,300 | 4,298 | 4,196 | 4,297 | 3,565 | 3,259 | 3,730 | 3,700 | 4,300 | 4,300 | 4,300 | 2,761        |
| 90%                    | 4,300 | 4,300 | 4,300 | 4,298 | 4,298 | 4,297 | 4,054 | 4,203 | 4,299 | 4,300 | 4,300 | 4,300 | 2,934        |
| 100%                   | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,299 | 4,299 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 3,047        |
| Mean                   | 3,505 | 3,764 | 3,761 | 3,597 | 3,838 | 2,597 | 2,401 | 2,919 | 3,141 | 3,290 | 3,719 | 3,661 | 2,425        |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 618   | 1,042 | 600   | 600   | 1,255 | 600   | 600   | 600   | 600   | 600   | 603   | 955   | 906          |
| 10%                    | 2,217 | 1,659 | 1,383 | 2,016 | 3,291 | 1,528 | 1,067 | 609   | 604   | 608   | 2,344 | 2,702 | 1,707        |
| 25%                    | 2,909 | 3,120 | 3,197 | 3,298 | 3,864 | 2,864 | 2,884 | 834   | 610   | 1,702 | 3,682 | 3,584 | 2,132        |
| 50%                    | 3,517 | 4,297 | 4,283 | 3,824 | 4,162 | 3,174 | 3,205 | 3,108 | 3,385 | 3,504 | 4,299 | 4,298 | 2,600        |
| 75%                    | 4,298 | 4,298 | 4,298 | 4,241 | 4,297 | 3,921 | 4,001 | 3,648 | 3,726 | 4,299 | 4,300 | 4,300 | 2,811        |
| 90%                    | 4,300 | 4,300 | 4,299 | 4,298 | 4,298 | 4,298 | 4,299 | 4,113 | 4,298 | 4,300 | 4,300 | 4,300 | 2,969        |
| 100%                   | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 4,300 | 3,101        |
| Mean                   | 3,439 | 3,634 | 3,583 | 3,510 | 3,914 | 3,136 | 3,099 | 2,582 | 2,593 | 2,937 | 3,745 | 3,811 | 2,411        |

**Table H1a2-102. Water Year Average of Monthly Flows (cfs) — Jones Pumping Plant (CVP)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,139 | 3,035 | 3,549 | 2,944 | 3,579 | 2,459 | 925   | 1,007 | 1,615 | 1,461 | 2,351 | 2,359 |
| D                      | 3,702 | 3,852 | 4,021 | 3,622 | 3,993 | 2,873 | 1,247 | 1,097 | 3,329 | 3,626 | 3,766 | 3,983 |
| BN                     | 3,710 | 3,880 | 3,775 | 3,722 | 4,042 | 3,313 | 972   | 980   | 3,414 | 3,798 | 3,813 | 3,841 |
| AN                     | 3,544 | 3,749 | 4,017 | 3,840 | 4,144 | 3,495 | 1,321 | 924   | 3,715 | 4,066 | 4,229 | 3,993 |
| W                      | 3,927 | 4,218 | 4,098 | 3,957 | 4,147 | 3,557 | 2,623 | 2,739 | 3,986 | 4,298 | 4,300 | 4,225 |
| All                    | 3,662 | 3,824 | 3,920 | 3,660 | 4,001 | 3,173 | 1,568 | 1,537 | 3,314 | 3,566 | 3,764 | 3,768 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,325 | 3,134 | 3,374 | 2,940 | 3,588 | 2,445 | 925   | 1,020 | 1,737 | 1,633 | 2,401 | 2,609 |
| D                      | 3,593 | 3,152 | 4,067 | 3,664 | 3,930 | 3,442 | 1,197 | 1,159 | 3,348 | 3,583 | 3,677 | 3,897 |
| BN                     | 3,636 | 3,521 | 3,792 | 3,666 | 4,023 | 3,805 | 1,024 | 959   | 3,464 | 3,612 | 3,800 | 3,625 |
| AN                     | 3,482 | 3,578 | 4,012 | 3,826 | 4,144 | 3,948 | 1,038 | 1,017 | 3,769 | 4,098 | 4,300 | 4,051 |
| W                      | 3,828 | 3,707 | 4,111 | 3,948 | 4,198 | 3,958 | 1,727 | 1,569 | 4,070 | 4,270 | 4,300 | 4,008 |
| All                    | 3,616 | 3,440 | 3,909 | 3,653 | 4,000 | 3,568 | 1,261 | 1,205 | 3,380 | 3,544 | 3,759 | 3,689 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,001 | 3,014 | 3,219 | 2,943 | 3,396 | 2,456 | 1,272 | 1,610 | 1,447 | 1,341 | 2,032 | 2,728 |
| D                      | 3,424 | 3,717 | 4,000 | 3,610 | 3,988 | 2,846 | 2,819 | 2,873 | 3,232 | 3,087 | 3,645 | 3,714 |
| BN                     | 3,610 | 3,946 | 3,498 | 3,722 | 4,042 | 3,355 | 3,313 | 3,223 | 3,379 | 3,252 | 3,603 | 3,221 |
| AN                     | 3,344 | 3,648 | 3,889 | 3,840 | 4,144 | 3,768 | 3,585 | 3,546 | 3,724 | 3,889 | 4,231 | 3,523 |
| W                      | 3,588 | 4,170 | 4,079 | 3,929 | 4,039 | 3,661 | 3,573 | 3,925 | 3,987 | 4,279 | 4,300 | 4,197 |
| All                    | 3,431 | 3,776 | 3,788 | 3,648 | 3,937 | 3,239 | 2,985 | 3,137 | 3,260 | 3,295 | 3,646 | 3,583 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,121 | 3,049 | 3,139 | 2,795 | 3,227 | 2,298 | 1,034 | 1,275 | 1,224 | 1,523 | 2,383 | 2,617 |
| D                      | 3,318 | 3,837 | 4,031 | 3,646 | 3,737 | 1,758 | 1,965 | 2,574 | 3,054 | 3,232 | 3,703 | 4,052 |
| BN                     | 3,693 | 3,761 | 3,533 | 3,600 | 3,964 | 1,962 | 2,896 | 2,942 | 3,272 | 3,095 | 3,612 | 3,280 |
| AN                     | 3,501 | 3,573 | 3,882 | 3,841 | 4,143 | 3,233 | 1,518 | 3,219 | 3,581 | 3,589 | 4,247 | 3,542 |
| W                      | 3,730 | 4,169 | 3,992 | 3,890 | 4,037 | 3,518 | 3,490 | 3,916 | 3,968 | 4,279 | 4,300 | 4,220 |
| All                    | 3,505 | 3,764 | 3,761 | 3,597 | 3,838 | 2,597 | 2,401 | 2,919 | 3,141 | 3,290 | 3,719 | 3,661 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,198 | 2,625 | 2,783 | 2,394 | 3,636 | 2,301 | 1,052 | 711   | 608   | 716   | 2,174 | 3,172 |
| D                      | 3,218 | 3,727 | 3,637 | 3,510 | 3,962 | 2,821 | 3,163 | 1,500 | 1,334 | 2,498 | 3,761 | 4,090 |
| BN                     | 3,622 | 3,857 | 3,450 | 3,575 | 3,815 | 3,372 | 3,543 | 2,837 | 2,870 | 2,856 | 4,013 | 3,439 |
| AN                     | 2,984 | 3,382 | 3,671 | 3,846 | 4,144 | 3,546 | 3,568 | 3,391 | 3,686 | 3,553 | 4,049 | 3,759 |
| W                      | 3,797 | 4,065 | 4,021 | 3,929 | 3,997 | 3,497 | 3,673 | 3,889 | 3,961 | 4,250 | 4,278 | 4,203 |
| All                    | 3,439 | 3,634 | 3,583 | 3,510 | 3,914 | 3,136 | 3,099 | 2,582 | 2,593 | 2,937 | 3,745 | 3,811 |

## H1a2.3.6 Banks Pumping Plant (SWP)

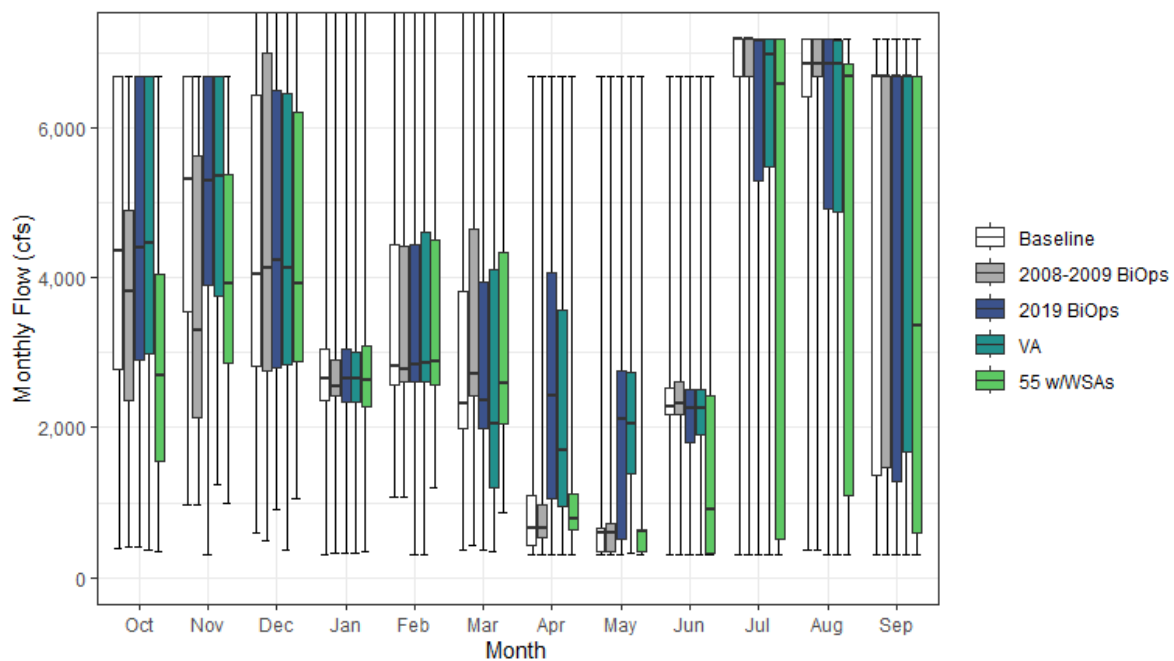


Figure H1a2-52. Banks Pumping Plant (SWP) Monthly Boxplot (cfs)

**Table H1a2-103. Cumulative Distribution of Monthly Flow (cfs) — Banks Pumping Plant (SWP)**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 381   | 971   | 604   | 311   | 1,065 | 359   | 301   | 301   | 315   | 302   | 377   | 310   | 827          |
| 10%                    | 1,484 | 2,294 | 2,219 | 2,009 | 2,394 | 1,873 | 316   | 306   | 332   | 319   | 755   | 480   | 1,288        |
| 25%                    | 2,785 | 3,546 | 2,810 | 2,371 | 2,575 | 1,984 | 427   | 351   | 2,167 | 6,680 | 6,406 | 1,372 | 2,184        |
| 50%                    | 4,364 | 5,304 | 4,050 | 2,658 | 2,817 | 2,326 | 662   | 601   | 2,274 | 7,180 | 6,855 | 6,680 | 2,810        |
| 75%                    | 6,680 | 6,680 | 6,430 | 3,053 | 4,441 | 3,813 | 1,099 | 662   | 2,524 | 7,180 | 7,180 | 6,680 | 3,290        |
| 90%                    | 6,680 | 6,680 | 7,062 | 3,942 | 6,631 | 6,890 | 5,755 | 4,145 | 5,179 | 7,180 | 7,180 | 6,725 | 3,924        |
| 100%                   | 6,680 | 6,680 | 7,678 | 8,500 | 8,500 | 7,561 | 6,680 | 6,680 | 6,680 | 7,180 | 7,180 | 7,180 | 5,018        |
| Mean                   | 4,380 | 4,918 | 4,401 | 2,955 | 3,692 | 3,199 | 1,668 | 1,285 | 2,481 | 5,810 | 5,625 | 4,681 | 2,725        |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 403   | 975   | 485   | 321   | 1,074 | 422   | 301   | 301   | 313   | 306   | 361   | 303   | 790          |
| 10%                    | 1,618 | 1,495 | 2,169 | 2,154 | 2,465 | 1,776 | 329   | 304   | 333   | 320   | 920   | 524   | 1,244        |
| 25%                    | 2,355 | 2,136 | 2,764 | 2,414 | 2,601 | 2,431 | 529   | 348   | 2,179 | 6,680 | 6,680 | 1,461 | 2,033        |
| 50%                    | 3,810 | 3,292 | 4,122 | 2,552 | 2,786 | 2,716 | 658   | 601   | 2,311 | 7,180 | 6,855 | 6,680 | 2,689        |
| 75%                    | 4,906 | 5,618 | 7,002 | 2,903 | 4,418 | 4,647 | 978   | 723   | 2,613 | 7,180 | 7,180 | 6,680 | 3,114        |
| 90%                    | 6,680 | 6,680 | 7,073 | 3,942 | 6,631 | 7,391 | 1,433 | 1,050 | 5,720 | 7,180 | 7,180 | 6,725 | 3,546        |
| 100%                   | 6,680 | 6,680 | 7,678 | 8,500 | 8,500 | 7,561 | 6,680 | 6,680 | 6,680 | 7,180 | 7,180 | 7,180 | 5,095        |
| Mean                   | 3,712 | 3,796 | 4,559 | 2,934 | 3,694 | 3,652 | 881   | 758   | 2,592 | 5,704 | 5,774 | 4,680 | 2,584        |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 407   | 310   | 909   | 321   | 306   | 361   | 303   | 315   | 312   | 302   | 307   | 307   | 713          |
| 10%                    | 1,762 | 2,278 | 2,345 | 1,975 | 2,418 | 1,873 | 332   | 336   | 328   | 322   | 842   | 457   | 1,297        |
| 25%                    | 2,904 | 3,899 | 2,802 | 2,332 | 2,602 | 1,984 | 1,049 | 506   | 1,803 | 5,284 | 4,920 | 1,285 | 2,296        |
| 50%                    | 4,407 | 5,291 | 4,230 | 2,658 | 2,839 | 2,369 | 2,425 | 2,104 | 2,265 | 7,165 | 6,855 | 6,680 | 2,928        |
| 75%                    | 6,680 | 6,680 | 6,490 | 3,056 | 4,441 | 3,941 | 4,062 | 2,754 | 2,506 | 7,180 | 7,180 | 6,680 | 3,530        |
| 90%                    | 6,680 | 6,680 | 7,062 | 4,043 | 6,670 | 6,636 | 6,285 | 4,639 | 5,180 | 7,180 | 7,180 | 6,680 | 4,054        |
| 100%                   | 6,680 | 6,680 | 7,678 | 8,500 | 8,500 | 7,561 | 6,680 | 6,680 | 6,680 | 7,180 | 7,180 | 7,180 | 4,973        |
| Mean                   | 4,500 | 4,967 | 4,534 | 2,941 | 3,704 | 3,140 | 2,766 | 2,229 | 2,416 | 5,582 | 5,625 | 4,526 | 2,836        |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 372   | 1,247 | 364   | 322   | 307   | 356   | 300   | 318   | 310   | 303   | 311   | 311   | 682          |
| 10%                    | 1,743 | 2,198 | 2,261 | 1,978 | 2,453 | 1,202 | 337   | 634   | 400   | 331   | 785   | 459   | 1,302        |
| 25%                    | 2,986 | 3,759 | 2,844 | 2,332 | 2,612 | 1,203 | 944   | 1,390 | 1,914 | 5,481 | 4,870 | 1,686 | 2,190        |
| 50%                    | 4,454 | 5,358 | 4,127 | 2,654 | 2,871 | 2,044 | 1,702 | 2,046 | 2,257 | 6,976 | 6,855 | 6,680 | 2,871        |
| 75%                    | 6,680 | 6,680 | 6,457 | 3,010 | 4,600 | 4,104 | 3,563 | 2,739 | 2,504 | 7,180 | 7,158 | 6,680 | 3,423        |
| 90%                    | 6,680 | 6,680 | 7,062 | 4,141 | 6,670 | 6,798 | 5,572 | 4,640 | 5,180 | 7,180 | 7,180 | 6,685 | 4,026        |
| 100%                   | 6,680 | 6,680 | 7,678 | 8,500 | 8,500 | 7,561 | 6,680 | 6,680 | 6,680 | 7,180 | 7,180 | 7,180 | 4,947        |
| Mean                   | 4,476 | 4,942 | 4,494 | 2,932 | 3,749 | 2,815 | 2,314 | 2,397 | 2,447 | 5,618 | 5,496 | 4,451 | 2,788        |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 345   | 990   | 1,045 | 338   | 1,201 | 872   | 302   | 307   | 300   | 304   | 300   | 307   | 782          |
| 10%                    | 668   | 1,889 | 2,542 | 1,402 | 2,326 | 1,937 | 612   | 324   | 326   | 311   | 664   | 340   | 1,117        |
| 25%                    | 1,552 | 2,857 | 2,872 | 2,280 | 2,564 | 2,047 | 641   | 339   | 333   | 509   | 1,087 | 590   | 1,430        |
| 50%                    | 2,692 | 3,923 | 3,916 | 2,625 | 2,872 | 2,583 | 775   | 623   | 906   | 6,586 | 6,680 | 3,353 | 2,377        |
| 75%                    | 4,041 | 5,368 | 6,196 | 3,082 | 4,492 | 4,335 | 1,109 | 632   | 2,419 | 7,180 | 6,855 | 6,680 | 3,080        |
| 90%                    | 6,680 | 6,680 | 7,040 | 3,975 | 6,671 | 6,635 | 5,083 | 3,964 | 5,037 | 7,180 | 7,180 | 6,680 | 3,649        |
| 100%                   | 6,680 | 6,680 | 7,678 | 8,500 | 8,500 | 7,561 | 6,680 | 6,680 | 6,680 | 7,180 | 7,180 | 7,180 | 5,069        |
| Mean                   | 3,148 | 4,076 | 4,468 | 2,887 | 3,768 | 3,317 | 1,720 | 1,229 | 1,768 | 4,101 | 4,591 | 3,631 | 2,337        |

**Table H1a2-104. Water Year Average of Monthly Flows (cfs) — Banks Pumping Plant (SWP)**

| Water Year Type        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,019 | 3,604 | 3,269 | 2,138 | 2,548 | 2,073 | 456   | 385   | 558   | 1,169 | 1,353 | 1,144 |
| D                      | 4,108 | 4,464 | 4,359 | 2,645 | 2,585 | 2,021 | 532   | 537   | 1,817 | 5,934 | 4,977 | 2,277 |
| BN                     | 4,274 | 4,685 | 4,693 | 2,516 | 3,388 | 2,489 | 706   | 557   | 2,338 | 7,062 | 7,119 | 6,139 |
| AN                     | 4,423 | 5,003 | 4,922 | 2,775 | 3,894 | 3,310 | 1,413 | 577   | 2,753 | 6,999 | 6,940 | 6,722 |
| W                      | 5,354 | 6,065 | 4,642 | 3,967 | 5,227 | 5,068 | 3,860 | 3,057 | 3,975 | 6,927 | 6,908 | 6,590 |
| All                    | 4,380 | 4,918 | 4,401 | 2,955 | 3,692 | 3,199 | 1,668 | 1,285 | 2,481 | 5,810 | 5,625 | 4,681 |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,925 | 2,510 | 3,307 | 2,163 | 2,579 | 2,065 | 455   | 415   | 563   | 1,107 | 1,259 | 697   |
| D                      | 3,370 | 3,506 | 4,764 | 2,604 | 2,617 | 2,365 | 548   | 495   | 1,892 | 5,394 | 5,715 | 2,255 |
| BN                     | 3,459 | 3,451 | 4,773 | 2,465 | 3,311 | 3,174 | 656   | 596   | 2,373 | 7,062 | 7,119 | 6,558 |
| AN                     | 3,342 | 4,183 | 5,351 | 2,766 | 3,885 | 4,036 | 882   | 639   | 2,835 | 7,075 | 6,940 | 6,722 |
| W                      | 4,691 | 4,759 | 4,623 | 3,950 | 5,245 | 5,592 | 1,496 | 1,282 | 4,230 | 6,975 | 6,908 | 6,578 |
| All                    | 3,712 | 3,796 | 4,559 | 2,934 | 3,694 | 3,652 | 881   | 758   | 2,592 | 5,704 | 5,774 | 4,680 |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,022 | 3,565 | 3,467 | 2,052 | 2,549 | 2,090 | 502   | 538   | 558   | 1,114 | 1,611 | 522   |
| D                      | 4,244 | 4,567 | 4,494 | 2,658 | 2,582 | 2,021 | 1,342 | 1,468 | 1,852 | 5,835 | 4,906 | 2,400 |
| BN                     | 4,458 | 4,781 | 4,882 | 2,455 | 3,396 | 2,447 | 2,549 | 1,829 | 2,126 | 7,027 | 7,119 | 5,907 |
| AN                     | 4,622 | 5,049 | 5,131 | 2,775 | 3,760 | 3,111 | 3,428 | 2,367 | 2,501 | 6,355 | 6,940 | 6,582 |
| W                      | 5,453 | 6,094 | 4,671 | 3,996 | 5,316 | 4,970 | 4,891 | 3,888 | 3,972 | 6,555 | 6,821 | 6,524 |
| All                    | 4,500 | 4,967 | 4,534 | 2,941 | 3,704 | 3,140 | 2,766 | 2,229 | 2,416 | 5,582 | 5,625 | 4,526 |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 3,020 | 3,411 | 3,503 | 1,992 | 2,584 | 2,073 | 503   | 700   | 579   | 1,112 | 1,272 | 663   |
| D                      | 4,370 | 4,519 | 4,321 | 2,603 | 2,773 | 1,206 | 1,275 | 1,718 | 1,908 | 5,828 | 4,873 | 2,070 |
| BN                     | 4,451 | 4,816 | 4,801 | 2,467 | 3,393 | 1,314 | 2,371 | 2,097 | 2,168 | 6,922 | 6,776 | 5,755 |
| AN                     | 4,432 | 5,028 | 5,137 | 2,774 | 3,761 | 3,462 | 1,083 | 2,629 | 2,510 | 6,805 | 6,940 | 6,667 |
| W                      | 5,364 | 6,112 | 4,699 | 4,034 | 5,307 | 5,083 | 4,499 | 3,897 | 3,990 | 6,568 | 6,818 | 6,504 |
| All                    | 4,476 | 4,942 | 4,494 | 2,932 | 3,749 | 2,815 | 2,314 | 2,397 | 2,447 | 5,618 | 5,496 | 4,451 |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |
| C                      | 2,068 | 2,977 | 3,554 | 1,924 | 2,545 | 2,619 | 663   | 367   | 326   | 311   | 728   | 359   |
| D                      | 2,583 | 3,623 | 4,625 | 2,445 | 2,667 | 2,166 | 772   | 488   | 519   | 1,308 | 2,862 | 1,612 |
| BN                     | 3,421 | 3,866 | 4,541 | 2,531 | 3,578 | 2,427 | 716   | 547   | 1,315 | 5,465 | 4,944 | 3,961 |
| AN                     | 2,991 | 4,013 | 5,081 | 2,771 | 3,604 | 3,203 | 1,507 | 627   | 2,399 | 6,003 | 6,563 | 4,687 |
| W                      | 4,029 | 5,154 | 4,550 | 3,996 | 5,415 | 5,142 | 3,701 | 2,905 | 3,488 | 6,547 | 6,908 | 6,226 |
| All                    | 3,148 | 4,076 | 4,468 | 2,887 | 3,768 | 3,317 | 1,720 | 1,229 | 1,768 | 4,101 | 4,591 | 3,631 |

## H1a2.4 Interbasin Diversions

Interbasin diversions divert water from one basin into a neighboring basin. Some interbasin diversions presented below move water from one fork to another within the same major tributary watershed, while others move water from one major tributary watershed to another. Results for all major interbasin diversions are presented in this section.

### H1a2.4.1 Bowman-SpaULDing Conduit

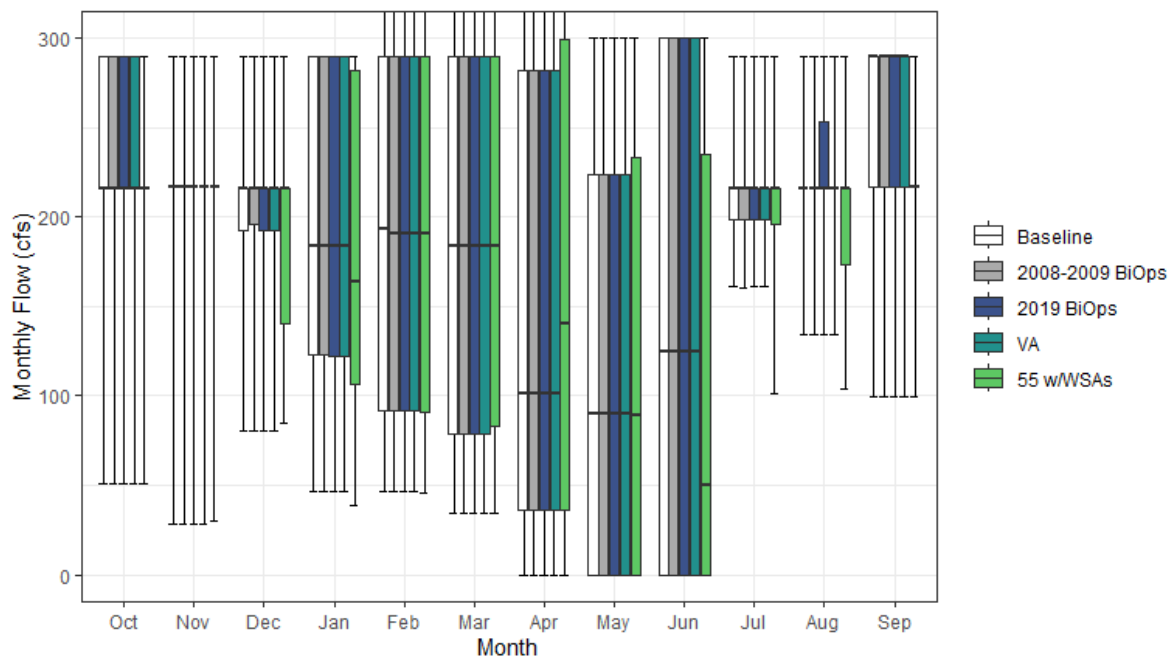


Figure H1a2-53. Bowman-SpaULDing Conduit Monthly Boxplot (cfs)

**Table H1a2-105. Cumulative Distribution of Monthly Flow (cfs) — Bowman-Spaulding Conduit**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 81  | 47  | 47  | 34  | 0   | 0   | 0   | 161 | 134 | 100 | 73           |
| 10%                    | 163 | 217 | 127 | 72  | 71  | 47  | 0   | 0   | 0   | 176 | 169 | 126 | 90           |
| 25%                    | 216 | 217 | 192 | 123 | 91  | 79  | 36  | 0   | 0   | 198 | 216 | 217 | 102          |
| 50%                    | 216 | 217 | 216 | 184 | 193 | 184 | 102 | 90  | 124 | 216 | 216 | 290 | 134          |
| 75%                    | 290 | 217 | 216 | 290 | 290 | 290 | 282 | 224 | 300 | 216 | 216 | 290 | 179          |
| 90%                    | 290 | 217 | 290 | 290 | 313 | 303 | 302 | 300 | 300 | 216 | 290 | 290 | 197          |
| 100%                   | 290 | 290 | 290 | 290 | 325 | 325 | 325 | 300 | 300 | 290 | 290 | 290 | 207          |
| Mean                   | 232 | 220 | 214 | 191 | 190 | 178 | 143 | 122 | 145 | 208 | 224 | 238 | 139          |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 81  | 47  | 47  | 34  | 0   | 0   | 0   | 161 | 134 | 100 | 73           |
| 10%                    | 163 | 217 | 127 | 72  | 71  | 47  | 0   | 0   | 0   | 176 | 169 | 126 | 90           |
| 25%                    | 216 | 217 | 196 | 123 | 91  | 79  | 36  | 0   | 0   | 198 | 216 | 217 | 102          |
| 50%                    | 216 | 217 | 216 | 184 | 191 | 184 | 102 | 90  | 124 | 216 | 216 | 290 | 134          |
| 75%                    | 290 | 217 | 216 | 290 | 290 | 290 | 282 | 224 | 300 | 216 | 216 | 290 | 179          |
| 90%                    | 290 | 217 | 290 | 290 | 315 | 303 | 313 | 300 | 300 | 216 | 290 | 290 | 197          |
| 100%                   | 290 | 290 | 290 | 290 | 325 | 325 | 325 | 300 | 300 | 290 | 290 | 290 | 212          |
| Mean                   | 232 | 220 | 213 | 191 | 190 | 178 | 143 | 122 | 145 | 208 | 224 | 239 | 139          |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 81  | 47  | 47  | 34  | 0   | 0   | 0   | 161 | 134 | 100 | 73           |
| 10%                    | 163 | 217 | 127 | 72  | 71  | 47  | 0   | 0   | 0   | 176 | 169 | 126 | 90           |
| 25%                    | 216 | 217 | 192 | 122 | 91  | 79  | 36  | 0   | 0   | 198 | 216 | 217 | 102          |
| 50%                    | 216 | 217 | 216 | 184 | 191 | 184 | 102 | 90  | 124 | 216 | 216 | 290 | 134          |
| 75%                    | 290 | 217 | 216 | 290 | 290 | 290 | 282 | 224 | 300 | 216 | 253 | 290 | 179          |
| 90%                    | 290 | 217 | 290 | 290 | 313 | 294 | 302 | 300 | 300 | 216 | 290 | 290 | 197          |
| 100%                   | 290 | 290 | 290 | 290 | 325 | 325 | 325 | 300 | 300 | 290 | 290 | 290 | 207          |
| Mean                   | 234 | 220 | 214 | 190 | 190 | 178 | 143 | 122 | 145 | 208 | 225 | 237 | 139          |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 81  | 47  | 47  | 34  | 0   | 0   | 0   | 161 | 134 | 100 | 73           |
| 10%                    | 163 | 217 | 127 | 72  | 71  | 47  | 0   | 0   | 0   | 176 | 169 | 126 | 90           |
| 25%                    | 216 | 217 | 192 | 122 | 91  | 79  | 36  | 0   | 0   | 198 | 216 | 217 | 102          |
| 50%                    | 216 | 217 | 216 | 184 | 191 | 184 | 102 | 90  | 124 | 216 | 216 | 290 | 134          |
| 75%                    | 290 | 217 | 216 | 290 | 290 | 290 | 282 | 224 | 300 | 216 | 216 | 290 | 179          |
| 90%                    | 290 | 217 | 290 | 290 | 313 | 303 | 302 | 300 | 300 | 216 | 290 | 290 | 197          |
| 100%                   | 290 | 290 | 290 | 290 | 325 | 325 | 325 | 300 | 300 | 290 | 290 | 290 | 212          |
| Mean                   | 234 | 220 | 214 | 191 | 190 | 178 | 143 | 121 | 145 | 210 | 224 | 237 | 139          |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 30  | 85  | 39  | 45  | 34  | 0   | 0   | 0   | 101 | 104 | 100 | 67           |
| 10%                    | 122 | 191 | 108 | 67  | 72  | 47  | 0   | 0   | 0   | 161 | 134 | 100 | 80           |
| 25%                    | 216 | 217 | 140 | 107 | 91  | 83  | 36  | 0   | 0   | 196 | 173 | 217 | 96           |
| 50%                    | 216 | 217 | 216 | 163 | 191 | 184 | 140 | 89  | 50  | 216 | 216 | 217 | 128          |
| 75%                    | 216 | 217 | 216 | 282 | 290 | 290 | 299 | 233 | 235 | 216 | 216 | 217 | 164          |
| 90%                    | 290 | 217 | 290 | 290 | 310 | 290 | 300 | 300 | 300 | 216 | 290 | 290 | 187          |
| 100%                   | 290 | 290 | 290 | 290 | 325 | 325 | 325 | 300 | 300 | 290 | 290 | 290 | 208          |
| Mean                   | 212 | 212 | 192 | 177 | 189 | 179 | 153 | 116 | 116 | 201 | 207 | 211 | 131          |

**Table H1a2-106. Water Year Average of Monthly Flows (cfs) — Bowman-Spaulding Conduit**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 216 | 222 | 183 | 117 | 99  | 94  | 10  | 0   | 3   | 201 | 181 | 161 |
| D                      | 222 | 218 | 200 | 149 | 124 | 103 | 55  | 33  | 50  | 206 | 197 | 204 |
| BN                     | 234 | 216 | 202 | 173 | 151 | 146 | 103 | 99  | 147 | 202 | 220 | 256 |
| AN                     | 223 | 203 | 215 | 208 | 231 | 203 | 192 | 195 | 208 | 202 | 235 | 272 |
| W                      | 251 | 229 | 248 | 265 | 296 | 290 | 284 | 237 | 262 | 218 | 265 | 280 |
| All                    | 232 | 220 | 214 | 191 | 190 | 178 | 143 | 122 | 145 | 208 | 224 | 238 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 211 | 222 | 184 | 117 | 99  | 94  | 10  | 0   | 3   | 201 | 181 | 161 |
| D                      | 222 | 218 | 200 | 149 | 124 | 103 | 55  | 33  | 50  | 206 | 197 | 204 |
| BN                     | 234 | 216 | 202 | 173 | 151 | 146 | 103 | 99  | 147 | 202 | 224 | 256 |
| AN                     | 229 | 203 | 215 | 208 | 228 | 203 | 192 | 195 | 208 | 196 | 235 | 278 |
| W                      | 251 | 229 | 245 | 265 | 296 | 290 | 285 | 238 | 262 | 221 | 263 | 280 |
| All                    | 232 | 220 | 213 | 191 | 190 | 178 | 143 | 122 | 145 | 208 | 224 | 239 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 216 | 222 | 183 | 117 | 99  | 94  | 10  | 0   | 3   | 201 | 181 | 161 |
| D                      | 222 | 218 | 200 | 149 | 124 | 103 | 55  | 33  | 50  | 206 | 197 | 204 |
| BN                     | 238 | 216 | 202 | 173 | 151 | 146 | 102 | 99  | 147 | 206 | 220 | 256 |
| AN                     | 229 | 203 | 215 | 207 | 228 | 203 | 191 | 194 | 208 | 202 | 235 | 272 |
| W                      | 251 | 229 | 248 | 265 | 296 | 289 | 284 | 237 | 262 | 216 | 268 | 277 |
| All                    | 234 | 220 | 214 | 190 | 190 | 178 | 143 | 122 | 145 | 208 | 225 | 237 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 216 | 222 | 183 | 117 | 99  | 94  | 10  | 0   | 3   | 201 | 181 | 161 |
| D                      | 222 | 218 | 200 | 149 | 124 | 103 | 55  | 33  | 50  | 206 | 197 | 204 |
| BN                     | 238 | 216 | 202 | 173 | 151 | 146 | 103 | 99  | 147 | 202 | 220 | 256 |
| AN                     | 229 | 203 | 215 | 207 | 228 | 203 | 191 | 194 | 208 | 196 | 235 | 272 |
| W                      | 251 | 229 | 248 | 265 | 295 | 290 | 284 | 237 | 262 | 228 | 265 | 277 |
| All                    | 234 | 220 | 214 | 191 | 190 | 178 | 143 | 121 | 145 | 210 | 224 | 237 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 176 | 205 | 159 | 110 | 96  | 95  | 9   | 0   | 0   | 198 | 153 | 139 |
| D                      | 199 | 206 | 184 | 133 | 127 | 106 | 63  | 24  | 36  | 200 | 189 | 188 |
| BN                     | 237 | 217 | 174 | 153 | 155 | 153 | 123 | 86  | 104 | 201 | 208 | 230 |
| AN                     | 203 | 199 | 197 | 188 | 227 | 193 | 215 | 171 | 164 | 194 | 222 | 235 |
| W                      | 230 | 224 | 224 | 256 | 291 | 287 | 291 | 242 | 224 | 208 | 243 | 243 |
| All                    | 212 | 212 | 192 | 177 | 189 | 179 | 153 | 116 | 116 | 201 | 207 | 211 |

## H1a2.4.2 Drum Canal

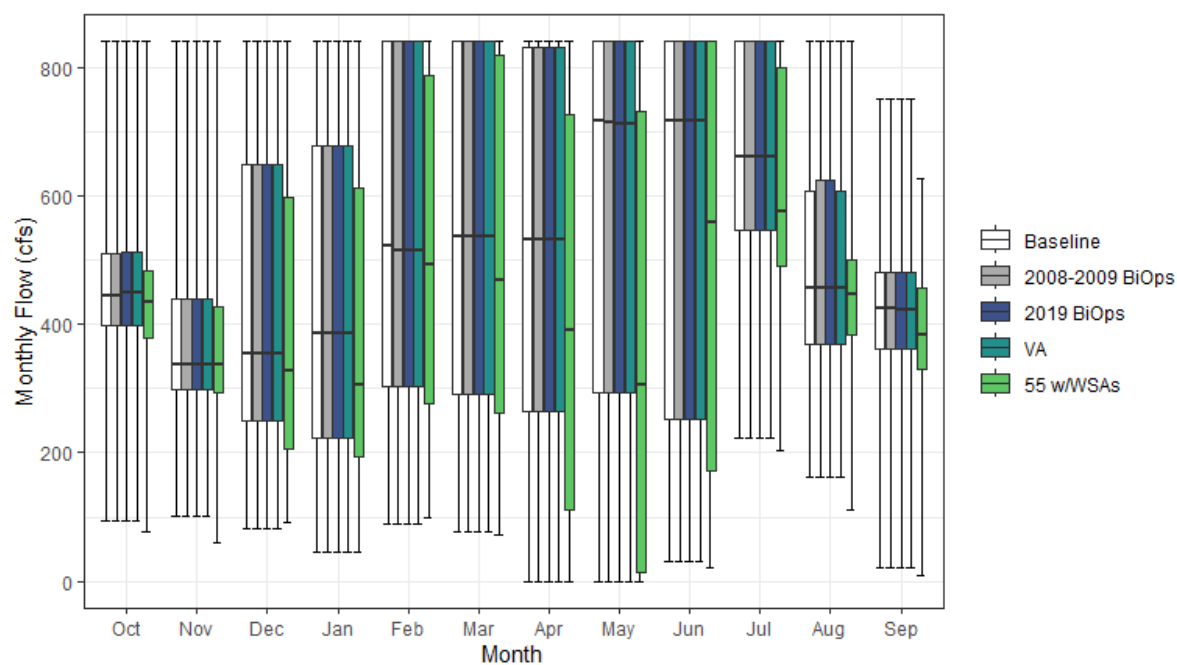


Figure H1a2-54. Drum Canal Monthly Boxplot (cfs)

**Table H1a2-107. Cumulative Distribution of Monthly Flow (cfs) — Drum Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 94  | 101 | 82  | 44  | 89  | 77  | 0   | 0   | 31  | 223 | 162 | 22  | 87           |
| 10%                    | 349 | 272 | 170 | 131 | 176 | 187 | 128 | 16  | 86  | 349 | 265 | 114 | 180          |
| 25%                    | 398 | 298 | 249 | 222 | 303 | 290 | 264 | 294 | 251 | 545 | 369 | 362 | 257          |
| 50%                    | 444 | 338 | 354 | 385 | 521 | 537 | 533 | 716 | 717 | 660 | 457 | 424 | 355          |
| 75%                    | 510 | 440 | 648 | 678 | 840 | 840 | 831 | 840 | 840 | 840 | 608 | 481 | 475          |
| 90%                    | 567 | 674 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 826 | 550 | 521          |
| 100%                   | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 750 | 576          |
| Mean                   | 450 | 403 | 441 | 444 | 522 | 522 | 503 | 557 | 577 | 653 | 497 | 395 | 360          |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 94  | 100 | 81  | 44  | 89  | 77  | 0   | 0   | 31  | 223 | 162 | 22  | 88           |
| 10%                    | 348 | 272 | 170 | 131 | 176 | 187 | 127 | 16  | 85  | 349 | 265 | 114 | 180          |
| 25%                    | 398 | 298 | 250 | 222 | 303 | 290 | 264 | 294 | 251 | 545 | 369 | 362 | 257          |
| 50%                    | 443 | 338 | 354 | 385 | 515 | 537 | 532 | 715 | 717 | 660 | 457 | 424 | 356          |
| 75%                    | 510 | 440 | 648 | 678 | 840 | 840 | 831 | 840 | 840 | 840 | 623 | 481 | 474          |
| 90%                    | 567 | 674 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 825 | 550 | 521          |
| 100%                   | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 750 | 576          |
| Mean                   | 450 | 403 | 440 | 444 | 522 | 522 | 503 | 557 | 577 | 653 | 496 | 395 | 360          |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 94  | 101 | 82  | 44  | 89  | 77  | 0   | 0   | 31  | 223 | 162 | 22  | 87           |
| 10%                    | 349 | 272 | 170 | 131 | 176 | 187 | 128 | 16  | 85  | 349 | 266 | 113 | 180          |
| 25%                    | 398 | 298 | 249 | 222 | 303 | 290 | 264 | 294 | 251 | 545 | 369 | 362 | 257          |
| 50%                    | 449 | 338 | 354 | 385 | 515 | 537 | 533 | 711 | 717 | 660 | 457 | 423 | 356          |
| 75%                    | 511 | 440 | 648 | 678 | 840 | 840 | 831 | 840 | 840 | 840 | 623 | 481 | 475          |
| 90%                    | 567 | 674 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 826 | 550 | 521          |
| 100%                   | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 750 | 576          |
| Mean                   | 451 | 403 | 441 | 443 | 522 | 522 | 503 | 557 | 577 | 653 | 498 | 394 | 360          |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 94  | 101 | 81  | 44  | 89  | 77  | 0   | 0   | 31  | 223 | 162 | 22  | 87           |
| 10%                    | 348 | 271 | 170 | 131 | 176 | 187 | 128 | 16  | 86  | 349 | 265 | 114 | 180          |
| 25%                    | 398 | 298 | 249 | 222 | 303 | 290 | 264 | 294 | 251 | 545 | 369 | 362 | 257          |
| 50%                    | 449 | 338 | 354 | 385 | 515 | 537 | 533 | 711 | 717 | 660 | 457 | 423 | 356          |
| 75%                    | 511 | 440 | 648 | 678 | 840 | 840 | 831 | 840 | 840 | 840 | 608 | 481 | 475          |
| 90%                    | 567 | 674 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 837 | 550 | 521          |
| 100%                   | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 750 | 576          |
| Mean                   | 451 | 403 | 441 | 443 | 522 | 522 | 503 | 557 | 577 | 653 | 498 | 394 | 360          |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 77  | 59  | 91  | 44  | 98  | 72  | 0   | 0   | 22  | 203 | 111 | 9   | 86           |
| 10%                    | 340 | 258 | 142 | 106 | 165 | 146 | 0   | 7   | 32  | 272 | 213 | 236 | 154          |
| 25%                    | 378 | 292 | 206 | 194 | 276 | 261 | 112 | 14  | 173 | 491 | 384 | 331 | 215          |
| 50%                    | 435 | 337 | 326 | 305 | 493 | 467 | 391 | 307 | 559 | 575 | 446 | 383 | 326          |
| 75%                    | 482 | 426 | 597 | 613 | 787 | 820 | 726 | 730 | 840 | 798 | 500 | 456 | 435          |
| 90%                    | 532 | 603 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 610 | 511 | 497          |
| 100%                   | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 840 | 627 | 556          |
| Mean                   | 432 | 384 | 404 | 417 | 509 | 489 | 413 | 374 | 507 | 585 | 445 | 371 | 322          |

**Table H1a2-108. Water Year Average of Monthly Flows (cfs) — Drum Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 430 | 337 | 292 | 187 | 296 | 279 | 120 | 107 | 234 | 404 | 285 | 168 |
| D                      | 416 | 372 | 345 | 264 | 381 | 336 | 356 | 357 | 400 | 558 | 373 | 350 |
| BN                     | 426 | 348 | 321 | 377 | 405 | 472 | 495 | 611 | 608 | 689 | 480 | 415 |
| AN                     | 435 | 400 | 478 | 567 | 626 | 655 | 636 | 797 | 686 | 710 | 534 | 465 |
| W                      | 506 | 497 | 651 | 704 | 778 | 767 | 768 | 814 | 827 | 811 | 697 | 508 |
| All                    | 450 | 403 | 441 | 444 | 522 | 522 | 503 | 557 | 577 | 653 | 497 | 395 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 426 | 337 | 293 | 187 | 296 | 279 | 120 | 107 | 234 | 404 | 285 | 168 |
| D                      | 416 | 372 | 345 | 265 | 381 | 336 | 356 | 357 | 400 | 558 | 373 | 350 |
| BN                     | 426 | 348 | 321 | 377 | 405 | 472 | 495 | 611 | 609 | 689 | 484 | 415 |
| AN                     | 441 | 400 | 478 | 567 | 623 | 655 | 636 | 797 | 687 | 710 | 531 | 471 |
| W                      | 506 | 497 | 649 | 704 | 778 | 767 | 768 | 814 | 827 | 811 | 693 | 507 |
| All                    | 450 | 403 | 440 | 444 | 522 | 522 | 503 | 557 | 577 | 653 | 496 | 395 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 430 | 337 | 292 | 187 | 296 | 279 | 120 | 107 | 234 | 404 | 285 | 168 |
| D                      | 416 | 372 | 345 | 265 | 381 | 336 | 356 | 357 | 400 | 558 | 373 | 350 |
| BN                     | 430 | 348 | 321 | 377 | 405 | 472 | 495 | 611 | 608 | 689 | 484 | 415 |
| AN                     | 441 | 400 | 478 | 566 | 623 | 655 | 636 | 795 | 686 | 710 | 539 | 465 |
| W                      | 506 | 497 | 651 | 704 | 778 | 767 | 768 | 814 | 827 | 811 | 697 | 505 |
| All                    | 451 | 403 | 441 | 443 | 522 | 522 | 503 | 557 | 577 | 653 | 498 | 394 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 430 | 337 | 292 | 187 | 296 | 279 | 120 | 107 | 234 | 404 | 285 | 168 |
| D                      | 416 | 372 | 345 | 265 | 381 | 336 | 356 | 357 | 400 | 558 | 373 | 350 |
| BN                     | 430 | 348 | 321 | 377 | 405 | 472 | 495 | 611 | 608 | 689 | 480 | 415 |
| AN                     | 441 | 400 | 478 | 566 | 623 | 655 | 636 | 795 | 686 | 710 | 535 | 465 |
| W                      | 506 | 497 | 651 | 704 | 778 | 767 | 768 | 814 | 827 | 811 | 700 | 506 |
| All                    | 451 | 403 | 441 | 443 | 522 | 522 | 503 | 557 | 577 | 653 | 498 | 394 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 404 | 318 | 262 | 176 | 282 | 241 | 38  | 27  | 173 | 349 | 257 | 181 |
| D                      | 395 | 357 | 317 | 239 | 365 | 301 | 209 | 146 | 321 | 497 | 390 | 354 |
| BN                     | 436 | 336 | 291 | 339 | 397 | 417 | 360 | 320 | 552 | 616 | 436 | 395 |
| AN                     | 420 | 380 | 427 | 528 | 600 | 632 | 570 | 527 | 615 | 648 | 473 | 428 |
| W                      | 478 | 470 | 604 | 680 | 771 | 749 | 732 | 701 | 750 | 731 | 579 | 445 |
| All                    | 432 | 384 | 404 | 417 | 509 | 489 | 413 | 374 | 507 | 585 | 445 | 371 |

## H1a2.4.3 Hell Hole Tunnel

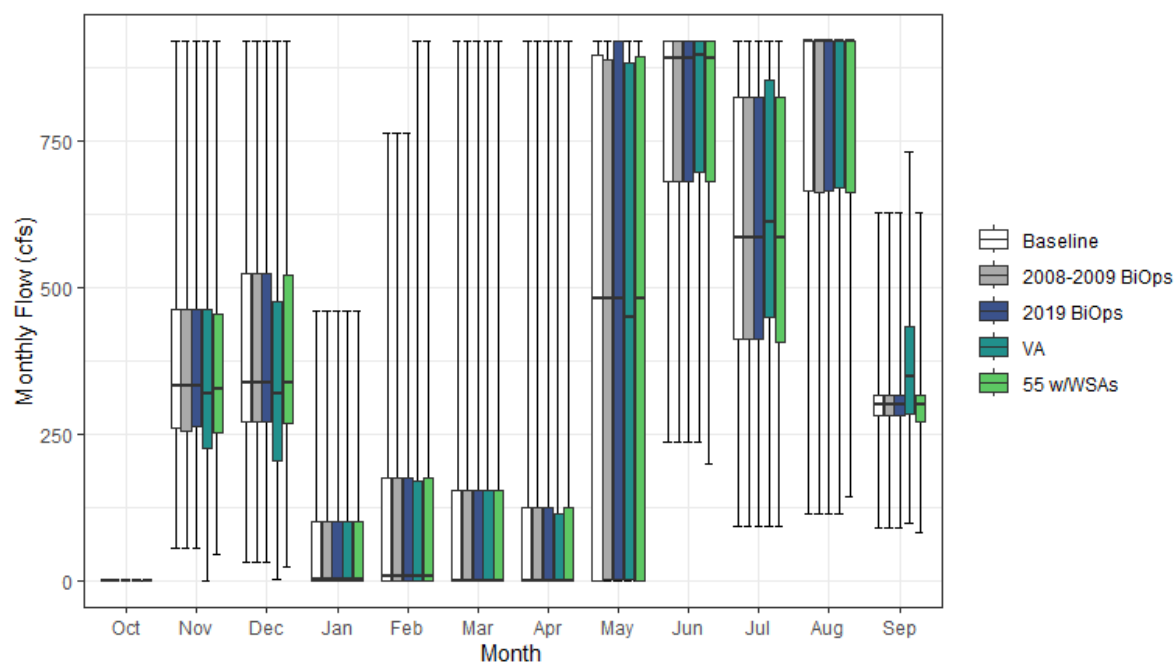


Figure H1a2-55. Hell Hole Tunnel Monthly Boxplot (cfs)

**Table H1a2-109. Cumulative Distribution of Monthly Flow (cfs) — Hell Hole Tunnel**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 55  | 32  | 0   | 0   | 0   | 0   | 0   | 237 | 93  | 114 | 90  | 48           |
| 10%                    | 0   | 199 | 217 | 0   | 0   | 0   | 0   | 0   | 401 | 290 | 281 | 216 | 117          |
| 25%                    | 0   | 260 | 270 | 0   | 0   | 0   | 0   | 0   | 680 | 411 | 664 | 280 | 167          |
| 50%                    | 0   | 332 | 337 | 1   | 6   | 0   | 0   | 481 | 890 | 584 | 920 | 300 | 245          |
| 75%                    | 0   | 463 | 524 | 99  | 174 | 153 | 124 | 896 | 920 | 825 | 920 | 315 | 319          |
| 90%                    | 0   | 676 | 883 | 245 | 297 | 388 | 486 | 920 | 920 | 884 | 920 | 396 | 375          |
| 100%                   | 0   | 920 | 920 | 460 | 764 | 920 | 920 | 920 | 920 | 920 | 920 | 627 | 503          |
| Mean                   | 0   | 387 | 433 | 68  | 103 | 105 | 121 | 465 | 773 | 600 | 764 | 300 | 249          |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 55  | 32  | 0   | 0   | 0   | 0   | 0   | 237 | 93  | 114 | 90  | 48           |
| 10%                    | 0   | 199 | 217 | 0   | 0   | 0   | 0   | 0   | 401 | 290 | 281 | 216 | 116          |
| 25%                    | 0   | 254 | 270 | 0   | 0   | 0   | 0   | 0   | 680 | 411 | 663 | 280 | 167          |
| 50%                    | 0   | 331 | 337 | 1   | 6   | 0   | 0   | 480 | 890 | 584 | 920 | 300 | 245          |
| 75%                    | 0   | 463 | 524 | 99  | 174 | 153 | 124 | 888 | 920 | 825 | 920 | 315 | 318          |
| 90%                    | 0   | 676 | 905 | 245 | 297 | 388 | 486 | 920 | 920 | 884 | 920 | 396 | 375          |
| 100%                   | 0   | 920 | 920 | 460 | 764 | 920 | 920 | 920 | 920 | 920 | 920 | 627 | 503          |
| Mean                   | 0   | 386 | 432 | 68  | 103 | 105 | 121 | 463 | 773 | 600 | 764 | 300 | 249          |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 55  | 32  | 0   | 0   | 0   | 0   | 0   | 237 | 93  | 114 | 90  | 48           |
| 10%                    | 0   | 198 | 218 | 0   | 0   | 0   | 0   | 0   | 401 | 290 | 281 | 216 | 118          |
| 25%                    | 0   | 262 | 270 | 0   | 0   | 0   | 0   | 1   | 680 | 411 | 663 | 280 | 167          |
| 50%                    | 0   | 332 | 337 | 1   | 6   | 0   | 0   | 480 | 890 | 584 | 920 | 300 | 245          |
| 75%                    | 0   | 462 | 524 | 99  | 174 | 153 | 124 | 920 | 920 | 825 | 920 | 316 | 319          |
| 90%                    | 0   | 676 | 838 | 245 | 297 | 388 | 486 | 920 | 920 | 884 | 920 | 396 | 374          |
| 100%                   | 0   | 920 | 920 | 460 | 764 | 920 | 920 | 920 | 920 | 920 | 920 | 627 | 503          |
| Mean                   | 0   | 386 | 431 | 68  | 103 | 105 | 121 | 465 | 773 | 600 | 764 | 300 | 249          |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 0   | 2   | 0   | 0   | 0   | 0   | 0   | 237 | 93  | 114 | 97  | 51           |
| 10%                    | 0   | 149 | 155 | 0   | 0   | 0   | 0   | 0   | 401 | 319 | 318 | 250 | 112          |
| 25%                    | 0   | 226 | 204 | 0   | 0   | 0   | 0   | 1   | 696 | 449 | 671 | 284 | 169          |
| 50%                    | 0   | 319 | 319 | 1   | 6   | 0   | 0   | 450 | 896 | 610 | 920 | 349 | 257          |
| 75%                    | 0   | 464 | 475 | 99  | 169 | 153 | 113 | 884 | 920 | 854 | 920 | 434 | 325          |
| 90%                    | 0   | 639 | 920 | 245 | 297 | 388 | 486 | 920 | 920 | 890 | 920 | 468 | 375          |
| 100%                   | 0   | 920 | 920 | 460 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 732 | 506          |
| Mean                   | 0   | 368 | 384 | 67  | 103 | 104 | 121 | 463 | 780 | 629 | 764 | 353 | 251          |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 44  | 24  | 0   | 0   | 0   | 0   | 0   | 198 | 93  | 142 | 81  | 47           |
| 10%                    | 0   | 189 | 216 | 0   | 0   | 0   | 0   | 0   | 399 | 290 | 281 | 176 | 116          |
| 25%                    | 0   | 253 | 268 | 0   | 0   | 0   | 0   | 0   | 680 | 406 | 663 | 270 | 167          |
| 50%                    | 0   | 327 | 337 | 1   | 6   | 0   | 0   | 480 | 890 | 584 | 920 | 300 | 245          |
| 75%                    | 0   | 454 | 520 | 99  | 174 | 153 | 124 | 894 | 920 | 825 | 920 | 315 | 318          |
| 90%                    | 0   | 666 | 882 | 245 | 297 | 388 | 486 | 920 | 920 | 884 | 920 | 396 | 377          |
| 100%                   | 0   | 920 | 920 | 460 | 920 | 920 | 920 | 920 | 920 | 920 | 920 | 627 | 507          |
| Mean                   | 0   | 379 | 428 | 68  | 104 | 105 | 121 | 469 | 772 | 599 | 764 | 295 | 249          |

**Table H1a2-110. Water Year Average of Monthly Flows (cfs) — Hell Hole Tunnel**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 0   | 290 | 314 | 2   | 0   | 0   | 0   | 0   | 471 | 290 | 331 | 270 |
| D                      | 0   | 382 | 328 | 27  | 24  | 7   | 15  | 183 | 702 | 466 | 689 | 306 |
| BN                     | 0   | 365 | 367 | 48  | 67  | 34  | 52  | 442 | 823 | 618 | 872 | 312 |
| AN                     | 0   | 372 | 424 | 72  | 167 | 91  | 112 | 709 | 882 | 672 | 920 | 265 |
| W                      | 0   | 460 | 618 | 144 | 212 | 282 | 311 | 837 | 910 | 824 | 920 | 317 |
| All                    | 0   | 387 | 433 | 68  | 103 | 105 | 121 | 465 | 773 | 600 | 764 | 300 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 0   | 289 | 313 | 2   | 1   | 0   | 0   | 0   | 471 | 290 | 331 | 269 |
| D                      | 0   | 382 | 330 | 27  | 24  | 7   | 15  | 183 | 702 | 466 | 689 | 306 |
| BN                     | 0   | 363 | 367 | 48  | 67  | 34  | 52  | 442 | 822 | 618 | 872 | 312 |
| AN                     | 0   | 371 | 424 | 72  | 167 | 91  | 112 | 712 | 882 | 672 | 920 | 265 |
| W                      | 0   | 460 | 615 | 144 | 212 | 282 | 311 | 829 | 911 | 824 | 920 | 317 |
| All                    | 0   | 386 | 432 | 68  | 103 | 105 | 121 | 463 | 773 | 600 | 764 | 300 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 0   | 289 | 315 | 2   | 1   | 0   | 0   | 0   | 471 | 290 | 331 | 270 |
| D                      | 0   | 382 | 331 | 27  | 24  | 7   | 15  | 185 | 702 | 466 | 689 | 306 |
| BN                     | 0   | 365 | 367 | 48  | 67  | 34  | 52  | 440 | 821 | 618 | 872 | 312 |
| AN                     | 0   | 371 | 416 | 72  | 167 | 91  | 112 | 720 | 881 | 672 | 920 | 265 |
| W                      | 0   | 460 | 612 | 144 | 212 | 282 | 311 | 833 | 914 | 824 | 920 | 317 |
| All                    | 0   | 386 | 431 | 68  | 103 | 105 | 121 | 465 | 773 | 600 | 764 | 300 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 0   | 264 | 269 | 2   | 1   | 0   | 0   | 0   | 471 | 290 | 335 | 268 |
| D                      | 0   | 381 | 275 | 27  | 24  | 7   | 15  | 183 | 713 | 501 | 692 | 369 |
| BN                     | 0   | 348 | 302 | 47  | 66  | 34  | 52  | 440 | 838 | 692 | 868 | 456 |
| AN                     | 0   | 358 | 377 | 72  | 163 | 91  | 112 | 704 | 887 | 729 | 916 | 410 |
| W                      | 0   | 431 | 578 | 142 | 215 | 281 | 310 | 832 | 914 | 824 | 920 | 300 |
| All                    | 0   | 368 | 384 | 67  | 103 | 104 | 121 | 463 | 780 | 629 | 764 | 353 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 0   | 280 | 307 | 2   | 0   | 0   | 0   | 22  | 467 | 285 | 336 | 262 |
| D                      | 0   | 375 | 322 | 27  | 24  | 7   | 15  | 181 | 701 | 466 | 689 | 300 |
| BN                     | 0   | 361 | 365 | 48  | 67  | 34  | 52  | 446 | 821 | 617 | 867 | 311 |
| AN                     | 0   | 362 | 419 | 72  | 167 | 91  | 112 | 706 | 882 | 672 | 920 | 259 |
| W                      | 0   | 453 | 613 | 144 | 217 | 282 | 311 | 838 | 911 | 824 | 920 | 314 |
| All                    | 0   | 379 | 428 | 68  | 104 | 105 | 121 | 469 | 772 | 599 | 764 | 295 |

## H1a2.4.4 Jenkinson Lake Camino Conduit

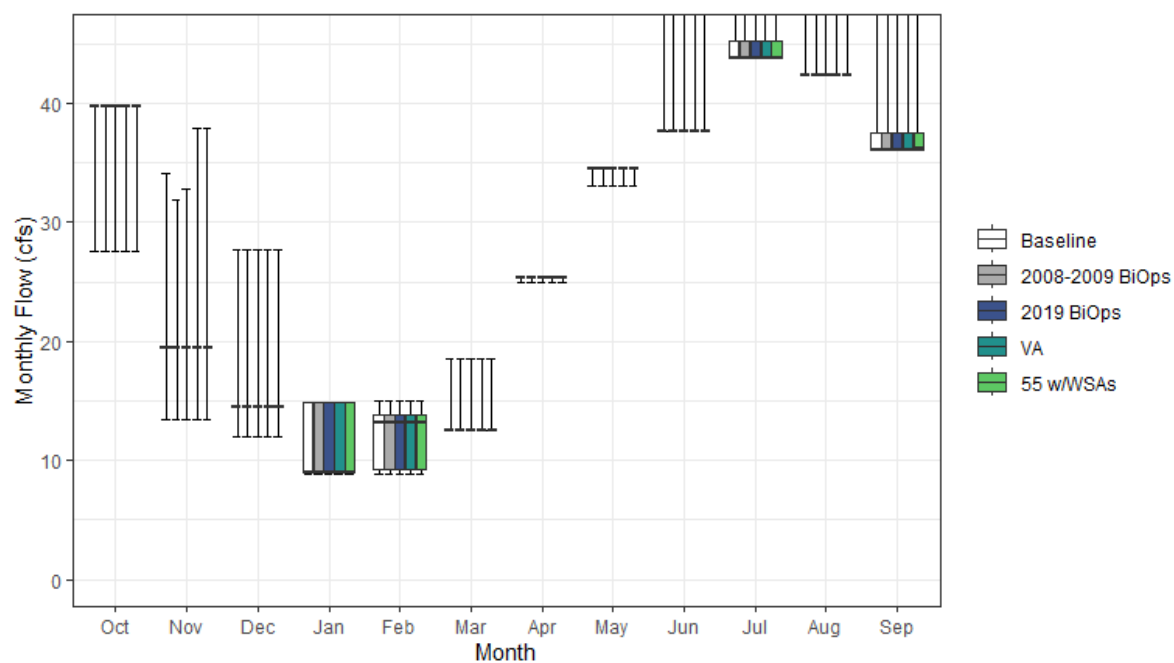


Figure H1a2-56. Jenkinson Lake Camino Conduit Monthly Boxplot (cfs)

**Table H1a2-111. Cumulative Distribution of Monthly Flow (cfs) — Jenkinson Lake Camino Conduit**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 28  | 13  | 12  | 9   | 9   | 13  | 25  | 33  | 38  | 44  | 42  | 36  | 18           |
| 10%                    | 38  | 18  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 25%                    | 40  | 19  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 50%                    | 40  | 19  | 14  | 9   | 13  | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 75%                    | 40  | 19  | 14  | 15  | 14  | 13  | 25  | 35  | 38  | 45  | 42  | 38  | 21           |
| 90%                    | 40  | 19  | 28  | 15  | 14  | 13  | 25  | 35  | 38  | 61  | 42  | 45  | 22           |
| 100%                   | 40  | 34  | 28  | 15  | 15  | 19  | 25  | 35  | 51  | 67  | 67  | 57  | 24           |
| Mean                   | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  | 20           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 28  | 13  | 12  | 9   | 9   | 13  | 25  | 33  | 38  | 44  | 42  | 36  | 18           |
| 10%                    | 38  | 18  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 25%                    | 40  | 19  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 50%                    | 40  | 19  | 14  | 9   | 13  | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 75%                    | 40  | 19  | 14  | 15  | 14  | 13  | 25  | 35  | 38  | 45  | 42  | 38  | 21           |
| 90%                    | 40  | 19  | 28  | 15  | 14  | 13  | 25  | 35  | 38  | 61  | 42  | 45  | 22           |
| 100%                   | 40  | 32  | 28  | 15  | 15  | 19  | 25  | 35  | 51  | 67  | 67  | 57  | 24           |
| Mean                   | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  | 20           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 28  | 13  | 12  | 9   | 9   | 13  | 25  | 33  | 38  | 44  | 42  | 36  | 18           |
| 10%                    | 38  | 18  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 25%                    | 40  | 19  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 50%                    | 40  | 19  | 14  | 9   | 13  | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 75%                    | 40  | 19  | 14  | 15  | 14  | 13  | 25  | 35  | 38  | 45  | 42  | 38  | 21           |
| 90%                    | 40  | 19  | 28  | 15  | 14  | 13  | 25  | 35  | 38  | 61  | 42  | 45  | 22           |
| 100%                   | 40  | 33  | 28  | 15  | 15  | 19  | 25  | 35  | 51  | 67  | 67  | 57  | 24           |
| Mean                   | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  | 20           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 28  | 13  | 12  | 9   | 9   | 13  | 25  | 33  | 38  | 44  | 42  | 36  | 18           |
| 10%                    | 38  | 18  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 25%                    | 40  | 19  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 50%                    | 40  | 19  | 14  | 9   | 13  | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 75%                    | 40  | 19  | 14  | 15  | 14  | 13  | 25  | 35  | 38  | 45  | 42  | 38  | 21           |
| 90%                    | 40  | 19  | 28  | 15  | 14  | 13  | 25  | 35  | 38  | 61  | 42  | 45  | 22           |
| 100%                   | 40  | 38  | 28  | 15  | 15  | 19  | 25  | 35  | 51  | 67  | 67  | 57  | 24           |
| Mean                   | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  | 20           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 28  | 13  | 12  | 9   | 9   | 13  | 25  | 33  | 38  | 44  | 42  | 36  | 18           |
| 10%                    | 38  | 18  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 25%                    | 40  | 19  | 14  | 9   | 9   | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 50%                    | 40  | 19  | 14  | 9   | 13  | 13  | 25  | 35  | 38  | 44  | 42  | 36  | 20           |
| 75%                    | 40  | 19  | 14  | 15  | 14  | 13  | 25  | 35  | 38  | 45  | 42  | 38  | 21           |
| 90%                    | 40  | 19  | 28  | 15  | 14  | 13  | 25  | 35  | 38  | 61  | 42  | 45  | 22           |
| 100%                   | 40  | 38  | 28  | 15  | 15  | 19  | 25  | 35  | 51  | 67  | 67  | 57  | 24           |
| Mean                   | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  | 20           |

**Table H1a2-112. Water Year Average of Monthly Flows (cfs) — Jenkinson Lake Camino Conduit**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 39  | 19  | 15  | 12  | 10  | 13  | 25  | 34  | 38  | 50  | 45  | 38  |
| D                      | 38  | 19  | 15  | 9   | 10  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| BN                     | 39  | 19  | 16  | 10  | 11  | 13  | 25  | 35  | 38  | 47  | 44  | 40  |
| AN                     | 39  | 20  | 15  | 12  | 12  | 13  | 25  | 35  | 38  | 54  | 44  | 43  |
| W                      | 40  | 20  | 18  | 13  | 14  | 13  | 25  | 35  | 38  | 44  | 42  | 37  |
| All                    | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 39  | 19  | 15  | 12  | 10  | 13  | 25  | 34  | 38  | 50  | 45  | 38  |
| D                      | 38  | 19  | 15  | 9   | 10  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| BN                     | 39  | 19  | 16  | 10  | 11  | 13  | 25  | 35  | 38  | 47  | 44  | 40  |
| AN                     | 39  | 20  | 15  | 12  | 12  | 13  | 25  | 35  | 38  | 54  | 44  | 43  |
| W                      | 40  | 20  | 18  | 13  | 14  | 13  | 25  | 35  | 38  | 44  | 42  | 37  |
| All                    | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 39  | 19  | 15  | 12  | 10  | 13  | 25  | 34  | 38  | 50  | 45  | 38  |
| D                      | 38  | 19  | 15  | 9   | 10  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| BN                     | 39  | 19  | 16  | 10  | 11  | 13  | 25  | 35  | 38  | 47  | 44  | 40  |
| AN                     | 39  | 20  | 15  | 12  | 12  | 13  | 25  | 35  | 38  | 54  | 44  | 43  |
| W                      | 40  | 20  | 18  | 13  | 14  | 13  | 25  | 35  | 38  | 44  | 42  | 37  |
| All                    | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 39  | 19  | 15  | 12  | 10  | 13  | 25  | 34  | 38  | 50  | 45  | 38  |
| D                      | 38  | 19  | 15  | 9   | 10  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| BN                     | 39  | 19  | 16  | 10  | 11  | 13  | 25  | 35  | 38  | 47  | 44  | 40  |
| AN                     | 39  | 20  | 15  | 12  | 12  | 13  | 25  | 35  | 38  | 54  | 44  | 43  |
| W                      | 40  | 20  | 18  | 13  | 14  | 13  | 25  | 35  | 38  | 44  | 42  | 37  |
| All                    | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 39  | 19  | 15  | 11  | 10  | 13  | 25  | 34  | 38  | 50  | 45  | 38  |
| D                      | 38  | 19  | 14  | 9   | 10  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |
| BN                     | 39  | 19  | 16  | 10  | 11  | 13  | 25  | 35  | 38  | 47  | 44  | 40  |
| AN                     | 39  | 20  | 15  | 12  | 12  | 13  | 25  | 35  | 38  | 54  | 44  | 43  |
| W                      | 40  | 20  | 18  | 13  | 14  | 13  | 25  | 35  | 38  | 44  | 42  | 37  |
| All                    | 39  | 19  | 16  | 11  | 12  | 13  | 25  | 35  | 38  | 48  | 44  | 39  |

## H1a2.4.5 Milton-Bowman Tunnel

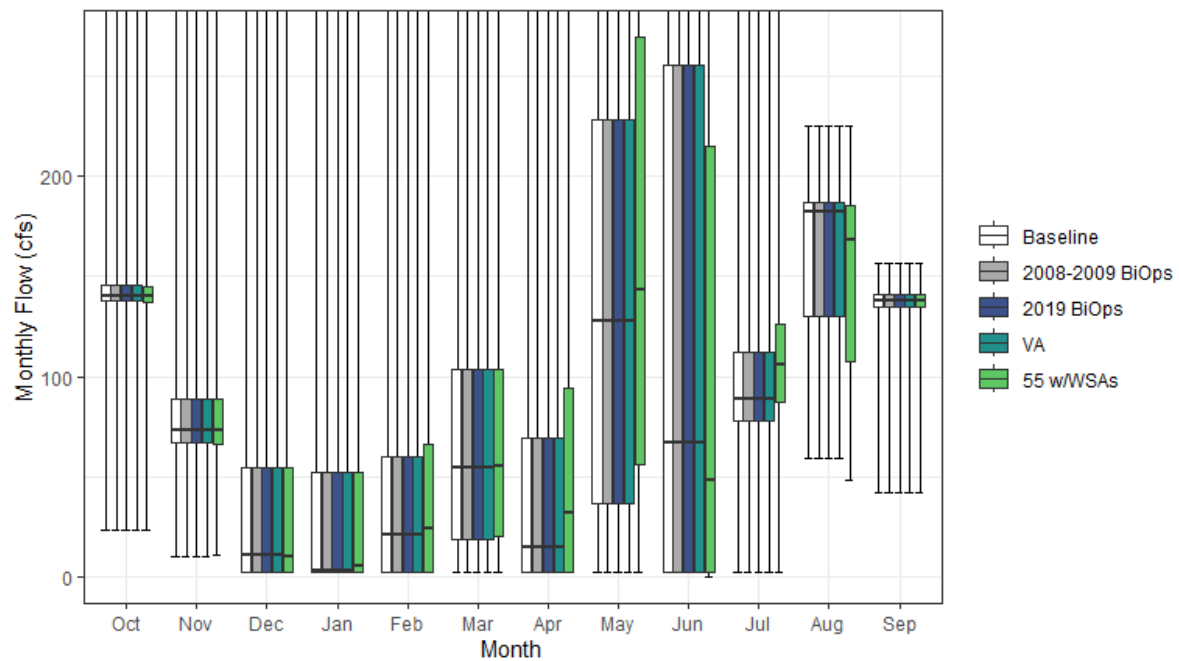


Figure H1a2-57. Milton-Bowman Tunnel Monthly Boxplot (cfs)

**Table H1a2-113. Cumulative Distribution of Monthly Flow (cfs) — Milton-Bowman Tunnel**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 23  | 10  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 59  | 42  | 25           |
| 10%                    | 101 | 63  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 71  | 88  | 89  | 30           |
| 25%                    | 137 | 67  | 2   | 2   | 2   | 18  | 2   | 36  | 2   | 78  | 130 | 135 | 43           |
| 50%                    | 140 | 73  | 10  | 3   | 21  | 55  | 14  | 128 | 67  | 89  | 182 | 138 | 67           |
| 75%                    | 146 | 89  | 54  | 52  | 60  | 104 | 69  | 228 | 256 | 112 | 187 | 141 | 97           |
| 90%                    | 155 | 127 | 144 | 125 | 105 | 137 | 113 | 374 | 425 | 154 | 192 | 147 | 117          |
| 100%                   | 369 | 425 | 425 | 425 | 425 | 425 | 419 | 425 | 425 | 326 | 225 | 156 | 209          |
| Mean                   | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 | 71           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 23  | 10  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 59  | 42  | 25           |
| 10%                    | 101 | 63  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 71  | 88  | 89  | 30           |
| 25%                    | 137 | 67  | 2   | 2   | 2   | 18  | 2   | 36  | 2   | 78  | 130 | 135 | 43           |
| 50%                    | 140 | 73  | 10  | 3   | 21  | 55  | 14  | 128 | 67  | 89  | 182 | 138 | 67           |
| 75%                    | 146 | 89  | 54  | 52  | 60  | 104 | 69  | 228 | 256 | 112 | 187 | 141 | 97           |
| 90%                    | 155 | 127 | 144 | 125 | 105 | 137 | 113 | 374 | 425 | 154 | 192 | 147 | 117          |
| 100%                   | 369 | 425 | 425 | 425 | 425 | 425 | 419 | 425 | 425 | 326 | 225 | 156 | 209          |
| Mean                   | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 | 71           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 23  | 10  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 59  | 42  | 25           |
| 10%                    | 101 | 63  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 71  | 88  | 89  | 30           |
| 25%                    | 137 | 67  | 2   | 2   | 2   | 18  | 2   | 36  | 2   | 78  | 130 | 135 | 43           |
| 50%                    | 140 | 73  | 10  | 3   | 21  | 55  | 14  | 128 | 67  | 89  | 182 | 138 | 67           |
| 75%                    | 146 | 89  | 54  | 52  | 60  | 104 | 69  | 228 | 256 | 112 | 187 | 141 | 97           |
| 90%                    | 155 | 127 | 144 | 125 | 105 | 137 | 113 | 374 | 425 | 154 | 192 | 147 | 117          |
| 100%                   | 369 | 425 | 425 | 425 | 425 | 425 | 419 | 425 | 425 | 326 | 225 | 156 | 209          |
| Mean                   | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 | 71           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 23  | 10  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 59  | 42  | 25           |
| 10%                    | 101 | 63  | 2   | 2   | 2   | 2   | 2   | 2   | 2   | 71  | 88  | 89  | 30           |
| 25%                    | 137 | 67  | 2   | 2   | 2   | 18  | 2   | 36  | 2   | 78  | 130 | 135 | 43           |
| 50%                    | 140 | 73  | 10  | 3   | 21  | 54  | 14  | 128 | 67  | 89  | 182 | 138 | 67           |
| 75%                    | 146 | 89  | 54  | 52  | 60  | 104 | 69  | 228 | 256 | 112 | 187 | 141 | 97           |
| 90%                    | 155 | 127 | 144 | 125 | 105 | 137 | 113 | 374 | 425 | 154 | 192 | 147 | 117          |
| 100%                   | 369 | 425 | 425 | 425 | 425 | 425 | 420 | 425 | 425 | 326 | 225 | 156 | 209          |
| Mean                   | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 | 71           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 23  | 11  | 2   | 2   | 2   | 2   | 2   | 2   | 0   | 2   | 48  | 42  | 23           |
| 10%                    | 88  | 62  | 2   | 2   | 2   | 2   | 2   | 13  | 2   | 78  | 78  | 77  | 31           |
| 25%                    | 137 | 66  | 2   | 2   | 2   | 20  | 2   | 56  | 2   | 88  | 108 | 135 | 43           |
| 50%                    | 140 | 73  | 10  | 5   | 24  | 55  | 31  | 144 | 48  | 106 | 168 | 138 | 67           |
| 75%                    | 145 | 88  | 54  | 52  | 66  | 104 | 94  | 270 | 215 | 126 | 186 | 141 | 94           |
| 90%                    | 155 | 127 | 144 | 125 | 105 | 140 | 165 | 379 | 308 | 152 | 191 | 147 | 116          |
| 100%                   | 369 | 425 | 425 | 425 | 425 | 425 | 419 | 425 | 425 | 312 | 225 | 156 | 202          |
| Mean                   | 137 | 91  | 47  | 45  | 52  | 71  | 60  | 165 | 115 | 114 | 147 | 126 | 71           |

**Table H1a2-114. Water Year Average of Monthly Flows (cfs) — Milton-Bowman Tunnel**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 134 | 70  | 8   | 3   | 14  | 25  | 7   | 13  | 8   | 81  | 105 | 98  |
| D                      | 130 | 79  | 19  | 10  | 12  | 37  | 29  | 71  | 38  | 85  | 142 | 124 |
| BN                     | 133 | 75  | 13  | 11  | 23  | 61  | 43  | 150 | 110 | 90  | 175 | 136 |
| AN                     | 127 | 106 | 57  | 57  | 48  | 87  | 55  | 230 | 166 | 93  | 184 | 141 |
| W                      | 157 | 116 | 106 | 109 | 114 | 115 | 79  | 255 | 306 | 144 | 187 | 141 |
| All                    | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 134 | 70  | 8   | 3   | 14  | 25  | 7   | 13  | 8   | 81  | 105 | 98  |
| D                      | 130 | 79  | 19  | 10  | 12  | 37  | 29  | 71  | 38  | 85  | 142 | 124 |
| BN                     | 133 | 75  | 13  | 11  | 23  | 61  | 43  | 150 | 110 | 90  | 175 | 136 |
| AN                     | 127 | 106 | 57  | 57  | 48  | 87  | 55  | 230 | 166 | 93  | 184 | 141 |
| W                      | 157 | 116 | 106 | 109 | 114 | 115 | 79  | 255 | 306 | 144 | 187 | 141 |
| All                    | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 134 | 70  | 8   | 3   | 14  | 25  | 7   | 13  | 8   | 81  | 105 | 98  |
| D                      | 130 | 79  | 19  | 10  | 12  | 37  | 29  | 71  | 38  | 85  | 142 | 124 |
| BN                     | 133 | 75  | 13  | 11  | 23  | 61  | 43  | 150 | 110 | 90  | 175 | 136 |
| AN                     | 127 | 106 | 57  | 57  | 48  | 87  | 55  | 230 | 166 | 93  | 184 | 141 |
| W                      | 157 | 116 | 106 | 109 | 114 | 115 | 79  | 255 | 306 | 144 | 187 | 141 |
| All                    | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 134 | 70  | 8   | 3   | 14  | 25  | 7   | 13  | 8   | 81  | 105 | 98  |
| D                      | 130 | 79  | 18  | 10  | 12  | 37  | 29  | 71  | 38  | 85  | 142 | 124 |
| BN                     | 133 | 75  | 13  | 11  | 23  | 61  | 43  | 150 | 110 | 90  | 175 | 136 |
| AN                     | 127 | 106 | 57  | 57  | 48  | 87  | 55  | 230 | 166 | 93  | 184 | 141 |
| W                      | 157 | 116 | 106 | 109 | 114 | 115 | 79  | 255 | 306 | 144 | 187 | 141 |
| All                    | 139 | 91  | 47  | 45  | 50  | 69  | 46  | 152 | 144 | 104 | 161 | 129 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 126 | 69  | 10  | 5   | 14  | 23  | 7   | 32  | 7   | 87  | 86  | 89  |
| D                      | 127 | 78  | 18  | 9   | 14  | 38  | 37  | 83  | 32  | 99  | 126 | 119 |
| BN                     | 133 | 75  | 13  | 10  | 24  | 65  | 56  | 156 | 98  | 105 | 155 | 135 |
| AN                     | 127 | 105 | 57  | 58  | 48  | 88  | 77  | 222 | 134 | 109 | 168 | 141 |
| W                      | 155 | 116 | 106 | 109 | 117 | 119 | 101 | 281 | 236 | 146 | 182 | 140 |
| All                    | 137 | 91  | 47  | 45  | 52  | 71  | 60  | 165 | 115 | 114 | 147 | 126 |

## H1a2.4.6 Toadtown Canal

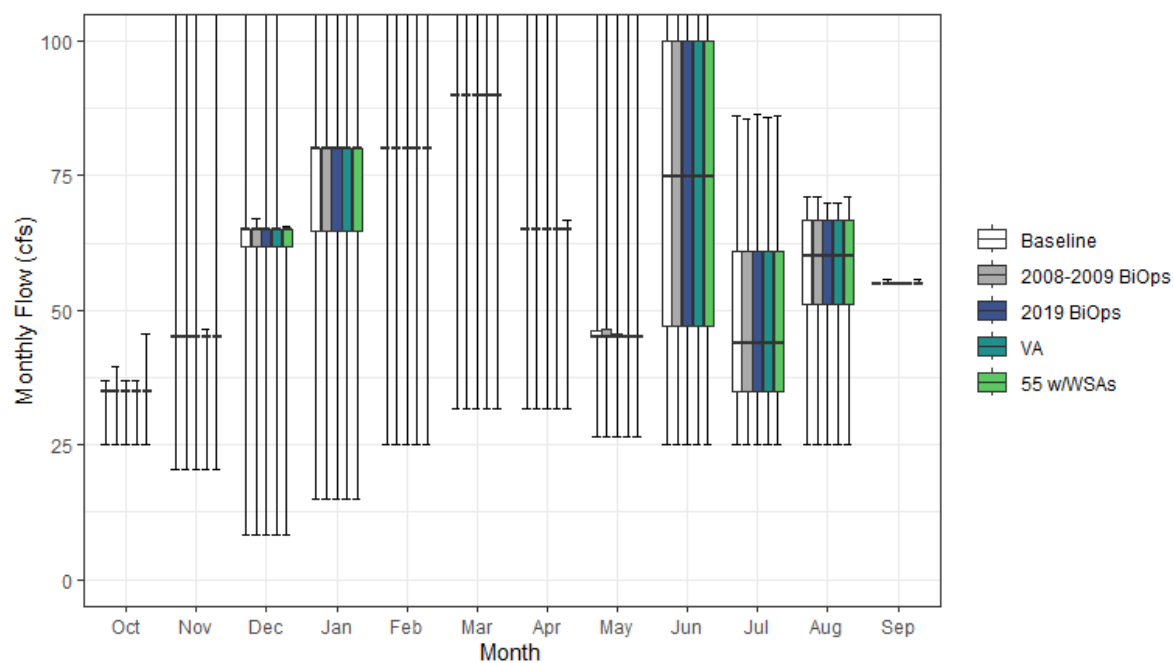


Figure H1a2-58. Toadtown Canal Monthly Boxplot (cfs)

**Table H1a2-115. Cumulative Distribution of Monthly Flow (cfs) — Toadtown Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 25  | 21  | 8   | 15  | 25  | 32  | 32  | 27  | 25  | 25  | 25  | 55  | 26           |
| 10%                    | 35  | 33  | 33  | 31  | 77  | 90  | 65  | 45  | 35  | 28  | 45  | 55  | 36           |
| 25%                    | 35  | 45  | 62  | 65  | 80  | 90  | 65  | 45  | 47  | 35  | 51  | 55  | 41           |
| 50%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 75  | 44  | 60  | 55  | 44           |
| 75%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 46  | 100 | 61  | 67  | 55  | 48           |
| 90%                    | 35  | 45  | 65  | 80  | 81  | 91  | 67  | 94  | 102 | 84  | 70  | 55  | 51           |
| 100%                   | 37  | 109 | 113 | 117 | 120 | 127 | 119 | 118 | 115 | 86  | 71  | 55  | 54           |
| Mean                   | 35  | 43  | 58  | 72  | 80  | 90  | 65  | 53  | 73  | 50  | 58  | 55  | 44           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 25  | 21  | 8   | 15  | 25  | 32  | 32  | 27  | 25  | 25  | 25  | 55  | 26           |
| 10%                    | 35  | 33  | 33  | 31  | 77  | 90  | 65  | 45  | 35  | 28  | 45  | 55  | 36           |
| 25%                    | 35  | 45  | 62  | 65  | 80  | 90  | 65  | 45  | 47  | 35  | 51  | 55  | 41           |
| 50%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 75  | 44  | 60  | 55  | 45           |
| 75%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 46  | 100 | 61  | 67  | 55  | 48           |
| 90%                    | 35  | 45  | 65  | 80  | 81  | 91  | 66  | 95  | 101 | 84  | 70  | 55  | 50           |
| 100%                   | 40  | 109 | 67  | 117 | 120 | 127 | 119 | 119 | 113 | 86  | 71  | 56  | 54           |
| Mean                   | 35  | 45  | 58  | 72  | 78  | 90  | 65  | 54  | 73  | 49  | 58  | 55  | 44           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 25  | 21  | 8   | 15  | 25  | 32  | 32  | 27  | 25  | 25  | 25  | 55  | 26           |
| 10%                    | 35  | 33  | 33  | 31  | 77  | 90  | 65  | 45  | 35  | 28  | 45  | 55  | 36           |
| 25%                    | 35  | 45  | 62  | 65  | 80  | 90  | 65  | 45  | 47  | 35  | 51  | 55  | 41           |
| 50%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 75  | 44  | 60  | 55  | 44           |
| 75%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 46  | 100 | 61  | 67  | 55  | 48           |
| 90%                    | 35  | 45  | 65  | 80  | 81  | 91  | 67  | 46  | 102 | 84  | 70  | 55  | 51           |
| 100%                   | 37  | 109 | 113 | 117 | 120 | 127 | 119 | 105 | 115 | 86  | 70  | 55  | 55           |
| Mean                   | 35  | 43  | 58  | 72  | 79  | 90  | 66  | 47  | 73  | 50  | 58  | 55  | 44           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 25  | 21  | 8   | 15  | 25  | 32  | 32  | 27  | 25  | 25  | 25  | 55  | 26           |
| 10%                    | 35  | 33  | 33  | 31  | 77  | 90  | 65  | 45  | 35  | 28  | 45  | 55  | 36           |
| 25%                    | 35  | 45  | 62  | 65  | 80  | 90  | 65  | 45  | 47  | 35  | 51  | 55  | 41           |
| 50%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 75  | 44  | 60  | 55  | 44           |
| 75%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 100 | 61  | 67  | 55  | 48           |
| 90%                    | 35  | 45  | 65  | 80  | 81  | 90  | 65  | 46  | 101 | 84  | 70  | 55  | 49           |
| 100%                   | 37  | 46  | 113 | 117 | 120 | 127 | 115 | 109 | 114 | 86  | 70  | 55  | 55           |
| Mean                   | 35  | 43  | 58  | 72  | 79  | 89  | 65  | 48  | 72  | 50  | 58  | 55  | 44           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 25  | 21  | 8   | 15  | 25  | 32  | 32  | 27  | 25  | 25  | 25  | 55  | 26           |
| 10%                    | 35  | 33  | 33  | 31  | 77  | 90  | 65  | 45  | 35  | 28  | 45  | 55  | 36           |
| 25%                    | 35  | 45  | 62  | 65  | 80  | 90  | 65  | 45  | 47  | 35  | 51  | 55  | 41           |
| 50%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 75  | 44  | 60  | 55  | 44           |
| 75%                    | 35  | 45  | 65  | 80  | 80  | 90  | 65  | 45  | 100 | 61  | 67  | 55  | 47           |
| 90%                    | 35  | 45  | 65  | 80  | 81  | 91  | 65  | 45  | 100 | 84  | 70  | 55  | 49           |
| 100%                   | 45  | 109 | 66  | 117 | 120 | 127 | 67  | 119 | 118 | 86  | 71  | 56  | 54           |
| Mean                   | 35  | 46  | 58  | 70  | 78  | 90  | 64  | 45  | 72  | 50  | 58  | 55  | 43           |

**Table H1a2-116. Water Year Average of Monthly Flows (cfs) — Toadtown Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 34  | 39  | 44  | 51  | 69  | 80  | 60  | 44  | 42  | 31  | 43  | 55  |
| D                      | 34  | 43  | 58  | 62  | 76  | 89  | 65  | 60  | 55  | 37  | 54  | 55  |
| BN                     | 35  | 42  | 54  | 73  | 78  | 90  | 65  | 65  | 72  | 43  | 58  | 55  |
| AN                     | 34  | 43  | 63  | 76  | 83  | 90  | 65  | 46  | 82  | 50  | 61  | 55  |
| W                      | 35  | 47  | 66  | 87  | 88  | 94  | 69  | 49  | 99  | 72  | 67  | 55  |
| All                    | 35  | 43  | 58  | 72  | 80  | 90  | 65  | 53  | 73  | 50  | 58  | 55  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 34  | 39  | 44  | 51  | 69  | 80  | 60  | 46  | 42  | 31  | 43  | 55  |
| D                      | 35  | 46  | 58  | 62  | 76  | 90  | 65  | 58  | 55  | 37  | 54  | 55  |
| BN                     | 35  | 43  | 54  | 73  | 78  | 90  | 65  | 67  | 72  | 43  | 58  | 55  |
| AN                     | 34  | 50  | 63  | 76  | 83  | 90  | 66  | 46  | 82  | 50  | 61  | 55  |
| W                      | 35  | 47  | 65  | 87  | 83  | 94  | 67  | 49  | 99  | 72  | 67  | 55  |
| All                    | 35  | 45  | 58  | 72  | 78  | 90  | 65  | 54  | 73  | 49  | 58  | 55  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 34  | 39  | 44  | 51  | 69  | 80  | 60  | 41  | 42  | 31  | 43  | 55  |
| D                      | 34  | 43  | 58  | 62  | 76  | 90  | 65  | 45  | 55  | 37  | 54  | 55  |
| BN                     | 35  | 42  | 54  | 73  | 78  | 90  | 65  | 50  | 72  | 43  | 58  | 55  |
| AN                     | 34  | 43  | 63  | 76  | 83  | 90  | 65  | 46  | 82  | 50  | 61  | 55  |
| W                      | 35  | 47  | 66  | 87  | 87  | 94  | 71  | 49  | 99  | 72  | 67  | 55  |
| All                    | 35  | 43  | 58  | 72  | 79  | 90  | 66  | 47  | 73  | 50  | 58  | 55  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 34  | 39  | 44  | 51  | 69  | 80  | 60  | 41  | 42  | 31  | 43  | 55  |
| D                      | 34  | 43  | 58  | 62  | 76  | 89  | 65  | 49  | 55  | 37  | 54  | 55  |
| BN                     | 35  | 42  | 54  | 73  | 77  | 90  | 65  | 52  | 71  | 43  | 58  | 55  |
| AN                     | 34  | 43  | 63  | 76  | 83  | 90  | 65  | 45  | 81  | 50  | 61  | 55  |
| W                      | 35  | 45  | 66  | 87  | 85  | 93  | 67  | 49  | 99  | 72  | 67  | 55  |
| All                    | 35  | 43  | 58  | 72  | 79  | 89  | 65  | 48  | 72  | 50  | 58  | 55  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 35  | 39  | 44  | 51  | 69  | 80  | 60  | 42  | 42  | 31  | 43  | 55  |
| D                      | 35  | 52  | 58  | 62  | 76  | 90  | 65  | 45  | 55  | 37  | 54  | 55  |
| BN                     | 35  | 43  | 54  | 73  | 77  | 90  | 65  | 45  | 70  | 43  | 58  | 55  |
| AN                     | 34  | 50  | 63  | 75  | 80  | 90  | 65  | 45  | 81  | 50  | 61  | 55  |
| W                      | 35  | 47  | 65  | 83  | 83  | 94  | 65  | 48  | 97  | 72  | 67  | 55  |
| All                    | 35  | 46  | 58  | 70  | 78  | 90  | 64  | 45  | 72  | 50  | 58  | 55  |

## H1a2.4.7 Slate Creek Tunnel

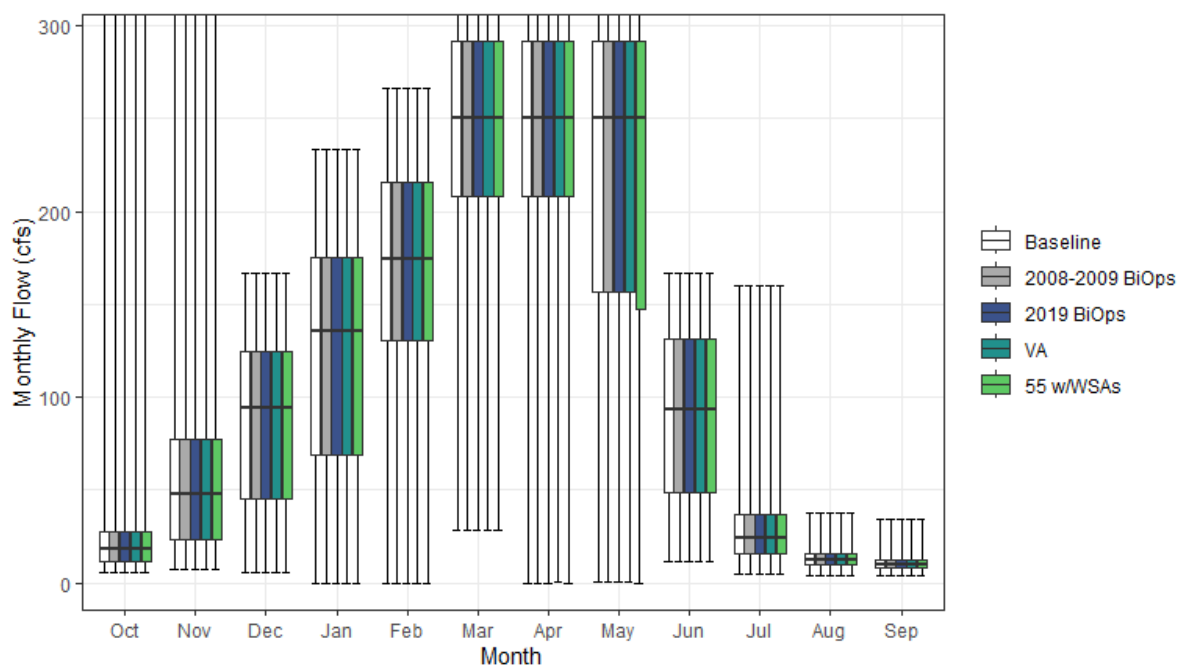


Figure H1a2-59. Slate Creek Tunnel Monthly Boxplot (cfs)

**Table H1a2-117. Cumulative Distribution of Monthly Flow (cfs) — Slate Creek Tunnel**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 5   | 8   | 6   | 0   | 0   | 29  | 0   | 1   | 12  | 5   | 4   | 4   | 13           |
| 10%                    | 8   | 15  | 28  | 43  | 71  | 139 | 149 | 81  | 27  | 13  | 8   | 7   | 50           |
| 25%                    | 11  | 24  | 46  | 69  | 131 | 208 | 208 | 156 | 48  | 16  | 10  | 8   | 65           |
| 50%                    | 18  | 48  | 94  | 136 | 175 | 250 | 250 | 250 | 93  | 24  | 12  | 10  | 78           |
| 75%                    | 28  | 77  | 125 | 175 | 216 | 292 | 292 | 292 | 131 | 37  | 15  | 13  | 96           |
| 90%                    | 44  | 184 | 146 | 204 | 233 | 292 | 292 | 292 | 146 | 57  | 20  | 14  | 108          |
| 100%                   | 437 | 470 | 167 | 233 | 267 | 333 | 333 | 333 | 167 | 160 | 38  | 34  | 134          |
| Mean                   | 27  | 78  | 88  | 125 | 168 | 236 | 237 | 215 | 91  | 32  | 13  | 11  | 79           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 5   | 8   | 6   | 0   | 0   | 29  | 0   | 1   | 12  | 5   | 4   | 4   | 13           |
| 10%                    | 8   | 15  | 28  | 43  | 71  | 139 | 149 | 81  | 27  | 13  | 8   | 7   | 50           |
| 25%                    | 11  | 23  | 46  | 69  | 131 | 208 | 208 | 156 | 48  | 16  | 10  | 8   | 65           |
| 50%                    | 18  | 48  | 94  | 136 | 175 | 250 | 250 | 250 | 93  | 24  | 12  | 10  | 77           |
| 75%                    | 28  | 77  | 125 | 175 | 216 | 292 | 292 | 292 | 131 | 37  | 15  | 13  | 96           |
| 90%                    | 44  | 184 | 146 | 204 | 233 | 292 | 292 | 292 | 146 | 57  | 20  | 14  | 108          |
| 100%                   | 437 | 470 | 167 | 233 | 267 | 333 | 333 | 333 | 167 | 160 | 38  | 34  | 134          |
| Mean                   | 27  | 78  | 88  | 125 | 168 | 235 | 237 | 215 | 91  | 32  | 13  | 11  | 79           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 5   | 8   | 6   | 0   | 0   | 29  | 0   | 1   | 12  | 5   | 4   | 4   | 13           |
| 10%                    | 8   | 15  | 28  | 43  | 71  | 139 | 149 | 81  | 27  | 13  | 8   | 7   | 50           |
| 25%                    | 11  | 24  | 46  | 69  | 131 | 208 | 208 | 156 | 48  | 16  | 10  | 8   | 65           |
| 50%                    | 18  | 48  | 94  | 136 | 175 | 250 | 250 | 250 | 93  | 24  | 12  | 10  | 78           |
| 75%                    | 28  | 77  | 125 | 175 | 216 | 292 | 292 | 292 | 131 | 37  | 15  | 13  | 96           |
| 90%                    | 44  | 184 | 146 | 204 | 233 | 292 | 292 | 292 | 146 | 57  | 20  | 14  | 108          |
| 100%                   | 437 | 470 | 167 | 233 | 267 | 333 | 333 | 333 | 167 | 160 | 38  | 34  | 134          |
| Mean                   | 27  | 78  | 88  | 125 | 168 | 236 | 237 | 215 | 91  | 32  | 13  | 11  | 79           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 5   | 8   | 6   | 0   | 0   | 29  | 0   | 1   | 12  | 5   | 4   | 4   | 13           |
| 10%                    | 8   | 15  | 28  | 43  | 71  | 139 | 149 | 81  | 27  | 13  | 8   | 7   | 50           |
| 25%                    | 11  | 24  | 46  | 69  | 131 | 208 | 208 | 156 | 48  | 16  | 10  | 8   | 65           |
| 50%                    | 19  | 48  | 94  | 136 | 175 | 250 | 250 | 250 | 93  | 24  | 12  | 10  | 77           |
| 75%                    | 28  | 77  | 125 | 175 | 216 | 292 | 292 | 292 | 131 | 37  | 15  | 13  | 96           |
| 90%                    | 44  | 184 | 146 | 204 | 233 | 292 | 292 | 292 | 146 | 57  | 20  | 14  | 108          |
| 100%                   | 437 | 470 | 167 | 233 | 267 | 333 | 333 | 333 | 167 | 160 | 38  | 34  | 134          |
| Mean                   | 27  | 78  | 88  | 125 | 168 | 235 | 237 | 215 | 91  | 32  | 13  | 11  | 79           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 5   | 8   | 6   | 0   | 0   | 29  | 0   | 0   | 12  | 5   | 4   | 4   | 13           |
| 10%                    | 8   | 15  | 28  | 43  | 71  | 139 | 148 | 67  | 27  | 13  | 8   | 7   | 50           |
| 25%                    | 11  | 24  | 46  | 69  | 131 | 208 | 208 | 148 | 48  | 16  | 10  | 8   | 65           |
| 50%                    | 19  | 48  | 94  | 136 | 175 | 250 | 250 | 250 | 93  | 24  | 12  | 10  | 77           |
| 75%                    | 28  | 77  | 125 | 175 | 216 | 292 | 292 | 292 | 131 | 37  | 15  | 13  | 95           |
| 90%                    | 44  | 184 | 146 | 204 | 233 | 292 | 292 | 292 | 146 | 57  | 19  | 14  | 108          |
| 100%                   | 429 | 470 | 167 | 233 | 267 | 333 | 333 | 333 | 167 | 160 | 38  | 34  | 127          |
| Mean                   | 26  | 78  | 88  | 125 | 168 | 236 | 233 | 210 | 91  | 32  | 13  | 11  | 79           |

**Table H1a2-118. Water Year Average of Monthly Flows (cfs) — Slate Creek Tunnel**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 29  | 45  | 61  | 101 | 157 | 164 | 115 | 44  | 14  | 8   | 7   |
| D                      | 19  | 69  | 81  | 88  | 152 | 213 | 232 | 187 | 63  | 18  | 10  | 9   |
| BN                     | 19  | 49  | 68  | 130 | 167 | 235 | 259 | 226 | 93  | 26  | 12  | 9   |
| AN                     | 26  | 92  | 90  | 154 | 200 | 284 | 288 | 273 | 100 | 29  | 14  | 12  |
| W                      | 40  | 123 | 129 | 173 | 203 | 276 | 245 | 258 | 130 | 56  | 18  | 14  |
| All                    | 27  | 78  | 88  | 125 | 168 | 236 | 237 | 215 | 91  | 32  | 13  | 11  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 29  | 45  | 61  | 101 | 157 | 164 | 115 | 44  | 14  | 8   | 7   |
| D                      | 19  | 69  | 81  | 88  | 152 | 212 | 232 | 187 | 63  | 18  | 10  | 9   |
| BN                     | 19  | 49  | 68  | 130 | 167 | 235 | 259 | 226 | 93  | 26  | 12  | 9   |
| AN                     | 26  | 92  | 90  | 154 | 200 | 284 | 288 | 273 | 100 | 29  | 14  | 12  |
| W                      | 40  | 123 | 129 | 173 | 203 | 275 | 245 | 258 | 130 | 56  | 18  | 14  |
| All                    | 27  | 78  | 88  | 125 | 168 | 235 | 237 | 215 | 91  | 32  | 13  | 11  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 29  | 45  | 61  | 101 | 157 | 164 | 115 | 44  | 14  | 8   | 7   |
| D                      | 19  | 69  | 81  | 88  | 152 | 212 | 232 | 187 | 63  | 18  | 10  | 9   |
| BN                     | 19  | 49  | 68  | 130 | 167 | 235 | 259 | 226 | 93  | 26  | 12  | 9   |
| AN                     | 26  | 92  | 90  | 154 | 200 | 284 | 288 | 273 | 100 | 29  | 14  | 12  |
| W                      | 40  | 123 | 129 | 173 | 203 | 276 | 245 | 258 | 130 | 56  | 18  | 14  |
| All                    | 27  | 78  | 88  | 125 | 168 | 236 | 237 | 215 | 91  | 32  | 13  | 11  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 29  | 45  | 61  | 101 | 157 | 164 | 115 | 44  | 14  | 8   | 7   |
| D                      | 19  | 69  | 81  | 88  | 152 | 212 | 232 | 187 | 63  | 18  | 10  | 9   |
| BN                     | 19  | 49  | 68  | 130 | 167 | 235 | 259 | 226 | 93  | 26  | 12  | 9   |
| AN                     | 26  | 92  | 90  | 154 | 200 | 284 | 288 | 273 | 100 | 29  | 14  | 12  |
| W                      | 40  | 123 | 128 | 173 | 203 | 273 | 245 | 258 | 130 | 56  | 18  | 14  |
| All                    | 27  | 78  | 88  | 125 | 168 | 235 | 237 | 215 | 91  | 32  | 13  | 11  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 22  | 29  | 45  | 61  | 101 | 157 | 164 | 115 | 44  | 14  | 8   | 7   |
| D                      | 19  | 69  | 81  | 88  | 152 | 212 | 232 | 187 | 63  | 18  | 10  | 9   |
| BN                     | 19  | 49  | 68  | 130 | 167 | 235 | 259 | 226 | 93  | 26  | 12  | 9   |
| AN                     | 26  | 92  | 90  | 154 | 200 | 284 | 288 | 273 | 100 | 29  | 14  | 12  |
| W                      | 39  | 123 | 128 | 173 | 203 | 276 | 234 | 241 | 130 | 56  | 18  | 14  |
| All                    | 26  | 78  | 88  | 125 | 168 | 236 | 233 | 210 | 91  | 32  | 13  | 11  |

## H1a2.4.8 South Canal

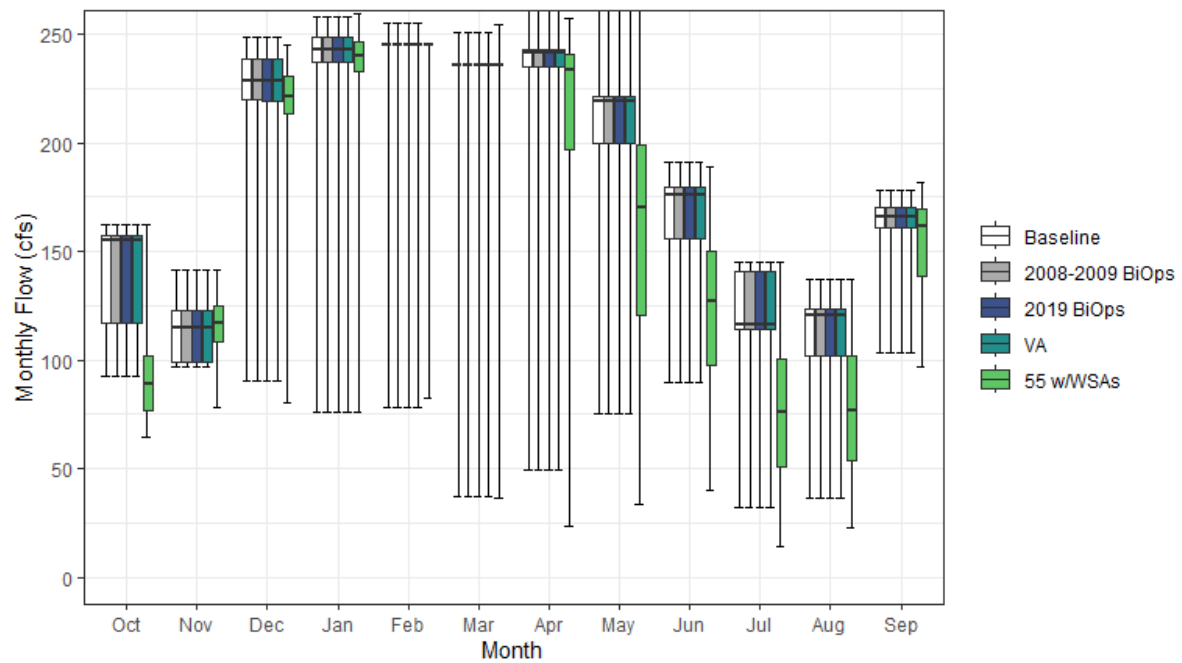


Figure H1a2-60. South Canal Monthly Boxplot (cfs)

**Table H1a2-119. Cumulative Distribution of Monthly Flow (cfs) — South Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 93  | 97  | 90  | 76  | 78  | 37  | 49  | 75  | 90  | 32  | 37  | 104 | 54           |
| 10%                    | 113 | 97  | 213 | 223 | 245 | 236 | 175 | 172 | 152 | 101 | 99  | 143 | 124          |
| 25%                    | 117 | 99  | 219 | 237 | 245 | 236 | 235 | 200 | 156 | 114 | 102 | 161 | 131          |
| 50%                    | 155 | 115 | 228 | 243 | 245 | 236 | 241 | 219 | 176 | 116 | 121 | 166 | 135          |
| 75%                    | 157 | 123 | 239 | 249 | 245 | 236 | 243 | 222 | 179 | 141 | 124 | 170 | 137          |
| 90%                    | 160 | 132 | 247 | 251 | 245 | 236 | 247 | 223 | 182 | 142 | 125 | 173 | 138          |
| 100%                   | 162 | 141 | 249 | 258 | 255 | 251 | 269 | 277 | 191 | 145 | 137 | 178 | 140          |
| Mean                   | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 | 132          |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 93  | 97  | 90  | 76  | 78  | 37  | 49  | 75  | 90  | 32  | 37  | 104 | 54           |
| 10%                    | 113 | 97  | 213 | 224 | 245 | 236 | 175 | 172 | 152 | 101 | 99  | 143 | 124          |
| 25%                    | 117 | 99  | 219 | 237 | 245 | 236 | 235 | 200 | 156 | 114 | 102 | 161 | 131          |
| 50%                    | 155 | 115 | 228 | 243 | 245 | 236 | 241 | 219 | 176 | 116 | 121 | 166 | 135          |
| 75%                    | 157 | 123 | 239 | 249 | 245 | 236 | 243 | 222 | 179 | 141 | 124 | 170 | 137          |
| 90%                    | 160 | 132 | 247 | 251 | 245 | 236 | 247 | 223 | 182 | 142 | 125 | 173 | 138          |
| 100%                   | 162 | 141 | 249 | 258 | 255 | 251 | 269 | 277 | 191 | 145 | 137 | 178 | 140          |
| Mean                   | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 | 132          |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 93  | 97  | 90  | 76  | 78  | 37  | 49  | 75  | 90  | 32  | 37  | 104 | 54           |
| 10%                    | 113 | 97  | 213 | 224 | 245 | 236 | 175 | 172 | 152 | 101 | 99  | 143 | 124          |
| 25%                    | 117 | 99  | 219 | 237 | 245 | 236 | 235 | 200 | 156 | 114 | 102 | 161 | 131          |
| 50%                    | 155 | 115 | 228 | 243 | 245 | 236 | 241 | 219 | 176 | 116 | 121 | 166 | 135          |
| 75%                    | 157 | 123 | 239 | 249 | 245 | 236 | 243 | 222 | 179 | 141 | 124 | 170 | 137          |
| 90%                    | 160 | 132 | 247 | 251 | 245 | 236 | 247 | 223 | 182 | 142 | 125 | 173 | 138          |
| 100%                   | 162 | 141 | 249 | 258 | 255 | 251 | 269 | 277 | 191 | 145 | 137 | 178 | 140          |
| Mean                   | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 | 132          |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 93  | 97  | 90  | 76  | 78  | 37  | 49  | 75  | 90  | 32  | 37  | 104 | 54           |
| 10%                    | 113 | 97  | 213 | 224 | 245 | 236 | 175 | 172 | 152 | 101 | 99  | 143 | 124          |
| 25%                    | 117 | 99  | 219 | 237 | 245 | 236 | 235 | 200 | 156 | 114 | 102 | 161 | 131          |
| 50%                    | 155 | 115 | 228 | 243 | 245 | 236 | 241 | 219 | 176 | 116 | 121 | 166 | 135          |
| 75%                    | 157 | 123 | 239 | 249 | 245 | 236 | 243 | 222 | 179 | 141 | 124 | 170 | 137          |
| 90%                    | 160 | 132 | 247 | 251 | 245 | 236 | 247 | 223 | 182 | 142 | 125 | 173 | 138          |
| 100%                   | 162 | 141 | 249 | 258 | 255 | 251 | 269 | 277 | 191 | 145 | 137 | 178 | 140          |
| Mean                   | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 | 132          |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 65  | 78  | 80  | 76  | 82  | 36  | 24  | 34  | 40  | 14  | 23  | 97  | 43           |
| 10%                    | 70  | 99  | 206 | 205 | 245 | 229 | 74  | 83  | 84  | 35  | 42  | 126 | 95           |
| 25%                    | 77  | 109 | 213 | 233 | 245 | 236 | 197 | 121 | 97  | 51  | 54  | 139 | 107          |
| 50%                    | 89  | 117 | 221 | 240 | 245 | 236 | 233 | 170 | 127 | 76  | 76  | 161 | 118          |
| 75%                    | 102 | 125 | 230 | 246 | 245 | 236 | 241 | 199 | 150 | 100 | 102 | 170 | 128          |
| 90%                    | 156 | 131 | 238 | 251 | 245 | 236 | 245 | 221 | 176 | 117 | 123 | 174 | 132          |
| 100%                   | 162 | 142 | 245 | 259 | 245 | 254 | 257 | 276 | 189 | 145 | 137 | 181 | 138          |
| Mean                   | 98  | 116 | 218 | 231 | 238 | 227 | 200 | 158 | 124 | 77  | 78  | 153 | 115          |

**Table H1a2-120. Water Year Average of Monthly Flows (cfs) — South Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 143 | 117 | 217 | 209 | 218 | 204 | 164 | 168 | 154 | 102 | 101 | 156 |
| D                      | 140 | 111 | 225 | 234 | 244 | 233 | 231 | 202 | 169 | 123 | 113 | 163 |
| BN                     | 139 | 115 | 232 | 239 | 243 | 236 | 239 | 219 | 172 | 125 | 117 | 165 |
| AN                     | 135 | 113 | 224 | 241 | 245 | 236 | 241 | 217 | 168 | 132 | 111 | 158 |
| W                      | 146 | 113 | 224 | 241 | 245 | 236 | 242 | 228 | 171 | 124 | 120 | 164 |
| All                    | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 143 | 117 | 217 | 209 | 218 | 204 | 164 | 168 | 154 | 102 | 101 | 156 |
| D                      | 140 | 111 | 225 | 234 | 244 | 233 | 231 | 202 | 169 | 123 | 113 | 163 |
| BN                     | 139 | 115 | 232 | 239 | 243 | 236 | 239 | 219 | 172 | 125 | 117 | 165 |
| AN                     | 135 | 113 | 224 | 241 | 245 | 236 | 241 | 217 | 168 | 132 | 111 | 158 |
| W                      | 146 | 113 | 224 | 241 | 245 | 236 | 242 | 228 | 171 | 124 | 120 | 164 |
| All                    | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 143 | 117 | 217 | 209 | 218 | 204 | 164 | 168 | 154 | 102 | 101 | 156 |
| D                      | 140 | 111 | 225 | 234 | 244 | 233 | 231 | 202 | 169 | 123 | 113 | 163 |
| BN                     | 139 | 115 | 232 | 239 | 243 | 236 | 239 | 219 | 172 | 125 | 117 | 165 |
| AN                     | 135 | 113 | 224 | 241 | 245 | 236 | 241 | 217 | 168 | 132 | 111 | 158 |
| W                      | 146 | 113 | 224 | 241 | 245 | 236 | 242 | 228 | 171 | 124 | 120 | 164 |
| All                    | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 143 | 117 | 217 | 209 | 218 | 204 | 164 | 168 | 154 | 102 | 101 | 156 |
| D                      | 140 | 111 | 225 | 234 | 244 | 233 | 231 | 202 | 169 | 123 | 113 | 163 |
| BN                     | 139 | 115 | 232 | 239 | 243 | 236 | 239 | 219 | 172 | 125 | 117 | 165 |
| AN                     | 135 | 113 | 224 | 241 | 245 | 236 | 241 | 217 | 168 | 132 | 111 | 158 |
| W                      | 146 | 113 | 224 | 241 | 245 | 236 | 242 | 228 | 171 | 124 | 120 | 164 |
| All                    | 142 | 113 | 225 | 234 | 240 | 230 | 226 | 210 | 168 | 122 | 114 | 162 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 93  | 118 | 207 | 205 | 217 | 193 | 108 | 95  | 97  | 51  | 55  | 135 |
| D                      | 95  | 116 | 219 | 225 | 241 | 229 | 183 | 133 | 118 | 68  | 73  | 152 |
| BN                     | 110 | 114 | 223 | 240 | 237 | 236 | 218 | 165 | 124 | 78  | 80  | 159 |
| AN                     | 83  | 114 | 219 | 238 | 245 | 236 | 239 | 184 | 137 | 97  | 85  | 165 |
| W                      | 100 | 118 | 220 | 239 | 245 | 236 | 235 | 194 | 136 | 88  | 88  | 155 |
| All                    | 98  | 116 | 218 | 231 | 238 | 227 | 200 | 158 | 124 | 77  | 78  | 153 |

## H1a2.4.9 South Yuba Canal

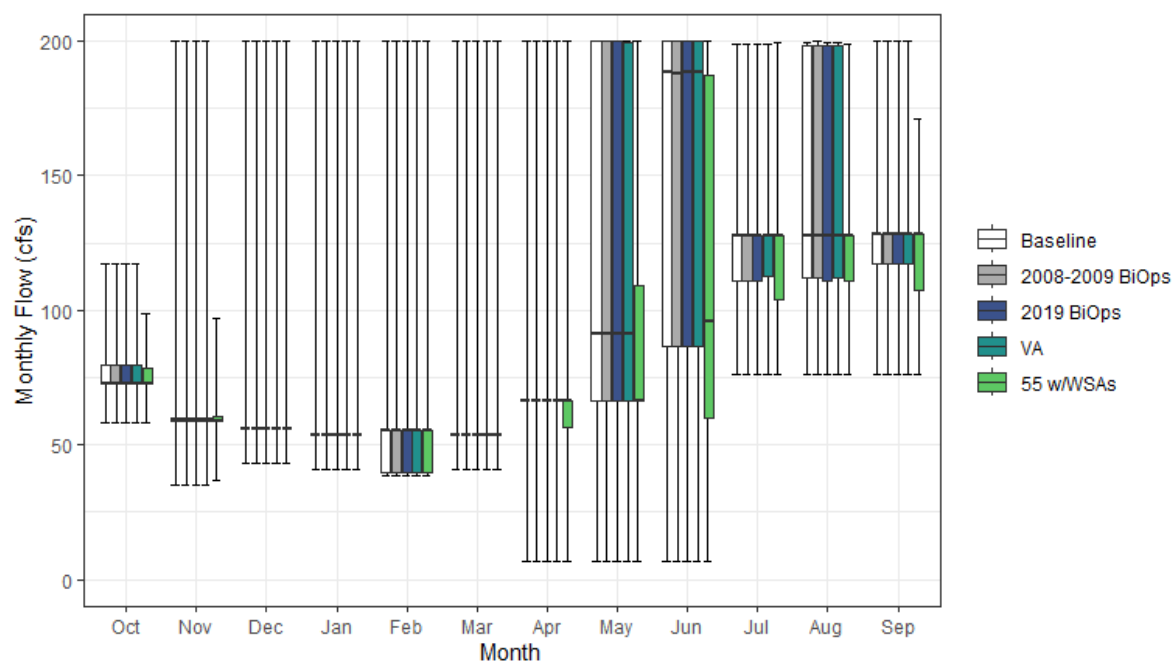


Figure H1a2-61. South Yuba Canal Monthly Boxplot (cfs)

**Table H1a2-121. Cumulative Distribution of Monthly Flow (cfs) — South Yuba Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 58  | 35  | 43  | 41  | 39  | 41  | 7   | 7   | 7   | 76  | 76  | 76  | 46           |
| 10%                    | 73  | 59  | 43  | 41  | 40  | 41  | 7   | 23  | 51  | 90  | 76  | 76  | 55           |
| 25%                    | 73  | 59  | 56  | 54  | 40  | 54  | 66  | 67  | 87  | 111 | 112 | 117 | 58           |
| 50%                    | 73  | 59  | 56  | 54  | 55  | 54  | 66  | 91  | 188 | 128 | 128 | 128 | 64           |
| 75%                    | 79  | 60  | 56  | 54  | 55  | 54  | 66  | 200 | 200 | 128 | 198 | 128 | 72           |
| 90%                    | 88  | 74  | 86  | 66  | 60  | 55  | 138 | 200 | 200 | 198 | 199 | 128 | 85           |
| 100%                   | 117 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 199 | 200 | 200 | 105          |
| Mean                   | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 116 | 144 | 130 | 141 | 124 | 67           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 58  | 35  | 43  | 41  | 39  | 41  | 7   | 7   | 7   | 76  | 76  | 76  | 46           |
| 10%                    | 73  | 59  | 43  | 41  | 40  | 41  | 7   | 23  | 51  | 90  | 76  | 76  | 55           |
| 25%                    | 73  | 59  | 56  | 54  | 40  | 54  | 66  | 67  | 87  | 111 | 112 | 118 | 58           |
| 50%                    | 73  | 59  | 56  | 54  | 55  | 54  | 66  | 91  | 188 | 128 | 128 | 128 | 64           |
| 75%                    | 79  | 60  | 56  | 54  | 55  | 54  | 66  | 200 | 200 | 128 | 198 | 128 | 72           |
| 90%                    | 88  | 74  | 86  | 66  | 60  | 55  | 137 | 200 | 200 | 198 | 199 | 128 | 85           |
| 100%                   | 117 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 199 | 200 | 200 | 105          |
| Mean                   | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 129 | 141 | 124 | 67           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 58  | 35  | 43  | 41  | 39  | 41  | 7   | 7   | 7   | 76  | 76  | 76  | 46           |
| 10%                    | 73  | 59  | 43  | 41  | 40  | 41  | 7   | 23  | 51  | 90  | 76  | 76  | 55           |
| 25%                    | 73  | 59  | 56  | 54  | 40  | 54  | 66  | 66  | 87  | 111 | 111 | 117 | 58           |
| 50%                    | 73  | 59  | 56  | 54  | 55  | 54  | 66  | 91  | 188 | 128 | 128 | 128 | 64           |
| 75%                    | 79  | 60  | 56  | 54  | 55  | 54  | 66  | 200 | 200 | 128 | 198 | 128 | 72           |
| 90%                    | 88  | 74  | 86  | 66  | 60  | 55  | 137 | 200 | 200 | 198 | 199 | 128 | 85           |
| 100%                   | 117 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 199 | 199 | 200 | 105          |
| Mean                   | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 130 | 140 | 124 | 67           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 58  | 35  | 43  | 41  | 39  | 41  | 7   | 7   | 7   | 76  | 76  | 76  | 46           |
| 10%                    | 73  | 59  | 43  | 41  | 40  | 41  | 7   | 23  | 51  | 90  | 76  | 76  | 55           |
| 25%                    | 73  | 59  | 56  | 54  | 40  | 54  | 66  | 66  | 87  | 113 | 112 | 117 | 58           |
| 50%                    | 73  | 59  | 56  | 54  | 55  | 54  | 66  | 91  | 188 | 128 | 128 | 128 | 63           |
| 75%                    | 79  | 60  | 56  | 54  | 55  | 54  | 66  | 200 | 200 | 128 | 198 | 128 | 72           |
| 90%                    | 88  | 74  | 86  | 66  | 60  | 55  | 137 | 200 | 200 | 198 | 199 | 128 | 85           |
| 100%                   | 117 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 199 | 200 | 200 | 105          |
| Mean                   | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 130 | 140 | 124 | 67           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 58  | 37  | 43  | 41  | 39  | 41  | 7   | 7   | 7   | 76  | 76  | 76  | 42           |
| 10%                    | 73  | 59  | 43  | 41  | 40  | 41  | 7   | 16  | 7   | 76  | 76  | 76  | 48           |
| 25%                    | 73  | 59  | 56  | 54  | 40  | 54  | 57  | 66  | 60  | 104 | 111 | 107 | 52           |
| 50%                    | 73  | 59  | 56  | 54  | 55  | 54  | 66  | 67  | 96  | 128 | 128 | 128 | 58           |
| 75%                    | 79  | 60  | 56  | 54  | 55  | 54  | 66  | 109 | 187 | 128 | 128 | 128 | 64           |
| 90%                    | 87  | 74  | 82  | 66  | 57  | 55  | 67  | 166 | 200 | 130 | 185 | 128 | 74           |
| 100%                   | 99  | 97  | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 199 | 171 | 99           |
| Mean                   | 76  | 62  | 64  | 57  | 59  | 60  | 64  | 83  | 107 | 120 | 126 | 118 | 60           |

**Table H1a2-122. Water Year Average of Monthly Flows (cfs) — South Yuba Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 75  | 61  | 61  | 61  | 48  | 52  | 49  | 137 | 133 | 167 | 179 | 153 |
| D                      | 75  | 64  | 58  | 54  | 46  | 49  | 40  | 91  | 122 | 140 | 162 | 128 |
| BN                     | 81  | 63  | 62  | 49  | 50  | 52  | 67  | 82  | 136 | 122 | 142 | 127 |
| AN                     | 74  | 68  | 69  | 51  | 51  | 53  | 77  | 113 | 149 | 110 | 130 | 110 |
| W                      | 76  | 59  | 79  | 71  | 84  | 83  | 104 | 145 | 168 | 115 | 109 | 108 |
| All                    | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 116 | 144 | 130 | 141 | 124 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 75  | 61  | 61  | 61  | 48  | 52  | 49  | 137 | 133 | 167 | 179 | 153 |
| D                      | 75  | 64  | 58  | 54  | 46  | 49  | 40  | 91  | 122 | 140 | 162 | 128 |
| BN                     | 81  | 63  | 62  | 49  | 50  | 52  | 67  | 82  | 136 | 122 | 141 | 127 |
| AN                     | 74  | 68  | 69  | 51  | 51  | 53  | 77  | 112 | 149 | 108 | 130 | 110 |
| W                      | 76  | 59  | 79  | 71  | 84  | 83  | 104 | 145 | 168 | 115 | 109 | 108 |
| All                    | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 129 | 141 | 124 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 75  | 61  | 61  | 61  | 48  | 52  | 49  | 137 | 133 | 167 | 179 | 153 |
| D                      | 75  | 64  | 58  | 54  | 46  | 49  | 40  | 91  | 122 | 140 | 162 | 128 |
| BN                     | 81  | 63  | 62  | 49  | 50  | 52  | 67  | 82  | 136 | 123 | 140 | 127 |
| AN                     | 74  | 68  | 69  | 51  | 51  | 53  | 77  | 111 | 150 | 110 | 126 | 110 |
| W                      | 76  | 59  | 79  | 71  | 84  | 83  | 104 | 144 | 168 | 115 | 109 | 108 |
| All                    | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 130 | 140 | 124 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 75  | 61  | 61  | 61  | 48  | 52  | 49  | 137 | 133 | 167 | 179 | 153 |
| D                      | 75  | 64  | 58  | 54  | 46  | 49  | 40  | 91  | 122 | 140 | 162 | 128 |
| BN                     | 81  | 63  | 62  | 49  | 50  | 52  | 67  | 82  | 136 | 122 | 141 | 127 |
| AN                     | 74  | 68  | 69  | 51  | 51  | 53  | 77  | 106 | 150 | 108 | 126 | 110 |
| W                      | 76  | 59  | 79  | 71  | 84  | 83  | 104 | 145 | 168 | 116 | 109 | 108 |
| All                    | 76  | 62  | 67  | 59  | 59  | 61  | 70  | 115 | 144 | 130 | 140 | 124 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 75  | 61  | 60  | 61  | 48  | 49  | 35  | 95  | 94  | 142 | 137 | 120 |
| D                      | 75  | 64  | 58  | 54  | 46  | 49  | 39  | 70  | 76  | 123 | 131 | 124 |
| BN                     | 79  | 64  | 62  | 49  | 50  | 52  | 65  | 59  | 103 | 127 | 131 | 127 |
| AN                     | 74  | 60  | 69  | 51  | 51  | 53  | 66  | 69  | 100 | 106 | 128 | 110 |
| W                      | 76  | 60  | 70  | 66  | 84  | 82  | 98  | 107 | 143 | 107 | 114 | 111 |
| All                    | 76  | 62  | 64  | 57  | 59  | 60  | 64  | 83  | 107 | 120 | 126 | 118 |

## H1a2.4.10 Chalk Bluff Canal

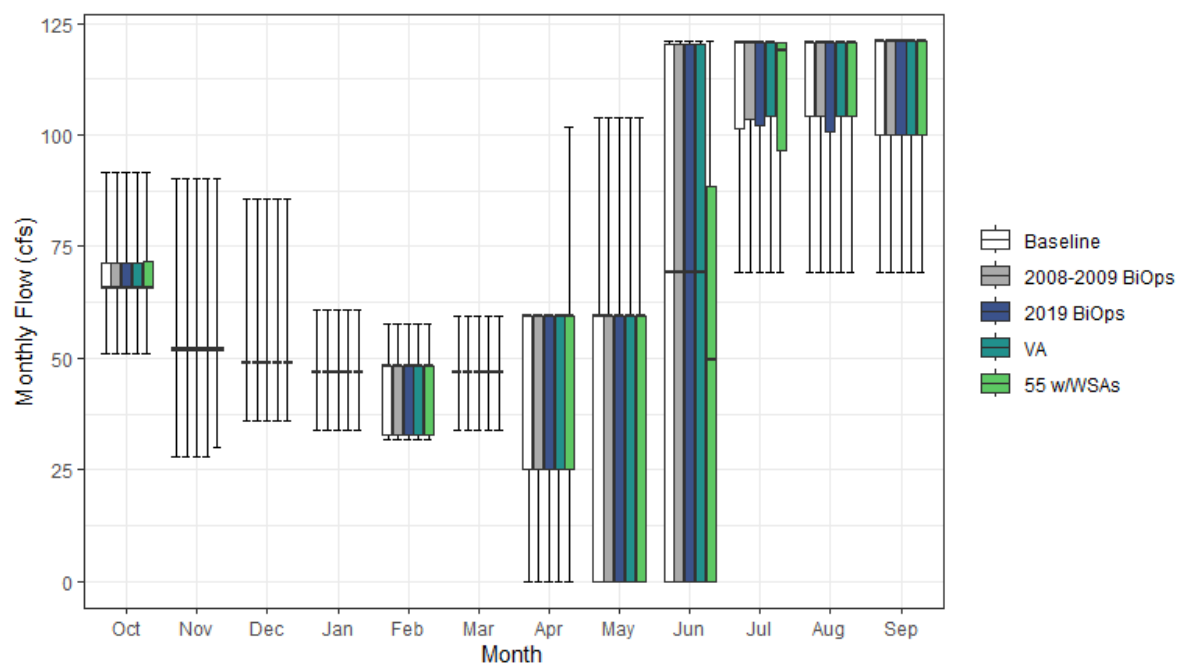


Figure H1a2-62. Chalk Bluff Canal Monthly Boxplot (cfs)

**Table H1a2-123. Cumulative Distribution of Monthly Flow (cfs) — Chalk Bluff Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 36  | 34  | 32  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 34           |
| 10%                    | 66  | 52  | 36  | 34  | 33  | 34  | 0   | 0   | 0   | 83  | 69  | 69  | 38           |
| 25%                    | 66  | 52  | 49  | 47  | 33  | 47  | 25  | 0   | 0   | 101 | 104 | 100 | 42           |
| 50%                    | 66  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 69  | 121 | 121 | 121 | 48           |
| 75%                    | 71  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 120 | 121 | 121 | 121 | 53           |
| 90%                    | 80  | 66  | 66  | 59  | 48  | 47  | 59  | 73  | 121 | 121 | 121 | 121 | 56           |
| 100%                   | 92  | 90  | 85  | 61  | 58  | 59  | 59  | 104 | 121 | 121 | 121 | 121 | 60           |
| Mean                   | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 | 47           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 36  | 34  | 32  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 34           |
| 10%                    | 66  | 52  | 36  | 34  | 33  | 34  | 0   | 0   | 0   | 83  | 69  | 69  | 38           |
| 25%                    | 66  | 52  | 49  | 47  | 33  | 47  | 25  | 0   | 0   | 103 | 104 | 100 | 42           |
| 50%                    | 66  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 69  | 121 | 121 | 121 | 48           |
| 75%                    | 71  | 53  | 49  | 47  | 48  | 47  | 59  | 59  | 120 | 121 | 121 | 121 | 53           |
| 90%                    | 80  | 66  | 66  | 59  | 48  | 47  | 59  | 73  | 121 | 121 | 121 | 121 | 56           |
| 100%                   | 92  | 90  | 85  | 61  | 58  | 59  | 59  | 104 | 121 | 121 | 121 | 121 | 60           |
| Mean                   | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 | 47           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 36  | 34  | 32  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 34           |
| 10%                    | 66  | 52  | 36  | 34  | 33  | 34  | 0   | 0   | 0   | 83  | 69  | 69  | 38           |
| 25%                    | 66  | 52  | 49  | 47  | 33  | 47  | 25  | 0   | 0   | 102 | 101 | 100 | 42           |
| 50%                    | 66  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 69  | 121 | 121 | 121 | 48           |
| 75%                    | 71  | 53  | 49  | 47  | 48  | 47  | 59  | 59  | 120 | 121 | 121 | 121 | 53           |
| 90%                    | 80  | 66  | 66  | 59  | 48  | 47  | 59  | 73  | 121 | 121 | 121 | 121 | 56           |
| 100%                   | 92  | 90  | 85  | 61  | 58  | 59  | 59  | 104 | 121 | 121 | 121 | 121 | 60           |
| Mean                   | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 | 47           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 28  | 36  | 34  | 32  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 34           |
| 10%                    | 66  | 52  | 36  | 34  | 33  | 34  | 0   | 0   | 0   | 83  | 69  | 69  | 38           |
| 25%                    | 66  | 52  | 49  | 47  | 33  | 47  | 25  | 0   | 0   | 104 | 104 | 100 | 42           |
| 50%                    | 66  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 69  | 121 | 121 | 121 | 48           |
| 75%                    | 71  | 53  | 49  | 47  | 48  | 47  | 59  | 59  | 120 | 121 | 121 | 121 | 53           |
| 90%                    | 80  | 66  | 66  | 59  | 48  | 47  | 59  | 73  | 121 | 121 | 121 | 121 | 56           |
| 100%                   | 92  | 90  | 85  | 61  | 58  | 59  | 59  | 104 | 121 | 121 | 121 | 121 | 60           |
| Mean                   | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 | 47           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 51  | 30  | 36  | 34  | 32  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 34           |
| 10%                    | 66  | 52  | 36  | 34  | 33  | 34  | 0   | 0   | 0   | 69  | 69  | 69  | 37           |
| 25%                    | 66  | 52  | 49  | 47  | 33  | 47  | 25  | 0   | 0   | 97  | 104 | 100 | 41           |
| 50%                    | 66  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 50  | 119 | 121 | 121 | 45           |
| 75%                    | 72  | 52  | 49  | 47  | 48  | 47  | 59  | 59  | 89  | 121 | 121 | 121 | 52           |
| 90%                    | 80  | 67  | 66  | 59  | 48  | 47  | 59  | 59  | 121 | 121 | 121 | 121 | 54           |
| 100%                   | 92  | 90  | 85  | 61  | 58  | 59  | 102 | 104 | 121 | 121 | 121 | 121 | 60           |
| Mean                   | 69  | 55  | 51  | 46  | 43  | 44  | 44  | 37  | 49  | 106 | 109 | 110 | 46           |

**Table H1a2-124. Water Year Average of Monthly Flows (cfs) — Chalk Bluff Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 68  | 54  | 53  | 53  | 40  | 41  | 10  | 0   | 3   | 108 | 109 | 106 |
| D                      | 68  | 57  | 51  | 47  | 39  | 42  | 31  | 18  | 35  | 113 | 117 | 117 |
| BN                     | 72  | 56  | 55  | 42  | 43  | 45  | 54  | 57  | 82  | 111 | 115 | 120 |
| AN                     | 67  | 53  | 50  | 44  | 44  | 46  | 59  | 65  | 89  | 103 | 102 | 103 |
| W                      | 69  | 52  | 48  | 46  | 47  | 47  | 59  | 63  | 95  | 107 | 95  | 101 |
| All                    | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 68  | 54  | 53  | 53  | 40  | 41  | 10  | 0   | 3   | 108 | 109 | 106 |
| D                      | 68  | 57  | 51  | 47  | 39  | 42  | 31  | 18  | 35  | 113 | 117 | 117 |
| BN                     | 72  | 56  | 55  | 42  | 43  | 45  | 54  | 57  | 82  | 111 | 115 | 120 |
| AN                     | 67  | 53  | 50  | 44  | 44  | 46  | 59  | 65  | 89  | 101 | 102 | 103 |
| W                      | 69  | 52  | 48  | 46  | 47  | 47  | 59  | 63  | 95  | 108 | 95  | 101 |
| All                    | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 68  | 54  | 53  | 53  | 40  | 41  | 10  | 0   | 3   | 108 | 109 | 106 |
| D                      | 68  | 57  | 51  | 47  | 39  | 42  | 31  | 18  | 35  | 113 | 117 | 117 |
| BN                     | 72  | 56  | 55  | 42  | 43  | 45  | 54  | 57  | 82  | 112 | 114 | 120 |
| AN                     | 67  | 53  | 50  | 44  | 44  | 46  | 59  | 65  | 89  | 103 | 102 | 103 |
| W                      | 69  | 52  | 48  | 46  | 47  | 47  | 59  | 63  | 95  | 107 | 95  | 101 |
| All                    | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 68  | 54  | 53  | 53  | 40  | 41  | 10  | 0   | 3   | 108 | 109 | 106 |
| D                      | 68  | 57  | 51  | 47  | 39  | 42  | 31  | 18  | 35  | 113 | 117 | 117 |
| BN                     | 72  | 56  | 55  | 42  | 43  | 45  | 54  | 57  | 82  | 111 | 115 | 120 |
| AN                     | 67  | 53  | 50  | 44  | 44  | 46  | 59  | 65  | 89  | 101 | 102 | 103 |
| W                      | 69  | 52  | 48  | 46  | 47  | 47  | 59  | 63  | 95  | 109 | 95  | 101 |
| All                    | 69  | 54  | 51  | 46  | 43  | 44  | 44  | 42  | 64  | 109 | 107 | 109 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 68  | 54  | 53  | 53  | 40  | 41  | 9   | 0   | 0   | 108 | 109 | 106 |
| D                      | 68  | 57  | 51  | 47  | 39  | 42  | 31  | 14  | 24  | 113 | 117 | 117 |
| BN                     | 72  | 57  | 55  | 42  | 43  | 45  | 54  | 42  | 65  | 112 | 117 | 120 |
| AN                     | 67  | 53  | 50  | 44  | 44  | 46  | 59  | 58  | 59  | 99  | 104 | 103 |
| W                      | 69  | 52  | 48  | 46  | 47  | 47  | 61  | 61  | 77  | 100 | 100 | 104 |
| All                    | 69  | 55  | 51  | 46  | 43  | 44  | 44  | 37  | 49  | 106 | 109 | 110 |

## H1a2.4.11 Clear Creek Tunnel

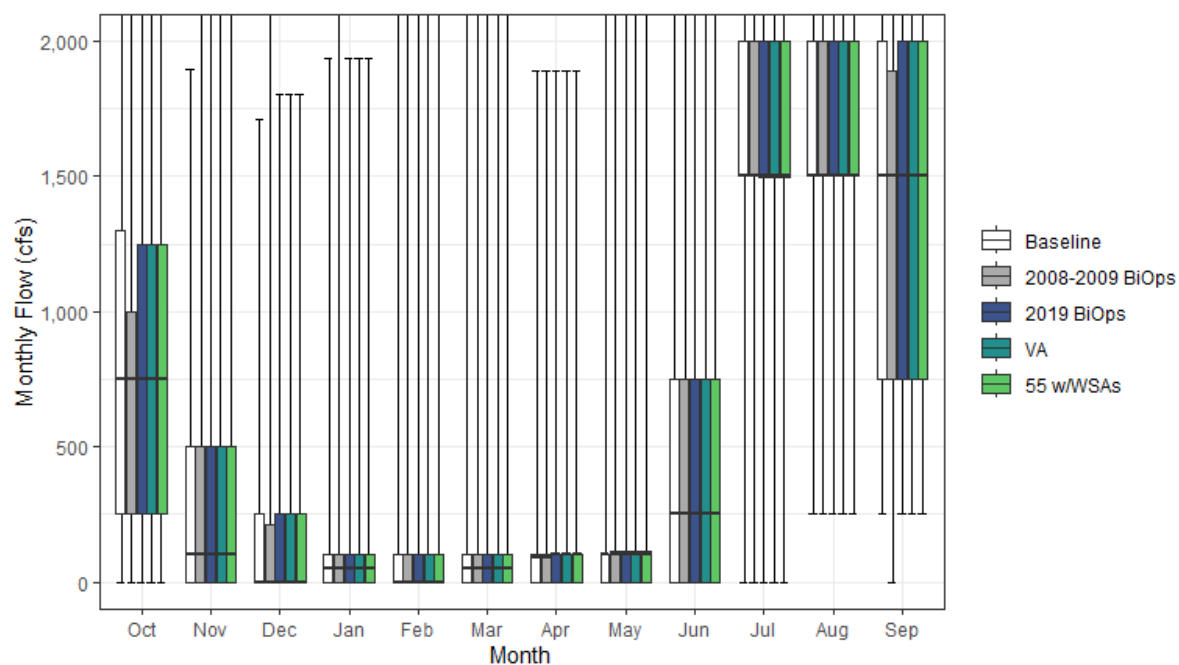


Figure H1a2-63. Clear Creek Tunnel Monthly Boxplot (cfs)

**Table H1a2-125. Cumulative Distribution of Monthly Flow (cfs) — Clear Creek Tunnel**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 250   | 250   | 128          |
| 10%                    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,000 | 500   | 226          |
| 25%                    | 250   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,500 | 1,500 | 750   | 312          |
| 50%                    | 750   | 100   | 0     | 50    | 0     | 50    | 88    | 100   | 250   | 1,500 | 1,500 | 1,500 | 440          |
| 75%                    | 1,298 | 500   | 250   | 100   | 100   | 100   | 100   | 100   | 750   | 2,000 | 2,000 | 2,000 | 568          |
| 90%                    | 1,848 | 500   | 308   | 266   | 709   | 824   | 258   | 250   | 1,300 | 2,873 | 2,750 | 2,101 | 696          |
| 100%                   | 3,200 | 1,898 | 1,714 | 1,935 | 3,200 | 3,199 | 1,889 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 1,050        |
| Mean                   | 852   | 227   | 157   | 144   | 273   | 262   | 161   | 211   | 471   | 1,575 | 1,721 | 1,396 | 452          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 250   | 0     | 128          |
| 10%                    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,000 | 500   | 233          |
| 25%                    | 250   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,500 | 1,500 | 750   | 310          |
| 50%                    | 750   | 100   | 0     | 50    | 0     | 50    | 88    | 100   | 250   | 1,500 | 1,500 | 1,500 | 439          |
| 75%                    | 1,000 | 500   | 211   | 100   | 100   | 100   | 100   | 111   | 750   | 2,000 | 2,000 | 1,892 | 581          |
| 90%                    | 1,826 | 500   | 397   | 250   | 727   | 817   | 250   | 250   | 1,261 | 3,200 | 3,167 | 2,082 | 696          |
| 100%                   | 2,131 | 3,200 | 3,200 | 2,662 | 3,200 | 3,199 | 1,889 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 1,000        |
| Mean                   | 805   | 273   | 229   | 141   | 256   | 250   | 163   | 217   | 430   | 1,611 | 1,749 | 1,372 | 455          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 250   | 250   | 128          |
| 10%                    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 987   | 500   | 220          |
| 25%                    | 250   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,498 | 1,500 | 750   | 312          |
| 50%                    | 750   | 100   | 0     | 50    | 0     | 50    | 100   | 100   | 250   | 1,500 | 1,500 | 1,500 | 440          |
| 75%                    | 1,250 | 500   | 250   | 100   | 100   | 100   | 100   | 111   | 750   | 2,000 | 2,000 | 2,000 | 564          |
| 90%                    | 1,826 | 500   | 308   | 250   | 706   | 905   | 258   | 250   | 1,183 | 3,200 | 2,584 | 2,132 | 696          |
| 100%                   | 3,200 | 3,200 | 1,802 | 1,935 | 3,200 | 3,199 | 1,889 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 1,048        |
| Mean                   | 832   | 276   | 157   | 141   | 278   | 260   | 165   | 210   | 452   | 1,597 | 1,671 | 1,409 | 452          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 250   | 250   | 128          |
| 10%                    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 987   | 500   | 220          |
| 25%                    | 250   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,498 | 1,500 | 750   | 312          |
| 50%                    | 750   | 100   | 0     | 50    | 0     | 50    | 100   | 100   | 250   | 1,500 | 1,500 | 1,500 | 440          |
| 75%                    | 1,250 | 500   | 250   | 100   | 100   | 100   | 100   | 111   | 750   | 2,000 | 2,000 | 2,000 | 564          |
| 90%                    | 1,826 | 500   | 308   | 250   | 706   | 905   | 258   | 250   | 1,183 | 3,200 | 2,584 | 2,132 | 696          |
| 100%                   | 3,200 | 3,200 | 1,802 | 1,935 | 3,200 | 3,199 | 1,889 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 1,048        |
| Mean                   | 832   | 276   | 157   | 141   | 278   | 260   | 165   | 210   | 452   | 1,597 | 1,671 | 1,409 | 452          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 250   | 250   | 128          |
| 10%                    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 987   | 500   | 220          |
| 25%                    | 250   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1,498 | 1,500 | 750   | 312          |
| 50%                    | 750   | 100   | 0     | 50    | 0     | 50    | 100   | 100   | 250   | 1,500 | 1,500 | 1,500 | 440          |
| 75%                    | 1,250 | 500   | 250   | 100   | 100   | 100   | 100   | 111   | 750   | 2,000 | 2,000 | 2,000 | 564          |
| 90%                    | 1,826 | 500   | 308   | 250   | 706   | 905   | 258   | 250   | 1,183 | 3,200 | 2,584 | 2,132 | 696          |
| 100%                   | 3,200 | 3,200 | 1,802 | 1,935 | 3,200 | 3,199 | 1,889 | 3,200 | 3,200 | 3,200 | 3,200 | 3,200 | 1,048        |
| Mean                   | 832   | 276   | 157   | 141   | 278   | 260   | 165   | 210   | 452   | 1,597 | 1,671 | 1,409 | 452          |

**Table H1a2-126. Water Year Average of Monthly Flows (cfs) — Clear Creek Tunnel**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul   | Aug   | Sep   |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |       |       |       |
| C                      | 608 | 141 | 121 | 139 | 545 | 304 | 134 | 421 | 798 | 2,246 | 1,657 | 762   |
| D                      | 780 | 236 | 155 | 144 | 684 | 269 | 86  | 127 | 670 | 1,725 | 2,021 | 1,510 |
| BN                     | 952 | 156 | 81  | 293 | 102 | 398 | 216 | 66  | 487 | 1,237 | 1,681 | 1,342 |
| AN                     | 882 | 250 | 269 | 178 | 25  | 50  | 211 | 52  | 148 | 1,336 | 1,625 | 1,424 |
| W                      | 960 | 302 | 182 | 39  | 33  | 234 | 174 | 315 | 270 | 1,417 | 1,599 | 1,673 |
| All                    | 852 | 227 | 157 | 144 | 273 | 262 | 161 | 211 | 471 | 1,575 | 1,721 | 1,396 |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |       |       |       |
| C                      | 423 | 358 | 121 | 128 | 419 | 249 | 127 | 441 | 653 | 2,400 | 1,715 | 812   |
| D                      | 710 | 299 | 269 | 155 | 739 | 294 | 85  | 134 | 659 | 1,785 | 2,123 | 1,378 |
| BN                     | 977 | 156 | 87  | 367 | 66  | 357 | 241 | 71  | 447 | 1,237 | 1,684 | 1,342 |
| AN                     | 840 | 302 | 652 | 37  | 25  | 44  | 207 | 52  | 86  | 1,336 | 1,583 | 1,382 |
| W                      | 955 | 270 | 180 | 35  | 28  | 234 | 173 | 317 | 270 | 1,411 | 1,599 | 1,680 |
| All                    | 805 | 273 | 229 | 141 | 256 | 250 | 163 | 217 | 430 | 1,611 | 1,749 | 1,372 |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |       |       |       |
| C                      | 608 | 157 | 115 | 134 | 544 | 257 | 124 | 408 | 770 | 2,415 | 1,420 | 885   |
| D                      | 769 | 296 | 155 | 133 | 697 | 264 | 95  | 134 | 670 | 1,702 | 1,983 | 1,503 |
| BN                     | 880 | 312 | 81  | 293 | 102 | 398 | 216 | 66  | 487 | 1,237 | 1,681 | 1,316 |
| AN                     | 851 | 292 | 276 | 178 | 25  | 50  | 250 | 52  | 86  | 1,336 | 1,625 | 1,424 |
| W                      | 960 | 293 | 182 | 39  | 41  | 254 | 171 | 315 | 245 | 1,417 | 1,587 | 1,674 |
| All                    | 832 | 276 | 157 | 141 | 278 | 260 | 165 | 210 | 452 | 1,597 | 1,671 | 1,409 |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |       |       |       |
| C                      | 608 | 157 | 115 | 134 | 544 | 257 | 124 | 408 | 770 | 2,415 | 1,420 | 885   |
| D                      | 769 | 296 | 155 | 133 | 697 | 264 | 95  | 134 | 670 | 1,702 | 1,983 | 1,503 |
| BN                     | 880 | 312 | 81  | 293 | 102 | 398 | 216 | 66  | 487 | 1,237 | 1,681 | 1,316 |
| AN                     | 851 | 292 | 276 | 178 | 25  | 50  | 250 | 52  | 86  | 1,336 | 1,625 | 1,424 |
| W                      | 960 | 293 | 182 | 39  | 41  | 254 | 171 | 315 | 245 | 1,417 | 1,587 | 1,674 |
| All                    | 832 | 276 | 157 | 141 | 278 | 260 | 165 | 210 | 452 | 1,597 | 1,671 | 1,409 |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |       |       |       |
| C                      | 608 | 157 | 115 | 134 | 544 | 257 | 124 | 408 | 770 | 2,415 | 1,420 | 885   |
| D                      | 769 | 296 | 155 | 133 | 697 | 264 | 95  | 134 | 670 | 1,702 | 1,983 | 1,503 |
| BN                     | 880 | 312 | 81  | 293 | 102 | 398 | 216 | 66  | 487 | 1,237 | 1,681 | 1,316 |
| AN                     | 851 | 292 | 276 | 178 | 25  | 50  | 250 | 52  | 86  | 1,336 | 1,625 | 1,424 |
| W                      | 960 | 293 | 182 | 39  | 41  | 254 | 171 | 315 | 245 | 1,417 | 1,587 | 1,674 |
| All                    | 832 | 276 | 157 | 141 | 278 | 260 | 165 | 210 | 452 | 1,597 | 1,671 | 1,409 |

## H1a2.4.12 Spring Creek Conduit

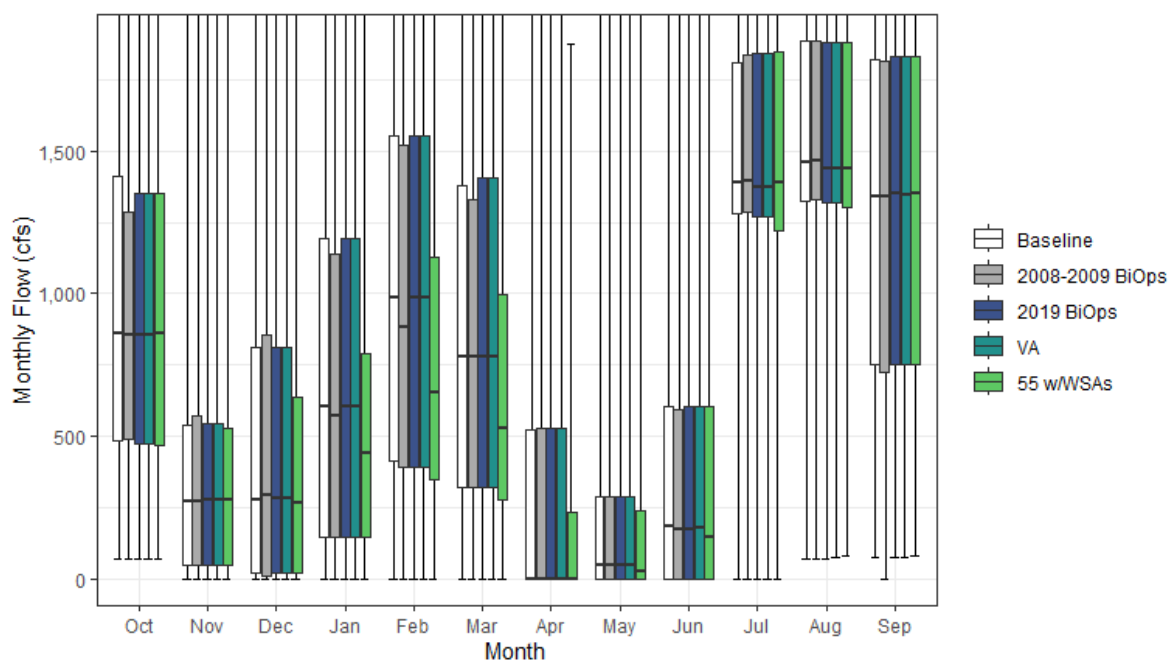


Figure H1a2-64. Spring Creek Conduit Monthly Boxplot (cfs)

**Table H1a2-127. Cumulative Distribution of Monthly Flow (cfs) — Spring Creek Conduit**

|                        | Oct   | Nov   | Dec   | Jan   | Feb   | Mar   | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Annual (TAF) |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------------|
| <b>Baseline</b>        |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 69    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 71    | 75    | 155          |
| 10%                    | 233   | 0     | 0     | 21    | 155   | 139   | 0     | 0     | 0     | 81    | 866   | 503   | 326          |
| 25%                    | 483   | 48    | 19    | 148   | 411   | 318   | 0     | 0     | 0     | 1,281 | 1,324 | 753   | 453          |
| 50%                    | 858   | 270   | 276   | 602   | 984   | 779   | 0     | 45    | 186   | 1,387 | 1,460 | 1,342 | 605          |
| 75%                    | 1,411 | 536   | 811   | 1,194 | 1,553 | 1,381 | 521   | 288   | 602   | 1,807 | 1,885 | 1,820 | 713          |
| 90%                    | 1,974 | 890   | 1,395 | 1,629 | 2,393 | 1,872 | 1,162 | 604   | 1,278 | 2,756 | 2,569 | 2,019 | 849          |
| 100%                   | 3,433 | 1,985 | 2,071 | 3,616 | 4,200 | 4,200 | 2,410 | 3,502 | 3,509 | 3,399 | 3,189 | 3,200 | 1,645        |
| Mean                   | 1,003 | 379   | 501   | 745   | 1,120 | 968   | 331   | 260   | 437   | 1,466 | 1,612 | 1,281 | 610          |
| <b>2008-2009 BiOps</b> |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 67    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 72    | 0     | 176          |
| 10%                    | 232   | 0     | 0     | 25    | 87    | 131   | 0     | 0     | 0     | 81    | 868   | 418   | 325          |
| 25%                    | 489   | 48    | 9     | 148   | 393   | 318   | 0     | 0     | 0     | 1,285 | 1,327 | 722   | 453          |
| 50%                    | 855   | 273   | 291   | 574   | 881   | 779   | 0     | 47    | 171   | 1,392 | 1,467 | 1,338 | 616          |
| 75%                    | 1,284 | 573   | 852   | 1,138 | 1,520 | 1,330 | 526   | 288   | 594   | 1,835 | 1,885 | 1,814 | 715          |
| 90%                    | 1,968 | 874   | 1,507 | 1,664 | 2,396 | 1,851 | 1,162 | 604   | 1,256 | 2,984 | 3,006 | 1,959 | 871          |
| 100%                   | 2,341 | 3,286 | 3,223 | 3,616 | 4,200 | 4,200 | 2,410 | 3,502 | 3,509 | 3,399 | 3,121 | 3,200 | 1,645        |
| Mean                   | 956   | 424   | 575   | 742   | 1,104 | 955   | 333   | 260   | 400   | 1,502 | 1,639 | 1,258 | 613          |
| <b>2019 BiOps</b>      |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 69    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 71    | 75    | 176          |
| 10%                    | 233   | 0     | 0     | 21    | 155   | 139   | 0     | 0     | 0     | 81    | 831   | 503   | 350          |
| 25%                    | 471   | 48    | 19    | 148   | 393   | 318   | 0     | 0     | 0     | 1,271 | 1,320 | 753   | 453          |
| 50%                    | 857   | 277   | 279   | 602   | 984   | 779   | 0     | 48    | 176   | 1,374 | 1,440 | 1,349 | 606          |
| 75%                    | 1,349 | 543   | 811   | 1,194 | 1,553 | 1,407 | 526   | 288   | 602   | 1,844 | 1,880 | 1,831 | 712          |
| 90%                    | 1,968 | 959   | 1,395 | 1,629 | 2,383 | 1,836 | 1,162 | 604   | 1,039 | 2,984 | 2,496 | 2,036 | 845          |
| 100%                   | 3,433 | 3,287 | 2,071 | 3,616 | 4,200 | 4,200 | 2,410 | 3,502 | 3,509 | 3,399 | 3,189 | 3,200 | 1,645        |
| Mean                   | 983   | 427   | 502   | 742   | 1,125 | 964   | 336   | 258   | 417   | 1,488 | 1,561 | 1,294 | 610          |
| <b>VA</b>              |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 67    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 72    | 75    | 176          |
| 10%                    | 233   | 0     | 0     | 21    | 155   | 139   | 0     | 0     | 0     | 81    | 832   | 503   | 350          |
| 25%                    | 472   | 48    | 19    | 148   | 393   | 318   | 0     | 0     | 0     | 1,271 | 1,320 | 753   | 453          |
| 50%                    | 857   | 277   | 279   | 602   | 984   | 779   | 0     | 48    | 176   | 1,374 | 1,440 | 1,347 | 606          |
| 75%                    | 1,349 | 543   | 811   | 1,194 | 1,553 | 1,407 | 526   | 288   | 602   | 1,844 | 1,880 | 1,831 | 712          |
| 90%                    | 1,968 | 959   | 1,395 | 1,629 | 2,383 | 1,836 | 1,162 | 604   | 1,038 | 2,984 | 2,497 | 2,036 | 845          |
| 100%                   | 3,433 | 3,286 | 2,071 | 3,616 | 4,200 | 4,200 | 2,410 | 3,502 | 3,509 | 3,399 | 3,189 | 3,200 | 1,645        |
| Mean                   | 983   | 427   | 502   | 742   | 1,124 | 964   | 336   | 258   | 417   | 1,488 | 1,562 | 1,295 | 610          |
| <b>55 w/WSAs</b>       |       |       |       |       |       |       |       |       |       |       |       |       |              |
| 0%                     | 71    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 78    | 82    | 181          |
| 10%                    | 238   | 0     | 0     | 21    | 157   | 140   | 0     | 0     | 0     | 38    | 815   | 503   | 332          |
| 25%                    | 470   | 48    | 23    | 148   | 347   | 279   | 0     | 0     | 0     | 1,222 | 1,302 | 753   | 418          |
| 50%                    | 858   | 277   | 268   | 441   | 654   | 528   | 0     | 24    | 148   | 1,388 | 1,440 | 1,352 | 527          |
| 75%                    | 1,349 | 530   | 635   | 791   | 1,128 | 996   | 234   | 236   | 606   | 1,847 | 1,880 | 1,833 | 658          |
| 90%                    | 1,964 | 892   | 991   | 1,134 | 1,821 | 1,399 | 495   | 446   | 1,056 | 2,993 | 2,479 | 2,045 | 735          |
| 100%                   | 3,436 | 3,287 | 1,987 | 2,798 | 3,324 | 3,736 | 1,877 | 3,405 | 3,357 | 3,266 | 3,190 | 3,233 | 1,301        |
| Mean                   | 984   | 400   | 393   | 540   | 850   | 707   | 175   | 219   | 403   | 1,490 | 1,559 | 1,297 | 545          |

**Table H1a2-128. Water Year Average of Monthly Flows (cfs) — Spring Creek Conduit**

| Water Year Type        | Oct   | Nov | Dec | Jan   | Feb   | Mar   | Apr | May | Jun | Jul   | Aug   | Sep   |
|------------------------|-------|-----|-----|-------|-------|-------|-----|-----|-----|-------|-------|-------|
| <b>Baseline</b>        |       |     |     |       |       |       |     |     |     |       |       |       |
| C                      | 744   | 136 | 196 | 219   | 831   | 438   | 12  | 275 | 649 | 2,105 | 1,526 | 638   |
| D                      | 911   | 351 | 286 | 280   | 1,126 | 775   | 49  | 53  | 551 | 1,574 | 1,869 | 1,378 |
| BN                     | 1,089 | 250 | 212 | 725   | 709   | 848   | 277 | 61  | 415 | 1,117 | 1,534 | 1,192 |
| AN                     | 1,058 | 421 | 593 | 1,147 | 1,374 | 1,075 | 382 | 252 | 219 | 1,249 | 1,539 | 1,342 |
| W                      | 1,132 | 593 | 969 | 1,220 | 1,428 | 1,424 | 721 | 533 | 342 | 1,353 | 1,547 | 1,584 |
| All                    | 1,003 | 379 | 501 | 745   | 1,120 | 968   | 331 | 260 | 437 | 1,466 | 1,612 | 1,281 |
| <b>2008-2009 BiOps</b> |       |     |     |       |       |       |     |     |     |       |       |       |
| C                      | 560   | 347 | 196 | 208   | 705   | 378   | 7   | 272 | 510 | 2,259 | 1,585 | 695   |
| D                      | 841   | 414 | 403 | 291   | 1,180 | 800   | 49  | 50  | 545 | 1,635 | 1,971 | 1,247 |
| BN                     | 1,113 | 250 | 217 | 799   | 679   | 807   | 296 | 65  | 386 | 1,117 | 1,538 | 1,192 |
| AN                     | 1,016 | 473 | 984 | 1,006 | 1,374 | 1,069 | 378 | 252 | 156 | 1,249 | 1,498 | 1,301 |
| W                      | 1,128 | 562 | 967 | 1,216 | 1,423 | 1,424 | 721 | 535 | 342 | 1,347 | 1,547 | 1,591 |
| All                    | 956   | 424 | 575 | 742   | 1,104 | 955   | 333 | 260 | 400 | 1,502 | 1,639 | 1,258 |
| <b>2019 BiOps</b>      |       |     |     |       |       |       |     |     |     |       |       |       |
| C                      | 744   | 151 | 196 | 219   | 830   | 387   | 12  | 256 | 618 | 2,274 | 1,291 | 758   |
| D                      | 900   | 412 | 286 | 268   | 1,138 | 770   | 52  | 57  | 551 | 1,551 | 1,831 | 1,371 |
| BN                     | 1,017 | 406 | 212 | 721   | 706   | 848   | 277 | 61  | 415 | 1,116 | 1,533 | 1,166 |
| AN                     | 1,026 | 463 | 601 | 1,147 | 1,374 | 1,075 | 422 | 252 | 156 | 1,249 | 1,539 | 1,342 |
| W                      | 1,132 | 585 | 969 | 1,220 | 1,436 | 1,444 | 721 | 533 | 317 | 1,353 | 1,535 | 1,585 |
| All                    | 983   | 427 | 502 | 742   | 1,125 | 964   | 336 | 258 | 417 | 1,488 | 1,561 | 1,294 |
| <b>VA</b>              |       |     |     |       |       |       |     |     |     |       |       |       |
| C                      | 744   | 151 | 196 | 219   | 830   | 387   | 12  | 256 | 618 | 2,274 | 1,292 | 760   |
| D                      | 900   | 412 | 286 | 268   | 1,138 | 770   | 52  | 57  | 551 | 1,551 | 1,831 | 1,371 |
| BN                     | 1,016 | 406 | 212 | 721   | 706   | 848   | 277 | 61  | 416 | 1,117 | 1,534 | 1,166 |
| AN                     | 1,027 | 463 | 601 | 1,147 | 1,374 | 1,075 | 422 | 252 | 156 | 1,249 | 1,539 | 1,342 |
| W                      | 1,132 | 585 | 969 | 1,220 | 1,436 | 1,444 | 721 | 533 | 317 | 1,353 | 1,535 | 1,585 |
| All                    | 983   | 427 | 502 | 742   | 1,124 | 964   | 336 | 258 | 417 | 1,488 | 1,562 | 1,295 |
| <b>55 w/WSAs</b>       |       |     |     |       |       |       |     |     |     |       |       |       |
| C                      | 746   | 151 | 175 | 211   | 782   | 367   | 8   | 256 | 634 | 2,319 | 1,331 | 780   |
| D                      | 902   | 394 | 261 | 235   | 1,030 | 627   | 22  | 50  | 548 | 1,564 | 1,836 | 1,373 |
| BN                     | 1,017 | 387 | 174 | 608   | 523   | 720   | 201 | 53  | 405 | 1,106 | 1,534 | 1,166 |
| AN                     | 1,027 | 439 | 525 | 872   | 941   | 713   | 257 | 179 | 128 | 1,249 | 1,531 | 1,342 |
| W                      | 1,131 | 528 | 691 | 763   | 926   | 937   | 325 | 446 | 281 | 1,335 | 1,503 | 1,583 |
| All                    | 984   | 400 | 393 | 540   | 850   | 707   | 175 | 219 | 403 | 1,490 | 1,559 | 1,297 |

## H1a2.4.13 Robbs Peak Tunnel

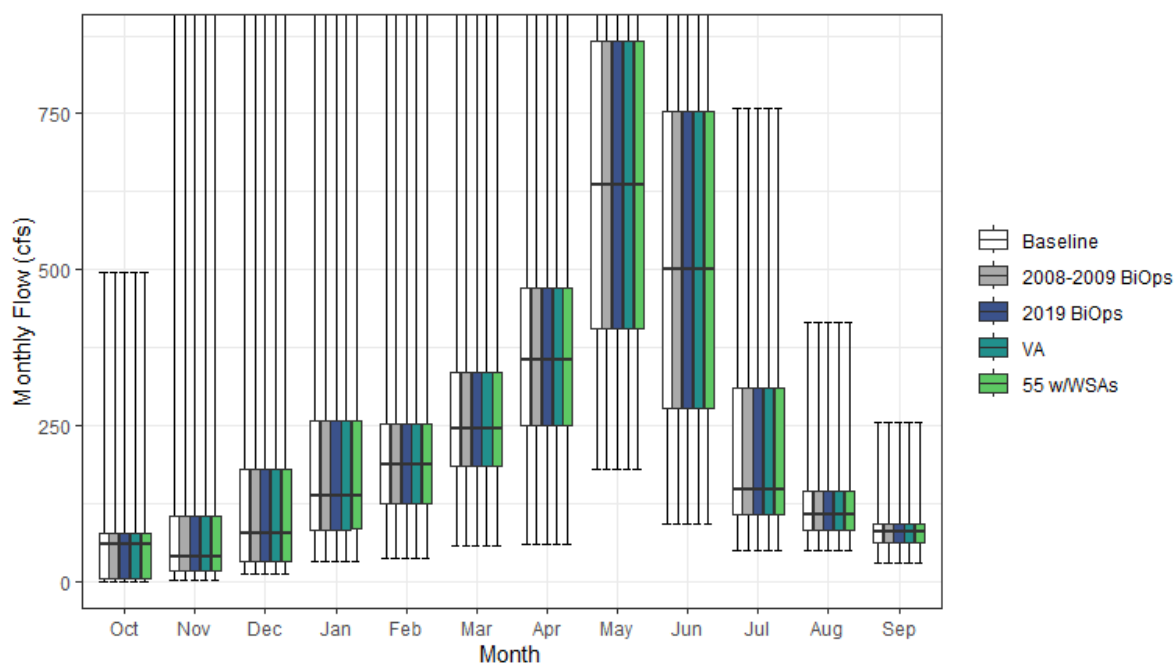


Figure H1a2-65. Robbs Peak Tunnel Monthly Boxplot (cfs)

**Table H1a2-129. Cumulative Distribution of Monthly Flow (cfs) — Robbs Peak Tunnel**

|                        | Oct | Nov | Dec   | Jan   | Feb   | Mar | Apr   | May   | Jun   | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-------|-------|-------|-----|-------|-------|-------|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |       |       |       |     |       |       |       |     |     |     |              |
| 0%                     | 0   | 2   | 12    | 31    | 36    | 58  | 59    | 180   | 92    | 50  | 48  | 29  | 50           |
| 10%                    | 0   | 11  | 21    | 60    | 82    | 124 | 182   | 273   | 180   | 81  | 72  | 54  | 83           |
| 25%                    | 5   | 17  | 33    | 83    | 124   | 185 | 250   | 406   | 278   | 107 | 81  | 63  | 116          |
| 50%                    | 61  | 40  | 76    | 138   | 187   | 244 | 355   | 637   | 500   | 148 | 107 | 79  | 170          |
| 75%                    | 77  | 105 | 181   | 257   | 253   | 335 | 470   | 866   | 753   | 311 | 146 | 92  | 237          |
| 90%                    | 117 | 224 | 541   | 375   | 353   | 467 | 640   | 1,020 | 988   | 407 | 168 | 108 | 279          |
| 100%                   | 496 | 968 | 1,020 | 1,020 | 1,020 | 956 | 1,020 | 1,020 | 1,020 | 758 | 416 | 256 | 422          |
| Mean                   | 65  | 95  | 170   | 192   | 219   | 276 | 382   | 645   | 533   | 220 | 119 | 83  | 181          |
| <b>2008-2009 BiOps</b> |     |     |       |       |       |     |       |       |       |     |     |     |              |
| 0%                     | 0   | 2   | 12    | 31    | 36    | 58  | 59    | 180   | 92    | 50  | 48  | 29  | 50           |
| 10%                    | 0   | 11  | 21    | 60    | 82    | 124 | 182   | 273   | 180   | 81  | 72  | 54  | 83           |
| 25%                    | 5   | 17  | 33    | 83    | 124   | 185 | 250   | 406   | 278   | 107 | 81  | 63  | 116          |
| 50%                    | 60  | 40  | 76    | 138   | 187   | 244 | 355   | 637   | 500   | 148 | 107 | 79  | 170          |
| 75%                    | 77  | 105 | 181   | 257   | 253   | 335 | 469   | 866   | 753   | 311 | 146 | 92  | 237          |
| 90%                    | 117 | 224 | 541   | 375   | 353   | 467 | 640   | 1,020 | 988   | 407 | 168 | 108 | 279          |
| 100%                   | 496 | 968 | 1,020 | 1,020 | 1,020 | 956 | 1,020 | 1,020 | 1,020 | 758 | 416 | 256 | 422          |
| Mean                   | 65  | 95  | 170   | 192   | 219   | 276 | 382   | 645   | 533   | 220 | 119 | 83  | 181          |
| <b>2019 BiOps</b>      |     |     |       |       |       |     |       |       |       |     |     |     |              |
| 0%                     | 0   | 2   | 12    | 31    | 36    | 58  | 59    | 180   | 92    | 50  | 48  | 29  | 50           |
| 10%                    | 0   | 11  | 21    | 60    | 82    | 124 | 182   | 273   | 180   | 81  | 72  | 54  | 83           |
| 25%                    | 5   | 17  | 33    | 83    | 124   | 185 | 250   | 406   | 278   | 107 | 81  | 63  | 116          |
| 50%                    | 61  | 40  | 76    | 138   | 187   | 244 | 355   | 637   | 500   | 148 | 107 | 79  | 170          |
| 75%                    | 77  | 105 | 181   | 257   | 253   | 335 | 469   | 866   | 753   | 311 | 146 | 92  | 237          |
| 90%                    | 117 | 224 | 541   | 375   | 353   | 467 | 640   | 1,020 | 988   | 407 | 168 | 108 | 279          |
| 100%                   | 496 | 968 | 1,020 | 1,020 | 1,020 | 956 | 1,020 | 1,020 | 1,020 | 758 | 416 | 256 | 422          |
| Mean                   | 65  | 95  | 170   | 192   | 219   | 276 | 382   | 645   | 533   | 220 | 119 | 83  | 181          |
| <b>VA</b>              |     |     |       |       |       |     |       |       |       |     |     |     |              |
| 0%                     | 0   | 2   | 12    | 31    | 36    | 58  | 59    | 180   | 92    | 50  | 48  | 29  | 50           |
| 10%                    | 0   | 11  | 21    | 60    | 82    | 124 | 182   | 273   | 180   | 81  | 72  | 54  | 83           |
| 25%                    | 5   | 17  | 33    | 83    | 124   | 185 | 250   | 406   | 278   | 107 | 81  | 63  | 116          |
| 50%                    | 60  | 40  | 76    | 138   | 187   | 244 | 355   | 637   | 500   | 148 | 107 | 79  | 170          |
| 75%                    | 77  | 105 | 181   | 257   | 253   | 335 | 469   | 866   | 753   | 311 | 146 | 92  | 237          |
| 90%                    | 117 | 224 | 541   | 375   | 353   | 467 | 640   | 1,020 | 988   | 407 | 168 | 108 | 279          |
| 100%                   | 496 | 968 | 1,020 | 1,020 | 1,020 | 956 | 1,020 | 1,020 | 1,020 | 758 | 416 | 256 | 422          |
| Mean                   | 65  | 95  | 170   | 192   | 219   | 276 | 382   | 645   | 533   | 220 | 119 | 83  | 181          |
| <b>55 w/WSAs</b>       |     |     |       |       |       |     |       |       |       |     |     |     |              |
| 0%                     | 0   | 2   | 12    | 31    | 36    | 58  | 59    | 179   | 91    | 50  | 48  | 29  | 51           |
| 10%                    | 0   | 11  | 21    | 60    | 82    | 124 | 182   | 273   | 180   | 81  | 72  | 54  | 83           |
| 25%                    | 5   | 17  | 33    | 83    | 124   | 185 | 250   | 406   | 278   | 107 | 81  | 63  | 116          |
| 50%                    | 60  | 40  | 76    | 138   | 186   | 244 | 355   | 637   | 500   | 148 | 107 | 79  | 170          |
| 75%                    | 77  | 105 | 181   | 257   | 253   | 335 | 469   | 866   | 752   | 311 | 146 | 92  | 237          |
| 90%                    | 117 | 224 | 541   | 375   | 353   | 467 | 640   | 1,020 | 988   | 407 | 168 | 108 | 279          |
| 100%                   | 496 | 968 | 1,020 | 1,020 | 1,020 | 956 | 1,020 | 1,020 | 1,020 | 758 | 416 | 256 | 422          |
| Mean                   | 65  | 95  | 170   | 192   | 219   | 276 | 382   | 645   | 532   | 220 | 119 | 82  | 181          |

**Table H1a2-130. Water Year Average of Monthly Flows (cfs) — Robbs Peak Tunnel**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 47  | 32  | 46  | 64  | 100 | 142 | 175 | 289 | 240 | 90  | 78  | 72  |
| D                      | 47  | 72  | 96  | 97  | 150 | 225 | 320 | 494 | 368 | 130 | 90  | 87  |
| BN                     | 59  | 65  | 78  | 132 | 176 | 259 | 427 | 653 | 512 | 180 | 108 | 77  |
| AN                     | 63  | 144 | 182 | 280 | 252 | 342 | 402 | 781 | 559 | 212 | 118 | 70  |
| W                      | 93  | 146 | 344 | 331 | 348 | 369 | 502 | 886 | 811 | 382 | 169 | 94  |
| All                    | 65  | 95  | 170 | 192 | 219 | 276 | 382 | 645 | 533 | 220 | 119 | 83  |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 47  | 32  | 46  | 64  | 100 | 142 | 175 | 289 | 240 | 90  | 78  | 72  |
| D                      | 47  | 72  | 96  | 97  | 150 | 225 | 320 | 494 | 368 | 130 | 90  | 87  |
| BN                     | 59  | 65  | 78  | 132 | 176 | 259 | 427 | 653 | 512 | 180 | 108 | 77  |
| AN                     | 63  | 144 | 182 | 280 | 252 | 342 | 402 | 781 | 559 | 212 | 118 | 70  |
| W                      | 93  | 146 | 344 | 331 | 348 | 369 | 502 | 886 | 811 | 382 | 169 | 94  |
| All                    | 65  | 95  | 170 | 192 | 219 | 276 | 382 | 645 | 533 | 220 | 119 | 83  |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 47  | 32  | 46  | 64  | 100 | 142 | 175 | 289 | 240 | 90  | 78  | 72  |
| D                      | 47  | 72  | 96  | 97  | 150 | 225 | 320 | 494 | 368 | 130 | 90  | 87  |
| BN                     | 59  | 65  | 78  | 132 | 176 | 259 | 427 | 653 | 512 | 180 | 108 | 77  |
| AN                     | 63  | 144 | 182 | 280 | 252 | 342 | 402 | 781 | 559 | 212 | 118 | 70  |
| W                      | 93  | 146 | 344 | 331 | 348 | 369 | 502 | 886 | 811 | 382 | 169 | 94  |
| All                    | 65  | 95  | 170 | 192 | 219 | 276 | 382 | 645 | 533 | 220 | 119 | 83  |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 47  | 32  | 46  | 64  | 100 | 142 | 175 | 289 | 240 | 90  | 78  | 72  |
| D                      | 47  | 72  | 96  | 97  | 150 | 225 | 320 | 494 | 368 | 130 | 90  | 87  |
| BN                     | 59  | 65  | 78  | 132 | 176 | 259 | 427 | 653 | 512 | 180 | 108 | 77  |
| AN                     | 63  | 144 | 182 | 280 | 252 | 342 | 402 | 781 | 559 | 212 | 118 | 70  |
| W                      | 93  | 146 | 344 | 331 | 348 | 369 | 502 | 886 | 811 | 382 | 169 | 94  |
| All                    | 65  | 95  | 170 | 192 | 219 | 276 | 382 | 645 | 533 | 220 | 119 | 83  |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 47  | 32  | 46  | 64  | 100 | 142 | 175 | 289 | 240 | 90  | 77  | 72  |
| D                      | 47  | 72  | 96  | 97  | 150 | 225 | 320 | 494 | 368 | 130 | 90  | 87  |
| BN                     | 59  | 65  | 78  | 132 | 176 | 259 | 427 | 653 | 512 | 180 | 108 | 77  |
| AN                     | 63  | 144 | 182 | 280 | 252 | 342 | 402 | 781 | 559 | 212 | 118 | 70  |
| W                      | 93  | 146 | 344 | 331 | 348 | 369 | 502 | 886 | 811 | 382 | 169 | 94  |
| All                    | 65  | 95  | 170 | 192 | 219 | 276 | 382 | 645 | 532 | 220 | 119 | 82  |

## H1a2.4.14 Lake Valley Canal

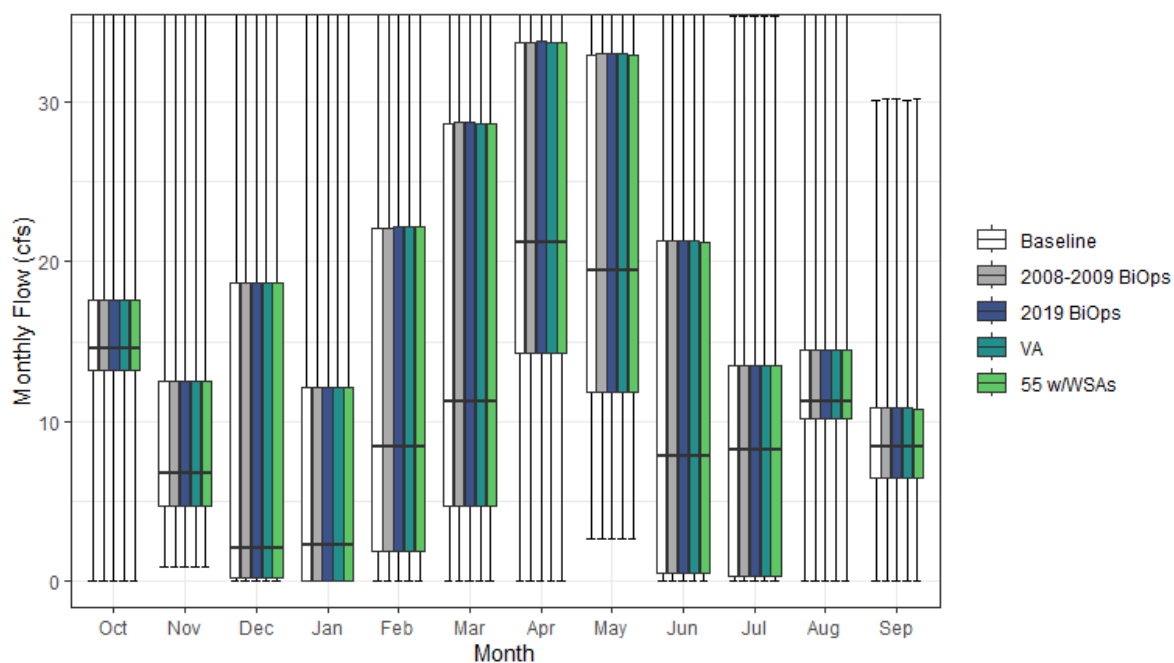


Figure H1a2-66. Lake Valley Canal Monthly Boxplot (cfs)

**Table H1a2-131. Cumulative Distribution of Monthly Flow (cfs) — Lake Valley Canal**

|                        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Annual (TAF) |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 13  | 4   | 0   | 0   | 0   | 1   | 6   | 7   | 0   | 0   | 2   | 6   | 6            |
| 25%                    | 13  | 5   | 0   | 0   | 2   | 5   | 14  | 12  | 0   | 0   | 10  | 6   | 7            |
| 50%                    | 15  | 7   | 2   | 2   | 8   | 11  | 21  | 20  | 8   | 8   | 11  | 8   | 9            |
| 75%                    | 18  | 12  | 19  | 12  | 22  | 29  | 34  | 33  | 21  | 13  | 14  | 11  | 12           |
| 90%                    | 21  | 21  | 35  | 35  | 36  | 42  | 42  | 42  | 40  | 21  | 17  | 14  | 15           |
| 100%                   | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 35  | 42  | 30  | 22           |
| Mean                   | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   | 10           |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 13  | 4   | 0   | 0   | 0   | 1   | 6   | 7   | 0   | 0   | 2   | 6   | 6            |
| 25%                    | 13  | 5   | 0   | 0   | 2   | 5   | 14  | 12  | 0   | 0   | 10  | 6   | 7            |
| 50%                    | 15  | 7   | 2   | 2   | 8   | 11  | 21  | 20  | 8   | 8   | 11  | 8   | 9            |
| 75%                    | 18  | 12  | 19  | 12  | 22  | 29  | 34  | 33  | 21  | 13  | 14  | 11  | 12           |
| 90%                    | 21  | 21  | 35  | 35  | 36  | 42  | 42  | 42  | 40  | 21  | 17  | 14  | 15           |
| 100%                   | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 35  | 42  | 30  | 22           |
| Mean                   | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   | 10           |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 13  | 4   | 0   | 0   | 0   | 1   | 6   | 7   | 0   | 0   | 2   | 6   | 6            |
| 25%                    | 13  | 5   | 0   | 0   | 2   | 5   | 14  | 12  | 0   | 0   | 10  | 6   | 7            |
| 50%                    | 15  | 7   | 2   | 2   | 8   | 11  | 21  | 20  | 8   | 8   | 11  | 8   | 9            |
| 75%                    | 18  | 12  | 19  | 12  | 22  | 29  | 34  | 33  | 21  | 13  | 14  | 11  | 12           |
| 90%                    | 21  | 21  | 35  | 35  | 36  | 42  | 42  | 42  | 40  | 21  | 17  | 14  | 15           |
| 100%                   | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 35  | 42  | 30  | 22           |
| Mean                   | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   | 10           |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 13  | 4   | 0   | 0   | 0   | 1   | 6   | 7   | 0   | 0   | 2   | 6   | 6            |
| 25%                    | 13  | 5   | 0   | 0   | 2   | 5   | 14  | 12  | 0   | 0   | 10  | 6   | 7            |
| 50%                    | 15  | 7   | 2   | 2   | 8   | 11  | 21  | 20  | 8   | 8   | 11  | 8   | 9            |
| 75%                    | 18  | 12  | 19  | 12  | 22  | 29  | 34  | 33  | 21  | 13  | 14  | 11  | 12           |
| 90%                    | 21  | 21  | 35  | 35  | 36  | 42  | 42  | 42  | 40  | 21  | 17  | 14  | 15           |
| 100%                   | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 35  | 42  | 30  | 22           |
| Mean                   | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   | 10           |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |              |
| 0%                     | 0   | 1   | 0   | 0   | 0   | 0   | 0   | 3   | 0   | 0   | 0   | 0   | 2            |
| 10%                    | 13  | 4   | 0   | 0   | 0   | 1   | 6   | 7   | 0   | 0   | 2   | 6   | 6            |
| 25%                    | 13  | 5   | 0   | 0   | 2   | 5   | 14  | 12  | 0   | 0   | 10  | 6   | 7            |
| 50%                    | 15  | 7   | 2   | 2   | 8   | 11  | 21  | 20  | 8   | 8   | 11  | 8   | 9            |
| 75%                    | 18  | 12  | 19  | 12  | 22  | 29  | 34  | 33  | 21  | 13  | 14  | 11  | 12           |
| 90%                    | 21  | 21  | 35  | 35  | 36  | 42  | 42  | 42  | 40  | 21  | 17  | 14  | 15           |
| 100%                   | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 42  | 35  | 42  | 30  | 22           |
| Mean                   | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   | 10           |

**Table H1a2-132. Water Year Average of Monthly Flows (cfs) — Lake Valley Canal**

| Water Year Type        | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| <b>Baseline</b>        |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 7   | 4   | 2   | 5   | 14  | 19  | 16  | 6   | 4   | 7   | 8   |
| D                      | 17  | 10  | 6   | 2   | 8   | 15  | 26  | 22  | 6   | 7   | 11  | 8   |
| BN                     | 15  | 8   | 2   | 5   | 12  | 17  | 26  | 27  | 15  | 10  | 12  | 9   |
| AN                     | 15  | 12  | 14  | 21  | 16  | 23  | 29  | 25  | 11  | 10  | 15  | 10  |
| W                      | 18  | 14  | 20  | 17  | 19  | 16  | 18  | 22  | 22  | 12  | 11  | 10  |
| All                    | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   |
| <b>2008-2009 BiOps</b> |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 7   | 4   | 2   | 5   | 14  | 19  | 16  | 6   | 4   | 7   | 8   |
| D                      | 17  | 10  | 6   | 2   | 8   | 15  | 26  | 22  | 6   | 7   | 11  | 8   |
| BN                     | 15  | 8   | 2   | 5   | 12  | 17  | 26  | 27  | 15  | 10  | 12  | 9   |
| AN                     | 15  | 12  | 14  | 21  | 16  | 23  | 29  | 25  | 11  | 10  | 15  | 10  |
| W                      | 18  | 14  | 20  | 17  | 19  | 16  | 18  | 22  | 22  | 12  | 11  | 10  |
| All                    | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   |
| <b>2019 BiOps</b>      |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 7   | 3   | 2   | 5   | 14  | 19  | 16  | 6   | 4   | 7   | 8   |
| D                      | 17  | 10  | 6   | 2   | 8   | 15  | 26  | 22  | 6   | 7   | 11  | 8   |
| BN                     | 15  | 8   | 2   | 5   | 12  | 17  | 26  | 27  | 15  | 10  | 12  | 9   |
| AN                     | 15  | 12  | 14  | 21  | 16  | 23  | 29  | 25  | 11  | 10  | 15  | 10  |
| W                      | 18  | 14  | 20  | 17  | 19  | 16  | 18  | 22  | 22  | 12  | 11  | 10  |
| All                    | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   |
| <b>VA</b>              |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 7   | 4   | 2   | 5   | 14  | 19  | 16  | 6   | 4   | 7   | 8   |
| D                      | 17  | 10  | 6   | 2   | 8   | 15  | 26  | 22  | 6   | 7   | 11  | 8   |
| BN                     | 15  | 8   | 2   | 5   | 12  | 17  | 26  | 27  | 15  | 10  | 12  | 9   |
| AN                     | 15  | 12  | 14  | 21  | 16  | 23  | 29  | 25  | 11  | 10  | 15  | 10  |
| W                      | 18  | 14  | 20  | 17  | 19  | 16  | 18  | 22  | 22  | 12  | 11  | 10  |
| All                    | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   |
| <b>55 w/WSAs</b>       |     |     |     |     |     |     |     |     |     |     |     |     |
| C                      | 15  | 7   | 4   | 2   | 5   | 14  | 20  | 16  | 6   | 4   | 7   | 8   |
| D                      | 17  | 10  | 6   | 2   | 8   | 15  | 26  | 22  | 6   | 7   | 11  | 8   |
| BN                     | 15  | 8   | 2   | 5   | 12  | 17  | 26  | 27  | 15  | 10  | 12  | 9   |
| AN                     | 15  | 12  | 14  | 21  | 16  | 23  | 29  | 25  | 11  | 10  | 15  | 10  |
| W                      | 18  | 14  | 20  | 17  | 19  | 16  | 18  | 22  | 22  | 12  | 11  | 10  |
| All                    | 16  | 11  | 10  | 9   | 13  | 17  | 23  | 23  | 13  | 9   | 11  | 9   |

## H1a2.5 Reservoir Storage

SacWAM dynamically simulates storage regulation in most major reservoirs in the Sacramento Valley and Delta Eastside Tributaries. Storage in smaller reservoirs, including regulating reservoirs that act as forebays and afterbays, are typically not simulated, although they may be represented in the model schematic. Storage in these smaller reservoirs is usually kept constant. For some mid-size reservoirs, storage is constrained to follow historical average monthly values. Reservoirs represented in the model but having storage that does not change in any of the scenarios are considered non-reoperated reservoirs. Results for non-reoperated reservoirs with constant end-of-April and end-of-September storage are listed in Table H1a2-133. Results for these reservoirs are not presented further. Farmington Reservoir and Schaads Reservoir do not store water in SacWAM as currently configured.

Reservoirs that exhibit interannual variability in end-of-April or end-of-September storage but show less than or equal to one percent change from baseline storage during April or September are listed in Table H1a2-134. Reservoirs that exhibit greater than one percent change from baseline storage during April or September are listed in Table H1a2-135.

Results for other reservoirs listed in Tables H1a2-134 and H1a2-135 are presented as end-of-April storage and elevation and end-of-September storage and elevation. SacWAM contains storage-elevation relationships for most of the reoperated reservoirs, allowing average annual fluctuation in reservoir elevation to be calculated as the average of the annual maximum minus minimum water surface elevations (Table H1a2-136).

**Table H1a2-133. Non-reoperated Reservoirs with Constant End-of-April and End-of-September Storage (TAF)**

| Reservoir                 | Watershed         | End-of-April | End-of-September |
|---------------------------|-------------------|--------------|------------------|
| Belden Reservoir          | Feather           | 2.4          | 2.4              |
| Buck Island               | American          | 1.1          | 1.1              |
| Camino Reservoir          | American          | 0.8          | 0.8              |
| Chili Bar Reservoir       | American          | 3            | 3                |
| Clifton Court Forebay     | Old River         | 31.3         | 31.3             |
| Cresta Reservoir          | Feather           | 4.1          | 4.1              |
| EBMUD Terminal Reservoirs | Offstream Storage | 140          | 118              |
| Englebright Reservoir     | Yuba              | 66.1         | 65.3             |
| Farmington Reservoir      | Littlejohns       | 0            | 0                |
| Gerle Creek Reservoir     | American          | 1.3          | 1.3              |
| Grizzly Reservoir         | Feather           | 1.1          | 1.1              |
| Junction Reservoir        | American          | 3.2          | 3.2              |
| Keswick Reservoir         | Sacramento        | 22           | 22               |
| Lake Combie               | Bear              | 5.2          | 3.3              |
| Lake Natoma               | American          | 8            | 8                |
| Lake Tableaud             | Mokelumne         | 1.3          | 1.3              |
| Lewiston Lake             | Trinity           | 14.7         | 14.7             |
| Lower Bucks Lake          | Feather           | 5.8          | 5.8              |
| PGE Old Reservoirs        | Mokelumne         | 7.8          | 7.2              |
| Poe Reservoir             | Feather           | 1.2          | 1.2              |

| Reservoir            | Watershed | End-of-April | End-of-September |
|----------------------|-----------|--------------|------------------|
| Rock Creek Reservoir | Feather   | 4.4          | 4.4              |
| Rubicon              | American  | 1.4          | 1.4              |
| Schaads Reservoir    | Mokelumne | 0            | 0                |
| Slab Creek Reservoir | American  | 16.6         | 16.6             |
| Thermalito Afterbay  | Feather   | 38           | 38               |
| Upper Bear           | Mokelumne | 7            | 1.6              |

**Table H1a2-134. Reservoirs with Interannual Variability in End-of-April or End-of-September Storage but with no Change in Storage Greater than One Percent Relative to Baseline in April or September.**

| Reservoir                     | Watershed |
|-------------------------------|-----------|
| Antelope Reservoir            | Feather   |
| Bucks Lake                    | Feather   |
| Butt Valley                   | Feather   |
| Caples Lake                   | American  |
| Frenchman Lake                | Feather   |
| Ice House                     | American  |
| Jenkinson Lake                | Cosumnes  |
| Lake Almanor                  | Feather   |
| Lake Aloha                    | American  |
| Lake Amador                   | Mokelumne |
| Lake Davis                    | Feather   |
| Lake Valley                   | American  |
| Little Grass Valley Reservoir | Feather   |
| Loon Lake                     | American  |
| Merle Collins Reservoir       | Yuba      |
| Mountain Meadows Reservoir    | Feather   |
| Philbrook Round Valley        | Feather   |
| Silver Lake                   | American  |
| Sly Creek Reservoir           | Feather   |
| Stumpy Meadows                | American  |
| Union Valley Reservoir        | American  |

**Table H1a2-135. Reservoirs with a Change in Storage Relative to Baseline Greater than One Percent in April or September**

| Reservoir                 | Watershed                |
|---------------------------|--------------------------|
| Black Butte Reservoir     | Stony                    |
| Bowman Lake               | Yuba                     |
| Camanche Reservoir        | Mokelumne                |
| Camp Far West             | Bear                     |
| Clear Lake                | Cache                    |
| CVP San Luis Reservoir    | South of Delta Offstream |
| East Park Reservoir       | Stony                    |
| Folsom Lake               | American                 |
| French Lake               | Yuba                     |
| French Meadows            | American                 |
| Hell Hole                 | American                 |
| Indian Valley Reservoir   | Cache                    |
| Jackson Meadows Reservoir | Yuba                     |
| Lake Berryessa            | Putah                    |
| Lake Fordyce              | Yuba                     |
| Lake Spaulding            | Yuba                     |

| Reservoir                  | Watershed                |
|----------------------------|--------------------------|
| Los Vaqueros Reservoir     | Kellogg                  |
| Lower Bear                 | Mokelumne                |
| New Bullards Bar Reservoir | Yuba                     |
| New Hogan Reservoir        | Calaveras                |
| Oroville Reservoir         | Feather                  |
| Pardee Reservoir           | Mokelumne                |
| Rollins Reservoir          | Bear                     |
| Salt Springs               | Mokelumne                |
| Scotts Flat Reservoir      | Yuba                     |
| Shasta Lake                | Sacramento               |
| Stony Gorge Reservoir      | Stony                    |
| SWP San Luis Reservoir     | South of Delta Offstream |
| Total San Luis Reservoir   | South of Delta Offstream |
| Trinity Reservoir          | Trinity                  |
| Whiskeytown Reservoir      | Clear                    |

**Table H1a2-136. Average Annual Change in Elevation for Reservoirs with Elevational Changes  
Calculated by SacWAM (ft)**

| Reservoir                     | Watershed        | Baseline | Flow Scenario Minus Baseline |               |              |       |
|-------------------------------|------------------|----------|------------------------------|---------------|--------------|-------|
|                               |                  |          | 2008-2009<br>BiOps           | 2019<br>BiOps | 55<br>w/WSAs | VA    |
| Black Butte Reservoir         | Stony            | 32.1     | 0                            | 0             | -4.8         | 0     |
| Bowman Lake                   | Yuba             | 54.6     | -0.1                         | 0             | -0.1         | 0     |
| Camanche Reservoir            | Mokelumne        | 23       | 0                            | 0             | -6.1         | 0     |
| Camp Far West                 | Bear             | 39.9     | 0                            | 0             | -0.6         | 0     |
| Clear Lake                    | Cache            | 5.8      | 0                            | 0             | -0.3         | 0     |
| East Park Reservoir           | Stony            | 10.7     | 0                            | 0             | 7.4          | 0     |
| Folsom Lake                   | American         | 48.2     | 4.1                          | -1.2          | -8.4         | -2.1  |
| French Meadows                | American         | 65.7     | 0                            | 0             | -0.1         | 0     |
| Hell Hole                     | American         | 102.7    | 0                            | 0             | -0.2         | 1     |
| Indian Valley Reservoir       | Cache            | 50       | 0                            | 0             | 3.7          | 0     |
| Jackson Meadows<br>Reservoir  | Yuba             | 38.2     | 0                            | 0             | -0.6         | 0     |
| Lake Berryessa                | Putah            | 20.4     | 0                            | 0             | -1.2         | 0.3   |
| Lake Fordyce                  | Yuba             | 67.8     | 0                            | 0             | -3           | 0     |
| Lake Spaulding                | Yuba             | 107.6    | 0                            | 0             | -0.8         | 0     |
| Los Vaqueros Reservoir        | Kellogg          | 14.1     | 0                            | 0             | 1.2          | 0     |
| Lower Bear                    | Mokelumne        | 87.5     | 0                            | 0             | 0            | 0     |
| New Bullards Bar<br>Reservoir | Yuba             | 91.7     | 0                            | 0             | -4.1         | 0.8   |
| New Hogan Reservoir           | Calaveras        | 36.5     | 0                            | 0             | -11.1        | 0     |
| Oroville Reservoir            | Feather          | 152      | -0.1                         | -2.8          | -30.4        | -3.9  |
| Pardee Reservoir              | Mokelumne        | 18.9     | 0                            | 0             | 1.6          | 0     |
| Rollins Reservoir             | Bear             | 11.7     | 0                            | 0             | 0.1          | 0     |
| Salt Springs                  | Mokelumne        | 184.8    | 0                            | 0             | -1.8         | 0     |
| Scotts Flat Reservoir         | Yuba             | 28.5     | 0                            | 0             | 0.1          | 0     |
| Shasta Lake                   | Sacramento       | 71.1     | 1.1                          | 1.5           | -5.3         | 1.4   |
| Stony Gorge Reservoir         | Stony            | 11.8     | 0                            | 0             | 9.9          | 0     |
| San Luis Reservoir Total      | SOD<br>Offstream | 125.1    | 2.5                          | -9.7          | -0.8         | -13.2 |
| Trinity Reservoir             | Trinity          | 66.5     | 0.2                          | -0.8          | -0.8         | -0.8  |
| Whiskeytown Reservoir         | Clear            | 10.2     | 0                            | 0             | 0            | 0     |

## H1a2.5.1 Antelope Reservoir (Feather River Watershed)

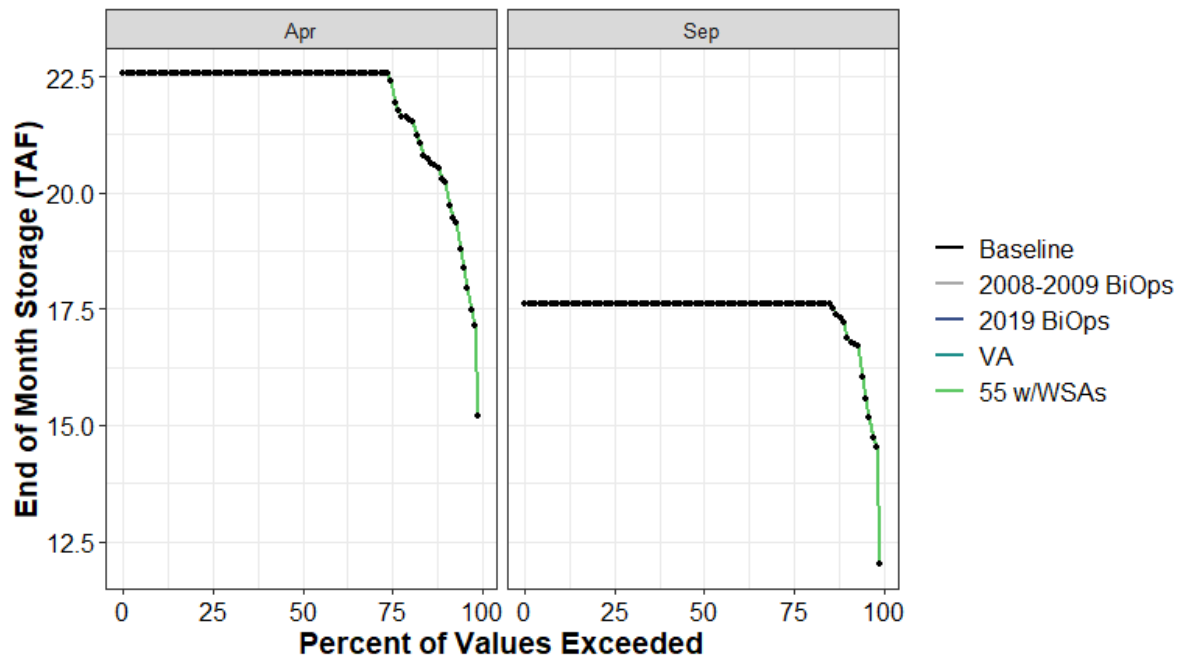


Figure H1a2-67. Antelope Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

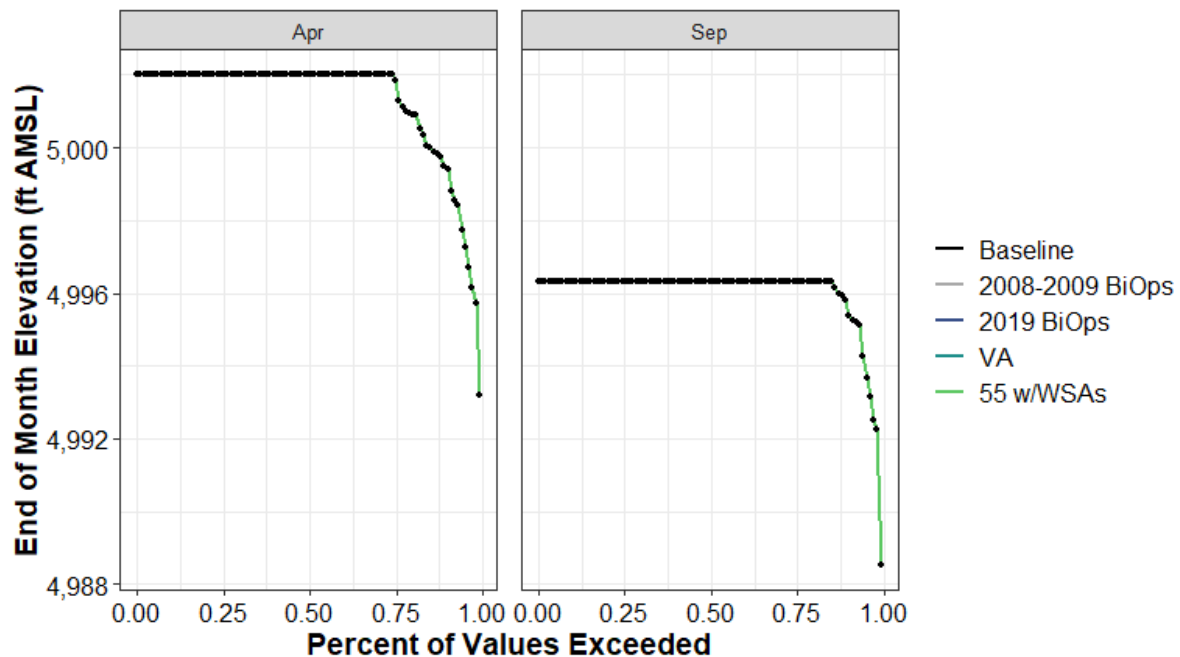


Figure H1a2-68. Antelope Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-137. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Antelope Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 12       | 0               | 0          | 0  | 0         |
| 10%  | 17       | 0               | 0          | 0  | 0         |
| 25%  | 18       | 0               | 0          | 0  | 0         |
| 50%  | 18       | 0               | 0          | 0  | 0         |
| 75%  | 18       | 0               | 0          | 0  | 0         |
| 90%  | 18       | 0               | 0          | 0  | 0         |
| 100% | 18       | 0               | 0          | 0  | 0         |
| Mean | 17       | 0               | 0          | 0  | 0         |

**Table H1a2-138. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Antelope Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,989    | 0               | 0          | 0  | 0         |
| 10%  | 4,996    | 0               | 0          | 0  | 0         |
| 25%  | 4,996    | 0               | 0          | 0  | 0         |
| 50%  | 4,996    | 0               | 0          | 0  | 0         |
| 75%  | 4,996    | 0               | 0          | 0  | 0         |
| 90%  | 4,996    | 0               | 0          | 0  | 0         |
| 100% | 4,996    | 0               | 0          | 0  | 0         |
| Mean | 4,996    | 0               | 0          | 0  | 0         |

**Table H1a2-139. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Antelope Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 15       | 0               | 0          | 0  | 0         |
| 10%  | 20       | 0               | 0          | 0  | 0         |
| 25%  | 22       | 0               | 0          | 0  | 0         |
| 50%  | 23       | 0               | 0          | 0  | 0         |
| 75%  | 23       | 0               | 0          | 0  | 0         |
| 90%  | 23       | 0               | 0          | 0  | 0         |
| 100% | 23       | 0               | 0          | 0  | 0         |
| Mean | 22       | 0               | 0          | 0  | 0         |

**Table H1a2-140. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Antelope Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,993    | 0               | 0          | 0  | 0         |
| 10%  | 4,999    | 0               | 0          | 0  | 0         |
| 25%  | 5,002    | 0               | 0          | 0  | 0         |
| 50%  | 5,002    | 0               | 0          | 0  | 0         |
| 75%  | 5,002    | 0               | 0          | 0  | 0         |
| 90%  | 5,002    | 0               | 0          | 0  | 0         |
| 100% | 5,002    | 0               | 0          | 0  | 0         |
| Mean | 5,001    | 0               | 0          | 0  | 0         |

## H1a2.5.2 Black Butte Reservoir (Stony Creek Watershed)

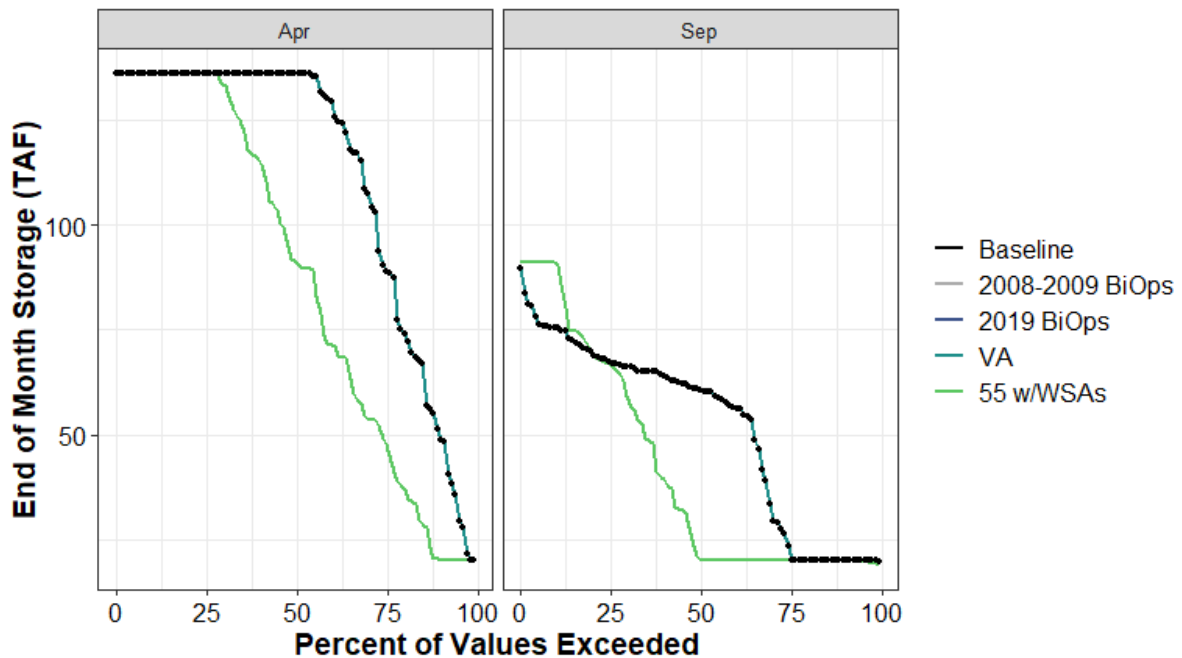


Figure H1a2-69. Black Butte Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

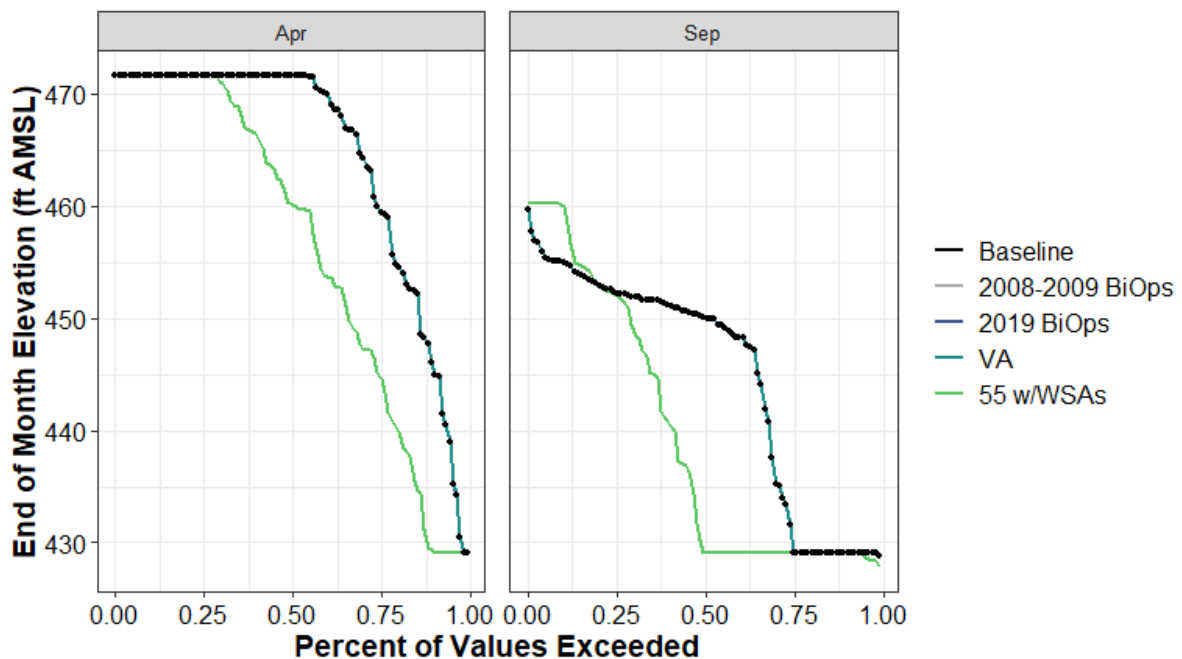


Figure H1a2-70. Black Butte Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-141. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Black Butte Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 20       | 0               | 0          | 0  | -1        |
| 10%  | 20       | 0               | 0          | 0  | 0         |
| 25%  | 22       | 0               | 0          | 0  | -2        |
| 50%  | 61       | 0               | 0          | 0  | -41       |
| 75%  | 67       | 0               | 0          | 0  | -1        |
| 90%  | 75       | 0               | 0          | 0  | 15        |
| 100% | 90       | 0               | 0          | 0  | 1         |
| Mean | 52       | 0               | 0          | 0  | -10       |

**Table H1a2-142. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Black Butte Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 429      | 0               | 0          | 0  | -1        |
| 10%  | 429      | 0               | 0          | 0  | 0         |
| 25%  | 430      | 0               | 0          | 0  | -1        |
| 50%  | 450      | 0               | 0          | 0  | -21       |
| 75%  | 452      | 0               | 0          | 0  | 0         |
| 90%  | 455      | 0               | 0          | 0  | 5         |
| 100% | 460      | 0               | 0          | 0  | 0         |
| Mean | 445      | 0               | 0          | 0  | -5        |

**Table H1a2-143. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Black Butte Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 20       | 0               | 0          | 0  | 0         |
| 10%  | 51       | 0               | 0          | 0  | -30       |
| 25%  | 90       | 0               | 0          | 0  | -41       |
| 50%  | 136      | 0               | 0          | 0  | -45       |
| 75%  | 136      | 0               | 0          | 0  | 0         |
| 90%  | 136      | 0               | 0          | 0  | 0         |
| 100% | 136      | 0               | 0          | 0  | 0         |
| Mean | 112      | 0               | 0          | 0  | -24       |

**Table H1a2-144. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Black Butte Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 429      | 0               | 0          | 0  | 0         |
| 10%  | 446      | 0               | 0          | 0  | -17       |
| 25%  | 460      | 0               | 0          | 0  | -15       |
| 50%  | 472      | 0               | 0          | 0  | -11       |
| 75%  | 472      | 0               | 0          | 0  | 0         |
| 90%  | 472      | 0               | 0          | 0  | 0         |
| 100% | 472      | 0               | 0          | 0  | 0         |
| Mean | 464      | 0               | 0          | 0  | -8        |

### H1a2.5.3 Bowman Lake (Yuba River Watershed)

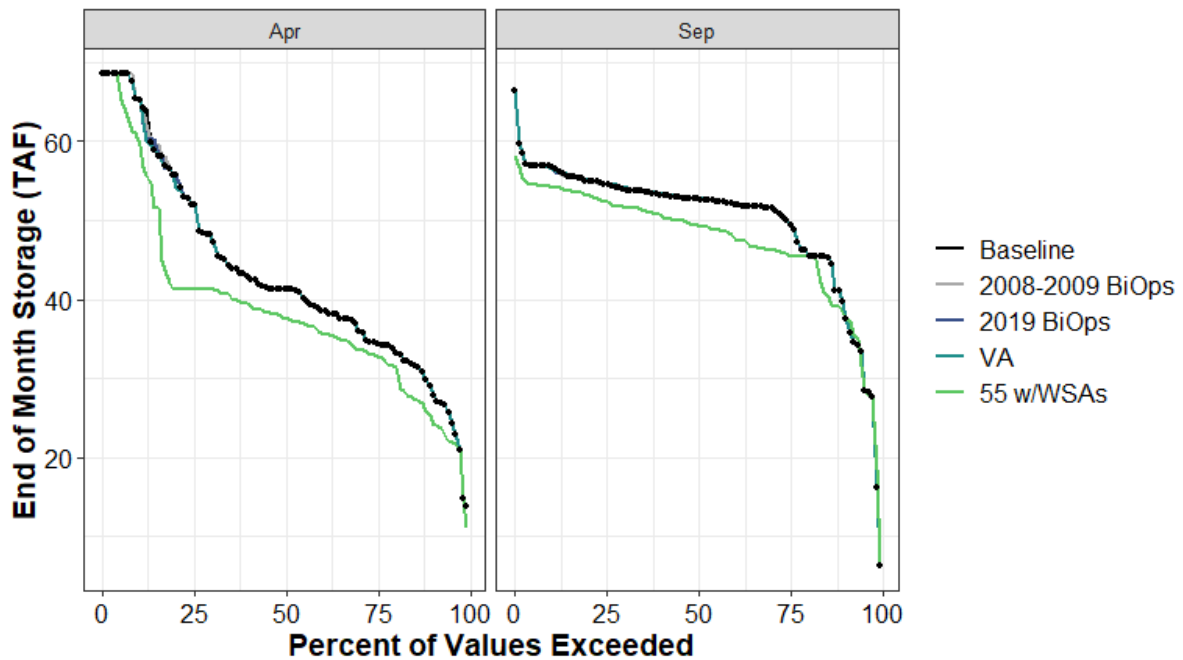


Figure H1a2-71. Bowman Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

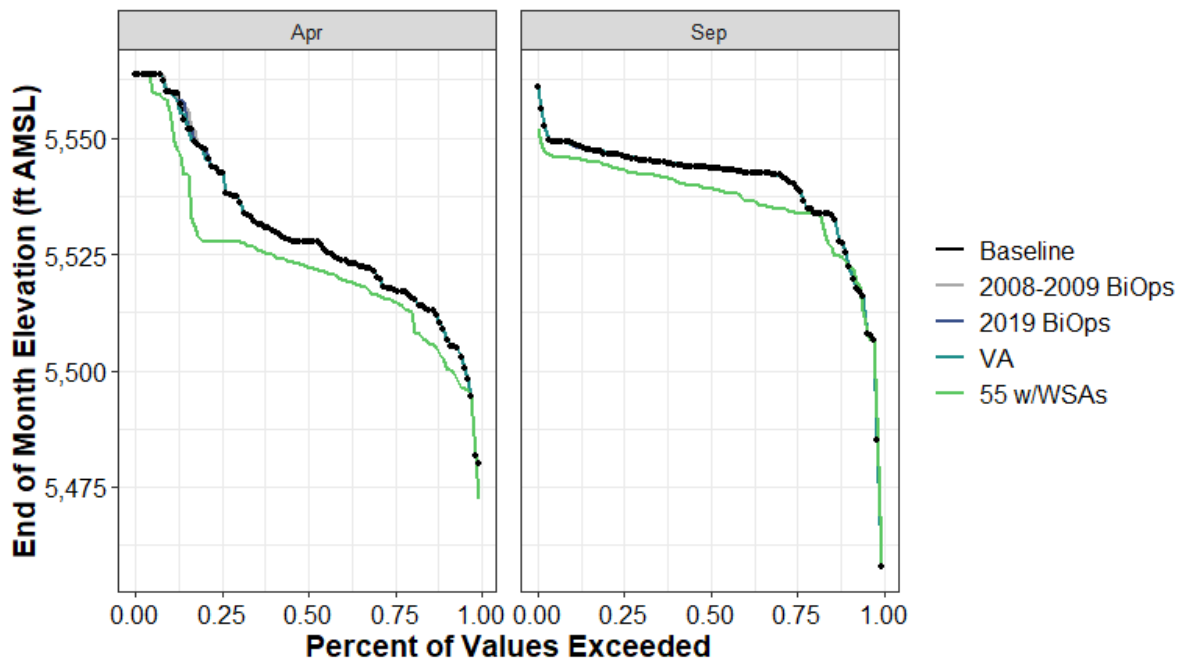


Figure H1a2-72. Bowman Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-145. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Bowman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6        | 0               | 0          | 0  | 0         |
| 10%  | 39       | 0               | 0          | 0  | -1        |
| 25%  | 50       | 0               | 0          | 0  | -4        |
| 50%  | 53       | 0               | 0          | 0  | -3        |
| 75%  | 54       | 0               | 0          | 0  | -2        |
| 90%  | 57       | 0               | 0          | 0  | -3        |
| 100% | 66       | 0               | 0          | 0  | -8        |
| Mean | 50       | 0               | 0          | 0  | -3        |

**Table H1a2-146. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Bowman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,458    | 0               | 0          | 0  | 0         |
| 10%  | 5,525    | 0               | 0          | 0  | -2        |
| 25%  | 5,540    | 0               | 0          | 0  | -6        |
| 50%  | 5,544    | 0               | 0          | 0  | -4        |
| 75%  | 5,546    | 0               | 0          | 0  | -3        |
| 90%  | 5,549    | 0               | 0          | 0  | -3        |
| 100% | 5,561    | 0               | 0          | 0  | -9        |
| Mean | 5,539    | 0               | 0          | 0  | -4        |

**Table H1a2-147. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Bowman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 14       | 0               | 0          | 0  | -3        |
| 10%  | 29       | 0               | 0          | 0  | -4        |
| 25%  | 34       | 0               | 0          | 0  | -2        |
| 50%  | 41       | 0               | 0          | 0  | -4        |
| 75%  | 52       | 0               | 0          | 0  | -11       |
| 90%  | 65       | 0               | 0          | 0  | -5        |
| 100% | 69       | 0               | 0          | 0  | 0         |
| Mean | 43       | 0               | 0          | 0  | -4        |

**Table H1a2-148. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Bowman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,480    | 0               | 0          | 0  | -8        |
| 10%  | 5,509    | 0               | 0          | 0  | -7        |
| 25%  | 5,517    | 0               | 0          | 0  | -2        |
| 50%  | 5,528    | 0               | 0          | 0  | -5        |
| 75%  | 5,543    | 0               | 0          | 0  | -15       |
| 90%  | 5,560    | 0               | 0          | 0  | -4        |
| 100% | 5,564    | 0               | 0          | 0  | 0         |
| Mean | 5,530    | 0               | 0          | 0  | -6        |

## H1a2.5.4 Bucks Lake (Feather River Watershed)

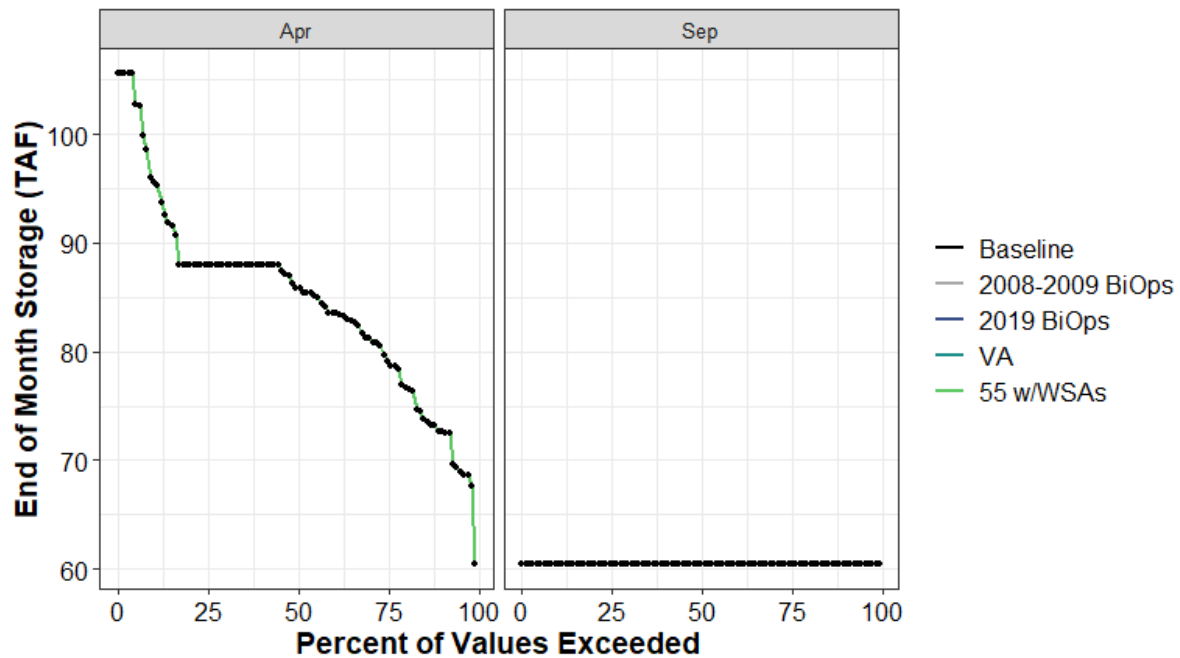


Figure H1a2-73. Bucks Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

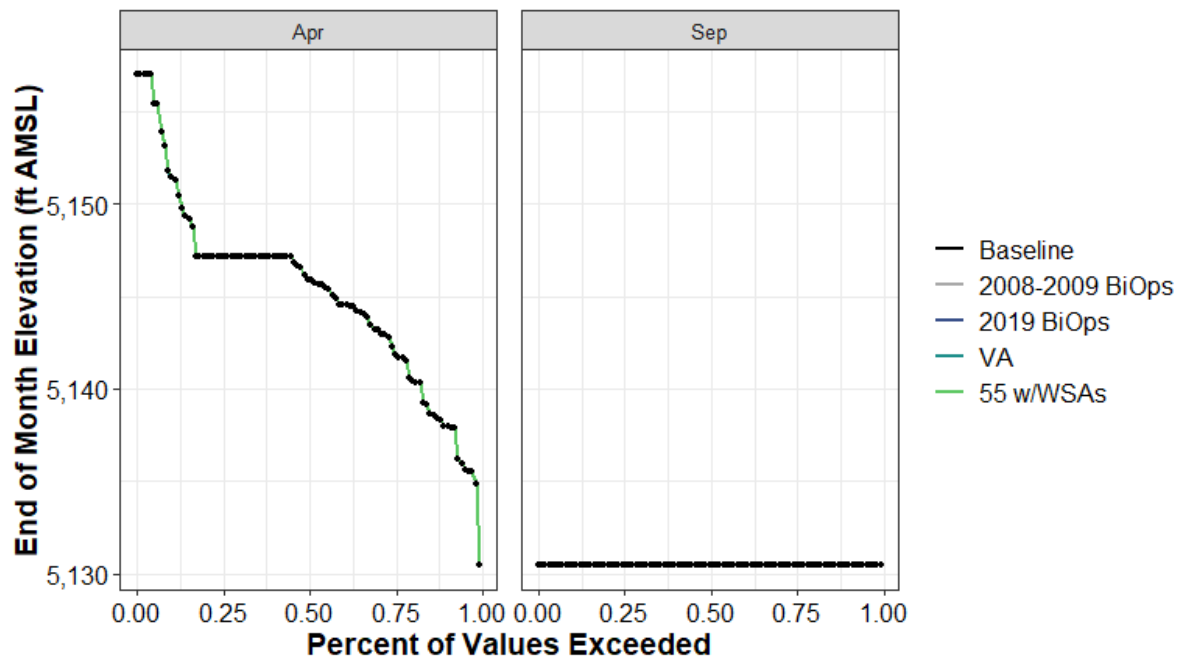


Figure H1a2-74. Bucks Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-149. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Bucks Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 60       | 0               | 0          | 0  | 0         |
| 10%  | 60       | 0               | 0          | 0  | 0         |
| 25%  | 60       | 0               | 0          | 0  | 0         |
| 50%  | 60       | 0               | 0          | 0  | 0         |
| 75%  | 60       | 0               | 0          | 0  | 0         |
| 90%  | 60       | 0               | 0          | 0  | 0         |
| 100% | 60       | 0               | 0          | 0  | 0         |
| Mean | 60       | 0               | 0          | 0  | 0         |

**Table H1a2-150. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Bucks Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,130    | 0               | 0          | 0  | 0         |
| 10%  | 5,130    | 0               | 0          | 0  | 0         |
| 25%  | 5,130    | 0               | 0          | 0  | 0         |
| 50%  | 5,130    | 0               | 0          | 0  | 0         |
| 75%  | 5,130    | 0               | 0          | 0  | 0         |
| 90%  | 5,130    | 0               | 0          | 0  | 0         |
| 100% | 5,130    | 0               | 0          | 0  | 0         |
| Mean | 5,130    | 0               | 0          | 0  | 0         |

**Table H1a2-151. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Bucks Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 60       | 0               | 0          | 0  | 0         |
| 10%  | 73       | 0               | 0          | 0  | 0         |
| 25%  | 79       | 0               | 0          | 0  | 0         |
| 50%  | 86       | 0               | 0          | 0  | 0         |
| 75%  | 88       | 0               | 0          | 0  | 0         |
| 90%  | 96       | 0               | 0          | 0  | 0         |
| 100% | 106      | 0               | 0          | 0  | 0         |
| Mean | 85       | 0               | 0          | 0  | 0         |

**Table H1a2-152. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Bucks Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,130    | 0               | 0          | 0  | 0         |
| 10%  | 5,138    | 0               | 0          | 0  | 0         |
| 25%  | 5,142    | 0               | 0          | 0  | 0         |
| 50%  | 5,146    | 0               | 0          | 0  | 0         |
| 75%  | 5,147    | 0               | 0          | 0  | 0         |
| 90%  | 5,152    | 0               | 0          | 0  | 0         |
| 100% | 5,157    | 0               | 0          | 0  | 0         |
| Mean | 5,145    | 0               | 0          | 0  | 0         |

## H1a2.5.5 Butt Valley (Feather River Watershed)

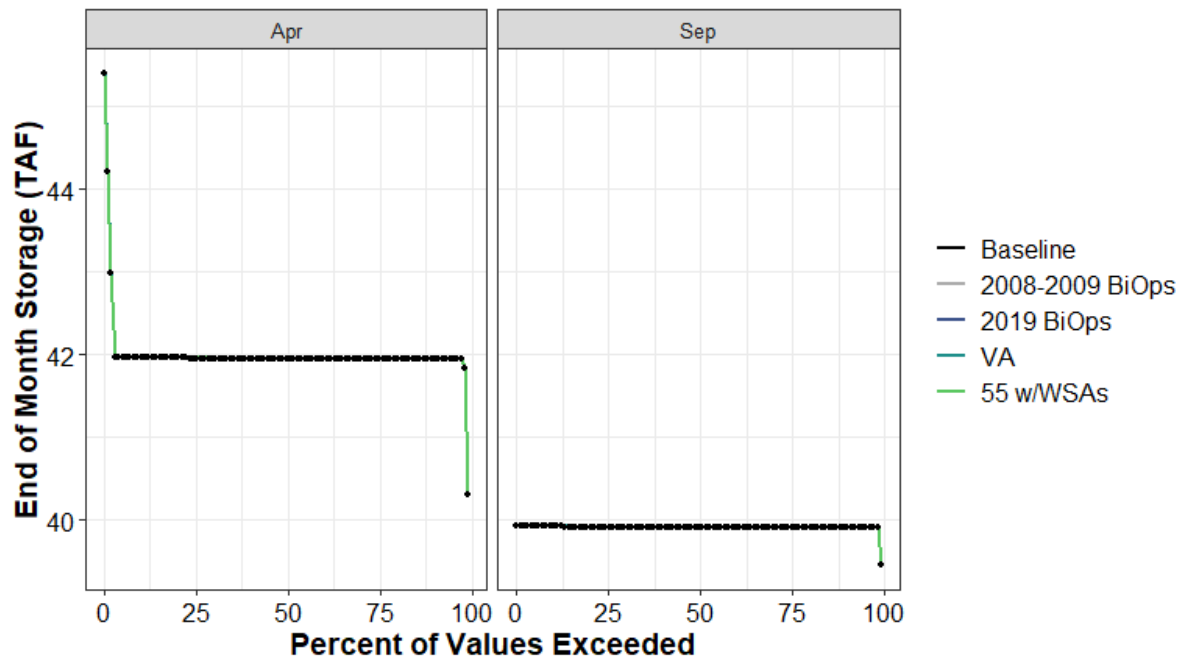


Figure H1a2-75. Butt Valley End of April and End of September Storage (TAF) Percent Exceedance Plot

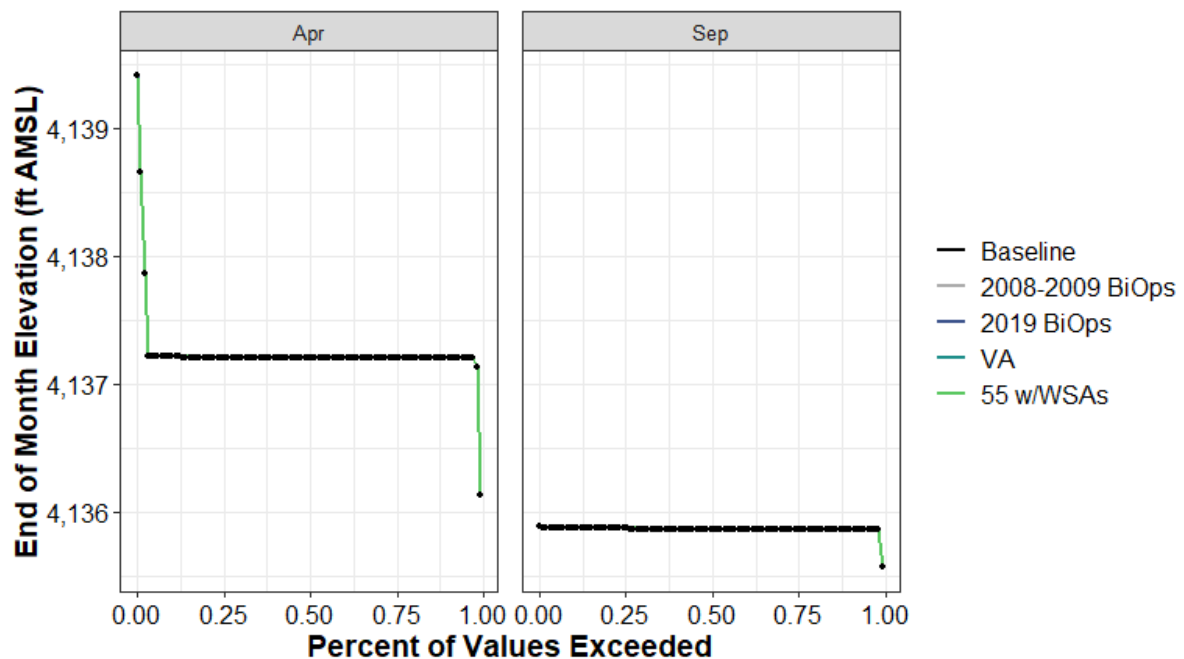


Figure H1a2-76. Butt Valley Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-153. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Butt Valley**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 39       | 0               | 0          | 0  | 0         |
| 10%  | 40       | 0               | 0          | 0  | 0         |
| 25%  | 40       | 0               | 0          | 0  | 0         |
| 50%  | 40       | 0               | 0          | 0  | 0         |
| 75%  | 40       | 0               | 0          | 0  | 0         |
| 90%  | 40       | 0               | 0          | 0  | 0         |
| 100% | 40       | 0               | 0          | 0  | 0         |
| Mean | 40       | 0               | 0          | 0  | 0         |

**Table H1a2-154. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Butt Valley**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,136    | 0               | 0          | 0  | 0         |
| 10%  | 4,136    | 0               | 0          | 0  | 0         |
| 25%  | 4,136    | 0               | 0          | 0  | 0         |
| 50%  | 4,136    | 0               | 0          | 0  | 0         |
| 75%  | 4,136    | 0               | 0          | 0  | 0         |
| 90%  | 4,136    | 0               | 0          | 0  | 0         |
| 100% | 4,136    | 0               | 0          | 0  | 0         |
| Mean | 4,136    | 0               | 0          | 0  | 0         |

**Table H1a2-155. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Butt Valley**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 40       | 0               | 0          | 0  | 0         |
| 10%  | 42       | 0               | 0          | 0  | 0         |
| 25%  | 42       | 0               | 0          | 0  | 0         |
| 50%  | 42       | 0               | 0          | 0  | 0         |
| 75%  | 42       | 0               | 0          | 0  | 0         |
| 90%  | 42       | 0               | 0          | 0  | 0         |
| 100% | 45       | 0               | 0          | 0  | 0         |
| Mean | 42       | 0               | 0          | 0  | 0         |

**Table H1a2-156. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Butt Valley**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,136    | 0               | 0          | 0  | 0         |
| 10%  | 4,137    | 0               | 0          | 0  | 0         |
| 25%  | 4,137    | 0               | 0          | 0  | 0         |
| 50%  | 4,137    | 0               | 0          | 0  | 0         |
| 75%  | 4,137    | 0               | 0          | 0  | 0         |
| 90%  | 4,137    | 0               | 0          | 0  | 0         |
| 100% | 4,139    | 0               | 0          | 0  | 0         |
| Mean | 4,137    | 0               | 0          | 0  | 0         |

## H1a2.5.6 Camanche Reservoir (Mokelumne River Watershed)

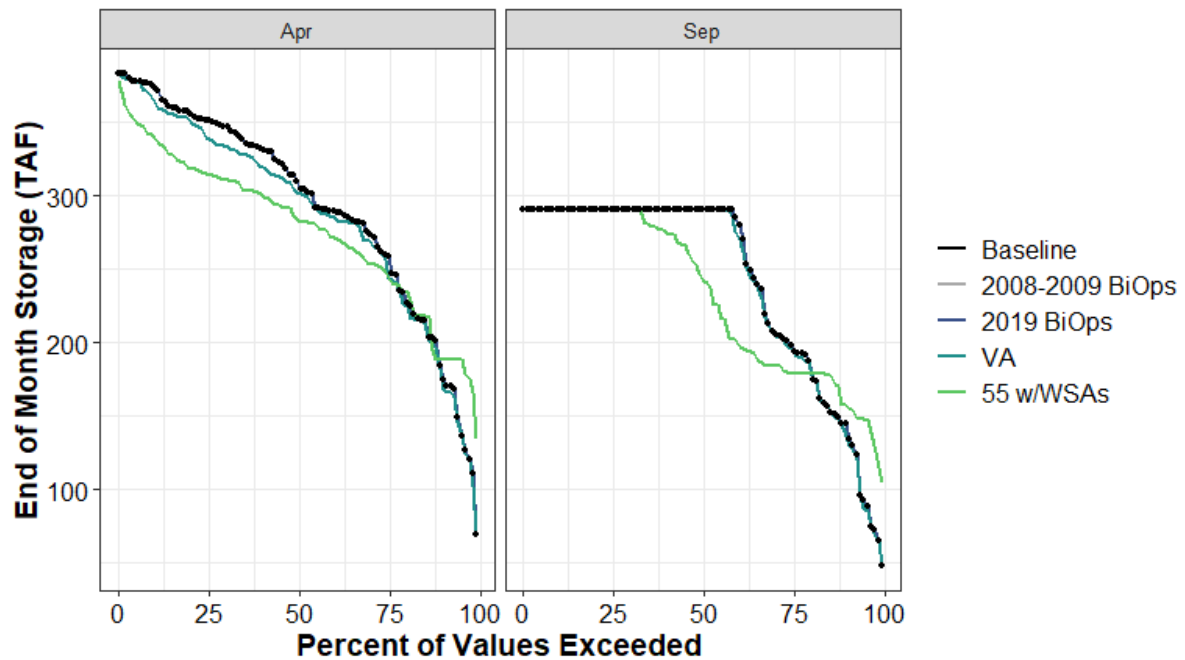


Figure H1a2-77. Camanche Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

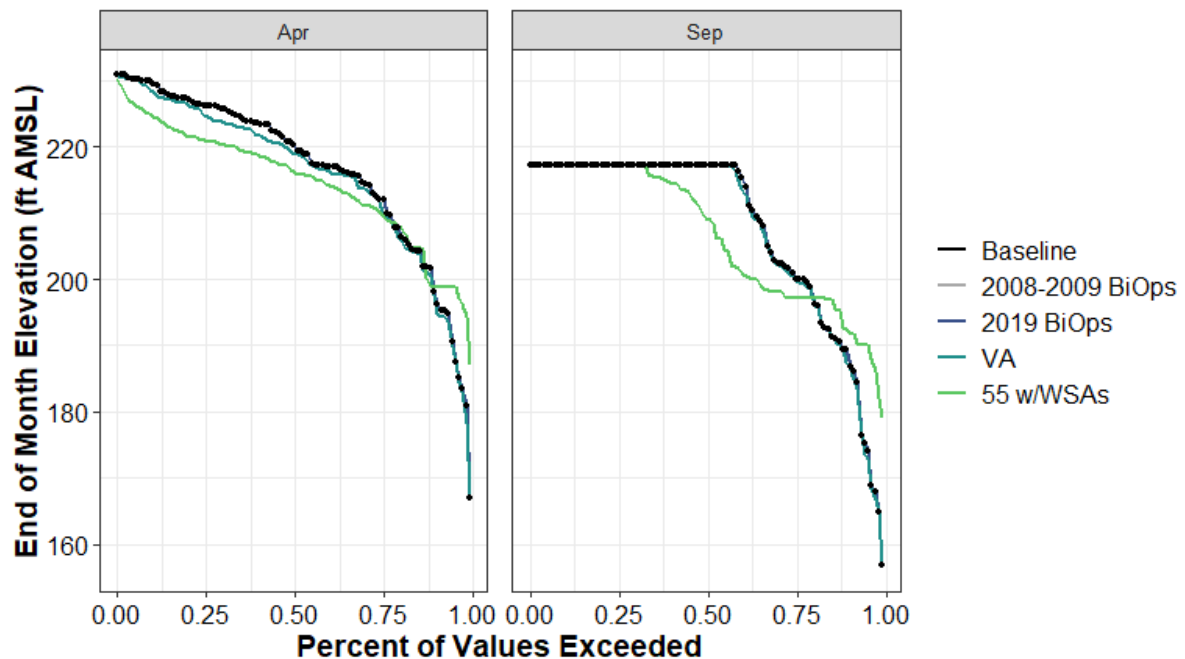


Figure H1a2-78. Camanche Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-157. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Camanche Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 48       | 0               | 0          | -1 | 56        |
| 10%  | 142      | 0               | 0          | -7 | 14        |
| 25%  | 196      | 0               | 0          | -2 | -17       |
| 50%  | 290      | 0               | 0          | 0  | -48       |
| 75%  | 290      | 0               | 0          | 0  | 0         |
| 90%  | 291      | 0               | 0          | 0  | 0         |
| 100% | 291      | 0               | 0          | 0  | 0         |
| Mean | 243      | 0               | 0          | -1 | -11       |

**Table H1a2-158. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Camanche Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 157      | 0               | 0          | 0  | 22        |
| 10%  | 189      | 0               | 0          | -2 | 3         |
| 25%  | 201      | 0               | 0          | 0  | -3        |
| 50%  | 217      | 0               | 0          | 0  | -8        |
| 75%  | 217      | 0               | 0          | 0  | 0         |
| 90%  | 217      | 0               | 0          | 0  | 0         |
| 100% | 217      | 0               | 0          | 0  | 0         |
| Mean | 208      | 0               | 0          | 0  | -1        |

**Table H1a2-159. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Camanche Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 69       | 0               | 0          | 0   | 65        |
| 10%  | 182      | 0               | 0          | -3  | 6         |
| 25%  | 259      | 0               | 0          | -9  | -13       |
| 50%  | 310      | 0               | 0          | -8  | -25       |
| 75%  | 351      | 0               | 0          | -12 | -36       |
| 90%  | 374      | 0               | 0          | -9  | -34       |
| 100% | 383      | 0               | 0          | 0   | -5        |
| Mean | 294      | 0               | 0          | -6  | -16       |

**Table H1a2-160. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Camanche Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 167      | 0               | 0          | 0  | 20        |
| 10%  | 198      | 0               | 0          | -1 | 1         |
| 25%  | 212      | 0               | 0          | -1 | -2        |
| 50%  | 220      | 0               | 0          | -1 | -4        |
| 75%  | 226      | 0               | 0          | -2 | -5        |
| 90%  | 230      | 0               | 0          | -1 | -5        |
| 100% | 231      | 0               | 0          | 0  | -1        |
| Mean | 217      | 0               | 0          | -1 | -2        |

## H1a2.5.7 Camp Far West (Bear River Watershed)

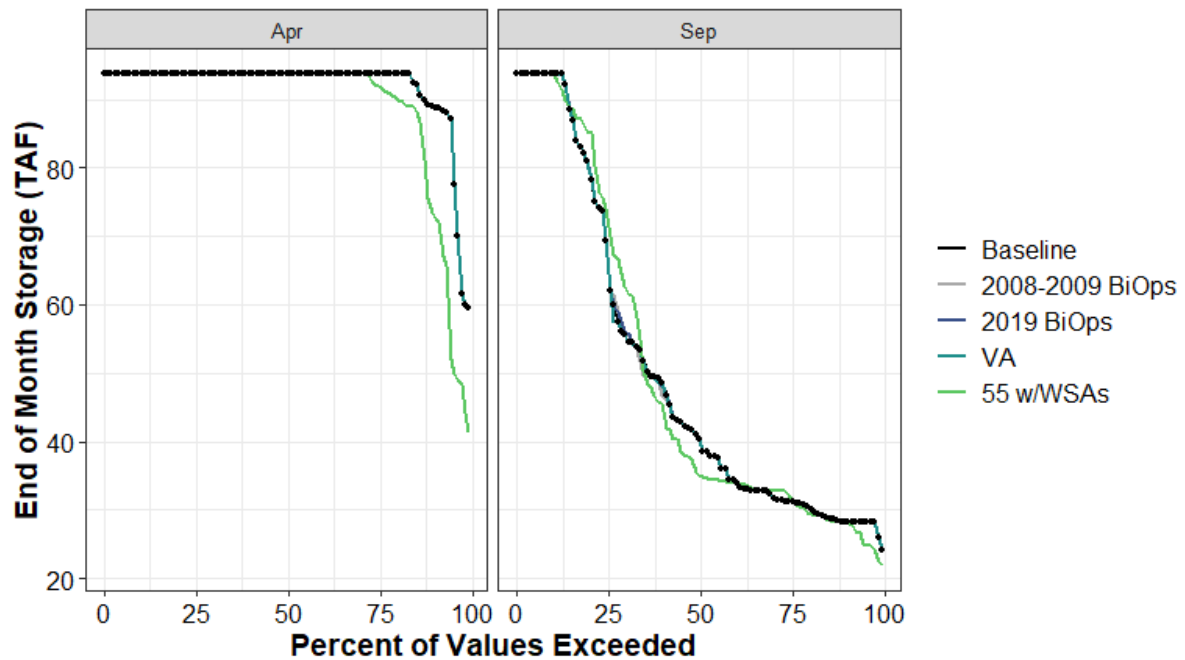


Figure H1a2-79. Camp Far West End of April and End of September Storage (TAF) Percent Exceedance Plot

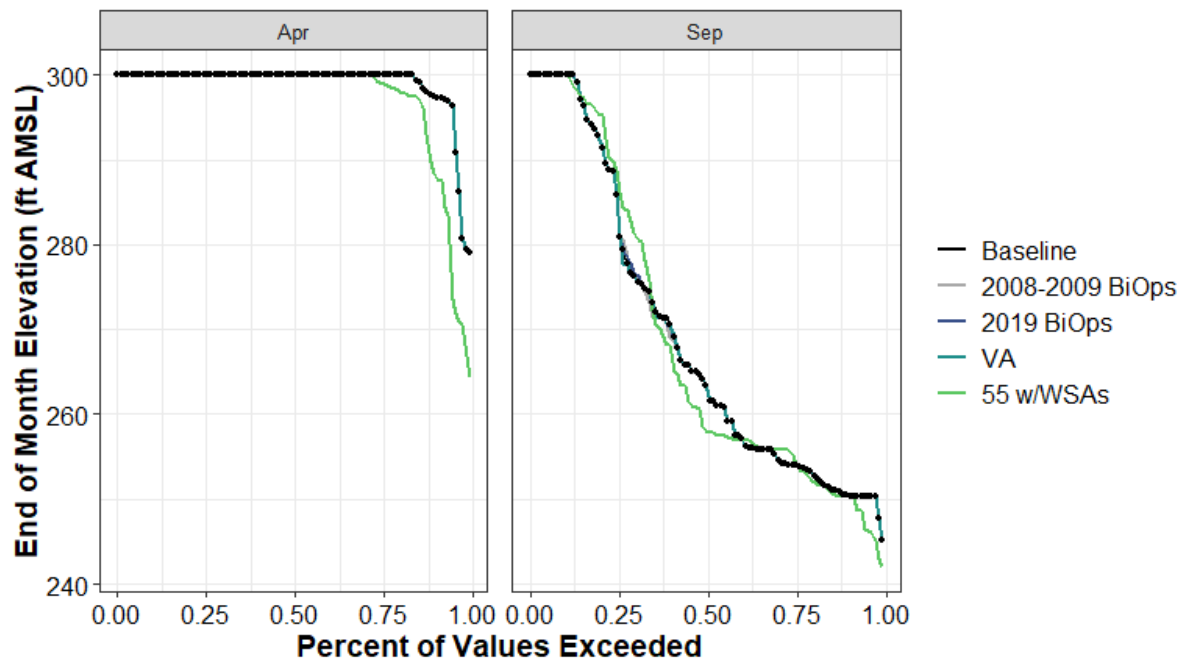


Figure H1a2-80. Camp Far West Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-161. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Camp Far West**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 24       | 0               | 0          | 0  | -2        |
| 10%  | 28       | 0               | 0          | 0  | 0         |
| 25%  | 31       | 0               | 0          | 0  | 1         |
| 50%  | 40       | 0               | 0          | 0  | -5        |
| 75%  | 66       | 0               | 0          | 0  | 6         |
| 90%  | 94       | 0               | 0          | 0  | 0         |
| 100% | 94       | 0               | 0          | 0  | 0         |
| Mean | 50       | 0               | 0          | 0  | 0         |

**Table H1a2-162. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Camp Far West**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 245      | 0               | 0          | 0  | -3        |
| 10%  | 250      | 0               | 0          | 0  | 0         |
| 25%  | 254      | 0               | 0          | 0  | 1         |
| 50%  | 263      | 0               | 0          | 0  | -5        |
| 75%  | 283      | 0               | 0          | 0  | 4         |
| 90%  | 300      | 0               | 0          | 0  | 0         |
| 100% | 300      | 0               | 0          | 0  | 0         |
| Mean | 269      | 0               | 0          | 0  | 0         |

**Table H1a2-163. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Camp Far West**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 60       | 0               | 0          | 0  | -18       |
| 10%  | 89       | 0               | 0          | 0  | -16       |
| 25%  | 94       | 0               | 0          | 0  | -2        |
| 50%  | 94       | 0               | 0          | 0  | 0         |
| 75%  | 94       | 0               | 0          | 0  | 0         |
| 90%  | 94       | 0               | 0          | 0  | 0         |
| 100% | 94       | 0               | 0          | 0  | 0         |
| Mean | 92       | 0               | 0          | 0  | -3        |

**Table H1a2-164. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Camp Far West**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 279      | 0               | 0          | 0  | -15       |
| 10%  | 297      | 0               | 0          | 0  | -9        |
| 25%  | 300      | 0               | 0          | 0  | -1        |
| 50%  | 300      | 0               | 0          | 0  | 0         |
| 75%  | 300      | 0               | 0          | 0  | 0         |
| 90%  | 300      | 0               | 0          | 0  | 0         |
| 100% | 300      | 0               | 0          | 0  | 0         |
| Mean | 299      | 0               | 0          | 0  | -2        |

## H1a2.5.8 Caples Lake (American River Watershed)

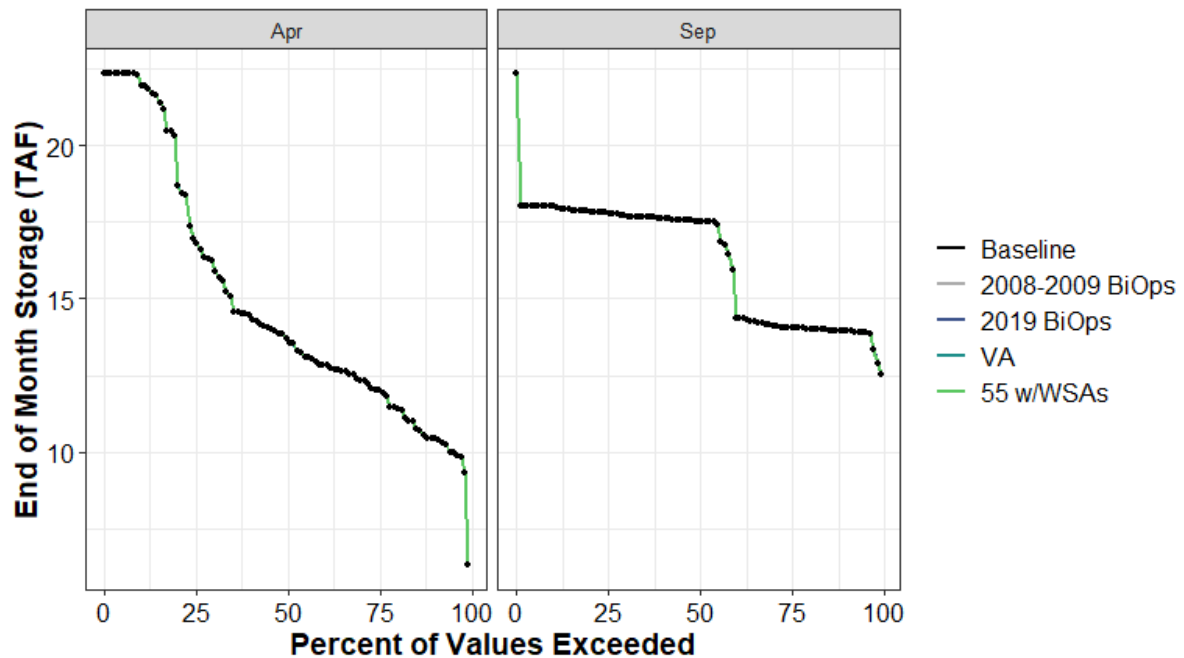


Figure H1a2-81. Caples Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

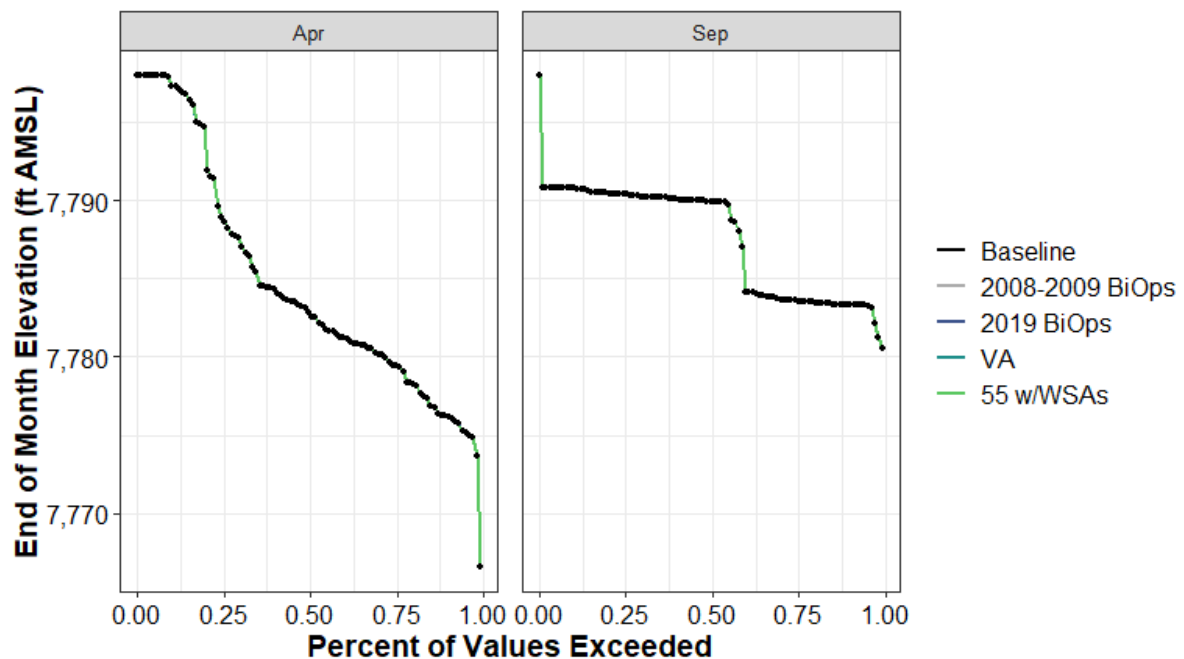


Figure H1a2-82. Caples Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-165. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Caples Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 13       | 0               | 0          | 0  | 0         |
| 10%  | 14       | 0               | 0          | 0  | 0         |
| 25%  | 14       | 0               | 0          | 0  | 0         |
| 50%  | 18       | 0               | 0          | 0  | 0         |
| 75%  | 18       | 0               | 0          | 0  | 0         |
| 90%  | 18       | 0               | 0          | 0  | 0         |
| 100% | 22       | 0               | 0          | 0  | 0         |
| Mean | 16       | 0               | 0          | 0  | 0         |

**Table H1a2-166. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Caples Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7,781    | 0               | 0          | 0  | 0         |
| 10%  | 7,783    | 0               | 0          | 0  | 0         |
| 25%  | 7,784    | 0               | 0          | 0  | 0         |
| 50%  | 7,790    | 0               | 0          | 0  | 0         |
| 75%  | 7,790    | 0               | 0          | 0  | 0         |
| 90%  | 7,791    | 0               | 0          | 0  | 0         |
| 100% | 7,798    | 0               | 0          | 0  | 0         |
| Mean | 7,788    | 0               | 0          | 0  | 0         |

**Table H1a2-167. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Caples Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6        | 0               | 0          | 0  | 0         |
| 10%  | 10       | 0               | 0          | 0  | 0         |
| 25%  | 12       | 0               | 0          | 0  | 0         |
| 50%  | 14       | 0               | 0          | 0  | 0         |
| 75%  | 17       | 0               | 0          | 0  | 0         |
| 90%  | 22       | 0               | 0          | 0  | 0         |
| 100% | 22       | 0               | 0          | 0  | 0         |
| Mean | 15       | 0               | 0          | 0  | 0         |

**Table H1a2-168. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Caples Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7,767    | 0               | 0          | 0  | 0         |
| 10%  | 7,776    | 0               | 0          | 0  | 0         |
| 25%  | 7,779    | 0               | 0          | 0  | 0         |
| 50%  | 7,783    | 0               | 0          | 0  | 0         |
| 75%  | 7,789    | 0               | 0          | 0  | 0         |
| 90%  | 7,797    | 0               | 0          | 0  | 0         |
| 100% | 7,798    | 0               | 0          | 0  | 0         |
| Mean | 7,785    | 0               | 0          | 0  | 0         |

## H1a2.5.9 Clear Lake (Cache Creek Watershed)

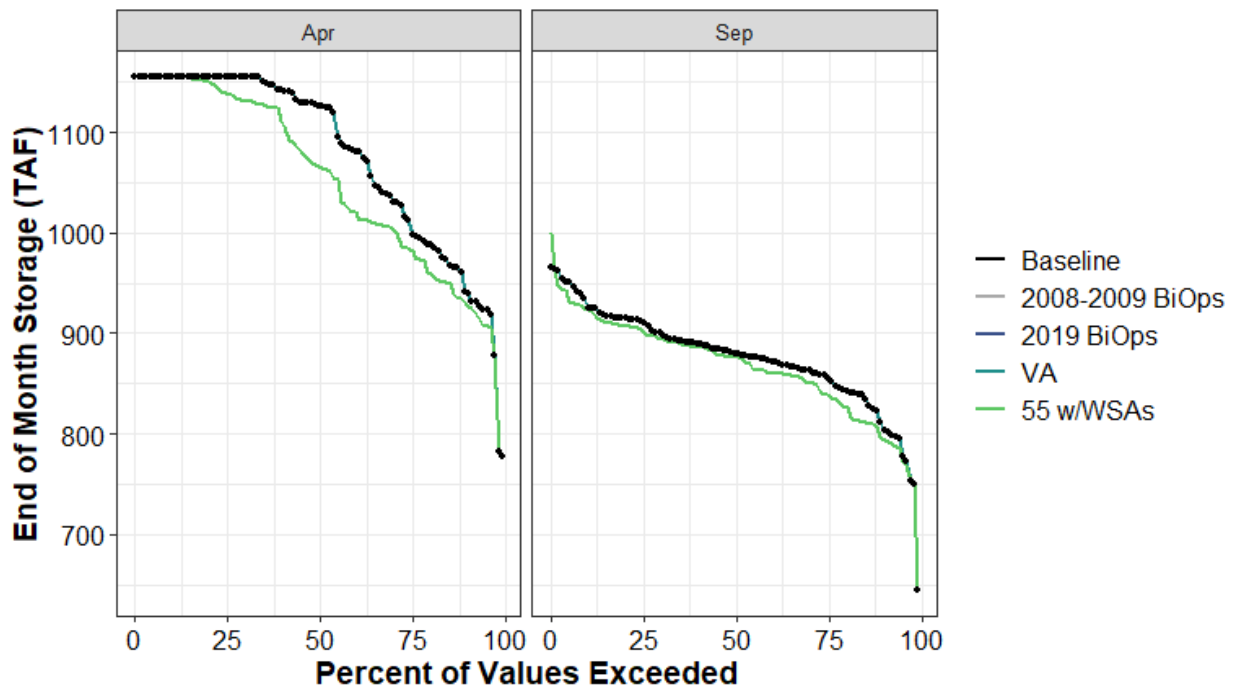


Figure H1a2-83. Clear Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

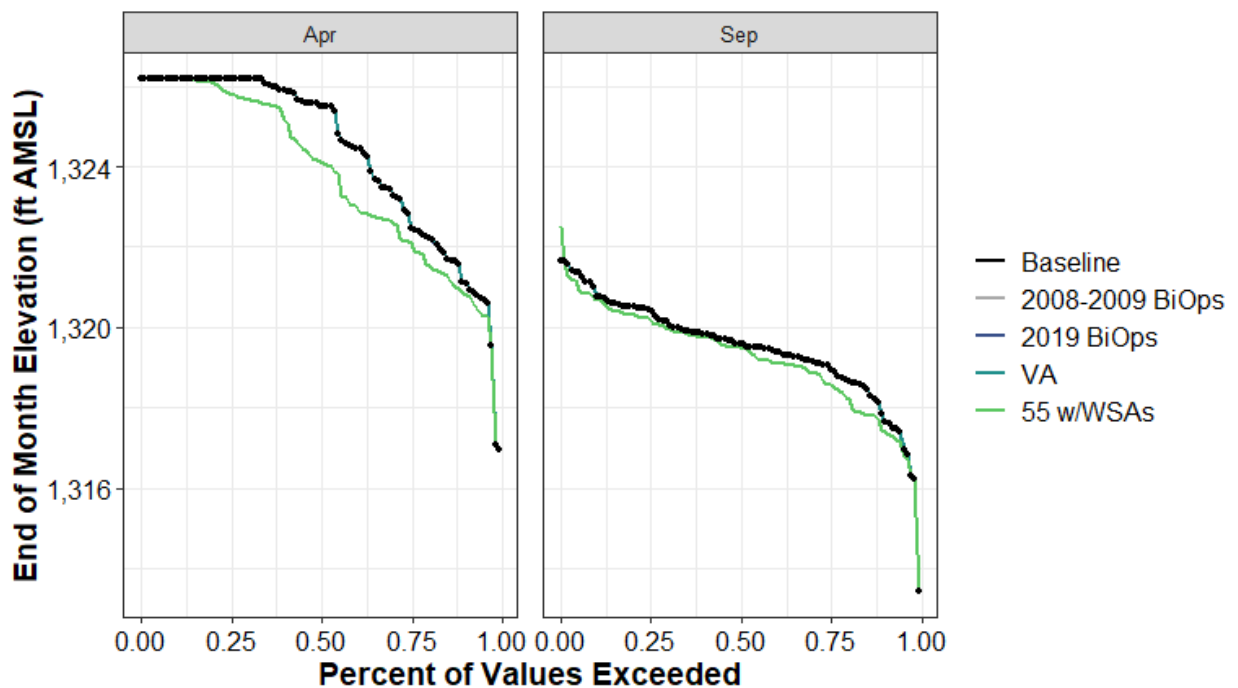


Figure H1a2-84. Clear Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-169. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Clear Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 645      | 0               | 0          | 0  | -1        |
| 10%  | 810      | 0               | 0          | 0  | -14       |
| 25%  | 856      | 0               | 0          | 0  | -17       |
| 50%  | 880      | 0               | 0          | 0  | -4        |
| 75%  | 911      | 0               | 0          | 0  | -9        |
| 90%  | 928      | 0               | 0          | 0  | -5        |
| 100% | 965      | 0               | 0          | 0  | 34        |
| Mean | 876      | 0               | 0          | 0  | -9        |

**Table H1a2-170. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Clear Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,313    | 0               | 0          | 0  | 0         |
| 10%  | 1,318    | 0               | 0          | 0  | 0         |
| 25%  | 1,319    | 0               | 0          | 0  | 0         |
| 50%  | 1,320    | 0               | 0          | 0  | 0         |
| 75%  | 1,320    | 0               | 0          | 0  | 0         |
| 90%  | 1,321    | 0               | 0          | 0  | 0         |
| 100% | 1,322    | 0               | 0          | 0  | 1         |
| Mean | 1,319    | 0               | 0          | 0  | 0         |

**Table H1a2-171. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Clear Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 777      | 0               | 0          | 0  | 0         |
| 10%  | 941      | 0               | 0          | 0  | -11       |
| 25%  | 1,005    | 0               | 0          | 0  | -22       |
| 50%  | 1,126    | 0               | 0          | 0  | -60       |
| 75%  | 1,155    | 0               | 0          | 0  | -17       |
| 90%  | 1,155    | 0               | 0          | 0  | 0         |
| 100% | 1,155    | 0               | 0          | 0  | 0         |
| Mean | 1,078    | 0               | 0          | 0  | -25       |

**Table H1a2-172. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Clear Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,317    | 0               | 0          | 0  | 0         |
| 10%  | 1,321    | 0               | 0          | 0  | 0         |
| 25%  | 1,323    | 0               | 0          | 0  | -1        |
| 50%  | 1,326    | 0               | 0          | 0  | -1        |
| 75%  | 1,326    | 0               | 0          | 0  | 0         |
| 90%  | 1,326    | 0               | 0          | 0  | 0         |
| 100% | 1,326    | 0               | 0          | 0  | 0         |
| Mean | 1,324    | 0               | 0          | 0  | -1        |

## H1a2.5.10 CVP San Luis Reservoir (South of Delta Offstream)

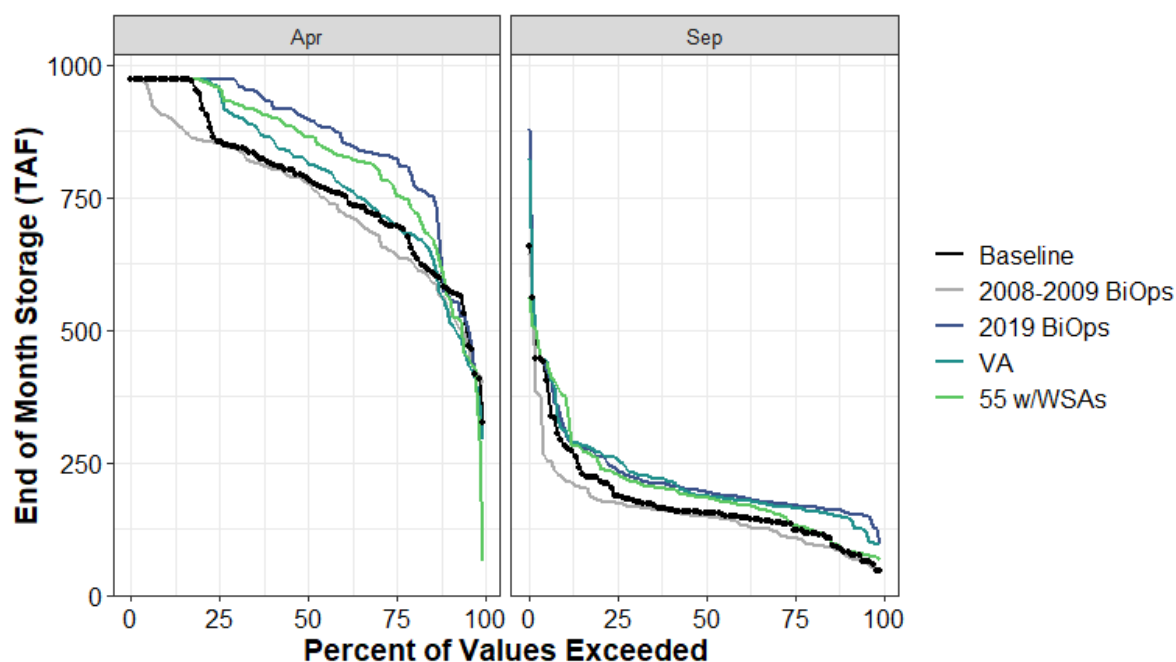


Figure H1a2-85. CVP San Luis Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-173. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for CVP San Luis Reservoir

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 45       | 0               | 51         | 51  | 21        |
| 10%  | 81       | -5              | 76         | 66  | 3         |
| 25%  | 128      | -20             | 40         | 37  | 4         |
| 50%  | 155      | -6              | 40         | 32  | 29        |
| 75%  | 188      | -15             | 49         | 70  | 41        |
| 90%  | 283      | -64             | 30         | 29  | 93        |
| 100% | 658      | -17             | 219        | 165 | -98       |
| Mean | 178      | -22             | 47         | 44  | 25        |

Table H1a2-174. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for CVP San Luis Reservoir

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 325      | 74              | -33        | -33 | -262      |
| 10%  | 578      | -37             | -9         | -44 | -14       |
| 25%  | 695      | -51             | 129        | 5   | 68        |
| 50%  | 789      | -11             | 109        | 29  | 76        |
| 75%  | 855      | -2              | 117        | 95  | 100       |
| 90%  | 972      | -67             | 0          | 0   | 0         |
| 100% | 972      | 0               | 0          | 0   | 0         |
| Mean | 773      | -29             | 77         | 18  | 48        |

## H1a2.5.11 East Park Reservoir (Stony Creek Watershed)

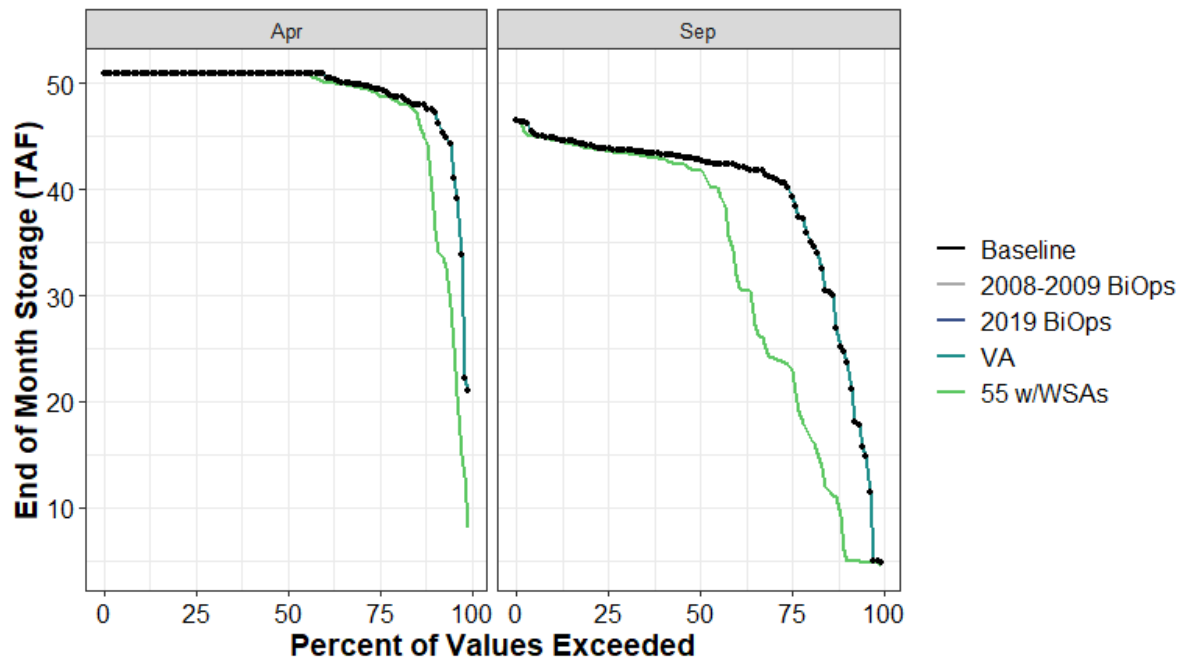


Figure H1a2-86. East Park Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

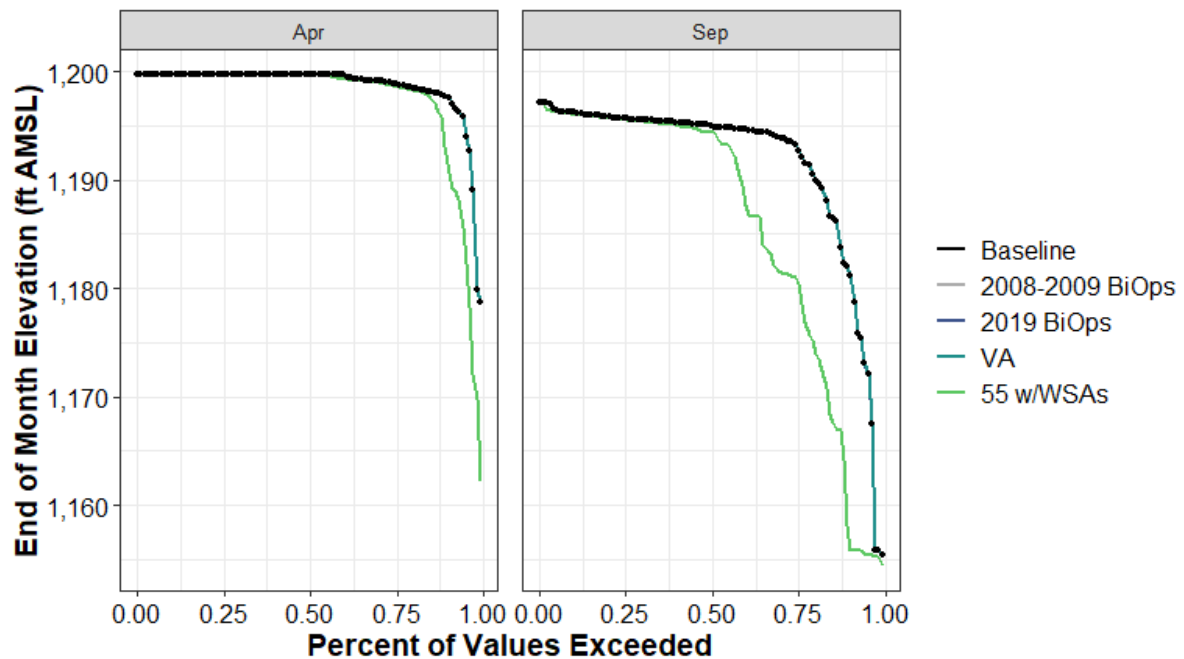


Figure H1a2-87. East Park Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-175. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for East Park Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5        | 0               | 0          | 0  | 0         |
| 10%  | 25       | 0               | 0          | 0  | -19       |
| 25%  | 40       | 0               | 0          | 0  | -16       |
| 50%  | 43       | 0               | 0          | 0  | -1        |
| 75%  | 44       | 0               | 0          | 0  | 0         |
| 90%  | 45       | 0               | 0          | 0  | 0         |
| 100% | 46       | 0               | 0          | 0  | 0         |
| Mean | 39       | 0               | 0          | 0  | -6        |

**Table H1a2-176. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for East Park Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,155    | 0               | 0          | 0  | -1        |
| 10%  | 1,182    | 0               | 0          | 0  | -24       |
| 25%  | 1,193    | 0               | 0          | 0  | -12       |
| 50%  | 1,195    | 0               | 0          | 0  | -1        |
| 75%  | 1,196    | 0               | 0          | 0  | 0         |
| 90%  | 1,196    | 0               | 0          | 0  | 0         |
| 100% | 1,197    | 0               | 0          | 0  | 0         |
| Mean | 1,192    | 0               | 0          | 0  | -6        |

**Table H1a2-177. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for East Park Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 21       | 0               | 0          | 0  | -13       |
| 10%  | 47       | 0               | 0          | 0  | -8        |
| 25%  | 49       | 0               | 0          | 0  | 0         |
| 50%  | 51       | 0               | 0          | 0  | 0         |
| 75%  | 51       | 0               | 0          | 0  | 0         |
| 90%  | 51       | 0               | 0          | 0  | 0         |
| 100% | 51       | 0               | 0          | 0  | 0         |
| Mean | 49       | 0               | 0          | 0  | -2        |

**Table H1a2-178. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for East Park Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,179    | 0               | 0          | 0  | -17       |
| 10%  | 1,198    | 0               | 0          | 0  | -5        |
| 25%  | 1,199    | 0               | 0          | 0  | 0         |
| 50%  | 1,200    | 0               | 0          | 0  | 0         |
| 75%  | 1,200    | 0               | 0          | 0  | 0         |
| 90%  | 1,200    | 0               | 0          | 0  | 0         |
| 100% | 1,200    | 0               | 0          | 0  | 0         |
| Mean | 1,199    | 0               | 0          | 0  | -1        |

## H1a2.5.12 Folsom Lake (American River Watershed)

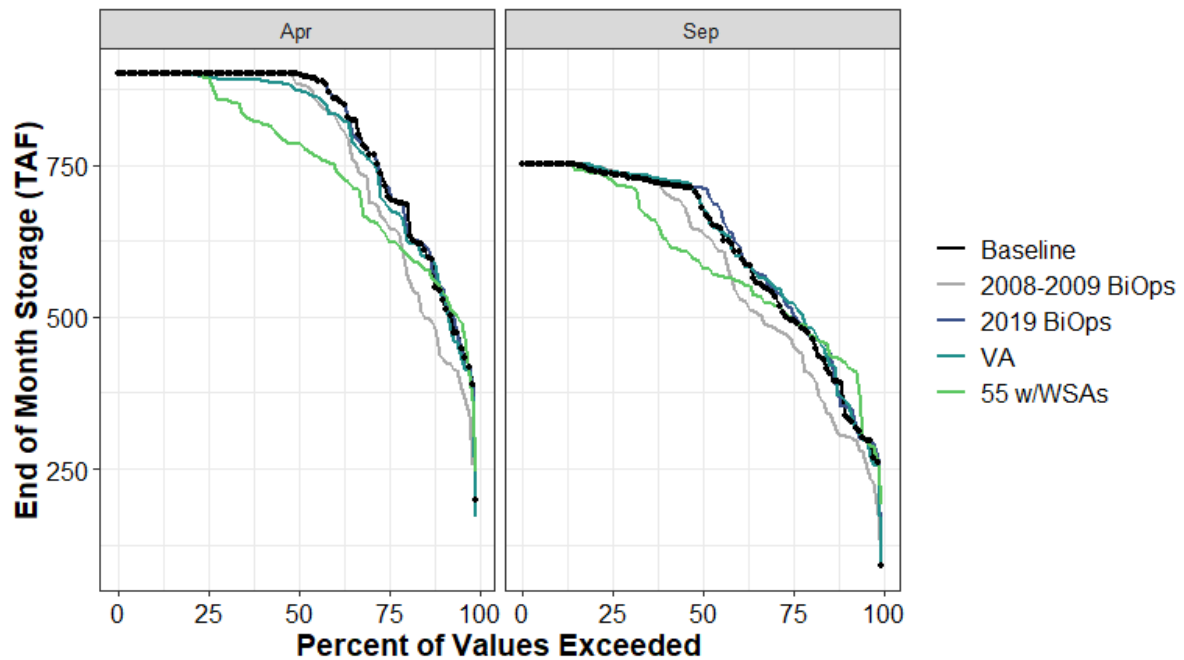


Figure H1a2-88. Folsom Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

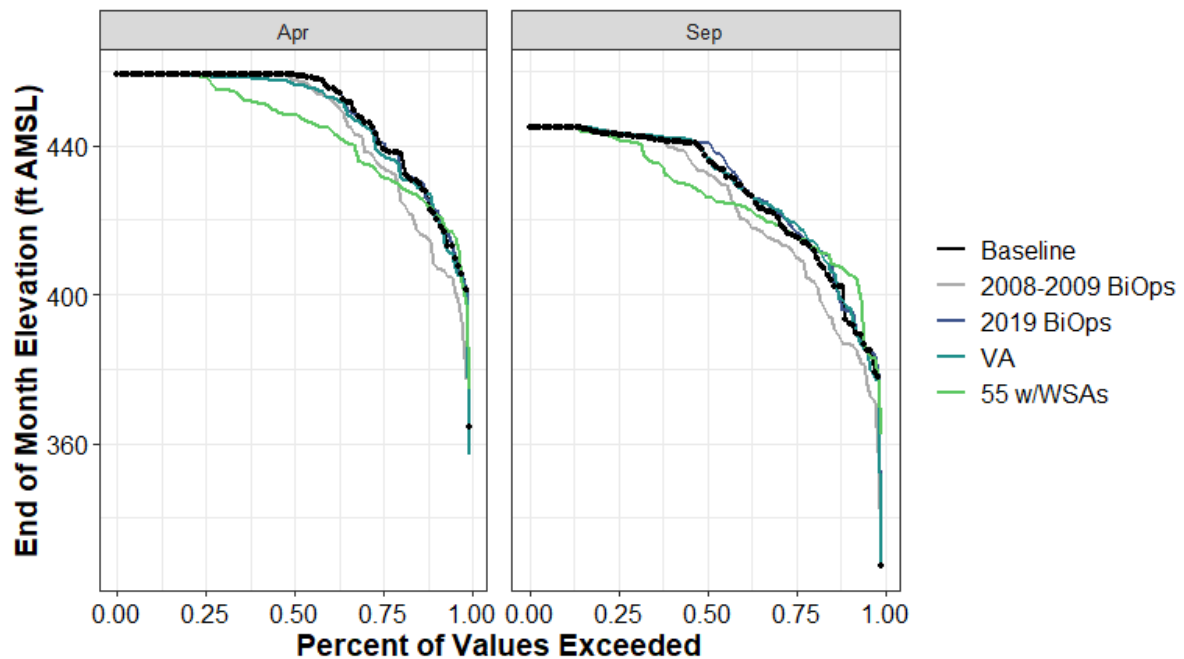


Figure H1a2-89. Folsom Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-179. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Folsom Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 90       | 0               | 0          | 0  | 102       |
| 10%  | 336      | -33             | 17         | 24 | 86        |
| 25%  | 494      | -38             | 14         | 28 | 4         |
| 50%  | 679      | -38             | 34         | 2  | -97       |
| 75%  | 735      | 5               | 3          | 4  | -12       |
| 90%  | 752      | 0               | 0          | 0  | 0         |
| 100% | 752      | 0               | 0          | 0  | 0         |
| Mean | 606      | -28             | 8          | 6  | -19       |

**Table H1a2-180. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Folsom Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 327      | 0               | 0          | 0  | 35        |
| 10%  | 393      | -6              | 3          | 4  | 13        |
| 25%  | 416      | -5              | 2          | 4  | 0         |
| 50%  | 437      | -4              | 4          | 0  | -11       |
| 75%  | 443      | 0               | 0          | 0  | -1        |
| 90%  | 445      | 0               | 0          | 0  | 0         |
| 100% | 445      | 0               | 0          | 0  | 0         |
| Mean | 427      | -4              | 1          | 1  | -2        |

**Table H1a2-181. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Folsom Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 199      | 58              | 0          | -28 | 45        |
| 10%  | 540      | -103            | 9          | 2   | 8         |
| 25%  | 706      | -52             | 8          | -22 | -75       |
| 50%  | 900      | -16             | 0          | -26 | -114      |
| 75%  | 900      | 0               | 0          | -4  | -8        |
| 90%  | 900      | 0               | 0          | 0   | 0         |
| 100% | 900      | 0               | 0          | 0   | 0         |
| Mean | 797      | -30             | 0          | -12 | -50       |

**Table H1a2-182. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Folsom Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 364      | 13              | 0          | -8 | 10        |
| 10%  | 421      | -13             | 1          | 0  | 1         |
| 25%  | 440      | -5              | 1          | -2 | -8        |
| 50%  | 459      | -2              | 0          | -2 | -11       |
| 75%  | 459      | 0               | 0          | 0  | -1        |
| 90%  | 459      | 0               | 0          | 0  | 0         |
| 100% | 459      | 0               | 0          | 0  | 0         |
| Mean | 448      | -3              | 0          | -1 | -5        |

## H1a2.5.13 French Lake (Yuba River Watershed)



Figure H1a2-90. French Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-183. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for French Lake

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 0        | 0               | 0          | 0  | 0         |
| 10%  | 0        | 0               | 0          | 0  | 0         |
| 25%  | 0        | 0               | 0          | 0  | 0         |
| 50%  | 0        | 0               | 0          | 0  | 0         |
| 75%  | 0        | 0               | 0          | 0  | 0         |
| 90%  | 0        | 0               | 0          | 0  | 0         |
| 100% | 0        | 0               | 0          | 0  | 0         |
| Mean | 0        | 0               | 0          | 0  | 0         |

Table H1a2-184. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for French Lake

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 0        | 0               | 0          | 0  | 0         |
| 10%  | 0        | 0               | 0          | 0  | 0         |
| 25%  | 0        | 0               | 0          | 0  | 0         |
| 50%  | 0        | 0               | 0          | 0  | 0         |
| 75%  | 0        | 0               | 0          | 0  | 0         |
| 90%  | 0        | 0               | 0          | 0  | 0         |
| 100% | 5        | 1               | 0          | 0  | -1        |
| Mean | 0        | 0               | 0          | 0  | 0         |

## H1a2.5.14 French Meadows (American River Watershed)

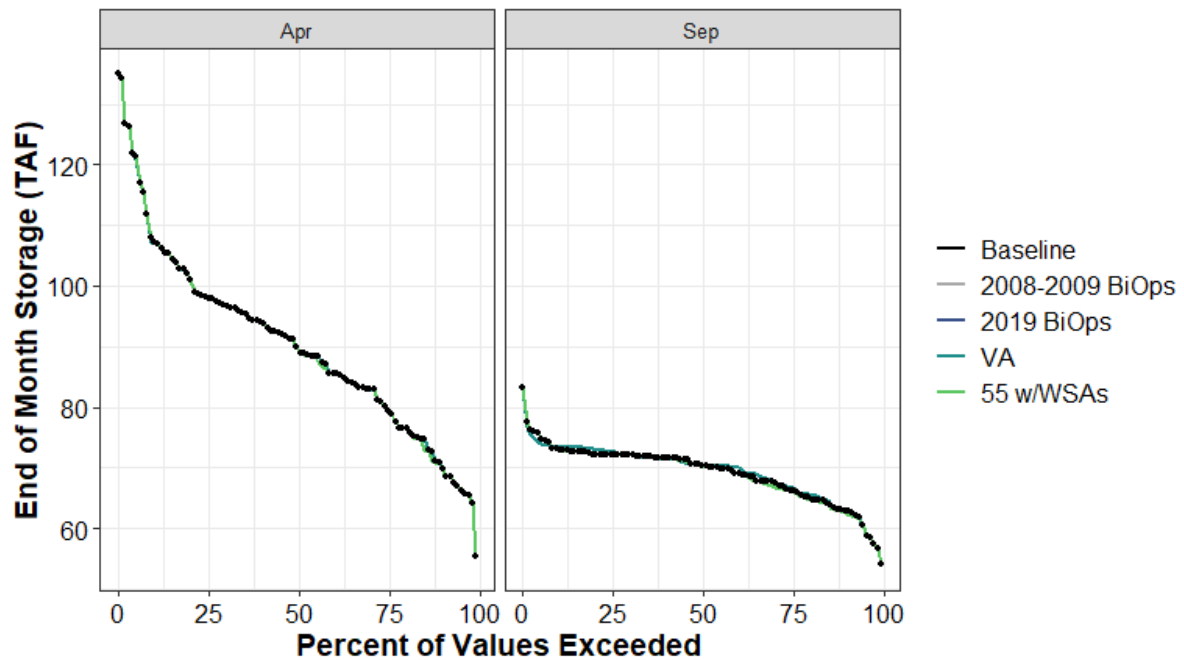


Figure H1a2-91. French Meadows End of April and End of September Storage (TAF) Percent Exceedance Plot

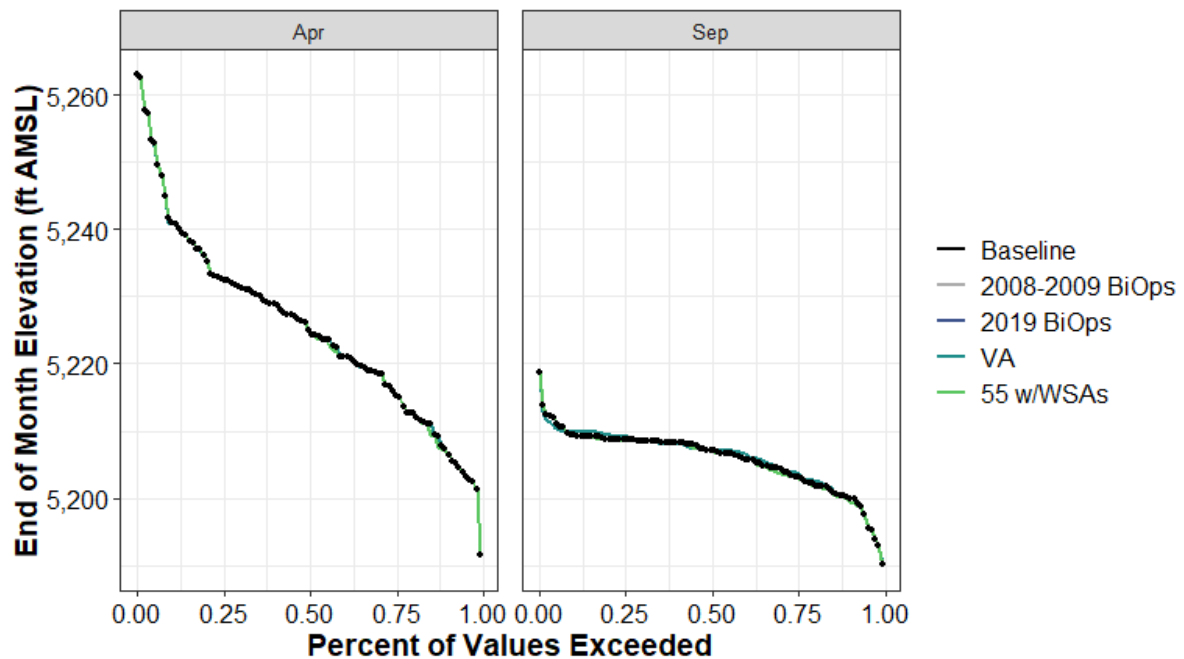


Figure H1a2-92. French Meadows Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-185. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for French Meadows**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 54       | 0               | 0          | 0  | 0         |
| 10%  | 63       | 0               | 0          | 0  | 0         |
| 25%  | 66       | 0               | 0          | 1  | 0         |
| 50%  | 70       | 0               | 0          | 0  | 0         |
| 75%  | 72       | 0               | 0          | 1  | 0         |
| 90%  | 73       | 0               | 0          | 1  | 0         |
| 100% | 83       | 0               | 0          | 0  | 0         |
| Mean | 69       | 0               | 0          | 0  | 0         |

**Table H1a2-186. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for French Meadows**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,190    | 0               | 0          | 0  | 0         |
| 10%  | 5,200    | 0               | 0          | 0  | 0         |
| 25%  | 5,203    | 0               | 0          | 1  | 0         |
| 50%  | 5,207    | 0               | 0          | 0  | 0         |
| 75%  | 5,209    | 0               | 0          | 1  | 0         |
| 90%  | 5,209    | 0               | 0          | 1  | 0         |
| 100% | 5,219    | 0               | 0          | 0  | 0         |
| Mean | 5,206    | 0               | 0          | 0  | 0         |

**Table H1a2-187. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for French Meadows**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 55       | 0               | 0          | 0  | 0         |
| 10%  | 71       | 0               | 0          | 0  | 0         |
| 25%  | 80       | 0               | 0          | 0  | 0         |
| 50%  | 90       | 0               | 0          | 0  | 0         |
| 75%  | 98       | 0               | 0          | 0  | 0         |
| 90%  | 107      | 0               | 0          | 0  | 0         |
| 100% | 135      | 0               | 0          | 0  | 0         |
| Mean | 90       | 0               | 0          | 0  | 0         |

**Table H1a2-188. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for French Meadows**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,192    | 0               | 0          | 0  | 0         |
| 10%  | 5,207    | 0               | 0          | 0  | 0         |
| 25%  | 5,216    | 0               | 0          | 0  | 0         |
| 50%  | 5,225    | 0               | 0          | 0  | 0         |
| 75%  | 5,233    | 0               | 0          | 0  | 0         |
| 90%  | 5,241    | 0               | 0          | 0  | 0         |
| 100% | 5,263    | 0               | 0          | 0  | 0         |
| Mean | 5,225    | 0               | 0          | 0  | 0         |

## H1a2.5.15 Frenchman Lake (Feather River Watershed)



Figure H1a2-93. Frenchman Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

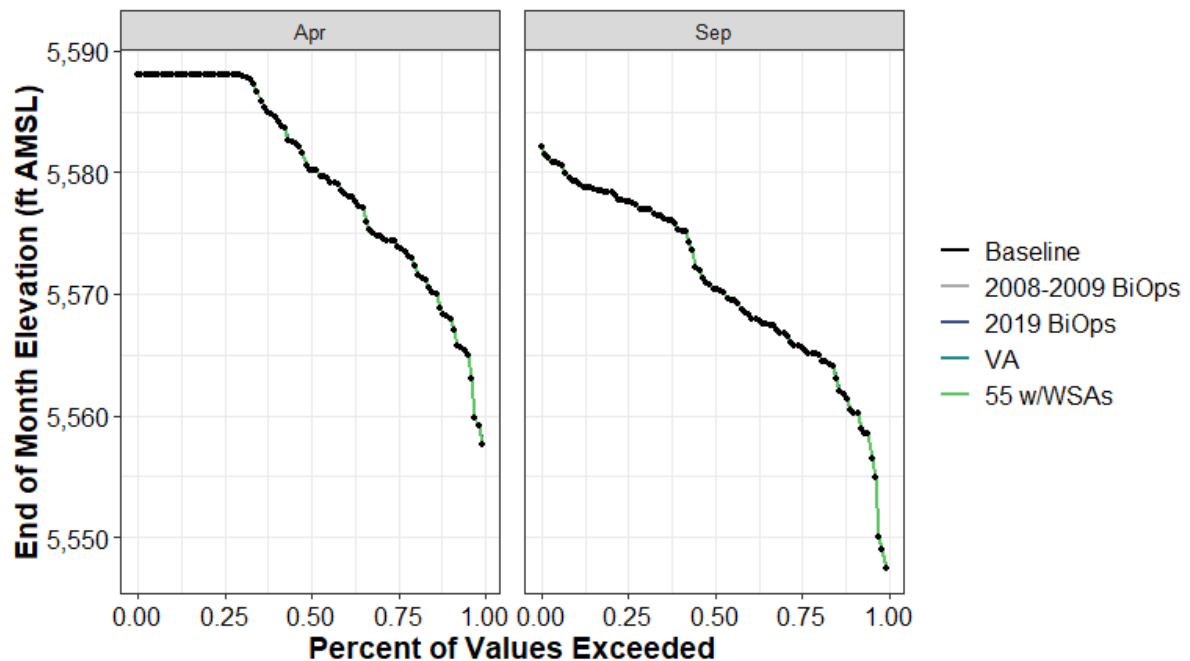


Figure H1a2-94. Frenchman Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-189. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Frenchman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 12       | 0               | 0          | 0  | 0         |
| 10%  | 22       | 0               | 0          | 0  | 0         |
| 25%  | 27       | 0               | 0          | 0  | 0         |
| 50%  | 32       | 0               | 0          | 0  | 0         |
| 75%  | 41       | 0               | 0          | 0  | 0         |
| 90%  | 43       | 0               | 0          | 0  | 0         |
| 100% | 47       | 0               | 0          | 0  | 0         |
| Mean | 33       | 0               | 0          | 0  | 0         |

**Table H1a2-190. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Frenchman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,547    | 0               | 0          | 0  | 0         |
| 10%  | 5,560    | 0               | 0          | 0  | 0         |
| 25%  | 5,566    | 0               | 0          | 0  | 0         |
| 50%  | 5,570    | 0               | 0          | 0  | 0         |
| 75%  | 5,578    | 0               | 0          | 0  | 0         |
| 90%  | 5,579    | 0               | 0          | 0  | 0         |
| 100% | 5,582    | 0               | 0          | 0  | 0         |
| Mean | 5,571    | 0               | 0          | 0  | 0         |

**Table H1a2-191. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Frenchman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 19       | 0               | 0          | 0  | 0         |
| 10%  | 29       | 0               | 0          | 0  | 0         |
| 25%  | 36       | 0               | 0          | 0  | 0         |
| 50%  | 44       | 0               | 0          | 0  | 0         |
| 75%  | 55       | 0               | 0          | 0  | 0         |
| 90%  | 55       | 0               | 0          | 0  | 0         |
| 100% | 55       | 0               | 0          | 0  | 0         |
| Mean | 44       | 0               | 0          | 0  | 0         |

**Table H1a2-192. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Frenchman Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,558    | 0               | 0          | 0  | 0         |
| 10%  | 5,568    | 0               | 0          | 0  | 0         |
| 25%  | 5,574    | 0               | 0          | 0  | 0         |
| 50%  | 5,580    | 0               | 0          | 0  | 0         |
| 75%  | 5,588    | 0               | 0          | 0  | 0         |
| 90%  | 5,588    | 0               | 0          | 0  | 0         |
| 100% | 5,588    | 0               | 0          | 0  | 0         |
| Mean | 5,580    | 0               | 0          | 0  | 0         |

## H1a2.5.16 Hell Hole (American River Watershed)

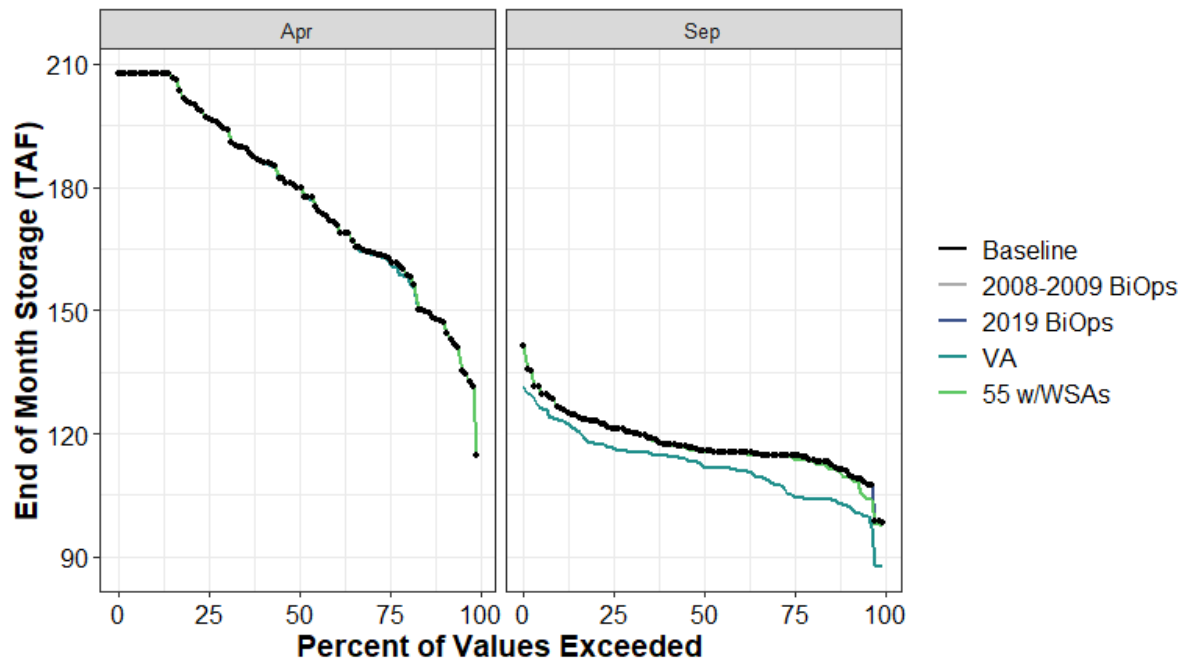


Figure H1a2-95. Hell Hole End of April and End of September Storage (TAF) Percent Exceedance Plot

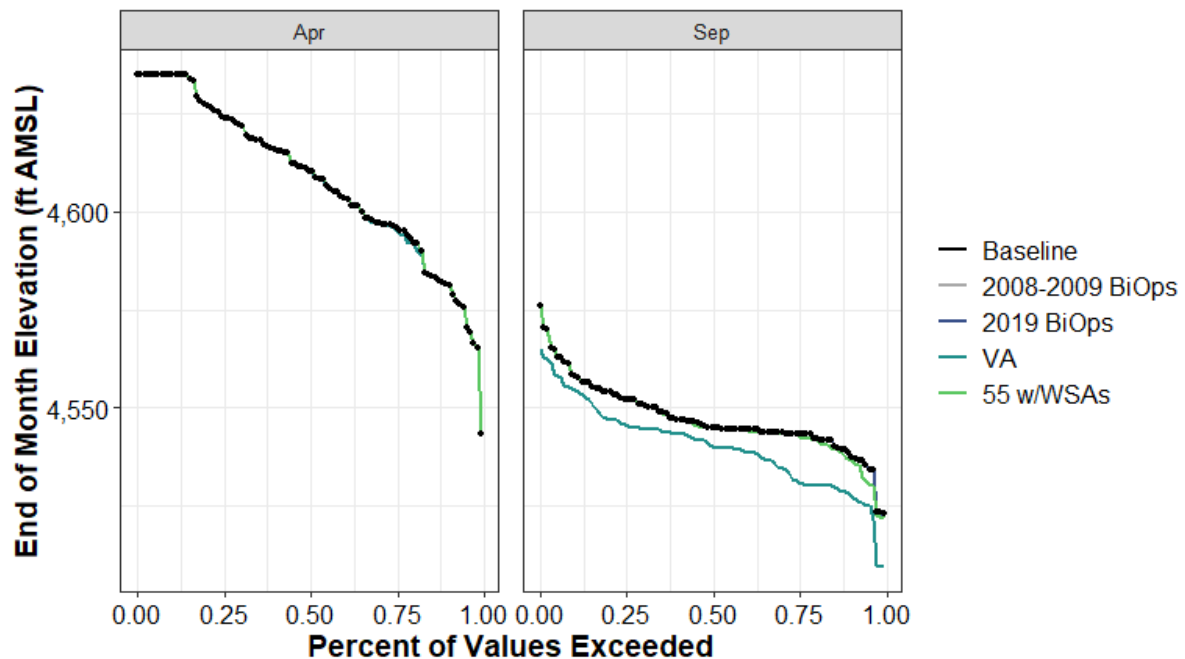


Figure H1a2-96. Hell Hole Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-193. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Hell Hole**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 98       | 0               | 0          | -11 | -1        |
| 10%  | 111      | 0               | 0          | -8  | -1        |
| 25%  | 115      | 0               | 0          | -10 | -1        |
| 50%  | 116      | 0               | 0          | -4  | 0         |
| 75%  | 121      | 0               | 0          | -5  | 0         |
| 90%  | 126      | 0               | 0          | -3  | 0         |
| 100% | 141      | 0               | 0          | -10 | 0         |
| Mean | 118      | 0               | 0          | -6  | 0         |

**Table H1a2-194. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Hell Hole**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 4,523    | 0               | 0          | -13 | -1        |
| 10%  | 4,538    | 0               | 0          | -10 | -1        |
| 25%  | 4,543    | 0               | 0          | -12 | -1        |
| 50%  | 4,545    | 0               | 0          | -5  | 0         |
| 75%  | 4,552    | 0               | 0          | -7  | 0         |
| 90%  | 4,558    | 0               | 0          | -4  | 0         |
| 100% | 4,576    | 0               | 0          | -11 | 0         |
| Mean | 4,547    | 0               | 0          | -7  | 0         |

**Table H1a2-195. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Hell Hole**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 115      | 0               | 0          | 0  | 0         |
| 10%  | 147      | 0               | 0          | 0  | 0         |
| 25%  | 163      | 0               | 0          | -1 | 0         |
| 50%  | 180      | 0               | 0          | 0  | 0         |
| 75%  | 197      | 0               | 0          | 0  | 0         |
| 90%  | 208      | 0               | 0          | 0  | 0         |
| 100% | 208      | 0               | 0          | 0  | 0         |
| Mean | 178      | 0               | 0          | 0  | 0         |

**Table H1a2-196. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Hell Hole**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,543    | 0               | 0          | 0  | 0         |
| 10%  | 4,581    | 0               | 0          | 0  | 0         |
| 25%  | 4,596    | 0               | 0          | -1 | 0         |
| 50%  | 4,610    | 0               | 0          | 0  | 0         |
| 75%  | 4,624    | 0               | 0          | 0  | 0         |
| 90%  | 4,635    | 0               | 0          | 0  | 0         |
| 100% | 4,635    | 0               | 0          | 0  | 0         |
| Mean | 4,608    | 0               | 0          | 0  | 0         |

## H1a2.5.17 Ice House (American River Watershed)

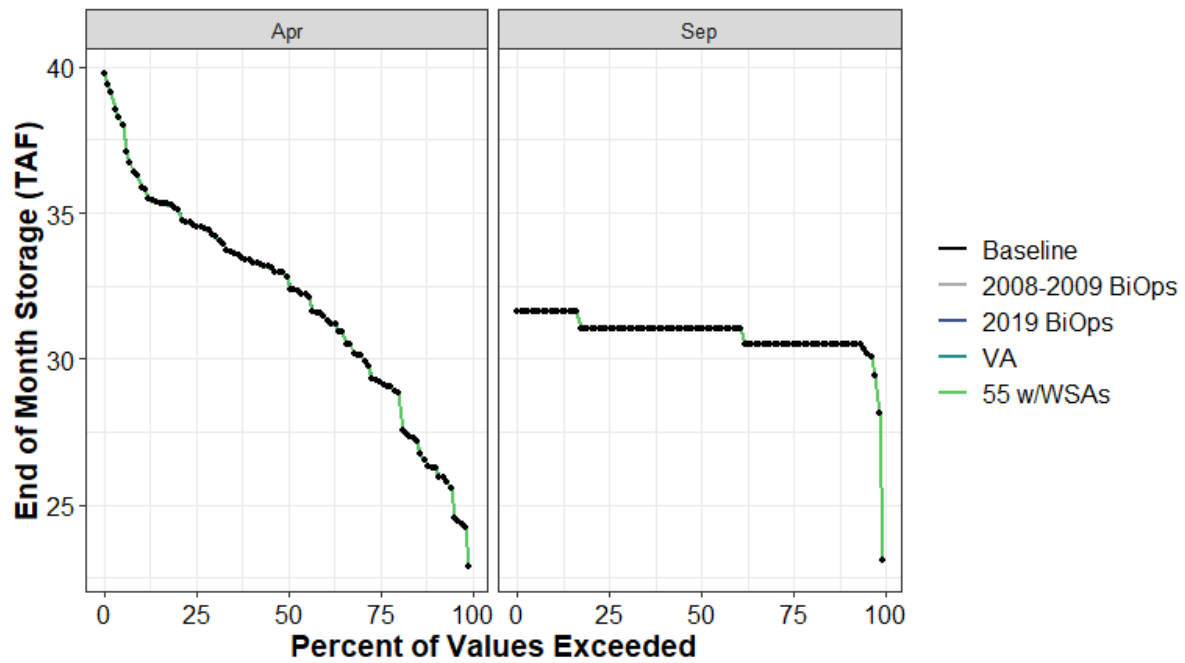


Figure H1a2-97. Ice House End of April and End of September Storage (TAF) Percent Exceedance Plot

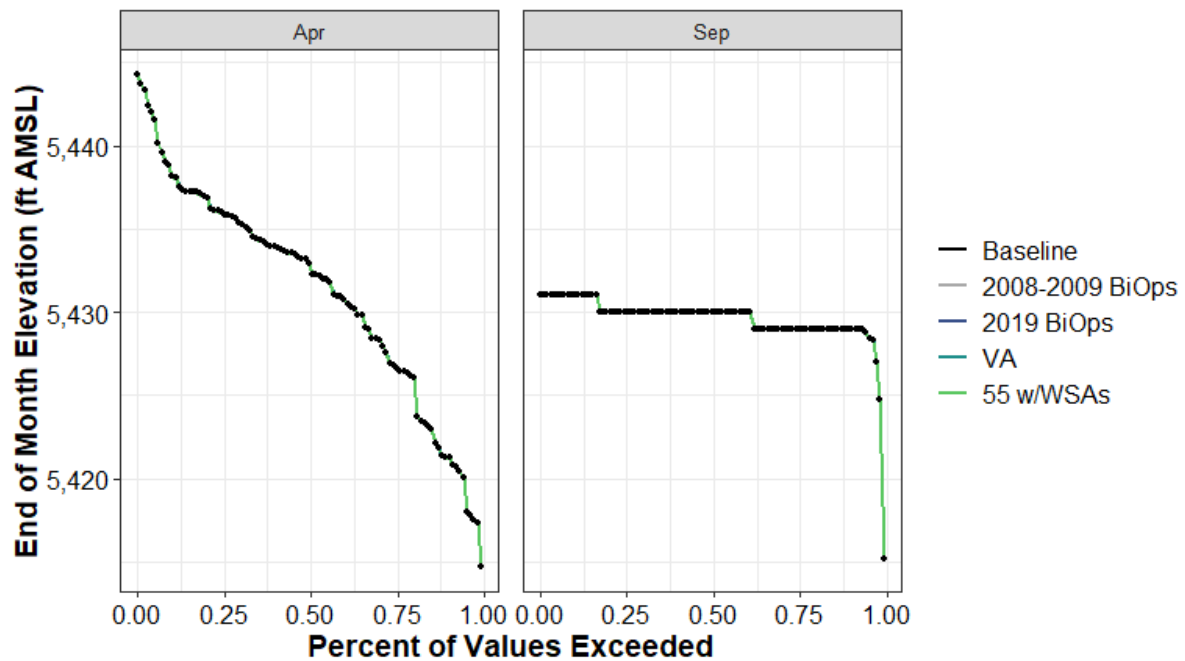


Figure H1a2-98. Ice House Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-197. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Ice House**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 23       | 0               | 0          | 0  | 0         |
| 10%  | 30       | 0               | 0          | 0  | 0         |
| 25%  | 30       | 0               | 0          | 0  | 0         |
| 50%  | 31       | 0               | 0          | 0  | 0         |
| 75%  | 31       | 0               | 0          | 0  | 0         |
| 90%  | 32       | 0               | 0          | 0  | 0         |
| 100% | 32       | 0               | 0          | 0  | 0         |
| Mean | 31       | 0               | 0          | 0  | 0         |

**Table H1a2-198. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Ice House**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,415    | 0               | 0          | 0  | 0         |
| 10%  | 5,429    | 0               | 0          | 0  | 0         |
| 25%  | 5,429    | 0               | 0          | 0  | 0         |
| 50%  | 5,430    | 0               | 0          | 0  | 0         |
| 75%  | 5,430    | 0               | 0          | 0  | 0         |
| 90%  | 5,431    | 0               | 0          | 0  | 0         |
| 100% | 5,431    | 0               | 0          | 0  | 0         |
| Mean | 5,430    | 0               | 0          | 0  | 0         |

**Table H1a2-199. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Ice House**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 23       | 0               | 0          | 0  | 0         |
| 10%  | 26       | 0               | 0          | 0  | 0         |
| 25%  | 29       | 0               | 0          | 0  | 0         |
| 50%  | 33       | 0               | 0          | 0  | 0         |
| 75%  | 35       | 0               | 0          | 0  | 0         |
| 90%  | 36       | 0               | 0          | 0  | 0         |
| 100% | 40       | 0               | 0          | 0  | 0         |
| Mean | 32       | 0               | 0          | 0  | 0         |

**Table H1a2-200. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Ice House**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,415    | 0               | 0          | 0  | 0         |
| 10%  | 5,421    | 0               | 0          | 0  | 0         |
| 25%  | 5,427    | 0               | 0          | 0  | 0         |
| 50%  | 5,433    | 0               | 0          | 0  | 0         |
| 75%  | 5,436    | 0               | 0          | 0  | 0         |
| 90%  | 5,438    | 0               | 0          | 0  | 0         |
| 100% | 5,444    | 0               | 0          | 0  | 0         |
| Mean | 5,431    | 0               | 0          | 0  | 0         |

## H1a2.5.18 Indian Valley Reservoir (Cache Creek Watershed)

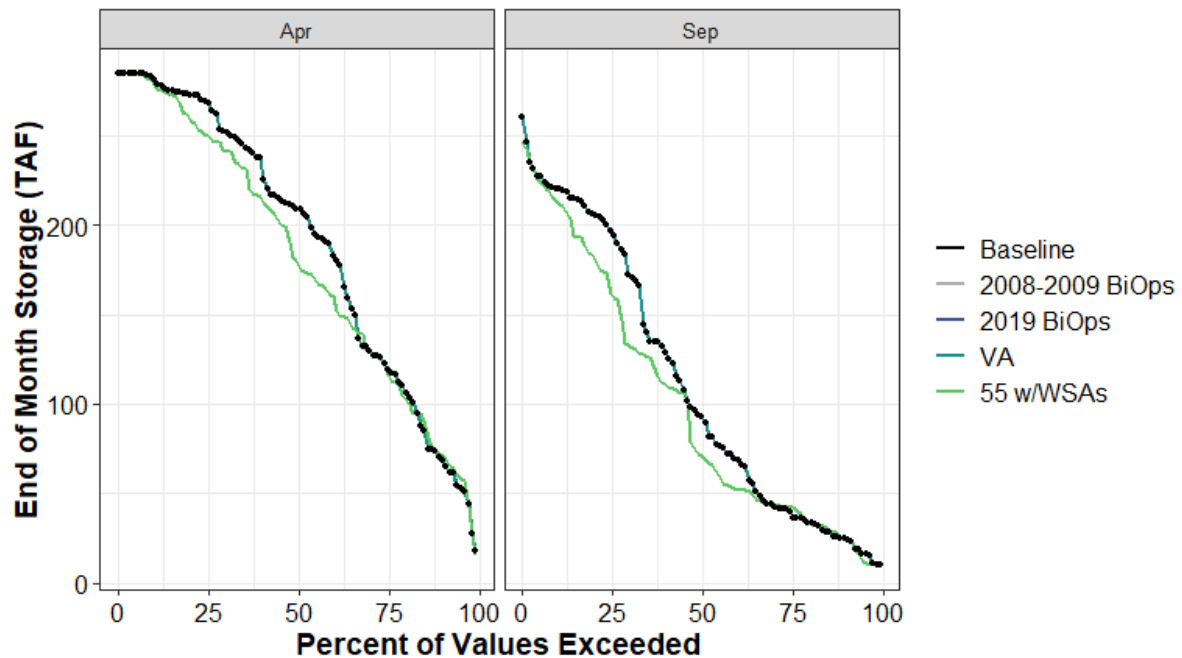


Figure H1a2-99. Indian Valley Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

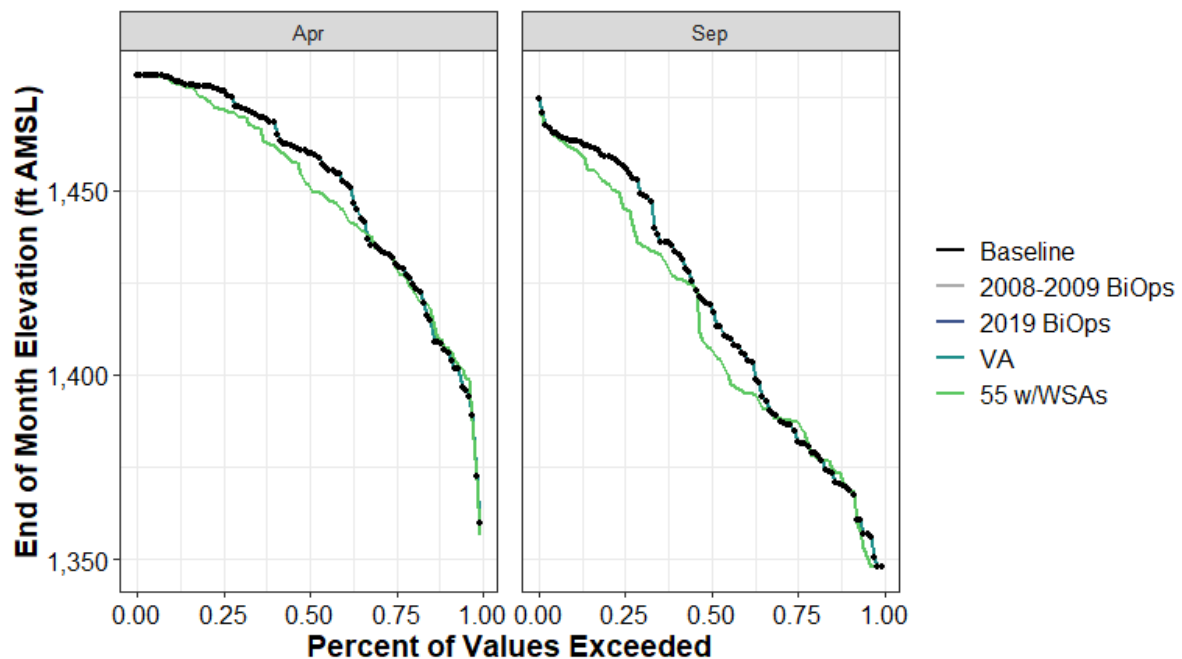


Figure H1a2-100. Indian Valley Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-201. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Indian Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 10       | 0               | 0          | 0  | 0         |
| 10%  | 25       | 0               | 0          | 0  | 0         |
| 25%  | 38       | 0               | 0          | 0  | 4         |
| 50%  | 93       | 0               | 0          | 0  | -22       |
| 75%  | 195      | 0               | 0          | 0  | -35       |
| 90%  | 220      | 0               | 0          | 0  | -8        |
| 100% | 260      | 0               | 0          | 0  | -14       |
| Mean | 111      | 0               | 0          | 0  | -11       |

**Table H1a2-202. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Indian Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,348    | 0               | 0          | 0  | 0         |
| 10%  | 1,370    | 0               | 0          | 0  | 0         |
| 25%  | 1,383    | 0               | 0          | 0  | 4         |
| 50%  | 1,419    | 0               | 0          | 0  | -12       |
| 75%  | 1,456    | 0               | 0          | 0  | -11       |
| 90%  | 1,463    | 0               | 0          | 0  | -2        |
| 100% | 1,475    | 0               | 0          | 0  | -4        |
| Mean | 1,417    | 0               | 0          | 0  | -5        |

**Table H1a2-203. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Indian Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 18       | 0               | 0          | 0  | -2        |
| 10%  | 70       | 0               | 0          | 0  | 2         |
| 25%  | 121      | 0               | 0          | 0  | -2        |
| 50%  | 209      | 0               | 0          | 0  | -29       |
| 75%  | 269      | 0               | 0          | 0  | -19       |
| 90%  | 282      | 0               | 0          | 0  | -3        |
| 100% | 284      | 0               | 0          | 0  | 0         |
| Mean | 190      | 0               | 0          | 0  | -9        |

**Table H1a2-204. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Indian Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,360    | 0               | 0          | 0  | -3        |
| 10%  | 1,406    | 0               | 0          | 0  | 1         |
| 25%  | 1,431    | 0               | 0          | 0  | -1        |
| 50%  | 1,460    | 0               | 0          | 0  | -9        |
| 75%  | 1,477    | 0               | 0          | 0  | -5        |
| 90%  | 1,480    | 0               | 0          | 0  | -1        |
| 100% | 1,481    | 0               | 0          | 0  | 0         |
| Mean | 1,451    | 0               | 0          | 0  | -3        |

## H1a2.5.19 Jackson Meadows Reservoir (Yuba River Watershed)

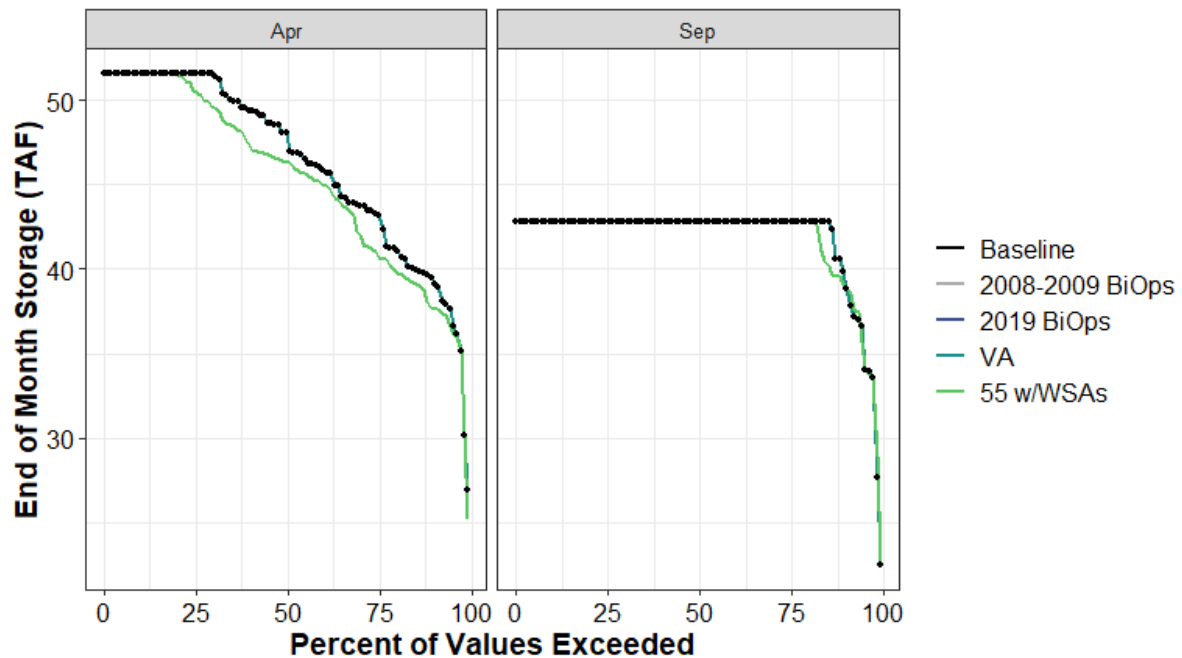


Figure H1a2-101. Jackson Meadows Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

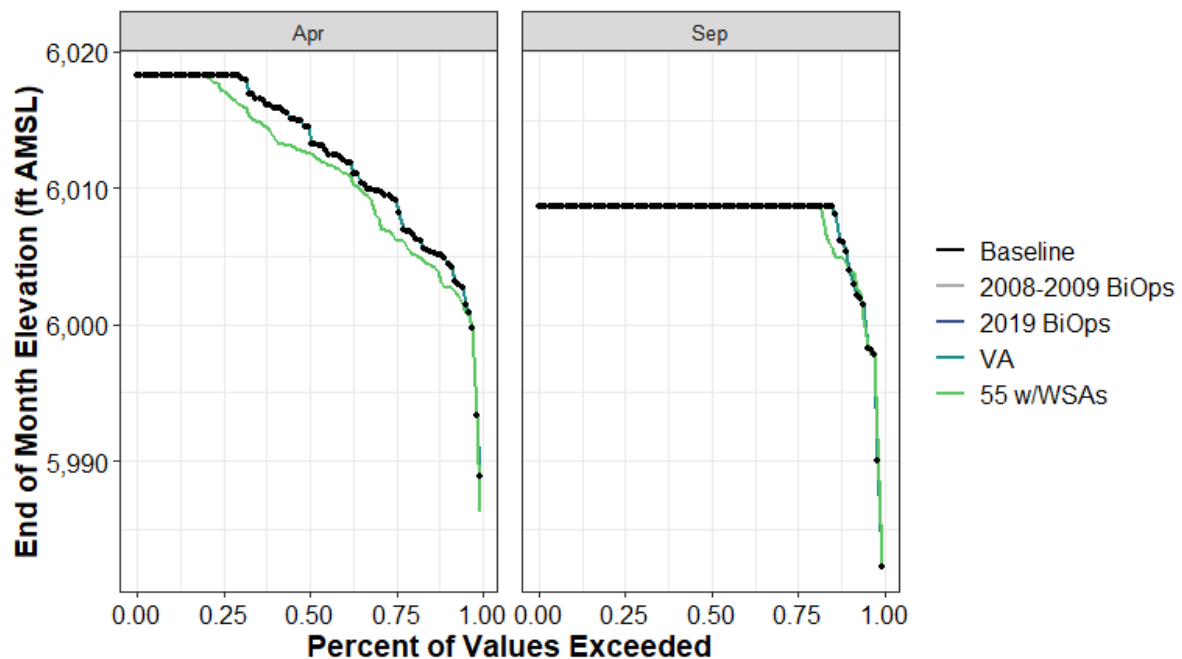


Figure H1a2-102. Jackson Meadows Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-205. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Jackson Meadows Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 22       | 0               | 0          | 0  | 0         |
| 10%  | 40       | 0               | 0          | 0  | -1        |
| 25%  | 43       | 0               | 0          | 0  | 0         |
| 50%  | 43       | 0               | 0          | 0  | 0         |
| 75%  | 43       | 0               | 0          | 0  | 0         |
| 90%  | 43       | 0               | 0          | 0  | 0         |
| 100% | 43       | 0               | 0          | 0  | 0         |
| Mean | 42       | 0               | 0          | 0  | 0         |

**Table H1a2-206. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Jackson Meadows Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,982    | 0               | 0          | 0  | 0         |
| 10%  | 6,005    | 0               | 0          | 0  | -1        |
| 25%  | 6,009    | 0               | 0          | 0  | 0         |
| 50%  | 6,009    | 0               | 0          | 0  | 0         |
| 75%  | 6,009    | 0               | 0          | 0  | 0         |
| 90%  | 6,009    | 0               | 0          | 0  | 0         |
| 100% | 6,009    | 0               | 0          | 0  | 0         |
| Mean | 6,008    | 0               | 0          | 0  | 0         |

**Table H1a2-207. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Jackson Meadows Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 27       | 0               | 0          | 0  | -2        |
| 10%  | 39       | 0               | 0          | 0  | -2        |
| 25%  | 43       | 0               | 0          | 0  | -2        |
| 50%  | 48       | 0               | 0          | 0  | -2        |
| 75%  | 52       | 0               | 0          | 0  | -1        |
| 90%  | 52       | 0               | 0          | 0  | 0         |
| 100% | 52       | 0               | 0          | 0  | 0         |
| Mean | 46       | 0               | 0          | 0  | -1        |

**Table H1a2-208. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Jackson Meadows Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,989    | 0               | 0          | 0  | -3        |
| 10%  | 6,005    | 0               | 0          | 0  | -2        |
| 25%  | 6,009    | 0               | 0          | 0  | -3        |
| 50%  | 6,014    | 0               | 0          | 0  | -2        |
| 75%  | 6,018    | 0               | 0          | 0  | -1        |
| 90%  | 6,018    | 0               | 0          | 0  | 0         |
| 100% | 6,018    | 0               | 0          | 0  | 0         |
| Mean | 6,012    | 0               | 0          | 0  | -1        |

## H1a2.5.20 Jenkinson Lake (Cosumnes River Watershed)

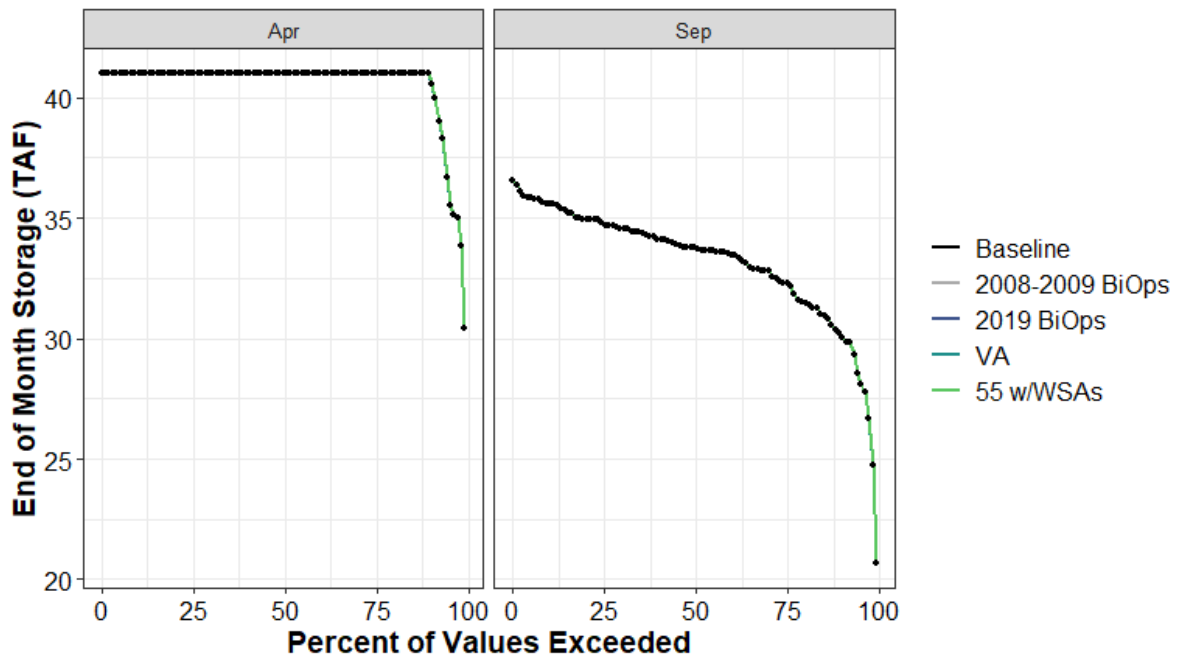


Figure H1a2-103. Jenkinson Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-209. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Jenkinson Lake

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 21       | 0               | 0          | 0  | 0         |
| 10%  | 30       | 0               | 0          | 0  | 0         |
| 25%  | 32       | 0               | 0          | 0  | 0         |
| 50%  | 34       | 0               | 0          | 0  | 0         |
| 75%  | 35       | 0               | 0          | 0  | 0         |
| 90%  | 36       | 0               | 0          | 0  | 0         |
| 100% | 37       | 0               | 0          | 0  | 0         |
| Mean | 33       | 0               | 0          | 0  | 0         |

Table H1a2-210. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Jenkinson Lake

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 30       | 0               | 0          | 0  | 0         |
| 10%  | 41       | 0               | 0          | 0  | 0         |
| 25%  | 41       | 0               | 0          | 0  | 0         |
| 50%  | 41       | 0               | 0          | 0  | 0         |
| 75%  | 41       | 0               | 0          | 0  | 0         |
| 90%  | 41       | 0               | 0          | 0  | 0         |
| 100% | 41       | 0               | 0          | 0  | 0         |
| Mean | 41       | 0               | 0          | 0  | 0         |

## H1a2.5.21 Lake Almanor (Feather River Watershed)

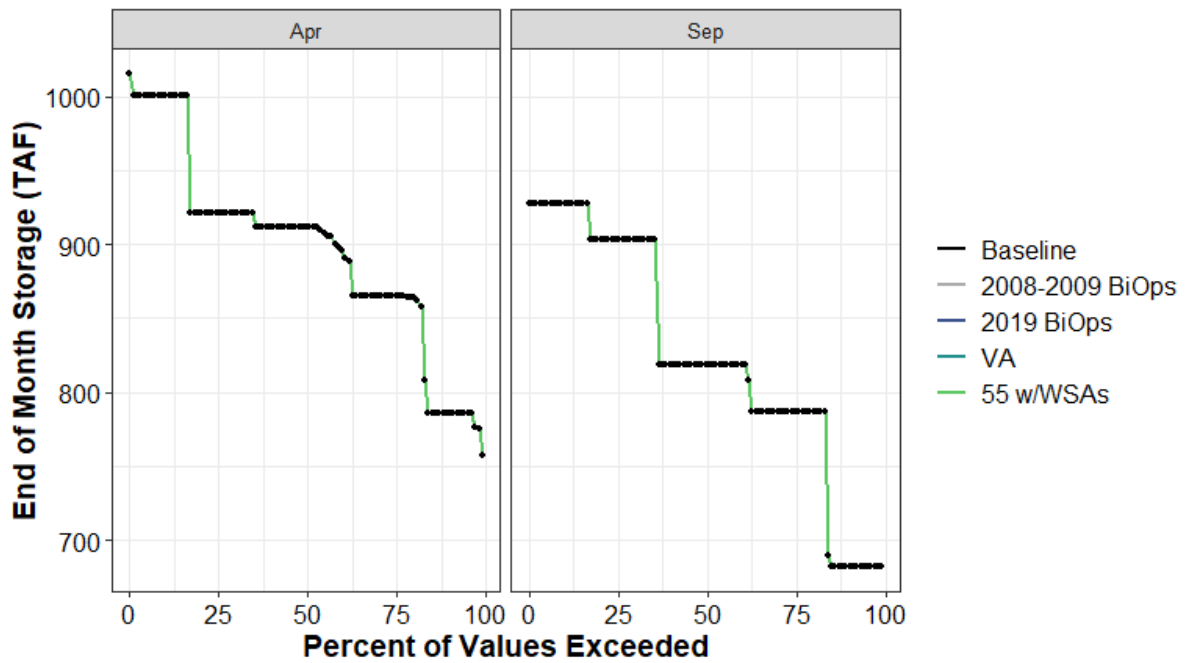


Figure H1a2-104. Lake Almanor End of April and End of September Storage (TAF) Percent Exceedance Plot

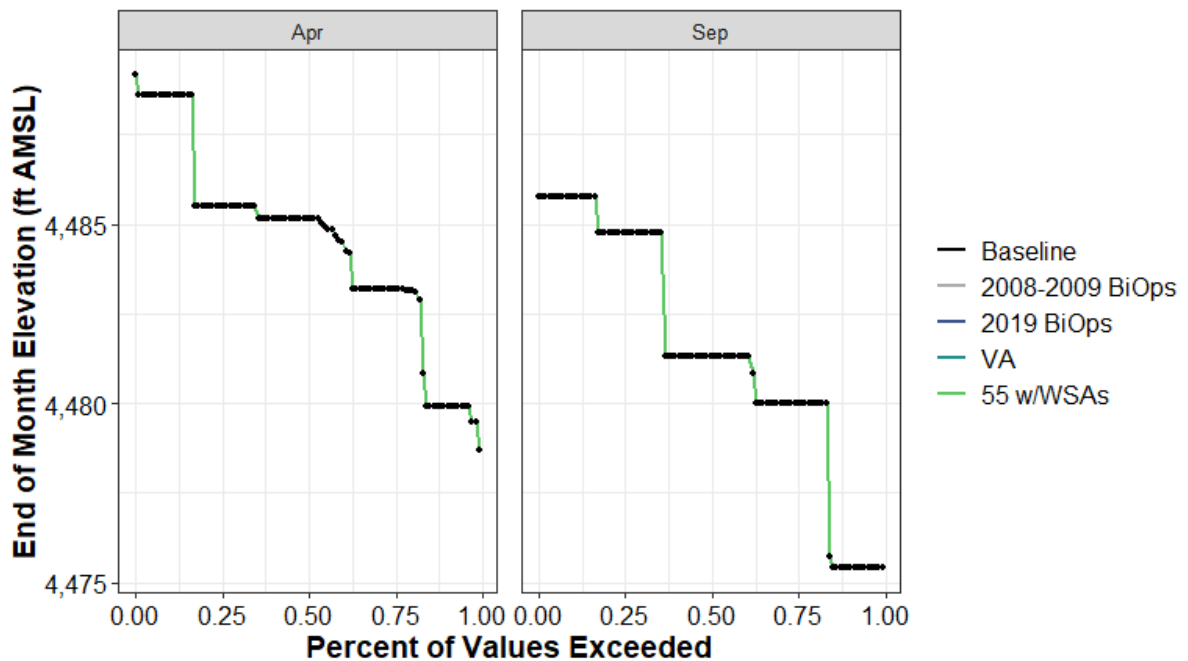


Figure H1a2-105. Lake Almanor Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-211. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Almanor**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 682      | 0               | 0          | 0  | 0         |
| 10%  | 682      | 0               | 0          | 0  | 0         |
| 25%  | 787      | 0               | 0          | 0  | 0         |
| 50%  | 819      | 0               | 0          | 0  | 0         |
| 75%  | 903      | 0               | 0          | 0  | 0         |
| 90%  | 928      | 0               | 0          | 0  | 0         |
| 100% | 928      | 0               | 0          | 0  | 0         |
| Mean | 825      | 0               | 0          | 0  | 0         |

**Table H1a2-212. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Almanor**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,475    | 0               | 0          | 0  | 0         |
| 10%  | 4,475    | 0               | 0          | 0  | 0         |
| 25%  | 4,480    | 0               | 0          | 0  | 0         |
| 50%  | 4,481    | 0               | 0          | 0  | 0         |
| 75%  | 4,485    | 0               | 0          | 0  | 0         |
| 90%  | 4,486    | 0               | 0          | 0  | 0         |
| 100% | 4,486    | 0               | 0          | 0  | 0         |
| Mean | 4,482    | 0               | 0          | 0  | 0         |

**Table H1a2-213. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Almanor**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 757      | 0               | 0          | 0  | 0         |
| 10%  | 786      | 0               | 0          | 0  | 0         |
| 25%  | 865      | 0               | 0          | 0  | 0         |
| 50%  | 912      | 0               | 0          | 0  | 0         |
| 75%  | 921      | 0               | 0          | 0  | 0         |
| 90%  | 1,001    | 0               | 0          | 0  | 0         |
| 100% | 1,015    | 0               | 0          | 0  | 0         |
| Mean | 896      | 0               | 0          | 0  | 0         |

**Table H1a2-214. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Almanor**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,479    | 0               | 0          | 0  | 0         |
| 10%  | 4,480    | 0               | 0          | 0  | 0         |
| 25%  | 4,483    | 0               | 0          | 0  | 0         |
| 50%  | 4,485    | 0               | 0          | 0  | 0         |
| 75%  | 4,485    | 0               | 0          | 0  | 0         |
| 90%  | 4,489    | 0               | 0          | 0  | 0         |
| 100% | 4,489    | 0               | 0          | 0  | 0         |
| Mean | 4,484    | 0               | 0          | 0  | 0         |

## H1a2.5.22 Lake Aloha (American River Watershed)

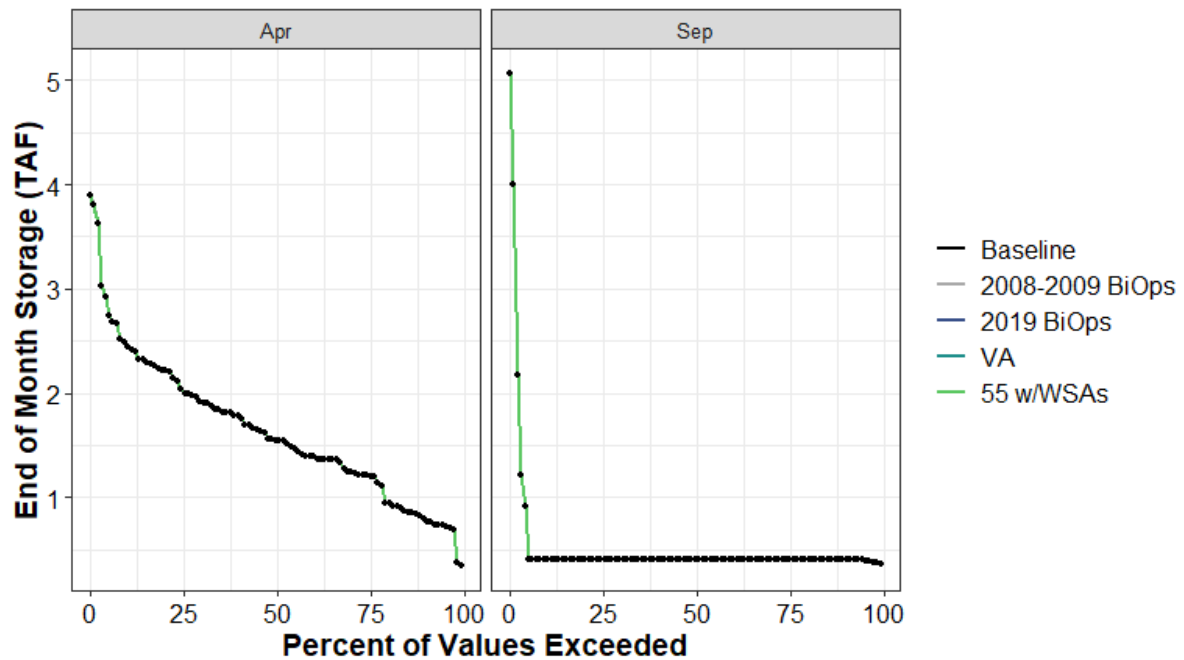


Figure H1a2-106. Lake Aloha End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-215. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Aloha

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 0        | 0               | 0          | 0  | 0         |
| 10%  | 0        | 0               | 0          | 0  | 0         |
| 25%  | 0        | 0               | 0          | 0  | 0         |
| 50%  | 0        | 0               | 0          | 0  | 0         |
| 75%  | 0        | 0               | 0          | 0  | 0         |
| 90%  | 0        | 0               | 0          | 0  | 0         |
| 100% | 5        | 0               | 0          | 0  | 0         |
| Mean | 1        | 0               | 0          | 0  | 0         |

Table H1a2-216. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Aloha

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 0        | 0               | 0          | 0  | 0         |
| 10%  | 1        | 0               | 0          | 0  | 0         |
| 25%  | 1        | 0               | 0          | 0  | 0         |
| 50%  | 2        | 0               | 0          | 0  | 0         |
| 75%  | 2        | 0               | 0          | 0  | 0         |
| 90%  | 2        | 0               | 0          | 0  | 0         |
| 100% | 4        | 0               | 0          | 0  | 0         |
| Mean | 2        | 0               | 0          | 0  | 0         |

## H1a2.5.23 Lake Amador (Mokelumne River Watershed)

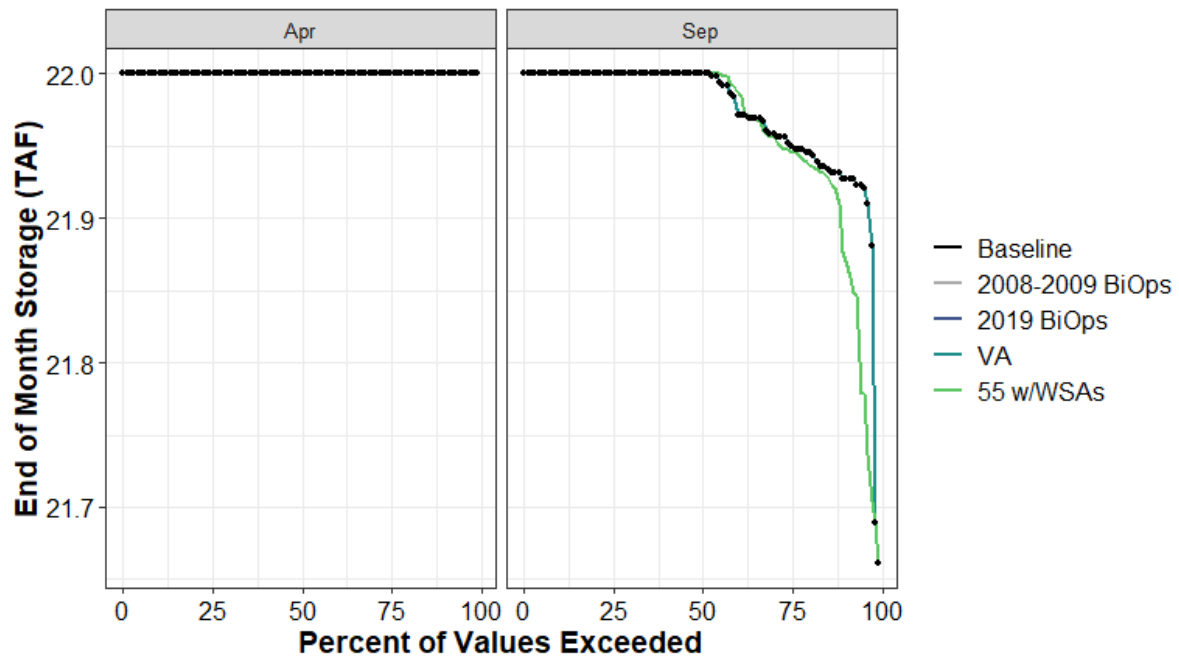


Figure H1a2-107. Lake Amador End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-217. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Amador

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 22       | 0               | 0          | 0  | 0         |
| 10%  | 22       | 0               | 0          | 0  | 0         |
| 25%  | 22       | 0               | 0          | 0  | 0         |
| 50%  | 22       | 0               | 0          | 0  | 0         |
| 75%  | 22       | 0               | 0          | 0  | 0         |
| 90%  | 22       | 0               | 0          | 0  | 0         |
| 100% | 22       | 0               | 0          | 0  | 0         |
| Mean | 22       | 0               | 0          | 0  | 0         |

Table H1a2-218. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Amador

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 22       | 0               | 0          | 0  | 0         |
| 10%  | 22       | 0               | 0          | 0  | 0         |
| 25%  | 22       | 0               | 0          | 0  | 0         |
| 50%  | 22       | 0               | 0          | 0  | 0         |
| 75%  | 22       | 0               | 0          | 0  | 0         |
| 90%  | 22       | 0               | 0          | 0  | 0         |
| 100% | 22       | 0               | 0          | 0  | 0         |
| Mean | 22       | 0               | 0          | 0  | 0         |

## H1a2.5.24 Lake Berryessa (Putah Creek Watershed)

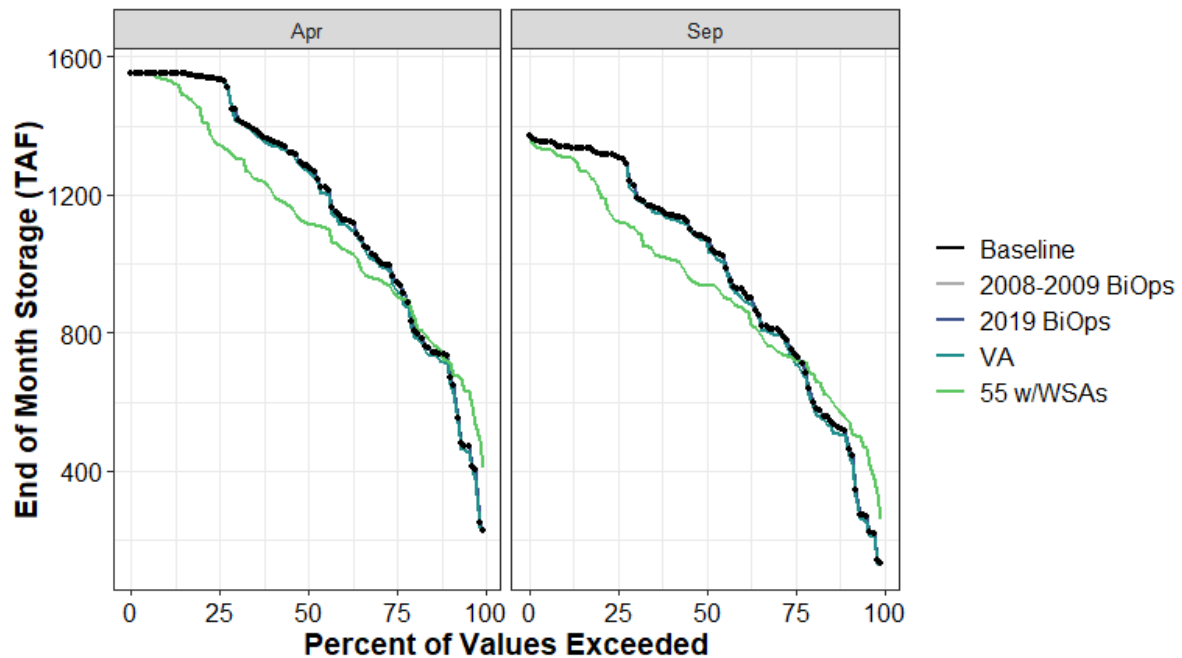


Figure H1a2-108. Lake Berryessa End of April and End of September Storage (TAF) Percent Exceedance Plot

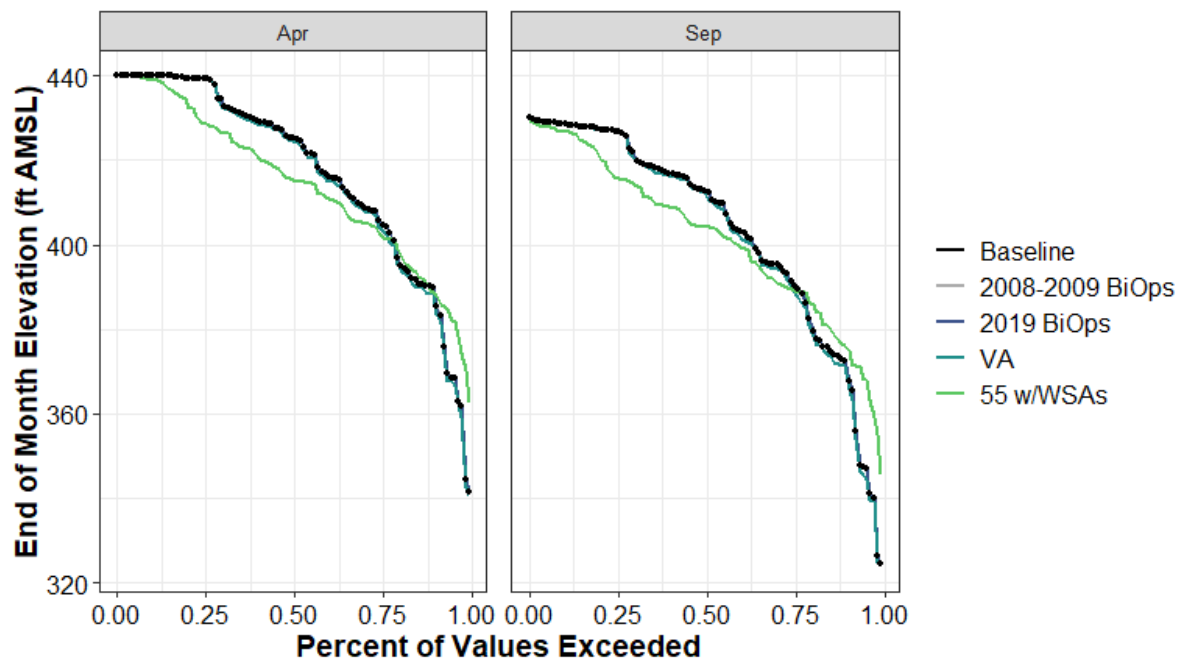


Figure H1a2-109. Lake Berryessa Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-219. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Berryessa**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 130      | 0               | 0          | -3  | 129       |
| 10%  | 505      | 0               | 0          | -14 | 50        |
| 25%  | 744      | 1               | 1          | -24 | -20       |
| 50%  | 1,073    | 1               | 0          | -7  | -135      |
| 75%  | 1,312    | 0               | 0          | 0   | -189      |
| 90%  | 1,342    | 0               | 0          | 0   | -31       |
| 100% | 1,370    | 0               | 0          | 0   | -14       |
| Mean | 969      | 0               | 0          | -10 | -43       |

**Table H1a2-220. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Berryessa**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 324      | 0               | 0          | -1 | 21        |
| 10%  | 372      | 0               | 0          | -1 | 4         |
| 25%  | 391      | 0               | 0          | -2 | -1        |
| 50%  | 413      | 0               | 0          | 0  | -8        |
| 75%  | 427      | 0               | 0          | 0  | -11       |
| 90%  | 428      | 0               | 0          | 0  | -2        |
| 100% | 430      | 0               | 0          | 0  | -1        |
| Mean | 403      | 0               | 0          | -1 | -2        |

**Table H1a2-221. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Berryessa**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 227      | 0               | 0          | -6  | 183       |
| 10%  | 720      | 0               | 0          | -21 | -3        |
| 25%  | 955      | 0               | 1          | -23 | -44       |
| 50%  | 1,286    | -1              | 0          | -12 | -166      |
| 75%  | 1,536    | 0               | 0          | -1  | -192      |
| 90%  | 1,551    | 0               | 0          | 0   | -19       |
| 100% | 1,551    | 0               | 0          | 0   | 0         |
| Mean | 1,178    | 0               | 0          | -11 | -59       |

**Table H1a2-222. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Berryessa**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 341      | 0               | 0          | -1 | 21        |
| 10%  | 389      | 0               | 0          | -2 | 0         |
| 25%  | 405      | 0               | 0          | -2 | -3        |
| 50%  | 425      | 0               | 0          | -1 | -10       |
| 75%  | 439      | 0               | 0          | 0  | -11       |
| 90%  | 440      | 0               | 0          | 0  | -1        |
| 100% | 440      | 0               | 0          | 0  | 0         |
| Mean | 417      | 0               | 0          | -1 | -3        |

## H1a2.5.25 Lake Davis (Feather River Watershed)

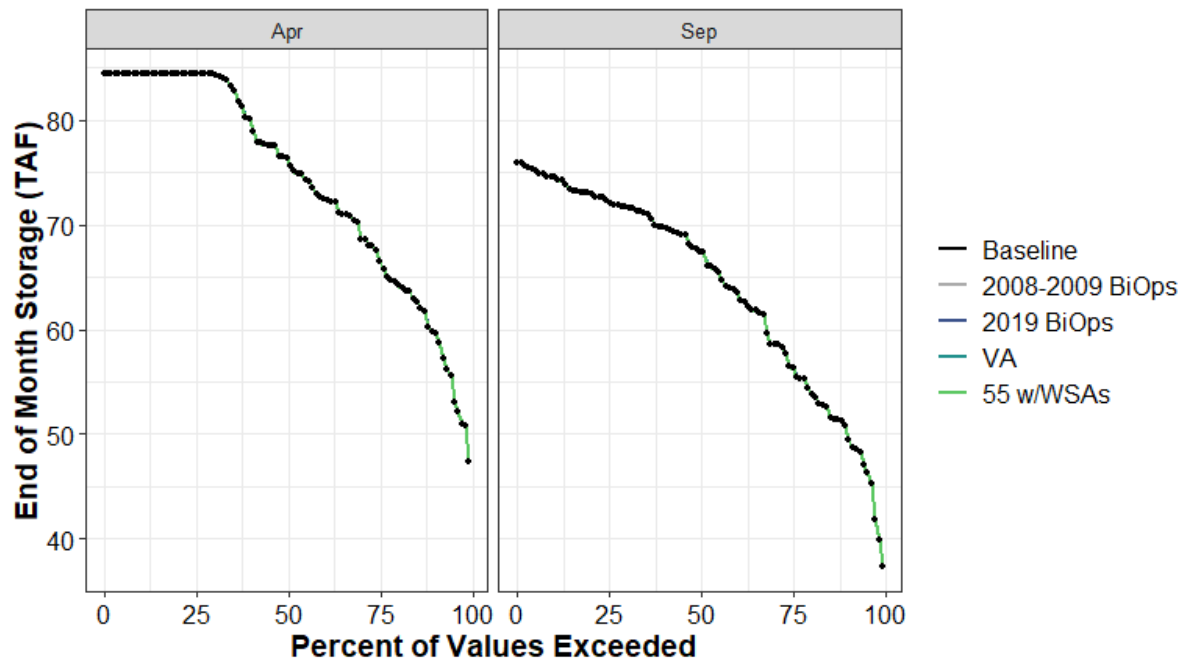


Figure H1a2-110. Lake Davis End of April and End of September Storage (TAF) Percent Exceedance Plot

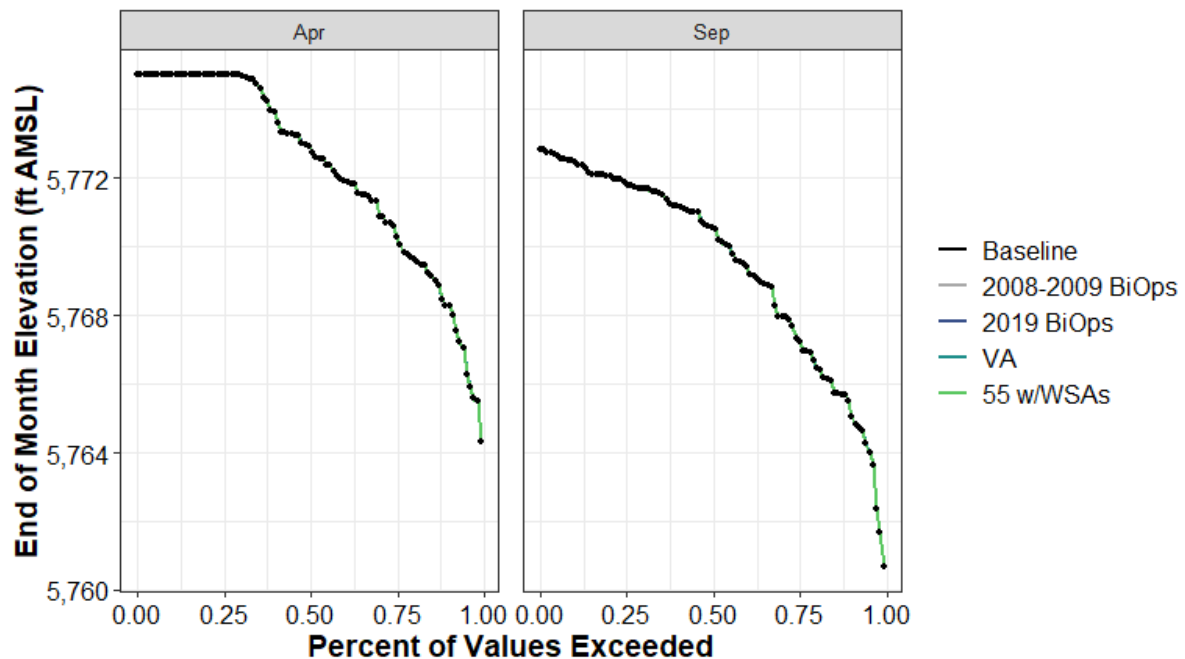


Figure H1a2-111. Lake Davis Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-223. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Davis**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 37       | 0               | 0          | 0  | 0         |
| 10%  | 51       | 0               | 0          | 0  | 0         |
| 25%  | 56       | 0               | 0          | 0  | 0         |
| 50%  | 67       | 0               | 0          | 0  | 0         |
| 75%  | 72       | 0               | 0          | 0  | 0         |
| 90%  | 75       | 0               | 0          | 0  | 0         |
| 100% | 76       | 0               | 0          | 0  | 0         |
| Mean | 64       | 0               | 0          | 0  | 0         |

**Table H1a2-224. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Davis**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,761    | 0               | 0          | 0  | 0         |
| 10%  | 5,765    | 0               | 0          | 0  | 0         |
| 25%  | 5,767    | 0               | 0          | 0  | 0         |
| 50%  | 5,771    | 0               | 0          | 0  | 0         |
| 75%  | 5,772    | 0               | 0          | 0  | 0         |
| 90%  | 5,772    | 0               | 0          | 0  | 0         |
| 100% | 5,773    | 0               | 0          | 0  | 0         |
| Mean | 5,769    | 0               | 0          | 0  | 0         |

**Table H1a2-225. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Davis**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 47       | 0               | 0          | 0  | 0         |
| 10%  | 60       | 0               | 0          | 0  | 0         |
| 25%  | 67       | 0               | 0          | 0  | 0         |
| 50%  | 76       | 0               | 0          | 0  | 0         |
| 75%  | 84       | 0               | 0          | 0  | 0         |
| 90%  | 84       | 0               | 0          | 0  | 0         |
| 100% | 84       | 0               | 0          | 0  | 0         |
| Mean | 74       | 0               | 0          | 0  | 0         |

**Table H1a2-226. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Davis**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,764    | 0               | 0          | 0  | 0         |
| 10%  | 5,768    | 0               | 0          | 0  | 0         |
| 25%  | 5,770    | 0               | 0          | 0  | 0         |
| 50%  | 5,773    | 0               | 0          | 0  | 0         |
| 75%  | 5,775    | 0               | 0          | 0  | 0         |
| 90%  | 5,775    | 0               | 0          | 0  | 0         |
| 100% | 5,775    | 0               | 0          | 0  | 0         |
| Mean | 5,772    | 0               | 0          | 0  | 0         |

## H1a2.5.26 Lake Fordyce (Yuba River Watershed)

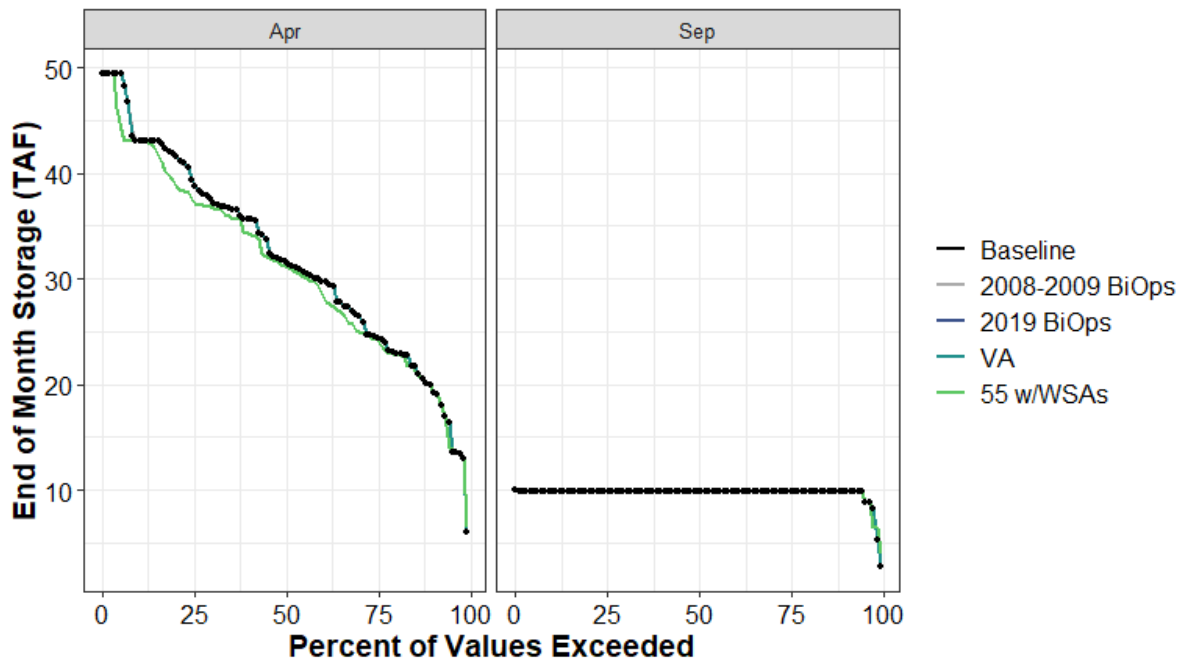


Figure H1a2-112. Lake Fordyce End of April and End of September Storage (TAF) Percent Exceedance Plot

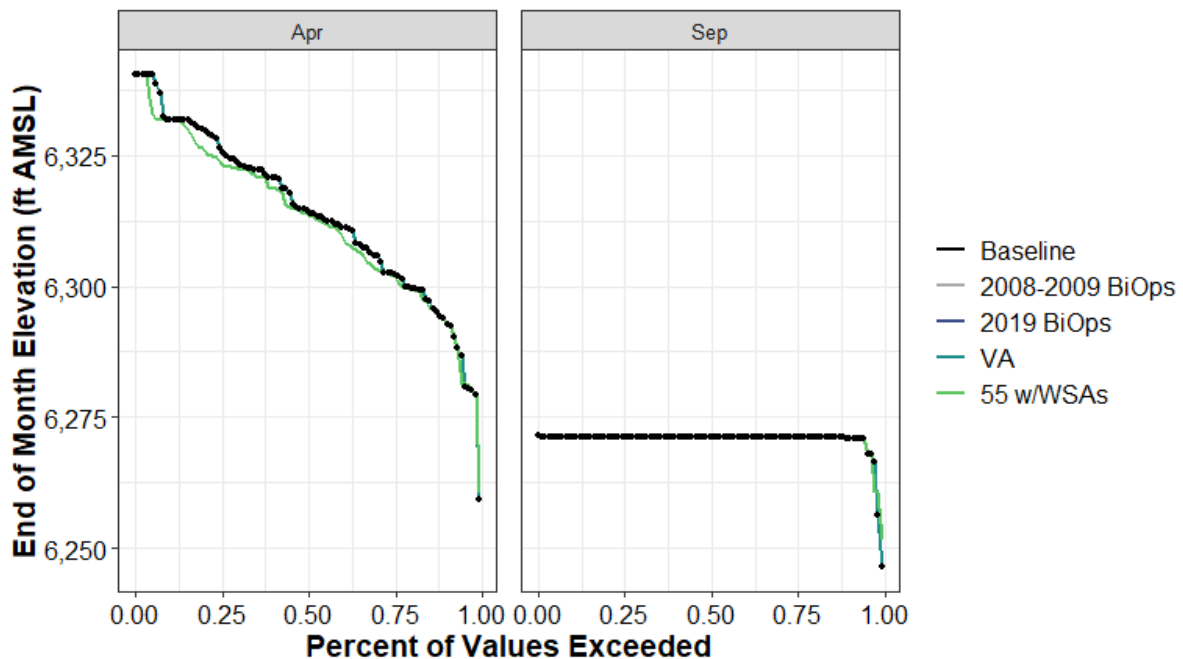


Figure H1a2-113. Lake Fordyce Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-227. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Fordyce**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3        | 0               | 0          | 0  | 1         |
| 10%  | 10       | 0               | 0          | 0  | 0         |
| 25%  | 10       | 0               | 0          | 0  | 0         |
| 50%  | 10       | 0               | 0          | 0  | 0         |
| 75%  | 10       | 0               | 0          | 0  | 0         |
| 90%  | 10       | 0               | 0          | 0  | 0         |
| 100% | 10       | 0               | 0          | 0  | 0         |
| Mean | 10       | 0               | 0          | 0  | 0         |

**Table H1a2-228. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Fordyce**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6,246    | 0               | 0          | 0  | 5         |
| 10%  | 6,271    | 0               | 0          | 0  | 0         |
| 25%  | 6,271    | 0               | 0          | 0  | 0         |
| 50%  | 6,271    | 0               | 0          | 0  | 0         |
| 75%  | 6,271    | 0               | 0          | 0  | 0         |
| 90%  | 6,271    | 0               | 0          | 0  | 0         |
| 100% | 6,271    | 0               | 0          | 0  | 0         |
| Mean | 6,271    | 0               | 0          | 0  | 0         |

**Table H1a2-229. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Fordyce**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6        | 0               | 0          | 0  | 0         |
| 10%  | 20       | 0               | 0          | 0  | 0         |
| 25%  | 24       | 0               | 0          | 0  | 0         |
| 50%  | 32       | 0               | 0          | 0  | 0         |
| 75%  | 39       | 0               | 0          | 0  | -2        |
| 90%  | 43       | 0               | 0          | 0  | 0         |
| 100% | 49       | 0               | 0          | 0  | 0         |
| Mean | 32       | 0               | 0          | 0  | -1        |

**Table H1a2-230. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Fordyce**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6,259    | 0               | 0          | 0  | 1         |
| 10%  | 6,294    | 0               | 0          | 0  | 0         |
| 25%  | 6,302    | 0               | 0          | 0  | 0         |
| 50%  | 6,315    | 0               | 0          | 0  | -1        |
| 75%  | 6,326    | 0               | 0          | 0  | -3        |
| 90%  | 6,332    | 0               | 0          | 0  | 0         |
| 100% | 6,340    | 0               | 0          | 0  | 0         |
| Mean | 6,314    | 0               | 0          | 0  | -1        |

## H1a2.5.27 Lake Spaulding (Yuba River Watershed)

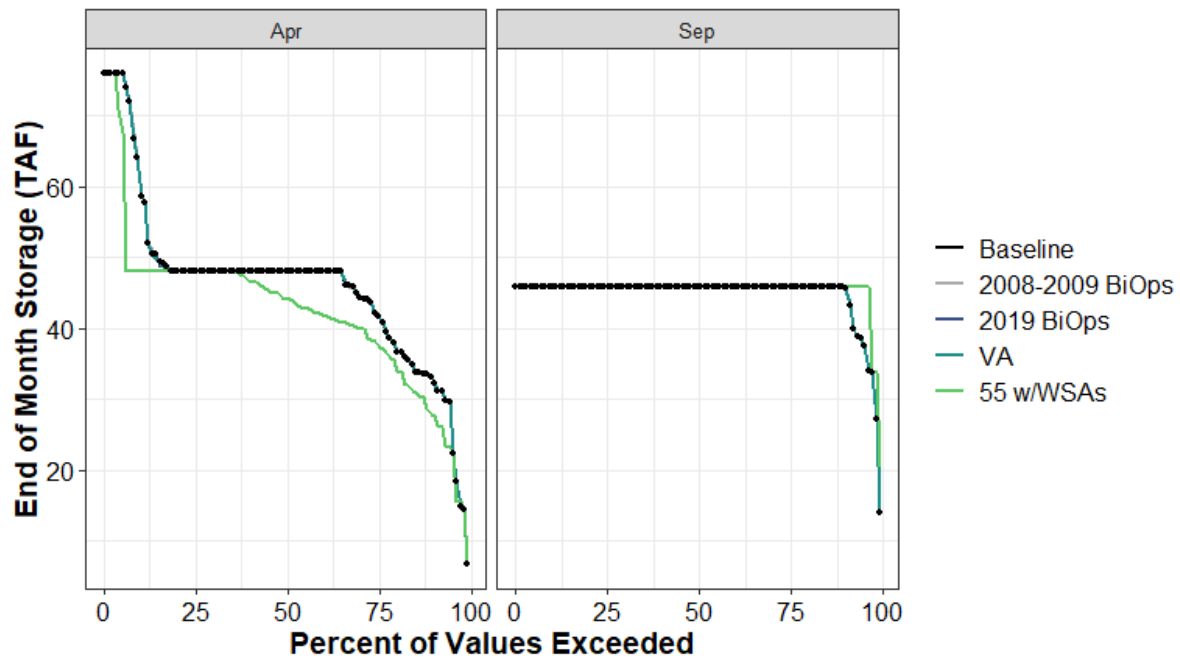


Figure H1a2-114. Lake Spaulding End of April and End of September Storage (TAF) Percent Exceedance Plot

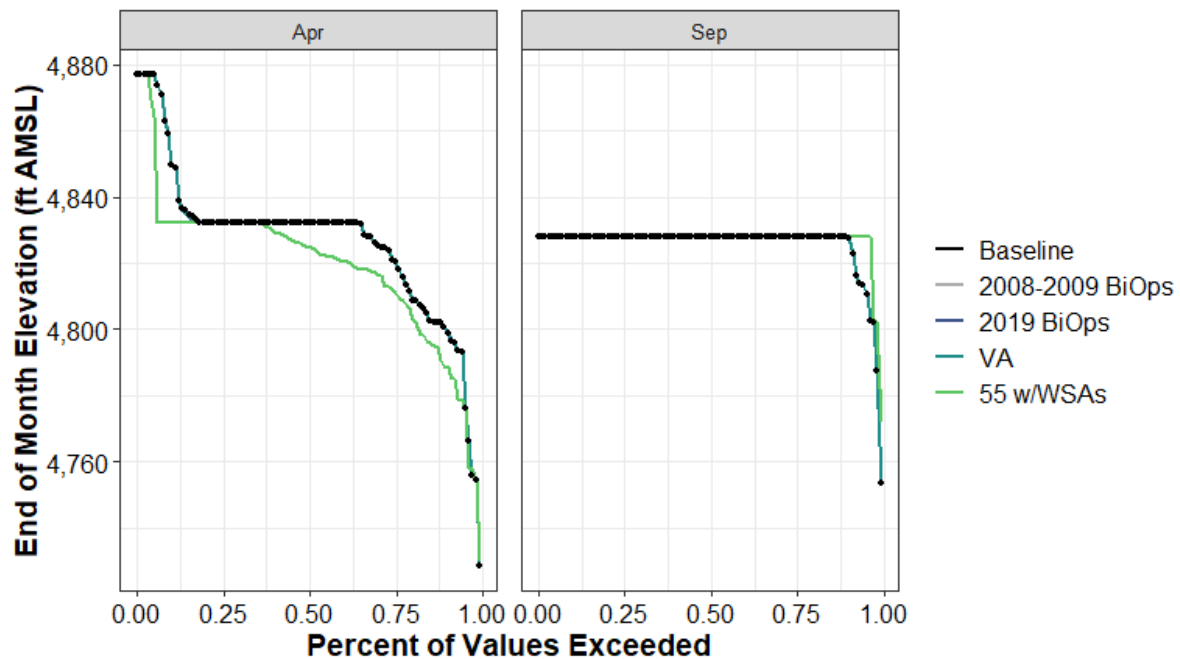


Figure H1a2-115. Lake Spaulding Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-231. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Spaulding**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 14       | 0               | 0          | 0  | 6         |
| 10%  | 46       | 0               | 0          | 0  | 0         |
| 25%  | 46       | 0               | 0          | 0  | 0         |
| 50%  | 46       | 0               | 0          | 0  | 0         |
| 75%  | 46       | 0               | 0          | 0  | 0         |
| 90%  | 46       | 0               | 0          | 0  | 0         |
| 100% | 46       | 0               | 0          | 0  | 0         |
| Mean | 45       | 0               | 0          | 0  | 1         |

**Table H1a2-232. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Spaulding**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,753    | 0               | 0          | 0  | 19        |
| 10%  | 4,828    | 0               | 0          | 0  | 0         |
| 25%  | 4,828    | 0               | 0          | 0  | 0         |
| 50%  | 4,828    | 0               | 0          | 0  | 0         |
| 75%  | 4,828    | 0               | 0          | 0  | 0         |
| 90%  | 4,828    | 0               | 0          | 0  | 0         |
| 100% | 4,828    | 0               | 0          | 0  | 0         |
| Mean | 4,826    | 0               | 0          | 0  | 1         |

**Table H1a2-233. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Spaulding**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7        | 0               | 0          | 0  | 0         |
| 10%  | 33       | 0               | 0          | 0  | -5        |
| 25%  | 42       | 0               | 0          | 0  | -4        |
| 50%  | 48       | 0               | 0          | 0  | -4        |
| 75%  | 48       | 0               | 0          | 0  | 0         |
| 90%  | 60       | 0               | 0          | 0  | -12       |
| 100% | 76       | 0               | 0          | 0  | 0         |
| Mean | 46       | 0               | 0          | 0  | -4        |

**Table H1a2-234. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lake Spaulding**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,728    | 0               | 0          | 0  | 2         |
| 10%  | 4,800    | 0               | 0          | 0  | -11       |
| 25%  | 4,821    | 0               | 0          | 0  | -9        |
| 50%  | 4,832    | 0               | 0          | 0  | -7        |
| 75%  | 4,832    | 0               | 0          | 0  | 0         |
| 90%  | 4,852    | 0               | 0          | 0  | -20       |
| 100% | 4,877    | 0               | 0          | 0  | 0         |
| Mean | 4,827    | 0               | 0          | 0  | -7        |

## H1a2.5.28 Lake Valley (American River Watershed)

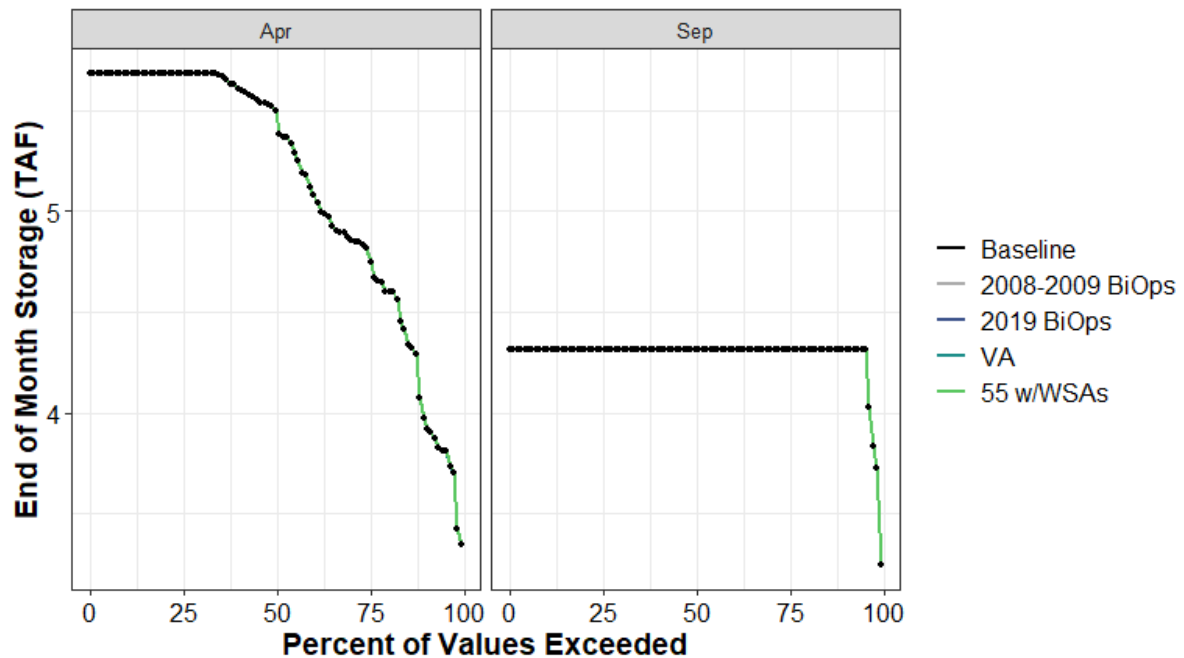


Figure H1a2-116. Lake Valley End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-235. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lake Valley

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3        | 0               | 0          | 0  | 0         |
| 10%  | 4        | 0               | 0          | 0  | 0         |
| 25%  | 4        | 0               | 0          | 0  | 0         |
| 50%  | 4        | 0               | 0          | 0  | 0         |
| 75%  | 4        | 0               | 0          | 0  | 0         |
| 90%  | 4        | 0               | 0          | 0  | 0         |
| 100% | 4        | 0               | 0          | 0  | 0         |
| Mean | 4        | 0               | 0          | 0  | 0         |

Table H1a2-236. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lake Valley

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3        | 0               | 0          | 0  | 0         |
| 10%  | 4        | 0               | 0          | 0  | 0         |
| 25%  | 5        | 0               | 0          | 0  | 0         |
| 50%  | 5        | 0               | 0          | 0  | 0         |
| 75%  | 6        | 0               | 0          | 0  | 0         |
| 90%  | 6        | 0               | 0          | 0  | 0         |
| 100% | 6        | 0               | 0          | 0  | 0         |
| Mean | 5        | 0               | 0          | 0  | 0         |

## H1a2.5.29 Little Grass Valley Reservoir (Feather River Watershed)

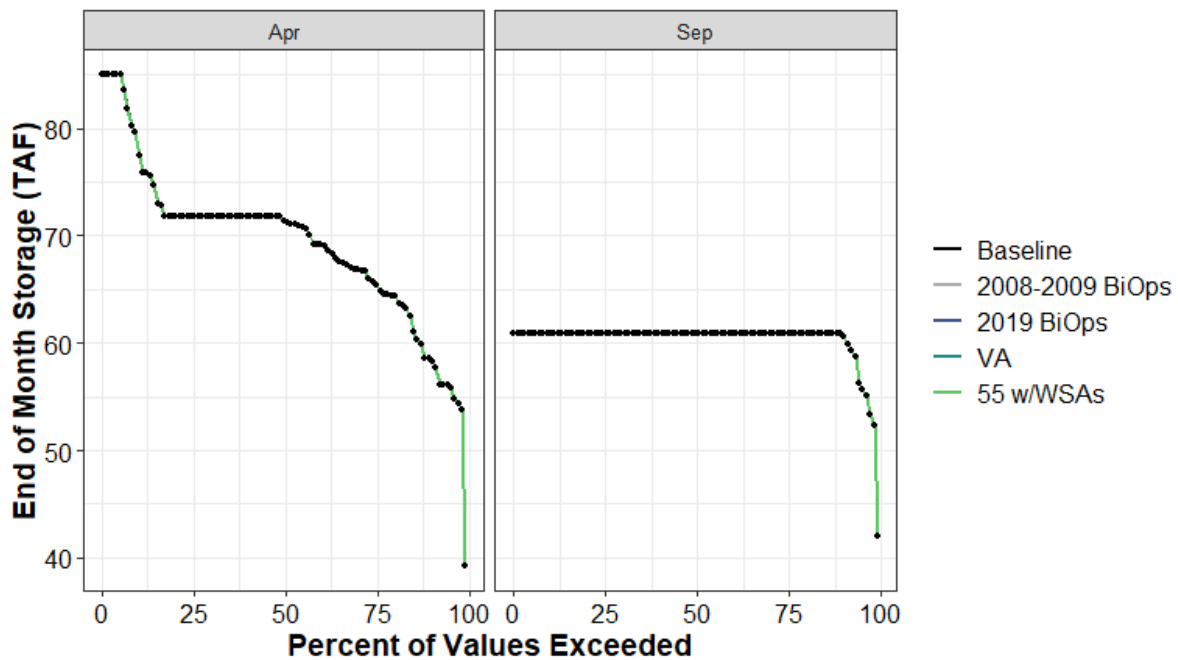


Figure H1a2-117. Little Grass Valley Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

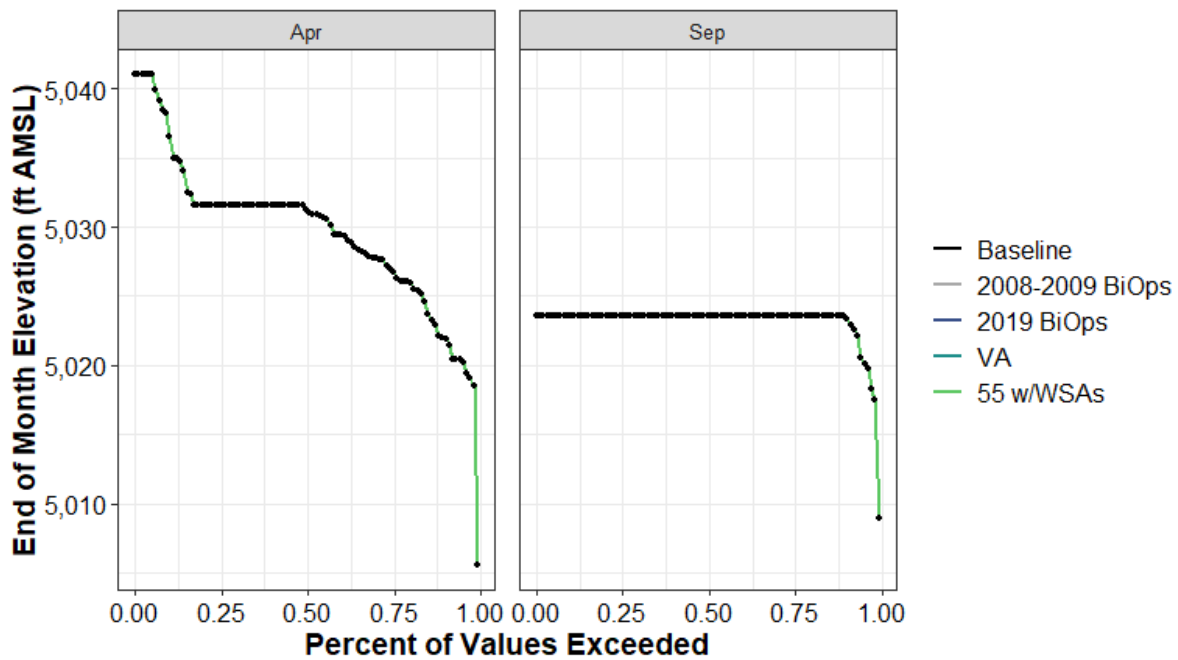


Figure H1a2-118. Little Grass Valley Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-237. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Little Grass Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 42       | 0               | 0          | 0  | 0         |
| 10%  | 61       | 0               | 0          | 0  | 0         |
| 25%  | 61       | 0               | 0          | 0  | 0         |
| 50%  | 61       | 0               | 0          | 0  | 0         |
| 75%  | 61       | 0               | 0          | 0  | 0         |
| 90%  | 61       | 0               | 0          | 0  | 0         |
| 100% | 61       | 0               | 0          | 0  | 0         |
| Mean | 60       | 0               | 0          | 0  | 0         |

**Table H1a2-238. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Little Grass Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,009    | 0               | 0          | 0  | 0         |
| 10%  | 5,024    | 0               | 0          | 0  | 0         |
| 25%  | 5,024    | 0               | 0          | 0  | 0         |
| 50%  | 5,024    | 0               | 0          | 0  | 0         |
| 75%  | 5,024    | 0               | 0          | 0  | 0         |
| 90%  | 5,024    | 0               | 0          | 0  | 0         |
| 100% | 5,024    | 0               | 0          | 0  | 0         |
| Mean | 5,023    | 0               | 0          | 0  | 0         |

**Table H1a2-239. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Little Grass Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 39       | 0               | 0          | 0  | 0         |
| 10%  | 59       | 0               | 0          | 0  | 0         |
| 25%  | 66       | 0               | 0          | 0  | 0         |
| 50%  | 71       | 0               | 0          | 0  | 0         |
| 75%  | 72       | 0               | 0          | 0  | 0         |
| 90%  | 78       | 0               | 0          | 0  | 0         |
| 100% | 85       | 0               | 0          | 0  | 0         |
| Mean | 69       | 0               | 0          | 0  | 0         |

**Table H1a2-240. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Little Grass Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,006    | 0               | 0          | 0  | 0         |
| 10%  | 5,022    | 0               | 0          | 0  | 0         |
| 25%  | 5,027    | 0               | 0          | 0  | 0         |
| 50%  | 5,031    | 0               | 0          | 0  | 0         |
| 75%  | 5,032    | 0               | 0          | 0  | 0         |
| 90%  | 5,037    | 0               | 0          | 0  | 0         |
| 100% | 5,041    | 0               | 0          | 0  | 0         |
| Mean | 5,030    | 0               | 0          | 0  | 0         |

## H1a2.5.30 Loon Lake (American River Watershed)

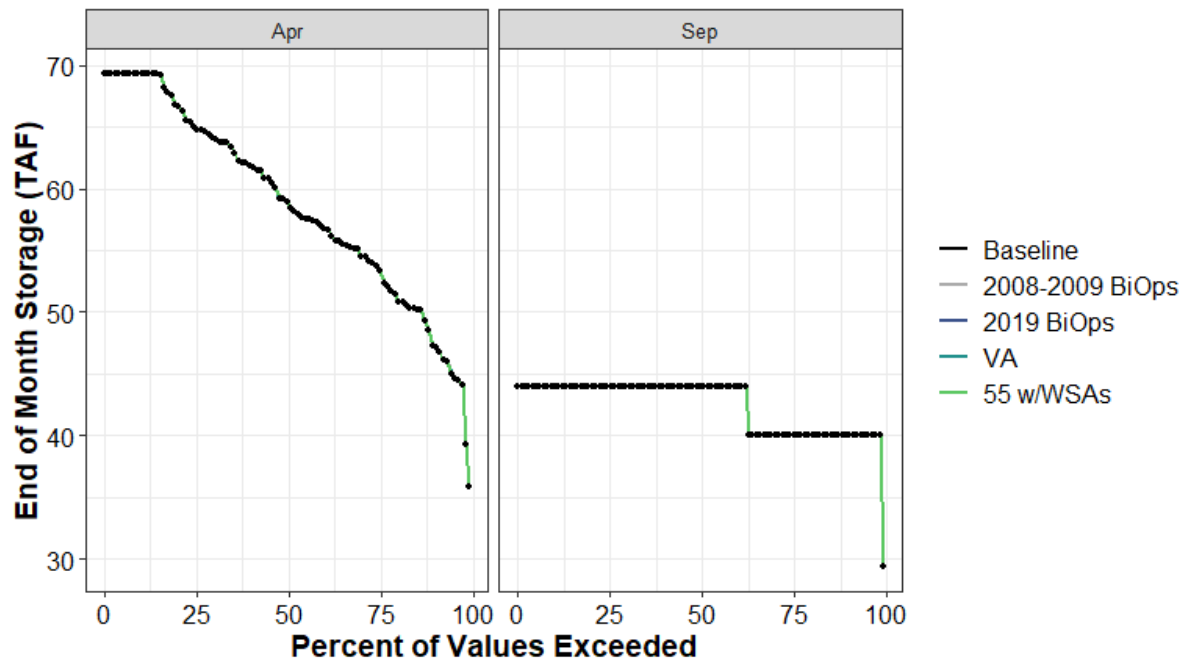


Figure H1a2-119. Loon Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

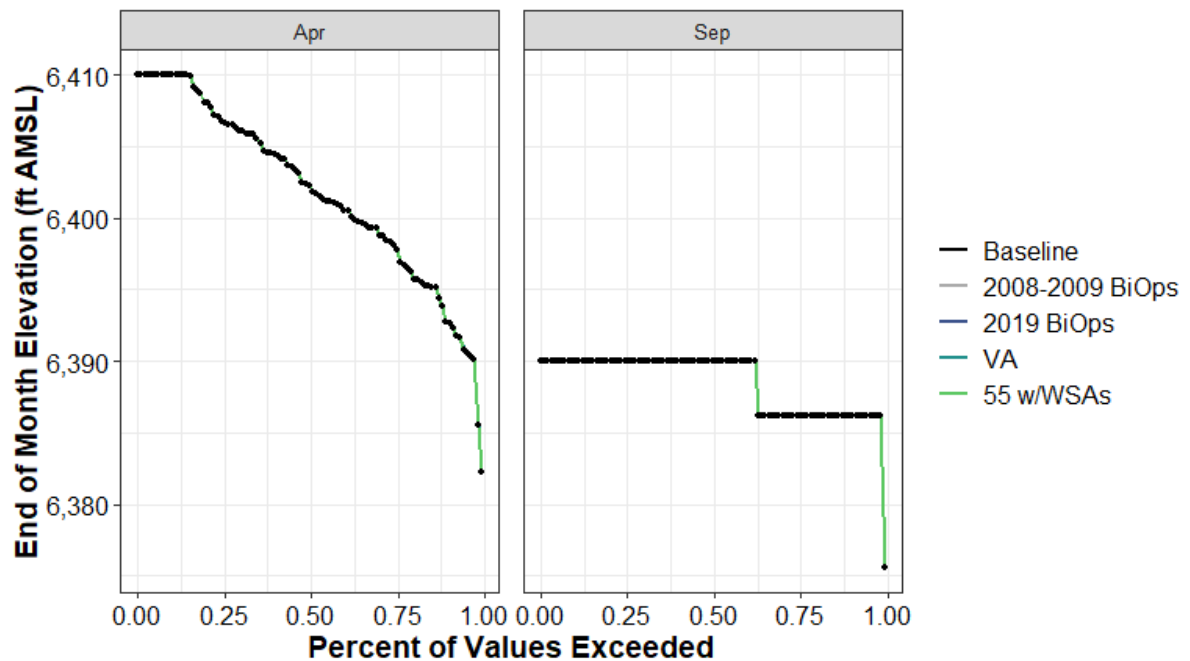


Figure H1a2-120. Loon Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-241. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Loon Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 29       | 0               | 0          | 0  | 0         |
| 10%  | 40       | 0               | 0          | 0  | 0         |
| 25%  | 40       | 0               | 0          | 0  | 0         |
| 50%  | 44       | 0               | 0          | 0  | 0         |
| 75%  | 44       | 0               | 0          | 0  | 0         |
| 90%  | 44       | 0               | 0          | 0  | 0         |
| 100% | 44       | 0               | 0          | 0  | 0         |
| Mean | 42       | 0               | 0          | 0  | 0         |

**Table H1a2-242. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Loon Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6,376    | 0               | 0          | 0  | 0         |
| 10%  | 6,386    | 0               | 0          | 0  | 0         |
| 25%  | 6,386    | 0               | 0          | 0  | 0         |
| 50%  | 6,390    | 0               | 0          | 0  | 0         |
| 75%  | 6,390    | 0               | 0          | 0  | 0         |
| 90%  | 6,390    | 0               | 0          | 0  | 0         |
| 100% | 6,390    | 0               | 0          | 0  | 0         |
| Mean | 6,388    | 0               | 0          | 0  | 0         |

**Table H1a2-243. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Loon Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 36       | 0               | 0          | 0  | 0         |
| 10%  | 47       | 0               | 0          | 0  | 0         |
| 25%  | 54       | 0               | 0          | 0  | 0         |
| 50%  | 59       | 0               | 0          | 0  | 0         |
| 75%  | 65       | 0               | 0          | 0  | 0         |
| 90%  | 69       | 0               | 0          | 0  | 0         |
| 100% | 69       | 0               | 0          | 0  | 0         |
| Mean | 59       | 0               | 0          | 0  | 0         |

**Table H1a2-244. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Loon Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 6,382    | 0               | 0          | 0  | 0         |
| 10%  | 6,393    | 0               | 0          | 0  | 0         |
| 25%  | 6,398    | 0               | 0          | 0  | 0         |
| 50%  | 6,402    | 0               | 0          | 0  | 0         |
| 75%  | 6,407    | 0               | 0          | 0  | 0         |
| 90%  | 6,410    | 0               | 0          | 0  | 0         |
| 100% | 6,410    | 0               | 0          | 0  | 0         |
| Mean | 6,402    | 0               | 0          | 0  | 0         |

### H1a2.5.31 Los Vaqueros Reservoir (Kellogg Creek Watershed)

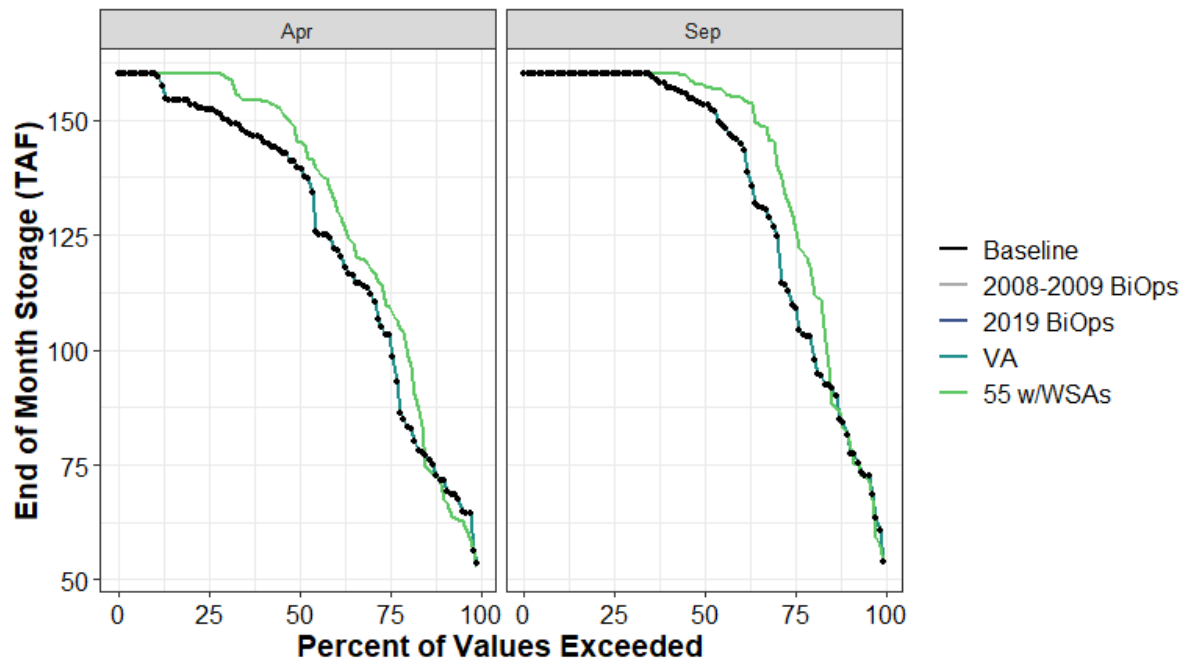


Figure H1a2-121. Los Vaqueros Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

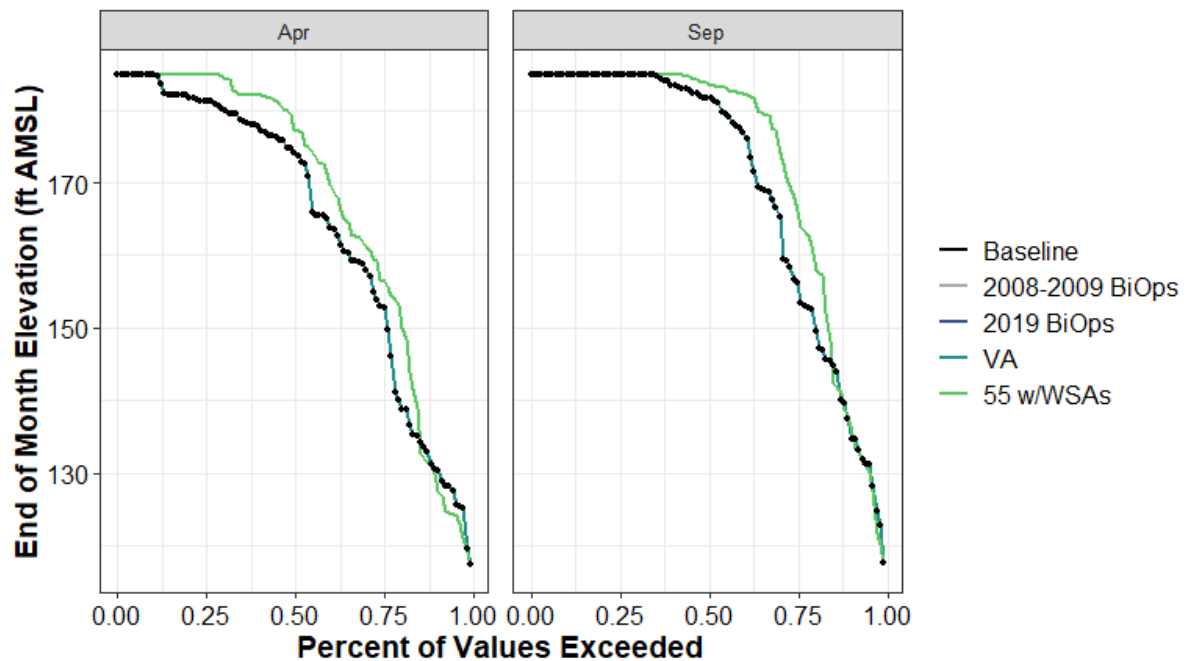


Figure H1a2-122. Los Vaqueros Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-245. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Los Vaqueros Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 54       | 0               | 0          | 0  | 0         |
| 10%  | 81       | 0               | 0          | 0  | 1         |
| 25%  | 109      | 0               | 0          | 0  | 18        |
| 50%  | 153      | 0               | 0          | 0  | 4         |
| 75%  | 160      | 0               | 0          | 0  | 0         |
| 90%  | 160      | 0               | 0          | 0  | 0         |
| 100% | 160      | 0               | 0          | 0  | 0         |
| Mean | 135      | 0               | 0          | 0  | 5         |

**Table H1a2-246. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Los Vaqueros Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 118      | 0               | 0          | 0  | 0         |
| 10%  | 137      | 0               | 0          | 0  | 0         |
| 25%  | 156      | 0               | 0          | 0  | 11        |
| 50%  | 182      | 0               | 0          | 0  | 2         |
| 75%  | 185      | 0               | 0          | 0  | 0         |
| 90%  | 185      | 0               | 0          | 0  | 0         |
| 100% | 185      | 0               | 0          | 0  | 0         |
| Mean | 170      | 0               | 0          | 0  | 3         |

**Table H1a2-247. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Los Vaqueros Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 53       | 0               | 0          | 0  | -1        |
| 10%  | 72       | 0               | 0          | 0  | -2        |
| 25%  | 103      | 0               | 0          | 0  | 6         |
| 50%  | 140      | 0               | 0          | 0  | 6         |
| 75%  | 152      | 0               | 0          | 0  | 8         |
| 90%  | 160      | 0               | 0          | 0  | 0         |
| 100% | 160      | 0               | 0          | 0  | 0         |
| Mean | 125      | 0               | 0          | 0  | 6         |

**Table H1a2-248. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Los Vaqueros Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 117      | 0               | 0          | 0  | 0         |
| 10%  | 131      | 0               | 0          | 0  | -1        |
| 25%  | 153      | 0               | 0          | 0  | 4         |
| 50%  | 174      | 0               | 0          | 0  | 3         |
| 75%  | 181      | 0               | 0          | 0  | 4         |
| 90%  | 185      | 0               | 0          | 0  | 0         |
| 100% | 185      | 0               | 0          | 0  | 0         |
| Mean | 164      | 0               | 0          | 0  | 3         |

## H1a2.5.32 Lower Bear (Mokelumne River Watershed)

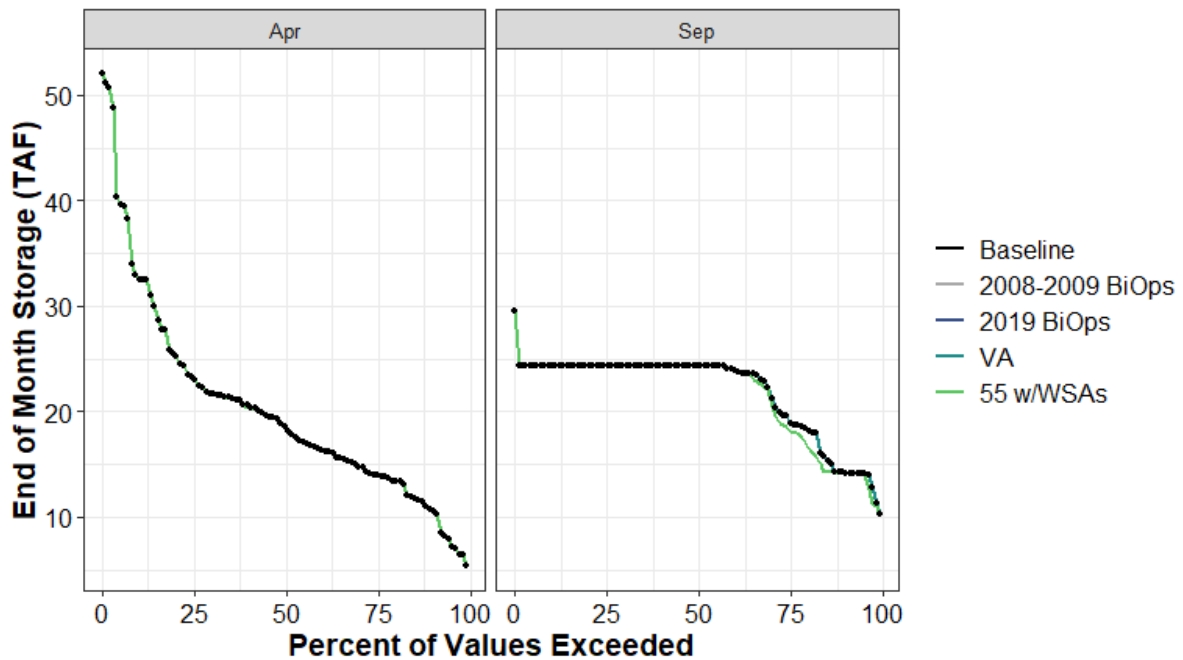


Figure H1a2-123. Lower Bear End of April and End of September Storage (TAF) Percent Exceedance Plot

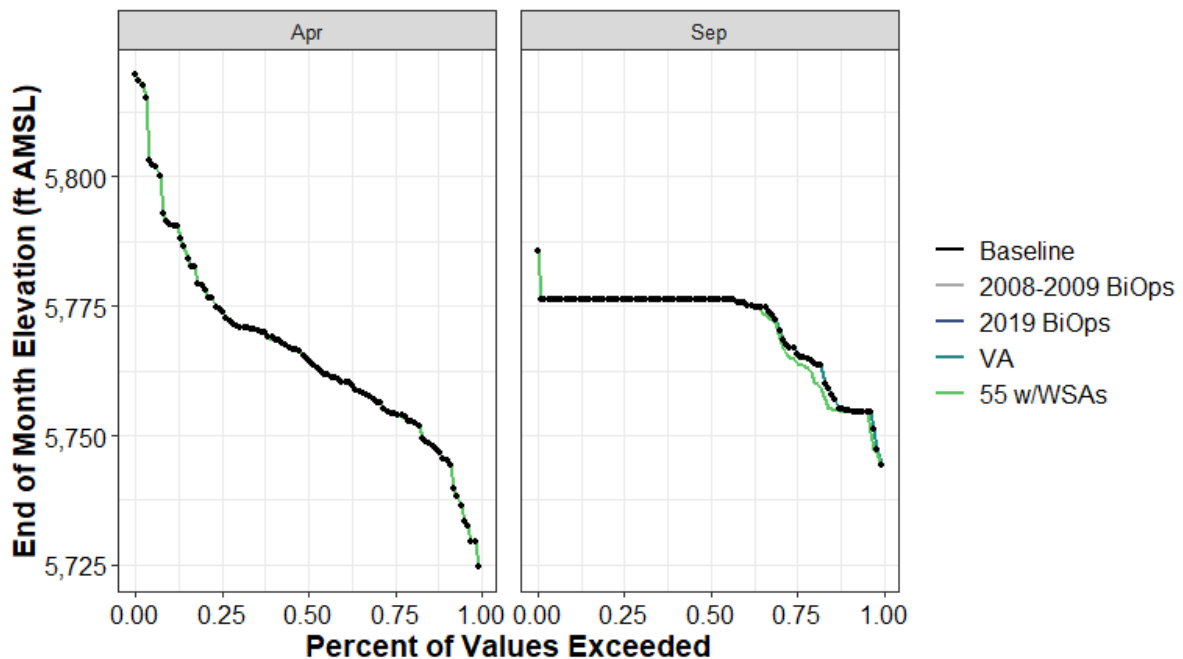


Figure H1a2-124. Lower Bear Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-249. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Lower Bear**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 10       | 0               | 0          | 0  | 0         |
| 10%  | 14       | 0               | 0          | 0  | 0         |
| 25%  | 19       | 0               | 0          | 0  | -1        |
| 50%  | 24       | 0               | 0          | 0  | 0         |
| 75%  | 24       | 0               | 0          | 0  | 0         |
| 90%  | 24       | 0               | 0          | 0  | 0         |
| 100% | 30       | 0               | 0          | 0  | 0         |
| Mean | 22       | 0               | 0          | 0  | 0         |

**Table H1a2-250. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lower Bear**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,744    | 0               | 0          | 0  | 0         |
| 10%  | 5,755    | 0               | 0          | 0  | 0         |
| 25%  | 5,766    | 0               | 0          | 0  | -2        |
| 50%  | 5,776    | 0               | 0          | 0  | 0         |
| 75%  | 5,776    | 0               | 0          | 0  | 0         |
| 90%  | 5,776    | 0               | 0          | 0  | 0         |
| 100% | 5,786    | 0               | 0          | 0  | 0         |
| Mean | 5,771    | 0               | 0          | 0  | -1        |

**Table H1a2-251. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Lower Bear**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5        | 0               | 0          | 0  | 0         |
| 10%  | 11       | 0               | 0          | 0  | 0         |
| 25%  | 14       | 0               | 0          | 0  | 0         |
| 50%  | 19       | 0               | 0          | 0  | 0         |
| 75%  | 23       | 0               | 0          | 0  | 0         |
| 90%  | 33       | 0               | 0          | 0  | 0         |
| 100% | 52       | 0               | 0          | 0  | 0         |
| Mean | 20       | 0               | 0          | 0  | 0         |

**Table H1a2-252. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Lower Bear**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5,725    | 0               | 0          | 0  | 0         |
| 10%  | 5,745    | 0               | 0          | 0  | 0         |
| 25%  | 5,754    | 0               | 0          | 0  | 0         |
| 50%  | 5,765    | 0               | 0          | 0  | 0         |
| 75%  | 5,774    | 0               | 0          | 0  | 0         |
| 90%  | 5,791    | 0               | 0          | 0  | 0         |
| 100% | 5,820    | 0               | 0          | 0  | 0         |
| Mean | 5,766    | 0               | 0          | 0  | 0         |

### H1a2.5.33 Merle Collins Reservoir (Yuba River Watershed)

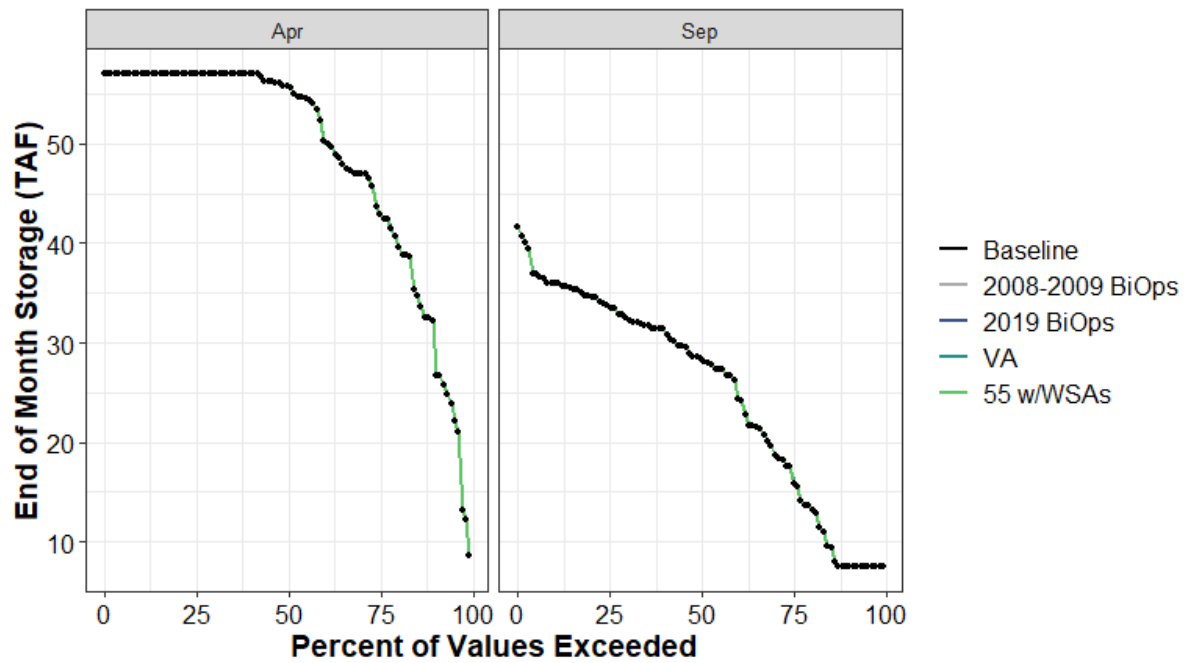


Figure H1a2-125. Merle Collins Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

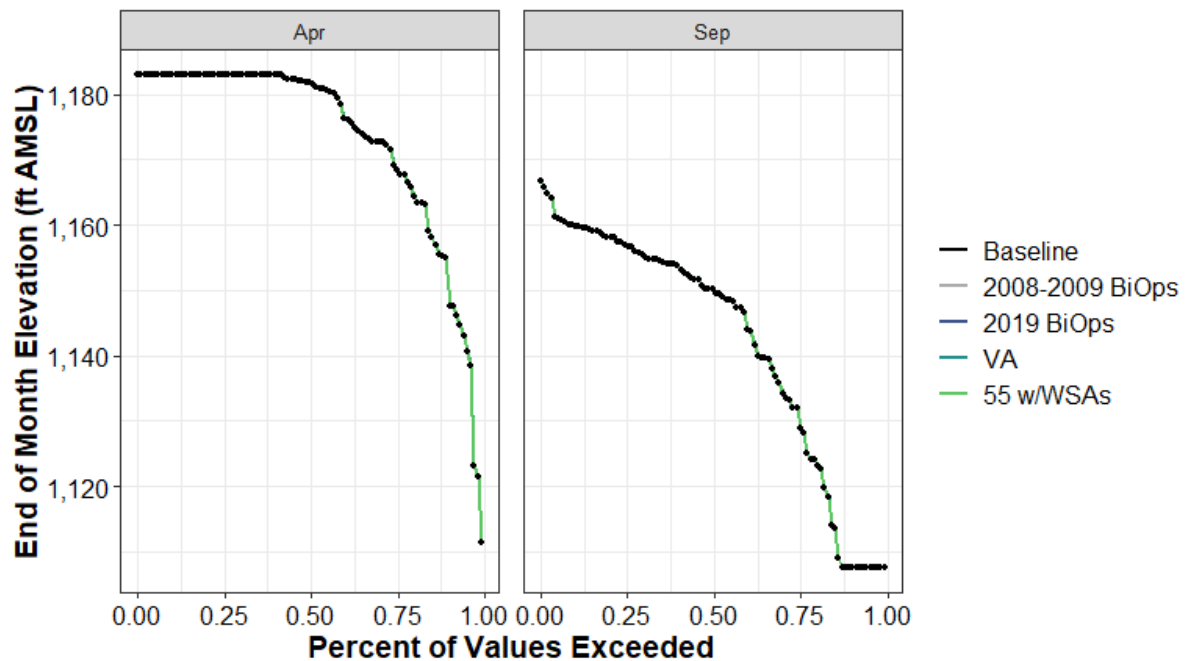


Figure H1a2-126. Merle Collins Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-253. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Merle Collins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 8        | 0               | 0          | 0  | 0         |
| 10%  | 8        | 0               | 0          | 0  | 0         |
| 25%  | 17       | 0               | 0          | 0  | 0         |
| 50%  | 29       | 0               | 0          | 0  | 0         |
| 75%  | 34       | 0               | 0          | 0  | 0         |
| 90%  | 36       | 0               | 0          | 0  | 0         |
| 100% | 42       | 0               | 0          | 0  | 0         |
| Mean | 25       | 0               | 0          | 0  | 0         |

**Table H1a2-254. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Merle Collins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,108    | 0               | 0          | 0  | 0         |
| 10%  | 1,108    | 0               | 0          | 0  | 0         |
| 25%  | 1,130    | 0               | 0          | 0  | 0         |
| 50%  | 1,150    | 0               | 0          | 0  | 0         |
| 75%  | 1,157    | 0               | 0          | 0  | 0         |
| 90%  | 1,160    | 0               | 0          | 0  | 0         |
| 100% | 1,167    | 0               | 0          | 0  | 0         |
| Mean | 1,142    | 0               | 0          | 0  | 0         |

**Table H1a2-255. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Merle Collins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 9        | 0               | 0          | 0  | 0         |
| 10%  | 31       | 0               | 0          | 0  | 0         |
| 25%  | 43       | 0               | 0          | 0  | 0         |
| 50%  | 56       | 0               | 0          | 0  | 0         |
| 75%  | 57       | 0               | 0          | 0  | 0         |
| 90%  | 57       | 0               | 0          | 0  | 0         |
| 100% | 57       | 0               | 0          | 0  | 0         |
| Mean | 49       | 0               | 0          | 0  | 0         |

**Table H1a2-256. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Merle Collins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,111    | 0               | 0          | 0  | 0         |
| 10%  | 1,154    | 0               | 0          | 0  | 0         |
| 25%  | 1,169    | 0               | 0          | 0  | 0         |
| 50%  | 1,182    | 0               | 0          | 0  | 0         |
| 75%  | 1,183    | 0               | 0          | 0  | 0         |
| 90%  | 1,183    | 0               | 0          | 0  | 0         |
| 100% | 1,183    | 0               | 0          | 0  | 0         |
| Mean | 1,173    | 0               | 0          | 0  | 0         |

## H1a2.5.34 Mountain Meadows Reservoir (Feather River Watershed)

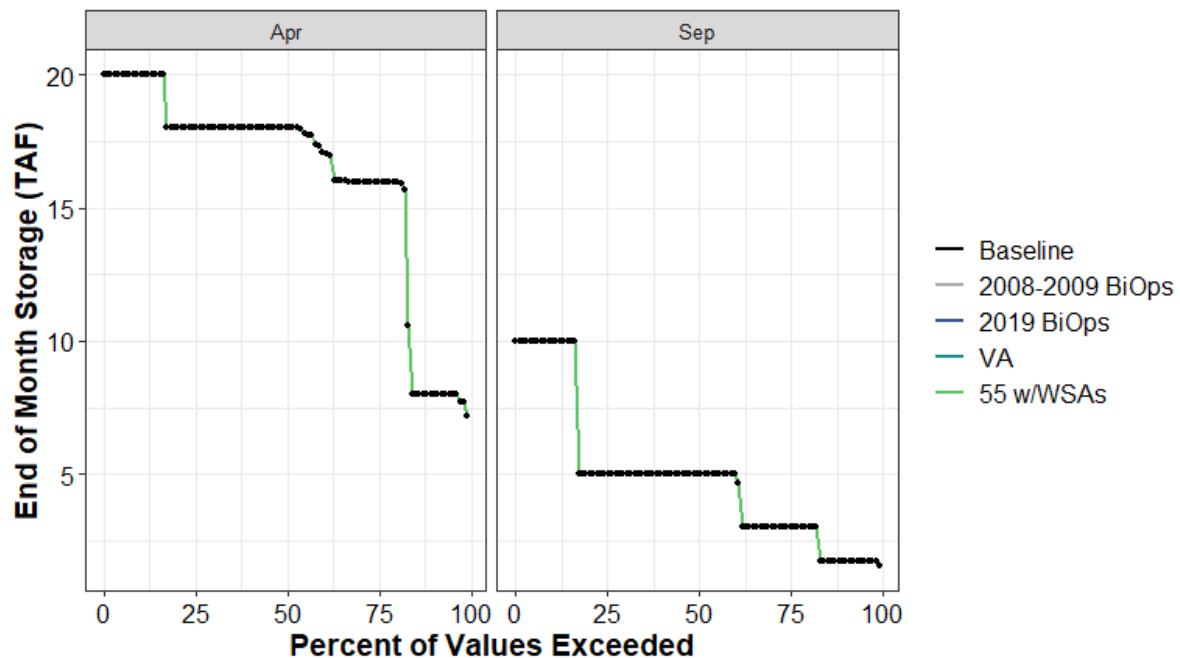


Figure H1a2-127. Mountain Meadows Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-257. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Mountain Meadows Reservoir

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2        | 0               | 0          | 0  | 0         |
| 10%  | 2        | 0               | 0          | 0  | 0         |
| 25%  | 3        | 0               | 0          | 0  | 0         |
| 50%  | 5        | 0               | 0          | 0  | 0         |
| 75%  | 5        | 0               | 0          | 0  | 0         |
| 90%  | 10       | 0               | 0          | 0  | 0         |
| 100% | 10       | 0               | 0          | 0  | 0         |
| Mean | 5        | 0               | 0          | 0  | 0         |

Table H1a2-258. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Mountain Meadows Reservoir

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7        | 0               | 0          | 0  | 0         |
| 10%  | 8        | 0               | 0          | 0  | 0         |
| 25%  | 16       | 0               | 0          | 0  | 0         |
| 50%  | 18       | 0               | 0          | 0  | 0         |
| 75%  | 18       | 0               | 0          | 0  | 0         |
| 90%  | 20       | 0               | 0          | 0  | 0         |
| 100% | 20       | 0               | 0          | 0  | 0         |
| Mean | 16       | 0               | 0          | 0  | 0         |

## H1a2.5.35 New Bullards Bar Reservoir (Yuba River Watershed)

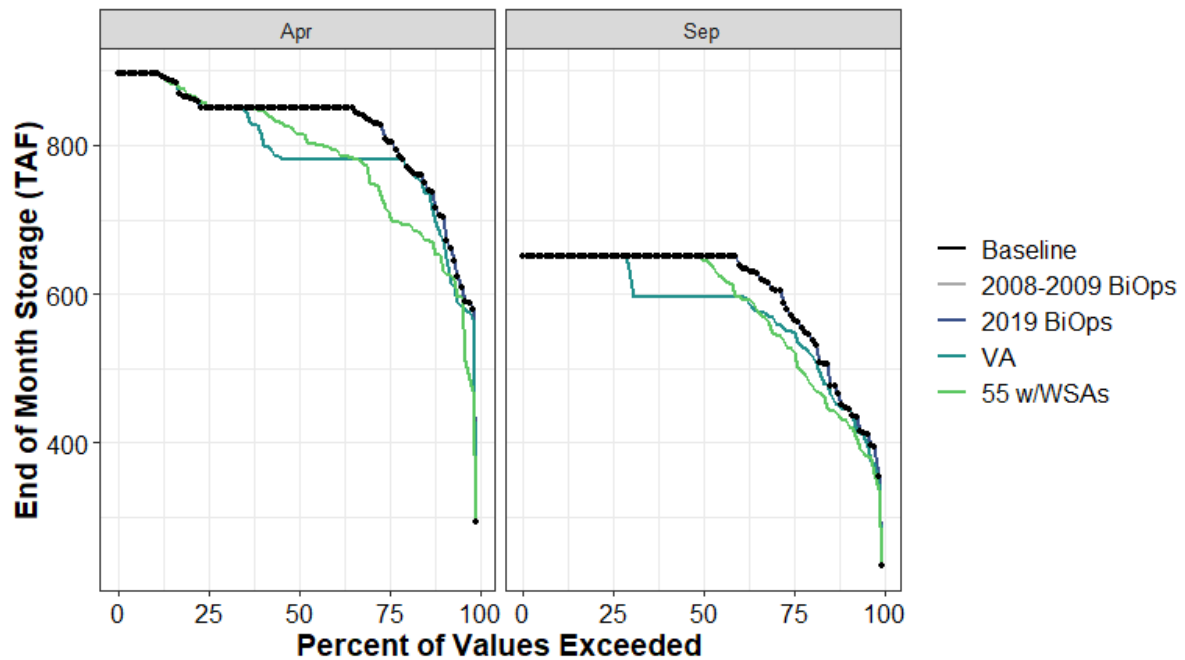


Figure H1a2-128. New Bullards Bar Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

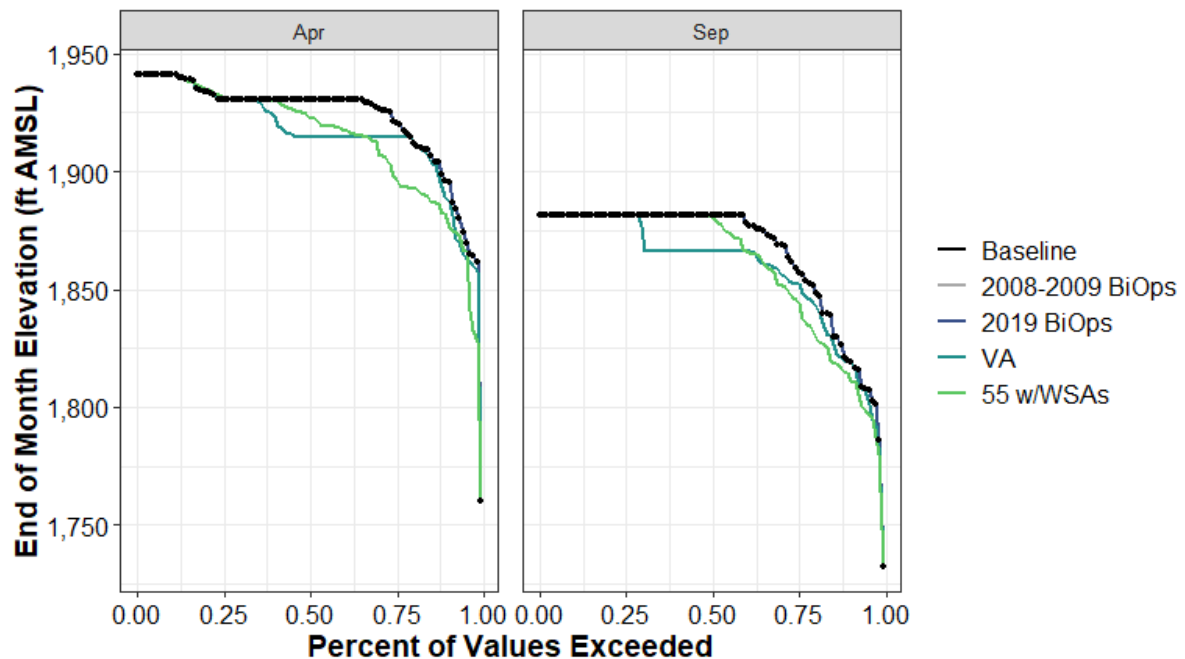


Figure H1a2-129. New Bullards Bar Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-259. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for New Bullards Bar Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 234      | 0               | 0          | 0   | 0         |
| 10%  | 446      | 0               | 0          | -2  | -17       |
| 25%  | 567      | 0               | 0          | -19 | -44       |
| 50%  | 650      | 0               | 0          | -55 | -3        |
| 75%  | 650      | 0               | 0          | 0   | 0         |
| 90%  | 650      | 0               | 0          | 0   | 0         |
| 100% | 650      | 0               | 0          | 0   | 0         |
| Mean | 597      | 0               | 0          | -26 | -19       |

**Table H1a2-260. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for New Bullards Bar Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 1,732    | 0               | 0          | 0   | 0         |
| 10%  | 1,820    | 0               | 0          | -1  | -6        |
| 25%  | 1,858    | 0               | 0          | -6  | -13       |
| 50%  | 1,881    | 0               | 0          | -15 | -1        |
| 75%  | 1,881    | 0               | 0          | 0   | 0         |
| 90%  | 1,881    | 0               | 0          | 0   | 0         |
| 100% | 1,881    | 0               | 0          | 0   | 0         |
| Mean | 1,865    | 0               | 0          | -8  | -6        |

**Table H1a2-261. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for New Bullards Bar Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 293      | 0               | 0          | 0   | 2         |
| 10%  | 706      | 0               | 0          | -27 | -57       |
| 25%  | 807      | 0               | 0          | -27 | -95       |
| 50%  | 850      | 0               | 0          | -70 | -35       |
| 75%  | 850      | 0               | 0          | 0   | 4         |
| 90%  | 896      | 0               | 0          | 0   | 0         |
| 100% | 896      | 0               | 0          | 0   | 0         |
| Mean | 818      | 0               | 0          | -27 | -34       |

**Table H1a2-262. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for New Bullards Bar Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 1,760    | 0               | 0          | 0   | 1         |
| 10%  | 1,896    | 0               | 0          | -7  | -15       |
| 25%  | 1,921    | 0               | 0          | -6  | -23       |
| 50%  | 1,931    | 0               | 0          | -16 | -8        |
| 75%  | 1,931    | 0               | 0          | 0   | 1         |
| 90%  | 1,941    | 0               | 0          | 0   | 0         |
| 100% | 1,941    | 0               | 0          | 0   | 0         |
| Mean | 1,922    | 0               | 0          | -6  | -8        |

## H1a2.5.36 New Hogan Reservoir (Calaveras River Watershed)

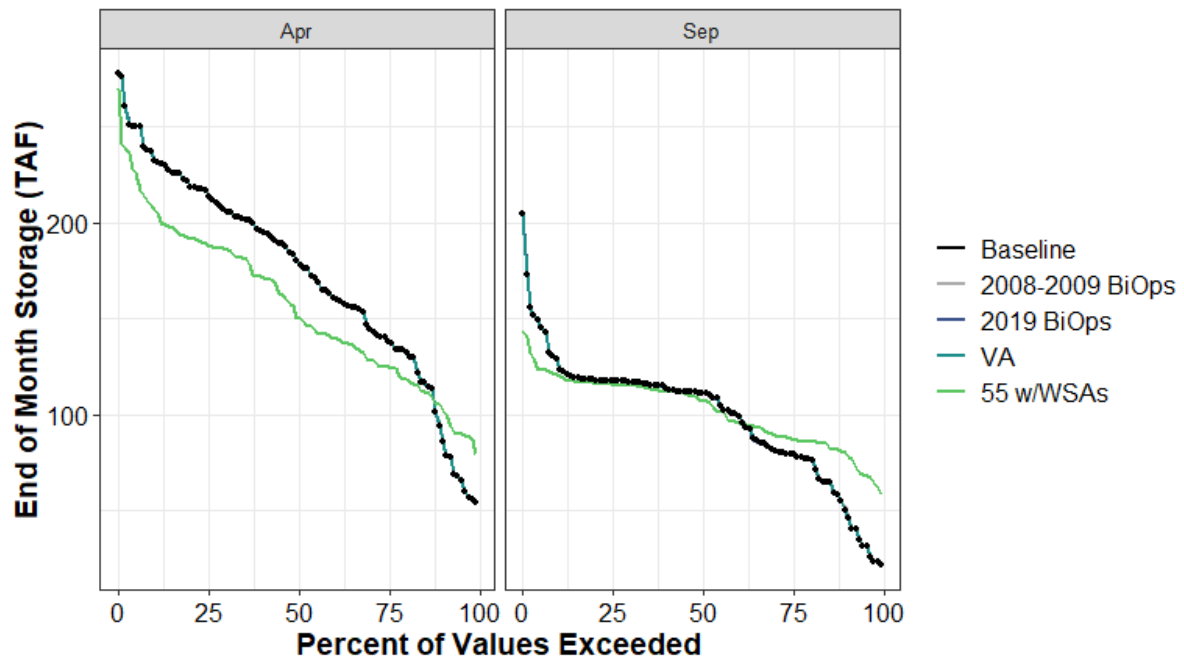


Figure H1a2-130. New Hogan Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

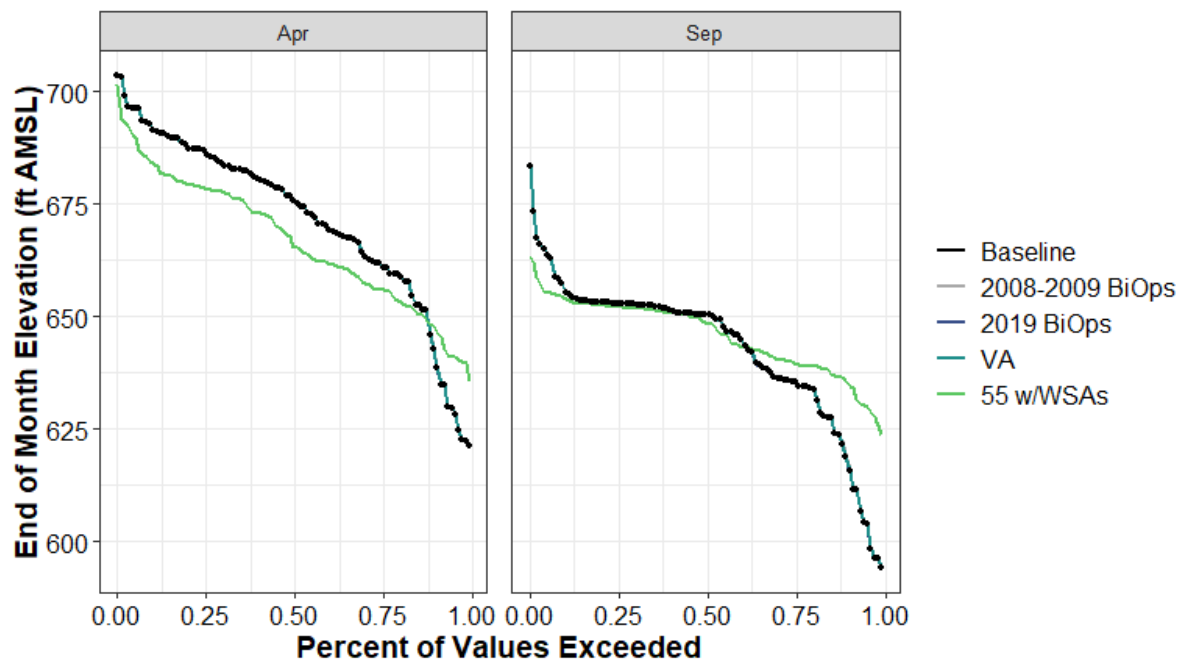


Figure H1a2-131. New Hogan Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-263. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for New Hogan Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 22       | 0               | 0          | 0  | 37        |
| 10%  | 50       | 1               | 0          | 0  | 30        |
| 25%  | 80       | 0               | 0          | 0  | 8         |
| 50%  | 111      | 0               | 0          | 0  | -4        |
| 75%  | 118      | 0               | 0          | 0  | -2        |
| 90%  | 124      | 0               | 0          | 0  | -4        |
| 100% | 205      | 0               | 0          | 0  | -61       |
| Mean | 99       | 0               | 0          | 0  | 3         |

**Table H1a2-264. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for New Hogan Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 594      | 0               | 0          | 0  | 30        |
| 10%  | 618      | 1               | 0          | 0  | 17        |
| 25%  | 636      | 0               | 0          | 0  | 4         |
| 50%  | 650      | 0               | 0          | 0  | -2        |
| 75%  | 653      | 0               | 0          | 0  | -1        |
| 90%  | 656      | 0               | 0          | 0  | -2        |
| 100% | 683      | 0               | 0          | 0  | -20       |
| Mean | 643      | 0               | 0          | 0  | 3         |

**Table H1a2-265. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for New Hogan Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 55       | 0               | 0          | 0  | 25        |
| 10%  | 93       | 1               | 0          | 0  | 12        |
| 25%  | 139      | 0               | 0          | 0  | -14       |
| 50%  | 180      | 0               | 0          | 0  | -30       |
| 75%  | 215      | 0               | 0          | 0  | -26       |
| 90%  | 234      | 0               | 0          | 0  | -26       |
| 100% | 278      | 0               | 0          | 0  | -8        |
| Mean | 174      | 0               | 0          | 0  | -17       |

**Table H1a2-266. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for New Hogan Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 621      | 0               | 0          | 0  | 14        |
| 10%  | 642      | 0               | 0          | 0  | 6         |
| 25%  | 661      | 0               | 0          | 0  | -5        |
| 50%  | 676      | 0               | 0          | 0  | -10       |
| 75%  | 686      | 0               | 0          | 0  | -8        |
| 90%  | 692      | 0               | 0          | 0  | -8        |
| 100% | 703      | 0               | 0          | 0  | -2        |
| Mean | 672      | 0               | 0          | 0  | -5        |

## H1a2.5.37 Oroville Reservoir (Feather River Watershed)

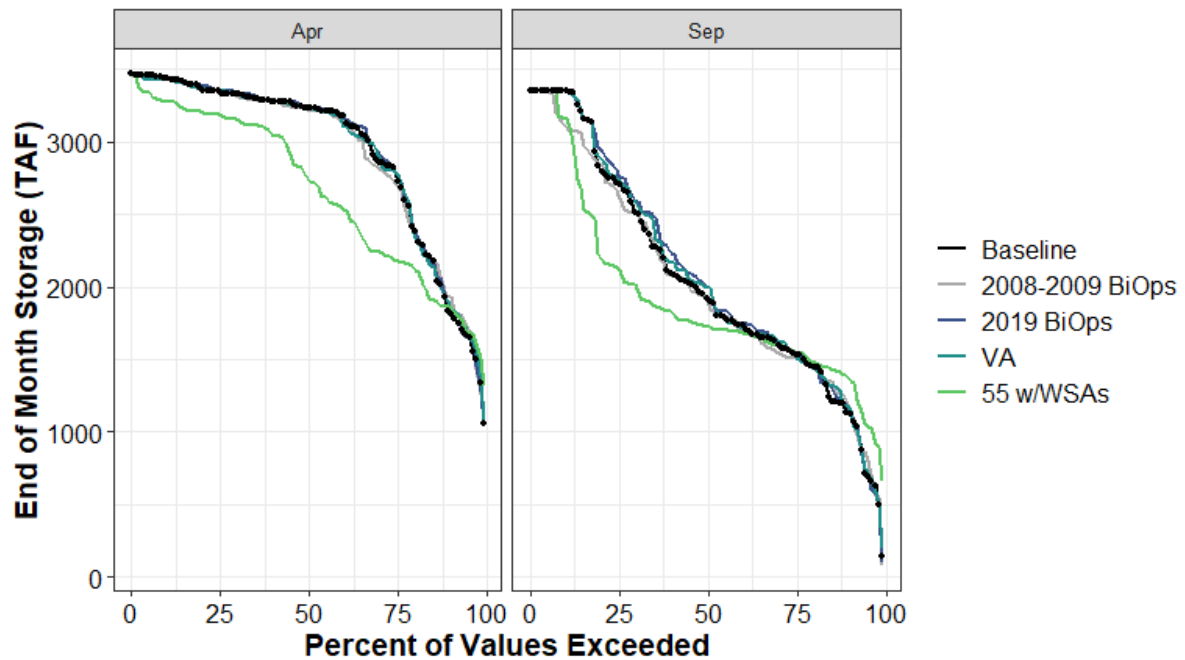


Figure H1a2-132. Oroville Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

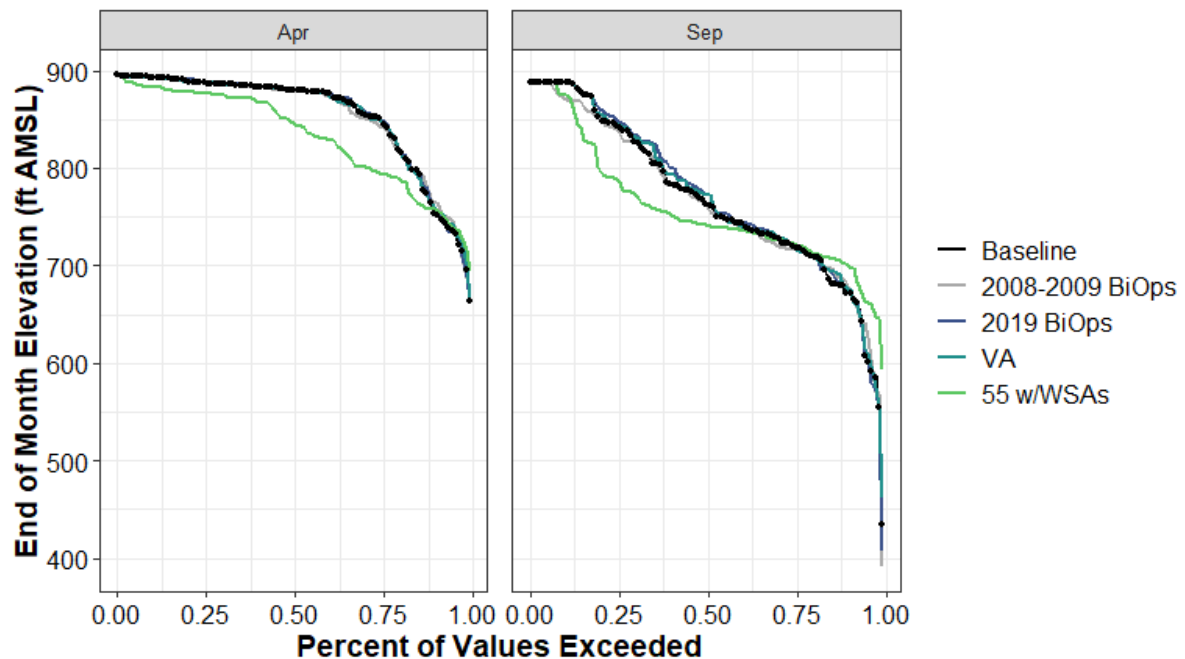


Figure H1a2-133. Oroville Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-267. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Oroville Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 146      | -71             | -51        | 54 | 510       |
| 10%  | 1,129    | 82              | 46         | 49 | 251       |
| 25%  | 1,539    | -29             | 8          | -9 | 16        |
| 50%  | 1,919    | -9              | 78         | 82 | -192      |
| 75%  | 2,713    | -76             | 66         | 25 | -592      |
| 90%  | 3,350    | -241            | 0          | 0  | -187      |
| 100% | 3,351    | 0               | 0          | 0  | 0         |
| Mean | 2,057    | -32             | 42         | 26 | -141      |

**Table H1a2-268. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Oroville Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 434      | -43             | -27        | 28 | 159       |
| 10%  | 672      | 9               | 5          | 6  | 29        |
| 25%  | 720      | -3              | 1          | -1 | 2         |
| 50%  | 764      | -1              | 9          | 9  | -22       |
| 75%  | 843      | -6              | 5          | 2  | -56       |
| 90%  | 888      | -16             | 0          | 0  | -13       |
| 100% | 888      | 0               | 0          | 0  | 0         |
| Mean | 768      | -2              | 4          | 3  | -10       |

**Table H1a2-269. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Oroville Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,056    | 65              | -20        | -4 | 261       |
| 10%  | 1,827    | 105             | 58         | 59 | 36        |
| 25%  | 2,779    | -72             | 12         | 9  | -595      |
| 50%  | 3,238    | -18             | 5          | -2 | -487      |
| 75%  | 3,343    | 6               | 13         | 8  | -159      |
| 90%  | 3,435    | 0               | 4          | -9 | -154      |
| 100% | 3,470    | 0               | 0          | 0  | 0         |
| Mean | 2,946    | -9              | 12         | -3 | -285      |

**Table H1a2-270. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Oroville Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 664      | 8               | -2         | 0  | 30        |
| 10%  | 753      | 12              | 7          | 7  | 4         |
| 25%  | 848      | -5              | 1          | 1  | -53       |
| 50%  | 880      | -1              | 0          | 0  | -35       |
| 75%  | 887      | 0               | 1          | 1  | -11       |
| 90%  | 893      | 0               | 0          | -1 | -10       |
| 100% | 896      | 0               | 0          | 0  | 0         |
| Mean | 854      | 0               | 1          | 0  | -22       |

## H1a2.5.38 Pardee Reservoir (Mokelumne River Watershed)

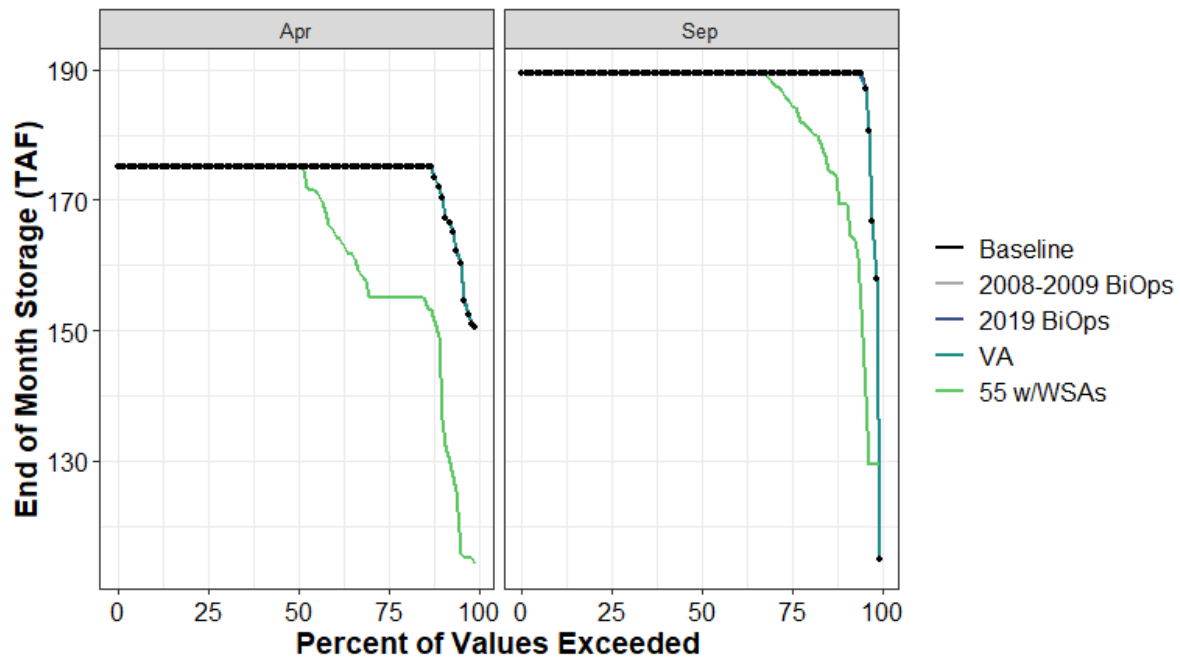


Figure H1a2-134. Pardee Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

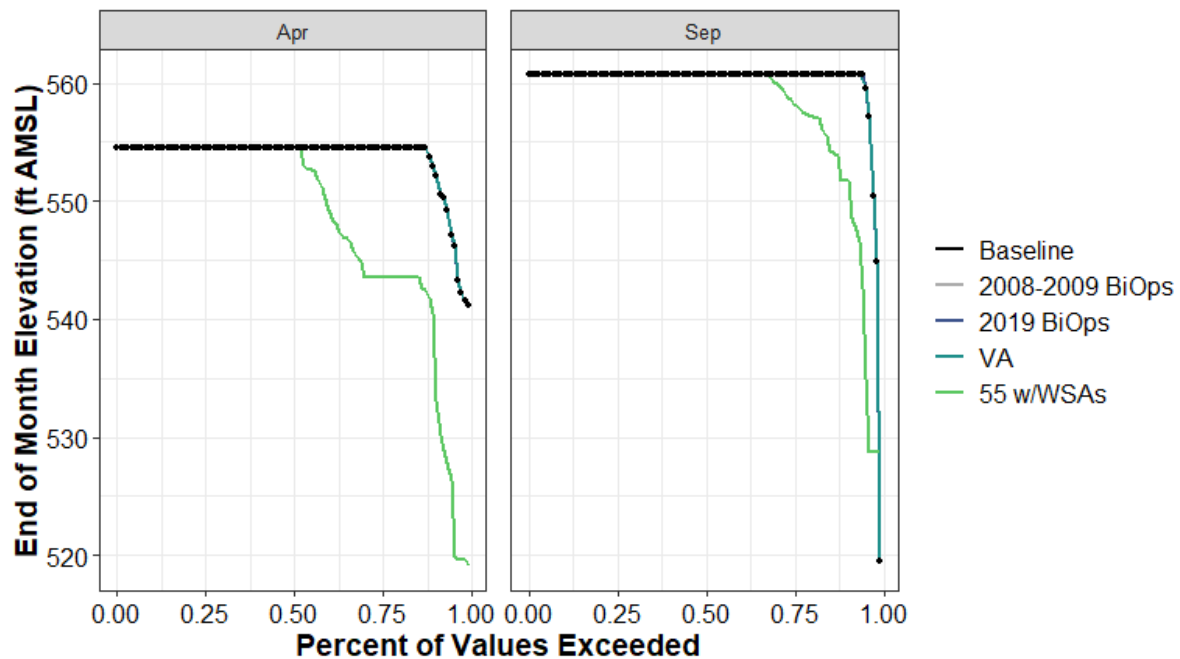


Figure H1a2-135. Pardee Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-271. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Pardee Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 115      | 0               | 0          | 0  | 14        |
| 10%  | 189      | 0               | 0          | 0  | -20       |
| 25%  | 189      | 0               | 0          | 0  | -5        |
| 50%  | 189      | 0               | 0          | 0  | 0         |
| 75%  | 189      | 0               | 0          | 0  | 0         |
| 90%  | 189      | 0               | 0          | 0  | 0         |
| 100% | 189      | 0               | 0          | 0  | 0         |
| Mean | 188      | 0               | 0          | 0  | -5        |

**Table H1a2-272. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Pardee Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 519      | 0               | 0          | 0  | 9         |
| 10%  | 561      | 0               | 0          | 0  | -9        |
| 25%  | 561      | 0               | 0          | 0  | -2        |
| 50%  | 561      | 0               | 0          | 0  | 0         |
| 75%  | 561      | 0               | 0          | 0  | 0         |
| 90%  | 561      | 0               | 0          | 0  | 0         |
| 100% | 561      | 0               | 0          | 0  | 0         |
| Mean | 560      | 0               | 0          | 0  | -2        |

**Table H1a2-273. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Pardee Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 150      | 0               | 0          | 0  | -36       |
| 10%  | 172      | 0               | 0          | 0  | -25       |
| 25%  | 175      | 0               | 0          | 0  | -20       |
| 50%  | 175      | 0               | 0          | 0  | 0         |
| 75%  | 175      | 0               | 0          | 0  | 0         |
| 90%  | 175      | 0               | 0          | 0  | 0         |
| 100% | 175      | 0               | 0          | 0  | 0         |
| Mean | 174      | 0               | 0          | 0  | -10       |

**Table H1a2-274. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Pardee Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 541      | 0               | 0          | 0  | -22       |
| 10%  | 553      | 0               | 0          | 0  | -14       |
| 25%  | 555      | 0               | 0          | 0  | -11       |
| 50%  | 555      | 0               | 0          | 0  | 0         |
| 75%  | 555      | 0               | 0          | 0  | 0         |
| 90%  | 555      | 0               | 0          | 0  | 0         |
| 100% | 555      | 0               | 0          | 0  | 0         |
| Mean | 554      | 0               | 0          | 0  | -5        |

## H1a2.5.39 Philbrook Round Valley (Feather River Watershed)

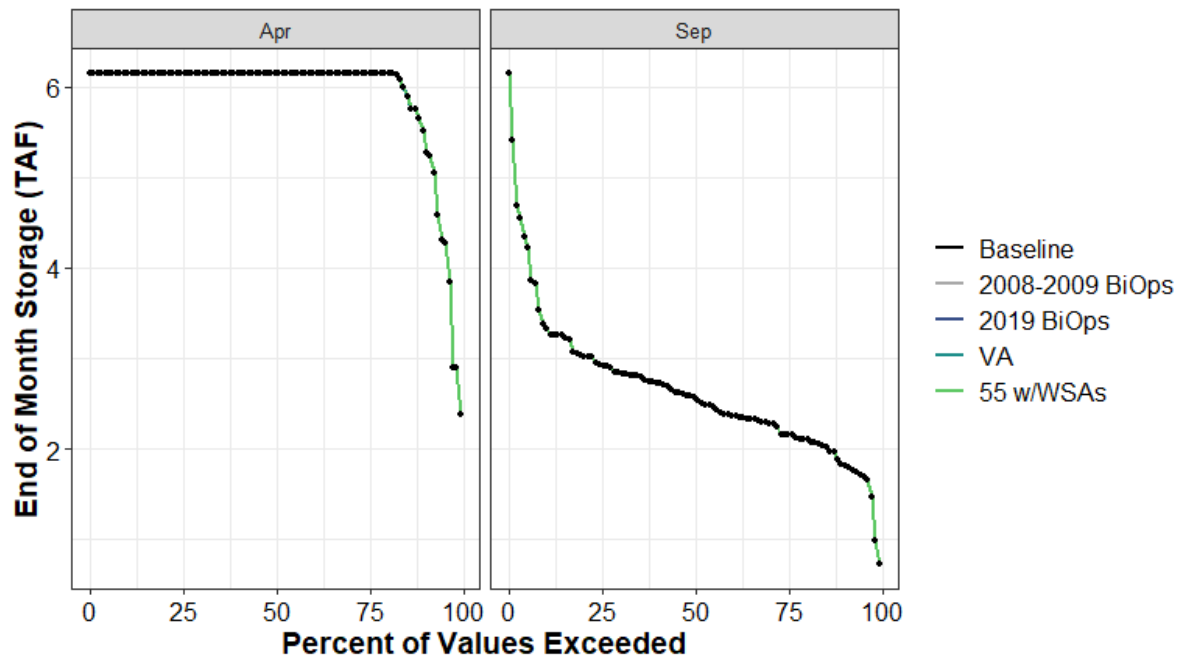


Figure H1a2-136. Philbrook Round Valley End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-275. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Philbrook Round Valley

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1        | 0               | 0          | 0  | 0         |
| 10%  | 2        | 0               | 0          | 0  | 0         |
| 25%  | 2        | 0               | 0          | 0  | 0         |
| 50%  | 3        | 0               | 0          | 0  | 0         |
| 75%  | 3        | 0               | 0          | 0  | 0         |
| 90%  | 3        | 0               | 0          | 0  | 0         |
| 100% | 6        | 0               | 0          | 0  | 0         |
| Mean | 3        | 0               | 0          | 0  | 0         |

Table H1a2-276. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for PhilbrookRoundValley

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2        | 0               | 0          | 0  | 0         |
| 10%  | 5        | 0               | 0          | 0  | 0         |
| 25%  | 6        | 0               | 0          | 0  | 0         |
| 50%  | 6        | 0               | 0          | 0  | 0         |
| 75%  | 6        | 0               | 0          | 0  | 0         |
| 90%  | 6        | 0               | 0          | 0  | 0         |
| 100% | 6        | 0               | 0          | 0  | 0         |
| Mean | 6        | 0               | 0          | 0  | 0         |

## H1a2.5.40 Rollins Reservoir (Bear River Watershed)

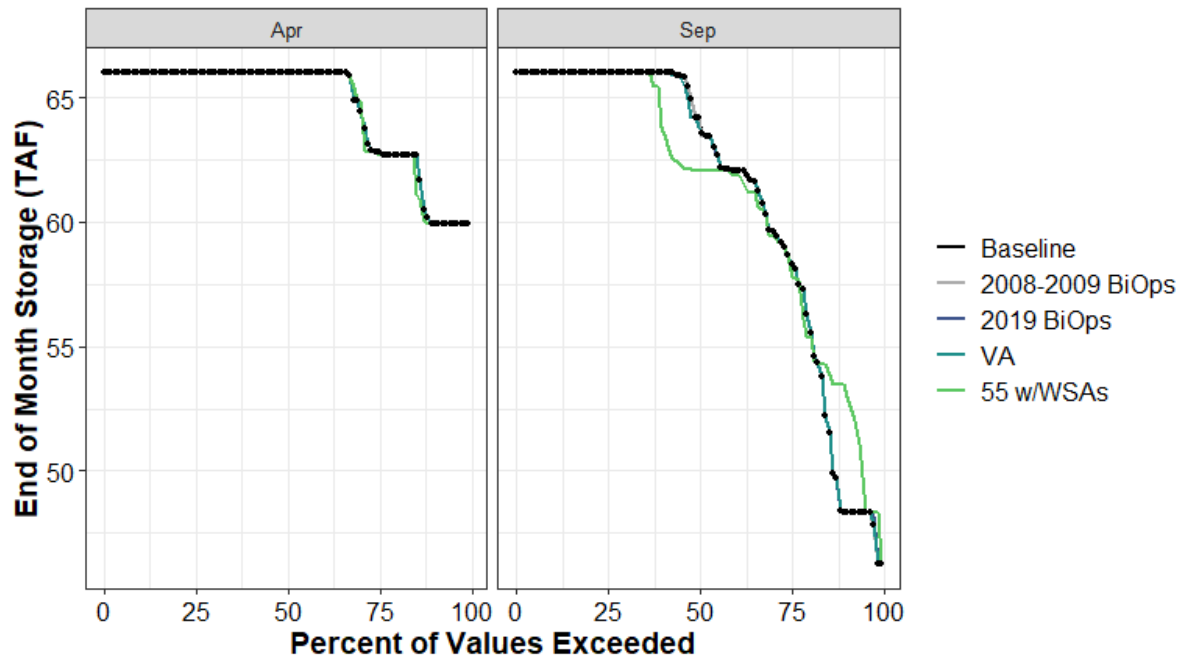


Figure H1a2-137. Rollins Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

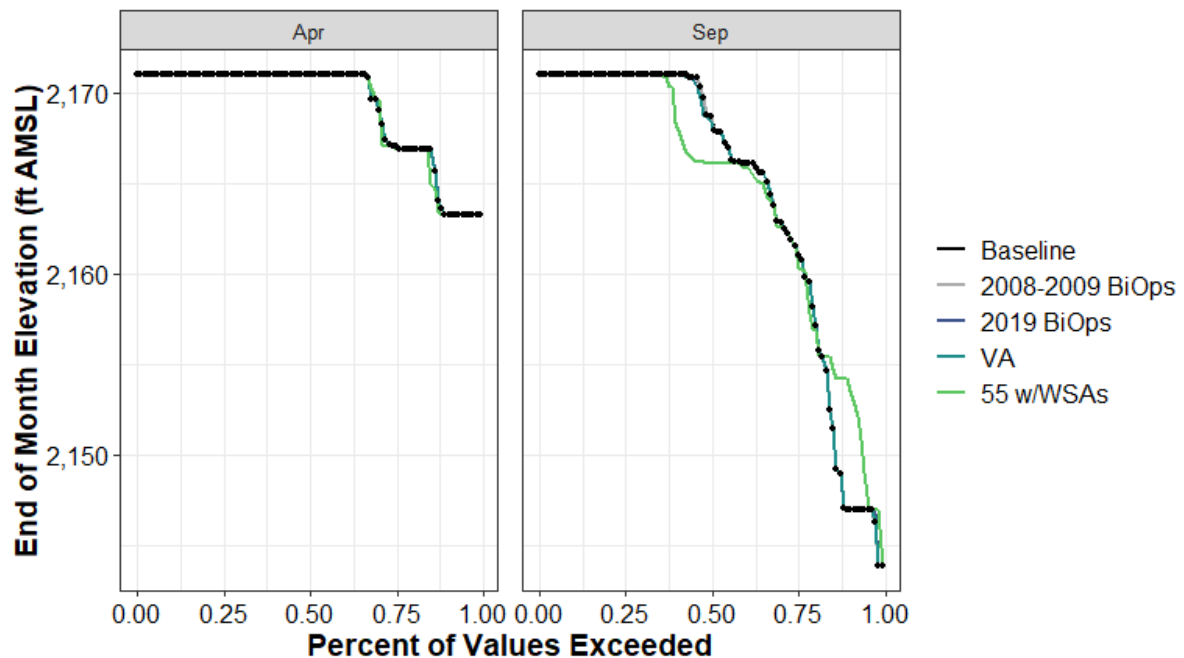


Figure H1a2-138. Rollins Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-277. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Rollins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 46       | 0               | 0          | 0  | 0         |
| 10%  | 48       | 0               | 0          | 0  | 5         |
| 25%  | 58       | 0               | 0          | 0  | 0         |
| 50%  | 64       | 0               | 0          | 0  | -2        |
| 75%  | 66       | 0               | 0          | 0  | 0         |
| 90%  | 66       | 0               | 0          | 0  | 0         |
| 100% | 66       | 0               | 0          | 0  | 0         |
| Mean | 61       | 0               | 0          | 0  | 0         |

**Table H1a2-278. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Rollins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2,144    | 0               | 0          | 0  | 0         |
| 10%  | 2,147    | 0               | 0          | 0  | 7         |
| 25%  | 2,161    | 0               | 0          | 0  | 0         |
| 50%  | 2,169    | 0               | 0          | 0  | -3        |
| 75%  | 2,171    | 0               | 0          | 0  | 0         |
| 90%  | 2,171    | 0               | 0          | 0  | 0         |
| 100% | 2,171    | 0               | 0          | 0  | 0         |
| Mean | 2,165    | 0               | 0          | 0  | 0         |

**Table H1a2-279. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Rollins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 60       | 0               | 0          | 0  | 0         |
| 10%  | 60       | 0               | 0          | 0  | 0         |
| 25%  | 63       | 0               | 0          | 0  | 0         |
| 50%  | 66       | 0               | 0          | 0  | 0         |
| 75%  | 66       | 0               | 0          | 0  | 0         |
| 90%  | 66       | 0               | 0          | 0  | 0         |
| 100% | 66       | 0               | 0          | 0  | 0         |
| Mean | 65       | 0               | 0          | 0  | 0         |

**Table H1a2-280. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Rollins Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2,163    | 0               | 0          | 0  | 0         |
| 10%  | 2,163    | 0               | 0          | 0  | 0         |
| 25%  | 2,167    | 0               | 0          | 0  | 0         |
| 50%  | 2,171    | 0               | 0          | 0  | 0         |
| 75%  | 2,171    | 0               | 0          | 0  | 0         |
| 90%  | 2,171    | 0               | 0          | 0  | 0         |
| 100% | 2,171    | 0               | 0          | 0  | 0         |
| Mean | 2,169    | 0               | 0          | 0  | 0         |

## H1a2.5.41 Salt Springs (Mokelumne River Watershed)

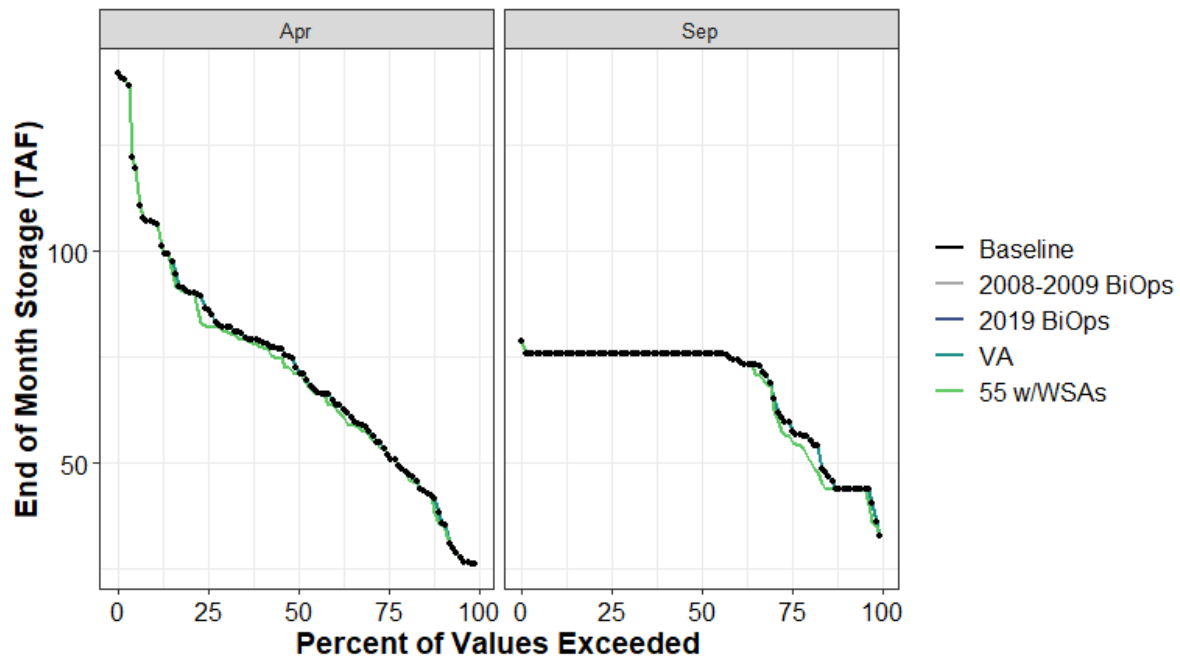


Figure H1a2-139. Salt Springs End of April and End of September Storage (TAF) Percent Exceedance Plot

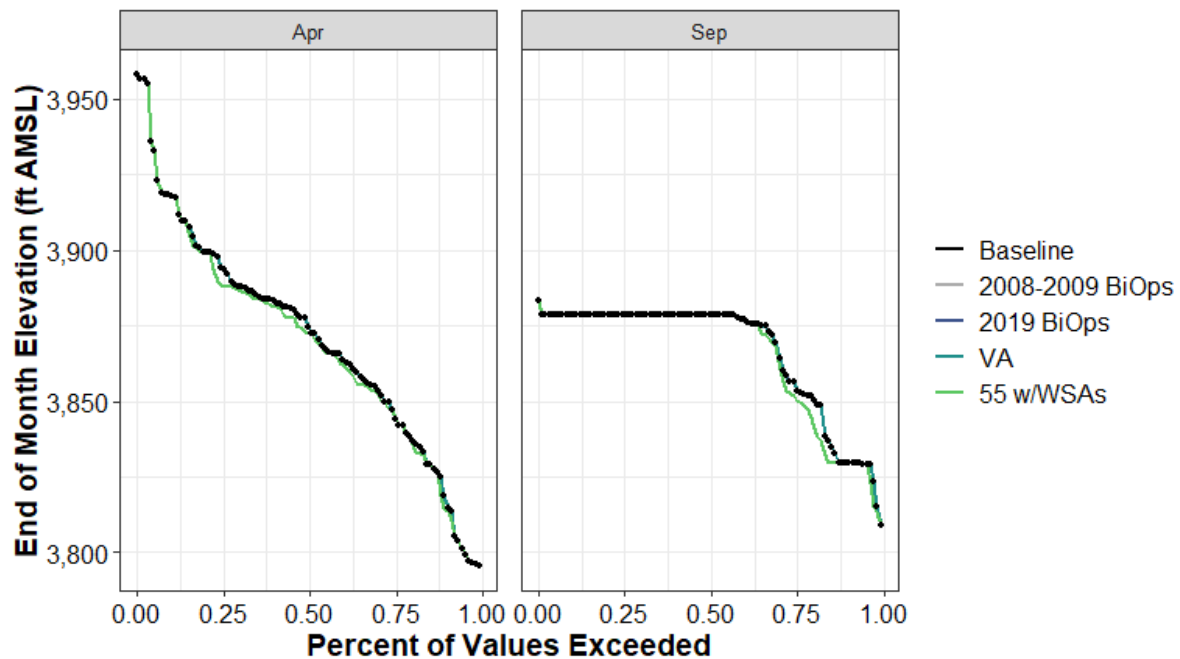


Figure H1a2-140. Salt Springs Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-281. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Salt Springs**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 33       | 0               | 0          | 0  | 0         |
| 10%  | 44       | 0               | 0          | 0  | 0         |
| 25%  | 59       | 0               | 0          | 0  | -3        |
| 50%  | 76       | 0               | 0          | 0  | 0         |
| 75%  | 76       | 0               | 0          | 0  | 0         |
| 90%  | 76       | 0               | 0          | 0  | 0         |
| 100% | 79       | 0               | 0          | 0  | 0         |
| Mean | 67       | 0               | 0          | 0  | -1        |

**Table H1a2-282. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Salt Springs**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,809    | 0               | 0          | 0  | 0         |
| 10%  | 3,830    | 0               | 0          | 0  | 0         |
| 25%  | 3,855    | 0               | 0          | 0  | -4        |
| 50%  | 3,879    | 0               | 0          | 0  | 0         |
| 75%  | 3,879    | 0               | 0          | 0  | 0         |
| 90%  | 3,879    | 0               | 0          | 0  | 0         |
| 100% | 3,883    | 0               | 0          | 0  | 0         |
| Mean | 3,867    | 0               | 0          | 0  | -1        |

**Table H1a2-283. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Salt Springs**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 26       | 0               | 0          | 0  | 0         |
| 10%  | 38       | 0               | 0          | 0  | -2        |
| 25%  | 53       | 0               | 0          | 0  | 0         |
| 50%  | 72       | 0               | 0          | 0  | -1        |
| 75%  | 86       | 0               | 0          | 0  | -4        |
| 90%  | 107      | 0               | 0          | 0  | 0         |
| 100% | 142      | 0               | 0          | 0  | 0         |
| Mean | 72       | 0               | 0          | 0  | -1        |

**Table H1a2-284. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Salt Springs**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,796    | 0               | 0          | 0  | 0         |
| 10%  | 3,818    | 0               | 0          | 0  | -4        |
| 25%  | 3,846    | 0               | 0          | 0  | 0         |
| 50%  | 3,874    | 0               | 0          | 0  | -2        |
| 75%  | 3,894    | 0               | 0          | 0  | -6        |
| 90%  | 3,918    | 0               | 0          | 0  | 0         |
| 100% | 3,958    | 0               | 0          | 0  | 0         |
| Mean | 3,871    | 0               | 0          | 0  | -1        |

## H1a2.5.42 Scotts Flat Reservoir (Yuba River Watershed)

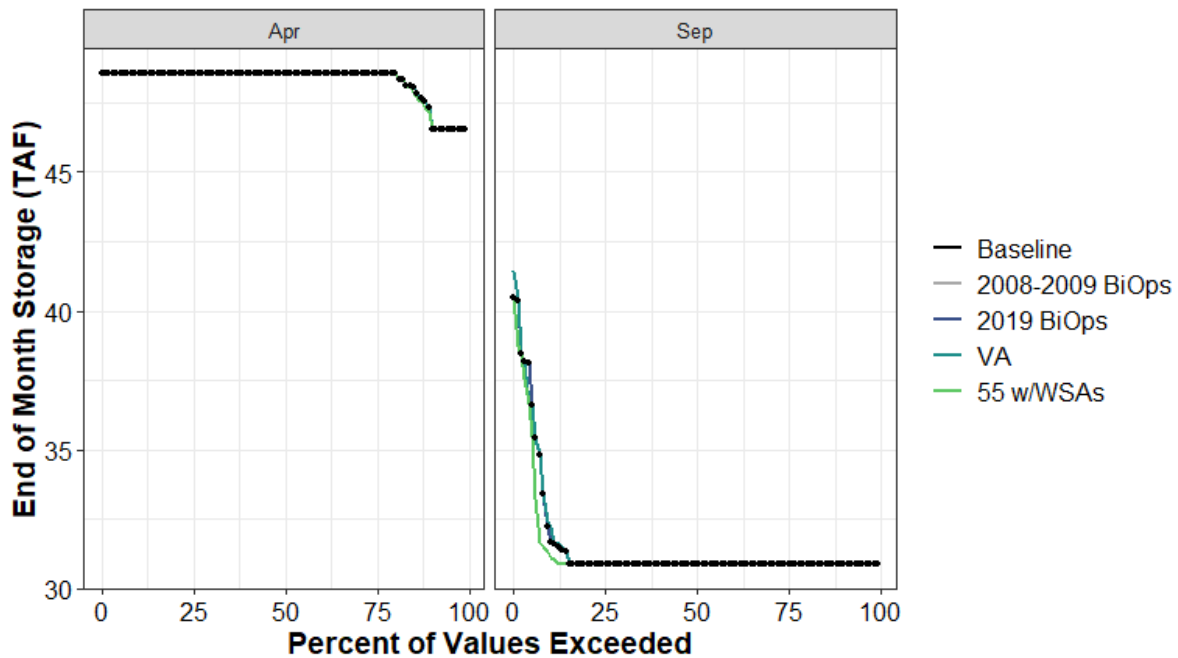


Figure H1a2-141. Scotts Flat Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

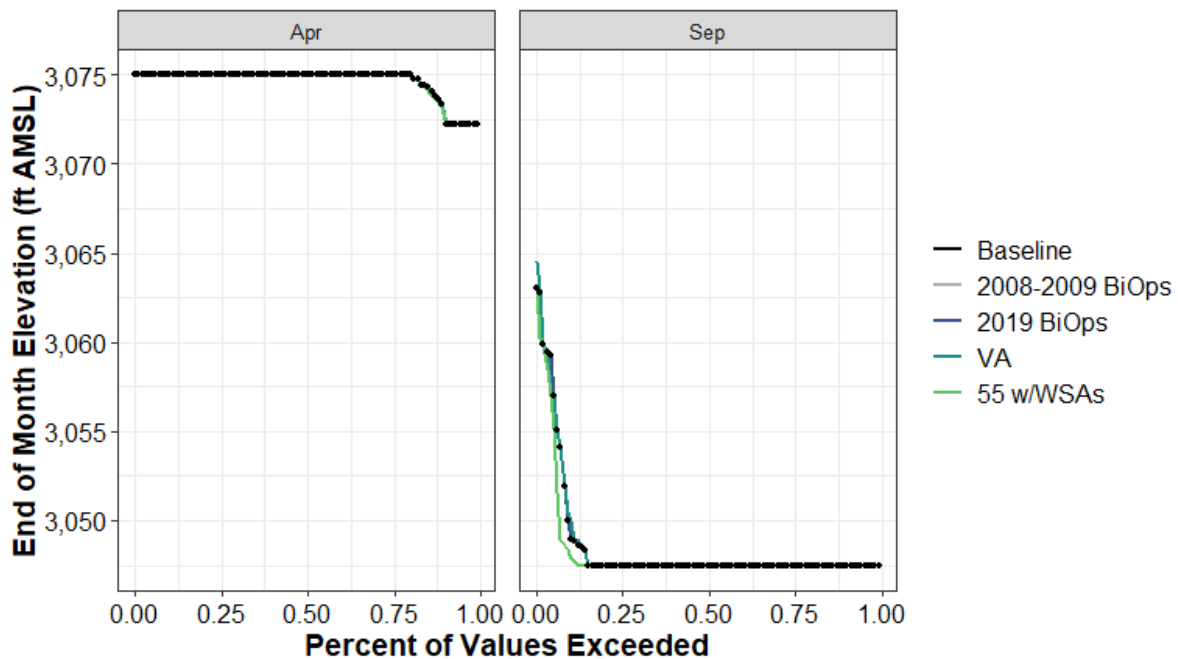


Figure H1a2-142. Scotts Flat Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-285. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Scotts Flat Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 31       | 0               | 0          | 0  | 0         |
| 10%  | 31       | 0               | 0          | 0  | 0         |
| 25%  | 31       | 0               | 0          | 0  | 0         |
| 50%  | 31       | 0               | 0          | 0  | 0         |
| 75%  | 31       | 0               | 0          | 0  | 0         |
| 90%  | 32       | 0               | 0          | 0  | -1        |
| 100% | 40       | 1               | 0          | 1  | 0         |
| Mean | 32       | 0               | 0          | 0  | 0         |

**Table H1a2-286. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Scotts Flat Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,047    | 0               | 0          | 0  | 0         |
| 10%  | 3,047    | 0               | 0          | 0  | 0         |
| 25%  | 3,047    | 0               | 0          | 0  | 0         |
| 50%  | 3,047    | 0               | 0          | 0  | 0         |
| 75%  | 3,047    | 0               | 0          | 0  | 0         |
| 90%  | 3,049    | 0               | 0          | 1  | -1        |
| 100% | 3,063    | 2               | 0          | 2  | 0         |
| Mean | 3,048    | 0               | 0          | 0  | 0         |

**Table H1a2-287. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Scotts Flat Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 47       | 0               | 0          | 0  | 0         |
| 10%  | 47       | 0               | 0          | 0  | 0         |
| 25%  | 49       | 0               | 0          | 0  | 0         |
| 50%  | 49       | 0               | 0          | 0  | 0         |
| 75%  | 49       | 0               | 0          | 0  | 0         |
| 90%  | 49       | 0               | 0          | 0  | 0         |
| 100% | 49       | 0               | 0          | 0  | 0         |
| Mean | 48       | 0               | 0          | 0  | 0         |

**Table H1a2-288. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Scotts Flat Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,072    | 0               | 0          | 0  | 0         |
| 10%  | 3,073    | 0               | 0          | 0  | 0         |
| 25%  | 3,075    | 0               | 0          | 0  | 0         |
| 50%  | 3,075    | 0               | 0          | 0  | 0         |
| 75%  | 3,075    | 0               | 0          | 0  | 0         |
| 90%  | 3,075    | 0               | 0          | 0  | 0         |
| 100% | 3,075    | 0               | 0          | 0  | 0         |
| Mean | 3,075    | 0               | 0          | 0  | 0         |

### H1a2.5.43 Shasta Lake (Sacramento River Watershed)

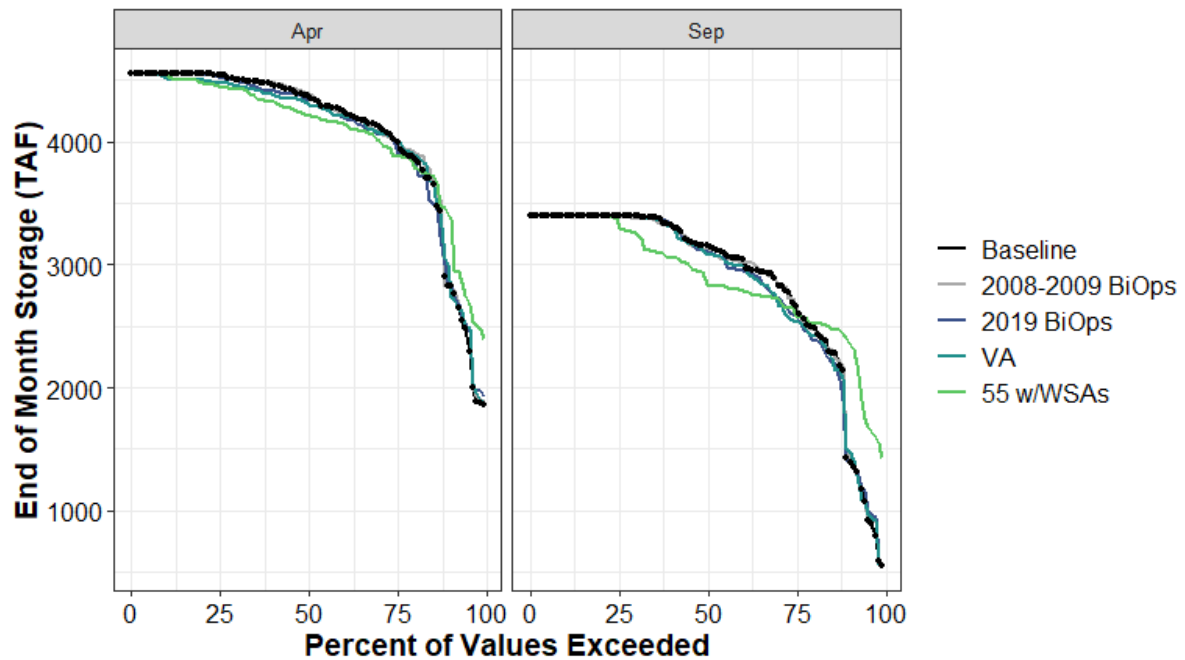


Figure H1a2-143. Shasta Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

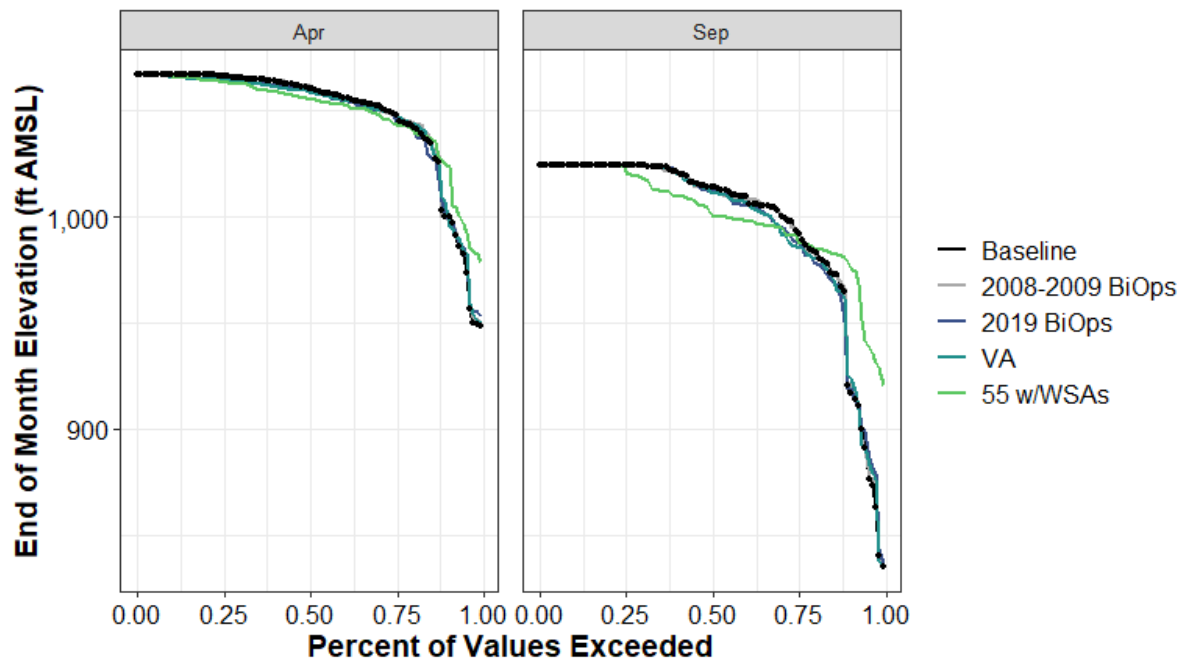


Figure H1a2-144. Shasta Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-289. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Shasta Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 550      | 0               | 10         | 0    | 876       |
| 10%  | 1,420    | 39              | -8         | 78   | 973       |
| 25%  | 2,679    | 13              | -87        | -134 | -61       |
| 50%  | 3,158    | -38             | -56        | -71  | -318      |
| 75%  | 3,400    | -6              | 0          | 0    | -64       |
| 90%  | 3,400    | 0               | 0          | 0    | 0         |
| 100% | 3,400    | 0               | 0          | 0    | 0         |
| Mean | 2,871    | -4              | -31        | -32  | 3         |

**Table H1a2-290. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Shasta Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 835      | 0               | 1          | 0  | 85        |
| 10%  | 920      | 3               | -1         | 5  | 59        |
| 25%  | 993      | 1               | -4         | -7 | -3        |
| 50%  | 1,014    | -2              | -2         | -3 | -14       |
| 75%  | 1,024    | 0               | 0          | 0  | -3        |
| 90%  | 1,024    | 0               | 0          | 0  | 0         |
| 100% | 1,024    | 0               | 0          | 0  | 0         |
| Mean | 997      | 0               | -1         | -1 | 3         |

**Table H1a2-291. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Shasta Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 1,862    | 23              | 68         | 23  | 533       |
| 10%  | 2,827    | -5              | 20         | 124 | 577       |
| 25%  | 4,015    | -7              | -47        | -10 | -131      |
| 50%  | 4,372    | 23              | -51        | -58 | -158      |
| 75%  | 4,543    | -3              | -23        | -63 | -94       |
| 90%  | 4,552    | 0               | 0          | -35 | -12       |
| 100% | 4,552    | 0               | 0          | 0   | 0         |
| Mean | 4,084    | 10              | -21        | -23 | -13       |

**Table H1a2-292. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Shasta Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 949      | 1               | 4          | 1  | 30        |
| 10%  | 1,000    | 0               | 1          | 5  | 25        |
| 25%  | 1,048    | 0               | -2         | 0  | -5        |
| 50%  | 1,061    | 1               | -2         | -2 | -5        |
| 75%  | 1,067    | 0               | -1         | -2 | -3        |
| 90%  | 1,067    | 0               | 0          | -1 | 0         |
| 100% | 1,067    | 0               | 0          | 0  | 0         |
| Mean | 1,049    | 0               | -1         | -1 | 0         |

## H1a2.5.44 Silver Lake (American River Watershed)

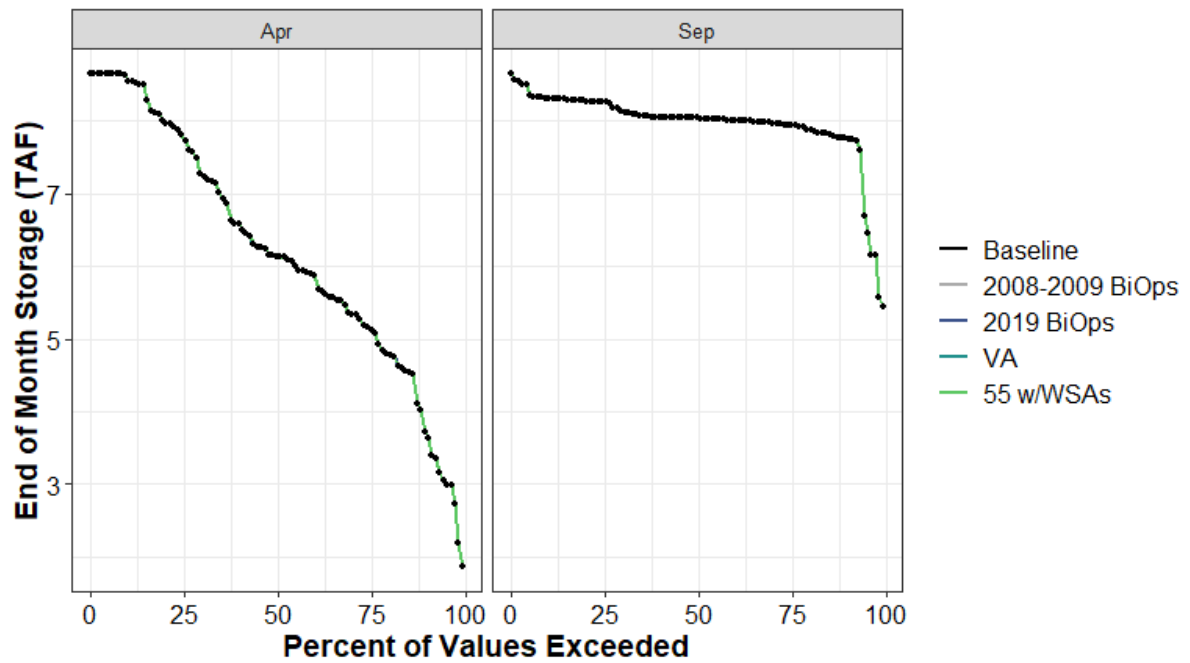


Figure H1a2-145. Silver Lake End of April and End of September Storage (TAF) Percent Exceedance Plot

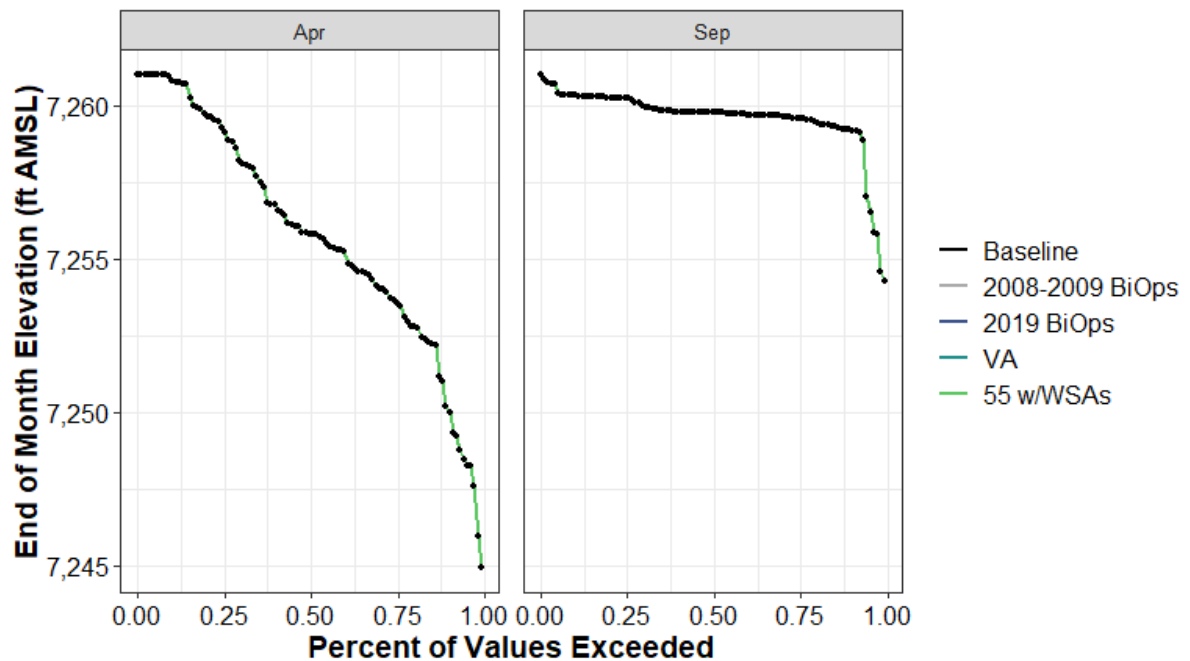


Figure H1a2-146. Silver Lake End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-293. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Silver Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 5        | 0               | 0          | 0  | 0         |
| 10%  | 8        | 0               | 0          | 0  | 0         |
| 25%  | 8        | 0               | 0          | 0  | 0         |
| 50%  | 8        | 0               | 0          | 0  | 0         |
| 75%  | 8        | 0               | 0          | 0  | 0         |
| 90%  | 8        | 0               | 0          | 0  | 0         |
| 100% | 9        | 0               | 0          | 0  | 0         |
| Mean | 8        | 0               | 0          | 0  | 0         |

**Table H1a2-294. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Silver Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7,254    | 0               | 0          | 0  | 0         |
| 10%  | 7,259    | 0               | 0          | 0  | 0         |
| 25%  | 7,260    | 0               | 0          | 0  | 0         |
| 50%  | 7,260    | 0               | 0          | 0  | 0         |
| 75%  | 7,260    | 0               | 0          | 0  | 0         |
| 90%  | 7,260    | 0               | 0          | 0  | 0         |
| 100% | 7,261    | 0               | 0          | 0  | 0         |
| Mean | 7,260    | 0               | 0          | 0  | 0         |

**Table H1a2-295. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Silver Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2        | 0               | 0          | 0  | 0         |
| 10%  | 4        | 0               | 0          | 0  | 0         |
| 25%  | 5        | 0               | 0          | 0  | 0         |
| 50%  | 6        | 0               | 0          | 0  | 0         |
| 75%  | 8        | 0               | 0          | 0  | 0         |
| 90%  | 9        | 0               | 0          | 0  | 0         |
| 100% | 9        | 0               | 0          | 0  | 0         |
| Mean | 6        | 0               | 0          | 0  | 0         |

**Table H1a2-296. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Silver Lake**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7,245    | 0               | 0          | 0  | 0         |
| 10%  | 7,250    | 0               | 0          | 0  | 0         |
| 25%  | 7,254    | 0               | 0          | 0  | 0         |
| 50%  | 7,256    | 0               | 0          | 0  | 0         |
| 75%  | 7,259    | 0               | 0          | 0  | 0         |
| 90%  | 7,261    | 0               | 0          | 0  | 0         |
| 100% | 7,261    | 0               | 0          | 0  | 0         |
| Mean | 7,256    | 0               | 0          | 0  | 0         |

## H1a2.5.45 Sly Creek Reservoir (Feather River Watershed)

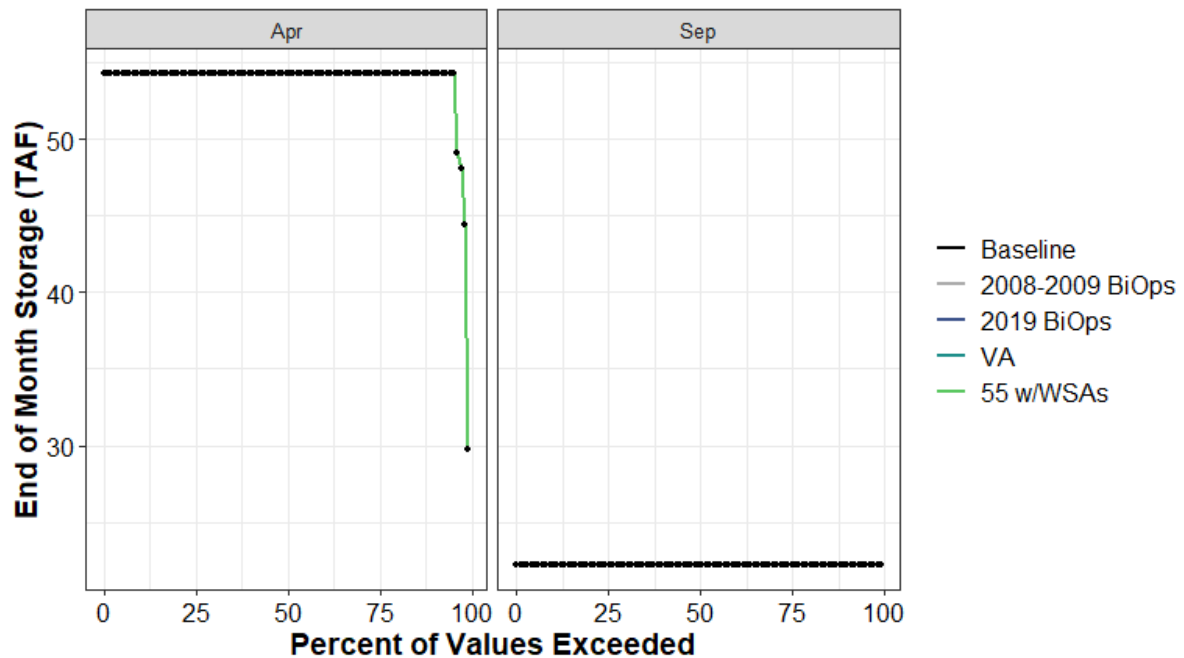


Figure H1a2-147. Sly Creek Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

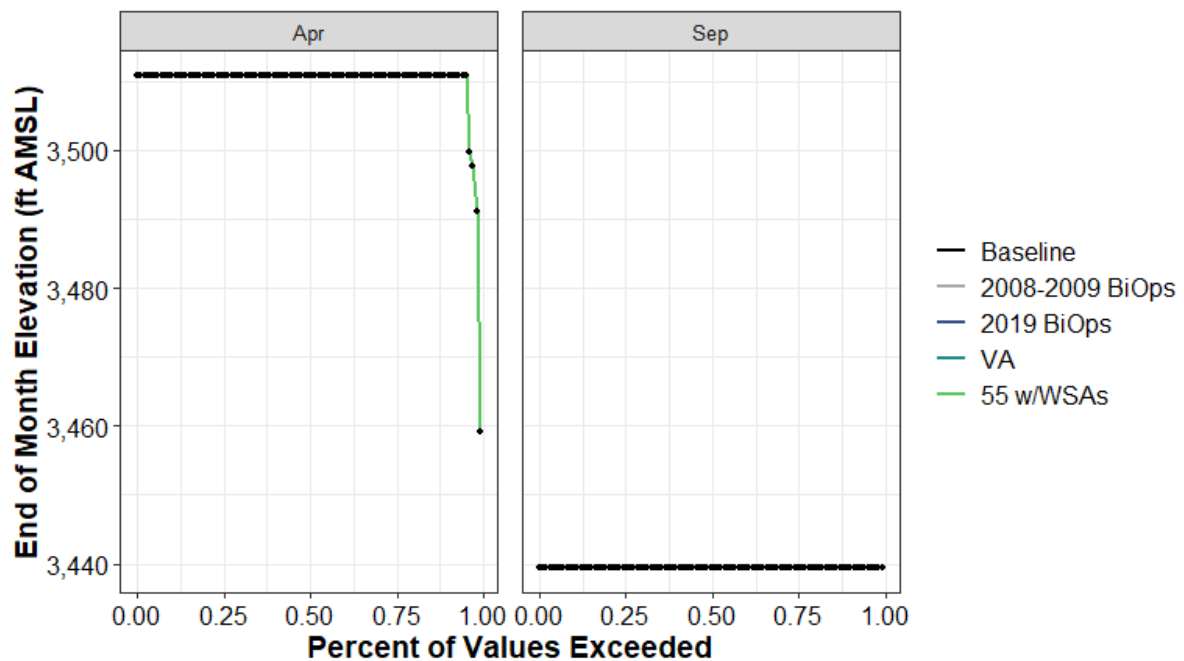


Figure H1a2-148. Sly Creek Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-297. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Sly Creek Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 22       | 0               | 0          | 0  | 0         |
| 10%  | 22       | 0               | 0          | 0  | 0         |
| 25%  | 22       | 0               | 0          | 0  | 0         |
| 50%  | 22       | 0               | 0          | 0  | 0         |
| 75%  | 22       | 0               | 0          | 0  | 0         |
| 90%  | 22       | 0               | 0          | 0  | 0         |
| 100% | 22       | 0               | 0          | 0  | 0         |
| Mean | 22       | 0               | 0          | 0  | 0         |

**Table H1a2-298. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Sly Creek Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,439    | 0               | 0          | 0  | 0         |
| 10%  | 3,439    | 0               | 0          | 0  | 0         |
| 25%  | 3,439    | 0               | 0          | 0  | 0         |
| 50%  | 3,439    | 0               | 0          | 0  | 0         |
| 75%  | 3,439    | 0               | 0          | 0  | 0         |
| 90%  | 3,439    | 0               | 0          | 0  | 0         |
| 100% | 3,439    | 0               | 0          | 0  | 0         |
| Mean | 3,439    | 0               | 0          | 0  | 0         |

**Table H1a2-299. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Sly Creek Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 30       | 0               | 0          | 0  | 0         |
| 10%  | 54       | 0               | 0          | 0  | 0         |
| 25%  | 54       | 0               | 0          | 0  | 0         |
| 50%  | 54       | 0               | 0          | 0  | 0         |
| 75%  | 54       | 0               | 0          | 0  | 0         |
| 90%  | 54       | 0               | 0          | 0  | 0         |
| 100% | 54       | 0               | 0          | 0  | 0         |
| Mean | 54       | 0               | 0          | 0  | 0         |

**Table H1a2-300. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Sly Creek Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 3,459    | 0               | 0          | 0  | 0         |
| 10%  | 3,511    | 0               | 0          | 0  | 0         |
| 25%  | 3,511    | 0               | 0          | 0  | 0         |
| 50%  | 3,511    | 0               | 0          | 0  | 0         |
| 75%  | 3,511    | 0               | 0          | 0  | 0         |
| 90%  | 3,511    | 0               | 0          | 0  | 0         |
| 100% | 3,511    | 0               | 0          | 0  | 0         |
| Mean | 3,510    | 0               | 0          | 0  | 0         |

## H1a2.5.46 Stony Gorge Reservoir (Stony Creek Watershed)

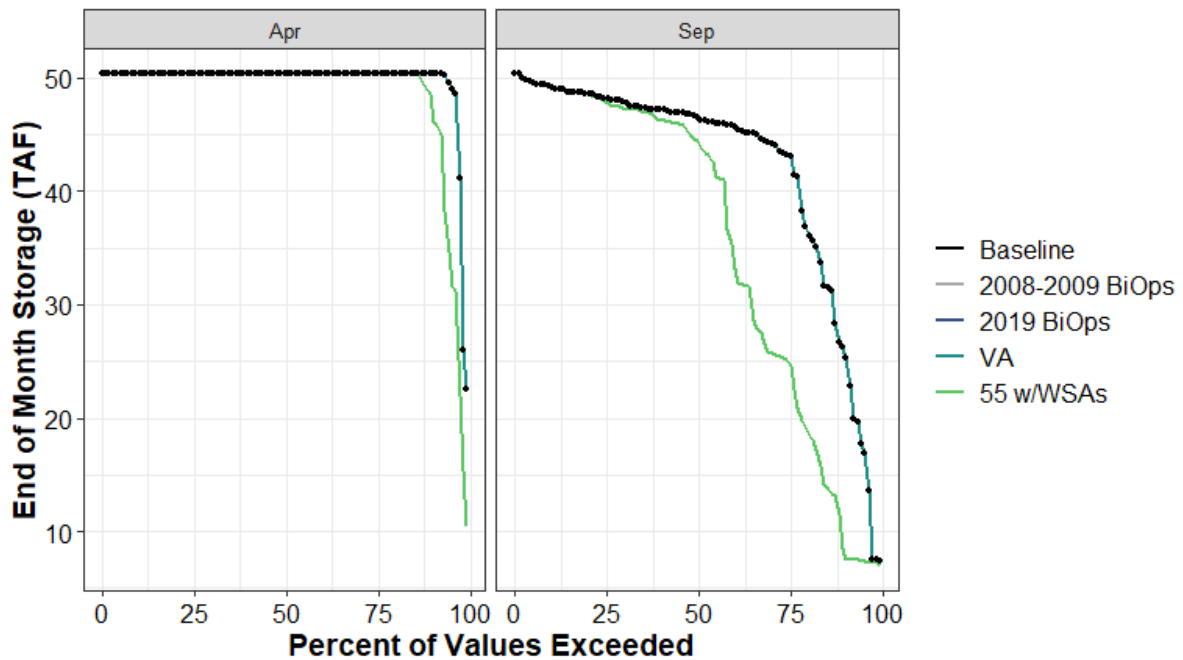


Figure H1a2-149. Stony Gorge Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

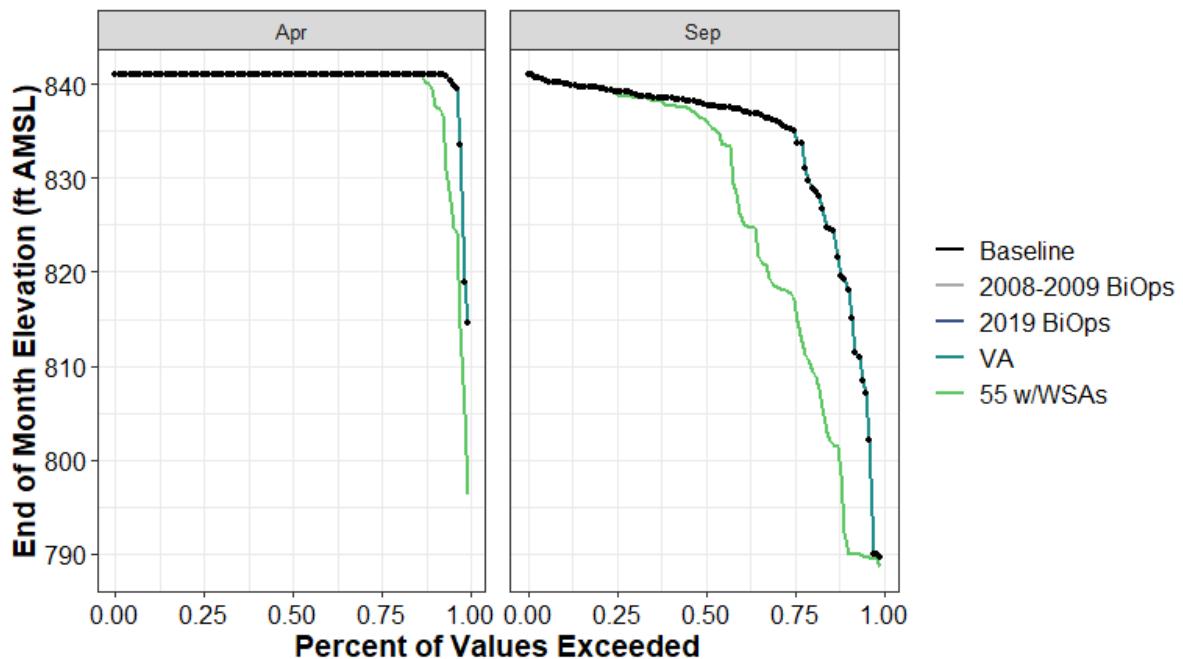


Figure H1a2-150. Stony Gorge Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-301. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Stony Gorge Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7        | 0               | 0          | 0  | 0         |
| 10%  | 26       | 0               | 0          | 0  | -18       |
| 25%  | 43       | 0               | 0          | 0  | -18       |
| 50%  | 47       | 0               | 0          | 0  | -2        |
| 75%  | 48       | 0               | 0          | 0  | 0         |
| 90%  | 49       | 0               | 0          | 0  | 0         |
| 100% | 50       | 0               | 0          | 0  | 0         |
| Mean | 42       | 0               | 0          | 0  | -7        |

**Table H1a2-302. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Stony Gorge Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 790      | 0               | 0          | 0  | -1        |
| 10%  | 819      | 0               | 0          | 0  | -27       |
| 25%  | 835      | 0               | 0          | 0  | -18       |
| 50%  | 838      | 0               | 0          | 0  | -2        |
| 75%  | 839      | 0               | 0          | 0  | 0         |
| 90%  | 840      | 0               | 0          | 0  | 0         |
| 100% | 841      | 0               | 0          | 0  | 0         |
| Mean | 833      | 0               | 0          | 0  | -7        |

**Table H1a2-303. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Stony Gorge Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 23       | 0               | 0          | 0  | -12       |
| 10%  | 50       | 0               | 0          | 0  | -2        |
| 25%  | 50       | 0               | 0          | 0  | 0         |
| 50%  | 50       | 0               | 0          | 0  | 0         |
| 75%  | 50       | 0               | 0          | 0  | 0         |
| 90%  | 50       | 0               | 0          | 0  | 0         |
| 100% | 50       | 0               | 0          | 0  | 0         |
| Mean | 50       | 0               | 0          | 0  | -1        |

**Table H1a2-304. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Stony Gorge Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 815      | 0               | 0          | 0  | -18       |
| 10%  | 841      | 0               | 0          | 0  | -2        |
| 25%  | 841      | 0               | 0          | 0  | 0         |
| 50%  | 841      | 0               | 0          | 0  | 0         |
| 75%  | 841      | 0               | 0          | 0  | 0         |
| 90%  | 841      | 0               | 0          | 0  | 0         |
| 100% | 841      | 0               | 0          | 0  | 0         |
| Mean | 840      | 0               | 0          | 0  | -1        |

## H1a2.5.47 Stumpy Meadows (American River Watershed)

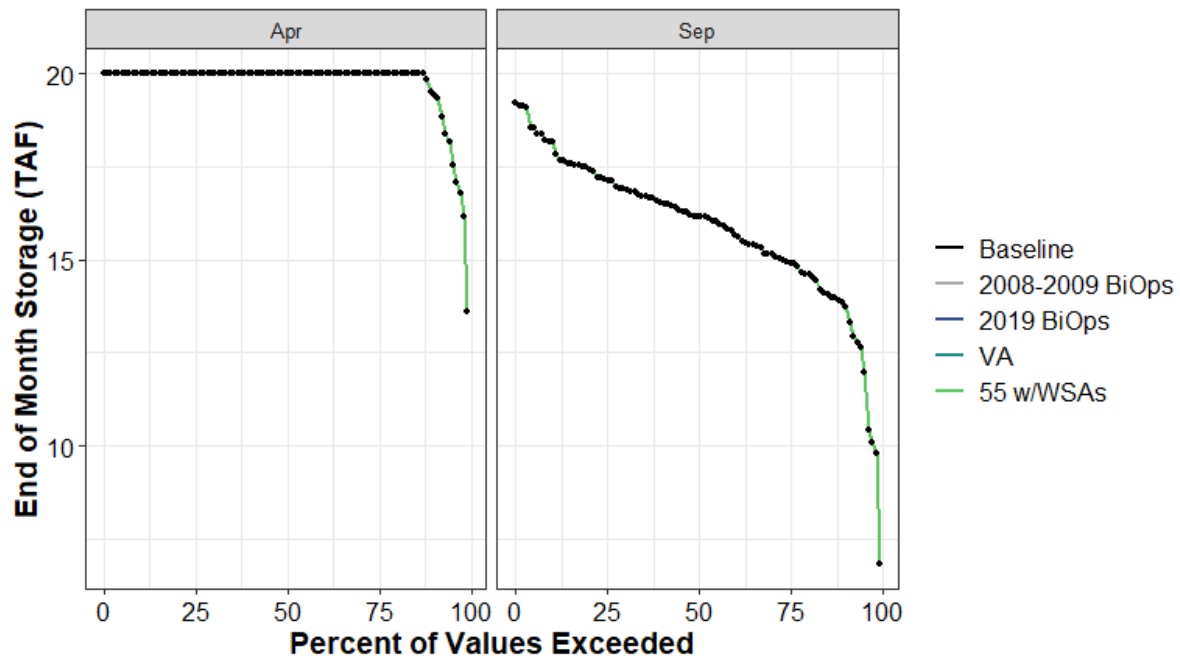


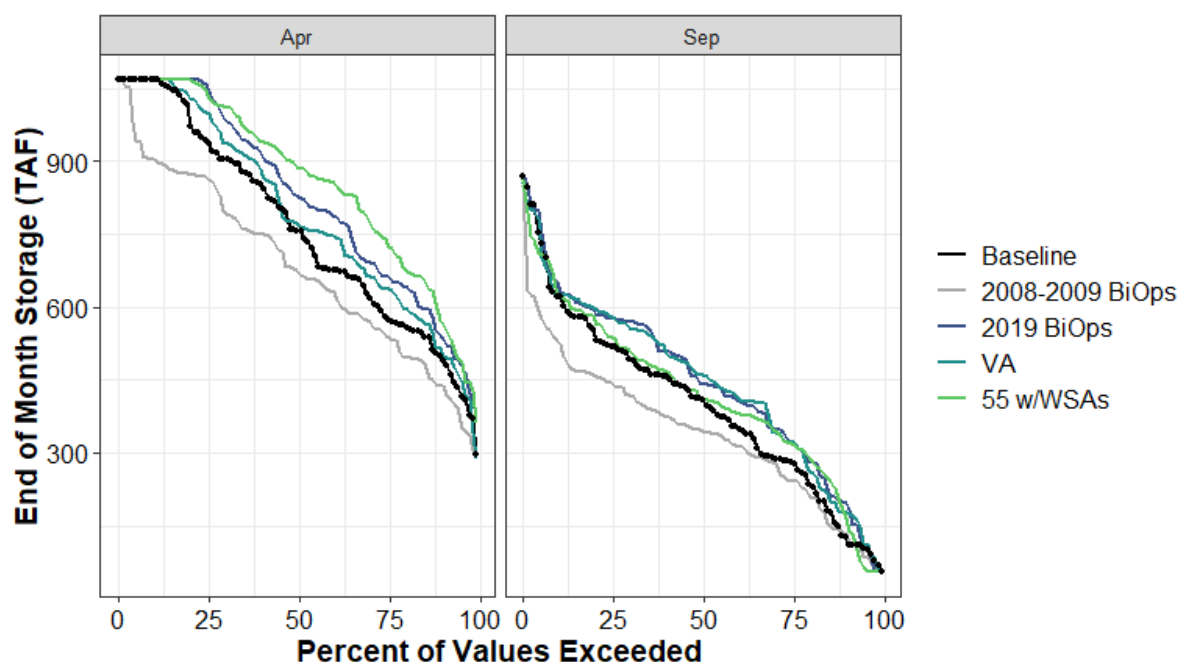
Figure H1a2-151. Stumpy Meadows End of April and End of September Storage (TAF) Percent Exceedance Plot

Table H1a2-305. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Stumpy Meadows

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 7        | 0               | 0          | 0  | 0         |
| 10%  | 14       | 0               | 0          | 0  | 0         |
| 25%  | 15       | 0               | 0          | 0  | 0         |
| 50%  | 16       | 0               | 0          | 0  | 0         |
| 75%  | 17       | 0               | 0          | 0  | 0         |
| 90%  | 18       | 0               | 0          | 0  | 0         |
| 100% | 19       | 0               | 0          | 0  | 0         |
| Mean | 16       | 0               | 0          | 0  | 0         |

Table H1a2-306. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Stumpy Meadows

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 14       | 0               | 0          | 0  | 0         |
| 10%  | 19       | 0               | 0          | 0  | 0         |
| 25%  | 20       | 0               | 0          | 0  | 0         |
| 50%  | 20       | 0               | 0          | 0  | 0         |
| 75%  | 20       | 0               | 0          | 0  | 0         |
| 90%  | 20       | 0               | 0          | 0  | 0         |
| 100% | 20       | 0               | 0          | 0  | 0         |
| Mean | 20       | 0               | 0          | 0  | 0         |

**H1a2.5.48 SWP San Luis Reservoir (South of Delta Offstream)**

**Figure H1a2-152. SWP San Luis Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot**

**Table H1a2-307. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for SWP San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 55       | 0               | 0          | 0   | 0         |
| 10%  | 123      | 6               | 72         | 54  | 37        |
| 25%  | 279      | -37             | 40         | 43  | 38        |
| 50%  | 410      | -65             | 31         | 51  | 1         |
| 75%  | 518      | -78             | 58         | 59  | 18        |
| 90%  | 622      | -98             | 14         | 4   | 1         |
| 100% | 869      | -20             | 4          | -14 | -7        |
| Mean | 397      | -58             | 47         | 44  | 20        |

**Table H1a2-308. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for SWP San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 297      | -5              | 93         | -10 | 64        |
| 10%  | 496      | -58             | 42         | 16  | 74        |
| 25%  | 575      | -36             | 89         | 62  | 157       |
| 50%  | 757      | -82             | 73         | 14  | 129       |
| 75%  | 940      | -76             | 111        | 59  | 97        |
| 90%  | 1,067    | -164            | 0          | 0   | 0         |
| 100% | 1,067    | 0               | 0          | 0   | 0         |
| Mean | 763      | -81             | 64         | 30  | 98        |

## H1a2.5.49 Total San Luis Reservoir (South of Delta Offstream)

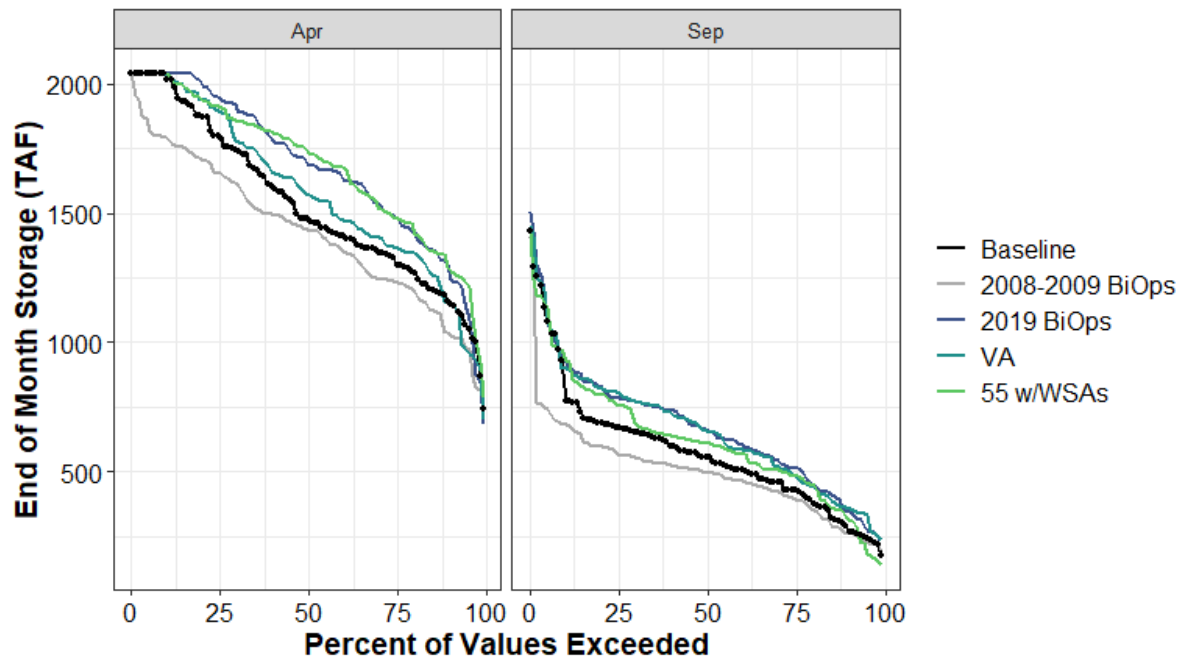


Figure H1a2-153. Total San Luis Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

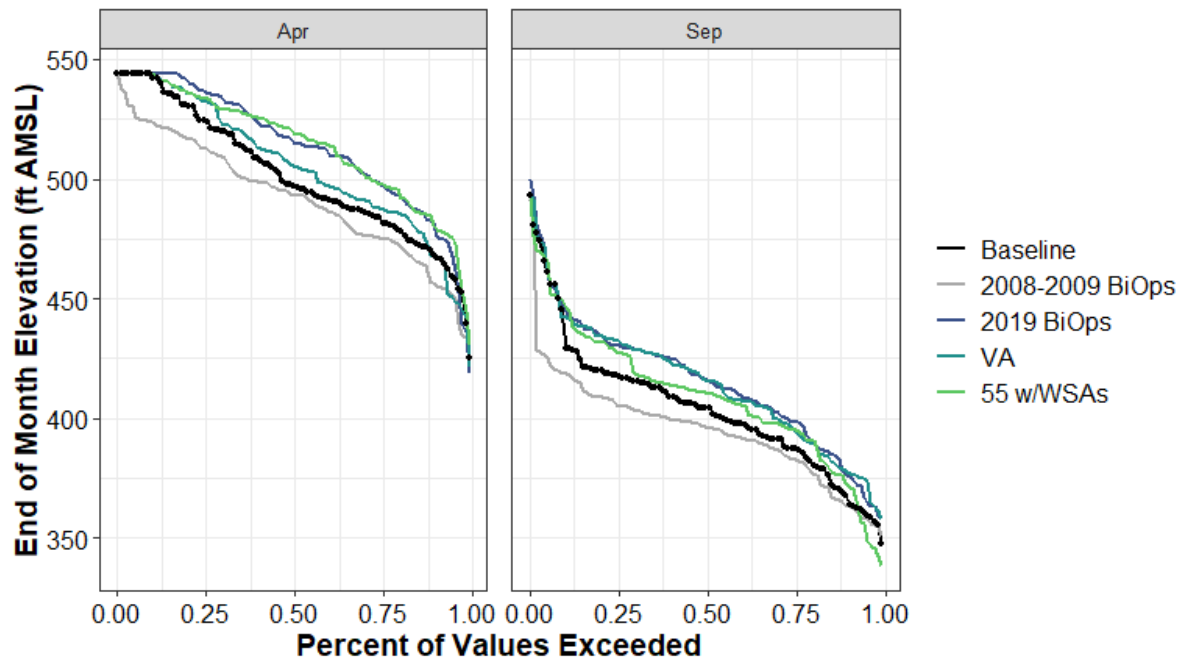


Figure H1a2-154. Total San Luis Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-309. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Total San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 176      | 17              | 56         | 56  | -39       |
| 10%  | 285      | -23             | 64         | 74  | 36        |
| 25%  | 428      | -33             | 85         | 57  | 57        |
| 50%  | 557      | -61             | 105        | 100 | 53        |
| 75%  | 671      | -103            | 115        | 134 | 88        |
| 90%  | 804      | -123            | 120        | 95  | 135       |
| 100% | 1,430    | -21             | 76         | 17  | -7        |
| Mean | 575      | -80             | 94         | 88  | 45        |

**Table H1a2-310. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Total San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 348      | 3               | 10         | 10 | -10       |
| 10%  | 367      | -4              | 10         | 11 | 6         |
| 25%  | 388      | -5              | 11         | 8  | 7         |
| 50%  | 404      | -8              | 12         | 12 | 6         |
| 75%  | 418      | -12             | 13         | 15 | 10        |
| 90%  | 432      | -14             | 13         | 10 | 14        |
| 100% | 493      | -2              | 7          | 2  | -1        |
| Mean | 404      | -9              | 11         | 11 | 5         |

**Table H1a2-311. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Total San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 740      | 45              | -58        | -40 | 44        |
| 10%  | 1,156    | -118            | 134        | -1  | 131       |
| 25%  | 1,313    | -79             | 171        | 54  | 170       |
| 50%  | 1,477    | -43             | 211        | 93  | 261       |
| 75%  | 1,793    | -138            | 150        | 100 | 118       |
| 90%  | 2,022    | -231            | 17         | 10  | 17        |
| 100% | 2,039    | 0               | 0          | 0   | 0         |
| Mean | 1,536    | -110            | 141        | 48  | 145       |

**Table H1a2-312. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Total San Luis Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 426      | 5               | -6         | -4 | 5         |
| 10%  | 468      | -11             | 13         | 0  | 12        |
| 25%  | 483      | -7              | 15         | 5  | 15        |
| 50%  | 497      | -4              | 18         | 8  | 22        |
| 75%  | 524      | -12             | 12         | 8  | 10        |
| 90%  | 543      | -19             | 1          | 1  | 1         |
| 100% | 544      | 0               | 0          | 0  | 0         |
| Mean | 502      | -10             | 12         | 4  | 13        |

## H1a2.5.50 Trinity Reservoir (Trinity River Watershed)



Figure H1a2-155. Trinity Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot



Figure H1a2-156. Trinity Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-313. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Trinity Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 246      | -6              | 2          | 2   | 2         |
| 10%  | 578      | -6              | -17        | -17 | -17       |
| 25%  | 1,030    | 8               | 0          | 0   | 0         |
| 50%  | 1,420    | -12             | 3          | 3   | 3         |
| 75%  | 1,831    | 0               | 0          | 0   | 0         |
| 90%  | 1,972    | 0               | 0          | 0   | 0         |
| 100% | 1,972    | 0               | 0          | 0   | 0         |
| Mean | 1,379    | -4              | -1         | -1  | -1        |

**Table H1a2-314. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Trinity Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2,107    | -4              | 1          | 1  | 1         |
| 10%  | 2,198    | -1              | -3         | -3 | -3        |
| 25%  | 2,258    | 1               | 0          | 0  | 0         |
| 50%  | 2,296    | -1              | 0          | 0  | 0         |
| 75%  | 2,331    | 0               | 0          | 0  | 0         |
| 90%  | 2,343    | 0               | 0          | 0  | 0         |
| 100% | 2,343    | 0               | 0          | 0  | 0         |
| Mean | 2,285    | 0               | 0          | 0  | 0         |

**Table H1a2-315. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Trinity Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 650      | 7               | 29         | 29 | 29        |
| 10%  | 1,004    | 7               | -6         | -6 | -6        |
| 25%  | 1,516    | 19              | 0          | 0  | 0         |
| 50%  | 2,009    | -11             | 0          | 0  | 0         |
| 75%  | 2,235    | 0               | 0          | 0  | 0         |
| 90%  | 2,300    | -1              | 0          | 0  | 0         |
| 100% | 2,300    | 0               | 0          | 0  | 0         |
| Mean | 1,843    | -4              | -3         | -3 | -3        |

**Table H1a2-316. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Trinity Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 2,209    | 1               | 4          | 4  | 4         |
| 10%  | 2,255    | 1               | -1         | -1 | -1        |
| 25%  | 2,304    | 2               | 0          | 0  | 0         |
| 50%  | 2,345    | -1              | 0          | 0  | 0         |
| 75%  | 2,358    | 0               | 0          | 0  | 0         |
| 90%  | 2,361    | 0               | 0          | 0  | 0         |
| 100% | 2,361    | 0               | 0          | 0  | 0         |
| Mean | 2,327    | 0               | 0          | 0  | 0         |

## H1a2.5.51 Union Valley Reservoir (American River Watershed)

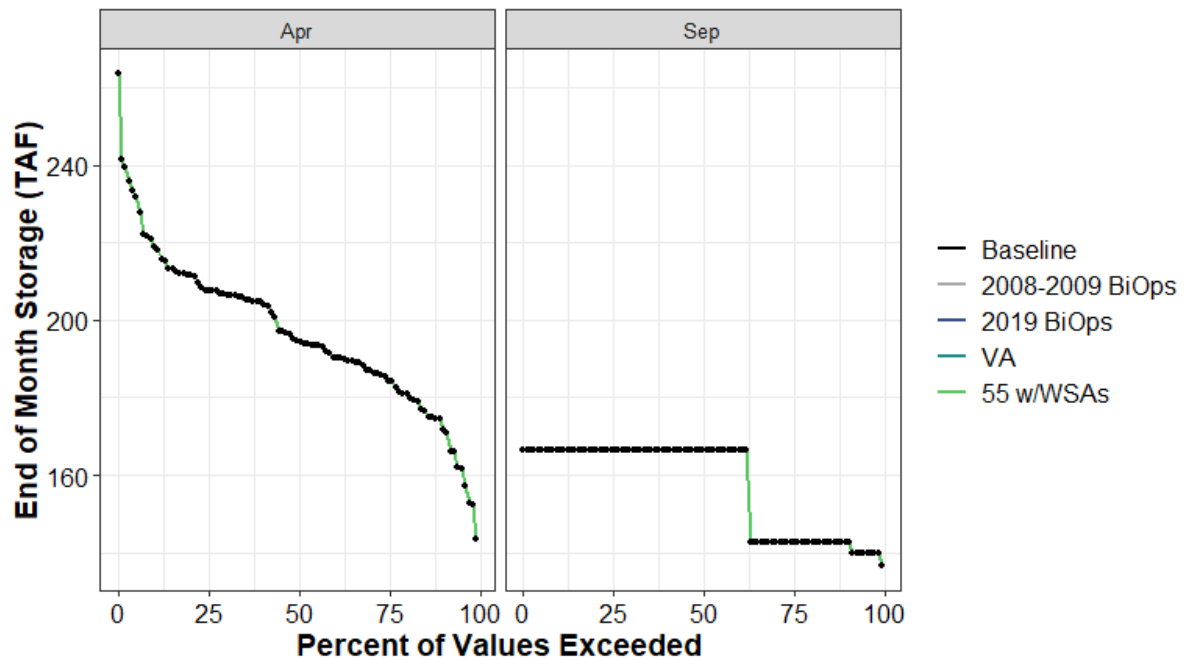


Figure H1a2-157. Union Valley Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

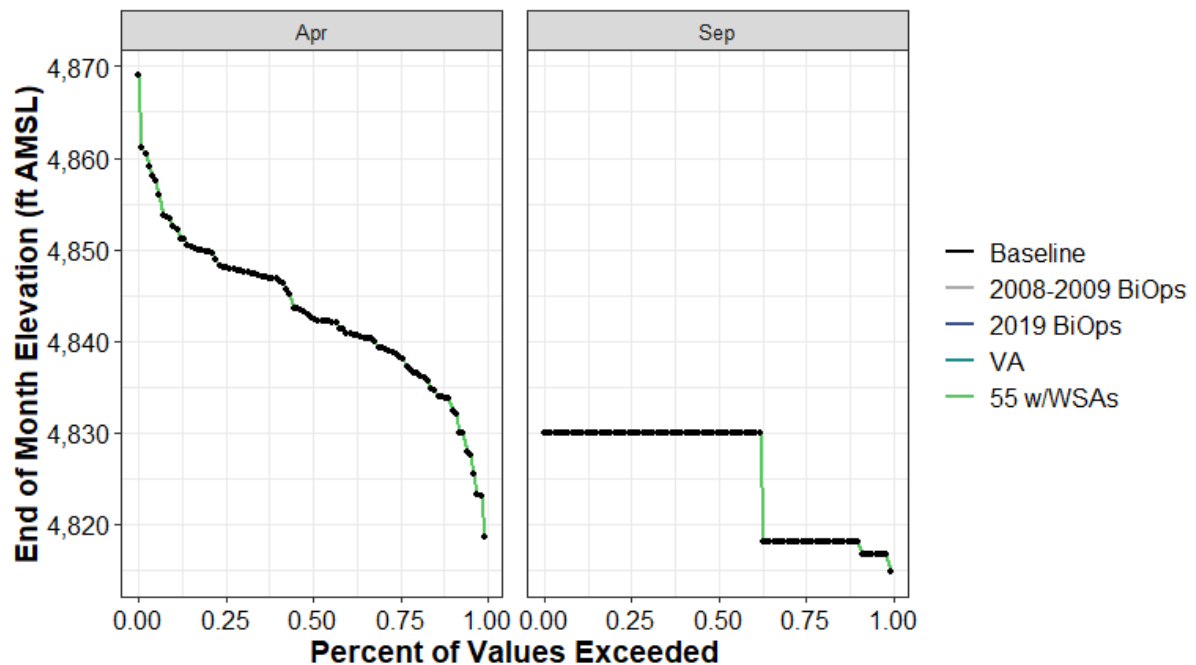


Figure H1a2-158. Union Valley Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-317. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Union Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 137      | 0               | 0          | 0  | 0         |
| 10%  | 143      | 0               | 0          | 0  | 0         |
| 25%  | 143      | 0               | 0          | 0  | 0         |
| 50%  | 166      | 0               | 0          | 0  | 0         |
| 75%  | 166      | 0               | 0          | 0  | 0         |
| 90%  | 166      | 0               | 0          | 0  | 0         |
| 100% | 166      | 0               | 0          | 0  | 0         |
| Mean | 157      | 0               | 0          | 0  | 0         |

**Table H1a2-318. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Union Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,815    | 0               | 0          | 0  | 0         |
| 10%  | 4,818    | 0               | 0          | 0  | 0         |
| 25%  | 4,818    | 0               | 0          | 0  | 0         |
| 50%  | 4,830    | 0               | 0          | 0  | 0         |
| 75%  | 4,830    | 0               | 0          | 0  | 0         |
| 90%  | 4,830    | 0               | 0          | 0  | 0         |
| 100% | 4,830    | 0               | 0          | 0  | 0         |
| Mean | 4,825    | 0               | 0          | 0  | 0         |

**Table H1a2-319. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Union Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 144      | 0               | 0          | 0  | 0         |
| 10%  | 174      | 0               | 0          | 0  | 0         |
| 25%  | 185      | 0               | 0          | 0  | 0         |
| 50%  | 195      | 0               | 0          | 0  | 0         |
| 75%  | 208      | 0               | 0          | 0  | 0         |
| 90%  | 219      | 0               | 0          | 0  | 0         |
| 100% | 264      | 0               | 0          | 0  | 0         |
| Mean | 197      | 0               | 0          | 0  | 0         |

**Table H1a2-320. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Union Valley Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 4,819    | 0               | 0          | 0  | 0         |
| 10%  | 4,833    | 0               | 0          | 0  | 0         |
| 25%  | 4,838    | 0               | 0          | 0  | 0         |
| 50%  | 4,843    | 0               | 0          | 0  | 0         |
| 75%  | 4,848    | 0               | 0          | 0  | 0         |
| 90%  | 4,853    | 0               | 0          | 0  | 0         |
| 100% | 4,869    | 0               | 0          | 0  | 0         |
| Mean | 4,843    | 0               | 0          | 0  | 0         |

## H1a2.5.52 Whiskeytown Reservoir (Clear Creek Watershed)

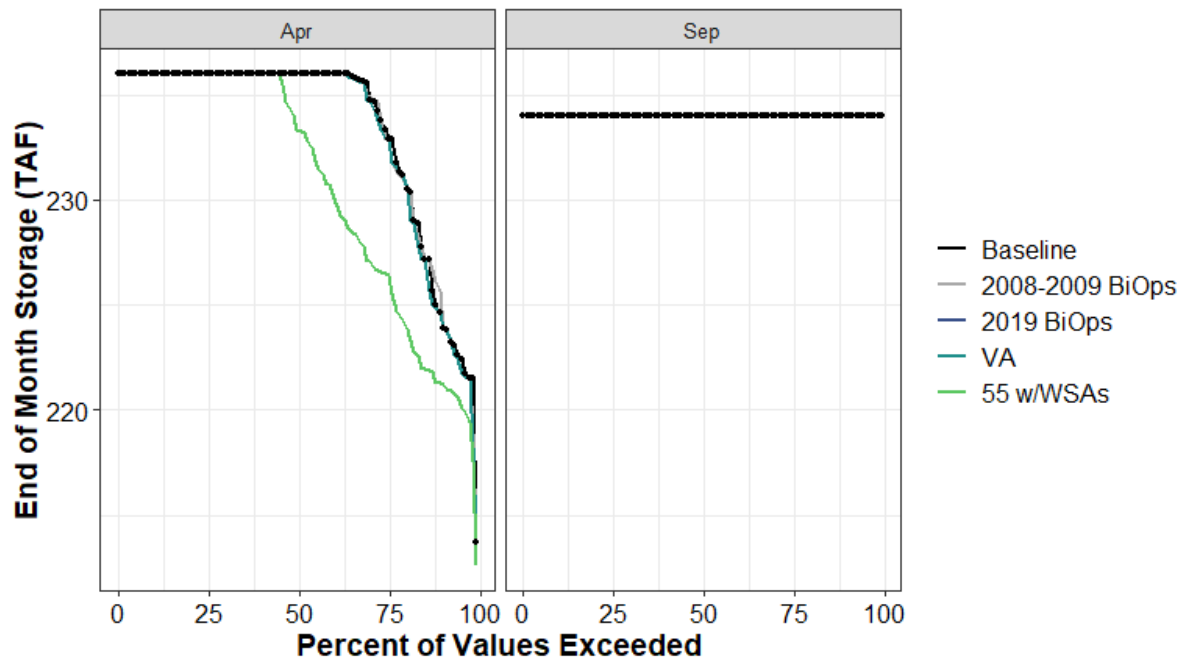


Figure H1a2-159. Whiskeytown Reservoir End of April and End of September Storage (TAF) Percent Exceedance Plot

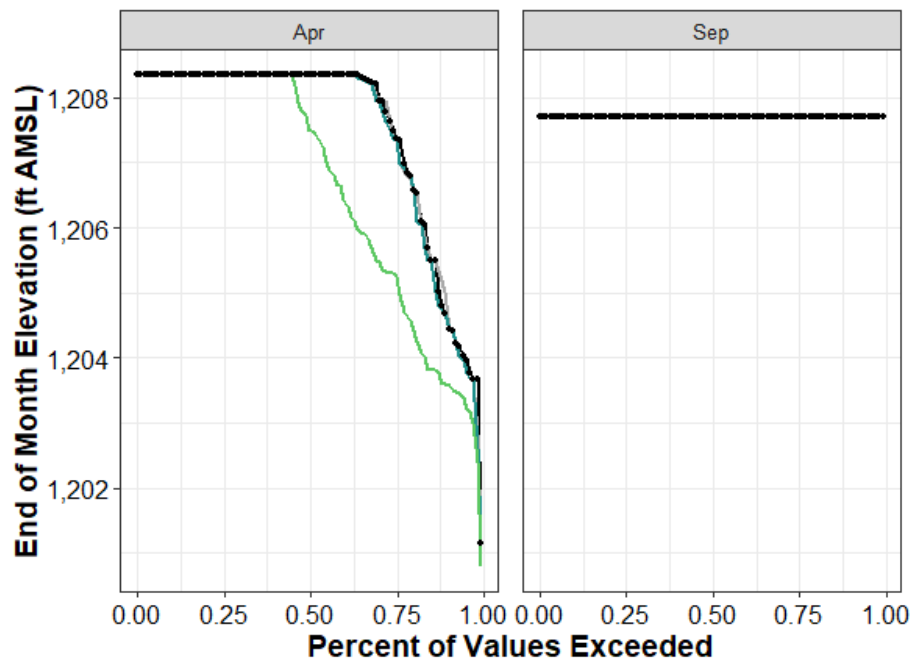


Figure H1a2-160. Whiskeytown Reservoir End-of-April and End-of-September Elevation (ft AMSL) Percent Exceedance Plot

**Table H1a2-321. Distribution of Baseline End-of-September Carryover Storage (TAF) and Absolute Difference by Scenario for Whiskeytown Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 234      | 0               | 0          | 0  | 0         |
| 10%  | 234      | 0               | 0          | 0  | 0         |
| 25%  | 234      | 0               | 0          | 0  | 0         |
| 50%  | 234      | 0               | 0          | 0  | 0         |
| 75%  | 234      | 0               | 0          | 0  | 0         |
| 90%  | 234      | 0               | 0          | 0  | 0         |
| 100% | 234      | 0               | 0          | 0  | 0         |
| Mean | 234      | 0               | 0          | 0  | 0         |

**Table H1a2-322. Distribution of Baseline End-of-September Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Whiskeytown Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,208    | 0               | 0          | 0  | 0         |
| 10%  | 1,208    | 0               | 0          | 0  | 0         |
| 25%  | 1,208    | 0               | 0          | 0  | 0         |
| 50%  | 1,208    | 0               | 0          | 0  | 0         |
| 75%  | 1,208    | 0               | 0          | 0  | 0         |
| 90%  | 1,208    | 0               | 0          | 0  | 0         |
| 100% | 1,208    | 0               | 0          | 0  | 0         |
| Mean | 1,208    | 0               | 0          | 0  | 0         |

**Table H1a2-323. Distribution of Baseline End-of-April Storage (TAF) and Absolute Difference by Scenario for Whiskeytown Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 214      | 0               | 0          | 0  | -1        |
| 10%  | 224      | 1               | 0          | 0  | -3        |
| 25%  | 233      | 0               | 0          | 0  | -7        |
| 50%  | 236      | 0               | 0          | 0  | -3        |
| 75%  | 236      | 0               | 0          | 0  | 0         |
| 90%  | 236      | 0               | 0          | 0  | 0         |
| 100% | 236      | 0               | 0          | 0  | 0         |
| Mean | 233      | 0               | 0          | 0  | -3        |

**Table H1a2-324. Distribution of Baseline End-of-April Storage Elevation (ft AMSL) and Absolute Difference by Scenario for Whiskeytown Reservoir**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 1,201    | 0               | 0          | 0  | 0         |
| 10%  | 1,205    | 0               | 0          | 0  | -1        |
| 25%  | 1,207    | 0               | 0          | 0  | -2        |
| 50%  | 1,208    | 0               | 0          | 0  | -1        |
| 75%  | 1,208    | 0               | 0          | 0  | 0         |
| 90%  | 1,208    | 0               | 0          | 0  | 0         |
| 100% | 1,208    | 0               | 0          | 0  | 0         |
| Mean | 1,208    | 0               | 0          | 0  | -1        |

## H1a2.6 Water Supply

In this section, SacWAM results for water supply are presented by water budget area (WBA), other logical groupings of demand sites within the model domain but outside of the valley floor (upper watershed and foothill, San Francisco Bay Area), CVP contract type, and SWP contract type. The values presented by WBA include total water supplied, including surface and groundwater to the demand locations by water year. Results presented for CVP and SWP deliveries only include surface supplies and are also summarized by water year. All water supply results are presented as simple aggregations of transmission link flows to the set of demand sites identified for each summary. WBAs in the Sacramento Valley include water delivered to SWP and CVP contractors in those WBAs.

Water supplies for many demand site groups remain essentially unchanged among the model scenarios presented here. The WBAs and other demand site groups identified in Table H1a2-325 show constant supplies for all water years in all scenarios summarized and are not presented further in this appendix.

**Table H1a2-325. Water Budget Areas and Demand Site Groups with Constant Supply in all Water Years of all Scenarios.**

| WBA or Demand Site Group     | Demand Type | Annual Supply (TAF) |
|------------------------------|-------------|---------------------|
| Water Budget Areas 4 and 6   | Urban       | 21                  |
| Water Budget Area 5          | Urban       | 9                   |
| Water Budget Area 7          | Urban       | 7                   |
| Water Budget Area 8          | Urban       | 8                   |
| Water Budget Area 9          | Urban       | 0.3                 |
| Water Budget Area 10         | Urban       | 32                  |
| Water Budget Area 11         | Urban       | 12                  |
| Water Budget Area 15S        | Urban       | 13                  |
| Water Budget Area 17         | Urban       | 0.8                 |
| Water Budget Areas 18 and 19 | Urban       | 0.7                 |
| Water Budget Area 22         | Urban       | 2                   |
| Water Budget Area 23         | Urban       | 1                   |
| Water Budget Area 61N        | Urban       | 26                  |

## H1a2.6.1 Water Budget Area 2 (Agricultural)

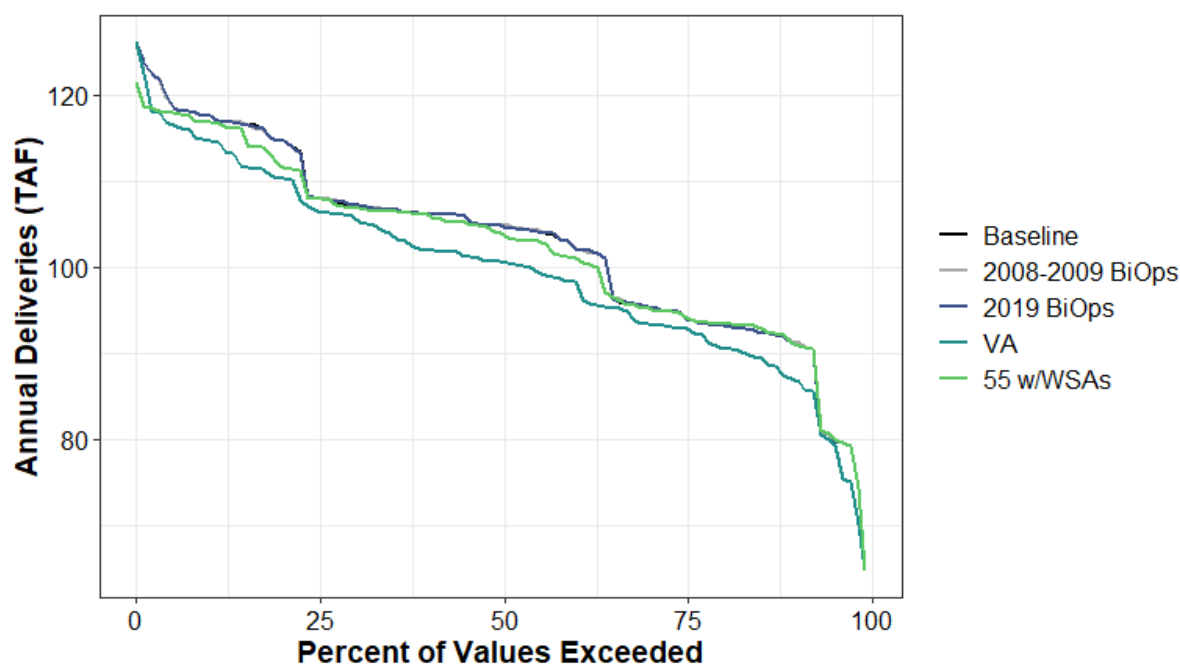


Figure H1a2-161. Total Water Supplied to Water Budget Area 2 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-326. Total Water Supplied to Water Budget Area 2 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 126      | 126             | 126        | 126 | 121       |
| 10%  | 118      | 118             | 118        | 115 | 117       |
| 20%  | 115      | 115             | 115        | 110 | 112       |
| 30%  | 107      | 107             | 107        | 106 | 107       |
| 40%  | 106      | 106             | 106        | 102 | 106       |
| 50%  | 105      | 105             | 105        | 101 | 104       |
| 60%  | 102      | 102             | 102        | 98  | 101       |
| 70%  | 95       | 95              | 95         | 93  | 95        |
| 80%  | 93       | 93              | 93         | 91  | 93        |
| 90%  | 91       | 91              | 91         | 87  | 91        |
| 100% | 65       | 65              | 65         | 65  | 65        |
| Mean | 103      | 103             | 103        | 100 | 102       |

Table H1a2-327. Total Water Supplied to Water Budget Area 2 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 111      | 111             | 111        | 111 | 107       |
| D   | 105      | 105             | 105        | 99  | 104       |
| BN  | 105      | 105             | 105        | 99  | 105       |
| AN  | 100      | 100             | 100        | 94  | 100       |
| W   | 97       | 97              | 97         | 97  | 97        |
| All | 103      | 103             | 103        | 100 | 102       |

## H1a2.6.2 Water Budget Area 2 (Urban)

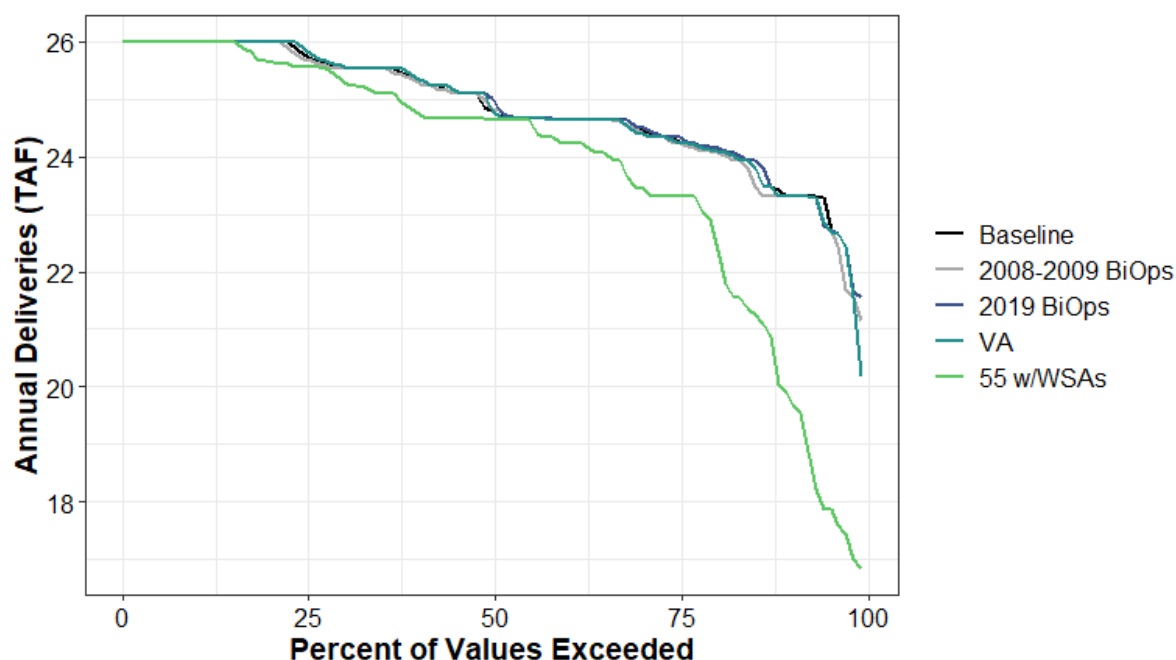


Figure H1a2-162. Total Water Supplied to Water Budget Area 2 (Urban) Annual Percent Exceedance Plot.

Table H1a2-328. Total Water Supplied to Water Budget Area 2 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 26       | 26              | 26         | 26   | 26        |
| 10%  | 26       | 26              | 26         | 26   | 26        |
| 20%  | 26       | 26              | 26         | 26   | 25.7      |
| 30%  | 25.5     | 25.5            | 25.6       | 25.6 | 25.3      |
| 40%  | 25.3     | 25.3            | 25.4       | 25.4 | 24.8      |
| 50%  | 24.8     | 24.8            | 25         | 24.8 | 24.7      |
| 60%  | 24.7     | 24.7            | 24.7       | 24.7 | 24.2      |
| 70%  | 24.5     | 24.4            | 24.5       | 24.4 | 23.5      |
| 80%  | 24.1     | 24.1            | 24.2       | 24.1 | 22.7      |
| 90%  | 23.3     | 23.3            | 23.3       | 23.3 | 19.9      |
| 100% | 21.6     | 21.2            | 21.6       | 20.2 | 16.8      |
| Mean | 24.9     | 24.8            | 24.9       | 24.8 | 23.8      |

Table H1a2-329. Total Water Supplied to Water Budget Area 2 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 24.3     | 24.2            | 24.3       | 24.1 | 19.6      |
| D   | 24.8     | 24.7            | 24.8       | 24.8 | 24        |
| BN  | 24.4     | 24.3            | 24.4       | 24.4 | 24.1      |
| AN  | 25.5     | 25.5            | 25.5       | 25.5 | 25.2      |
| W   | 25.3     | 25.3            | 25.3       | 25.3 | 25.2      |
| All | 24.9     | 24.8            | 24.9       | 24.8 | 23.8      |

## H1a2.6.3 Water Budget Area 3 (Agricultural)

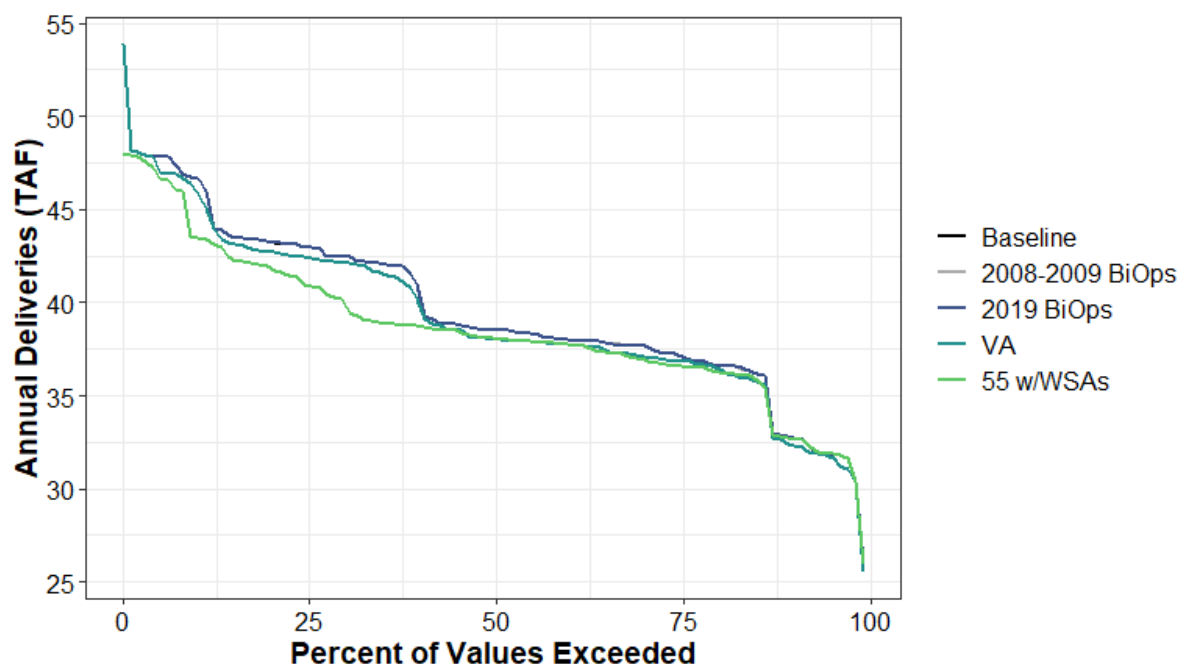


Figure H1a2-163. Total Water Supplied to Water Budget Area 3 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-330. Total Water Supplied to Water Budget Area 3 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 54       | 54              | 54         | 54 | 48        |
| 10%  | 47       | 47              | 47         | 46 | 44        |
| 20%  | 43       | 43              | 43         | 43 | 42        |
| 30%  | 42       | 42              | 42         | 42 | 40        |
| 40%  | 41       | 41              | 41         | 40 | 39        |
| 50%  | 39       | 39              | 39         | 38 | 38        |
| 60%  | 38       | 38              | 38         | 38 | 38        |
| 70%  | 38       | 38              | 38         | 37 | 37        |
| 80%  | 37       | 37              | 37         | 37 | 36        |
| 90%  | 33       | 33              | 33         | 32 | 33        |
| 100% | 26       | 26              | 26         | 26 | 26        |
| Mean | 40       | 40              | 40         | 39 | 39        |

Table H1a2-331. Total Water Supplied to Water Budget Area 3 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 44       | 44              | 44         | 44 | 39        |
| D   | 41       | 41              | 41         | 40 | 40        |
| BN  | 39       | 39              | 39         | 38 | 39        |
| AN  | 37       | 37              | 37         | 37 | 37        |
| W   | 38       | 38              | 38         | 38 | 38        |
| All | 40       | 40              | 40         | 39 | 39        |

## H1a2.6.4 Water Budget Area 3 (Urban)

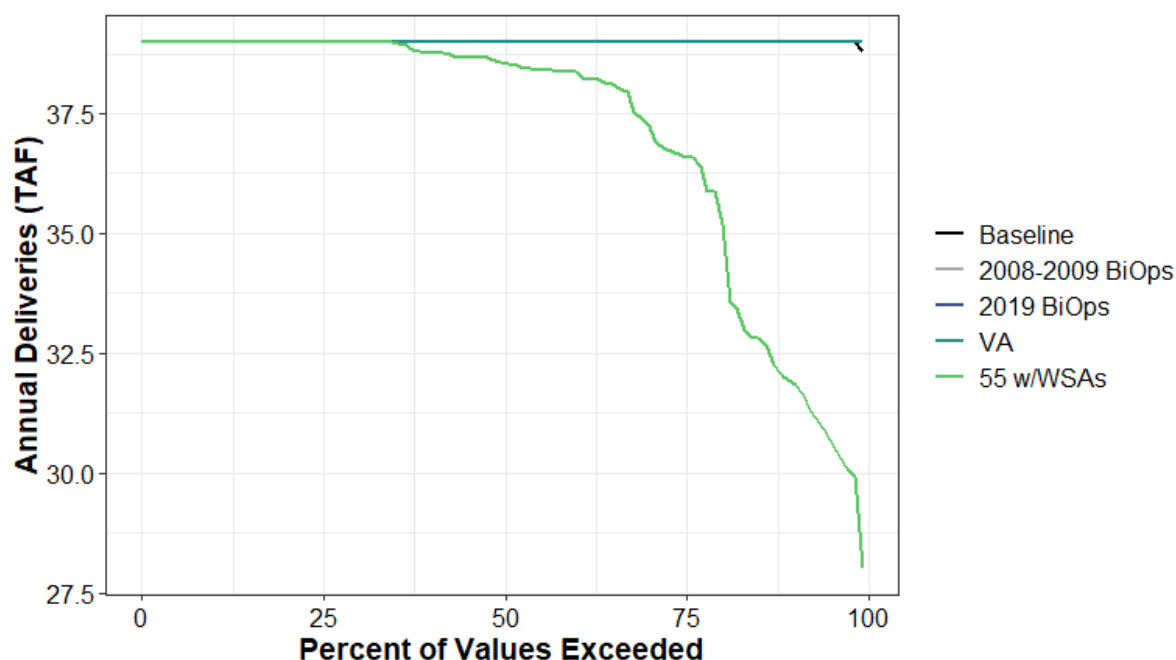


Figure H1a2-164. Total Water Supplied to Water Budget Area 3 (Urban) Annual Percent Exceedance Plot.

Table H1a2-332. Total Water Supplied to Water Budget Area 3 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 39       | 39              | 39         | 39 | 39        |
| 10%  | 39       | 39              | 39         | 39 | 39        |
| 20%  | 39       | 39              | 39         | 39 | 39        |
| 30%  | 39       | 39              | 39         | 39 | 39        |
| 40%  | 39       | 39              | 39         | 39 | 39        |
| 50%  | 39       | 39              | 39         | 39 | 39        |
| 60%  | 39       | 39              | 39         | 39 | 38        |
| 70%  | 39       | 39              | 39         | 39 | 37        |
| 80%  | 39       | 39              | 39         | 39 | 36        |
| 90%  | 39       | 39              | 39         | 39 | 32        |
| 100% | 39       | 39              | 39         | 39 | 28        |
| Mean | 39       | 39              | 39         | 39 | 37        |

Table H1a2-333. Total Water Supplied to Water Budget Area 3 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 39       | 39              | 39         | 39 | 32        |
| D   | 39       | 39              | 39         | 39 | 36        |
| BN  | 39       | 39              | 39         | 39 | 38        |
| AN  | 39       | 39              | 39         | 39 | 39        |
| W   | 39       | 39              | 39         | 39 | 39        |
| All | 39       | 39              | 39         | 39 | 37        |

## H1a2.6.5 Water Budget Areas 4 and 6 (Agricultural)

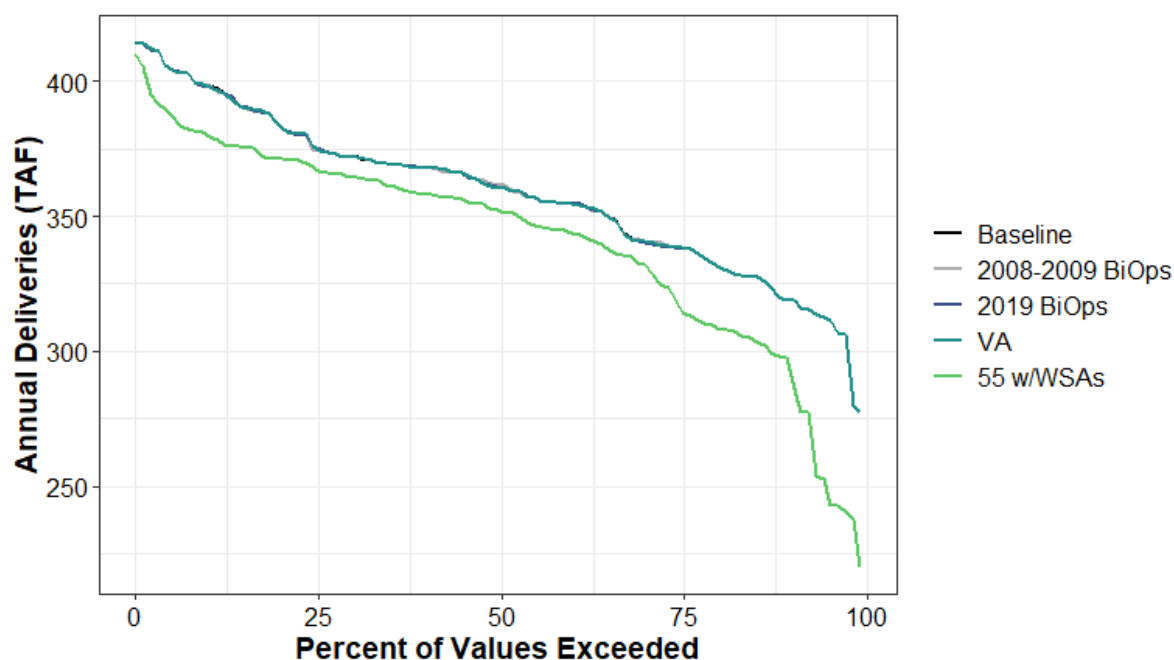


Figure H1a2-165. Total Water Supplied to Water Budget Areas 4 and 6 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-334. Total Water Supplied to Water Budget Areas 4 and 6 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 415      | 415             | 415        | 415 | 410       |
| 10%  | 398      | 399             | 398        | 398 | 380       |
| 20%  | 383      | 383             | 383        | 383 | 371       |
| 30%  | 372      | 372             | 372        | 372 | 364       |
| 40%  | 368      | 368             | 368        | 368 | 358       |
| 50%  | 361      | 362             | 361        | 360 | 352       |
| 60%  | 355      | 354             | 355        | 355 | 344       |
| 70%  | 341      | 341             | 340        | 341 | 332       |
| 80%  | 332      | 332             | 332        | 332 | 309       |
| 90%  | 319      | 319             | 319        | 319 | 295       |
| 100% | 277      | 277             | 277        | 277 | 220       |
| Mean | 359      | 359             | 359        | 359 | 341       |

Table H1a2-335. Total Water Supplied to Water Budget Areas 4 and 6 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 385      | 385             | 385        | 385 | 362       |
| D   | 369      | 369             | 369        | 369 | 362       |
| BN  | 364      | 364             | 364        | 364 | 360       |
| AN  | 343      | 343             | 343        | 343 | 333       |
| W   | 340      | 340             | 340        | 340 | 306       |
| All | 359      | 359             | 359        | 359 | 341       |

## H1a2.6.6 Water Budget Area 5 (Agricultural)

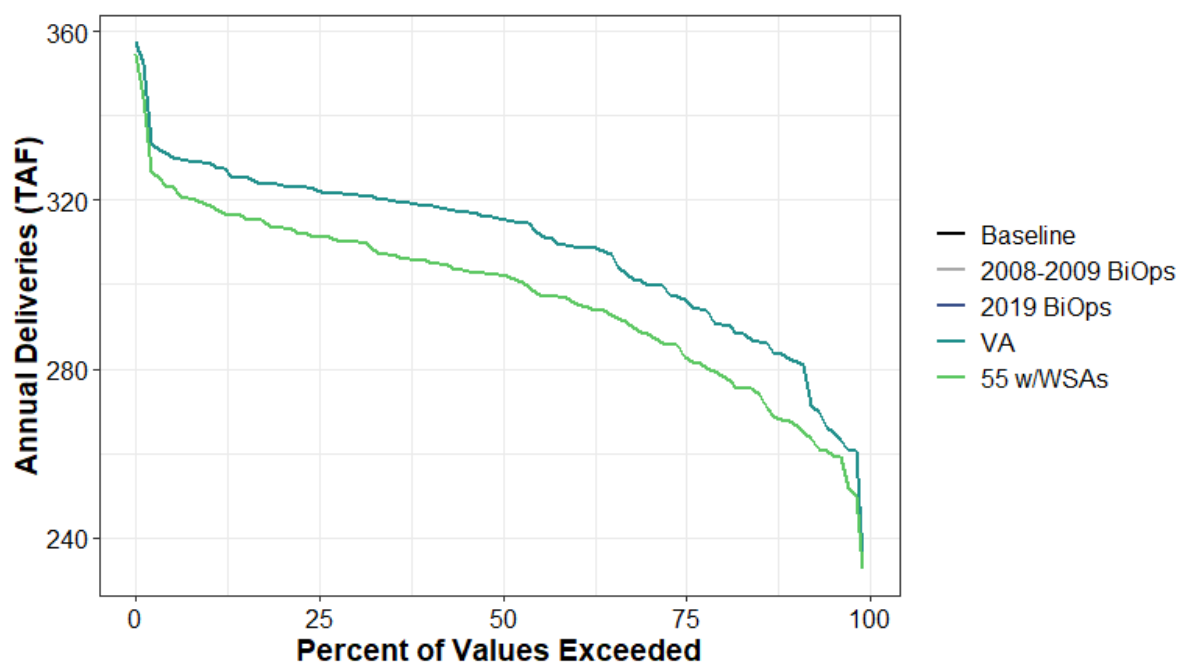


Figure H1a2-166. Total Water Supplied to Water Budget Area 5 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-336. Total Water Supplied to Water Budget Area 5 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 358      | 358             | 358        | 358 | 355       |
| 10%  | 329      | 329             | 329        | 329 | 319       |
| 20%  | 324      | 324             | 324        | 324 | 314       |
| 30%  | 321      | 321             | 321        | 321 | 310       |
| 40%  | 319      | 319             | 319        | 319 | 306       |
| 50%  | 316      | 316             | 316        | 316 | 302       |
| 60%  | 309      | 309             | 309        | 309 | 296       |
| 70%  | 300      | 300             | 300        | 300 | 288       |
| 80%  | 291      | 291             | 291        | 291 | 279       |
| 90%  | 282      | 282             | 282        | 282 | 267       |
| 100% | 235      | 235             | 235        | 235 | 232       |
| Mean | 309      | 309             | 309        | 309 | 297       |

Table H1a2-337. Total Water Supplied to Water Budget Area 5 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 322      | 322             | 322        | 322 | 316       |
| D   | 315      | 315             | 315        | 315 | 305       |
| BN  | 309      | 309             | 309        | 309 | 297       |
| AN  | 300      | 300             | 300        | 300 | 289       |
| W   | 300      | 300             | 300        | 300 | 284       |
| All | 309      | 309             | 309        | 309 | 297       |

## H1a2.6.7 Water Budget Area 7 (Agricultural)

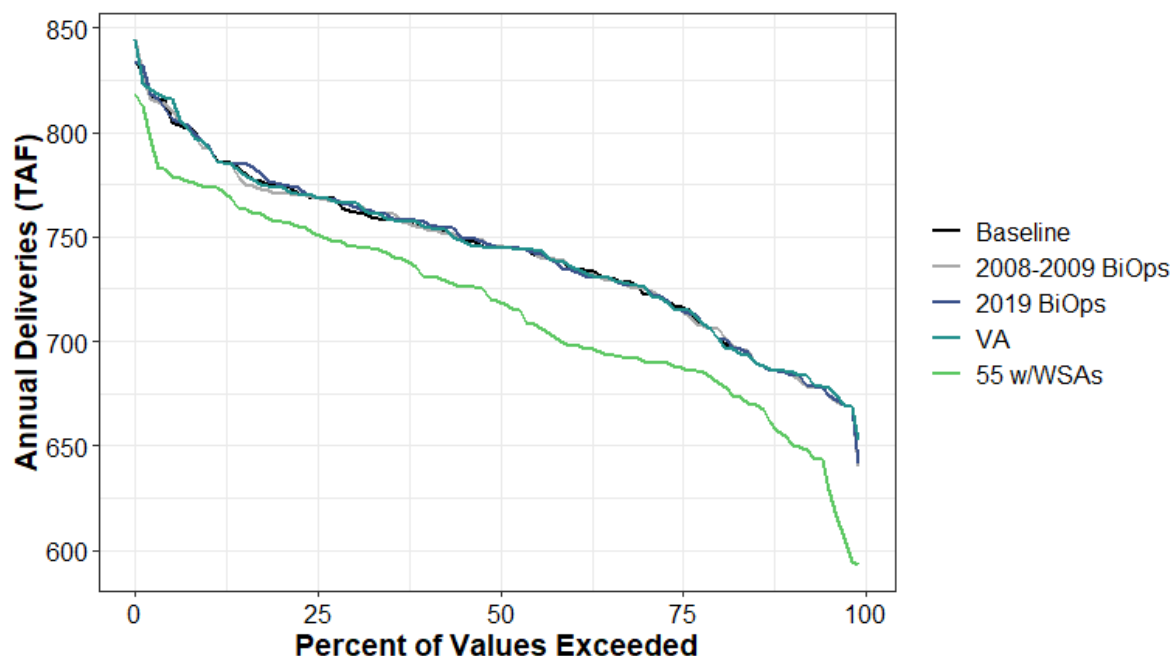


Figure H1a2-167. Total Water Supplied to Water Budget Area 7 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-338. Total Water Supplied to Water Budget Area 7 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 834      | 844             | 834        | 844 | 818       |
| 10%  | 794      | 792             | 794        | 793 | 774       |
| 20%  | 775      | 771             | 775        | 774 | 757       |
| 30%  | 762      | 766             | 765        | 766 | 745       |
| 40%  | 755      | 754             | 757        | 755 | 731       |
| 50%  | 745      | 746             | 745        | 745 | 719       |
| 60%  | 736      | 735             | 734        | 736 | 698       |
| 70%  | 724      | 725             | 726        | 726 | 691       |
| 80%  | 704      | 706             | 704        | 704 | 682       |
| 90%  | 686      | 685             | 685        | 686 | 654       |
| 100% | 642      | 640             | 641        | 653 | 593       |
| Mean | 743      | 742             | 743        | 743 | 716       |

Table H1a2-339. Total Water Supplied to Water Budget Area 7 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 754      | 754             | 754        | 754 | 674       |
| D   | 758      | 756             | 760        | 758 | 706       |
| BN  | 758      | 760             | 759        | 760 | 745       |
| AN  | 734      | 734             | 735        | 734 | 732       |
| W   | 719      | 718             | 718        | 718 | 720       |
| All | 743      | 742             | 743        | 743 | 716       |

## H1a2.6.8 Water Budget Area 8 (Agricultural)

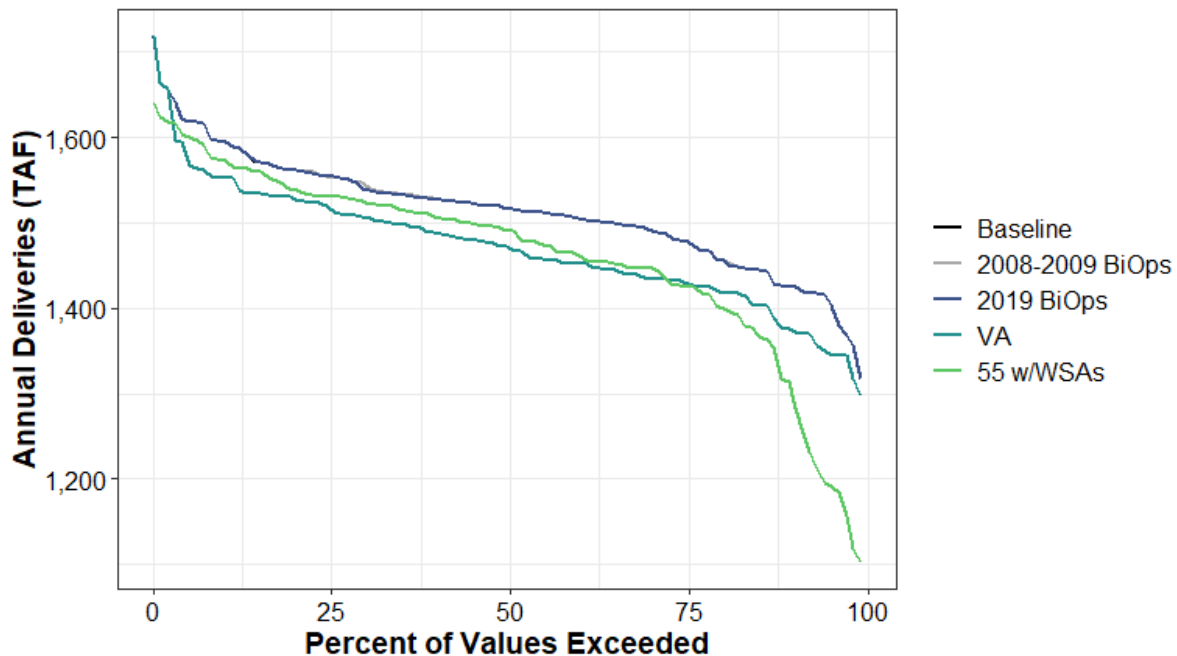


Figure H1a2-168. Total Water Supplied to Water Budget Area 8 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-340. Total Water Supplied to Water Budget Area 8 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,718    | 1,718           | 1,718      | 1,719 | 1,641     |
| 10%  | 1,596    | 1,596           | 1,596      | 1,554 | 1,573     |
| 20%  | 1,562    | 1,562           | 1,562      | 1,528 | 1,538     |
| 30%  | 1,545    | 1,545           | 1,540      | 1,507 | 1,524     |
| 40%  | 1,528    | 1,528           | 1,527      | 1,489 | 1,507     |
| 50%  | 1,517    | 1,517           | 1,517      | 1,473 | 1,491     |
| 60%  | 1,506    | 1,506           | 1,506      | 1,452 | 1,462     |
| 70%  | 1,492    | 1,492           | 1,492      | 1,435 | 1,446     |
| 80%  | 1,458    | 1,458           | 1,458      | 1,420 | 1,402     |
| 90%  | 1,426    | 1,426           | 1,426      | 1,376 | 1,308     |
| 100% | 1,318    | 1,318           | 1,318      | 1,297 | 1,102     |
| Mean | 1,514    | 1,514           | 1,514      | 1,472 | 1,462     |

Table H1a2-341. Total Water Supplied to Water Budget Area 8 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,572    | 1,572           | 1,571      | 1,570 | 1,271     |
| D   | 1,540    | 1,540           | 1,540      | 1,460 | 1,516     |
| BN  | 1,526    | 1,526           | 1,526      | 1,447 | 1,530     |
| AN  | 1,483    | 1,484           | 1,483      | 1,406 | 1,488     |
| W   | 1,470    | 1,470           | 1,470      | 1,470 | 1,469     |
| All | 1,514    | 1,514           | 1,514      | 1,472 | 1,462     |

## H1a2.6.9 Water Budget Area 8 (Refuge)

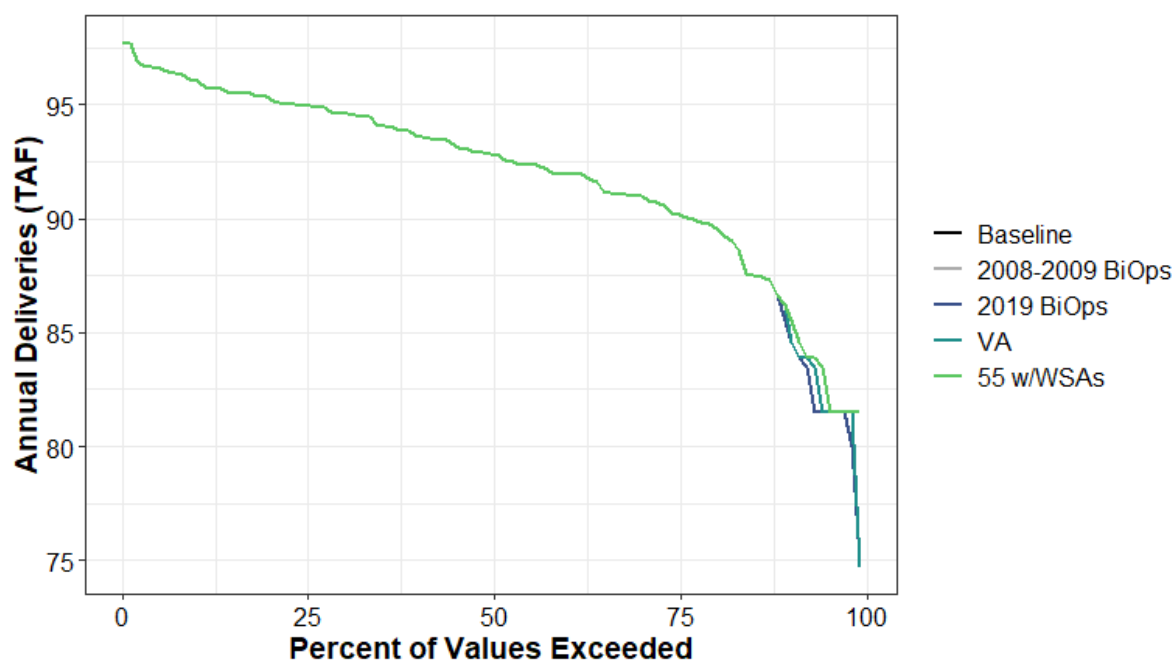


Figure H1a2-169. Total Water Supplied to Water Budget Area 8 (Refuge) Annual Percent Exceedance Plot.

Table H1a2-342. Total Water Supplied to Water Budget Area 8 (Refuge) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 98       | 98              | 98         | 98 | 98        |
| 10%  | 96       | 96              | 96         | 96 | 96        |
| 20%  | 95       | 95              | 95         | 95 | 95        |
| 30%  | 95       | 95              | 95         | 95 | 95        |
| 40%  | 94       | 94              | 94         | 94 | 94        |
| 50%  | 93       | 93              | 93         | 93 | 93        |
| 60%  | 92       | 92              | 92         | 92 | 92        |
| 70%  | 91       | 91              | 91         | 91 | 91        |
| 80%  | 90       | 90              | 90         | 90 | 90        |
| 90%  | 86       | 86              | 85         | 86 | 86        |
| 100% | 82       | 82              | 75         | 75 | 82        |
| Mean | 92       | 92              | 92         | 92 | 92        |

Table H1a2-343. Total Water Supplied to Water Budget Area 8 (Refuge) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 90       | 90              | 90         | 90 | 90        |
| D   | 93       | 93              | 93         | 93 | 93        |
| BN  | 93       | 93              | 93         | 93 | 93        |
| AN  | 91       | 91              | 91         | 91 | 91        |
| W   | 92       | 92              | 92         | 92 | 92        |
| All | 92       | 92              | 92         | 92 | 92        |

## H1a2.6.10 Water Budget Area 9 (Agricultural)

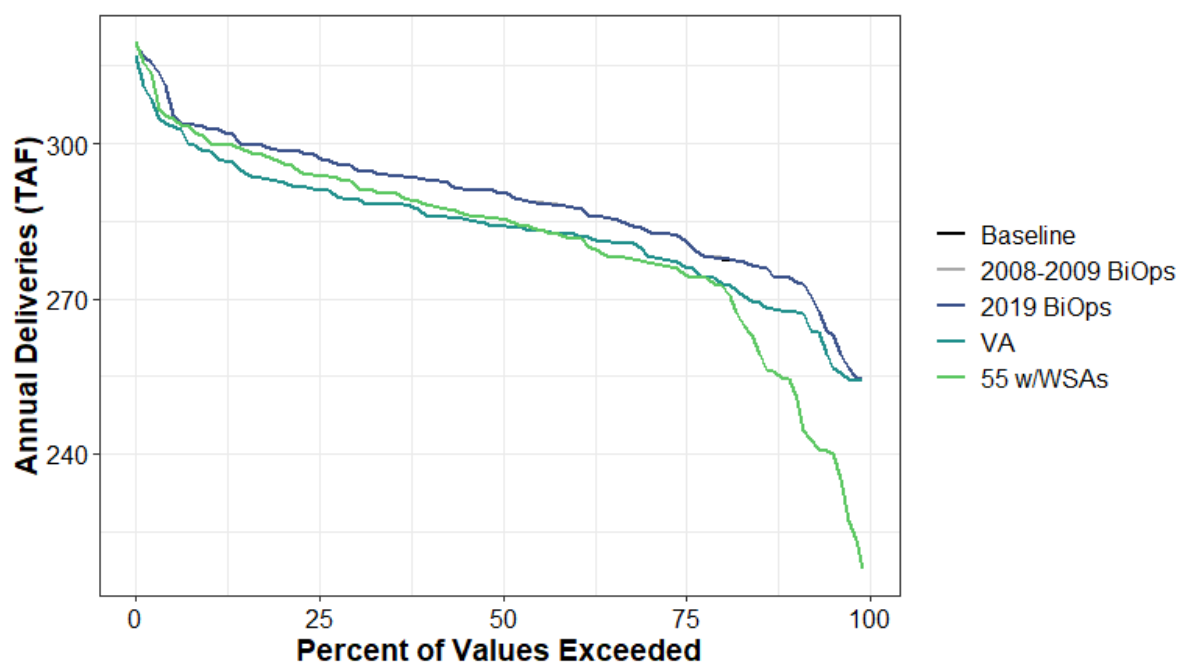


Figure H1a2-170. Total Water Supplied to Water Budget Area 9 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-344. Total Water Supplied to Water Budget Area 9 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 320      | 320             | 320        | 317 | 320       |
| 10%  | 303      | 303             | 303        | 299 | 300       |
| 20%  | 299      | 299             | 299        | 293 | 296       |
| 30%  | 295      | 295             | 295        | 289 | 292       |
| 40%  | 293      | 293             | 293        | 286 | 288       |
| 50%  | 291      | 291             | 291        | 284 | 286       |
| 60%  | 288      | 288             | 288        | 283 | 282       |
| 70%  | 283      | 283             | 283        | 279 | 277       |
| 80%  | 278      | 278             | 278        | 273 | 273       |
| 90%  | 274      | 274             | 274        | 267 | 254       |
| 100% | 254      | 254             | 254        | 254 | 218       |
| Mean | 289      | 289             | 289        | 283 | 281       |

Table H1a2-345. Total Water Supplied to Water Budget Area 9 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 297      | 297             | 297        | 297 | 253       |
| D   | 294      | 294             | 294        | 284 | 290       |
| BN  | 294      | 294             | 294        | 283 | 295       |
| AN  | 284      | 284             | 284        | 274 | 286       |
| W   | 279      | 279             | 279        | 279 | 280       |
| All | 289      | 289             | 289        | 283 | 281       |

## H1a2.6.11 Water Budget Area 9 (Refuge)

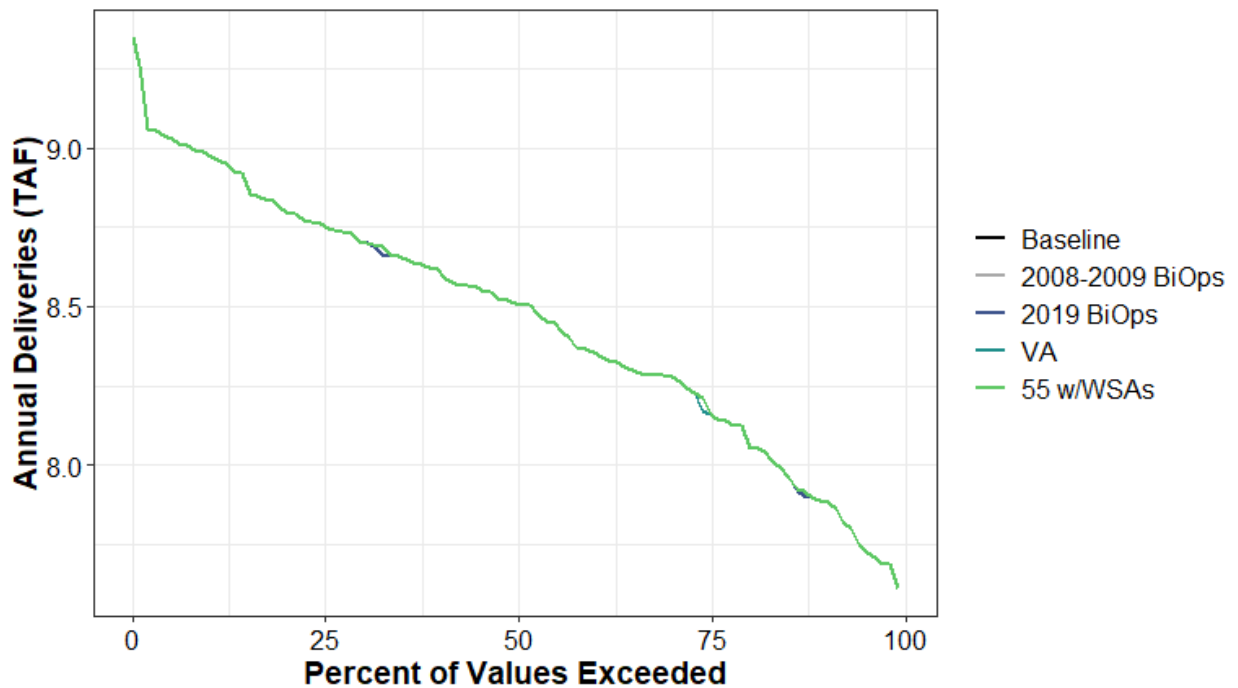


Figure H1a2-171. Total Water Supplied to Water Budget Area 9 (Refuge) Annual Percent Exceedance Plot.

Table H1a2-346. Total Water Supplied to Water Budget Area 9 (Refuge) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 9.3      | 9.3             | 9.3        | 9.3 | 9.3       |
| 10%  | 9        | 9               | 9          | 9   | 9         |
| 20%  | 8.8      | 8.8             | 8.8        | 8.8 | 8.8       |
| 30%  | 8.7      | 8.7             | 8.7        | 8.7 | 8.7       |
| 40%  | 8.6      | 8.6             | 8.6        | 8.6 | 8.6       |
| 50%  | 8.5      | 8.5             | 8.5        | 8.5 | 8.5       |
| 60%  | 8.4      | 8.4             | 8.4        | 8.4 | 8.4       |
| 70%  | 8.3      | 8.3             | 8.3        | 8.3 | 8.3       |
| 80%  | 8.1      | 8.1             | 8.1        | 8.1 | 8.1       |
| 90%  | 7.9      | 7.9             | 7.9        | 7.9 | 7.9       |
| 100% | 7.6      | 7.6             | 7.6        | 7.6 | 7.6       |
| Mean | 8.5      | 8.5             | 8.5        | 8.5 | 8.5       |

Table H1a2-347. Total Water Supplied to Water Budget Area 9 (Refuge) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 8.8      | 8.8             | 8.8        | 8.8 | 8.8       |
| D   | 8.6      | 8.6             | 8.6        | 8.6 | 8.6       |
| BN  | 8.6      | 8.6             | 8.6        | 8.6 | 8.6       |
| AN  | 8.3      | 8.3             | 8.3        | 8.3 | 8.3       |
| W   | 8.2      | 8.2             | 8.2        | 8.2 | 8.2       |
| All | 8.5      | 8.5             | 8.5        | 8.5 | 8.5       |

## H1a2.6.12 Water Budget Area 10 (Agricultural)

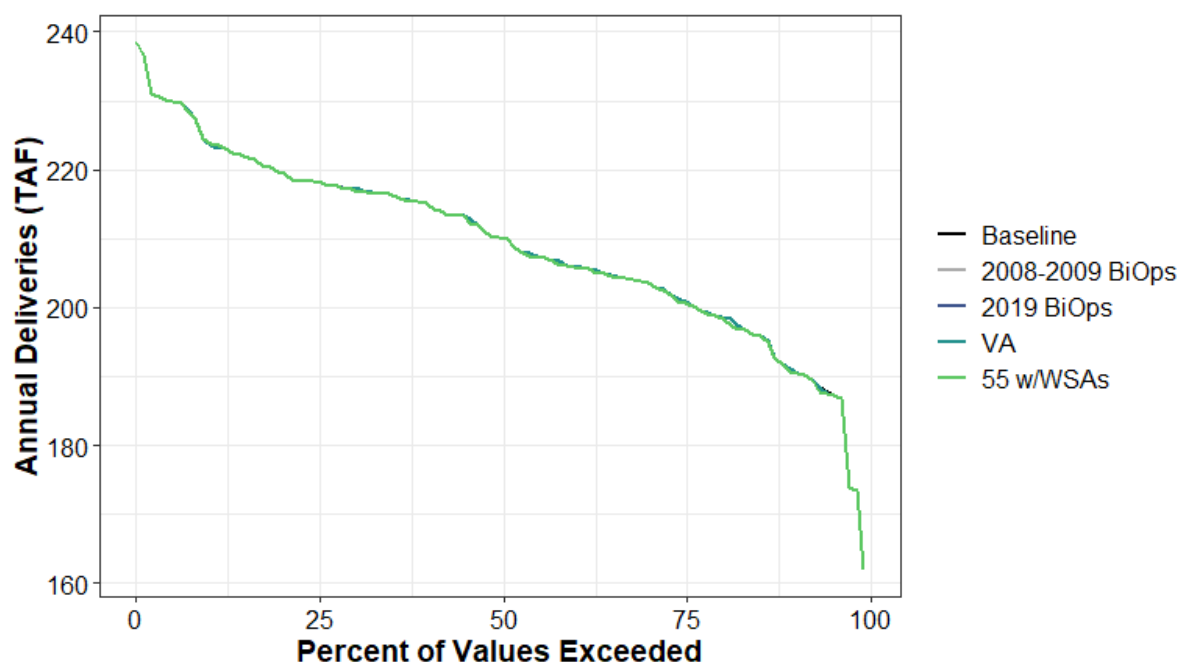


Figure H1a2-172. Total Water Supplied to Water Budget Area 10 (Agricultural) Annual Percent Exceedance Plot.

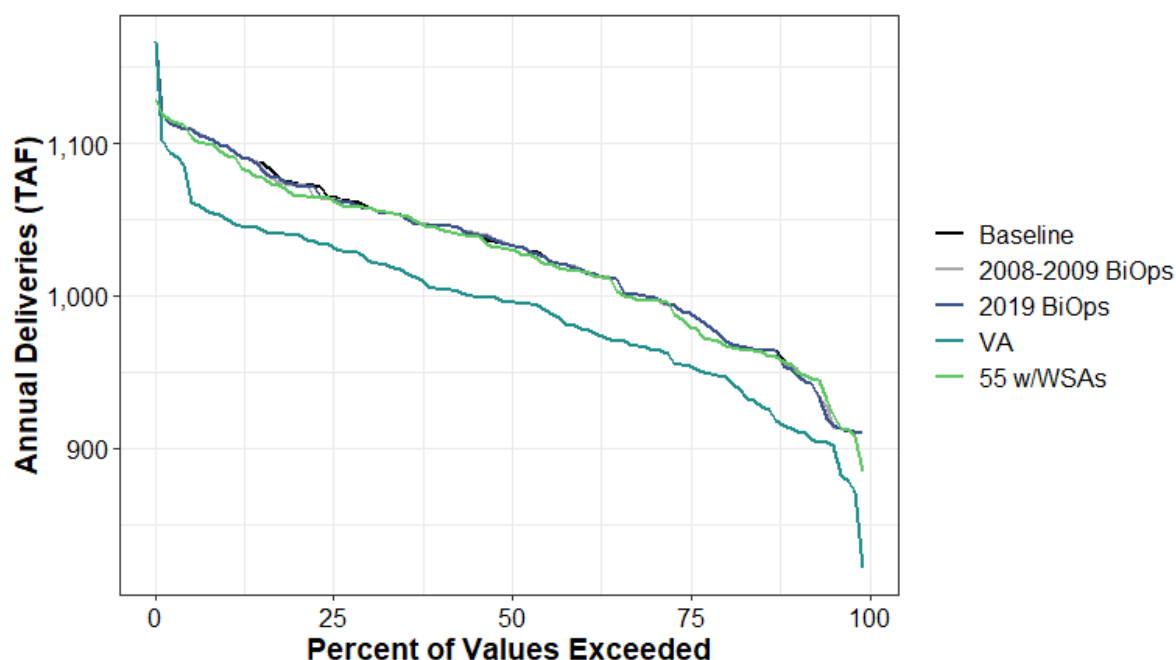
Table H1a2-348. Total Water Supplied to Water Budget Area 10 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 239      | 239             | 239        | 239 | 239       |
| 10%  | 224      | 224             | 224        | 224 | 224       |
| 20%  | 220      | 220             | 220        | 220 | 220       |
| 30%  | 217      | 217             | 217        | 217 | 217       |
| 40%  | 215      | 215             | 215        | 215 | 215       |
| 50%  | 210      | 210             | 210        | 210 | 210       |
| 60%  | 206      | 206             | 206        | 206 | 206       |
| 70%  | 204      | 204             | 204        | 204 | 204       |
| 80%  | 199      | 199             | 199        | 199 | 199       |
| 90%  | 191      | 191             | 191        | 191 | 191       |
| 100% | 162      | 162             | 162        | 162 | 162       |
| Mean | 209      | 209             | 209        | 209 | 209       |

Table H1a2-349. Total Water Supplied to Water Budget Area 10 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 220      | 220             | 220        | 220 | 220       |
| D   | 214      | 214             | 214        | 214 | 214       |
| BN  | 210      | 210             | 210        | 210 | 210       |
| AN  | 203      | 203             | 203        | 203 | 202       |
| W   | 202      | 202             | 202        | 202 | 202       |
| All | 209      | 209             | 209        | 209 | 209       |

## H1a2.6.13 Water Budget Area 11 (Agricultural)



**Figure H1a2-173. Total Water Supplied to Water Budget Area 11 (Agricultural) Annual Percent Exceedance Plot.**

**Table H1a2-350. Total Water Supplied to Water Budget Area 11 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,167    | 1,167           | 1,167      | 1,167 | 1,129     |
| 10%  | 1,098    | 1,098           | 1,098      | 1,051 | 1,093     |
| 20%  | 1,074    | 1,072           | 1,073      | 1,040 | 1,066     |
| 30%  | 1,059    | 1,057           | 1,057      | 1,024 | 1,058     |
| 40%  | 1,046    | 1,046           | 1,046      | 1,005 | 1,044     |
| 50%  | 1,034    | 1,033           | 1,034      | 996   | 1,030     |
| 60%  | 1,018    | 1,018           | 1,018      | 979   | 1,016     |
| 70%  | 999      | 999             | 999        | 965   | 997       |
| 80%  | 974      | 974             | 974        | 947   | 969       |
| 90%  | 953      | 953             | 951        | 913   | 954       |
| 100% | 910      | 910             | 910        | 821   | 885       |
| Mean | 1,027    | 1,027           | 1,026      | 991   | 1,024     |

**Table H1a2-351. Total Water Supplied to Water Budget Area 11 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,048    | 1,046           | 1,046      | 1,048 | 1,032     |
| D   | 1,054    | 1,054           | 1,054      | 983   | 1,056     |
| BN  | 1,042    | 1,043           | 1,042      | 977   | 1,045     |
| AN  | 1,008    | 1,009           | 1,008      | 945   | 1,011     |
| W   | 993      | 993             | 993        | 993   | 988       |
| All | 1,027    | 1,027           | 1,026      | 991   | 1,024     |

## H1a2.6.14 Water Budget Area 11 (Refuge)

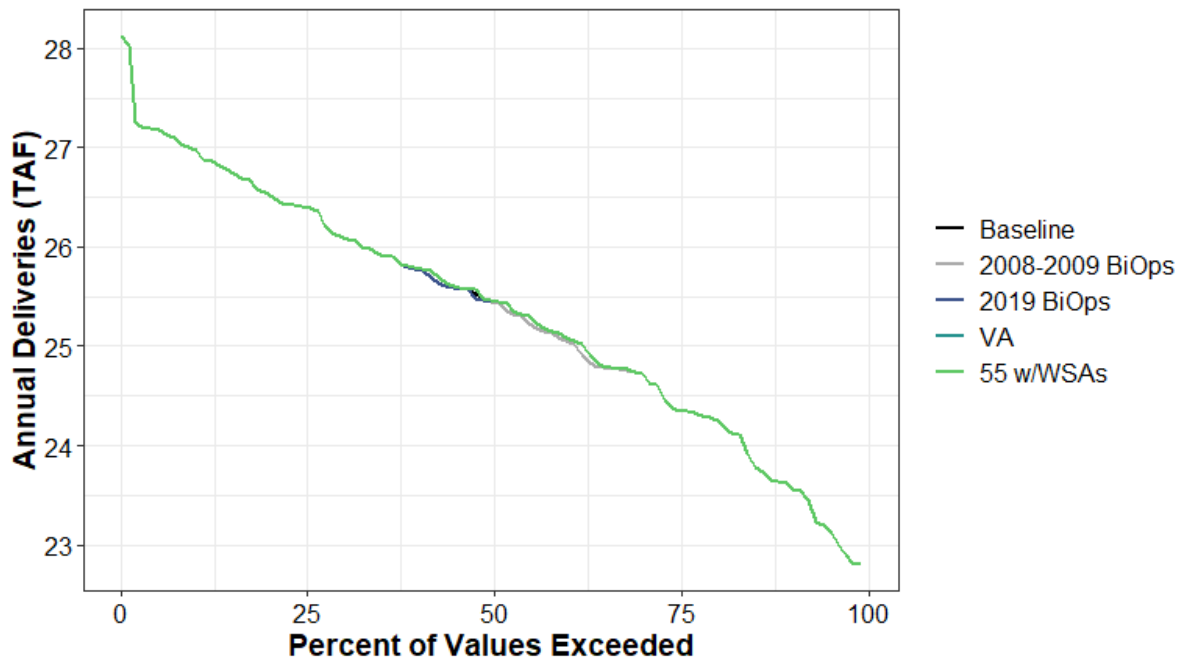


Figure H1a2-174. Total Water Supplied to Water Budget Area 11 (Refuge) Annual Percent Exceedance Plot.

Table H1a2-352. Total Water Supplied to Water Budget Area 11 (Refuge) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 28.1     | 28.1            | 28.1       | 28.1 | 28.1      |
| 10%  | 27       | 27              | 27         | 27   | 27        |
| 20%  | 26.5     | 26.5            | 26.5       | 26.5 | 26.5      |
| 30%  | 26.1     | 26.1            | 26.1       | 26.1 | 26.1      |
| 40%  | 25.8     | 25.8            | 25.8       | 25.8 | 25.8      |
| 50%  | 25.5     | 25.4            | 25.4       | 25.5 | 25.5      |
| 60%  | 25.1     | 25.1            | 25.1       | 25.1 | 25.1      |
| 70%  | 24.7     | 24.7            | 24.7       | 24.7 | 24.7      |
| 80%  | 24.3     | 24.3            | 24.3       | 24.3 | 24.3      |
| 90%  | 23.6     | 23.6            | 23.6       | 23.6 | 23.6      |
| 100% | 22.8     | 22.8            | 22.8       | 22.8 | 22.8      |
| Mean | 25.4     | 25.4            | 25.4       | 25.4 | 25.4      |

Table H1a2-353. Total Water Supplied to Water Budget Area 11 (Refuge) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 26.6     | 26.6            | 26.6       | 26.6 | 26.6      |
| D   | 25.8     | 25.8            | 25.8       | 25.8 | 25.8      |
| BN  | 25.6     | 25.6            | 25.6       | 25.6 | 25.6      |
| AN  | 24.9     | 24.9            | 24.9       | 24.9 | 24.9      |
| W   | 24.4     | 24.4            | 24.4       | 24.4 | 24.4      |
| All | 25.4     | 25.4            | 25.4       | 25.4 | 25.4      |

## H1a2.6.15 Water Budget Areas 12 and 13 (Agricultural)

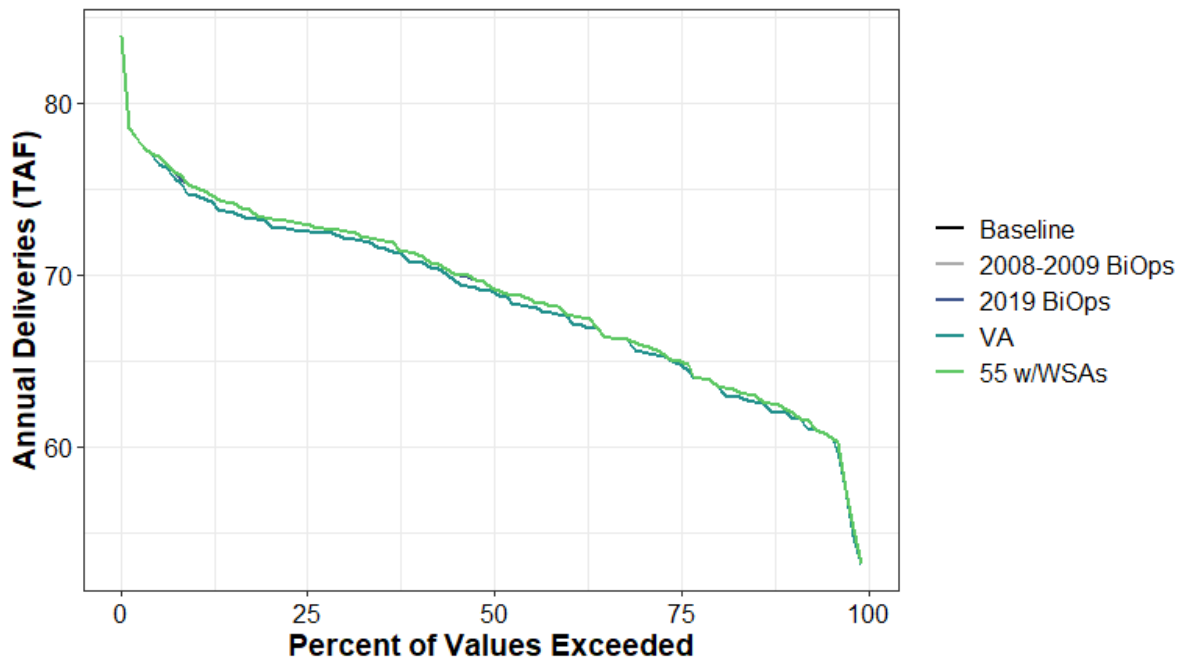


Figure H1a2-175. Total Water Supplied to Water Budget Areas 12 and 13 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-354. Total Water Supplied to Water Budget Areas 12 and 13 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 84       | 84              | 84         | 84 | 84        |
| 10%  | 75       | 75              | 75         | 75 | 75        |
| 20%  | 73       | 73              | 73         | 73 | 73        |
| 30%  | 73       | 73              | 73         | 72 | 73        |
| 40%  | 71       | 71              | 71         | 71 | 71        |
| 50%  | 69       | 69              | 69         | 69 | 69        |
| 60%  | 68       | 68              | 68         | 68 | 68        |
| 70%  | 66       | 66              | 66         | 66 | 66        |
| 80%  | 64       | 64              | 64         | 64 | 64        |
| 90%  | 62       | 62              | 62         | 62 | 62        |
| 100% | 53       | 53              | 53         | 53 | 53        |
| Mean | 69       | 69              | 69         | 69 | 69        |

Table H1a2-355. Total Water Supplied to Water Budget Areas 12 and 13 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 75       | 75              | 75         | 75 | 75        |
| D   | 70       | 70              | 70         | 70 | 70        |
| BN  | 70       | 70              | 70         | 69 | 70        |
| AN  | 67       | 67              | 67         | 66 | 67        |
| W   | 65       | 65              | 65         | 65 | 65        |
| All | 69       | 69              | 69         | 69 | 69        |

## H1a2.6.16 Water Budget Areas 12 and 13 (Urban)

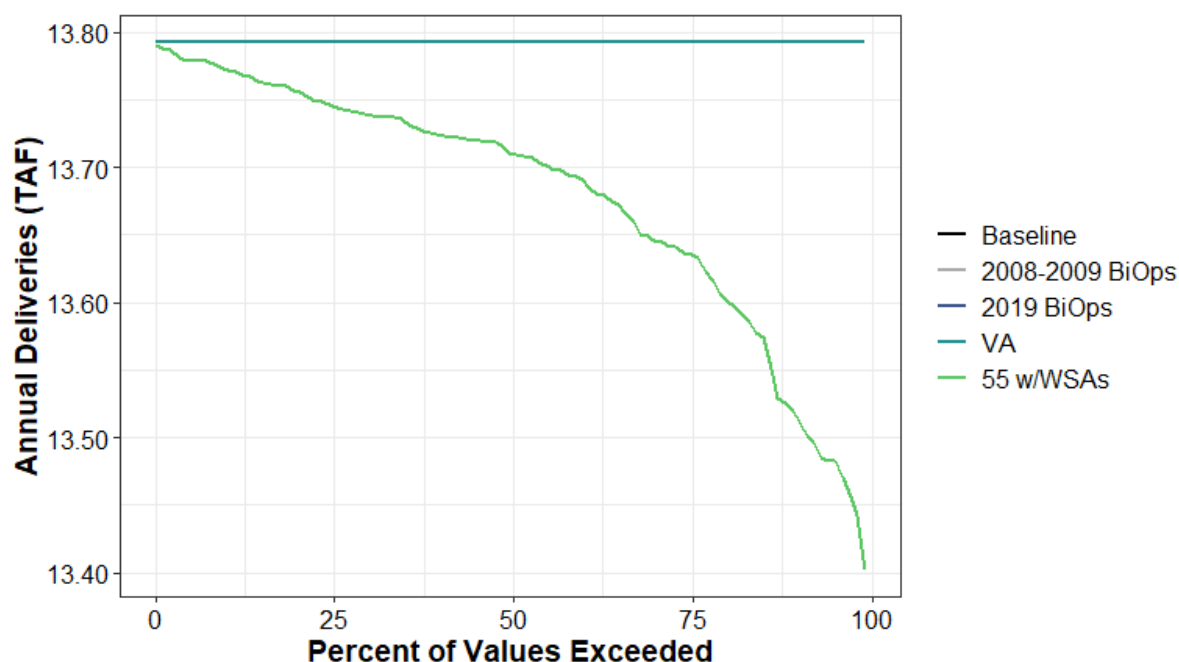


Figure H1a2-176. Total Water Supplied to Water Budget Areas 12 and 13 (Urban) Annual Percent Exceedance Plot.

Table H1a2-356. Total Water Supplied to Water Budget Areas 12 and 13 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 13.8     | 13.8            | 13.8       | 13.8 | 13.8      |
| 10%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.8      |
| 20%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.8      |
| 30%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| 40%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| 50%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| 60%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| 70%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.6      |
| 80%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.6      |
| 90%  | 13.8     | 13.8            | 13.8       | 13.8 | 13.5      |
| 100% | 13.8     | 13.8            | 13.8       | 13.8 | 13.4      |
| Mean | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |

Table H1a2-357. Total Water Supplied to Water Budget Areas 12 and 13 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| D   | 13.8     | 13.8            | 13.8       | 13.8 | 13.6      |
| BN  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| AN  | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| W   | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |
| All | 13.8     | 13.8            | 13.8       | 13.8 | 13.7      |

## H1a2.6.17 Water Budget Areas 14 and 15N (Agricultural)

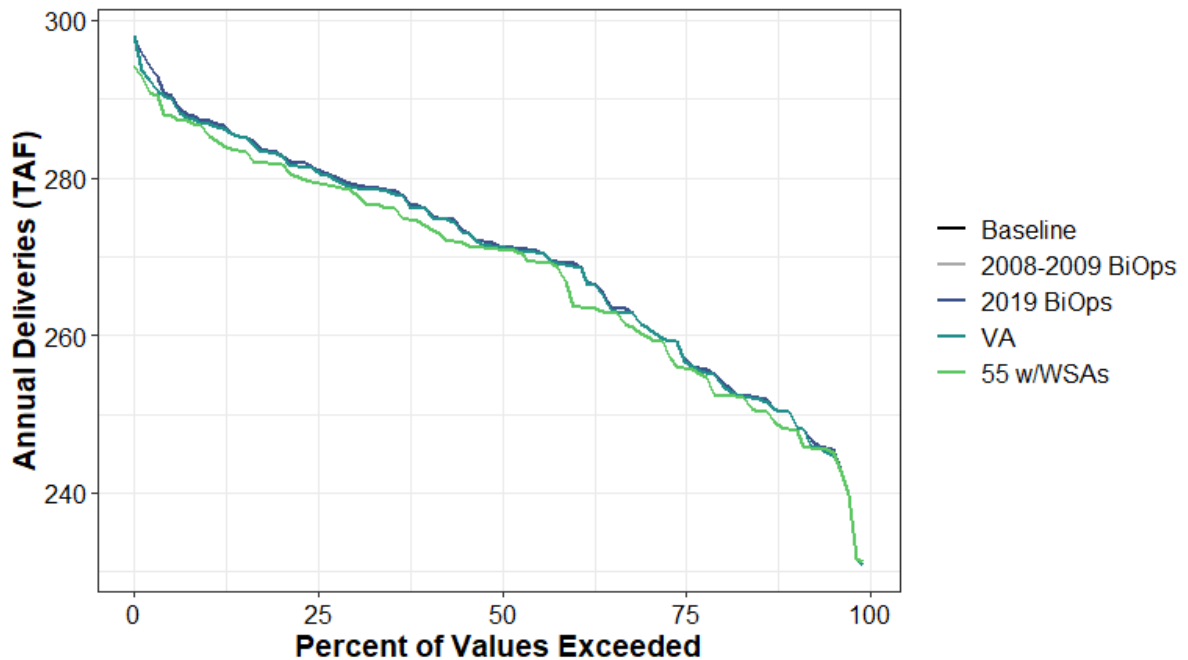


Figure H1a2-177. Total Water Supplied to Water Budget Areas 14 and 15N (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-358. Total Water Supplied to Water Budget Areas 14 and 15N (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 298      | 298             | 298        | 298 | 294       |
| 10%  | 287      | 287             | 287        | 287 | 286       |
| 20%  | 283      | 283             | 283        | 283 | 282       |
| 30%  | 279      | 279             | 279        | 279 | 278       |
| 40%  | 276      | 276             | 276        | 276 | 274       |
| 50%  | 271      | 271             | 271        | 271 | 271       |
| 60%  | 269      | 269             | 269        | 269 | 264       |
| 70%  | 261      | 261             | 261        | 261 | 260       |
| 80%  | 255      | 255             | 255        | 254 | 252       |
| 90%  | 250      | 250             | 250        | 250 | 248       |
| 100% | 231      | 231             | 231        | 231 | 231       |
| Mean | 270      | 270             | 270        | 269 | 268       |

Table H1a2-359. Total Water Supplied to Water Budget Areas 14 and 15N (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 280      | 280             | 280        | 280 | 272       |
| D   | 277      | 277             | 277        | 277 | 276       |
| BN  | 274      | 274             | 274        | 273 | 274       |
| AN  | 265      | 265             | 265        | 264 | 264       |
| W   | 258      | 258             | 258        | 258 | 258       |
| All | 270      | 270             | 270        | 269 | 268       |

## H1a2.6.18 Water Budget Areas 14 and 15N (Urban)

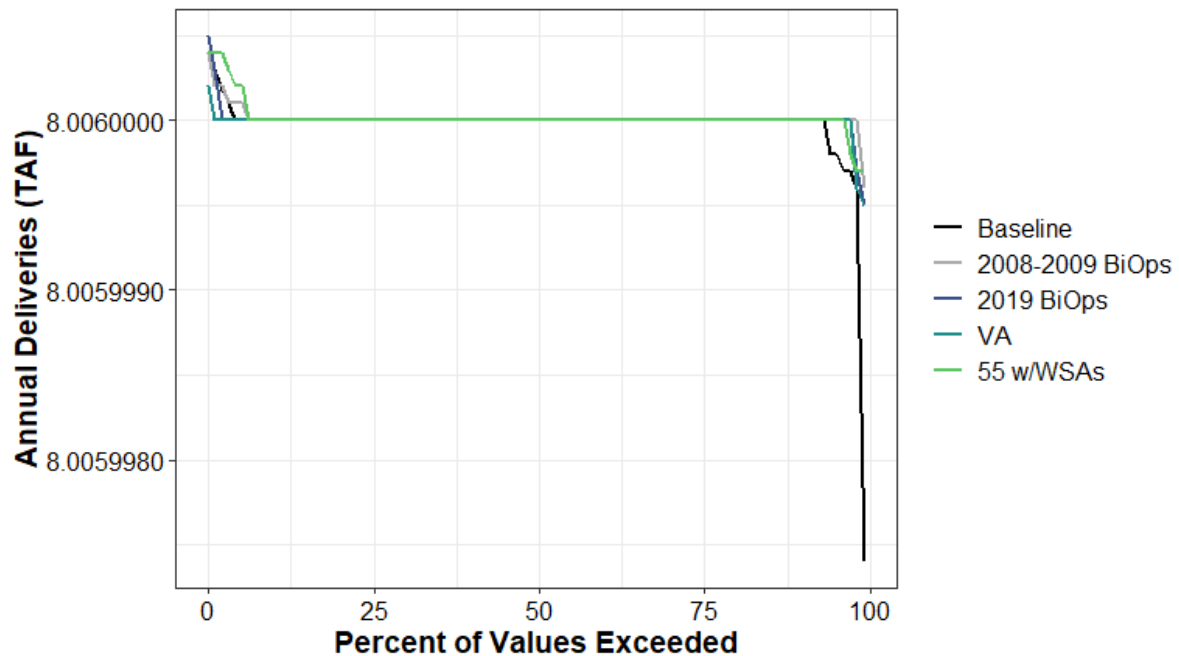


Figure H1a2-178. Total Water Supplied to Water Budget Areas 14 and 15N (Urban) Annual Percent Exceedance Plot.

Table H1a2-360. Total Water Supplied to Water Budget Areas 14 and 15N (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 8        | 8               | 8          | 8  | 8         |
| 10%  | 8        | 8               | 8          | 8  | 8         |
| 20%  | 8        | 8               | 8          | 8  | 8         |
| 30%  | 8        | 8               | 8          | 8  | 8         |
| 40%  | 8        | 8               | 8          | 8  | 8         |
| 50%  | 8        | 8               | 8          | 8  | 8         |
| 60%  | 8        | 8               | 8          | 8  | 8         |
| 70%  | 8        | 8               | 8          | 8  | 8         |
| 80%  | 8        | 8               | 8          | 8  | 8         |
| 90%  | 8        | 8               | 8          | 8  | 8         |
| 100% | 8        | 8               | 8          | 8  | 8         |
| Mean | 8        | 8               | 8          | 8  | 8         |

Table H1a2-361. Total Water Supplied to Water Budget Areas 14 and 15N (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 8        | 8               | 8          | 8  | 8         |
| D   | 8        | 8               | 8          | 8  | 8         |
| BN  | 8        | 8               | 8          | 8  | 8         |
| AN  | 8        | 8               | 8          | 8  | 8         |
| W   | 8        | 8               | 8          | 8  | 8         |
| All | 8        | 8               | 8          | 8  | 8         |

## H1a2.6.19 Water Budget Area 15S (Agricultural)

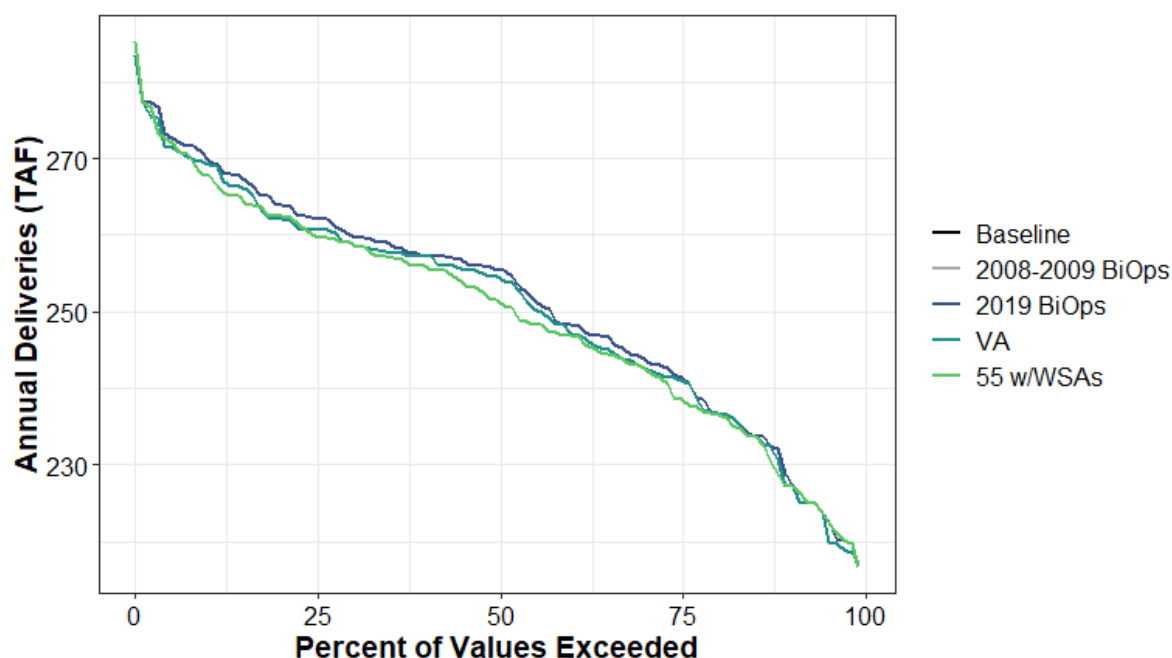


Figure H1a2-179. Total Water Supplied to Water Budget Area 15S (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-362. Total Water Supplied to Water Budget Area 15S (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 285      | 285             | 285        | 283 | 285       |
| 10%  | 270      | 270             | 270        | 269 | 268       |
| 20%  | 264      | 264             | 264        | 262 | 263       |
| 30%  | 260      | 260             | 260        | 259 | 259       |
| 40%  | 257      | 257             | 257        | 257 | 256       |
| 50%  | 256      | 256             | 256        | 255 | 252       |
| 60%  | 248      | 248             | 248        | 247 | 247       |
| 70%  | 244      | 244             | 244        | 243 | 243       |
| 80%  | 237      | 237             | 237        | 237 | 237       |
| 90%  | 228      | 228             | 228        | 227 | 227       |
| 100% | 217      | 217             | 217        | 217 | 217       |
| Mean | 252      | 252             | 251        | 251 | 250       |

Table H1a2-363. Total Water Supplied to Water Budget Area 15S (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 263      | 263             | 263        | 263 | 253       |
| D   | 259      | 259             | 259        | 257 | 258       |
| BN  | 254      | 254             | 254        | 252 | 254       |
| AN  | 247      | 247             | 247        | 245 | 247       |
| W   | 240      | 240             | 240        | 240 | 240       |
| All | 252      | 252             | 251        | 251 | 250       |

## H1a2.6.20 Water Budget Area 16 (Agricultural)

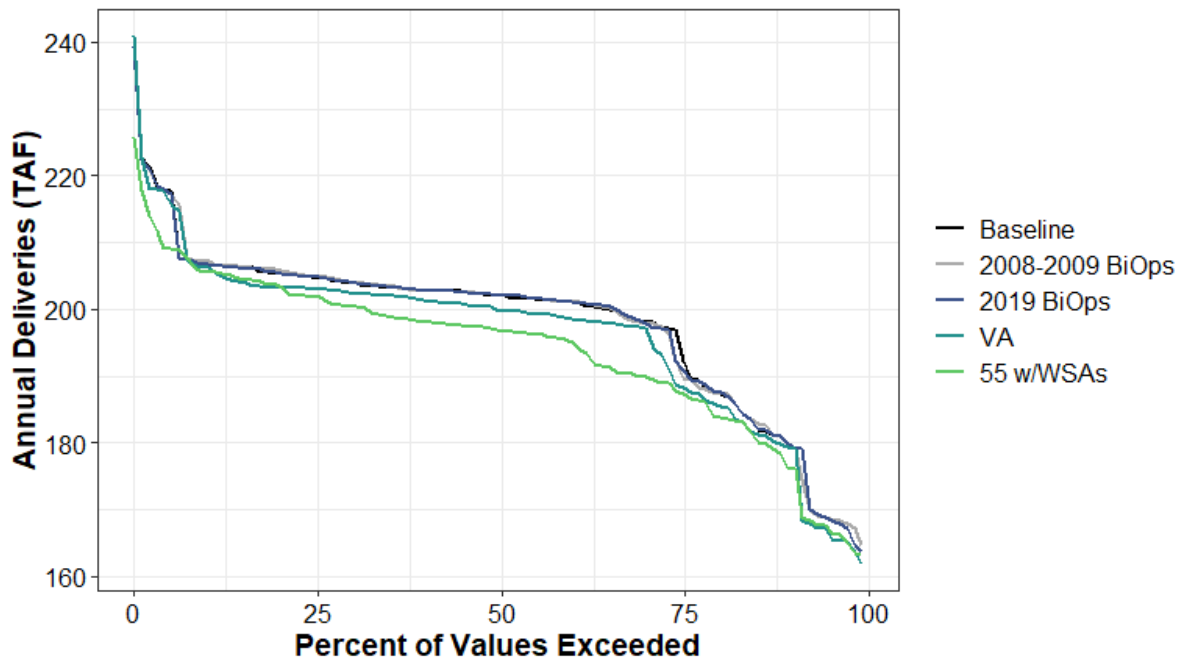


Figure H1a2-180. Total Water Supplied to Water Budget Area 16 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-364. Total Water Supplied to Water Budget Area 16 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 239      | 239             | 239        | 241 | 226       |
| 10%  | 207      | 207             | 207        | 206 | 206       |
| 20%  | 205      | 206             | 205        | 203 | 203       |
| 30%  | 204      | 204             | 204        | 203 | 200       |
| 40%  | 203      | 203             | 203        | 201 | 198       |
| 50%  | 202      | 202             | 202        | 200 | 197       |
| 60%  | 201      | 201             | 201        | 199 | 195       |
| 70%  | 198      | 198             | 198        | 197 | 190       |
| 80%  | 187      | 187             | 188        | 186 | 184       |
| 90%  | 180      | 180             | 180        | 179 | 176       |
| 100% | 164      | 165             | 164        | 162 | 163       |
| Mean | 198      | 198             | 198        | 196 | 194       |

Table H1a2-365. Total Water Supplied to Water Budget Area 16 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 209      | 209             | 209        | 209 | 202       |
| D   | 202      | 202             | 202        | 199 | 196       |
| BN  | 198      | 198             | 198        | 195 | 195       |
| AN  | 194      | 194             | 195        | 191 | 192       |
| W   | 191      | 191             | 191        | 191 | 188       |
| All | 198      | 198             | 198        | 196 | 194       |

## H1a2.6.21 Water Budget Area 16 (Urban)

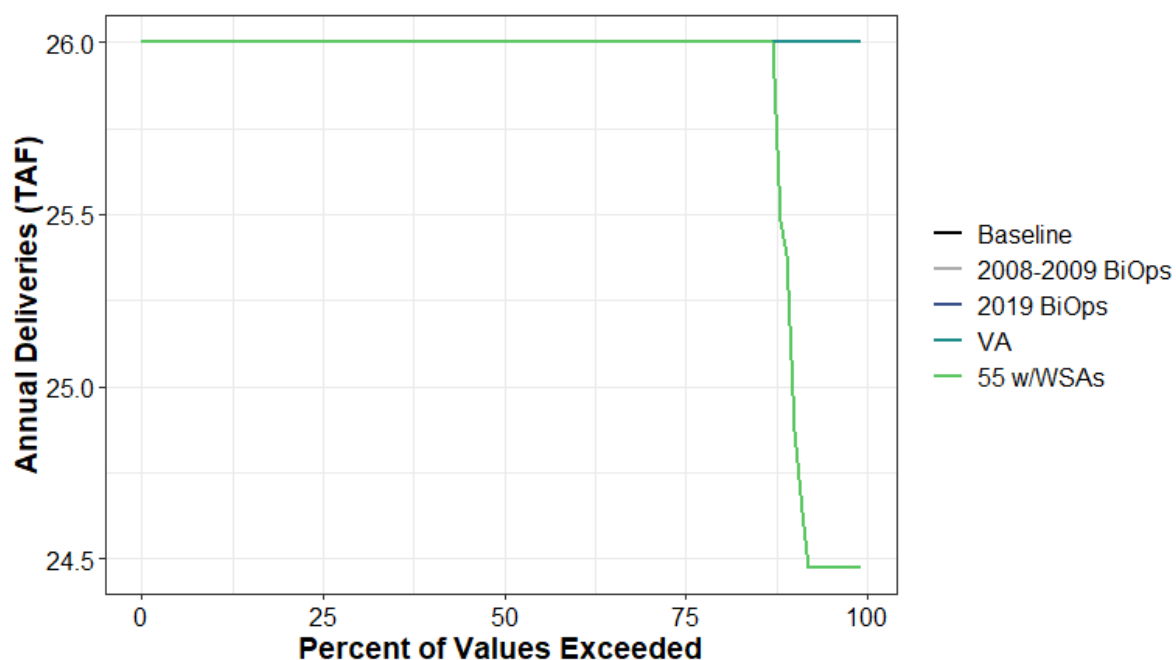


Figure H1a2-181. Total Water Supplied to Water Budget Area 16 (Urban) Annual Percent Exceedance Plot.

Table H1a2-366. Total Water Supplied to Water Budget Area 16 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 26       | 26              | 26         | 26 | 26        |
| 10%  | 26       | 26              | 26         | 26 | 26        |
| 20%  | 26       | 26              | 26         | 26 | 26        |
| 30%  | 26       | 26              | 26         | 26 | 26        |
| 40%  | 26       | 26              | 26         | 26 | 26        |
| 50%  | 26       | 26              | 26         | 26 | 26        |
| 60%  | 26       | 26              | 26         | 26 | 26        |
| 70%  | 26       | 26              | 26         | 26 | 26        |
| 80%  | 26       | 26              | 26         | 26 | 26        |
| 90%  | 26       | 26              | 26         | 26 | 25.3      |
| 100% | 26       | 26              | 26         | 26 | 24.5      |
| Mean | 26       | 26              | 26         | 26 | 25.8      |

Table H1a2-367. Total Water Supplied to Water Budget Area 16 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 26       | 26              | 26         | 26 | 25.6      |
| D   | 26       | 26              | 26         | 26 | 25.6      |
| BN  | 26       | 26              | 26         | 26 | 26        |
| AN  | 26       | 26              | 26         | 26 | 26        |
| W   | 26       | 26              | 26         | 26 | 25.9      |
| All | 26       | 26              | 26         | 26 | 25.8      |

## H1a2.6.22 Water Budget Area 17 (Agricultural)

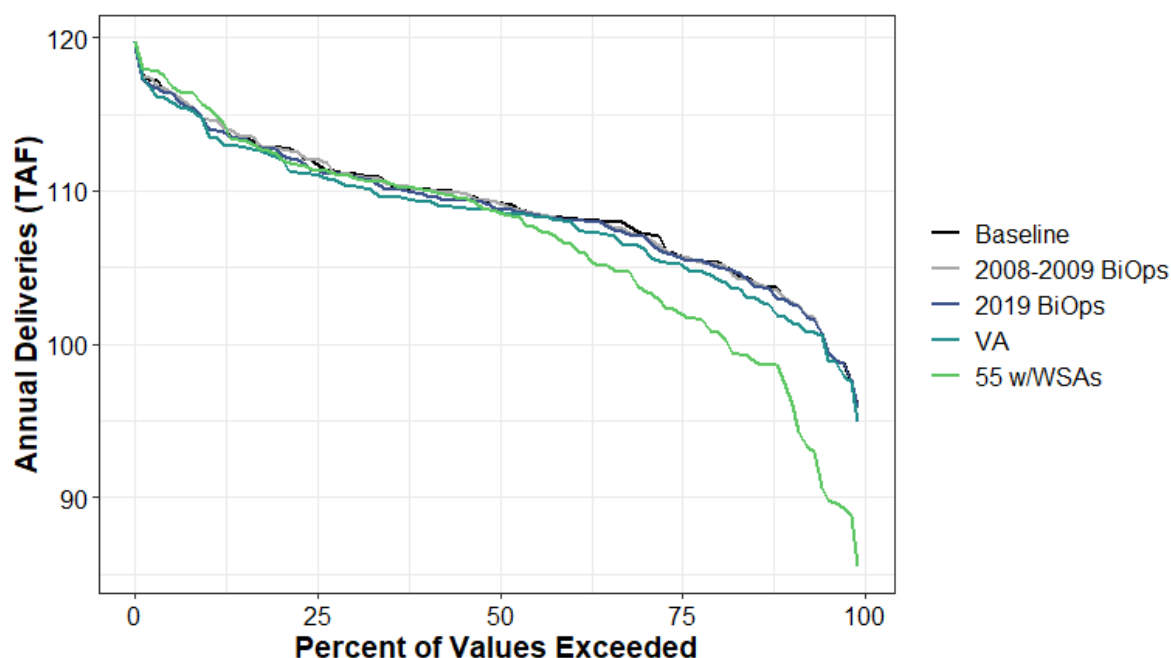


Figure H1a2-182. Total Water Supplied to Water Budget Area 17 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-368. Total Water Supplied to Water Budget Area 17 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 119      | 119             | 119        | 120 | 120       |
| 10%  | 115      | 115             | 114        | 114 | 115       |
| 20%  | 113      | 113             | 113        | 112 | 112       |
| 30%  | 111      | 111             | 111        | 110 | 111       |
| 40%  | 110      | 110             | 110        | 109 | 110       |
| 50%  | 109      | 109             | 109        | 109 | 109       |
| 60%  | 108      | 108             | 108        | 108 | 107       |
| 70%  | 107      | 107             | 107        | 106 | 104       |
| 80%  | 105      | 105             | 105        | 104 | 101       |
| 90%  | 103      | 103             | 103        | 102 | 97        |
| 100% | 96       | 96              | 96         | 95  | 85        |
| Mean | 109      | 109             | 109        | 108 | 107       |

Table H1a2-369. Total Water Supplied to Water Budget Area 17 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 112      | 112             | 112        | 112 | 112       |
| D   | 110      | 110             | 109        | 109 | 110       |
| BN  | 110      | 110             | 109        | 108 | 109       |
| AN  | 107      | 107             | 107        | 105 | 105       |
| W   | 107      | 107             | 107        | 107 | 101       |
| All | 109      | 109             | 109        | 108 | 107       |

## H1a2.6.23 Water Budget Area 17 (Refuge)

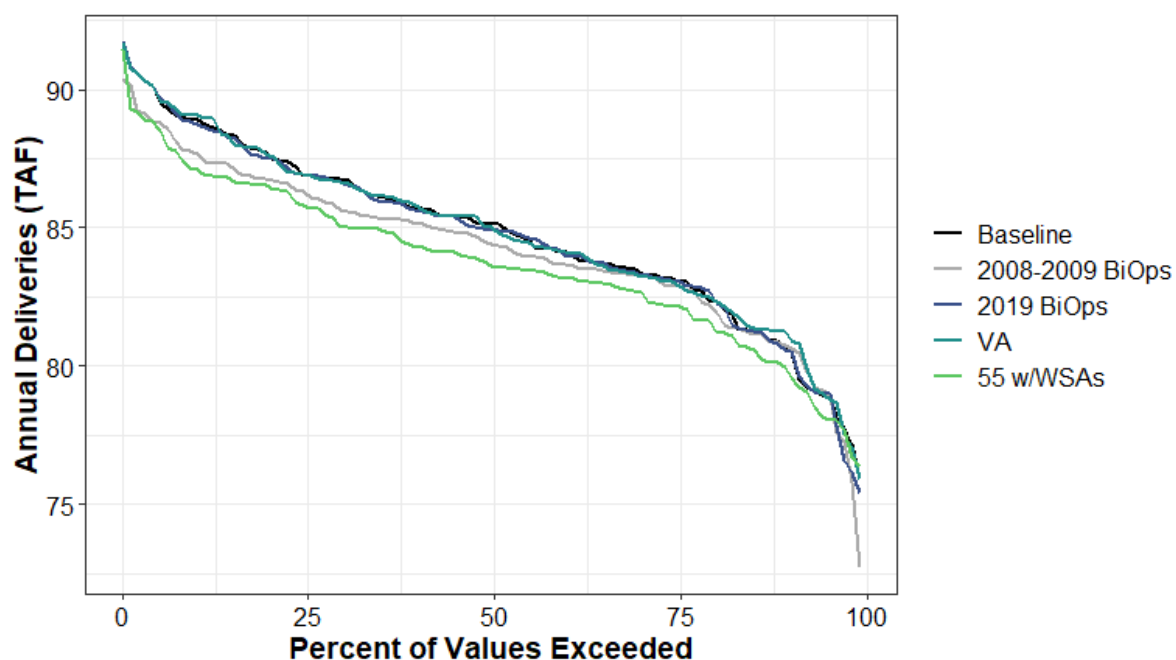


Figure H1a2-183. Total Water Supplied to Water Budget Area 17 (Refuge) Annual Percent Exceedance Plot.

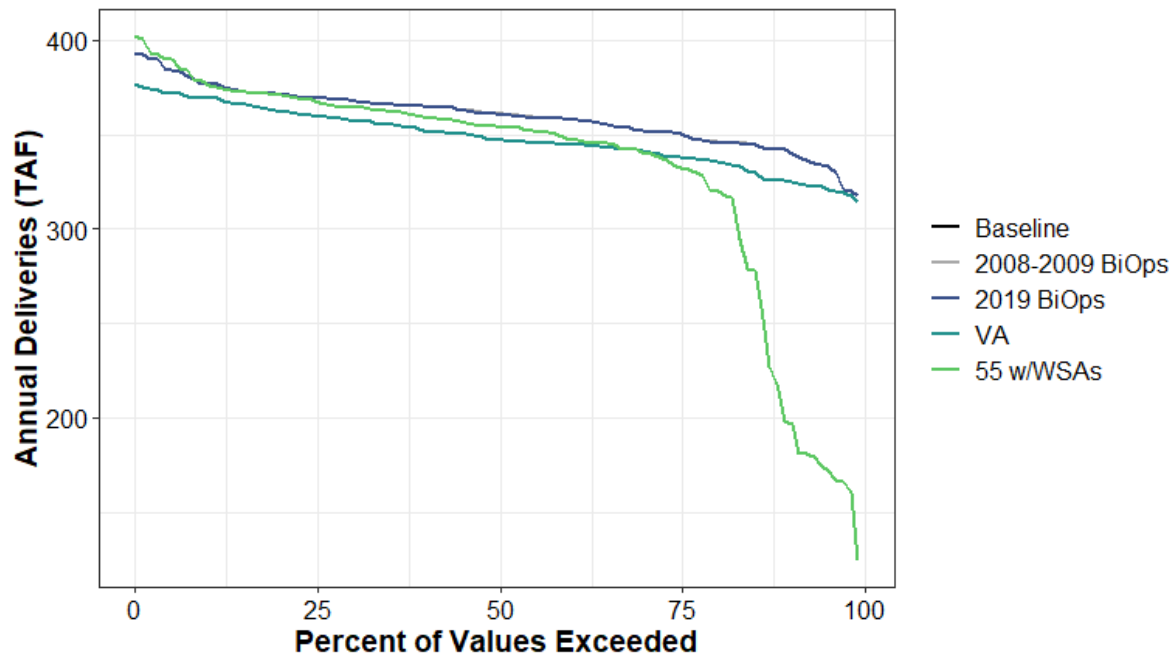
Table H1a2-370. Total Water Supplied to Water Budget Area 17 (Refuge) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 92       | 90              | 92         | 92 | 91        |
| 10%  | 89       | 88              | 89         | 89 | 87        |
| 20%  | 88       | 87              | 87         | 88 | 86        |
| 30%  | 87       | 86              | 87         | 87 | 85        |
| 40%  | 86       | 85              | 86         | 86 | 84        |
| 50%  | 85       | 84              | 85         | 85 | 84        |
| 60%  | 84       | 84              | 84         | 84 | 83        |
| 70%  | 83       | 83              | 83         | 83 | 83        |
| 80%  | 82       | 82              | 83         | 82 | 81        |
| 90%  | 81       | 81              | 81         | 81 | 80        |
| 100% | 76       | 73              | 75         | 76 | 76        |
| Mean | 85       | 84              | 85         | 85 | 84        |

Table H1a2-371. Total Water Supplied to Water Budget Area 17 (Refuge) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 84       | 84              | 84         | 84 | 84        |
| D   | 85       | 85              | 85         | 85 | 84        |
| BN  | 85       | 84              | 85         | 85 | 84        |
| AN  | 84       | 83              | 84         | 84 | 83        |
| W   | 85       | 85              | 85         | 85 | 84        |
| All | 85       | 84              | 85         | 85 | 84        |

## H1a2.6.24 Water Budget Areas 18 and 19 (Agricultural)



**Figure H1a2-184. Total Water Supplied to Water Budget Areas 18 and 19 (Agricultural) Annual Percent Exceedance Plot.**

**Table H1a2-372. Total Water Supplied to Water Budget Areas 18 and 19 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 393      | 393             | 393        | 377 | 403       |
| 10%  | 377      | 377             | 377        | 369 | 377       |
| 20%  | 371      | 371             | 371        | 362 | 371       |
| 30%  | 368      | 368             | 368        | 358 | 365       |
| 40%  | 365      | 365             | 365        | 352 | 359       |
| 50%  | 361      | 361             | 361        | 347 | 354       |
| 60%  | 358      | 358             | 358        | 345 | 347       |
| 70%  | 352      | 352             | 352        | 342 | 341       |
| 80%  | 346      | 346             | 346        | 336 | 320       |
| 90%  | 341      | 341             | 341        | 325 | 198       |
| 100% | 318      | 318             | 318        | 315 | 124       |
| Mean | 360      | 360             | 360        | 348 | 332       |

**Table H1a2-373. Total Water Supplied to Water Budget Areas 18 and 19 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 364      | 364             | 364        | 364 | 206       |
| D   | 367      | 367             | 367        | 345 | 353       |
| BN  | 366      | 366             | 366        | 345 | 368       |
| AN  | 356      | 356             | 355        | 334 | 357       |
| W   | 350      | 350             | 350        | 350 | 350       |
| All | 360      | 360             | 360        | 348 | 332       |

## H1a2.6.25 Water Budget Areas 20 and 25 (Agricultural)

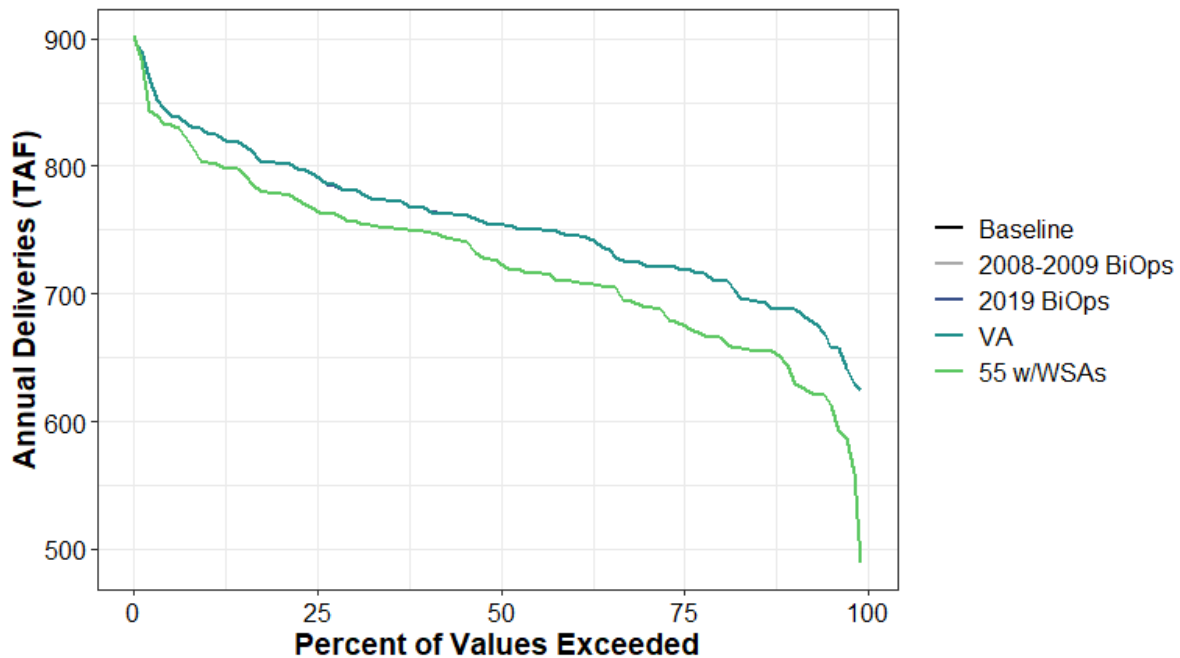


Figure H1a2-185. Total Water Supplied to Water Budget Areas 20 and 25 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-374. Total Water Supplied to Water Budget Areas 20 and 25 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 900      | 900             | 900        | 900 | 902       |
| 10%  | 826      | 826             | 826        | 826 | 803       |
| 20%  | 802      | 802             | 802        | 802 | 778       |
| 30%  | 781      | 781             | 781        | 781 | 757       |
| 40%  | 766      | 766             | 766        | 766 | 749       |
| 50%  | 754      | 754             | 754        | 754 | 726       |
| 60%  | 746      | 746             | 746        | 746 | 710       |
| 70%  | 723      | 723             | 723        | 723 | 690       |
| 80%  | 711      | 711             | 711        | 711 | 666       |
| 90%  | 688      | 688             | 688        | 688 | 641       |
| 100% | 625      | 625             | 625        | 625 | 489       |
| Mean | 755      | 755             | 755        | 755 | 724       |

Table H1a2-375. Total Water Supplied to Water Budget Areas 20 and 25 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 794      | 794             | 794        | 794 | 760       |
| D   | 777      | 777             | 777        | 777 | 740       |
| BN  | 768      | 768             | 768        | 768 | 710       |
| AN  | 738      | 738             | 738        | 738 | 715       |
| W   | 718      | 718             | 718        | 718 | 704       |
| All | 755      | 755             | 755        | 755 | 724       |

## H1a2.6.26 Water Budget Areas 20 and 25 (Urban)

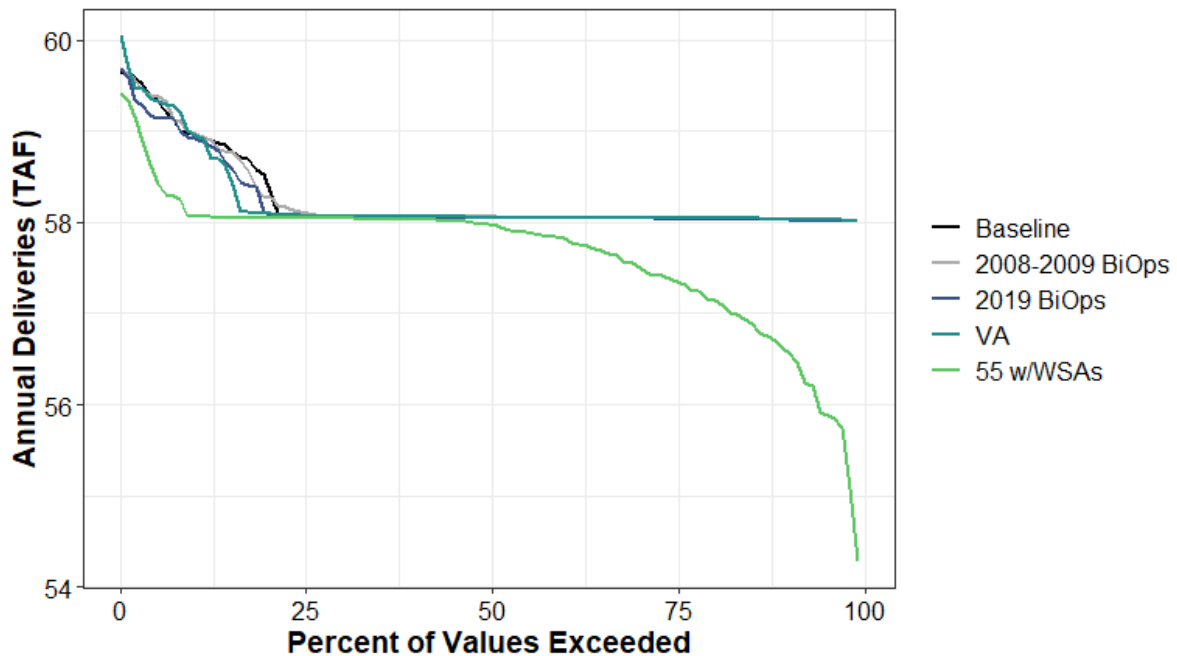


Figure H1a2-186. Total Water Supplied to Water Budget Areas 20 and 25 (Urban) Annual Percent Exceedance Plot.

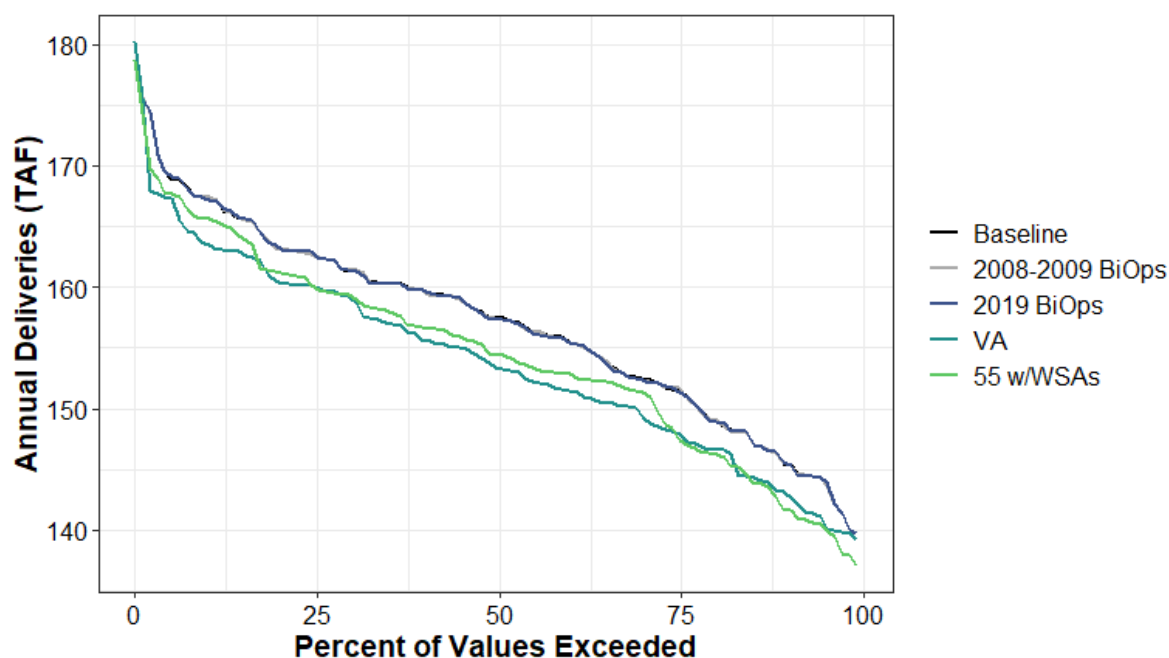
Table H1a2-376. Total Water Supplied to Water Budget Areas 20 and 25 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 60       | 60              | 60         | 60 | 59        |
| 10%  | 59       | 59              | 59         | 59 | 58        |
| 20%  | 58       | 58              | 58         | 58 | 58        |
| 30%  | 58       | 58              | 58         | 58 | 58        |
| 40%  | 58       | 58              | 58         | 58 | 58        |
| 50%  | 58       | 58              | 58         | 58 | 58        |
| 60%  | 58       | 58              | 58         | 58 | 58        |
| 70%  | 58       | 58              | 58         | 58 | 58        |
| 80%  | 58       | 58              | 58         | 58 | 57        |
| 90%  | 58       | 58              | 58         | 58 | 57        |
| 100% | 58       | 58              | 58         | 58 | 54        |
| Mean | 58       | 58              | 58         | 58 | 58        |

Table H1a2-377. Total Water Supplied to Water Budget Areas 20 and 25 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 59       | 59              | 59         | 59 | 58        |
| D   | 58       | 58              | 58         | 58 | 57        |
| BN  | 58       | 58              | 58         | 58 | 57        |
| AN  | 58       | 58              | 58         | 58 | 58        |
| W   | 58       | 58              | 58         | 58 | 58        |
| All | 58       | 58              | 58         | 58 | 58        |

## H1a2.6.27 Water Budget Area 21 (Agricultural)



**Figure H1a2-187. Total Water Supplied to Water Budget Area 21 (Agricultural) Annual Percent Exceedance Plot.**

**Table H1a2-378. Total Water Supplied to Water Budget Area 21 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 180      | 180             | 180        | 180 | 179       |
| 10%  | 167      | 168             | 167        | 164 | 166       |
| 20%  | 163      | 163             | 163        | 160 | 161       |
| 30%  | 161      | 161             | 161        | 159 | 159       |
| 40%  | 160      | 160             | 160        | 156 | 157       |
| 50%  | 157      | 157             | 157        | 153 | 154       |
| 60%  | 156      | 156             | 156        | 151 | 153       |
| 70%  | 153      | 152             | 152        | 150 | 151       |
| 80%  | 149      | 149             | 149        | 147 | 146       |
| 90%  | 145      | 146             | 146        | 143 | 142       |
| 100% | 140      | 140             | 140        | 139 | 137       |
| Mean | 157      | 157             | 157        | 154 | 154       |

**Table H1a2-379. Total Water Supplied to Water Budget Area 21 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 164      | 164             | 164        | 164 | 162       |
| D   | 160      | 160             | 160        | 154 | 157       |
| BN  | 158      | 158             | 158        | 152 | 156       |
| AN  | 155      | 155             | 155        | 149 | 154       |
| W   | 151      | 151             | 151        | 151 | 148       |
| All | 157      | 157             | 157        | 154 | 154       |

## H1a2.6.28 Water Budget Area 21 (Urban)

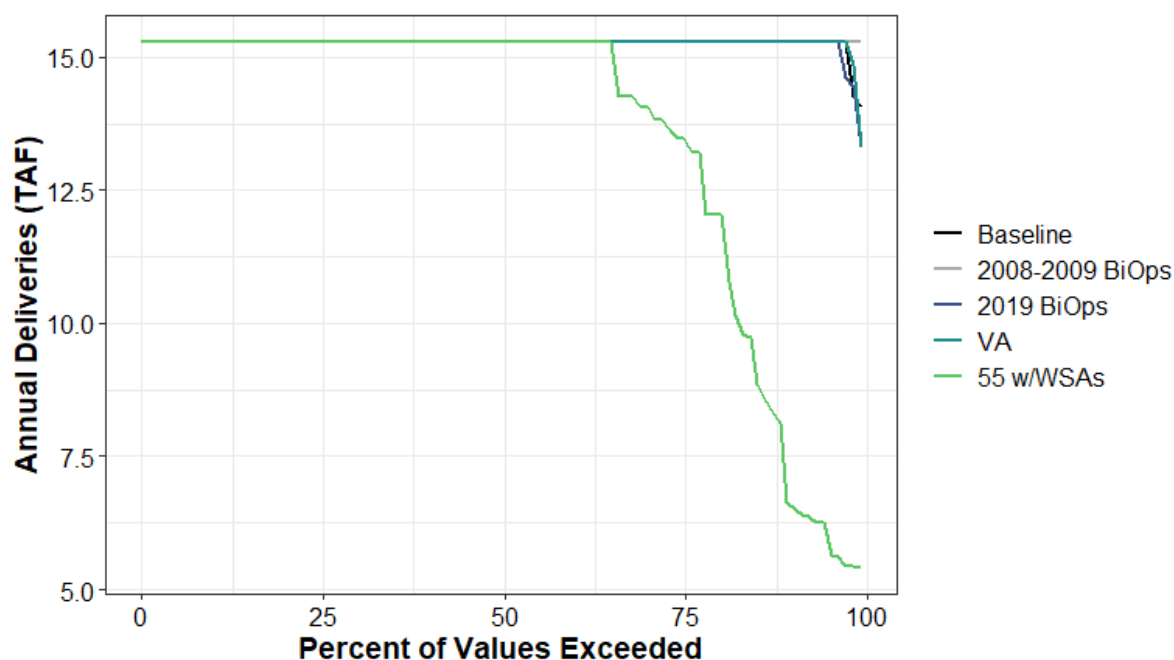


Figure H1a2-188. Total Water Supplied to Water Budget Area 21 (Urban) Annual Percent Exceedance Plot.

Table H1a2-380. Total Water Supplied to Water Budget Area 21 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 10%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 20%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 30%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 40%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 50%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 60%  | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| 70%  | 15.3     | 15.3            | 15.3       | 15.3 | 14.1      |
| 80%  | 15.3     | 15.3            | 15.3       | 15.3 | 12        |
| 90%  | 15.3     | 15.3            | 15.3       | 15.3 | 6.6       |
| 100% | 14.1     | 15.3            | 13.3       | 13.3 | 5.4       |
| Mean | 15.3     | 15.3            | 15.3       | 15.3 | 13.5      |

Table H1a2-381. Total Water Supplied to Water Budget Area 21 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 15.3     | 15.3            | 15.2       | 15.2 | 7.3       |
| D   | 15.3     | 15.3            | 15.3       | 15.3 | 13.4      |
| BN  | 15.2     | 15.3            | 15.2       | 15.3 | 15        |
| AN  | 15.2     | 15.3            | 15.2       | 15.3 | 15        |
| W   | 15.3     | 15.3            | 15.3       | 15.3 | 15.3      |
| All | 15.3     | 15.3            | 15.3       | 15.3 | 13.5      |

## H1a2.6.29 Water Budget Area 22 (Agricultural)

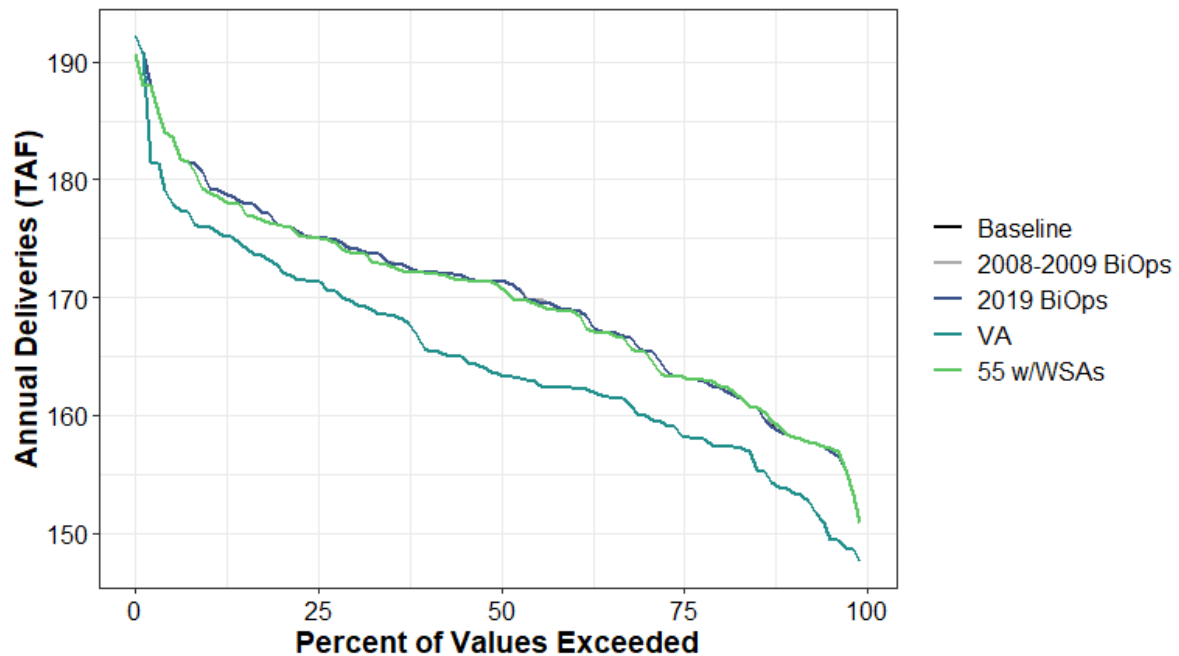


Figure H1a2-189. Total Water Supplied to Water Budget Area 22 (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-382. Total Water Supplied to Water Budget Area 22 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 192      | 192             | 192        | 192 | 191       |
| 10%  | 180      | 180             | 180        | 176 | 179       |
| 20%  | 176      | 176             | 176        | 172 | 176       |
| 30%  | 174      | 174             | 174        | 170 | 174       |
| 40%  | 172      | 172             | 172        | 166 | 172       |
| 50%  | 171      | 171             | 171        | 164 | 171       |
| 60%  | 169      | 169             | 169        | 162 | 169       |
| 70%  | 166      | 166             | 166        | 160 | 165       |
| 80%  | 162      | 162             | 162        | 157 | 163       |
| 90%  | 158      | 158             | 158        | 154 | 158       |
| 100% | 151      | 151             | 151        | 148 | 151       |
| Mean | 170      | 170             | 170        | 165 | 170       |

Table H1a2-383. Total Water Supplied to Water Budget Area 22 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 178      | 178             | 178        | 178 | 176       |
| D   | 173      | 173             | 173        | 163 | 173       |
| BN  | 171      | 171             | 171        | 162 | 172       |
| AN  | 167      | 167             | 167        | 157 | 167       |
| W   | 164      | 164             | 164        | 164 | 164       |
| All | 170      | 170             | 170        | 165 | 170       |

## H1a2.6.30 Water Budget Area 23 (Agricultural)

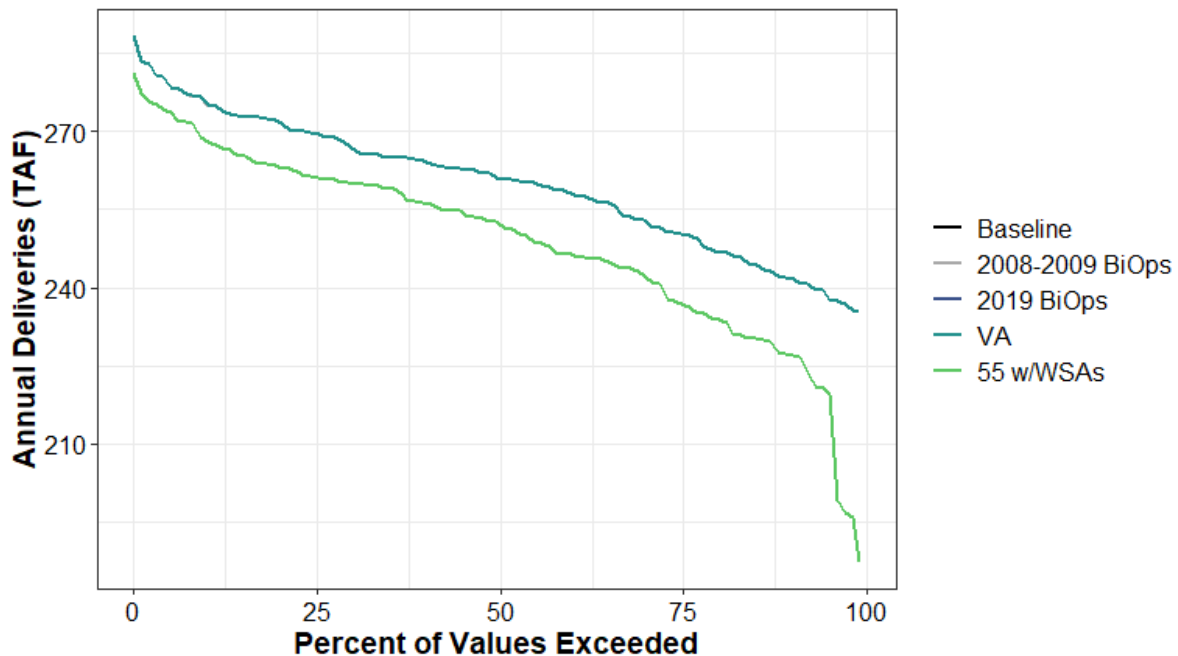


Figure H1a2-190. Total Water Supplied to Water Budget Area 23 (Agricultural) Annual Percent Exceedance Plot.

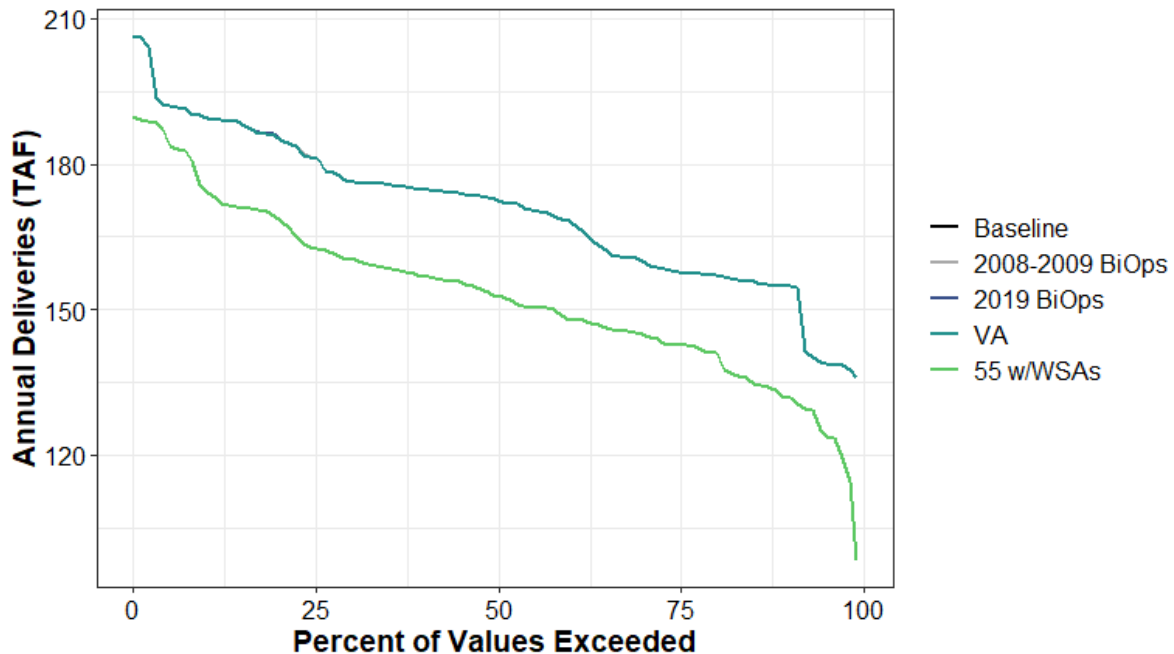
Table H1a2-384. Total Water Supplied to Water Budget Area 23 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 288      | 288             | 288        | 288 | 281       |
| 10%  | 275      | 275             | 275        | 275 | 268       |
| 20%  | 272      | 272             | 272        | 272 | 263       |
| 30%  | 267      | 267             | 267        | 267 | 260       |
| 40%  | 264      | 264             | 264        | 264 | 256       |
| 50%  | 261      | 261             | 261        | 261 | 253       |
| 60%  | 258      | 258             | 258        | 258 | 246       |
| 70%  | 253      | 253             | 253        | 253 | 243       |
| 80%  | 247      | 247             | 247        | 247 | 234       |
| 90%  | 242      | 242             | 242        | 242 | 227       |
| 100% | 235      | 235             | 235        | 235 | 187       |
| Mean | 260      | 260             | 260        | 260 | 249       |

Table H1a2-385. Total Water Supplied to Water Budget Area 23 (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 270      | 270             | 270        | 270 | 259       |
| D   | 265      | 265             | 265        | 265 | 255       |
| BN  | 263      | 263             | 263        | 263 | 250       |
| AN  | 256      | 256             | 256        | 256 | 241       |
| W   | 251      | 251             | 251        | 251 | 241       |
| All | 260      | 260             | 260        | 260 | 249       |

### H1a2.6.31 Water Budget Area 24 (Agricultural)



**Figure H1a2-191. Total Water Supplied to Water Budget Area 24 (Agricultural) Annual Percent Exceedance Plot.**

**Table H1a2-386. Total Water Supplied to Water Budget Area 24 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 207      | 207             | 207        | 207 | 190       |
| 10%  | 190      | 190             | 190        | 190 | 174       |
| 20%  | 185      | 185             | 185        | 185 | 169       |
| 30%  | 176      | 176             | 176        | 176 | 160       |
| 40%  | 175      | 175             | 175        | 175 | 157       |
| 50%  | 173      | 173             | 173        | 173 | 153       |
| 60%  | 168      | 168             | 168        | 168 | 148       |
| 70%  | 160      | 160             | 160        | 160 | 145       |
| 80%  | 157      | 157             | 157        | 157 | 141       |
| 90%  | 155      | 155             | 155        | 155 | 132       |
| 100% | 136      | 136             | 136        | 136 | 98        |
| Mean | 170      | 170             | 170        | 170 | 153       |

**Table H1a2-387. Total Water Supplied to Water Budget Area 24 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 181      | 181             | 181        | 181 | 158       |
| D   | 177      | 177             | 177        | 177 | 156       |
| BN  | 173      | 173             | 173        | 173 | 153       |
| AN  | 165      | 165             | 165        | 165 | 154       |
| W   | 161      | 161             | 161        | 161 | 148       |
| All | 170      | 170             | 170        | 170 | 153       |

## H1a2.6.32 Water Budget Area 24 (Urban)

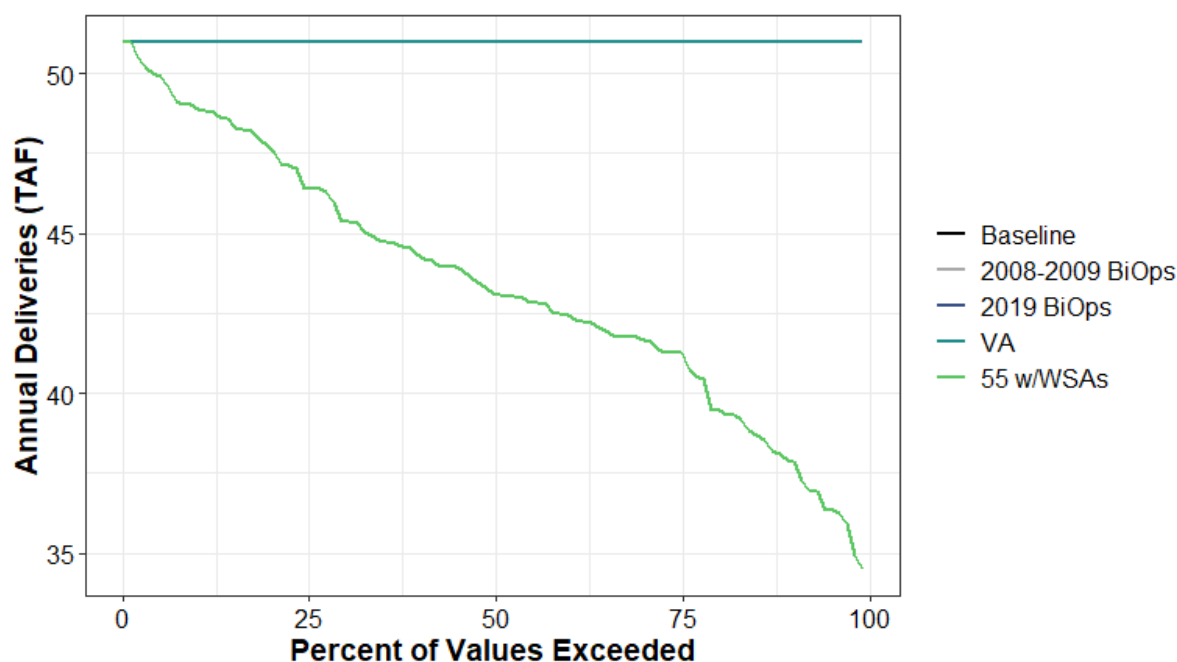


Figure H1a2-192. Total Water Supplied to Water Budget Area 24 (Urban) Annual Percent Exceedance Plot.

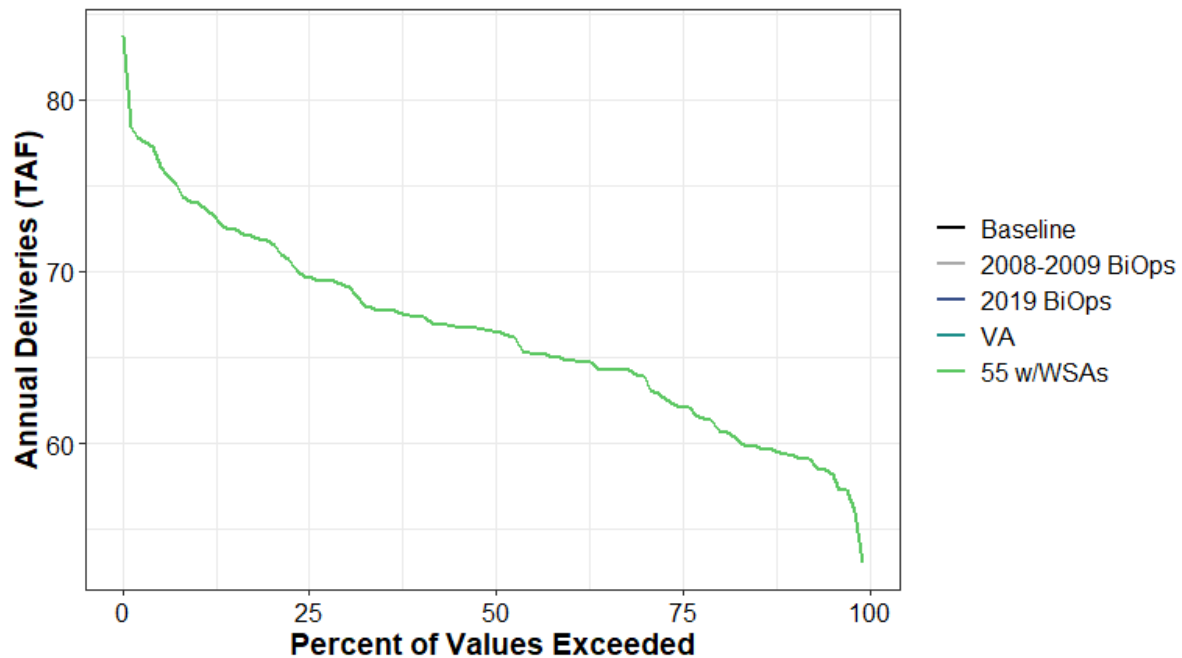
Table H1a2-388. Total Water Supplied to Water Budget Area 24 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 51       | 51              | 51         | 51 | 51        |
| 10%  | 51       | 51              | 51         | 51 | 49        |
| 20%  | 51       | 51              | 51         | 51 | 48        |
| 30%  | 51       | 51              | 51         | 51 | 45        |
| 40%  | 51       | 51              | 51         | 51 | 44        |
| 50%  | 51       | 51              | 51         | 51 | 43        |
| 60%  | 51       | 51              | 51         | 51 | 42        |
| 70%  | 51       | 51              | 51         | 51 | 42        |
| 80%  | 51       | 51              | 51         | 51 | 39        |
| 90%  | 51       | 51              | 51         | 51 | 38        |
| 100% | 51       | 51              | 51         | 51 | 34        |
| Mean | 51       | 51              | 51         | 51 | 43        |

Table H1a2-389. Total Water Supplied to Water Budget Area 24 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 51       | 51              | 51         | 51 | 40        |
| D   | 51       | 51              | 51         | 51 | 42        |
| BN  | 51       | 51              | 51         | 51 | 45        |
| AN  | 51       | 51              | 51         | 51 | 45        |
| W   | 51       | 51              | 51         | 51 | 45        |
| All | 51       | 51              | 51         | 51 | 43        |

## H1a2.6.33 Water Budget Area 26 (Agricultural)



**Figure H1a2-193. Total Water Supplied to Water Budget Area 26 (Agricultural) Annual Percent Exceedance Plot.**

**Table H1a2-390. Total Water Supplied to Water Budget Area 26 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 84       | 84              | 84         | 84 | 84        |
| 10%  | 74       | 74              | 74         | 74 | 74        |
| 20%  | 72       | 72              | 72         | 72 | 72        |
| 30%  | 69       | 69              | 69         | 69 | 69        |
| 40%  | 67       | 67              | 67         | 67 | 67        |
| 50%  | 67       | 67              | 67         | 67 | 67        |
| 60%  | 65       | 65              | 65         | 65 | 65        |
| 70%  | 64       | 64              | 64         | 64 | 64        |
| 80%  | 61       | 61              | 61         | 61 | 61        |
| 90%  | 59       | 59              | 59         | 59 | 59        |
| 100% | 53       | 53              | 53         | 53 | 53        |
| Mean | 66       | 66              | 66         | 66 | 66        |

**Table H1a2-391. Total Water Supplied to Water Budget Area 26 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 73       | 73              | 73         | 73 | 73        |
| D   | 68       | 68              | 68         | 68 | 68        |
| BN  | 67       | 67              | 67         | 67 | 67        |
| AN  | 65       | 65              | 65         | 65 | 65        |
| W   | 63       | 63              | 63         | 63 | 63        |
| All | 66       | 66              | 66         | 66 | 66        |

## H1a2.6.34 Water Budget Area 26 (Urban)

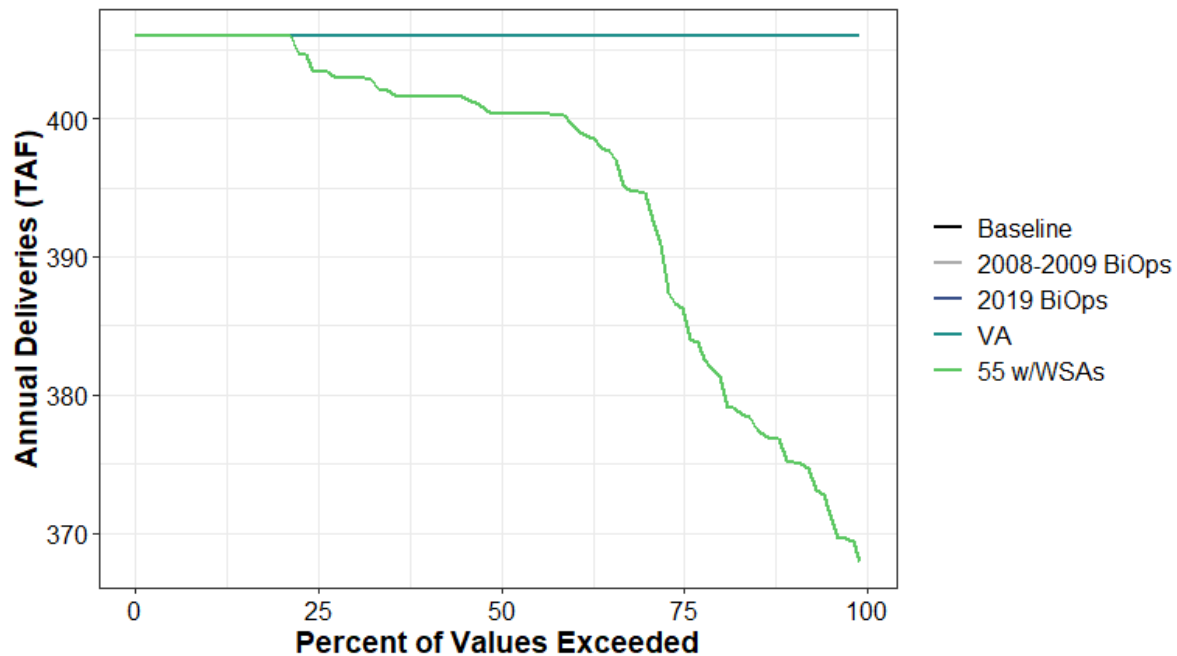


Figure H1a2-194. Total Water Supplied to Water Budget Area 26 (Urban) Annual Percent Exceedance Plot.

Table H1a2-392. Total Water Supplied to Water Budget Area 26 (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

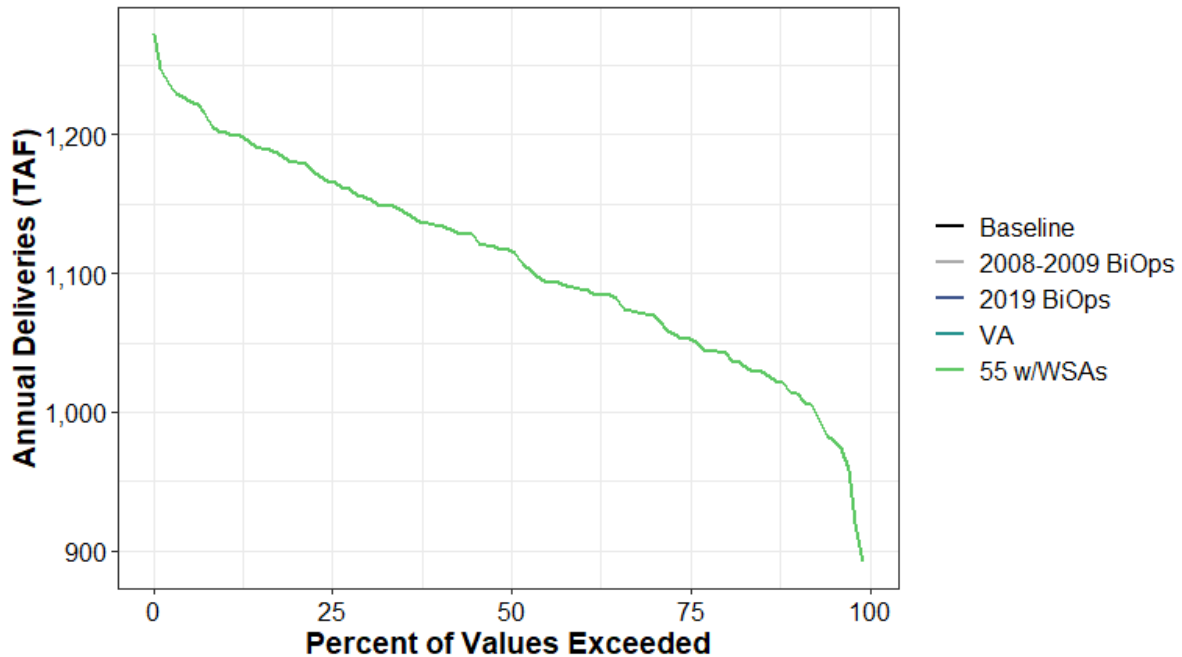
|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 406      | 406             | 406        | 406 | 406       |
| 10%  | 406      | 406             | 406        | 406 | 406       |
| 20%  | 406      | 406             | 406        | 406 | 406       |
| 30%  | 406      | 406             | 406        | 406 | 403       |
| 40%  | 406      | 406             | 406        | 406 | 402       |
| 50%  | 406      | 406             | 406        | 406 | 400       |
| 60%  | 406      | 406             | 406        | 406 | 400       |
| 70%  | 406      | 406             | 406        | 406 | 395       |
| 80%  | 406      | 406             | 406        | 406 | 382       |
| 90%  | 406      | 406             | 406        | 406 | 375       |
| 100% | 406      | 406             | 406        | 406 | 368       |
| Mean | 406      | 406             | 406        | 406 | 395       |

Table H1a2-393. Total Water Supplied to Water Budget Area 26 (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 406      | 406             | 406        | 406 | 375       |
| D   | 406      | 406             | 406        | 406 | 390       |
| BN  | 406      | 406             | 406        | 406 | 401       |
| AN  | 406      | 406             | 406        | 406 | 402       |
| W   | 406      | 406             | 406        | 406 | 404       |
| All | 406      | 406             | 406        | 406 | 395       |

## H1a2.6.35 Water Budget Area 50 (Agricultural)

The values in the figure and tables that follow summarize agricultural diversions to Delta islands as represented by the Delta Channel Depletions model.



**Figure H1a2-195. Surface Water Supplied to Water Budget Area 50 (Agricultural) Annual Percent Exceedance Plot. Includes agricultural diversions to Delta islands as represented by the Delta Channel Depletions model.**

**Table H1a2-394. Surface Water Supplied to Water Budget Area 50 (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,273    | 1,273           | 1,273      | 1,273 | 1,273     |
| 10%  | 1,202    | 1,202           | 1,202      | 1,202 | 1,202     |
| 20%  | 1,180    | 1,180           | 1,180      | 1,180 | 1,180     |
| 30%  | 1,154    | 1,154           | 1,154      | 1,154 | 1,154     |
| 40%  | 1,135    | 1,135           | 1,135      | 1,135 | 1,135     |
| 50%  | 1,117    | 1,117           | 1,117      | 1,117 | 1,117     |
| 60%  | 1,089    | 1,089           | 1,089      | 1,089 | 1,089     |
| 70%  | 1,070    | 1,070           | 1,070      | 1,070 | 1,070     |
| 80%  | 1,043    | 1,043           | 1,043      | 1,043 | 1,043     |
| 90%  | 1,013    | 1,013           | 1,013      | 1,013 | 1,013     |
| 100% | 892      | 892             | 892        | 892   | 892       |
| Mean | 1,109    | 1,109           | 1,109      | 1,109 | 1,109     |

**Table H1a2-395. Surface Water Supplied to Water Budget Area 50 (Agricultural) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,177    | 1,177           | 1,177      | 1,177 | 1,177     |
| D   | 1,148    | 1,148           | 1,148      | 1,148 | 1,148     |
| BN  | 1,129    | 1,129           | 1,129      | 1,129 | 1,129     |
| AN  | 1,077    | 1,077           | 1,077      | 1,077 | 1,077     |
| W   | 1,045    | 1,045           | 1,045      | 1,045 | 1,045     |
| All | 1,109    | 1,109           | 1,109      | 1,109 | 1,109     |

## H1a2.6.36 Delta (Urban)

The values in the figure and tables that follow summarize diversions to the City of Antioch (demand site U\_ANTOC\_NU).

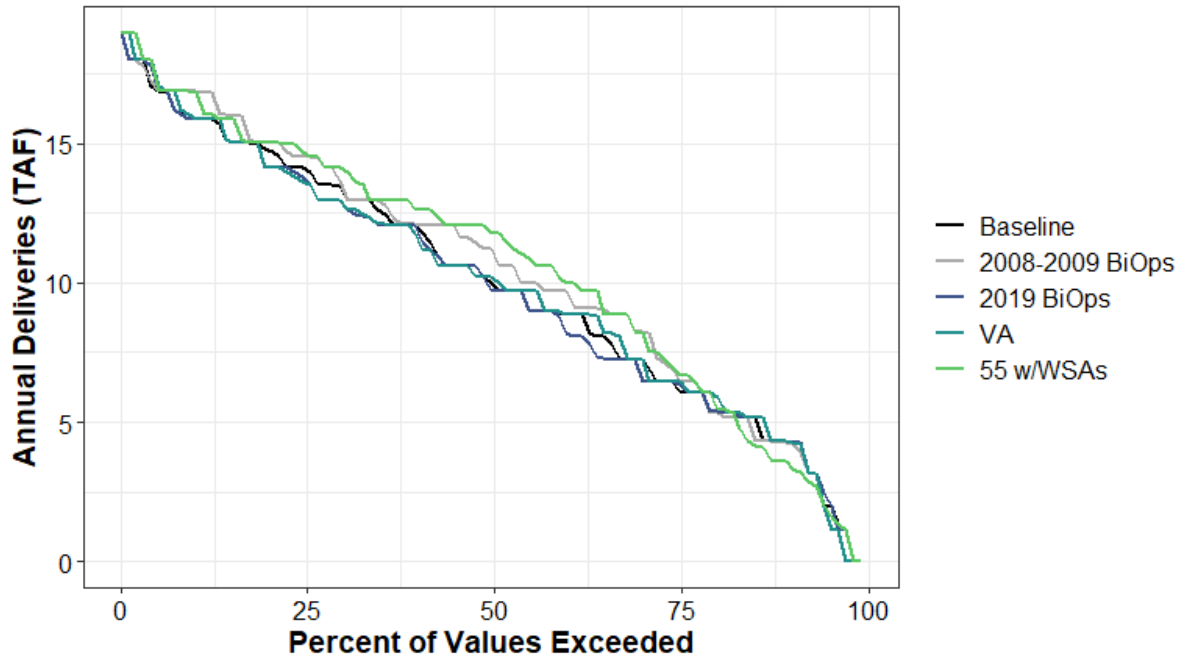


Figure H1a2-196. Surface Water Supplied to Delta (Urban) Annual Percent Exceedance Plot.

Table H1a2-396. Surface Water Supplied to Delta (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 19       | 19              | 19         | 19   | 19        |
| 10%  | 15.9     | 16.9            | 15.9       | 15.9 | 16.8      |
| 20%  | 14.8     | 15.1            | 14.2       | 14.2 | 15.1      |
| 30%  | 13.3     | 13.4            | 12.8       | 12.8 | 14.1      |
| 40%  | 12       | 12.1            | 11.9       | 11.7 | 12.6      |
| 50%  | 10       | 11.2            | 9.7        | 10.2 | 11.8      |
| 60%  | 8.9      | 9.7             | 8.3        | 8.9  | 10.1      |
| 70%  | 7.2      | 8.2             | 6.8        | 7.2  | 8.2       |
| 80%  | 5.4      | 5.3             | 5.4        | 6    | 5.8       |
| 90%  | 4.3      | 4.2             | 4.3        | 4.3  | 3.5       |
| 100% | 0        | 0               | 0          | 0    | 0         |
| Mean | 10.1     | 10.5            | 9.9        | 10   | 10.7      |

Table H1a2-397. Surface Water Supplied to Delta (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 3.2      | 3               | 3.3        | 3    | 2.8       |
| D   | 7        | 7.7             | 6.7        | 7.1  | 7.8       |
| BN  | 9.7      | 10.3            | 9.8        | 10.1 | 11.1      |
| AN  | 12.2     | 13.1            | 12.3       | 12   | 12.9      |
| W   | 15.3     | 15.6            | 15         | 15.2 | 15.8      |
| All | 10.1     | 10.5            | 9.9        | 10   | 10.7      |

## H1a2.6.37 Water Budget Area 60N (Agricultural)

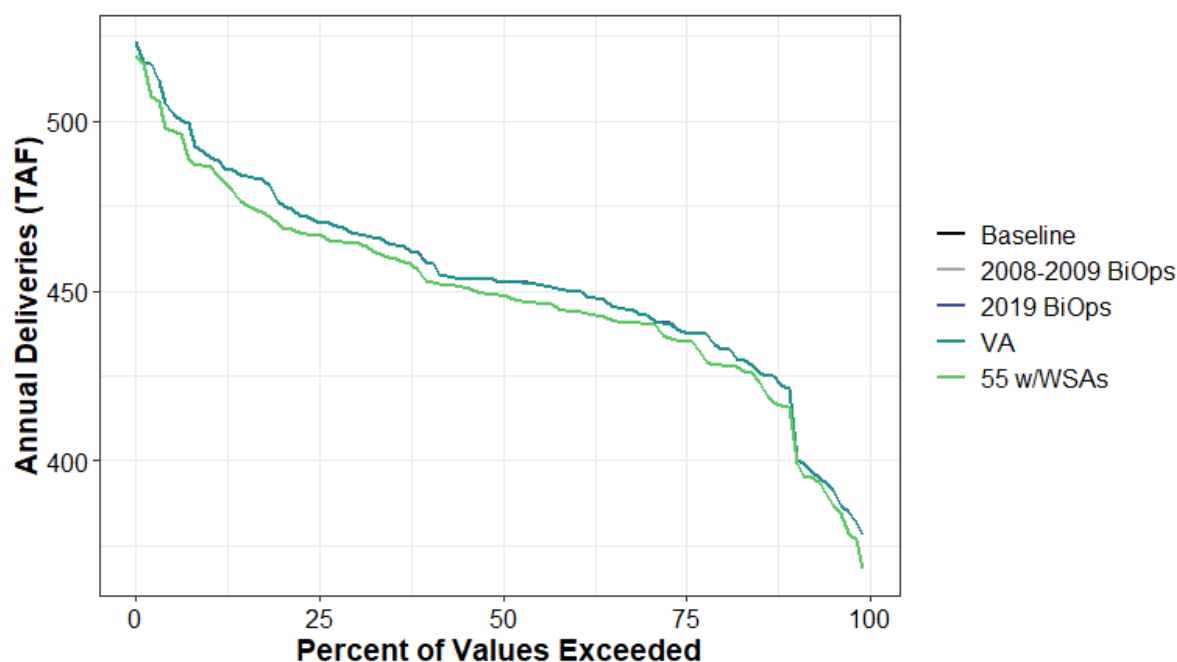


Figure H1a2-197. Total Water Supplied to Water Budget Area 60N (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-398. Total Water Supplied to Water Budget Area 60N (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 523      | 523             | 523        | 523 | 519       |
| 10%  | 490      | 490             | 490        | 490 | 486       |
| 20%  | 476      | 476             | 476        | 476 | 469       |
| 30%  | 467      | 467             | 467        | 467 | 464       |
| 40%  | 459      | 459             | 459        | 458 | 453       |
| 50%  | 453      | 453             | 453        | 453 | 449       |
| 60%  | 450      | 450             | 450        | 450 | 444       |
| 70%  | 443      | 443             | 443        | 443 | 440       |
| 80%  | 434      | 434             | 434        | 434 | 428       |
| 90%  | 417      | 417             | 417        | 417 | 412       |
| 100% | 378      | 378             | 378        | 378 | 368       |
| Mean | 453      | 453             | 453        | 453 | 449       |

Table H1a2-399. Total Water Supplied to Water Budget Area 60N (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 476      | 476             | 476        | 476 | 470       |
| D   | 465      | 465             | 465        | 465 | 460       |
| BN  | 450      | 450             | 450        | 450 | 445       |
| AN  | 442      | 442             | 442        | 442 | 437       |
| W   | 439      | 439             | 439        | 439 | 436       |
| All | 453      | 453             | 453        | 453 | 449       |

## H1a2.6.38 Water Budget Area 60N (Urban)

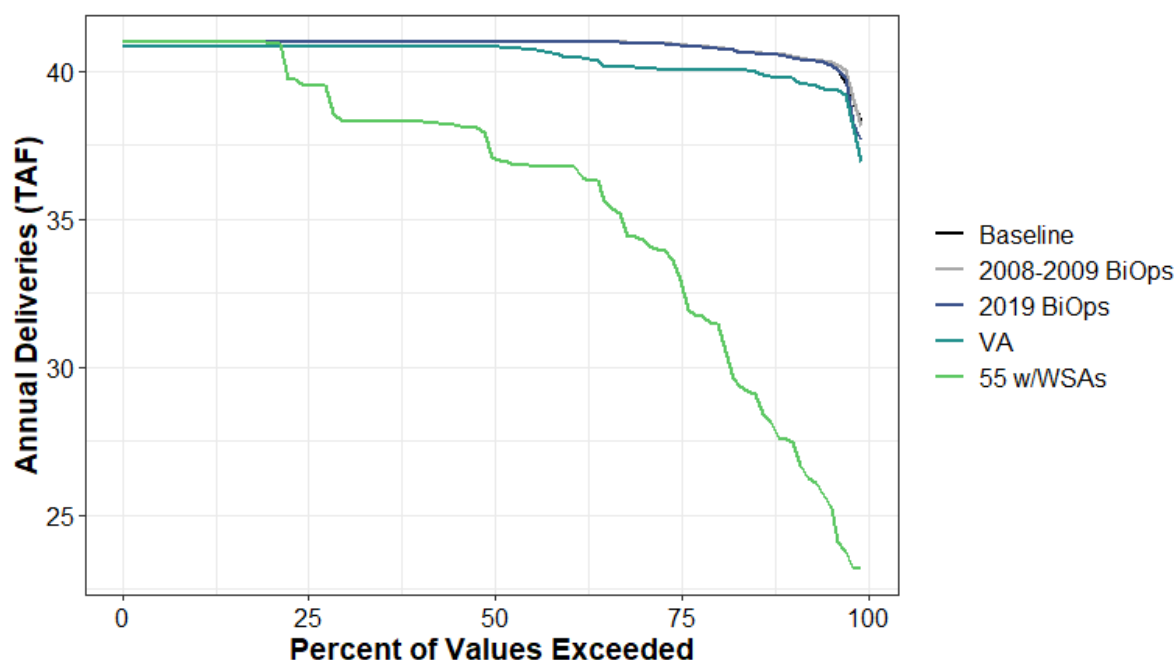


Figure H1a2-198. Total Water Supplied to Water Budget Area 60N (Urban) Annual Percent Exceedance Plot.

Table H1a2-400. Total Water Supplied to Water Budget Area 60N (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 41       | 41              | 41         | 41 | 41        |
| 10%  | 41       | 41              | 41         | 41 | 41        |
| 20%  | 41       | 41              | 41         | 41 | 41        |
| 30%  | 41       | 41              | 41         | 41 | 38        |
| 40%  | 41       | 41              | 41         | 41 | 38        |
| 50%  | 41       | 41              | 41         | 41 | 37        |
| 60%  | 41       | 41              | 41         | 40 | 37        |
| 70%  | 41       | 41              | 41         | 40 | 34        |
| 80%  | 41       | 41              | 41         | 40 | 31        |
| 90%  | 41       | 41              | 41         | 40 | 28        |
| 100% | 38       | 38              | 38         | 37 | 23        |
| Mean | 41       | 41              | 41         | 40 | 36        |

Table H1a2-401. Total Water Supplied to Water Budget Area 60N (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 41       | 41              | 40         | 40 | 28        |
| D   | 41       | 41              | 41         | 40 | 33        |
| BN  | 41       | 41              | 41         | 41 | 38        |
| AN  | 41       | 41              | 41         | 41 | 38        |
| W   | 41       | 41              | 41         | 41 | 39        |
| All | 41       | 41              | 41         | 40 | 36        |

## H1a2.6.39 Water Budget Area 60S (Agricultural)

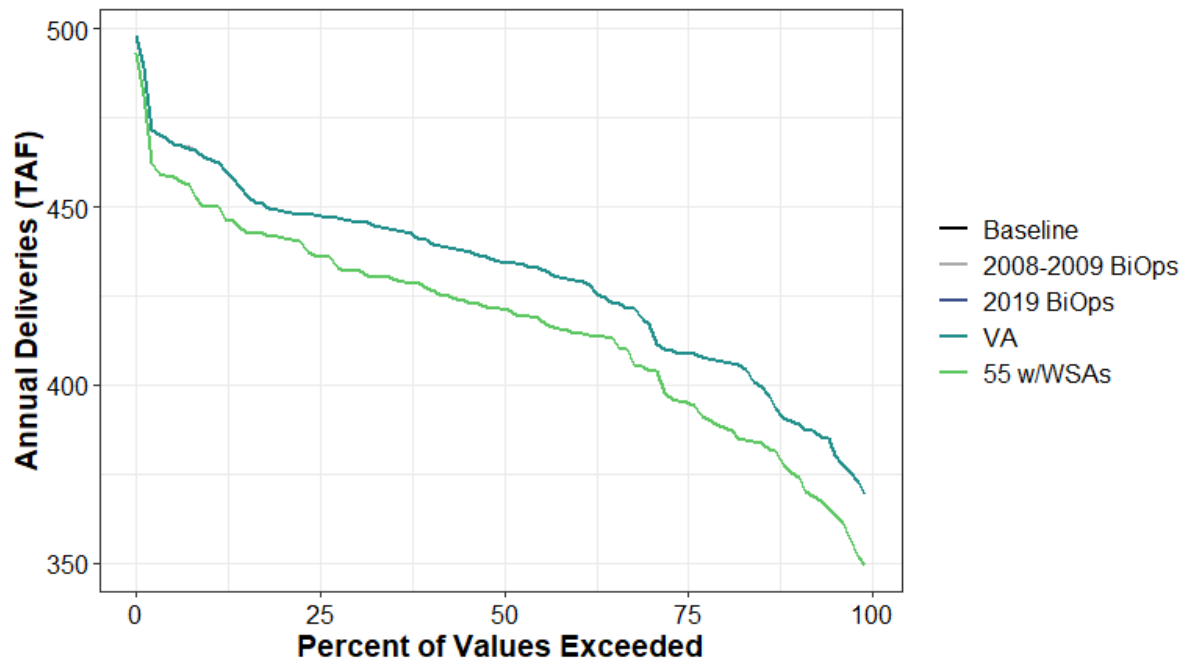


Figure H1a2-199. Total Water Supplied to Water Budget Area 60S (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-402. Total Water Supplied to Water Budget Area 60S (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 498      | 498             | 498        | 498 | 493       |
| 10%  | 463      | 463             | 463        | 463 | 450       |
| 20%  | 449      | 449             | 449        | 449 | 441       |
| 30%  | 446      | 446             | 446        | 446 | 432       |
| 40%  | 440      | 440             | 440        | 440 | 427       |
| 50%  | 435      | 435             | 435        | 435 | 421       |
| 60%  | 430      | 430             | 430        | 430 | 415       |
| 70%  | 418      | 418             | 418        | 418 | 404       |
| 80%  | 407      | 407             | 407        | 407 | 389       |
| 90%  | 390      | 390             | 390        | 390 | 375       |
| 100% | 369      | 369             | 369        | 369 | 350       |
| Mean | 430      | 430             | 430        | 430 | 417       |

Table H1a2-403. Total Water Supplied to Water Budget Area 60S (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 445      | 445             | 445        | 445 | 439       |
| D   | 442      | 442             | 442        | 442 | 433       |
| BN  | 437      | 437             | 437        | 437 | 417       |
| AN  | 425      | 425             | 425        | 425 | 408       |
| W   | 411      | 411             | 411        | 411 | 396       |
| All | 430      | 430             | 430        | 430 | 417       |

## H1a2.6.40 Water Budget Area 60S (Urban)

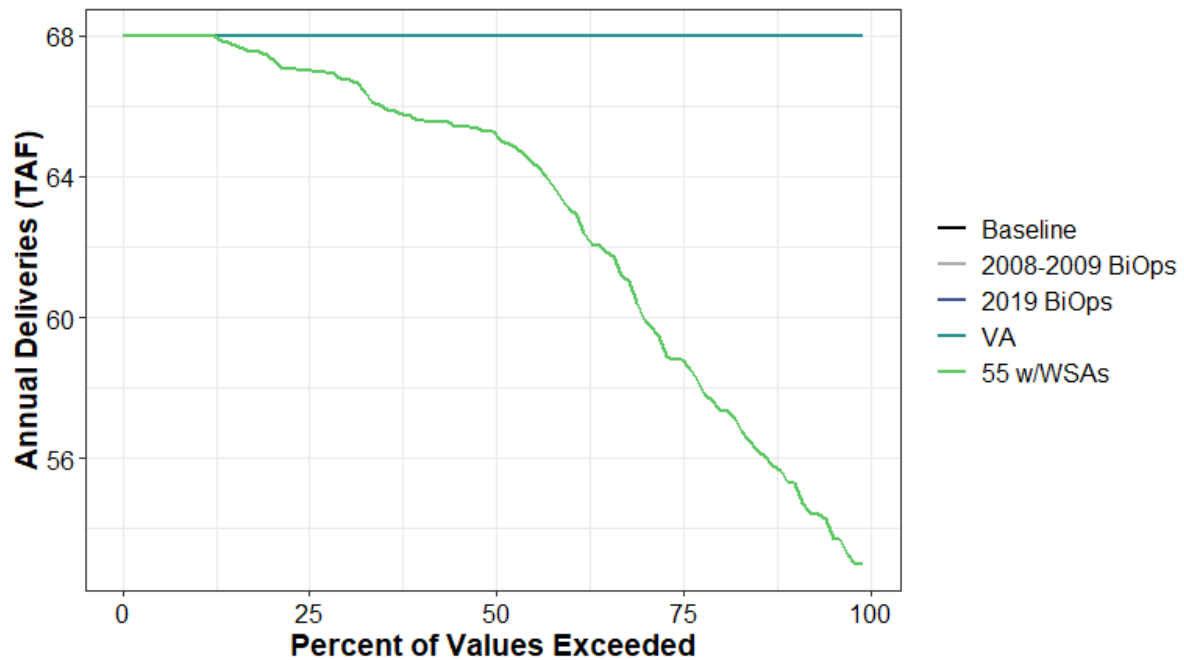


Figure H1a2-200. Total Water Supplied to Water Budget Area 60S (Urban) Annual Percent Exceedance Plot.

Table H1a2-404. Total Water Supplied to Water Budget Area 60S (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 68       | 68              | 68         | 68 | 68        |
| 10%  | 68       | 68              | 68         | 68 | 68        |
| 20%  | 68       | 68              | 68         | 68 | 67        |
| 30%  | 68       | 68              | 68         | 68 | 67        |
| 40%  | 68       | 68              | 68         | 68 | 66        |
| 50%  | 68       | 68              | 68         | 68 | 65        |
| 60%  | 68       | 68              | 68         | 68 | 63        |
| 70%  | 68       | 68              | 68         | 68 | 60        |
| 80%  | 68       | 68              | 68         | 68 | 58        |
| 90%  | 68       | 68              | 68         | 68 | 55        |
| 100% | 68       | 68              | 68         | 68 | 53        |
| Mean | 68       | 68              | 68         | 68 | 63        |

Table H1a2-405. Total Water Supplied to Water Budget Area 60S (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 68       | 68              | 68         | 68 | 56        |
| D   | 68       | 68              | 68         | 68 | 59        |
| BN  | 68       | 68              | 68         | 68 | 65        |
| AN  | 68       | 68              | 68         | 68 | 67        |
| W   | 68       | 68              | 68         | 68 | 67        |
| All | 68       | 68              | 68         | 68 | 63        |

## H1a2.6.41 Water Budget Area 61N (Agricultural)

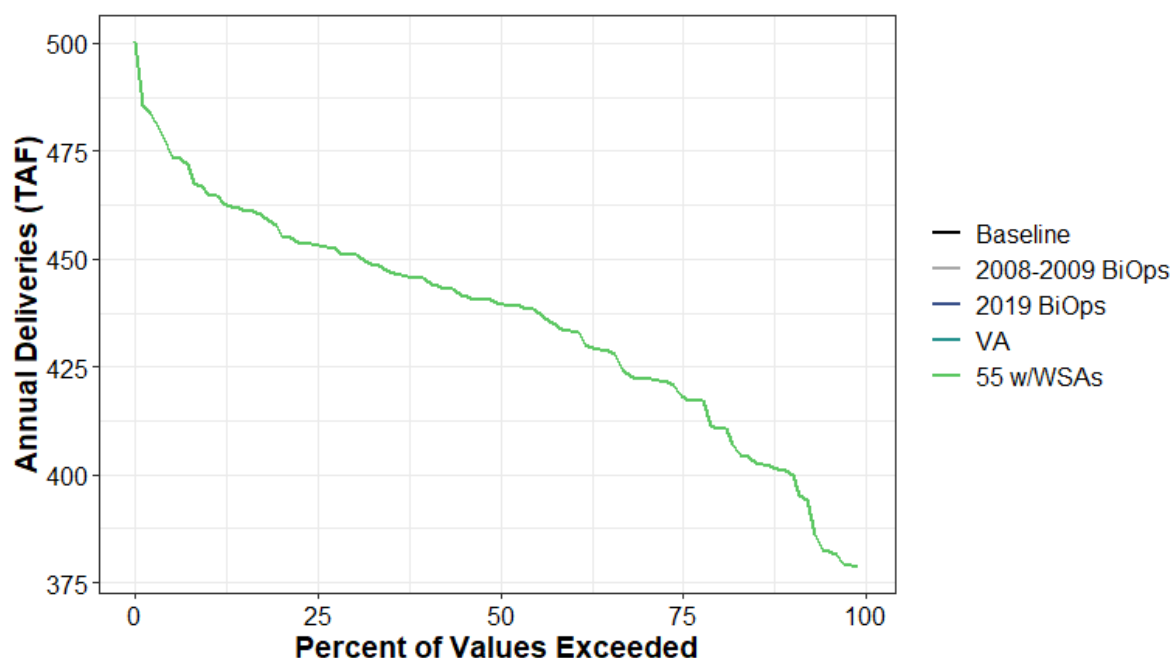


Figure H1a2-201. Total Water Supplied to Water Budget Area 61N (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-406. Total Water Supplied to Water Budget Area 61N (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 500      | 500             | 500        | 500 | 500       |
| 10%  | 465      | 465             | 465        | 465 | 465       |
| 20%  | 456      | 456             | 456        | 456 | 456       |
| 30%  | 451      | 451             | 451        | 451 | 451       |
| 40%  | 445      | 445             | 445        | 445 | 445       |
| 50%  | 440      | 440             | 440        | 440 | 440       |
| 60%  | 433      | 433             | 433        | 433 | 433       |
| 70%  | 422      | 422             | 422        | 422 | 422       |
| 80%  | 411      | 411             | 411        | 411 | 411       |
| 90%  | 401      | 401             | 401        | 401 | 401       |
| 100% | 379      | 379             | 379        | 379 | 379       |
| Mean | 436      | 436             | 436        | 436 | 436       |

Table H1a2-407. Total Water Supplied to Water Budget Area 61N (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 453      | 453             | 453        | 453 | 453       |
| D   | 452      | 452             | 452        | 452 | 452       |
| BN  | 437      | 437             | 437        | 437 | 437       |
| AN  | 424      | 424             | 424        | 424 | 424       |
| W   | 419      | 419             | 419        | 419 | 419       |
| All | 436      | 436             | 436        | 436 | 436       |

## H1a2.6.42 Upper Watershed and Foothill (Agricultural)

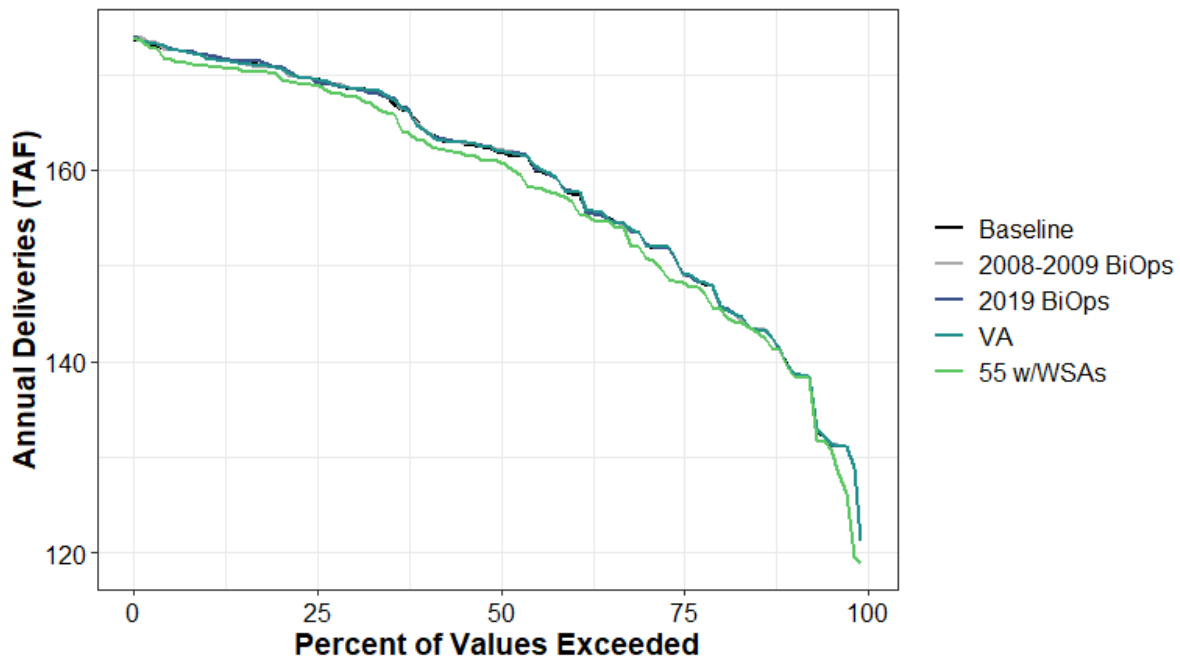


Figure H1a2-202. Surface Water Supplied to Upper Watershed and Foothill (Agricultural) Annual Percent Exceedance Plot.

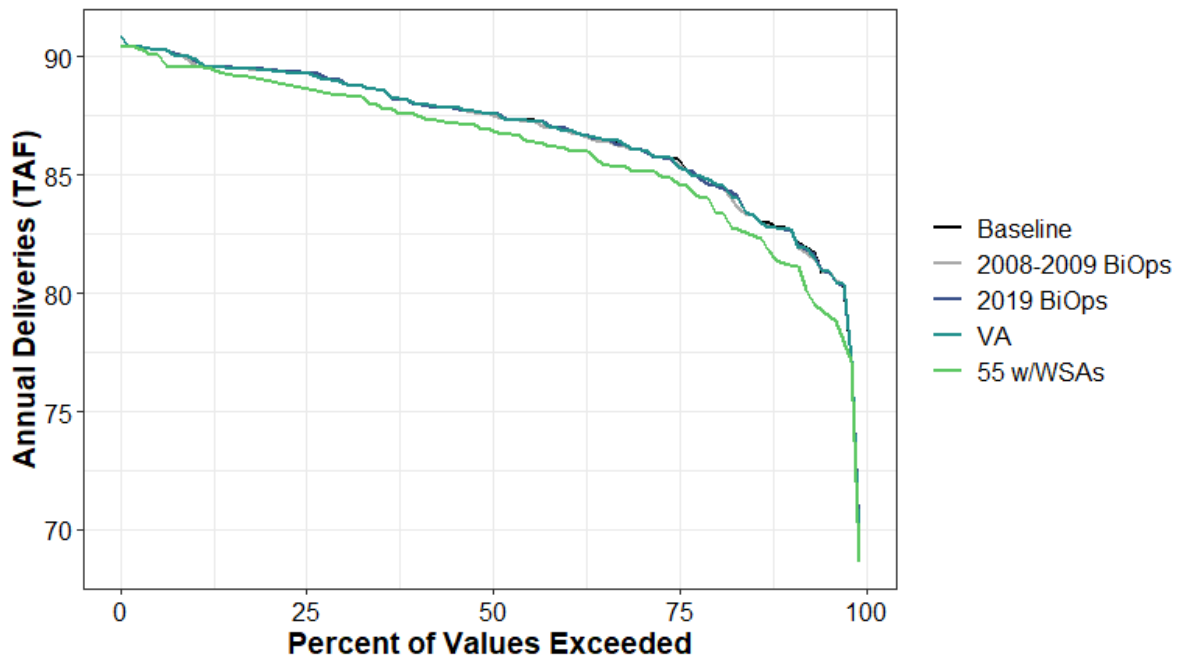
Table H1a2-408. Surface Water Supplied to Upper Watershed and Foothill (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 174      | 174             | 174        | 174 | 174       |
| 10%  | 172      | 172             | 172        | 172 | 171       |
| 20%  | 171      | 171             | 171        | 171 | 170       |
| 30%  | 169      | 169             | 169        | 169 | 168       |
| 40%  | 164      | 164             | 164        | 164 | 163       |
| 50%  | 162      | 162             | 162        | 162 | 161       |
| 60%  | 158      | 158             | 158        | 158 | 157       |
| 70%  | 153      | 153             | 153        | 153 | 151       |
| 80%  | 147      | 147             | 147        | 147 | 146       |
| 90%  | 139      | 139             | 139        | 139 | 139       |
| 100% | 121      | 121             | 121        | 121 | 119       |
| Mean | 158      | 159             | 159        | 159 | 157       |

Table H1a2-409. Surface Water Supplied to Upper Watershed and Foothill (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 139      | 139             | 139        | 139 | 138       |
| D   | 150      | 150             | 150        | 151 | 150       |
| BN  | 160      | 160             | 160        | 160 | 159       |
| AN  | 165      | 165             | 165        | 165 | 163       |
| W   | 171      | 171             | 171        | 171 | 170       |
| All | 158      | 159             | 159        | 159 | 157       |

## H1a2.6.43 Upper Watershed and Foothill (Urban)



**Figure H1a2-203. Surface Water Supplied to Upper Watershed and Foothill (Urban) Annual Percent Exceedance Plot.**

**Table H1a2-410. Surface Water Supplied to Upper Watershed and Foothill (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 91       | 91              | 91         | 91 | 90        |
| 10%  | 90       | 90              | 90         | 90 | 90        |
| 20%  | 89       | 89              | 89         | 89 | 89        |
| 30%  | 89       | 89              | 89         | 89 | 88        |
| 40%  | 88       | 88              | 88         | 88 | 88        |
| 50%  | 88       | 88              | 88         | 88 | 87        |
| 60%  | 87       | 87              | 87         | 87 | 86        |
| 70%  | 86       | 86              | 86         | 86 | 85        |
| 80%  | 85       | 85              | 85         | 85 | 84        |
| 90%  | 83       | 83              | 83         | 83 | 81        |
| 100% | 70       | 70              | 70         | 69 | 69        |
| Mean | 87       | 87              | 87         | 87 | 86        |

**Table H1a2-411. Surface Water Supplied to Upper Watershed and Foothill (Urban) Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 81       | 81              | 81         | 81 | 80        |
| D   | 86       | 86              | 86         | 86 | 85        |
| BN  | 88       | 88              | 88         | 88 | 87        |
| AN  | 88       | 88              | 88         | 88 | 88        |
| W   | 89       | 89              | 89         | 89 | 89        |
| All | 87       | 87              | 87         | 87 | 86        |

## H1a2.6.44 San Francisco Bay Area (Agricultural)

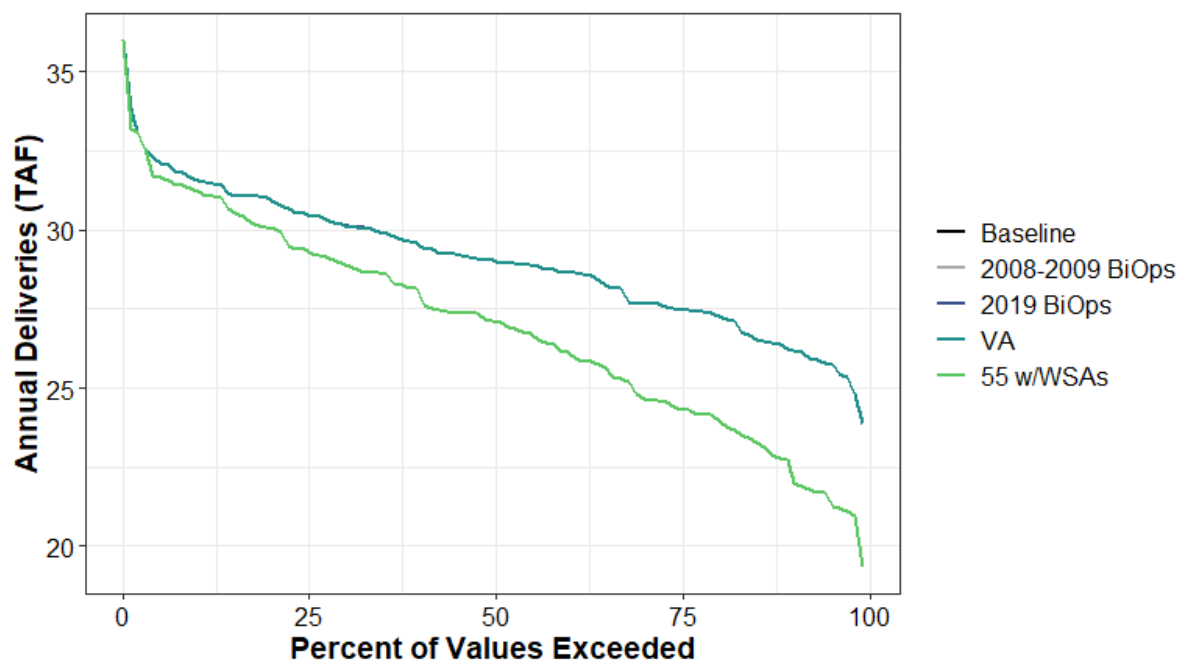


Figure H1a2-204. Total Water Supplied to San Francisco Bay Area (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-412. Total Water Supplied to San Francisco Bay Area (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 36       | 36              | 36         | 36 | 36        |
| 10%  | 32       | 32              | 32         | 32 | 31        |
| 20%  | 31       | 31              | 31         | 31 | 30        |
| 30%  | 30       | 30              | 30         | 30 | 29        |
| 40%  | 30       | 30              | 30         | 30 | 28        |
| 50%  | 29       | 29              | 29         | 29 | 27        |
| 60%  | 29       | 29              | 29         | 29 | 26        |
| 70%  | 28       | 28              | 28         | 28 | 25        |
| 80%  | 27       | 27              | 27         | 27 | 24        |
| 90%  | 26       | 26              | 26         | 26 | 23        |
| 100% | 24       | 24              | 24         | 24 | 19        |
| Mean | 29       | 29              | 29         | 29 | 27        |

Table H1a2-413. Total Water Supplied to San Francisco Bay Area (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 31       | 31              | 31         | 31 | 28        |
| D   | 30       | 30              | 30         | 30 | 29        |
| BN  | 29       | 29              | 29         | 29 | 26        |
| AN  | 28       | 28              | 28         | 28 | 26        |
| W   | 27       | 27              | 27         | 27 | 26        |
| All | 29       | 29              | 29         | 29 | 27        |

## H1a2.6.45 San Francisco Bay Area (Urban)

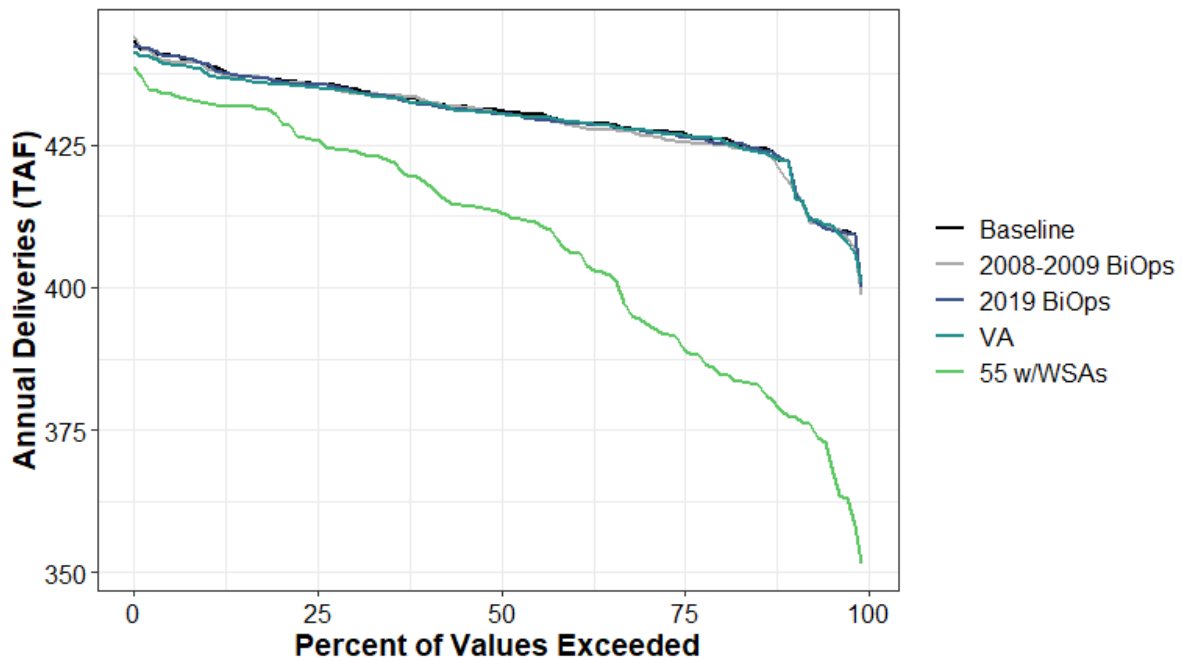


Figure H1a2-205. Surface Water Supplied to San Francisco Bay Area (Urban) Annual Percent Exceedance Plot.

Table H1a2-414. Surface Water Supplied to San Francisco Bay Area (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 443      | 444             | 442        | 442 | 438       |
| 10%  | 439      | 438             | 439        | 437 | 432       |
| 20%  | 436      | 436             | 436        | 436 | 429       |
| 30%  | 435      | 434             | 435        | 434 | 424       |
| 40%  | 433      | 433             | 432        | 432 | 418       |
| 50%  | 431      | 431             | 431        | 431 | 413       |
| 60%  | 429      | 428             | 429        | 429 | 406       |
| 70%  | 428      | 427             | 427        | 428 | 394       |
| 80%  | 426      | 425             | 425        | 426 | 386       |
| 90%  | 421      | 418             | 421        | 421 | 377       |
| 100% | 400      | 399             | 400        | 401 | 351       |
| Mean | 430      | 429             | 430        | 429 | 408       |

Table H1a2-415. Surface Water Supplied to San Francisco Bay Area (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 420      | 420             | 420        | 420 | 390       |
| D   | 432      | 431             | 431        | 431 | 392       |
| BN  | 432      | 431             | 431        | 431 | 406       |
| AN  | 432      | 432             | 432        | 431 | 420       |
| W   | 432      | 431             | 432        | 432 | 426       |
| All | 430      | 429             | 430        | 429 | 408       |

## H1a2.6.46 Total CVP Deliveries

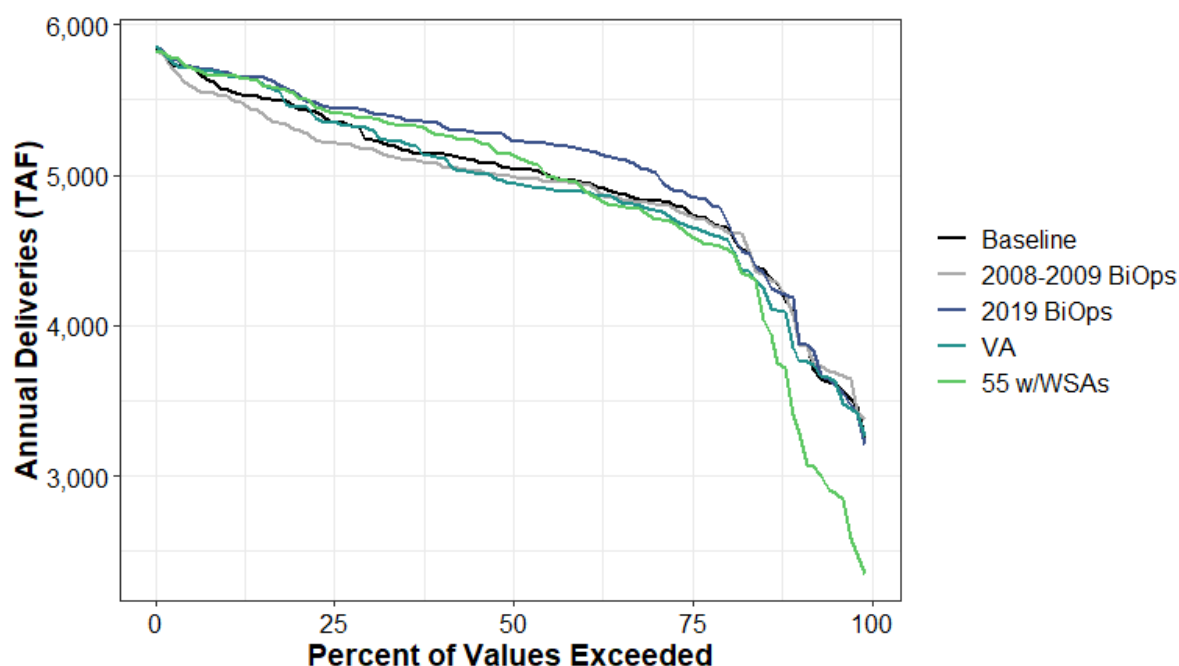


Figure H1a2-206. Surface Water Supplied to Total CVP Deliveries Annual Percent Exceedance Plot.

Table H1a2-416. Surface Water Supplied to Total CVP Deliveries Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 5,839    | 5,832           | 5,860      | 5,861 | 5,822     |
| 10%  | 5,569    | 5,526           | 5,684      | 5,669 | 5,661     |
| 20%  | 5,448    | 5,300           | 5,541      | 5,454 | 5,519     |
| 30%  | 5,237    | 5,170           | 5,423      | 5,308 | 5,382     |
| 40%  | 5,140    | 5,069           | 5,339      | 5,118 | 5,267     |
| 50%  | 5,044    | 4,996           | 5,239      | 4,946 | 5,143     |
| 60%  | 4,956    | 4,939           | 5,173      | 4,888 | 4,923     |
| 70%  | 4,830    | 4,815           | 5,027      | 4,768 | 4,718     |
| 80%  | 4,657    | 4,642           | 4,745      | 4,582 | 4,520     |
| 90%  | 4,056    | 4,032           | 4,127      | 3,835 | 3,382     |
| 100% | 3,247    | 3,377           | 3,204      | 3,264 | 2,346     |
| Mean | 4,950    | 4,903           | 5,068      | 4,916 | 4,868     |

Table H1a2-417. Surface Water Supplied to Total CVP Deliveries Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 4,035    | 4,060           | 4,041      | 4,012 | 3,280     |
| D   | 4,821    | 4,792           | 4,955      | 4,700 | 4,717     |
| BN  | 4,958    | 4,891           | 5,123      | 4,869 | 5,065     |
| AN  | 5,062    | 5,062           | 5,290      | 4,983 | 5,251     |
| W   | 5,482    | 5,378           | 5,576      | 5,558 | 5,549     |
| All | 4,950    | 4,903           | 5,068      | 4,916 | 4,868     |

## H1a2.6.47 Total CVP North of Delta

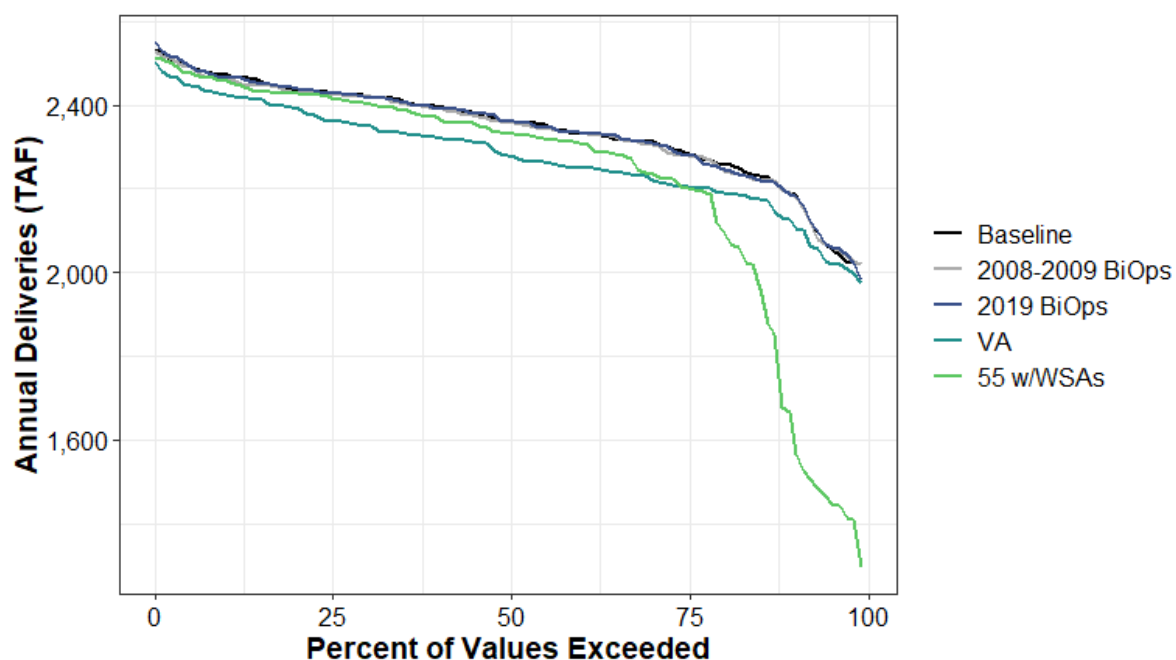


Figure H1a2-207. Surface Water Supplied to Total CVP North of Delta Annual Percent Exceedance Plot.

Table H1a2-418. Surface Water Supplied to Total CVP North of Delta Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 2,534    | 2,529           | 2,552      | 2,502 | 2,514     |
| 10%  | 2,473    | 2,461           | 2,465      | 2,424 | 2,457     |
| 20%  | 2,438    | 2,431           | 2,442      | 2,392 | 2,429     |
| 30%  | 2,423    | 2,421           | 2,419      | 2,350 | 2,405     |
| 40%  | 2,398    | 2,392           | 2,393      | 2,323 | 2,370     |
| 50%  | 2,363    | 2,357           | 2,363      | 2,279 | 2,334     |
| 60%  | 2,333    | 2,334           | 2,335      | 2,250 | 2,311     |
| 70%  | 2,313    | 2,305           | 2,311      | 2,226 | 2,236     |
| 80%  | 2,260    | 2,252           | 2,252      | 2,191 | 2,111     |
| 90%  | 2,187    | 2,187           | 2,188      | 2,123 | 1,646     |
| 100% | 2,019    | 2,022           | 1,981      | 1,976 | 1,295     |
| Mean | 2,344    | 2,339           | 2,343      | 2,279 | 2,226     |

Table H1a2-419. Surface Water Supplied to Total CVP North of Delta Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 2,176    | 2,177           | 2,174      | 2,172 | 1,619     |
| D   | 2,343    | 2,335           | 2,343      | 2,221 | 2,231     |
| BN  | 2,390    | 2,380           | 2,389      | 2,268 | 2,378     |
| AN  | 2,391    | 2,390           | 2,391      | 2,278 | 2,393     |
| W   | 2,385    | 2,383           | 2,385      | 2,385 | 2,381     |
| All | 2,344    | 2,339           | 2,343      | 2,279 | 2,226     |

## H1a2.6.48 CVP North of Delta Water Service (Agricultural)

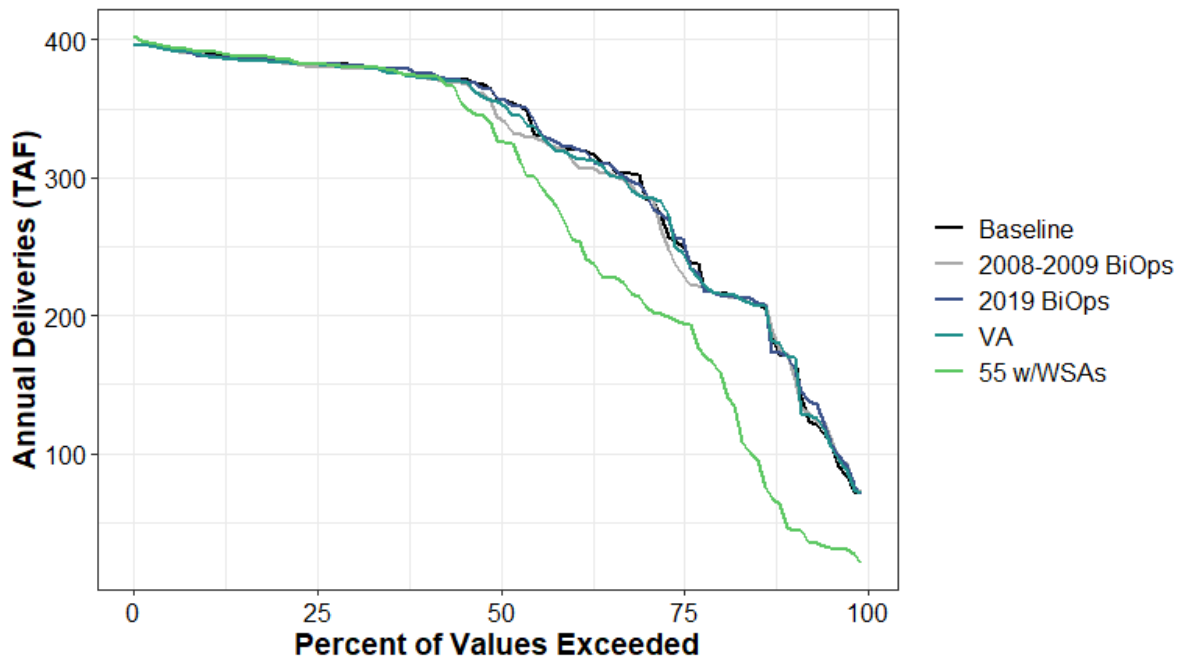


Figure H1a2-208. Surface Water Supplied to CVP North of Delta Water Service (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-420. Surface Water Supplied to CVP North of Delta Water Service (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 397      | 397             | 397        | 397 | 403       |
| 10%  | 390      | 388             | 388        | 388 | 391       |
| 20%  | 384      | 384             | 384        | 384 | 387       |
| 30%  | 382      | 379             | 381        | 380 | 380       |
| 40%  | 374      | 373             | 375        | 372 | 374       |
| 50%  | 356      | 344             | 357        | 355 | 327       |
| 60%  | 320      | 314             | 322        | 317 | 258       |
| 70%  | 292      | 287             | 291        | 286 | 210       |
| 80%  | 216      | 217             | 216        | 217 | 163       |
| 90%  | 171      | 169             | 169        | 170 | 46        |
| 100% | 71       | 73              | 70         | 71  | 20        |
| Mean | 312      | 308             | 312        | 310 | 275       |

Table H1a2-421. Surface Water Supplied to CVP North of Delta Water Service (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 167      | 168             | 167        | 169 | 55        |
| D   | 275      | 268             | 275        | 274 | 202       |
| BN  | 327      | 318             | 328        | 319 | 311       |
| AN  | 373      | 372             | 375        | 373 | 373       |
| W   | 382      | 381             | 382        | 382 | 384       |
| All | 312      | 308             | 312        | 310 | 275       |

## H1a2.6.49 CVP North of Delta Water Service (M&I)

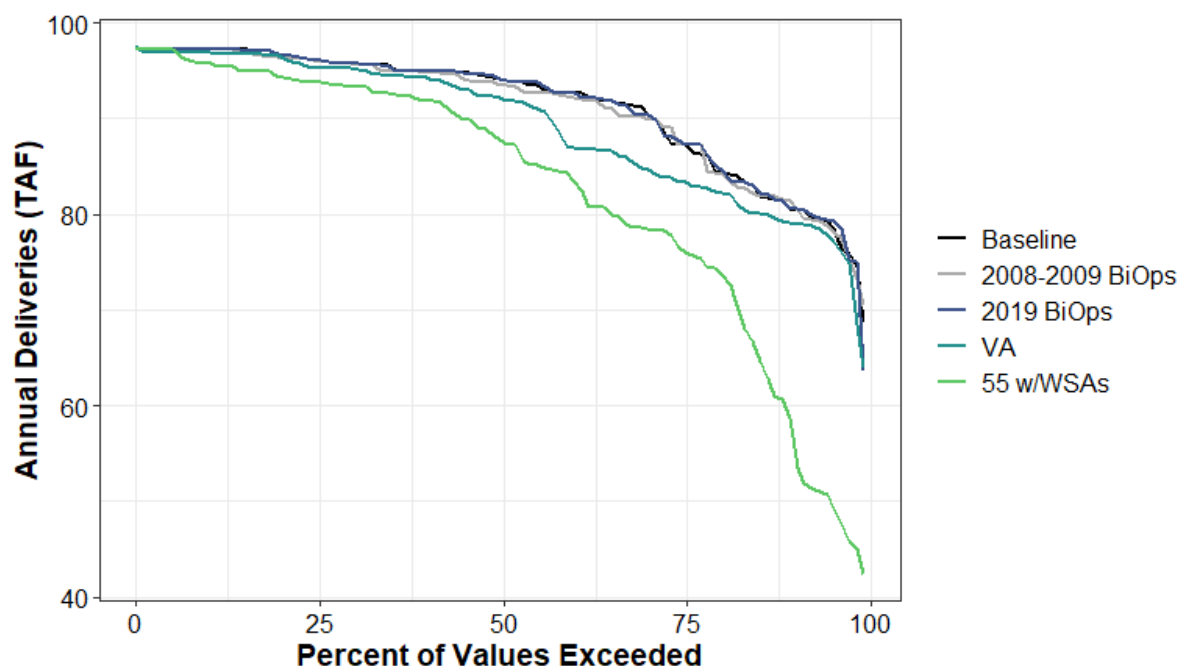


Figure H1a2-209. Surface Water Supplied to CVP North of Delta Water Service (M&I) Annual Percent Exceedance Plot.

Table H1a2-422. Surface Water Supplied to CVP North of Delta Water Service (M&I) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 97       | 97              | 97         | 98 | 97        |
| 10%  | 97       | 97              | 97         | 97 | 96        |
| 20%  | 97       | 96              | 97         | 96 | 94        |
| 30%  | 96       | 96              | 96         | 95 | 93        |
| 40%  | 95       | 95              | 95         | 94 | 92        |
| 50%  | 94       | 93              | 94         | 92 | 88        |
| 60%  | 93       | 92              | 93         | 87 | 84        |
| 70%  | 91       | 90              | 90         | 85 | 78        |
| 80%  | 84       | 84              | 85         | 82 | 74        |
| 90%  | 81       | 81              | 81         | 79 | 58        |
| 100% | 69       | 70              | 64         | 64 | 42        |
| Mean | 91       | 91              | 91         | 89 | 82        |

Table H1a2-423. Surface Water Supplied to CVP North of Delta Water Service (M&I) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 83       | 83              | 83         | 80 | 55        |
| D   | 91       | 90              | 91         | 83 | 79        |
| BN  | 91       | 91              | 91         | 91 | 87        |
| AN  | 93       | 94              | 94         | 94 | 90        |
| W   | 95       | 95              | 95         | 95 | 93        |
| All | 91       | 91              | 91         | 89 | 82        |

## H1a2.6.50 CVP Settlement (Agricultural)

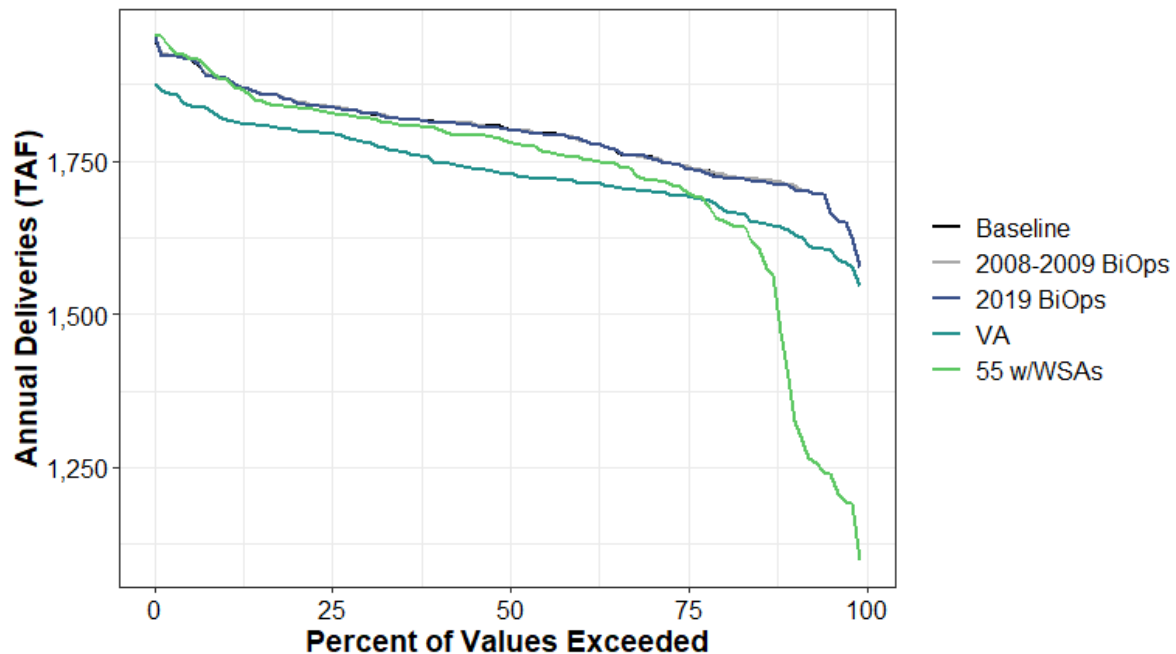


Figure H1a2-210. Surface Water Supplied to CVP Settlement (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-424. Surface Water Supplied to CVP Settlement (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,950    | 1,951           | 1,951      | 1,877 | 1,955     |
| 10%  | 1,883    | 1,883           | 1,885      | 1,819 | 1,883     |
| 20%  | 1,847    | 1,848           | 1,846      | 1,800 | 1,837     |
| 30%  | 1,828    | 1,829           | 1,828      | 1,780 | 1,820     |
| 40%  | 1,814    | 1,813           | 1,813      | 1,747 | 1,803     |
| 50%  | 1,802    | 1,802           | 1,803      | 1,729 | 1,781     |
| 60%  | 1,785    | 1,785           | 1,786      | 1,715 | 1,756     |
| 70%  | 1,756    | 1,755           | 1,756      | 1,701 | 1,719     |
| 80%  | 1,726    | 1,730           | 1,723      | 1,677 | 1,656     |
| 90%  | 1,711    | 1,711           | 1,709      | 1,637 | 1,383     |
| 100% | 1,576    | 1,576           | 1,577      | 1,547 | 1,098     |
| Mean | 1,794    | 1,794           | 1,793      | 1,733 | 1,722     |

Table H1a2-425. Surface Water Supplied to CVP Settlement (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,784    | 1,784           | 1,782      | 1,782 | 1,368     |
| D   | 1,830    | 1,830           | 1,829      | 1,716 | 1,804     |
| BN  | 1,824    | 1,825           | 1,823      | 1,710 | 1,832     |
| AN  | 1,778    | 1,778           | 1,777      | 1,665 | 1,785     |
| W   | 1,759    | 1,759           | 1,759      | 1,759 | 1,756     |
| All | 1,794    | 1,794           | 1,793      | 1,733 | 1,722     |

## H1a2.6.51 CVP Settlement (M&I)

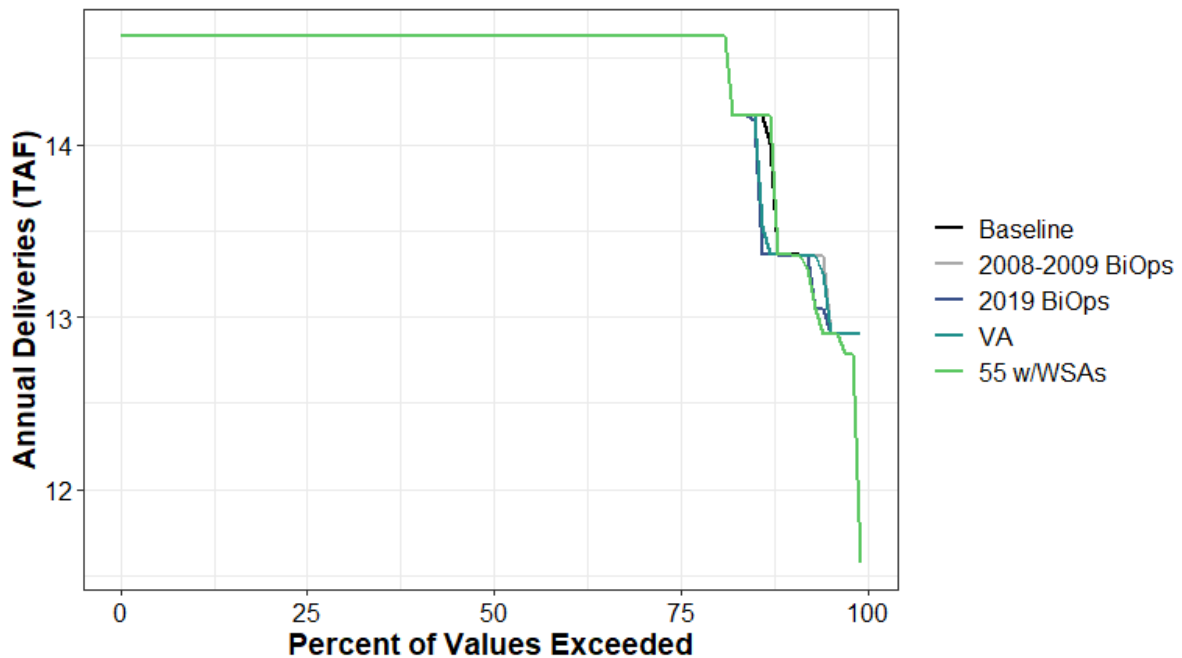


Figure H1a2-211. Surface Water Supplied to CVP Settlement (M&I) Annual Percent Exceedance Plot.

Table H1a2-426. Surface Water Supplied to CVP Settlement (M&I) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 10%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 20%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 30%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 40%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 50%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 60%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 70%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 80%  | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| 90%  | 13.4     | 13.4            | 13.4       | 13.4 | 13.4      |
| 100% | 12.9     | 12.9            | 12.9       | 12.9 | 11.6      |
| Mean | 14.4     | 14.4            | 14.4       | 14.4 | 14.4      |

Table H1a2-427. Surface Water Supplied to CVP Settlement (M&I) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|-----|----------|-----------------|------------|------|-----------|
| C   | 13.6     | 13.6            | 13.6       | 13.6 | 13.5      |
| D   | 14.5     | 14.5            | 14.5       | 14.5 | 14.5      |
| BN  | 14.6     | 14.6            | 14.5       | 14.6 | 14.6      |
| AN  | 14.5     | 14.6            | 14.5       | 14.5 | 14.6      |
| W   | 14.6     | 14.6            | 14.6       | 14.6 | 14.6      |
| All | 14.4     | 14.4            | 14.4       | 14.4 | 14.4      |

## H1a2.6.52 CVP North of Delta (Refuge)

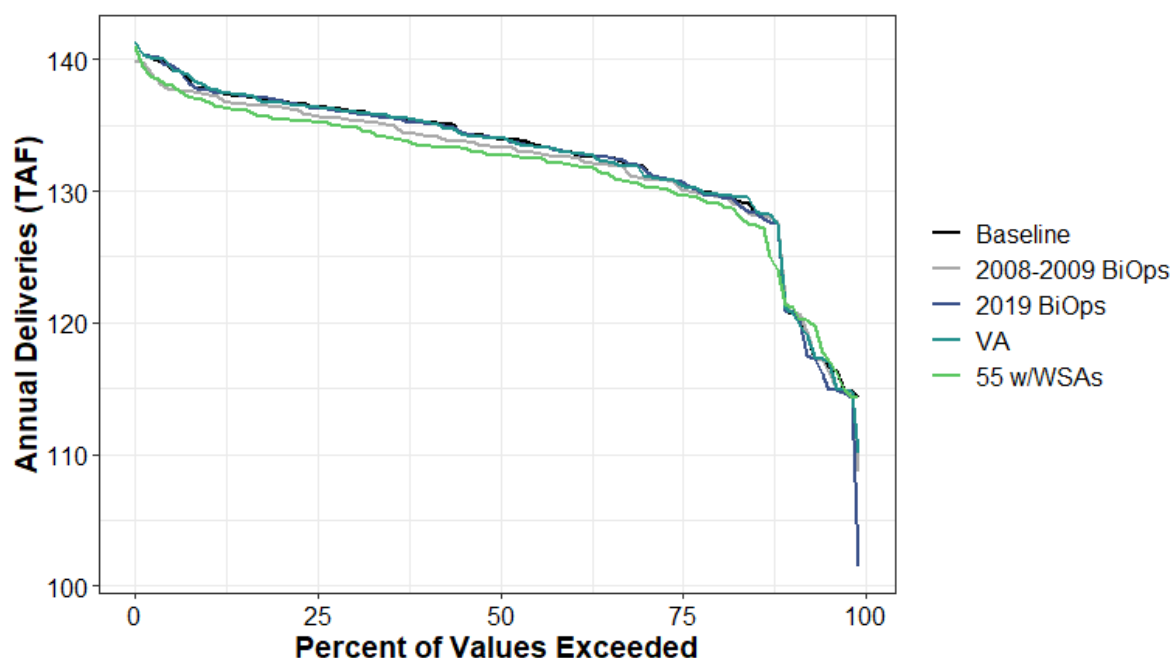


Figure H1a2-212. Surface Water Supplied to CVP North of Delta (Refuge) Annual Percent Exceedance Plot.

Table H1a2-428. Surface Water Supplied to CVP North of Delta (Refuge) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 141      | 140             | 141        | 141 | 141       |
| 10%  | 138      | 137             | 138        | 138 | 137       |
| 20%  | 137      | 136             | 137        | 137 | 135       |
| 30%  | 136      | 135             | 136        | 136 | 135       |
| 40%  | 135      | 134             | 135        | 135 | 133       |
| 50%  | 134      | 133             | 134        | 134 | 133       |
| 60%  | 133      | 133             | 133        | 133 | 132       |
| 70%  | 132      | 131             | 132        | 131 | 130       |
| 80%  | 130      | 130             | 130        | 130 | 129       |
| 90%  | 121      | 121             | 121        | 121 | 121       |
| 100% | 114      | 109             | 101        | 110 | 114       |
| Mean | 133      | 132             | 132        | 132 | 131       |

Table H1a2-429. Surface Water Supplied to CVP North of Delta (Refuge) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 128      | 128             | 128        | 128 | 128       |
| D   | 133      | 133             | 133        | 133 | 132       |
| BN  | 133      | 132             | 133        | 133 | 133       |
| AN  | 132      | 131             | 132        | 132 | 130       |
| W   | 134      | 134             | 134        | 134 | 133       |
| All | 133      | 132             | 132        | 132 | 131       |

## H1a2.6.53 Total CVP South of Delta

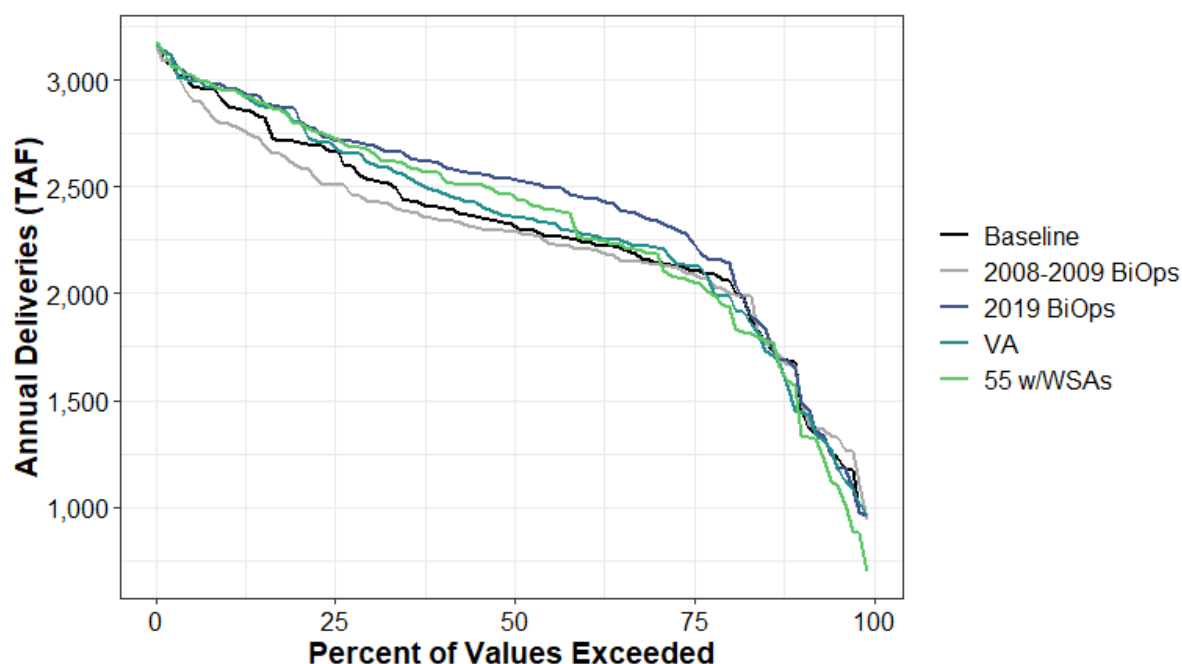


Figure H1a2-213. Surface Water Supplied to Total CVP South of Delta Annual Percent Exceedance Plot.

Table H1a2-430. Surface Water Supplied to Total CVP South of Delta Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 3,179    | 3,159           | 3,179      | 3,172 | 3,178     |
| 10%  | 2,885    | 2,794           | 2,961      | 2,951 | 2,953     |
| 20%  | 2,712    | 2,595           | 2,830      | 2,803 | 2,795     |
| 30%  | 2,537    | 2,435           | 2,700      | 2,614 | 2,666     |
| 40%  | 2,403    | 2,347           | 2,609      | 2,477 | 2,557     |
| 50%  | 2,328    | 2,292           | 2,536      | 2,362 | 2,464     |
| 60%  | 2,240    | 2,210           | 2,449      | 2,281 | 2,261     |
| 70%  | 2,150    | 2,139           | 2,343      | 2,218 | 2,189     |
| 80%  | 2,067    | 2,019           | 2,149      | 1,987 | 1,947     |
| 90%  | 1,638    | 1,629           | 1,616      | 1,453 | 1,522     |
| 100% | 963      | 936             | 964        | 960   | 697       |
| Mean | 2,294    | 2,251           | 2,413      | 2,324 | 2,327     |

Table H1a2-431. Surface Water Supplied to Total CVP South of Delta Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,568    | 1,592           | 1,576      | 1,548 | 1,375     |
| D   | 2,170    | 2,148           | 2,303      | 2,170 | 2,168     |
| BN  | 2,250    | 2,193           | 2,416      | 2,282 | 2,362     |
| AN  | 2,346    | 2,348           | 2,573      | 2,380 | 2,532     |
| W   | 2,778    | 2,677           | 2,873      | 2,855 | 2,849     |
| All | 2,294    | 2,251           | 2,413      | 2,324 | 2,327     |

## H1a2.6.54 CVP South of Delta Water Service (Agricultural)

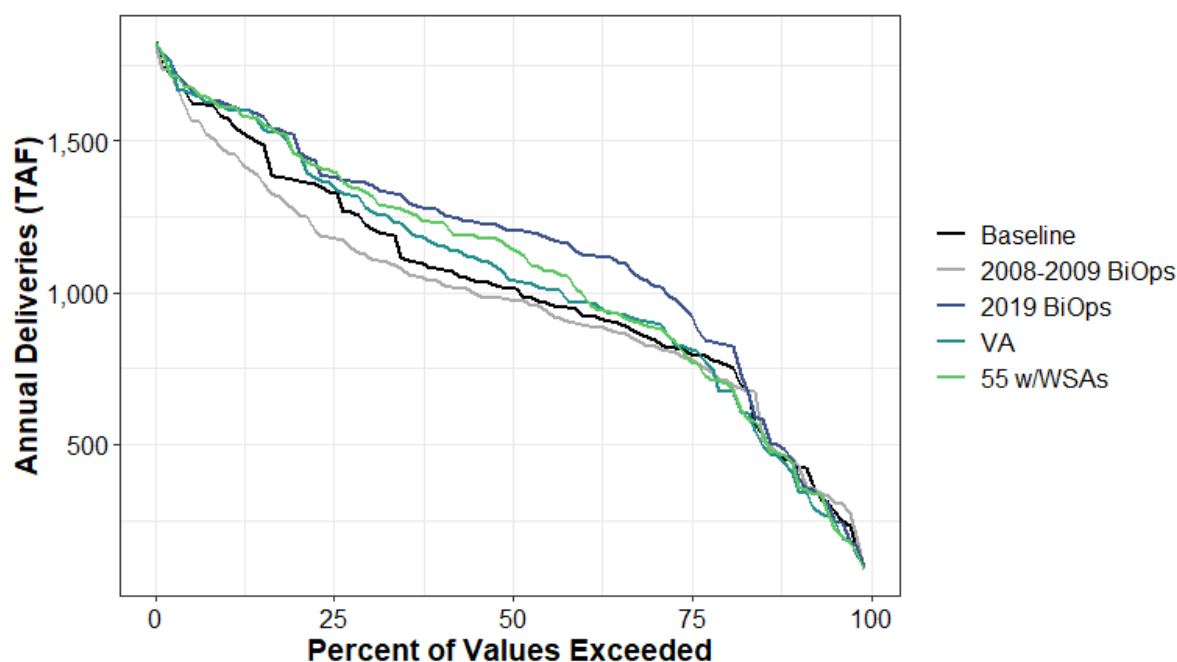


Figure H1a2-214. Surface Water Supplied to CVP South of Delta Water Service (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-432. Surface Water Supplied to CVP South of Delta Water Service (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,827    | 1,808           | 1,827      | 1,821 | 1,827     |
| 10%  | 1,576    | 1,464           | 1,622      | 1,607 | 1,611     |
| 20%  | 1,372    | 1,262           | 1,485      | 1,457 | 1,453     |
| 30%  | 1,217    | 1,120           | 1,360      | 1,275 | 1,327     |
| 40%  | 1,077    | 1,034           | 1,273      | 1,156 | 1,230     |
| 50%  | 1,015    | 979             | 1,204      | 1,039 | 1,148     |
| 60%  | 930      | 897             | 1,127      | 968   | 999       |
| 70%  | 847      | 823             | 1,028      | 903   | 887       |
| 80%  | 768      | 713             | 833        | 676   | 704       |
| 90%  | 444      | 453             | 436        | 396   | 421       |
| 100% | 91       | 90              | 92         | 91    | 88        |
| Mean | 1,017    | 971             | 1,129      | 1,045 | 1,069     |

Table H1a2-433. Surface Water Supplied to CVP South of Delta Water Service (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 497      | 500             | 506        | 476   | 393       |
| D   | 873      | 846             | 996        | 871   | 897       |
| BN  | 937      | 882             | 1,094      | 967   | 1,046     |
| AN  | 1,036    | 1,037           | 1,252      | 1,066 | 1,215     |
| W   | 1,443    | 1,345           | 1,531      | 1,516 | 1,513     |
| All | 1,017    | 971             | 1,129      | 1,045 | 1,069     |

## H1a2.6.55 CVP South of Delta Water Service (M&I)

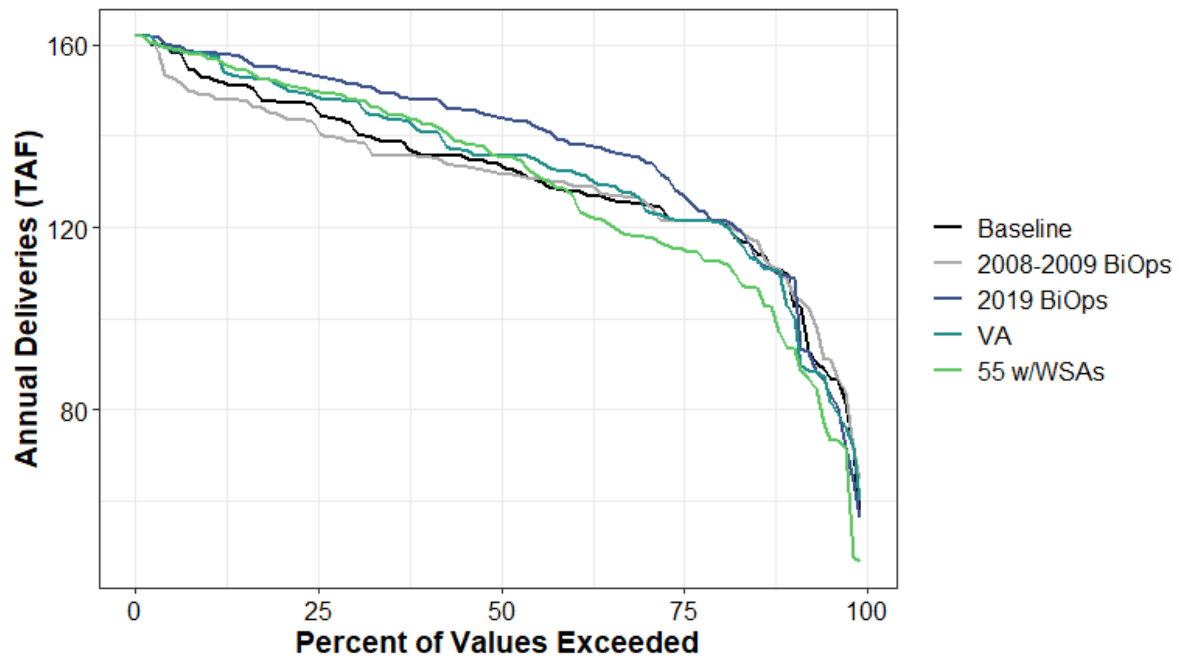


Figure H1a2-215. Surface Water Supplied to CVP South of Delta Water Service (M&I) Annual Percent Exceedance Plot.

Table H1a2-434. Surface Water Supplied to CVP South of Delta Water Service (M&I) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 162      | 162             | 162        | 162 | 162       |
| 10%  | 153      | 149             | 158        | 158 | 157       |
| 20%  | 147      | 145             | 155        | 151 | 152       |
| 30%  | 142      | 139             | 151        | 148 | 148       |
| 40%  | 136      | 135             | 148        | 141 | 143       |
| 50%  | 134      | 132             | 144        | 136 | 136       |
| 60%  | 128      | 129             | 138        | 132 | 127       |
| 70%  | 125      | 126             | 135        | 125 | 118       |
| 80%  | 122      | 121             | 122        | 121 | 113       |
| 90%  | 108      | 108             | 109        | 103 | 94        |
| 100% | 57       | 65              | 56         | 60  | 47        |
| Mean | 131      | 130             | 137        | 133 | 130       |

Table H1a2-435. Surface Water Supplied to CVP South of Delta Water Service (M&I) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 101      | 103             | 101        | 101 | 88        |
| D   | 127      | 128             | 133        | 126 | 119       |
| BN  | 130      | 129             | 139        | 133 | 134       |
| AN  | 132      | 132             | 144        | 135 | 140       |
| W   | 149      | 146             | 155        | 153 | 152       |
| All | 131      | 130             | 137        | 133 | 130       |

## H1a2.6.56 CVP SOD Exchange

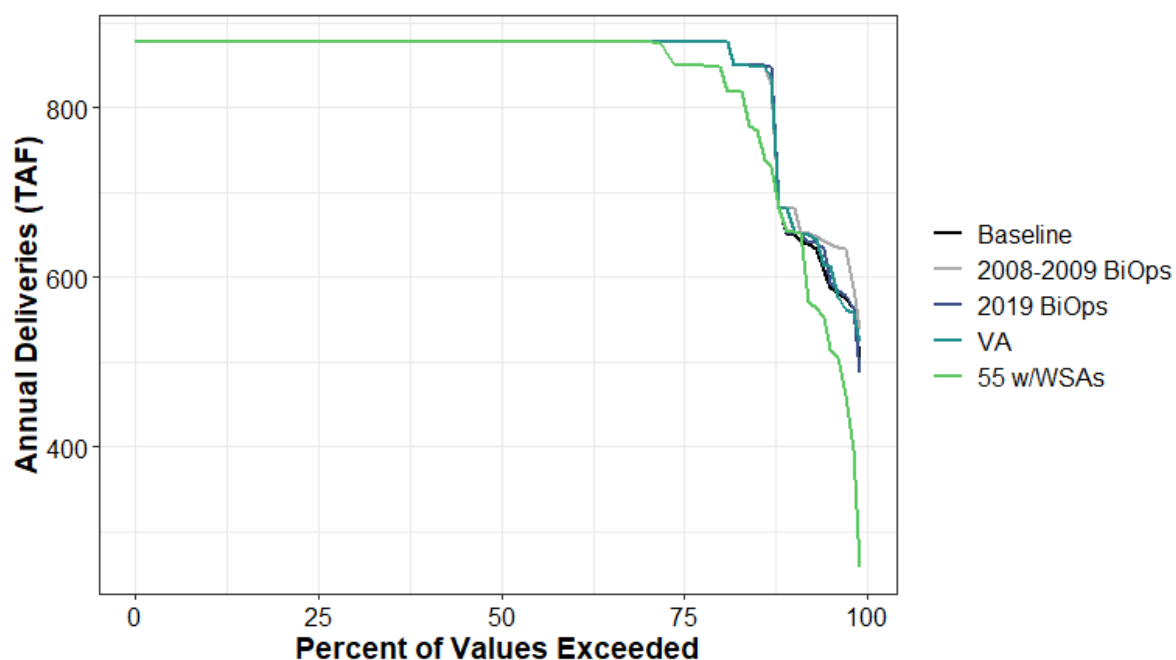


Figure H1a2-216. Surface Water Supplied to CVP SOD Exchange Annual Percent Exceedance Plot.

Table H1a2-436. Surface Water Supplied to CVP SOD Exchange Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 878      | 878             | 878        | 878 | 878       |
| 10%  | 878      | 878             | 878        | 878 | 878       |
| 20%  | 878      | 878             | 878        | 878 | 878       |
| 30%  | 878      | 878             | 878        | 878 | 878       |
| 40%  | 878      | 878             | 878        | 878 | 878       |
| 50%  | 878      | 878             | 878        | 878 | 878       |
| 60%  | 878      | 878             | 878        | 878 | 878       |
| 70%  | 878      | 878             | 878        | 878 | 878       |
| 80%  | 878      | 878             | 878        | 878 | 848       |
| 90%  | 651      | 682             | 653        | 677 | 654       |
| 100% | 504      | 538             | 486        | 523 | 257       |
| Mean | 844      | 848             | 845        | 845 | 828       |

Table H1a2-437. Surface Water Supplied to CVP SOD Exchange Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 694      | 714             | 694        | 697 | 626       |
| D   | 865      | 867             | 867        | 866 | 845       |
| BN  | 875      | 874             | 875        | 875 | 875       |
| AN  | 874      | 874             | 874        | 874 | 874       |
| W   | 877      | 877             | 877        | 877 | 875       |
| All | 844      | 848             | 845        | 845 | 828       |

## H1a2.6.57 CVP SOD Refuge

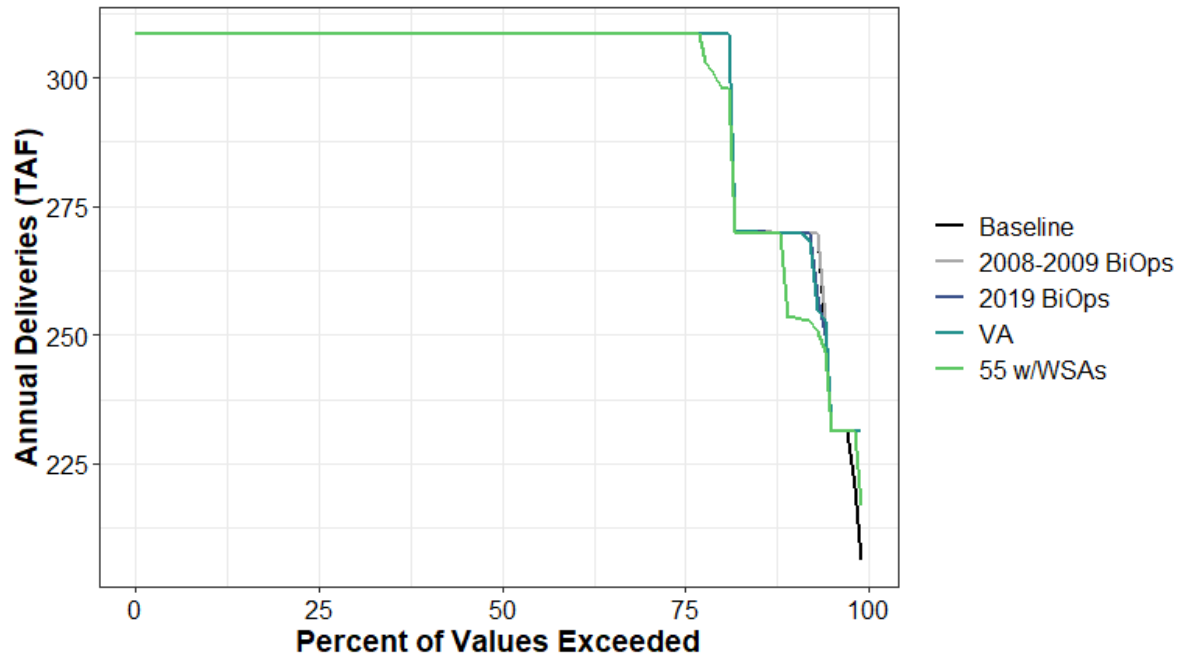


Figure H1a2-217. Surface Water Supplied to CVP SOD Refuge Annual Percent Exceedance Plot.

Table H1a2-438. Surface Water Supplied to CVP SOD Refuge Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 309      | 309             | 309        | 309 | 309       |
| 10%  | 309      | 309             | 309        | 309 | 309       |
| 20%  | 309      | 309             | 309        | 309 | 309       |
| 30%  | 309      | 309             | 309        | 309 | 309       |
| 40%  | 309      | 309             | 309        | 309 | 309       |
| 50%  | 309      | 309             | 309        | 309 | 309       |
| 60%  | 309      | 309             | 309        | 309 | 309       |
| 70%  | 309      | 309             | 309        | 309 | 309       |
| 80%  | 309      | 309             | 309        | 309 | 300       |
| 90%  | 270      | 270             | 270        | 270 | 253       |
| 100% | 206      | 231             | 231        | 231 | 217       |
| Mean | 299      | 299             | 299        | 299 | 298       |

Table H1a2-439. Surface Water Supplied to CVP SOD Refuge Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 271      | 271             | 270        | 270 | 264       |
| D   | 302      | 303             | 303        | 303 | 303       |
| BN  | 304      | 304             | 304        | 304 | 304       |
| AN  | 302      | 302             | 302        | 302 | 302       |
| W   | 307      | 307             | 307        | 307 | 307       |
| All | 299      | 299             | 299        | 299 | 298       |

## H1a2.6.58 Total SWP Deliveries

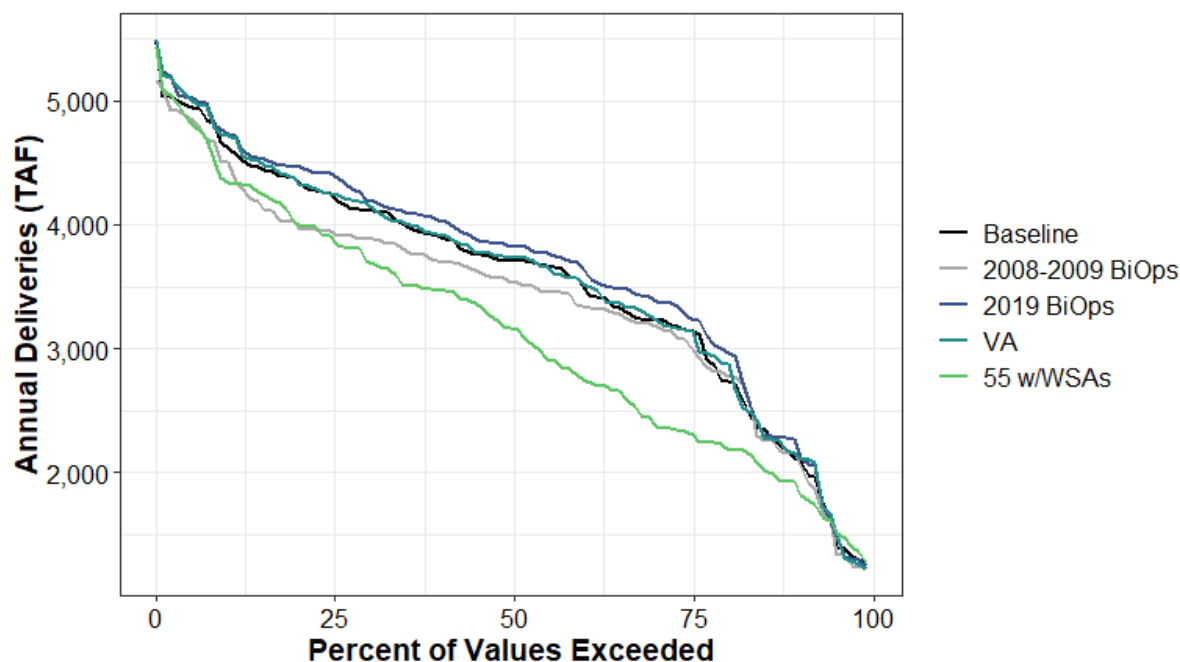


Figure H1a2-218. Surface Water Supplied to Total SWP Deliveries Annual Percent Exceedance Plot.

Table H1a2-440. Surface Water Supplied to Total SWP Deliveries Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 5,465    | 5,162           | 5,479      | 5,491 | 5,419     |
| 10%  | 4,630    | 4,505           | 4,743      | 4,725 | 4,345     |
| 20%  | 4,351    | 3,988           | 4,462      | 4,343 | 4,005     |
| 30%  | 4,112    | 3,881           | 4,195      | 4,157 | 3,697     |
| 40%  | 3,903    | 3,710           | 4,035      | 3,922 | 3,472     |
| 50%  | 3,710    | 3,530           | 3,828      | 3,738 | 3,167     |
| 60%  | 3,512    | 3,339           | 3,660      | 3,526 | 2,756     |
| 70%  | 3,231    | 3,184           | 3,396      | 3,240 | 2,400     |
| 80%  | 2,745    | 2,801           | 2,987      | 2,881 | 2,212     |
| 90%  | 2,110    | 2,137           | 2,241      | 2,144 | 1,908     |
| 100% | 1,288    | 1,232           | 1,245      | 1,223 | 1,272     |
| Mean | 3,551    | 3,409           | 3,659      | 3,576 | 3,136     |

Table H1a2-441. Surface Water Supplied to Total SWP Deliveries Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 2,043    | 1,961           | 2,078      | 2,063 | 1,888     |
| D   | 3,234    | 3,112           | 3,353      | 3,225 | 2,427     |
| BN  | 3,631    | 3,529           | 3,779      | 3,632 | 3,094     |
| AN  | 3,782    | 3,714           | 3,953      | 3,799 | 3,436     |
| W   | 4,446    | 4,200           | 4,534      | 4,517 | 4,227     |
| All | 3,551    | 3,409           | 3,659      | 3,576 | 3,136     |

## H1a2.6.59 Total SWP Table A

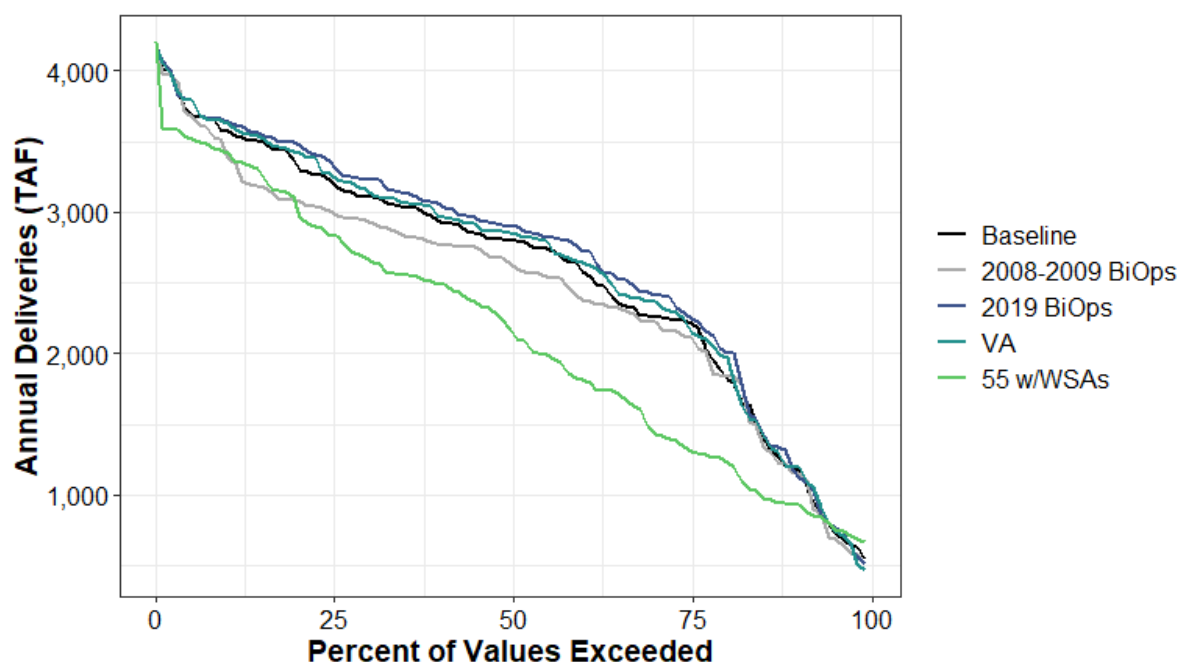


Figure H1a2-219. Surface Water Supplied to Total SWP Table A Annual Percent Exceedance Plot.

Table H1a2-442. Surface Water Supplied to Total SWP Table A Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 4,190    | 4,149           | 4,176      | 4,172 | 4,205     |
| 10%  | 3,577    | 3,408           | 3,638      | 3,635 | 3,419     |
| 20%  | 3,326    | 3,075           | 3,483      | 3,422 | 3,023     |
| 30%  | 3,110    | 2,934           | 3,233      | 3,147 | 2,663     |
| 40%  | 2,941    | 2,774           | 3,057      | 2,974 | 2,488     |
| 50%  | 2,796    | 2,634           | 2,903      | 2,858 | 2,168     |
| 60%  | 2,595    | 2,384           | 2,732      | 2,645 | 1,816     |
| 70%  | 2,263    | 2,228           | 2,424      | 2,368 | 1,451     |
| 80%  | 1,866    | 1,845           | 2,028      | 1,983 | 1,246     |
| 90%  | 1,183    | 1,155           | 1,168      | 1,201 | 935       |
| 100% | 549      | 510             | 513        | 469   | 664       |
| Mean | 2,595    | 2,467           | 2,682      | 2,634 | 2,142     |

Table H1a2-443. Surface Water Supplied to Total SWP Table A Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,190    | 1,101           | 1,209      | 1,198 | 1,015     |
| D   | 2,273    | 2,155           | 2,361      | 2,300 | 1,451     |
| BN  | 2,700    | 2,593           | 2,835      | 2,750 | 2,148     |
| AN  | 2,830    | 2,760           | 2,988      | 2,891 | 2,425     |
| W   | 3,421    | 3,229           | 3,484      | 3,467 | 3,133     |
| All | 2,595    | 2,467           | 2,682      | 2,634 | 2,142     |

## H1a2.6.60 SWP Table A North of Delta

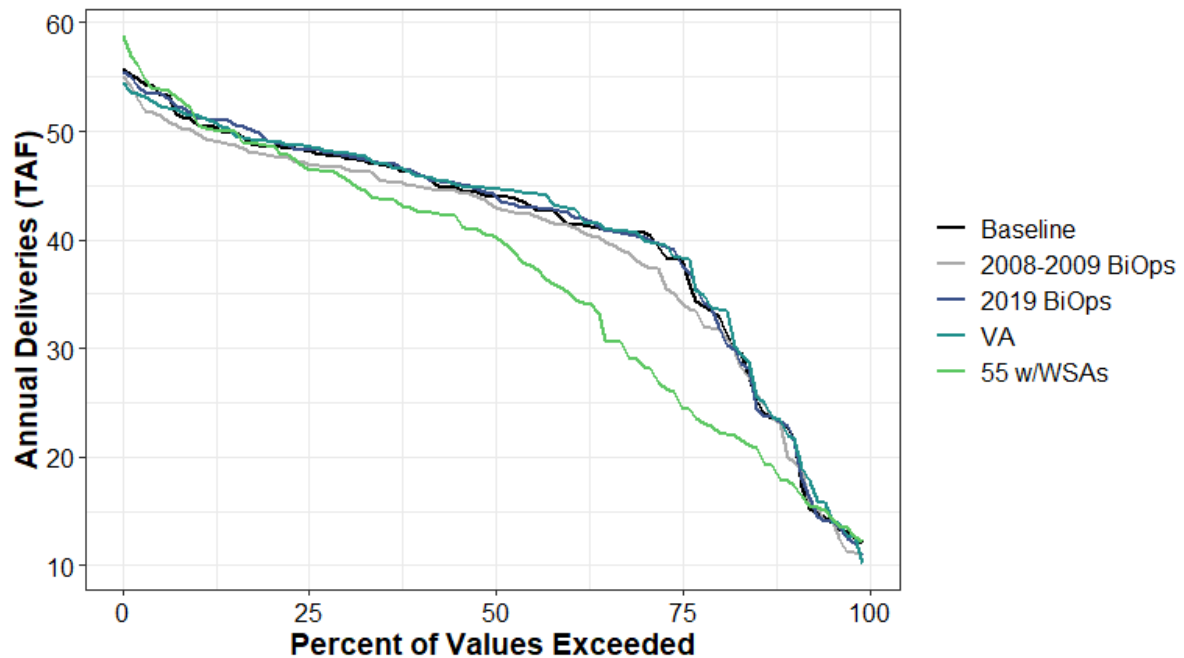


Figure H1a2-220. Surface Water Supplied to SWP Table A North of Delta Annual Percent Exceedance Plot.

Table H1a2-444. Surface Water Supplied to SWP Table A North of Delta Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------|----------|-----------------|------------|----|-----------|
| 0%   | 56       | 55              | 55         | 55 | 59        |
| 10%  | 51       | 50              | 51         | 51 | 51        |
| 20%  | 49       | 48              | 49         | 49 | 49        |
| 30%  | 48       | 47              | 48         | 48 | 46        |
| 40%  | 46       | 45              | 46         | 46 | 43        |
| 50%  | 44       | 43              | 44         | 45 | 40        |
| 60%  | 42       | 41              | 43         | 43 | 35        |
| 70%  | 41       | 38              | 40         | 40 | 29        |
| 80%  | 33       | 32              | 33         | 34 | 23        |
| 90%  | 22       | 20              | 23         | 22 | 18        |
| 100% | 12       | 11              | 11         | 10 | 12        |
| Mean | 41       | 40              | 41         | 41 | 37        |

Table H1a2-445. Surface Water Supplied to SWP Table A North of Delta Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 21       | 20              | 21         | 21 | 17        |
| D   | 37       | 36              | 37         | 38 | 27        |
| BN  | 43       | 42              | 44         | 44 | 39        |
| AN  | 46       | 45              | 46         | 45 | 44        |
| W   | 50       | 49              | 50         | 50 | 49        |
| All | 41       | 40              | 41         | 41 | 37        |

## H1a2.6.61 SWP Table A South of Delta

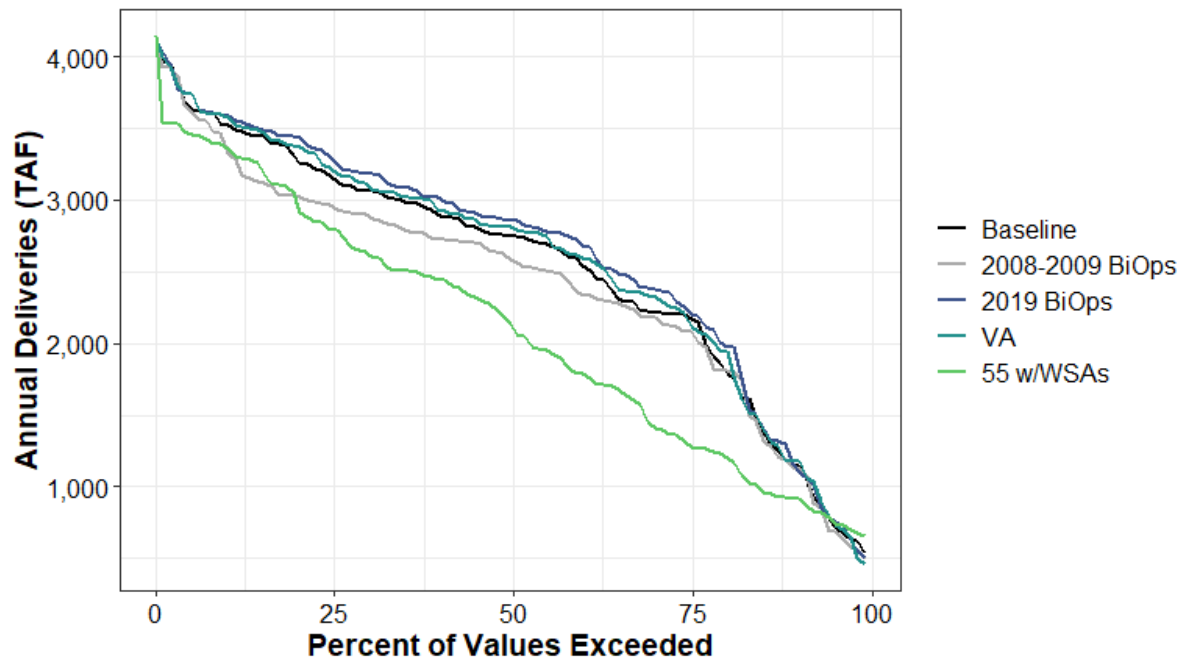


Figure H1a2-221. Surface Water Supplied to SWP Table A South of Delta Annual Percent Exceedance Plot.

Table H1a2-446. Surface Water Supplied to SWP Table A South of Delta Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 4,135    | 4,094           | 4,123      | 4,119 | 4,148     |
| 10%  | 3,528    | 3,358           | 3,588      | 3,584 | 3,369     |
| 20%  | 3,277    | 3,026           | 3,436      | 3,371 | 2,971     |
| 30%  | 3,064    | 2,888           | 3,187      | 3,100 | 2,621     |
| 40%  | 2,895    | 2,729           | 3,013      | 2,929 | 2,444     |
| 50%  | 2,750    | 2,587           | 2,861      | 2,811 | 2,133     |
| 60%  | 2,555    | 2,341           | 2,689      | 2,601 | 1,786     |
| 70%  | 2,221    | 2,184           | 2,380      | 2,326 | 1,421     |
| 80%  | 1,833    | 1,813           | 1,995      | 1,949 | 1,224     |
| 90%  | 1,160    | 1,130           | 1,144      | 1,180 | 914       |
| 100% | 535      | 494             | 499        | 458   | 651       |
| Mean | 2,555    | 2,428           | 2,641      | 2,593 | 2,105     |

Table H1a2-447. Surface Water Supplied to SWP Table A South of Delta Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 1,169    | 1,081           | 1,189      | 1,177 | 998       |
| D   | 2,236    | 2,119           | 2,324      | 2,261 | 1,424     |
| BN  | 2,657    | 2,550           | 2,792      | 2,707 | 2,108     |
| AN  | 2,784    | 2,715           | 2,941      | 2,847 | 2,381     |
| W   | 3,371    | 3,180           | 3,434      | 3,417 | 3,083     |
| All | 2,555    | 2,428           | 2,641      | 2,593 | 2,105     |

## H1a2.6.62 Total SWP Article 21

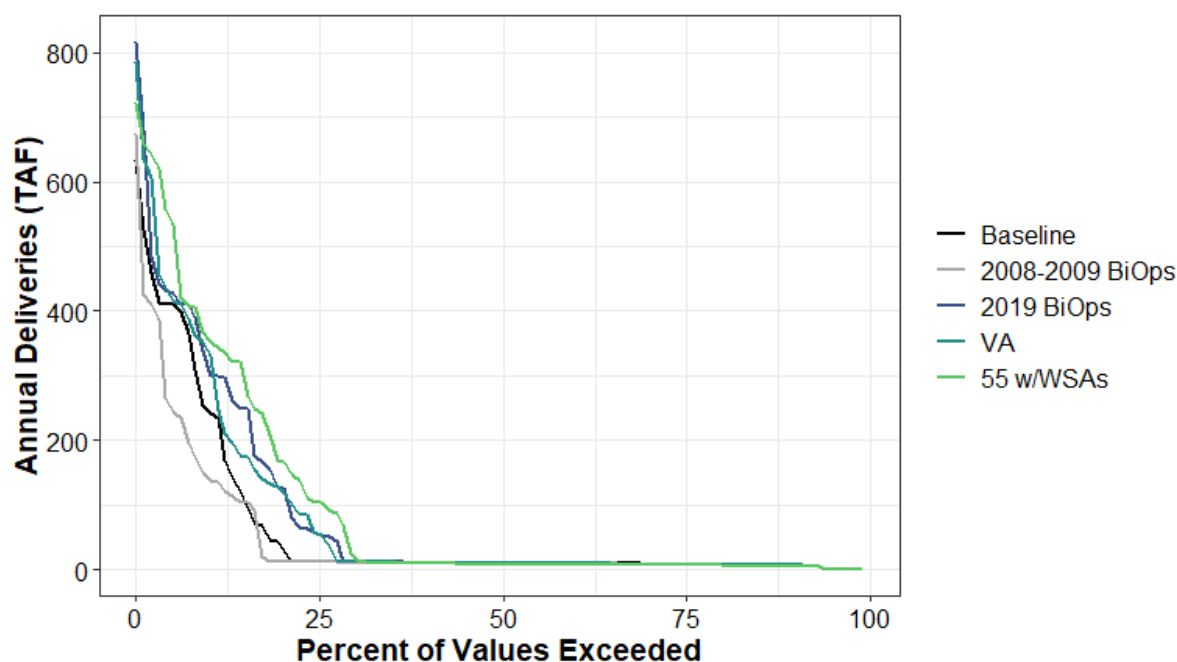


Figure H1a2-222. Surface Water Supplied to Total SWP Article 21 Annual Percent Exceedance Plot.

Table H1a2-448. Surface Water Supplied to Total SWP Article 21 Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 633      | 674             | 817        | 786 | 723       |
| 10%  | 244      | 140             | 308        | 335 | 355       |
| 20%  | 35       | 12              | 126        | 123 | 168       |
| 30%  | 11       | 11              | 12         | 12  | 19        |
| 40%  | 11       | 10              | 11         | 11  | 9         |
| 50%  | 10       | 10              | 10         | 10  | 8         |
| 60%  | 9        | 9               | 9          | 9   | 8         |
| 70%  | 9        | 8               | 8          | 8   | 7         |
| 80%  | 8        | 7               | 7          | 7   | 6         |
| 90%  | 6        | 6               | 6          | 6   | 5         |
| 100% | 0        | 0               | 0          | 0   | 0         |
| Mean | 62       | 47              | 83         | 79  | 98        |

Table H1a2-449. Surface Water Supplied to Total SWP Article 21 Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 21       | 30              | 39         | 32  | 53        |
| D   | 29       | 26              | 59         | 56  | 37        |
| BN  | 18       | 21              | 29         | 24  | 28        |
| AN  | 62       | 63              | 76         | 72  | 112       |
| W   | 136      | 82              | 161        | 160 | 204       |
| All | 62       | 47              | 83         | 79  | 98        |

## H1a2.6.63 SWP Article 21 Central Coast and Tulare

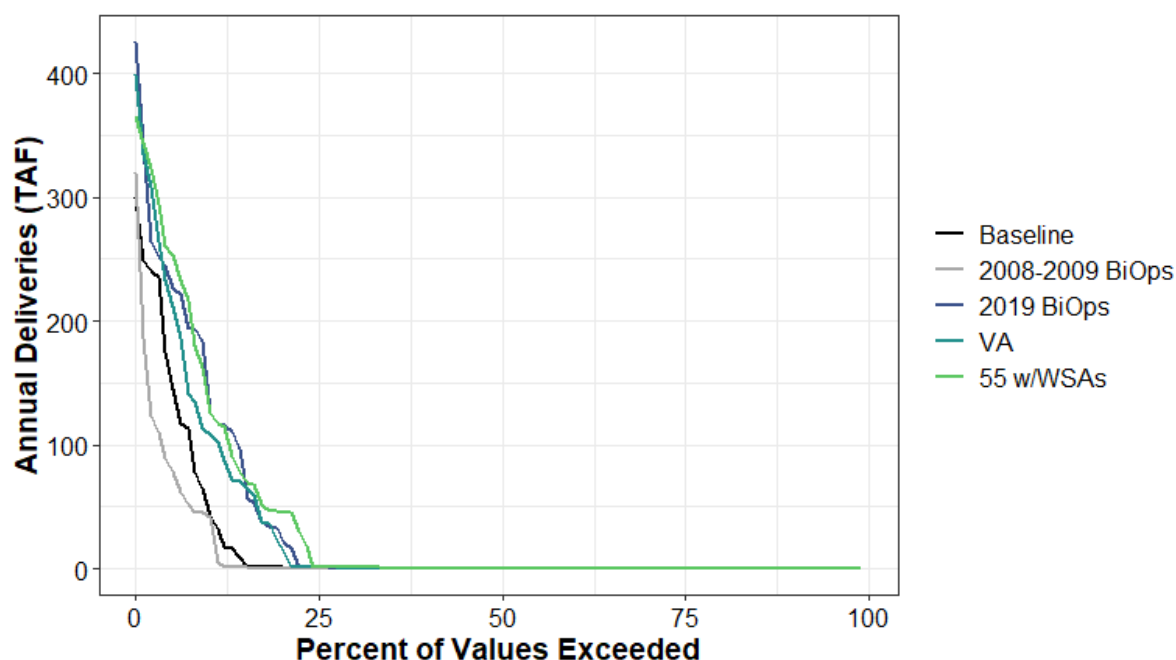


Figure H1a2-223. Surface Water Supplied to SWP Article 21 Central Coast and Tulare Annual Percent Exceedance Plot.

Table H1a2-450. Surface Water Supplied to SWP Article 21 Central Coast and Tulare Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 300      | 319             | 426        | 399 | 365       |
| 10%  | 47       | 42              | 137        | 110 | 133       |
| 20%  | 1        | 1               | 26         | 17  | 46        |
| 30%  | 1        | 1               | 1          | 1   | 1         |
| 40%  | 1        | 0               | 1          | 1   | 1         |
| 50%  | 0        | 0               | 1          | 1   | 1         |
| 60%  | 0        | 0               | 0          | 1   | 0         |
| 70%  | 0        | 0               | 0          | 0   | 0         |
| 80%  | 0        | 0               | 0          | 0   | 0         |
| 90%  | 0        | 0               | 0          | 0   | 0         |
| 100% | 0        | 0               | 0          | 0   | 0         |
| Mean | 19       | 12              | 34         | 31  | 36        |

Table H1a2-451. Surface Water Supplied to SWP Article 21 Central Coast and Tulare Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 8        | 12              | 18         | 14 | 24        |
| D   | 10       | 9               | 35         | 31 | 17        |
| BN  | 4        | 6               | 13         | 11 | 11        |
| AN  | 7        | 5               | 18         | 10 | 12        |
| W   | 45       | 21              | 63         | 60 | 83        |
| All | 19       | 12              | 34         | 31 | 36        |

## H1a2.6.64 SWP Article 21 South Bay Aqueduct

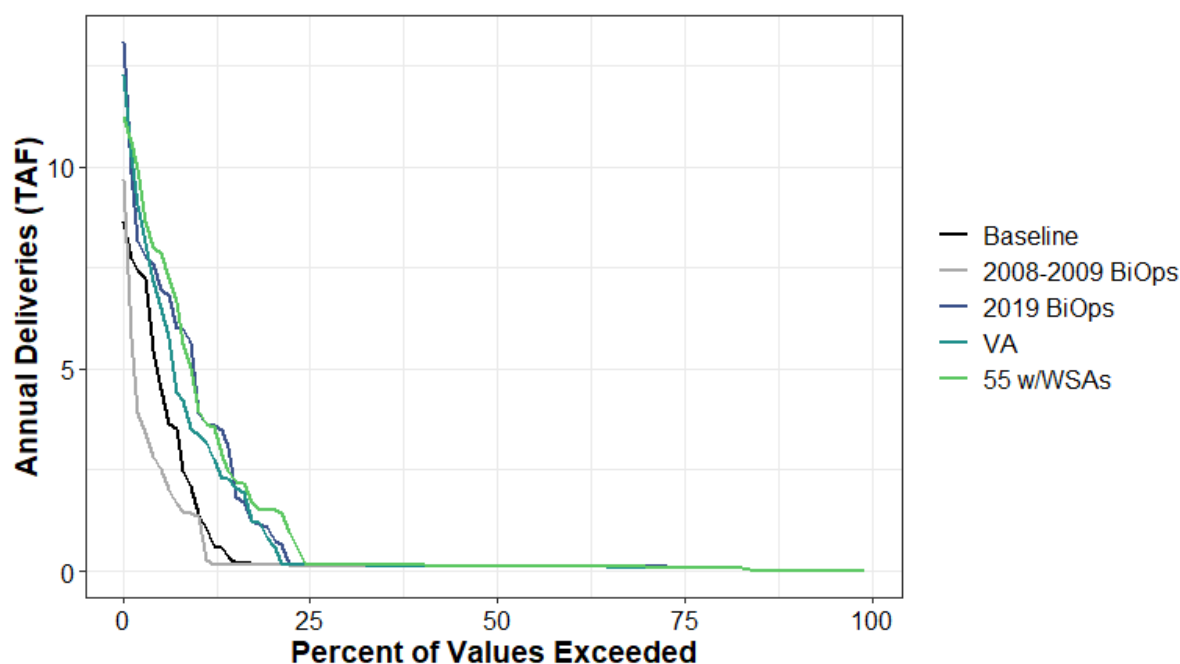


Figure H1a2-224. Surface Water Supplied to SWP Article 21 South Bay Aqueduct Annual Percent Exceedance Plot.

Table H1a2-452. Surface Water Supplied to SWP Article 21 South Bay Aqueduct Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 8.6      | 9.7             | 13.1       | 12.3 | 11.2      |
| 10%  | 1.5      | 1.4             | 4.3        | 3.4  | 4.2       |
| 20%  | 0.2      | 0.1             | 0.9        | 0.7  | 1.5       |
| 30%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.2       |
| 40%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.1       |
| 50%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.1       |
| 60%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.1       |
| 70%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.1       |
| 80%  | 0.1      | 0.1             | 0.1        | 0.1  | 0.1       |
| 90%  | 0        | 0               | 0          | 0    | 0         |
| 100% | 0        | 0               | 0          | 0    | 0         |
| Mean | 0.7      | 0.4             | 1.1        | 1    | 1.2       |

Table H1a2-453. Surface Water Supplied to SWP Article 21 South Bay Aqueduct Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 0.3      | 0.4             | 0.6        | 0.5 | 0.8       |
| D   | 0.4      | 0.4             | 1.2        | 1   | 0.6       |
| BN  | 0.2      | 0.3             | 0.5        | 0.4 | 0.4       |
| AN  | 0.3      | 0.3             | 0.6        | 0.4 | 0.5       |
| W   | 1.4      | 0.7             | 2          | 1.9 | 2.6       |
| All | 0.7      | 0.4             | 1.1        | 1   | 1.2       |

## H1a2.6.65 SWP Article 21 South Coast

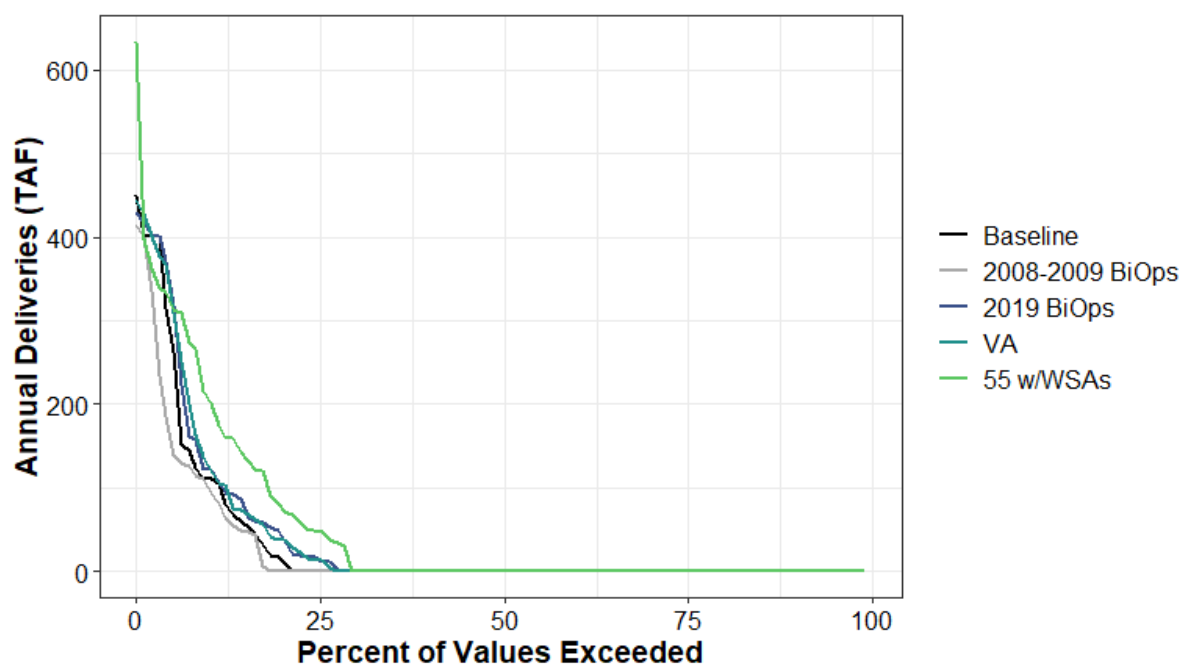


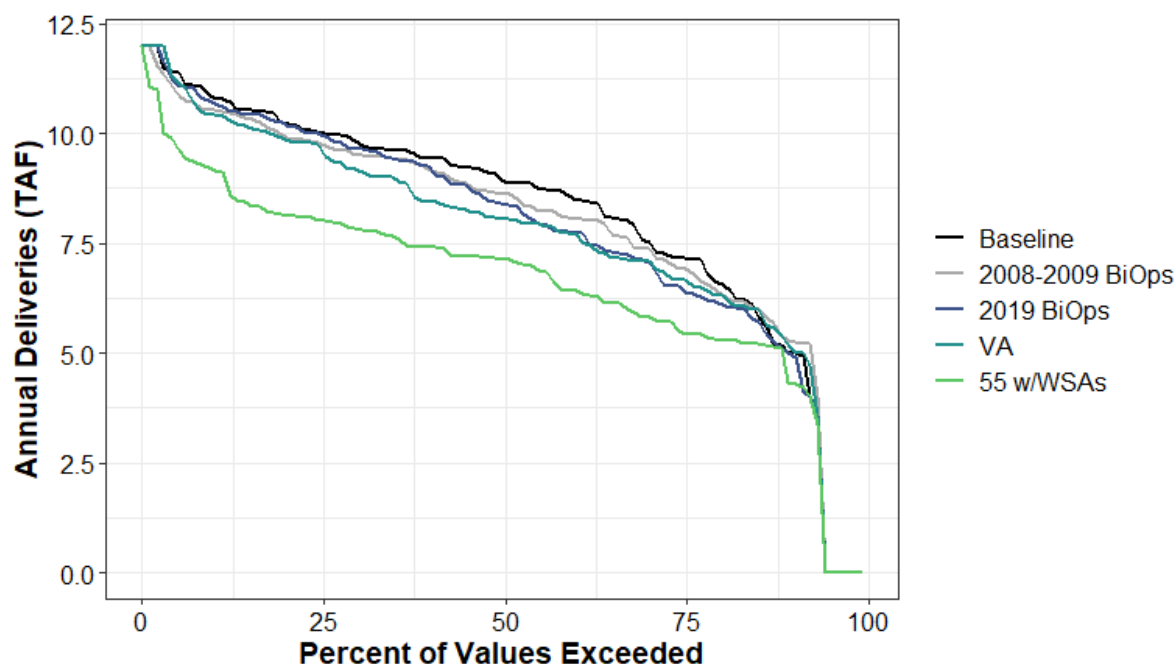
Figure H1a2-225. Surface Water Supplied to SWP Article 21 South Coast Annual Percent Exceedance Plot.

Table H1a2-454. Surface Water Supplied to SWP Article 21 South Coast Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 449      | 414             | 429        | 444 | 634       |
| 10%  | 111      | 97              | 122        | 123 | 203       |
| 20%  | 12       | 0               | 41         | 37  | 75        |
| 30%  | 0        | 0               | 0          | 0   | 1         |
| 40%  | 0        | 0               | 0          | 0   | 0         |
| 50%  | 0        | 0               | 0          | 0   | 0         |
| 60%  | 0        | 0               | 0          | 0   | 0         |
| 70%  | 0        | 0               | 0          | 0   | 0         |
| 80%  | 0        | 0               | 0          | 0   | 0         |
| 90%  | 0        | 0               | 0          | 0   | 0         |
| 100% | 0        | 0               | 0          | 0   | 0         |
| Mean | 34       | 27              | 40         | 40  | 53        |

Table H1a2-455. Surface Water Supplied to SWP Article 21 South Coast Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|-----|----------|-----------------|------------|----|-----------|
| C   | 7        | 12              | 15         | 11 | 23        |
| D   | 11       | 9               | 17         | 18 | 14        |
| BN  | 4        | 6               | 8          | 5  | 11        |
| AN  | 46       | 48              | 48         | 53 | 92        |
| W   | 80       | 52              | 87         | 89 | 110       |
| All | 34       | 27              | 40         | 40 | 53        |

**H1a2.6.66 SWP Article 21 Napa****Figure H1a2-226. Surface Water Supplied to SWP Article 21 Napa Annual Percent Exceedance Plot.****Table H1a2-456. Surface Water Supplied to SWP Article 21 Napa Annual Exceedance Probability Distribution by Scenario (TAF).**

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------|----------|-----------------|------------|------|-----------|
| 0%   | 12       | 12              | 12         | 12   | 12        |
| 10%  | 10.8     | 10.5            | 10.7       | 10.4 | 9.2       |
| 20%  | 10.2     | 9.9             | 10.2       | 9.9  | 8.1       |
| 30%  | 9.8      | 9.5             | 9.7        | 9.2  | 7.8       |
| 40%  | 9.4      | 9.2             | 9.2        | 8.5  | 7.4       |
| 50%  | 8.9      | 8.6             | 8.4        | 8.1  | 7.1       |
| 60%  | 8.5      | 8.1             | 7.7        | 7.7  | 6.4       |
| 70%  | 7.5      | 7.4             | 7.1        | 7.1  | 5.8       |
| 80%  | 6.6      | 6.4             | 6.1        | 6.3  | 5.3       |
| 90%  | 5        | 5.3             | 5          | 5.2  | 4.3       |
| 100% | 0        | 0               | 0          | 0    | 0         |
| Mean | 8.2      | 8               | 7.9        | 7.8  | 6.7       |

**Table H1a2-457. Surface Water Supplied to SWP Article 21 Napa Average by Water Year Type (TAF).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 5.7      | 5.7             | 5.6        | 5.8 | 5.5       |
| D   | 7.3      | 7.3             | 6.6        | 6.7 | 5.8       |
| BN  | 8.5      | 8.3             | 8          | 7.9 | 6.1       |
| AN  | 9.3      | 9.1             | 9          | 8.2 | 7.3       |
| W   | 9.6      | 9.2             | 9.6        | 9.4 | 8         |
| All | 8.2      | 8               | 7.9        | 7.8 | 6.7       |

## H1a2.6.67 SWP Feather River Service Area (Agricultural)

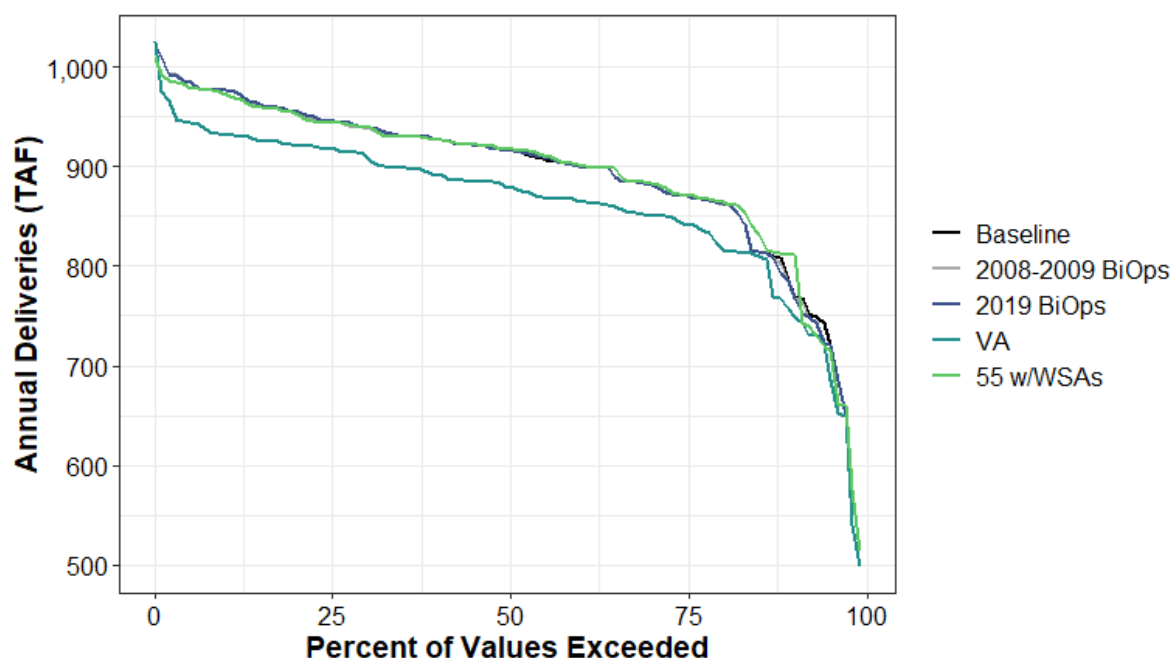


Figure H1a2-227. Surface Water Supplied to SWP Feather River Service Area (Agricultural) Annual Percent Exceedance Plot.

Table H1a2-458. Surface Water Supplied to SWP Feather River Service Area (Agricultural) Annual Exceedance Probability Distribution by Scenario (TAF).

|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|------|----------|-----------------|------------|-------|-----------|
| 0%   | 1,022    | 1,022           | 1,022      | 1,026 | 1,010     |
| 10%  | 976      | 976             | 976        | 932   | 973       |
| 20%  | 953      | 953             | 955        | 922   | 953       |
| 30%  | 939      | 939             | 940        | 910   | 940       |
| 40%  | 928      | 928             | 928        | 891   | 928       |
| 50%  | 916      | 916             | 916        | 879   | 917       |
| 60%  | 901      | 901             | 901        | 865   | 903       |
| 70%  | 883      | 883             | 883        | 851   | 884       |
| 80%  | 864      | 864             | 864        | 821   | 866       |
| 90%  | 781      | 781             | 781        | 755   | 812       |
| 100% | 498      | 498             | 498        | 498   | 513       |
| Mean | 894      | 893             | 894        | 862   | 895       |

Table H1a2-459. Surface Water Supplied to SWP Feather River Service Area (Agricultural) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 830      | 827             | 827        | 830 | 815       |
| D   | 932      | 931             | 932        | 868 | 937       |
| BN  | 913      | 914             | 914        | 858 | 917       |
| AN  | 890      | 891             | 890        | 836 | 899       |
| W   | 889      | 889             | 889        | 889 | 890       |
| All | 894      | 893             | 894        | 862 | 895       |

## H1a2.6.68 SWP Settlement (Urban)

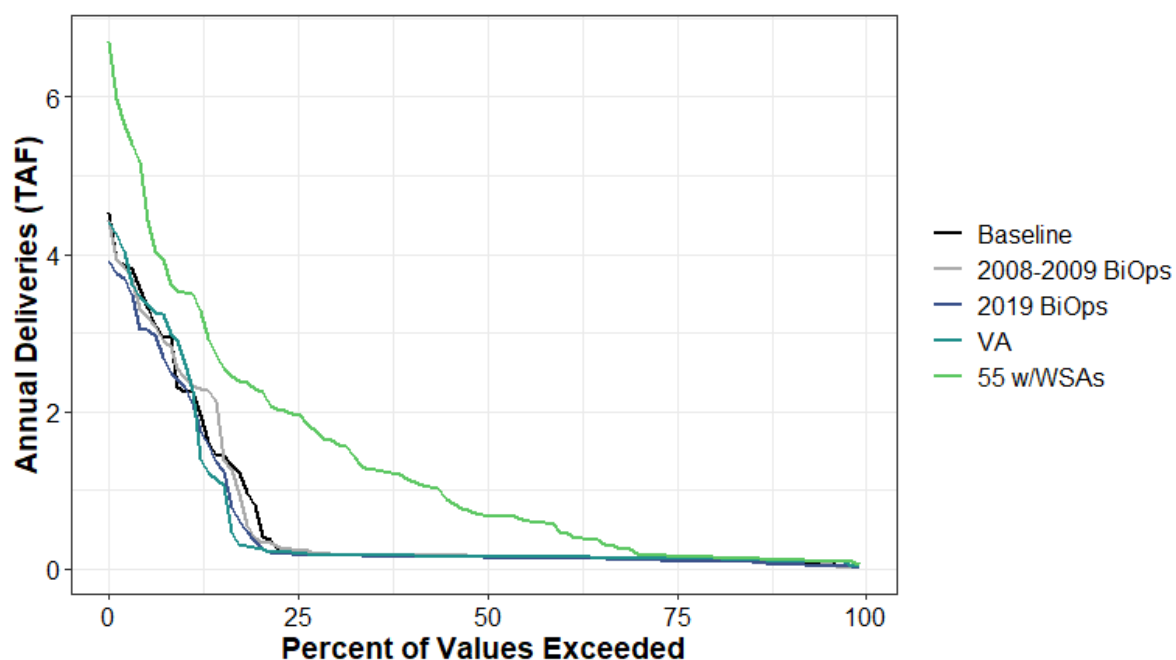


Figure H1a2-228. Surface Water Supplied to SWP Settlement (Urban) Annual Percent Exceedance Plot.

Table H1a2-460. Surface Water Supplied to SWP Settlement (Urban) Annual Exceedance Probability Distribution by Scenario (TAF).

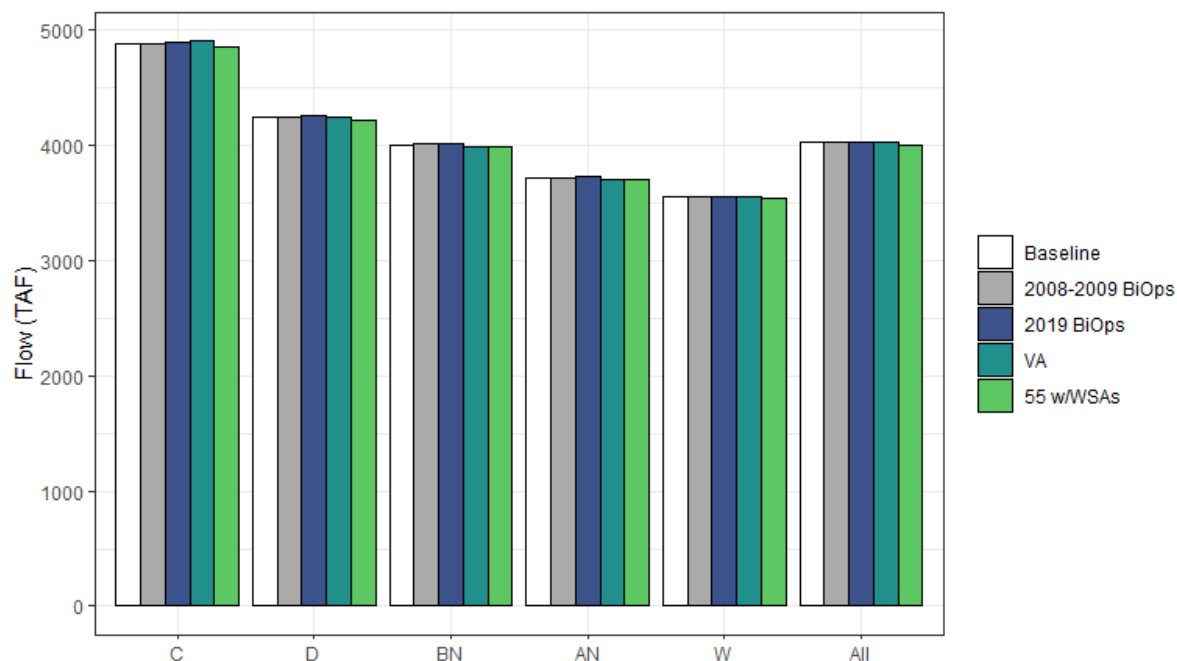
|      | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------|----------|-----------------|------------|-----|-----------|
| 0%   | 4.5      | 4.4             | 3.9        | 4.4 | 6.7       |
| 10%  | 2.3      | 2.5             | 2.3        | 2.7 | 3.5       |
| 20%  | 0.6      | 0.4             | 0.3        | 0.3 | 2.3       |
| 30%  | 0.2      | 0.2             | 0.2        | 0.2 | 1.6       |
| 40%  | 0.2      | 0.2             | 0.2        | 0.2 | 1.1       |
| 50%  | 0.2      | 0.2             | 0.1        | 0.2 | 0.7       |
| 60%  | 0.1      | 0.1             | 0.1        | 0.2 | 0.5       |
| 70%  | 0.1      | 0.1             | 0.1        | 0.1 | 0.2       |
| 80%  | 0.1      | 0.1             | 0.1        | 0.1 | 0.1       |
| 90%  | 0.1      | 0.1             | 0.1        | 0.1 | 0.1       |
| 100% | 0        | 0               | 0          | 0   | 0.1       |
| Mean | 0.6      | 0.6             | 0.5        | 0.6 | 1.3       |

Table H1a2-461. Surface Water Supplied to SWP Settlement (Urban) Average by Water Year Type (TAF).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 2.5      | 2.5             | 2.3        | 2.6 | 3.8       |
| D   | 0.4      | 0.4             | 0.2        | 0.2 | 1.3       |
| BN  | 0.3      | 0.3             | 0.3        | 0.3 | 1.1       |
| AN  | 0.1      | 0.2             | 0.1        | 0.1 | 0.6       |
| W   | 0.1      | 0.1             | 0.1        | 0.1 | 0.4       |
| All | 0.6      | 0.6             | 0.5        | 0.6 | 1.3       |

## H1a2.7 Groundwater Storage and Flows

### H1a2.7.1 Total Groundwater Pumping



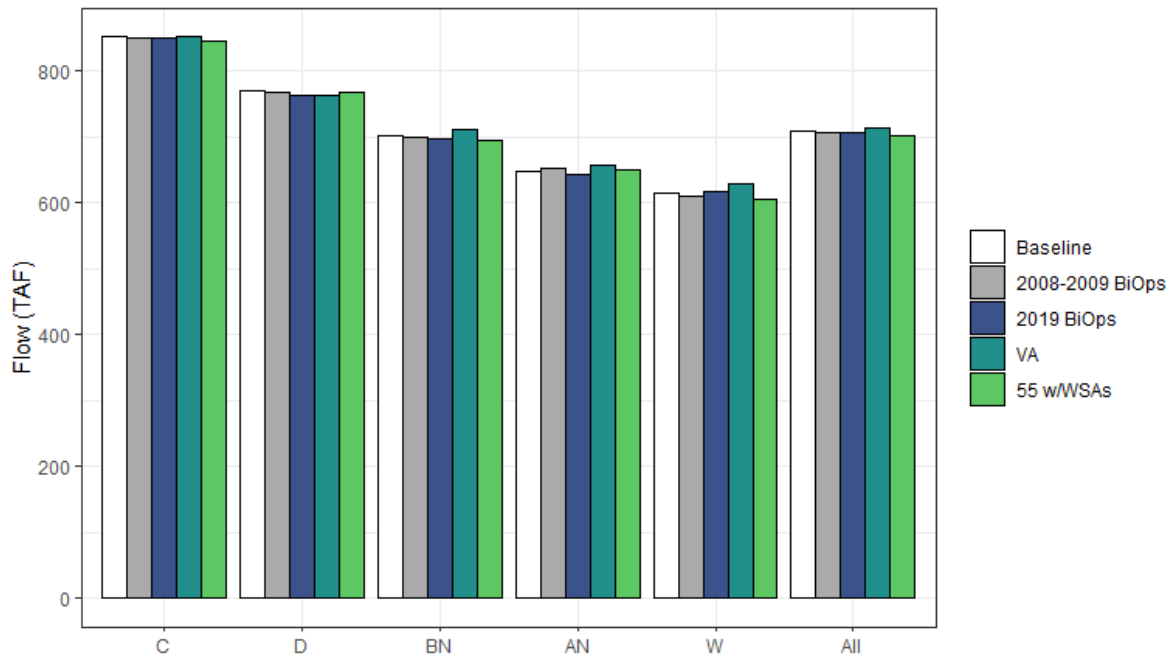
**Figure H1a2-229. Average Annual Groundwater Pumping Across All Basins by WYT and Scenario (TAF/yr).**

**Table H1a2-462. Average Annual Groundwater Pumping Across All Basins by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 4,884    | 4,885           | 4,889      | 4,907 | 4,849     |
| D   | 4,242    | 4,248           | 4,250      | 4,240 | 4,212     |
| BN  | 4,006    | 4,013           | 4,012      | 3,986 | 3,984     |
| AN  | 3,721    | 3,721           | 3,725      | 3,702 | 3,703     |
| W   | 3,546    | 3,550           | 3,547      | 3,551 | 3,535     |
| All | 4,027    | 4,031           | 4,031      | 4,025 | 4,004     |

## H1a2.7.2 Total Groundwater Pumping — Delta Eastside Tributaries

The groundwater basins underlying the Delta Eastside Tributaries region include the Cosumnes and a portion of the Eastern San Joaquin basins. Groundwater pumping for this region is considered to be the sum of groundwater pumping for all demands in water budget areas 60N and 60S; pumping for demands in water budget area 61N is excluded.



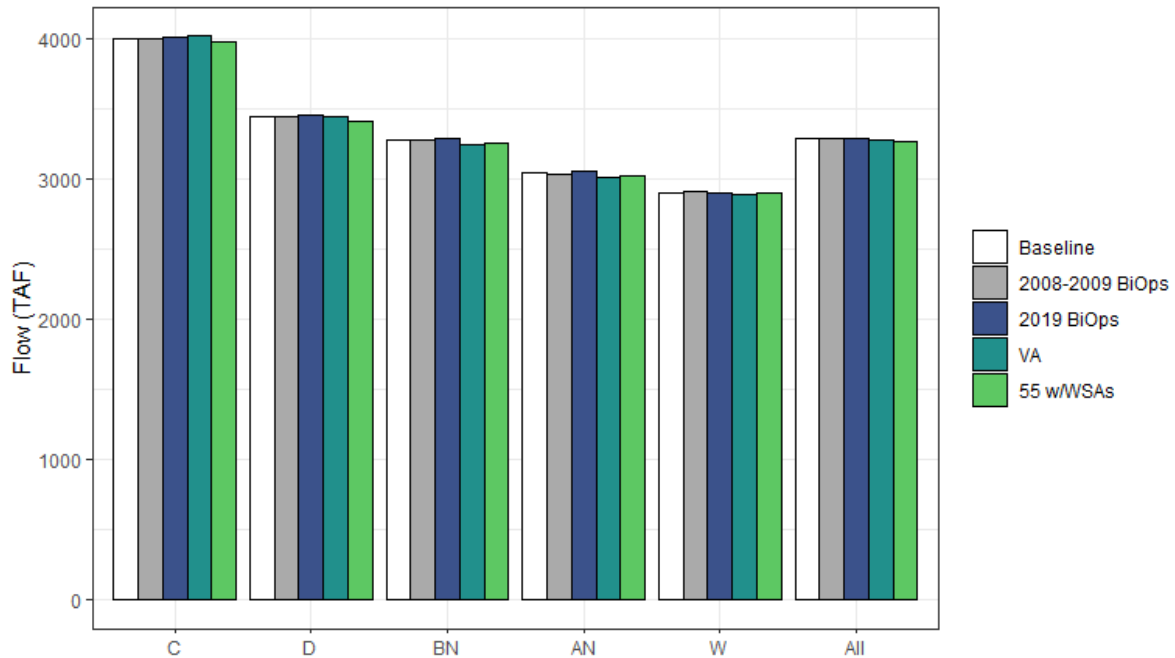
**Figure H1a2-230. Average Total Annual Groundwater Pumping for the Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

**Table H1a2-463. Average Total Annual Groundwater Pumping for the Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 851      | 851             | 850        | 852 | 844       |
| D   | 770      | 768             | 764        | 763 | 766       |
| BN  | 701      | 699             | 696        | 711 | 696       |
| AN  | 647      | 653             | 644        | 657 | 649       |
| W   | 614      | 610             | 617        | 629 | 604       |
| All | 708      | 706             | 706        | 714 | 702       |

## H1a2.7.3 Groundwater Pumping — Sacramento River Watershed

The groundwater basins underlying the Sacramento River Watershed region include the American, Butte, Red Bluff-Corning, Redding, Sutter-Yuba, Yolo-Solano, and Colusa basins.



**Figure H1a2-231. Average Total Annual Groundwater Pumping for the Sacramento Watershed Region by WYT and Scenario (TAF/yr).**

**Table H1a2-464. Average Total Annual Groundwater Pumping for the Sacramento Watershed Region by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 3,998    | 4,000           | 4,004      | 4,020 | 3,970     |
| D   | 3,439    | 3,446           | 3,453      | 3,444 | 3,413     |
| BN  | 3,273    | 3,282           | 3,283      | 3,243 | 3,256     |
| AN  | 3,043    | 3,038           | 3,050      | 3,014 | 3,024     |
| W   | 2,902    | 2,910           | 2,899      | 2,891 | 2,900     |
| All | 3,287    | 3,292           | 3,293      | 3,279 | 3,270     |

## H1a2.7.4 Groundwater Pumping by Basin

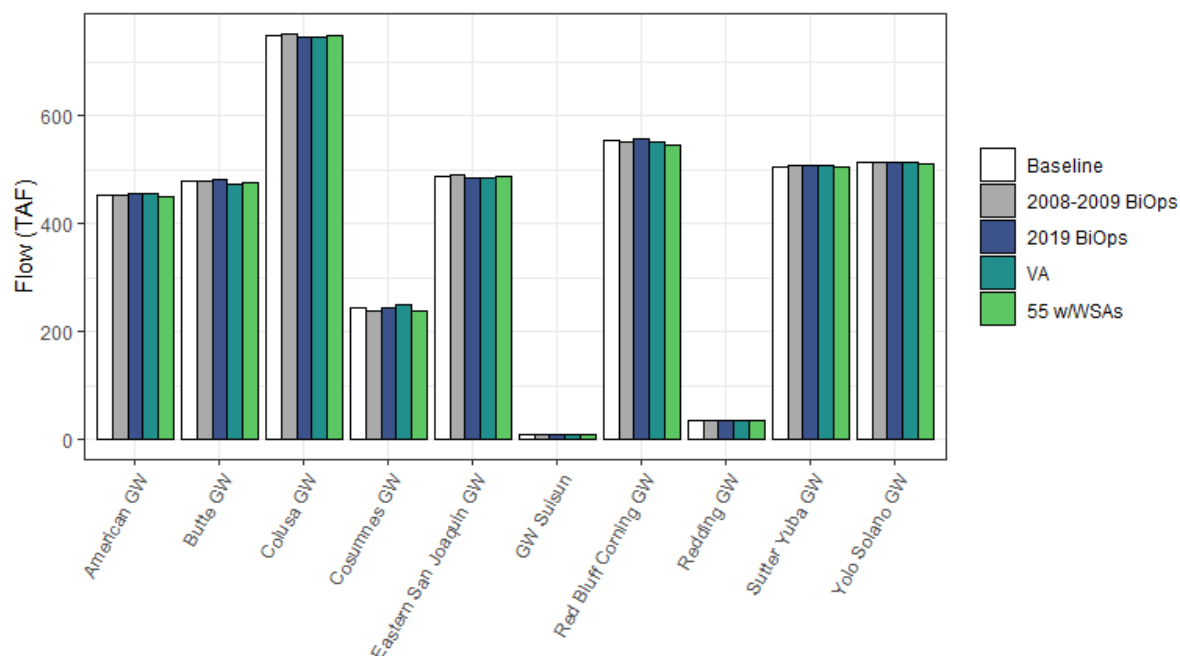


Figure H1a2-232. Annual Average Groundwater Pumping by Basin (TAF/yr).

Table H1a2-465. Annual Average Groundwater Pumping by Basin and Change from Baseline (TAF/yr).

| Basin                  | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------------------------|----------|-----------------|------------|----|-----------|
| American GW            | 453      | 1               | 2          | 4  | -2        |
| Butte GW               | 479      | 0               | 2          | -8 | -4        |
| Colusa GW              | 747      | 5               | -2         | -2 | 2         |
| Cosumnes GW            | 243      | -3              | 0          | 8  | -5        |
| Eastern San Joaquin GW | 487      | 2               | -2         | -2 | 0         |
| GW Suisun              | 10       | 0               | 0          | 0  | 0         |
| Red Bluff Corning GW   | 554      | -2              | 3          | -2 | -7        |
| Redding GW             | 36       | 0               | 0          | 0  | 0         |
| Sutter Yuba GW         | 506      | 1               | 2          | 0  | -1        |
| Yolo Solano GW         | 513      | 0               | 0          | 0  | -3        |

## H1a2.7.5 Total Groundwater Recharge

Total groundwater recharge includes stream gain/loss, infiltration from applied water and precipitation, and transmission losses to all of the groundwater basins.

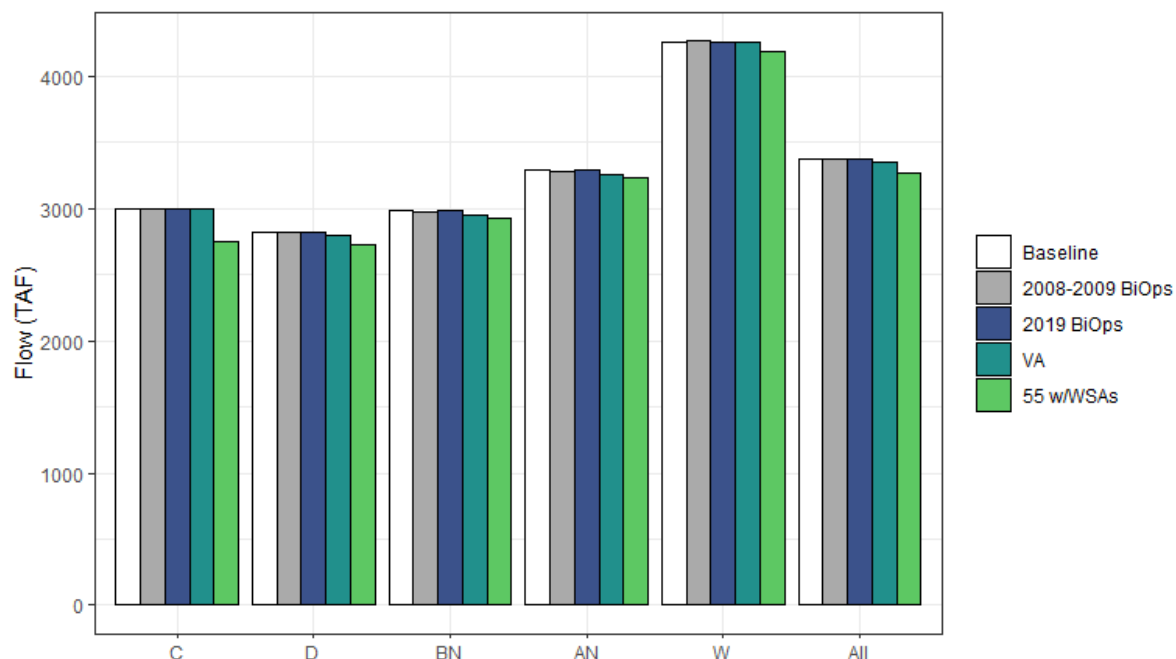


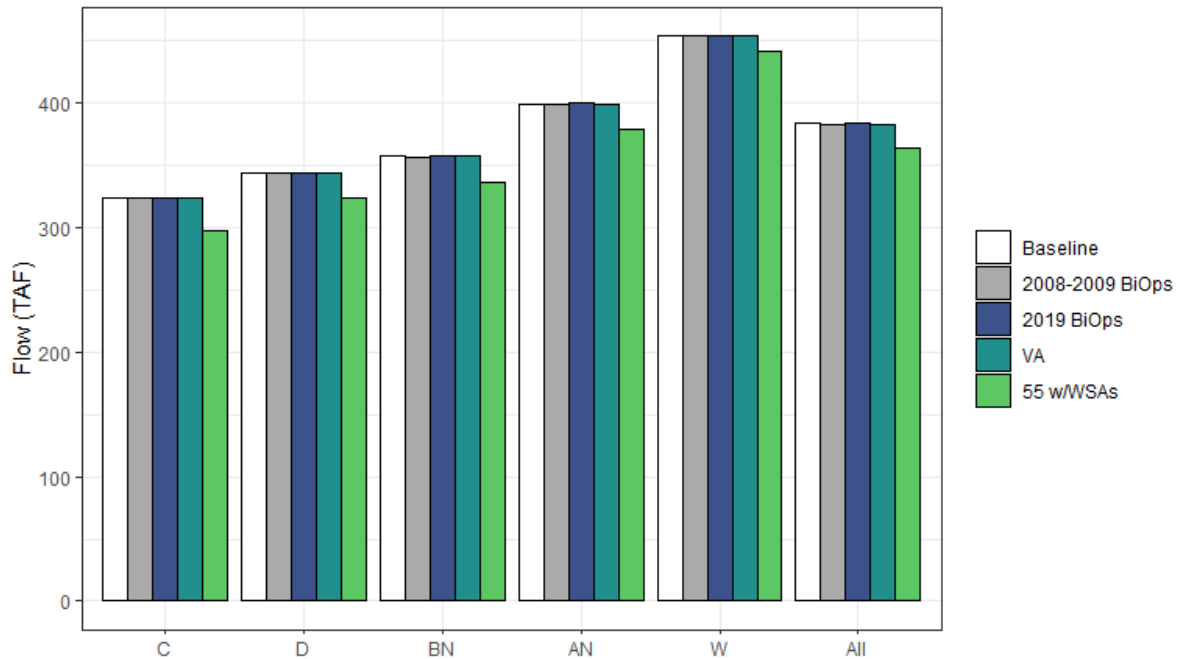
Figure H1a2-233. Total Average Annual Groundwater Recharge by WYT and Scenario (TAF/yr).

Table H1a2-466. Total Average Annual Groundwater Recharge by WYT and Scenario (TAF/yr).

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 3,001    | 2,996           | 2,996      | 2,993 | 2,754     |
| D   | 2,819    | 2,823           | 2,820      | 2,795 | 2,723     |
| BN  | 2,982    | 2,975           | 2,985      | 2,946 | 2,925     |
| AN  | 3,291    | 3,282           | 3,291      | 3,256 | 3,235     |
| W   | 4,264    | 4,271           | 4,263      | 4,259 | 4,193     |
| All | 3,375    | 3,375           | 3,375      | 3,355 | 3,274     |

## H1a2.7.6 Total Groundwater Recharge — Delta Eastside Tributaries

Total groundwater recharge includes stream gain/loss, infiltration from applied water and precipitation, and transmission losses to all of the groundwater basins. The groundwater basins underlying the Delta Eastside Tributaries region include the Cosumnes and a portion of the Eastern San Joaquin basins. All sources of recharge within water budget areas 60S and 60N are included in the summary of recharge for the Delta Eastside Tributaries region.



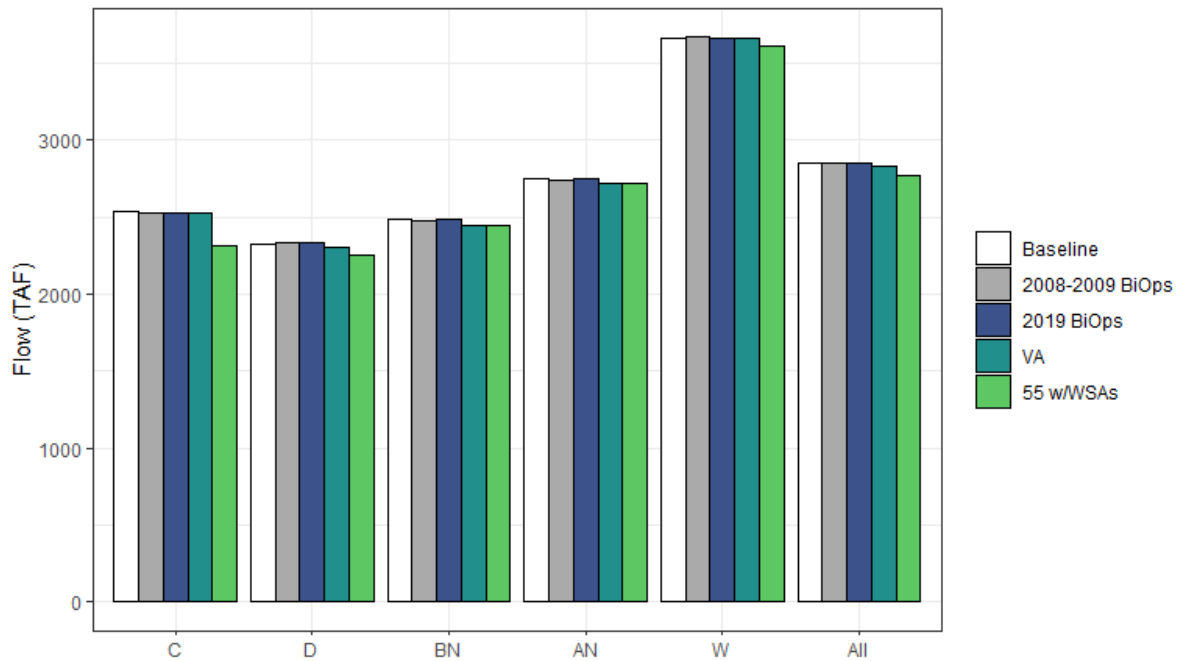
**Figure H1a2-234. Total Average Annual Groundwater Recharge for the Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

**Table H1a2-467. Total Average Annual Groundwater Recharge for the Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 324      | 324             | 324        | 324 | 297       |
| D   | 344      | 344             | 344        | 343 | 323       |
| BN  | 357      | 357             | 357        | 358 | 337       |
| AN  | 399      | 399             | 399        | 398 | 379       |
| W   | 454      | 454             | 454        | 454 | 442       |
| All | 383      | 383             | 383        | 383 | 364       |

## H1a2.7.7 Total Groundwater Recharge — Sacramento River Watershed

Total groundwater recharge includes stream gain/loss, infiltration from applied water and precipitation, and transmission losses to all of the groundwater basins. The groundwater basins underlying the Sacramento watershed region include the American, Butte, Red Bluff-Corning, Redding, Sutter-Yuba, Yolo-Solano, and Colusa basins.



**Figure H1a2-235. Total Average Annual Groundwater Recharge for the Sacramento River Watershed by WYT and Scenario (TAF/yr).**

**Table H1a2-468. Total Average Annual Groundwater Recharge for the Sacramento River Watershed by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|-----|----------|-----------------|------------|-------|-----------|
| C   | 2,534    | 2,529           | 2,529      | 2,525 | 2,315     |
| D   | 2,330    | 2,335           | 2,332      | 2,307 | 2,257     |
| BN  | 2,485    | 2,478           | 2,487      | 2,447 | 2,450     |
| AN  | 2,752    | 2,742           | 2,751      | 2,717 | 2,717     |
| W   | 3,667    | 3,674           | 3,666      | 3,663 | 3,609     |
| All | 2,849    | 2,849           | 2,849      | 2,830 | 2,769     |

## H1a2.7.8 Total Groundwater Recharge by Basin

Total groundwater recharge includes stream gain/loss, infiltration from applied water and precipitation, and transmission losses.

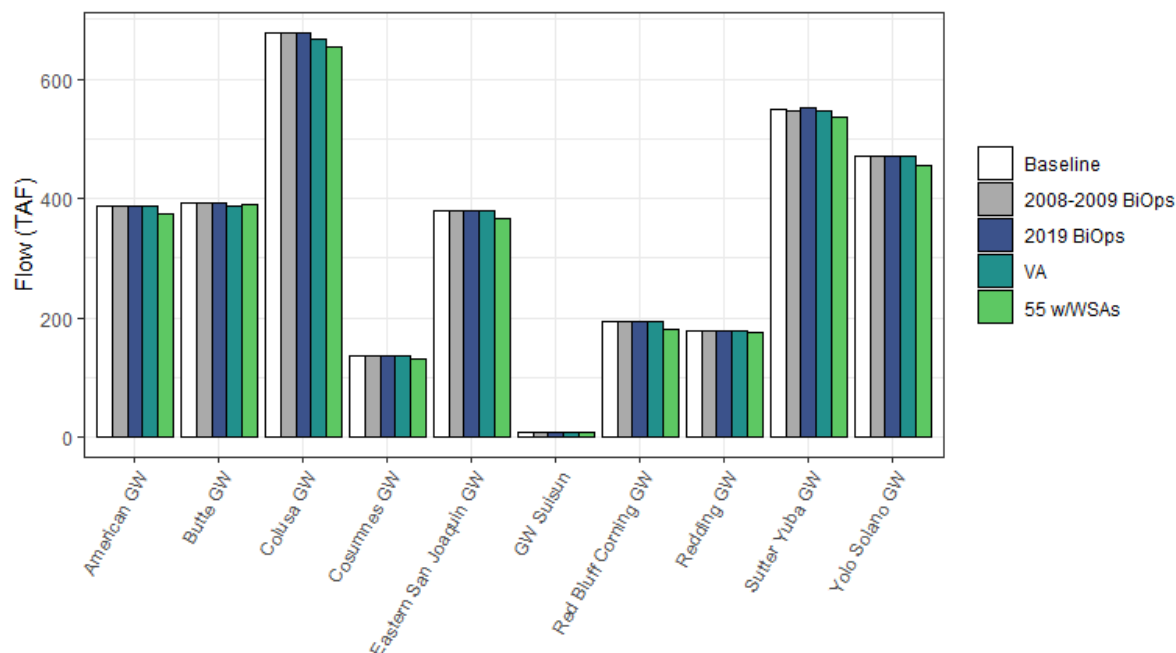


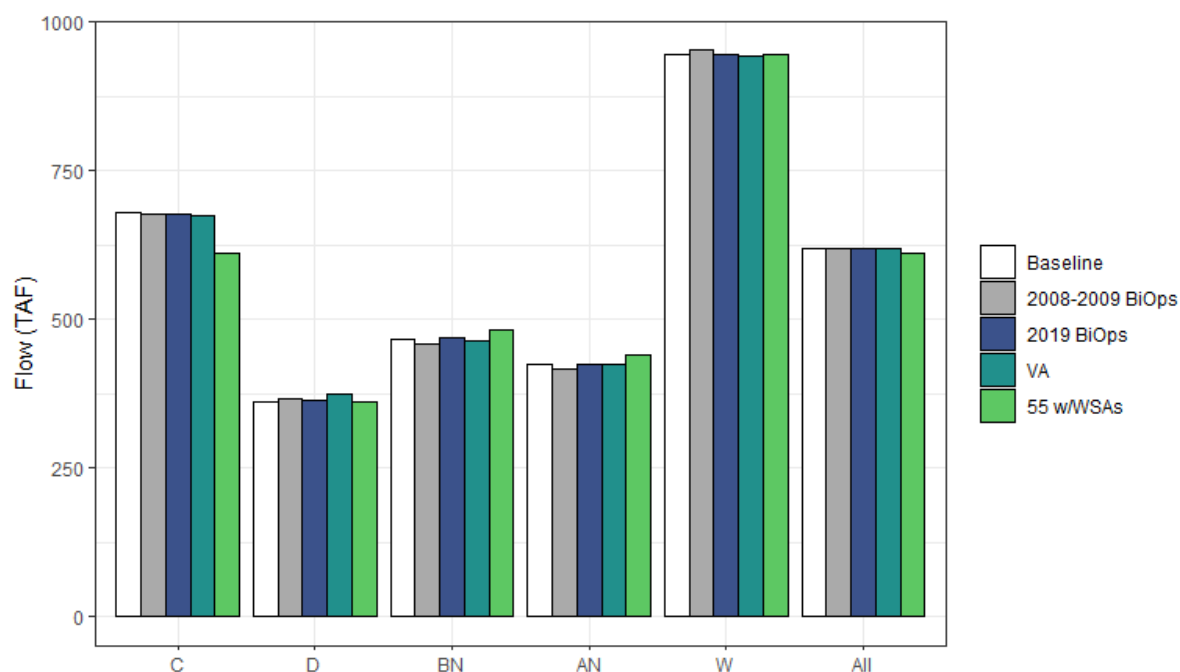
Figure H1a2-236. Annual Average Groundwater Recharge by Basin (TAF/yr).

Table H1a2-469. Annual Average Groundwater Recharge by Basin and Change from Baseline (TAF/yr).

| Basin                  | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|------------------------|----------|-----------------|------------|-----|-----------|
| American GW            | 388      | 0               | 0          | -1  | -13       |
| Butte GW               | 393      | 0               | -1         | -6  | -2        |
| Colusa GW              | 678      | 0               | -2         | -10 | -25       |
| Cosumnes GW            | 137      | 0               | 0          | 0   | -7        |
| Eastern San Joaquin GW | 380      | 0               | 0          | 0   | -12       |
| GW Suisun              | 9        | 0               | 0          | 0   | -1        |
| Red Bluff Corning GW   | 193      | 0               | 0          | 0   | -13       |
| Redding GW             | 179      | 0               | 0          | -1  | -2        |
| Sutter Yuba GW         | 549      | -1              | 3          | -1  | -11       |
| Yolo Solano GW         | 471      | 0               | 0          | 0   | -14       |

## H1a2.7.9 Total Stream-Groundwater Flux

Total stream-groundwater flux represents the net flow from streams to underlying groundwater basins.



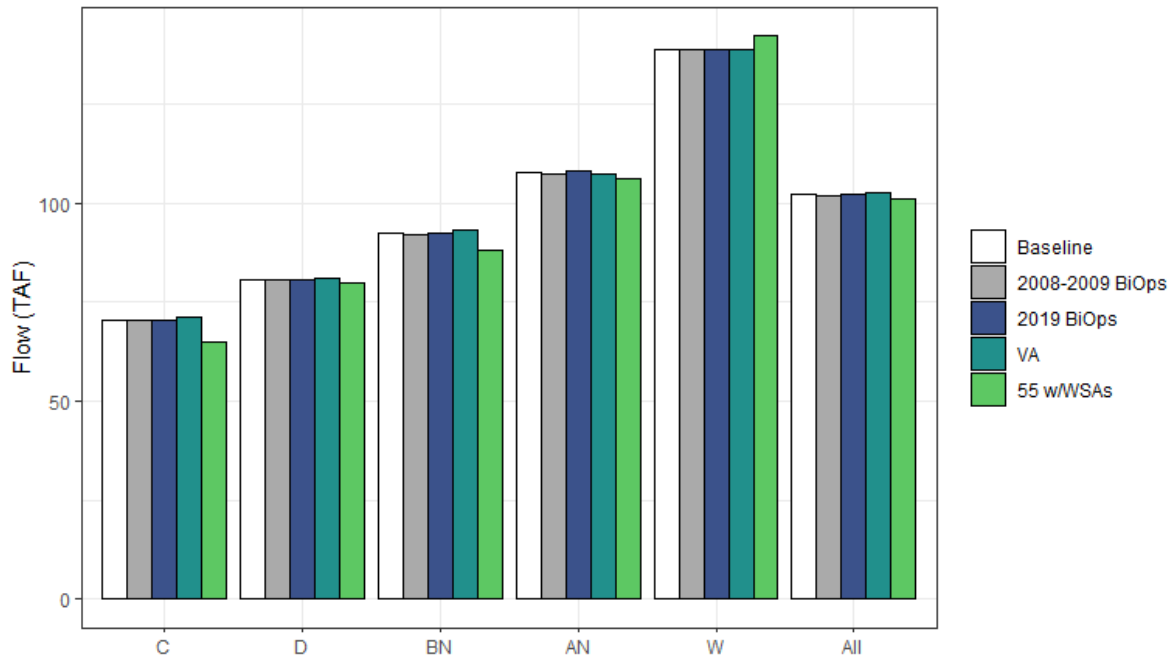
**Figure H1a2-237. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) by WYT and Scenario (TAF/yr).**

**Table H1a2-470. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 680      | 676             | 677        | 674 | 612       |
| D   | 363      | 368             | 365        | 376 | 362       |
| BN  | 466      | 458             | 468        | 464 | 483       |
| AN  | 426      | 416             | 425        | 425 | 440       |
| W   | 946      | 953             | 945        | 941 | 946       |
| All | 618      | 618             | 618        | 618 | 612       |

## H1a2.7.10 Total Stream-Groundwater Flux — Delta Eastside Tributaries

For the Delta Eastside Tributaries, this summary includes stream-groundwater flows associated with the Cosumnes, Mokelumne, and Calaveras River watersheds.



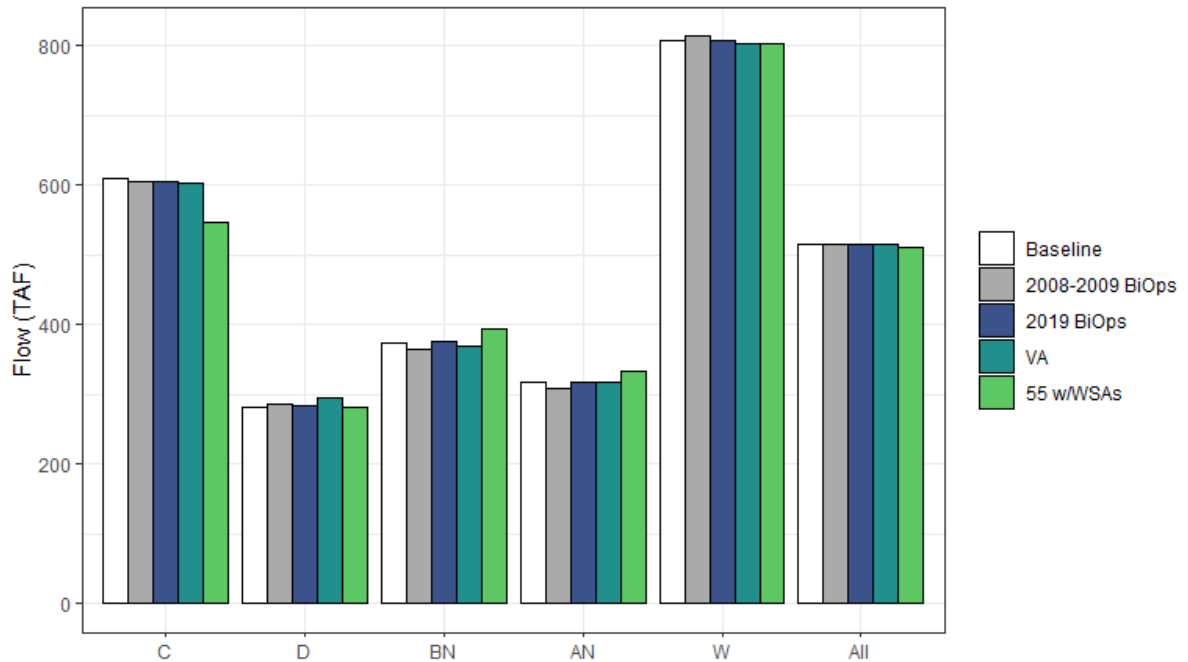
**Figure H1a2-238. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) for Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

**Table H1a2-471. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) for Delta Eastside Tributaries Region by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 70       | 70              | 70         | 71  | 65        |
| D   | 81       | 80              | 81         | 81  | 80        |
| BN  | 92       | 92              | 92         | 93  | 88        |
| AN  | 108      | 107             | 108        | 107 | 106       |
| W   | 138      | 139             | 139        | 139 | 142       |
| All | 102      | 102             | 102        | 102 | 101       |

## H1a2.7.11 Total Stream-Groundwater Flux — Sacramento River Watershed

For the Sacramento River Watershed, this summary includes all stream-groundwater flows in the American, Butte, Red Bluff-Corning, Redding, Sutter-Yuba, Yolo-Solano, and Colusa basins.



**Figure H1a2-239. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) for Sacramento River Watershed by WYT and Scenario (TAF/yr).**

**Table H1a2-472. Total Average Annual Stream-Groundwater Flux (Net Groundwater Gain) for Sacramento River Watershed by WYT and Scenario (TAF/yr).**

| WYT | Baseline | 2008-2009 BiOps | 2019 BiOps | VA  | 55 w/WSAs |
|-----|----------|-----------------|------------|-----|-----------|
| C   | 610      | 606             | 607        | 603 | 547       |
| D   | 282      | 287             | 284        | 295 | 282       |
| BN  | 373      | 366             | 376        | 371 | 395       |
| AN  | 318      | 309             | 317        | 318 | 334       |
| W   | 807      | 815             | 807        | 803 | 804       |
| All | 516      | 516             | 516        | 516 | 511       |

## H1a2.7.12 Stream-Groundwater Flux by Basin

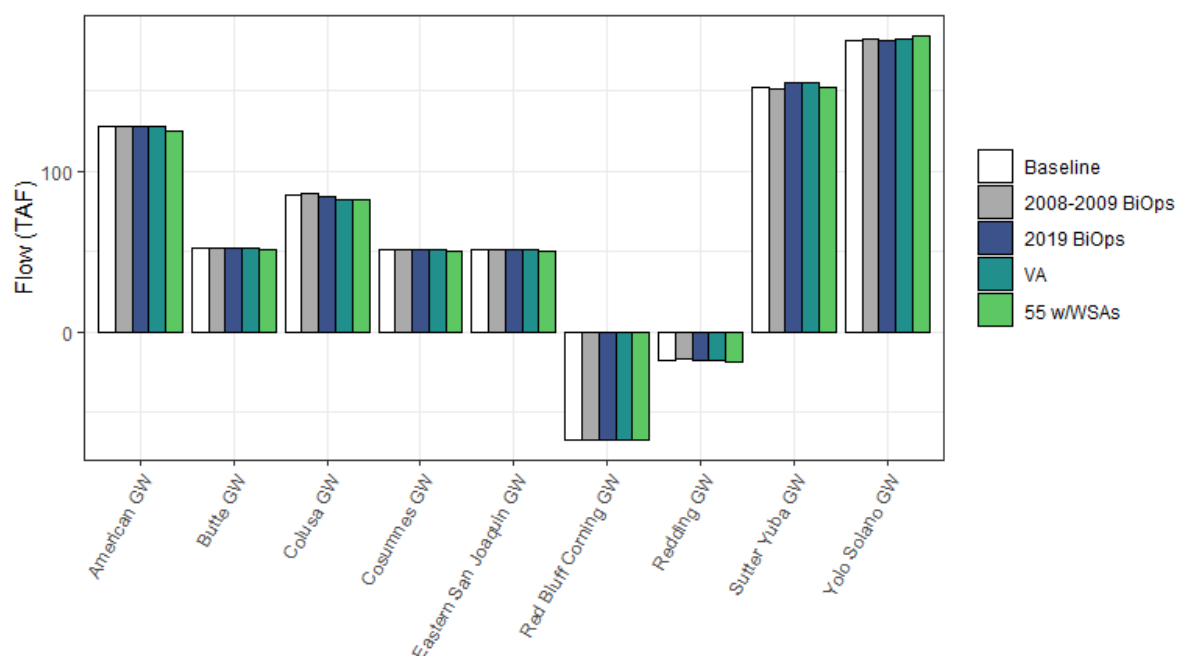


Figure H1a2-240. Stream-Groundwater Flux (Net Groundwater Gain) by Basin (TAF/yr).

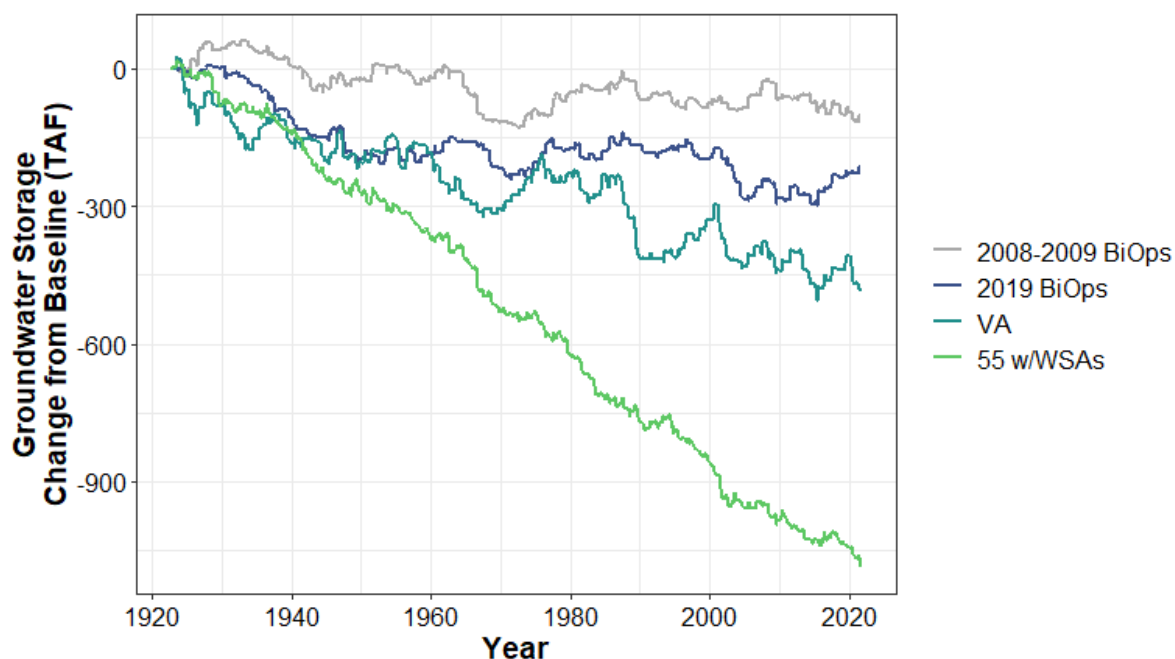
Table H1a2-473. Annual Average Stream-Groundwater Flux by Basin and Change from Baseline (TAF/yr).

| Basin                  | Baseline | 2008-2009 BiOps | 2019 BiOps | VA | 55 w/WSAs |
|------------------------|----------|-----------------|------------|----|-----------|
| American GW            | 128      | 0               | 0          | 0  | -3        |
| Butte GW               | 52       | 0               | -1         | -1 | -1        |
| Colusa GW              | 86       | 0               | -2         | -3 | -3        |
| Cosumnes GW            | 51       | 0               | 0          | 0  | -1        |
| Eastern San Joaquin GW | 51       | 0               | 0          | 0  | 0         |
| Red Bluff Corning GW   | -67      | 0               | 0          | 0  | 0         |
| Redding GW             | -17      | 0               | 0          | 0  | -1        |
| Sutter Yuba GW         | 152      | -1              | 3          | 3  | 0         |
| Yolo Solano GW         | 182      | 0               | 0          | 0  | 3         |

## H1a2.7.13 Groundwater Storage by Basin

**Table H1a2-474. Annual Average Rate of Change in Storage by Basin (TAF/yr).**

| Basin                  | Baseline | 2008-2009 BiOps | 2019 BiOps | VA   | 55 w/WSAs |
|------------------------|----------|-----------------|------------|------|-----------|
| American GW            | -65      | -66             | -67        | -70  | -76       |
| Butte GW               | -86      | -87             | -89        | -85  | -84       |
| Colusa GW              | -69      | -73             | -68        | -77  | -95       |
| Cosumnes GW            | -106     | -103            | -106       | -114 | -107      |
| Eastern San Joaquin GW | -108     | -110            | -105       | -106 | -119      |
| GW Suisun              | -1       | -1              | -1         | -1   | -2        |
| Red Bluff Corning GW   | -361     | -359            | -364       | -358 | -366      |
| Redding GW             | 143      | 143             | 143        | 142  | 141       |
| Sutter Yuba GW         | 43       | 41              | 44         | 41   | 32        |
| Yolo Solano GW         | -42      | -42             | -43        | -42  | -53       |



**Figure H1a2-241. American River Groundwater Basin End of Year Storage—Change from Baseline (TAF)**

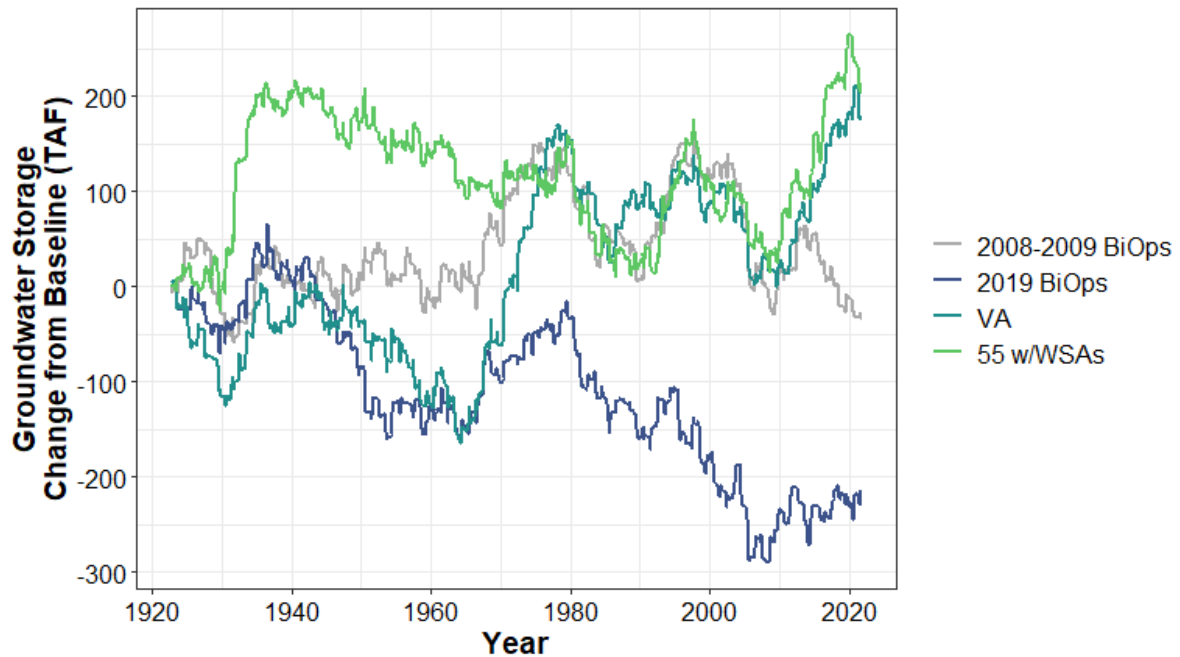


Figure H1a2-242. Butte Groundwater Basin End of Year Storage—Change from Baseline (TAF)

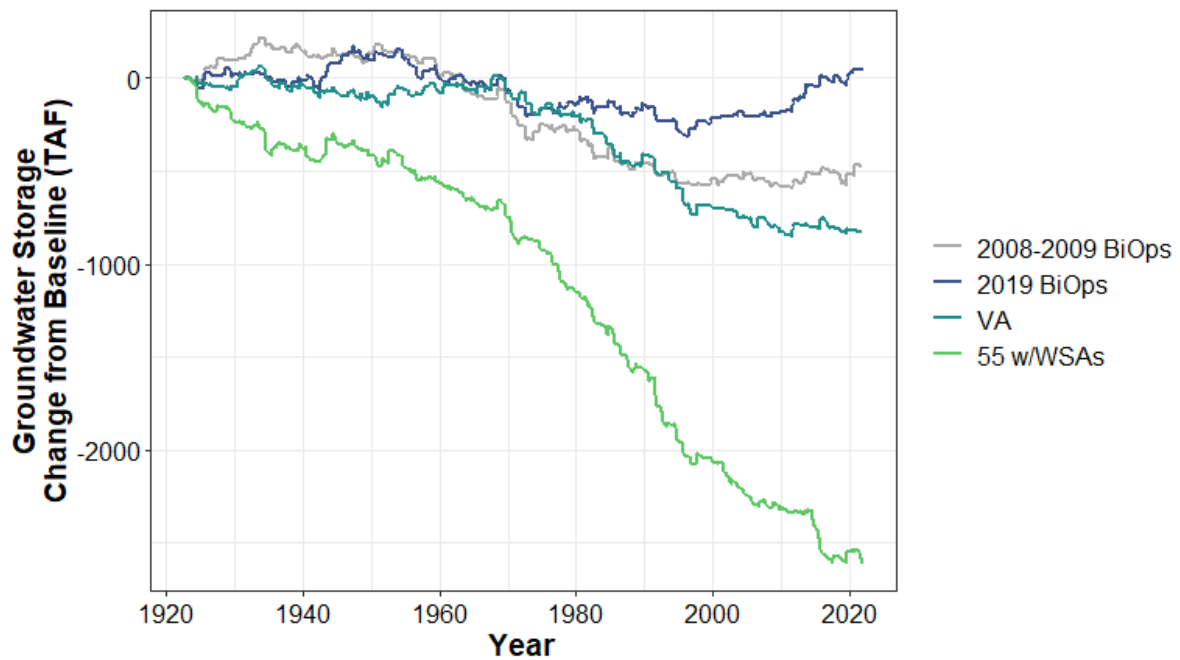


Figure H1a2-243. Colusa Groundwater Basin End of Year Storage—Change from Baseline (TAF)

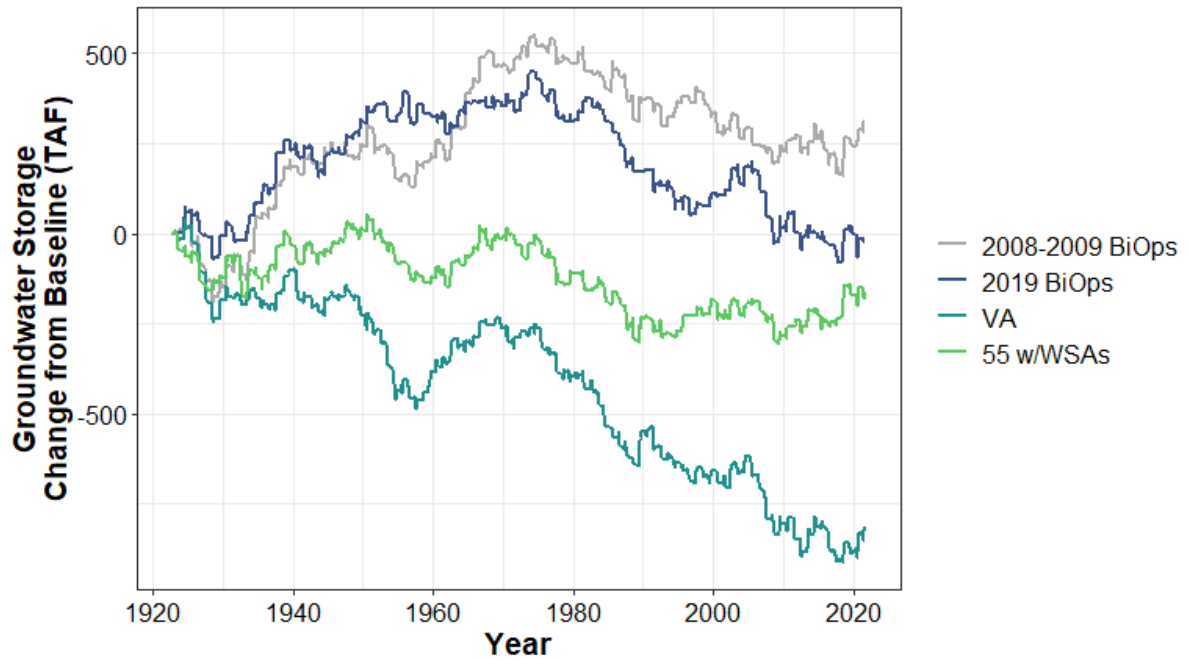


Figure H1a2-244. Cosumnes Groundwater Basin End of Year Storage—Change from Baseline (TAF)

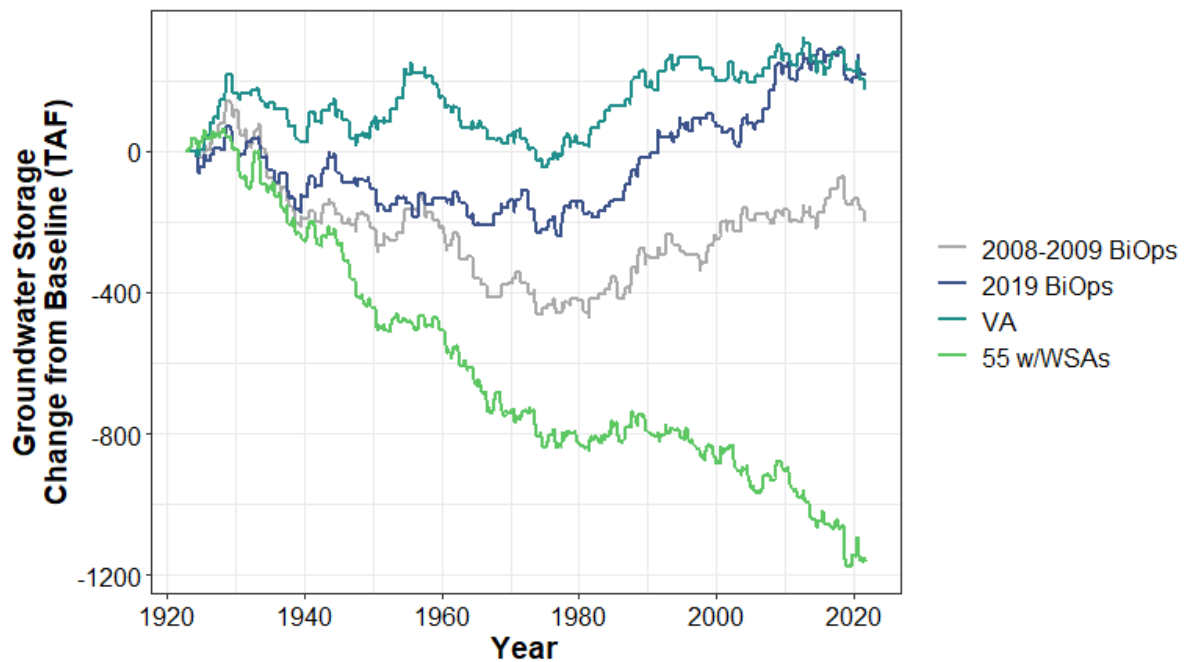


Figure H1a2-245. Eastern San Joaquin Groundwater Basin End of Year Storage—Change from Baseline (TAF)

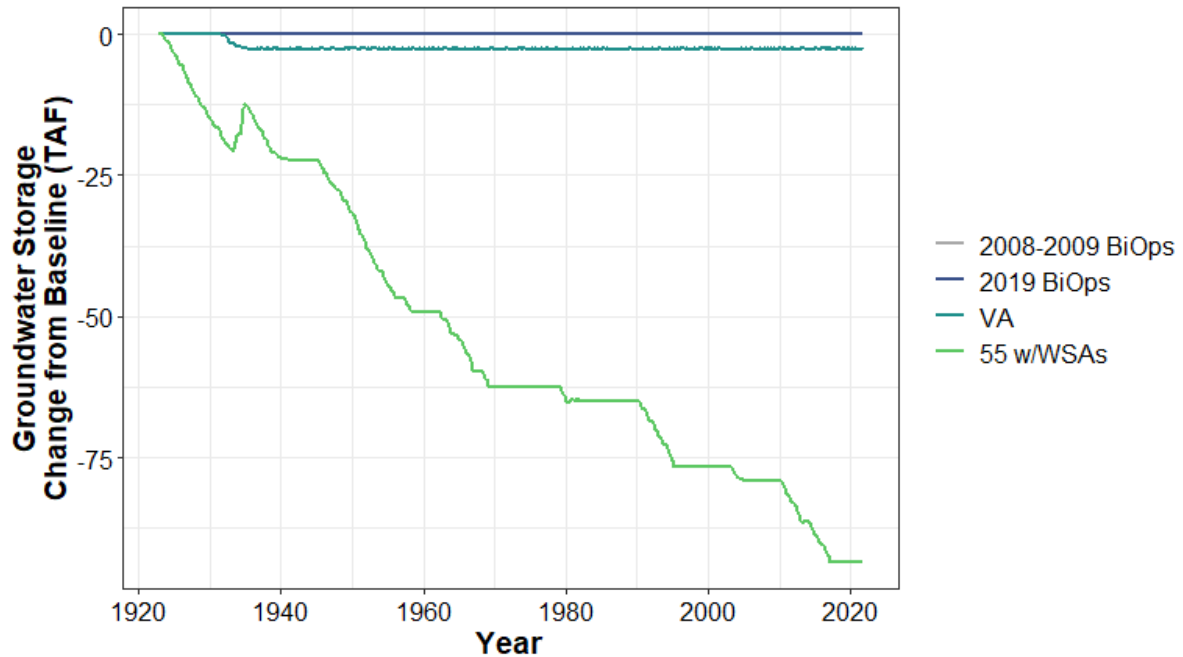


Figure H1a2-246. Suisun Groundwater Basin End of Year Storage—Change from Baseline (TAF)

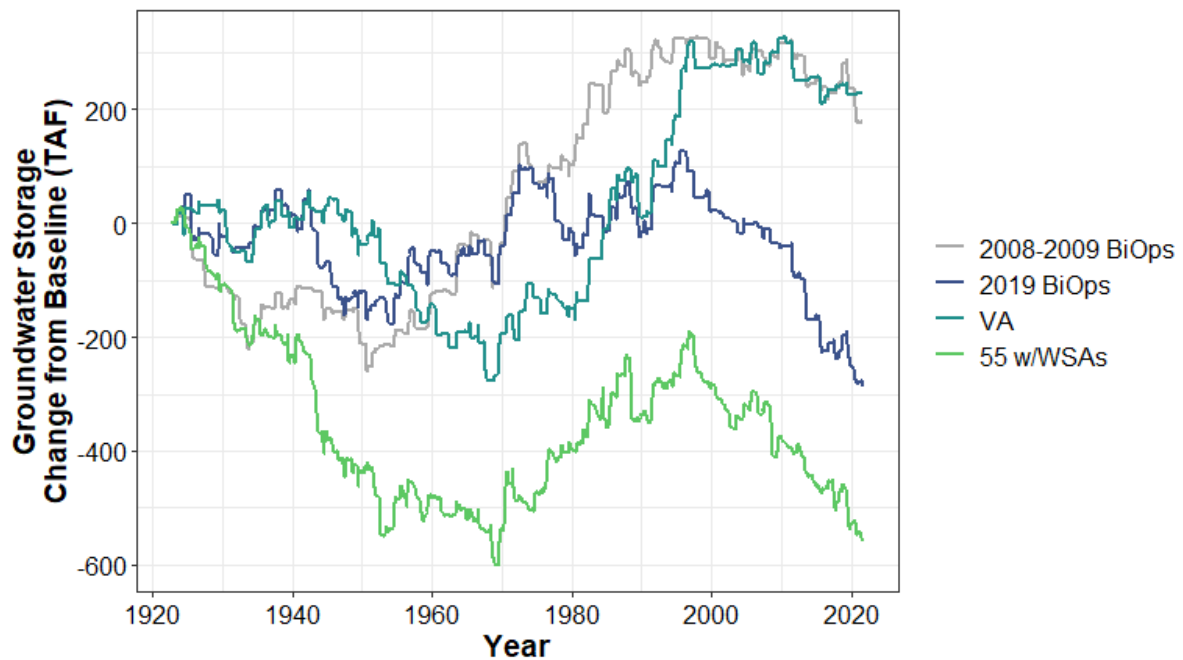


Figure H1a2-247. Red Bluff-Corning Groundwater Basin End of Year Storage—Change from Baseline (TAF)

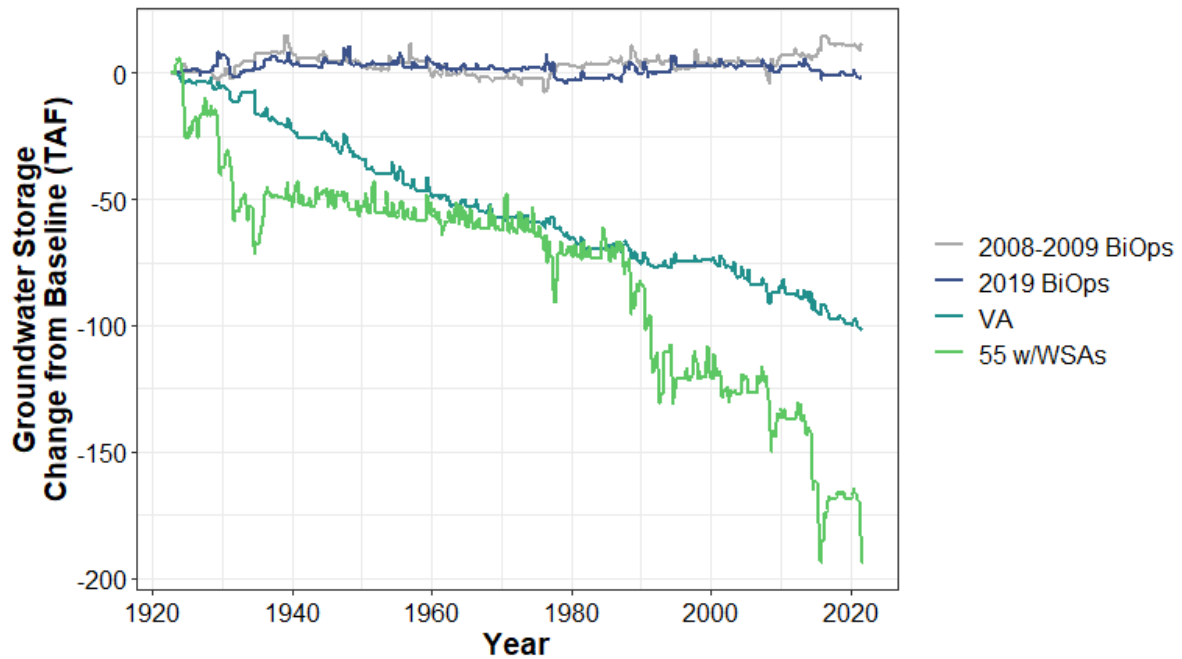


Figure H1a2-248. Redding Groundwater Basin End of Year Storage—Change from Baseline

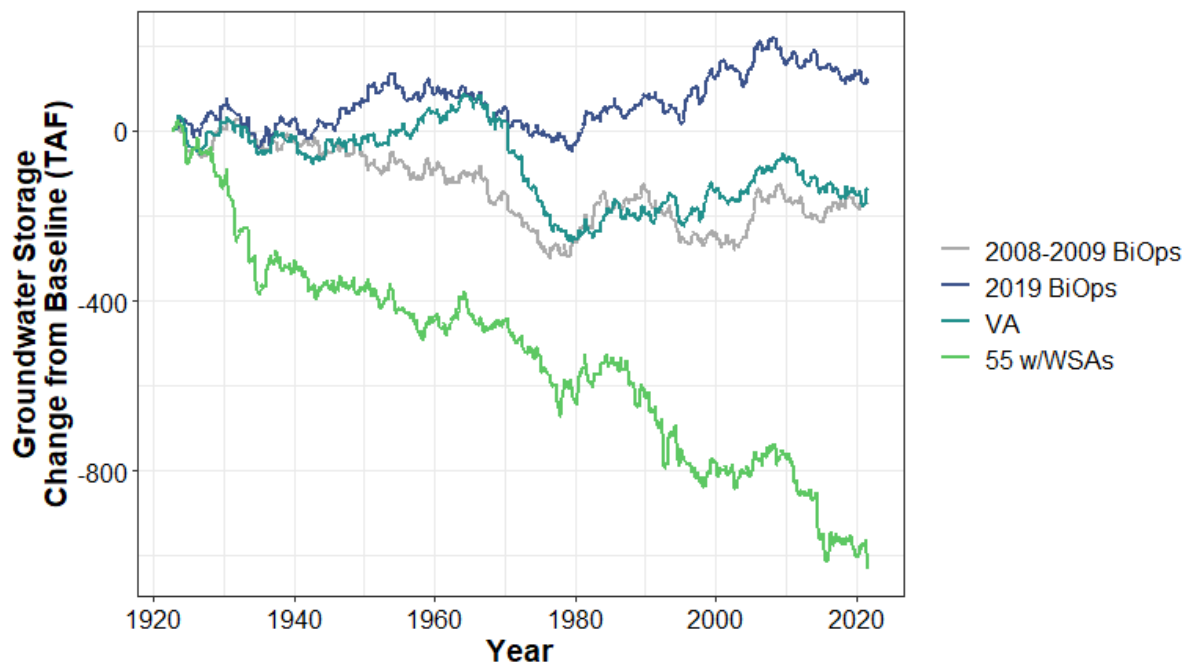


Figure H1a2-249. Sutter-Yuba Groundwater Basin End of Year Storage—Change from Baseline

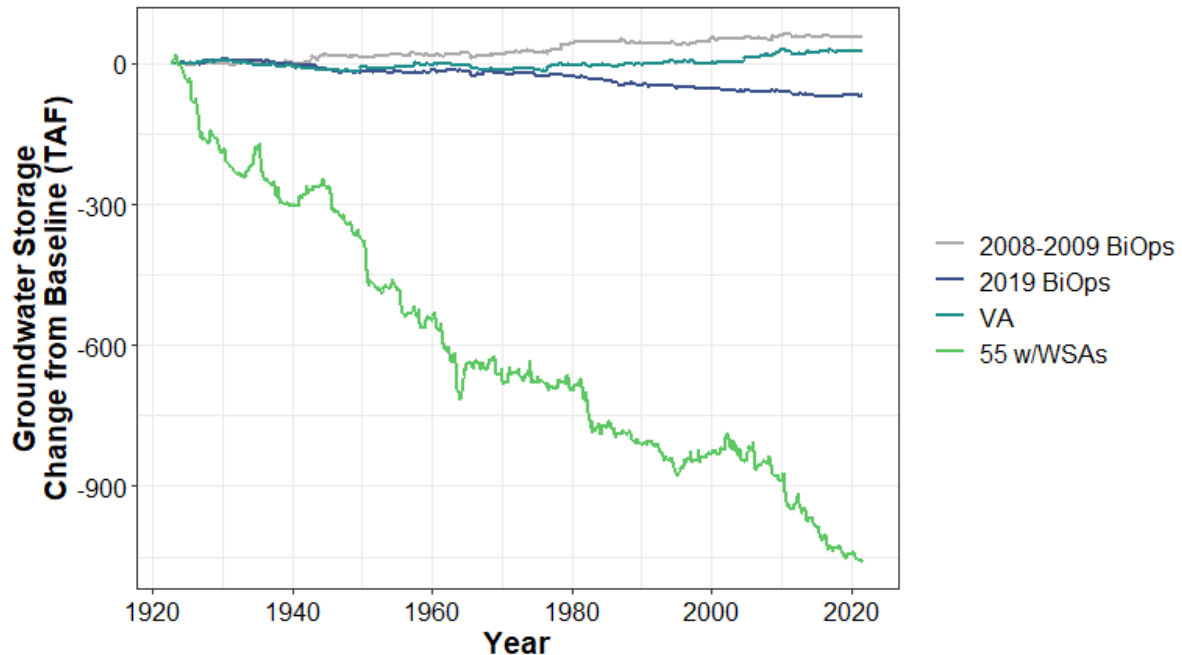


Figure H1a2-250. Yolo-Solano Groundwater Basin End of Year Storage—Change from Baseline

## H1a2.8 Unmet Instream Flow Requirements

Unmet instream flow requirements are presented as a count of months and percent of months in which the flow requirement was not met. There are a total of 1,188 months in the 1923–2021 simulation period presented here, though many instream flow requirements are not in effect in every month of the simulation period. The flow requirement was considered unmet if the shortfall was greater than 5% of the monthly requirement. Results are presented for “REG” flow requirements, which represent existing regulatory flow requirements. The VA scenario makes use of a subset of “SWRCB” flow requirements (SWRCB Camanche, SWRCB Folsom, SWRCB Delta, SWRCB Putah Creek, and SWRCB Sacramento at Knights Landing) as well as REG High Flow Channel to implement VA flow requirements. These requirements are always met in the VA scenario.

Table H1a2-475. Number of Months (Percent of Months) with Unmet REG Instream Flow Requirements

| Requirement                         | Baseline | 2008-2009 BiOps | 2019 BiOps | VA       | 55 w/WSAs |
|-------------------------------------|----------|-----------------|------------|----------|-----------|
| REG American River at Fair Oaks     | 3 (0)    | 2 (0)           | 3 (0)      | 3 (0)    | 0 (0)     |
| REG Bear River below Lower Bear Dam | 18 (2)   | 18 (2)          | 18 (2)     | 18 (2)   | 18 (2)    |
| REG Below Little Grass Valley Dam   | 14 (1)   | 14 (1)          | 14 (1)     | 14 (1)   | 14 (1)    |
| REG below SFF Tunnel                | 14 (1)   | 14 (1)          | 14 (1)     | 14 (1)   | 14 (1)    |
| REG Below Tiger River Regulator     | 2 (0)    | 2 (0)           | 2 (0)      | 2 (0)    | 2 (0)     |
| REG Clear Creek below Igo           | 153 (13) | 155 (13)        | 149 (13)   | 149 (13) | 150 (13)  |
| REG Cole Creek below Diversion Dam  | 12 (1)   | 12 (1)          | 12 (1)     | 12 (1)   | 12 (1)    |
| REG D893 H St                       | 3 (0)    | 1 (0)           | 3 (0)      | 3 (0)    | 0 (0)     |
| REG Downstream of Forbestown Dam    | 1 (0)    | 1 (0)           | 1 (0)      | 1 (0)    | 1 (0)     |
| REG Downstream of Lost Creek Dam    | 2 (0)    | 2 (0)           | 2 (0)      | 2 (0)    | 2 (0)     |
| REG Hamilton Branch                 | 1 (0)    | 1 (0)           | 1 (0)      | 1 (0)    | 1 (0)     |
| REG HighFlow Channel                | 1 (0)    | 2 (0)           | 1 (0)      | 0 (0)    | 0 (0)     |

| Requirement                             | Baseline | 2008-2009 BiOps | 2019 BiOps | VA       | 55 w/WSAs |
|-----------------------------------------|----------|-----------------|------------|----------|-----------|
| REG Kellogg Creek below Los Vaqueros    | 194 (16) | 194 (16)        | 194 (16)   | 194 (16) | 194 (16)  |
| REG Little Rubicon below Diversion      | 22 (2)   | 22 (2)          | 22 (2)     | 22 (2)   | 22 (2)    |
| REG Lodi1950 Base                       | 10 (1)   | 10 (1)          | 10 (1)     | 10 (1)   | 10 (1)    |
| REG Lodi1950 HiMayStorage               | 79 (7)   | 79 (7)          | 79 (7)     | 79 (7)   | 77 (6)    |
| REG Lodi1950                            | 48 (4)   | 48 (4)          | 48 (4)     | 48 (4)   | 62 (5)    |
| LoMayStorageHiEOMStorage                |          |                 |            |          |           |
| REG Lodi22415 Base                      | 10 (1)   | 10 (1)          | 10 (1)     | 10 (1)   | 10 (1)    |
| REG Lodi22415 HiPrecipHiEOMStorage      | 63 (5)   | 63 (5)          | 63 (5)     | 63 (5)   | 70 (6)    |
| REG Lodi22415_HiPrecipLoEOMStorage      | 2 (0)    | 2 (0)           | 2 (0)      | 2 (0)    | 2 (0)     |
| REG Lodi22415 LoPrecipHiEOMStorage      | 2 (0)    | 2 (0)           | 2 (0)      | 2 (0)    | 2 (0)     |
| REG LowFlowChannel                      | 1 (0)    | 1 (0)           | 1 (0)      | 0 (0)    | 0 (0)     |
| REG Middle Yuba below Our House Dam     | 59 (5)   | 59 (5)          | 59 (5)     | 59 (5)   | 59 (5)    |
| REG Mormon Ravine                       | 99 (8)   | 99 (8)          | 99 (8)     | 99 (8)   | 99 (8)    |
| REG NF American below Lake Valley Canal | 137 (12) | 137 (12)        | 137 (12)   | 137 (12) | 137 (12)  |
| REG NF Mokelumne below Salt Spring Dam  | 2 (0)    | 2 (0)           | 2 (0)      | 2 (0)    | 2 (0)     |
| REG NS Fork Long Canyon below Dam       | 1 (0)    | 1 (0)           | 1 (0)      | 1 (0)    | 1 (0)     |
| REG Rubicon below Rubicon Dam           | 21 (2)   | 21 (2)          | 21 (2)     | 21 (2)   | 21 (2)    |
| REG Silver Creek below Oyster Creek     | 93 (8)   | 93 (8)          | 93 (8)     | 93 (8)   | 93 (8)    |
| REG Stony Creek below Black Butte       | 4 (0)    | 4 (0)           | 4 (0)      | 4 (0)    | 25 (2)    |
| REG Stony Creek below East Park Dam     | 3 (0)    | 3 (0)           | 3 (0)      | 3 (0)    | 23 (2)    |
| REG Stony Creek below Northside Dam     | 4 (0)    | 4 (0)           | 4 (0)      | 4 (0)    | 22 (2)    |
| REG Stony Creek below Stony Gorge       | 4 (0)    | 4 (0)           | 4 (0)      | 4 (0)    | 21 (2)    |
| REG Trinity River below Lewiston        | 3 (0)    | 3 (0)           | 1 (0)      | 1 (0)    | 1 (0)     |
| REG Yuba River near Marysville          | 3 (0)    | 3 (0)           | 3 (0)      | 3 (0)    | 3 (0)     |
| REG Yuba River near Smartville          | 3 (0)    | 3 (0)           | 3 (0)      | 3 (0)    | 3 (0)     |

**Table H1a2-476. Number of Months (Percent of Months) with Unmet SWRCB Instream Flow Requirements**

| Requirement          | Baseline | 2008-2009 BiOps | 2019 BiOps | VA    | 55 w/WSAs |
|----------------------|----------|-----------------|------------|-------|-----------|
| SWRCB Black Butte    | -        | 0 (0)           | 0 (0)      | 0 (0) | 14 (1)    |
| SWRCB Clear Lake     | -        | 0 (0)           | 0 (0)      | 0 (0) | 52 (4)    |
| SWRCB Cosumnes River | -        | 0 (0)           | 0 (0)      | 0 (0) | 6 (1)     |
| SWRCB Oroville       | -        | 0 (0)           | 0 (0)      | 0 (0) | 9 (1)     |
| SWRCB Stony Creek    | -        | 0 (0)           | 0 (0)      | 0 (0) | 5 (0)     |