

**Appendix 12L**  
**Weighted Useable Area Analysis**

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# APPENDIX 12L

## Weighted Useable Area Analysis

### 12L.1 Overview

This appendix describes the approach used to compute weighted usable area (WUA) for estimating seasonal spawning and rearing habitat of Chinook salmon species and steelhead, for analysis of the Sites Reservoir Project (Project) action alternatives (alternatives) for the Draft Environmental Impact Report/Environmental Impact Statement (DEIR/EIS). It includes a summary of the flow versus WUA relationships and results used in the detailed evaluation of the alternatives. Results were used or referenced in Chapter 12 Aquatic Biological Resources. The fisheries impact assessment and methodology is described in Chapter 12 Aquatic Biological Resources and in Appendix 12B Fisheries Impact Assessment Methodology and Appendix 12C Fisheries Impact Summary.

#### 12L.1.1 Introduction

The analytical framework used to evaluate the alternatives is summarized in Chapter 5 Guide to the Resource Analyses and Appendix 6B Water Resources System Modeling. Assumptions used in modeling the alternatives are summarized in Appendix 6A Modeling of Alternatives. WUA estimates provide an approach to quantify the availability of the flow-dependent habitat suitable for each life stage. In evaluating the alternatives, seasonal WUA estimates of total suitable spawning and rearing habitat were computed for the relevant Chinook salmon run and steelhead on Clear Creek, the Sacramento River, Feather River, and American River.

#### 12L.1.2 Weighted Useable Area

To compare the operational flow regime and evaluate the potential effects on habitat for anadromous species inhabiting streams, it was necessary to determine the relationships between streamflow and habitat availability for each life stage of these species in the rivers in which flows may be altered by Project operations.

A number of studies have been conducted using the models and techniques contained within the Instream Flow Incremental Methodology (IFIM) to establish these relationships in streams within the study area. The analytic variable provided by the IFIM is total habitat, in units of Weighted Useable Area (WUA), for each life stage (fry, juvenile and spawning) of each evaluation species (or race as applied to Chinook Salmon). Habitat (WUA) incorporates both macro- and microhabitat features. Macrohabitat features include changes in flow and microhabitat features include the hydraulic and structural conditions (depth, velocity, substrate or cover) affected by flow, which define the actual living space of the organisms. The total habitat available to a species/life stage at any streamflow is the area of overlap between available microhabitat and macrohabitat conditions. Because the combination of depths, velocities, and substrates preferred by species and life stages varies, WUA values at a given flow differ substantially for the species and life stages evaluated.

WUA-flow relationships have been developed for only some of the rivers where simulated flows were available. Therefore, flow dependent habitat availability was evaluated quantitatively only for Clear Creek and the Sacramento, Feather, and American rivers and was not reported for other rivers evaluated in this EIR/EIS. Tables of the spawning habitat-discharge relationships used in the calculations of

spawning WUA for these rivers are provided below (see Tables 12L-1 to 12L-11). Because the WUA-flow relationships developed by the most recent IFIM studies present WUA values within particular flow ranges at particular variable steps, in many cases the monthly flow for a particular reach fell between two flows for which there were WUA values. In these cases, the value was determined by linear interpolation between the available WUA values for the flows immediately below and above the target flow. When the target flow was lower than the lowermost flow for which a WUA value exists, the corresponding WUA value was determined by linear interpolation between a flow of zero and the lowermost flow for which a WUA value exists. When the target flow was higher than the highest flow for which a WUA value exists, the corresponding WUA value was determined by assuming the WUA value for the highest flow.

Within Clear Creek, there are three segments for which WUA tables are available: the Upper Alluvial Segment (Whiskeytown Dam to Camp Bridge); Canyon Segment (Camp Bridge to Clear Creek Road Bridge); and Lower Alluvial Segment (Clear Creek Road Bridge to Sacramento River). Spring-run Chinook Salmon spawn in the upper two segments, fall-run Chinook Salmon spawn in the lower segment and steelhead/Rainbow Trout spawn in all three segments. Spring-run Chinook Salmon and steelhead fry and juveniles rear in all three segments while fall-run Chinook Salmon rear in the lower segment. The relationships between WUA and flow in all of these segments for each of these species and life stages are based upon the flow released below Whiskeytown Dam and are described in USFWS (2007, 2011a, 2011b, and 2013). For this analysis, if the WUA values for a species and life stage were in the upper section only, the upper two segments were combined for an upper Clear Creek total WUA value at each flow. The same approach was done for the lower segment. If the species and life stage spanned the entire Clear Creek, WUA values were combined for the three segments to provide an estimate of the total WUA available at each flow.

Within the Sacramento River, there are two river segments for which WUA tables are available: Keswick Dam to Battle Creek and Battle Creek to Deer Creek. Spring-run and fall-run Chinook Salmon and steelhead spawn only in the upper segment; fry and juveniles rear in both segments. Each of these segments have multiple reaches identified and for which WUA was calculated (USFWS 2005a, 2005b, and 2006). For this analysis, WUA estimates in each reach between Keswick Dam and Battle Creek were combined into an estimate of the total amount of habitat available in that river segment. Similarly, WUA estimates for reaches between Battle Creek and Deer Creek were combined into an estimate of the total amount of WUA available in that river segment.

For the American River, WUA estimates were available only for fall-run Chinook Salmon and steelhead spawning. USFWS (2003) identified five reaches between Sailor Bar (RM 22.1) and Rossmoor (RM 16.6). The relationships between WUA and flow in all of these reaches was based upon the flow released below Nimbus Dam. For this analysis, WUA estimates within the five reaches were combined into an estimate of the total WUA in the American River at a given flow released from Nimbus Dam.

For the Feather River, WUA estimates are available for spring-run and fall-run Chinook Salmon and steelhead spawning in two reaches: the low flow channel from the fish barrier dam (RM 67) to the Thermalito Afterbay outlet (RM 59) and the lower Feather River high flow channel from the Thermalito Afterbay outlet to Honcut Creek (RM 44). The relationship between WUA and flow in these reaches for each of these species is described in DWR (2004). The WUA-flow relationships developed by DWR (2004) are based upon the merging of IFIM data collected by DWR in 1992 and reviewed by DWR (DWR, 2002), with new depth, velocity, substrate and cover data collected along supplemental PHABSIM cross-section transects in 2002 and 2003. For this analysis, WUA estimates within the two

reaches were kept separate and estimates of WUA in each reach were based upon the different flows in each reach.

WUA values were calculated and presented only on a monthly time-step, and not as seasonal or annual values. WUA values based on the monthly CalSim II flows were prepared for detailed evaluation of the alternatives. Monthly WUA values are presented as the average total WUA in each river segment, for the entire 82-year simulation period and the average total WUA in each of five water year types for each alternative. Differences between the alternatives and the two bases of comparison (No Action Alternative and Second Basis of Comparison) are used to identify the effects of each alternative on habitat availability (WUA) for each species and life stage in each river. These comparisons were made only for the months in which the species and life stage is anticipated to be present in each river.

The ability to estimate WUA values is limited due to the monthly time-step of the CalSim II results. The monthly time-step is most limiting during the fall through spring seasons, when flows vary significantly on a daily basis due to hydrologic conditions. Hydrologic variability in the runoff and tributary flows cause significant variability of flows in the areas of interest for the WUA computations. During the periods of low flows, regulated flows from reservoir releases dampen the impact of daily variability of flows on WUA estimates. Monthly time-step simulation results do not capture the daily variability or change in variability between alternative operations. Nonetheless, these estimates provide an indication of the habitat differences among the alternative operational scenarios evaluated.

**Table 12L-1  
Flow versus Weighted Useable Area (WUA) Relationship for Spring-Run Chinook Salmon  
in Clear Creek**

| Flow (cfs) | WUA (square feet)                        |   |   |
|------------|--|---|---|
|            | Upper Clear Creek<br>Spring-run Spawning | Total Clear Creek<br>Spring-run Fry Rearing | Total Clear Creek<br>Spring-run Juvenile<br>Rearing |
| 0          | 0  | 0   | 0   |
| 50         | 1,737                                    | 305,087                                     | 181,084   |
| 75         | 3,319                                    | 300,786                                     | 231,295   |
| 100        | 4,986                                    | 302,878                                     | 276,361   |
| 125        | 6,504                                    | 308,988                                     | 316,822   |
| 150        | 7,948                                    | 310,298                                     | 353,767   |
| 175        | 9,486                                    | 314,688                                     | 391,364   |
| 200        | 10,739                                   | 318,856                                     | 421,350   |
| 225        | 11,905                                   | 330,375                                     | 447,973   |
| 250        | 13,020                                   | 338,441                                     | 473,325   |
| 275        | 14,067                                   | 355,645                                     | 495,004   |
| 300        | 15,078                                   | 369,849                                     | 515,631   |
| 350        | 16,876                                   | 381,099                                     | 552,011   |
| 400        | 18,463                                   | 389,480                                     | 583,890   |
| 450        | 19,744                                   | 407,051                                     | 605,088   |
| 500        | 20,726                                   | 420,617                                     | 635,094   |
| 550        | 21,379                                   | 438,624                                     | 653,678   |
| 600        | 22,034                                   | 463,029                                     | 662,533   |

| Flow (cfs) | WUA (square feet)                     |  |   |
|------------|---------------------------------------|--|---|
|            | Upper Clear Creek Spring-run Spawning | Total Clear Creek Spring-run Fry Rearing | Total Clear Creek Spring-run Juvenile Rearing |
| 650        | 22,581                                | 470,058                                  | 676,055                                       |
| 700        | 22,855                                | 471,109                                  | 686,271                                       |
| 750        | 22,924                                | 476,652                                  | 693,625                                       |
| 800        | 23,039                                | 480,913                                  | 699,399                                       |
| 850        | 22,953                                | 497,147                                  | 701,810                                       |
| 900        | 23,012                                | 510,275                                  | 703,629                                       |
| 99,999     | 23,012                                | 510,275                                  | 703,629                                       |

Note:

cfs = cubic feet per second

**Table 12L-2**  
**Flow versus Weighted Useable Area (WUA) Relationship for Fall-Run Chinook Salmon**  
**in Clear Creek**

| Flow (cfs) | WUA (square feet)                   |  |   |
|------------|-------------------------------------|--|---|
|            | Lower Clear Creek Fall-run Spawning | Lower Clear Creek Fall-run Fry Rearing | Lower Clear Creek Fall-run Juvenile Rearing |
| 0          | 0                                   | 0                                      | 0   |
| 50         | 78,145                              | 536,166                                | 224,915                                     |
| 75         | 107,008                             | 528,779                                | 248,454                                     |
| 100        | 130,194                             | 515,513                                | 267,634                                     |
| 125        | 151,079                             | 501,845                                | 283,272                                     |
| 150        | 168,950                             | 490,718                                | 296,863                                     |
| 175        | 185,871                             | 478,203                                | 308,968                                     |
| 200        | 197,705                             | 470,453                                | 318,200                                     |
| 225        | 206,377                             | 463,637                                | 325,414                                     |
| 250        | 212,410                             | 458,051                                | 330,224                                     |
| 275        | 216,026                             | 454,405                                | 334,768                                     |
| 300        | 217,880                             | 450,992                                | 337,862                                     |
| 350        | 217,553                             | 444,511                                | 338,627                                     |
| 400        | 213,538                             | 440,975                                | 334,869                                     |
| 450        | 207,615                             | 438,123                                | 315,866                                     |
| 500        | 199,662                             | 425,804                                | 315,769                                     |
| 550        | 191,877                             | 418,842                                | 304,825                                     |
| 600        | 184,133                             | 417,735                                | 284,289                                     |
| 650        | 176,448                             | 410,118                                | 273,178                                     |
| 700        | 169,132                             | 404,258                                | 263,294                                     |
| 750        | 162,105                             | 400,288                                | 253,609                                     |
| 800        | 155,008                             | 393,976                                | 242,998                                     |
| 850        | 148,934                             | 390,482                                | 234,032                                     |
| 900        | 143,371                             | 389,928                                | 226,215                                     |
| 99,999     | 143,371                             | 389,928                                | 226,215                                     |

Note:

cfs = cubic feet per second

**Table 12L-3**  
**Flow versus Weighted Useable Area (WUA) Relationship for Spring-Run Chinook Salmon**  
**in Clear Creek**

| Flow (cfs) | WUA (square feet)                                  |   |  |
|------------|--|---|--|
|            | Total Clear Creek Steelhead/Rainbow Trout Spawning | Total Clear Creek Steelhead/Rainbow Trout Fry Rearing | Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing |
| 0          | 0  | 0   | 0  |
| 50         | 14,700   | 224,356   | 181,084  |
| 75         | 22,837   | 222,351   | 231,295  |
| 100        | 29,787   | 214,949   | 276,361  |
| 125        | 36,338   | 211,348   | 316,822  |
| 150        | 42,328   | 209,184   | 353,767  |
| 175        | 48,149   | 206,849   | 391,364  |
| 200        | 52,420   | 203,238   | 421,350  |
| 225        | 55,867   | 208,995   | 447,973  |
| 250        | 58,528   | 209,322   | 473,325  |
| 275        | 60,424   | 212,115   | 495,004  |
| 300        | 61,871   | 220,851   | 515,631  |
| 350        | 63,255   | 228,833   | 552,011  |
| 400        | 63,412   | 230,063   | 583,890  |
| 450        | 62,622   | 241,496   | 605,088  |
| 500        | 60,877   | 246,000   | 635,094  |
| 550        | 58,758   | 251,634   | 653,678  |
| 600        | 56,675   | 261,221   | 662,533  |
| 650        | 54,518   | 268,887   | 676,055  |
| 700        | 52,169   | 270,618   | 686,271  |
| 750        | 49,738   | 271,310   | 693,625  |
| 800        | 47,369   | 271,035   | 699,399  |
| 850        | 45,171   | 274,512   | 701,810  |
| 900        | 43,337   | 275,489   | 703,629  |
| 99,999     | 43,337   | 275,489   | 703,629  |

Note:

cfs = cubic feet per second

**Table 12L-4  
Flow versus Weighted Useable Area (WUA) Relationship for Fall-Run Chinook Salmon  
in the Sacramento River**

| Flow (cfs) | WUA (square feet)                            |   |  |   |
|------------|--|---|--|---|
|            | Battle Creek to Deer Creek Fall-run Spawning | Keswick to Battle Creek Fall-run Spawning | Keswick to Battle Creek Fall-run Fry Rearing | Keswick to Battle Creek Fall-run Juvenile Rearing |
| 0          | 0  | 0   | 0  | 0   |
| 3,250      | 2,432,159                                    | 1,073,679                                 | 1,871,072                                    | 728,233   |
| 3,500      | 2,472,408                                    | 1,089,475                                 | 1,821,873                                    | 715,103   |
| 3,750      | 2,517,107                                    | 1,093,650                                 | 1,830,154                                    | 701,709   |
| 4,000      | 2,548,379                                    | 1,089,818                                 | 1,798,254                                    | 691,339   |
| 4,250      | 2,537,270                                    | 1,084,494                                 | 1,750,173                                    | 688,865   |
| 4,500      | 2,572,156                                    | 1,074,099                                 | 1,690,021                                    | 681,467   |
| 4,750      | 2,617,635                                    | 1,057,966                                 | 1,617,681                                    | 668,630   |
| 5,000      | 2,607,065                                    | 1,036,730                                 | 1,542,592                                    | 654,220   |
| 5,250      | 2,619,093                                    | 1,017,272                                 | 1,478,235                                    | 640,414   |
| 5,500      | 2,610,395                                    | 994,119                                   | 1,419,447                                    | 627,375   |
| 6,000      | 2,578,633                                    | 942,777                                   | 1,328,088                                    | 604,811   |
| 6,500      | 2,504,604                                    | 891,555                                   | 1,279,831                                    | 582,950   |
| 7,000      | 2,438,632                                    | 837,998                                   | 1,235,057                                    | 556,427   |
| 7,500      | 2,372,848                                    | 784,594                                   | 1,164,277                                    | 532,183   |
| 8,000      | 2,285,308                                    | 731,498                                   | 1,120,681                                    | 507,090   |
| 9,000      | 2,106,590                                    | 643,378                                   | 1,091,836                                    | 464,272   |
| 10,000     | 1,948,099                                    | 555,487                                   | 1,092,181                                    | 428,954   |
| 11,000     | 1,712,607                                    | 474,731                                   | 1,085,512                                    | 403,177   |
| 12,000     | 1,483,279                                    | 408,952                                   | 1,101,042                                    | 379,516   |
| 13,000     | 1,269,818                                    | 346,840                                   | 1,118,019                                    | 370,163   |
| 14,000     | 1,094,316                                    | 301,374                                   | 1,142,898                                    | 358,085   |
| 15,000     | 952,887                                      | 269,303                                   | 1,167,580                                    | 347,450   |
| 17,000     | 749,112                                      | 222,822                                   | 1,220,225                                    | 361,817   |
| 19,000     | 630,753                                      | 185,045                                   | 1,222,740                                    | 369,470   |
| 21,000     | 526,365                                      | 163,408                                   | 1,264,409                                    | 362,192   |
| 23,000     | 462,509                                      | 141,757                                   | 1,270,854                                    | 366,577   |
| 25,000     | 421,614                                      | 130,345                                   | 1,282,882                                    | 372,986   |
| 27,000     | 382,837                                      | 132,036                                   | 1,305,362                                    | 378,114   |
| 29,000     | 340,721                                      | 119,187                                   | 1,295,423                                    | 361,772   |
| 31,000     | 298,265                                      | 103,856                                   | 1,311,020                                    | 378,338   |
| 99,999     | 298,265                                      | 103,856                                   | 1,311,020                                    | 378,338   |

Note:

cfs = cubic feet per second

**Table 12L-5**  
**Flow versus Weighted Useable Area (WUA) Relationship for Late-Fall-Run Chinook Salmon**  
**in the Sacramento River**

| Flow (cfs) | WUA (square feet)                                 |   |  |
|------------|---|---|--|
|            | Keswick to Battle Creek<br>Late-Fall-run Spawning | Keswick to Battle Creek<br>Late-Fall-run Fry<br>Rearing | Keswick to Battle Creek<br>Late-Fall-run Juvenile<br>Rearing |
| 0          | 0   | 0   | 0  |
| 3,250      | 1,357,068   | 1,757,540   | 659,077  |
| 3,500      | 1,378,274   | 1,718,590   | 648,446  |
| 3,750      | 1,378,912   | 1,740,549   | 637,005  |
| 4,000      | 1,370,262   | 1,721,404   | 628,277  |
| 4,250      | 1,359,143   | 1,680,035   | 627,744  |
| 4,500      | 1,342,482   | 1,629,936   | 620,092  |
| 4,750      | 1,320,680   | 1,571,143   | 608,977  |
| 5,000      | 1,295,212   | 1,502,665   | 596,274  |
| 5,250      | 1,271,113   | 1,437,972   | 583,959  |
| 5,500      | 1,243,776   | 1,376,346   | 572,860  |
| 6,000      | 1,181,069   | 1,261,669   | 554,054  |
| 6,500      | 1,122,270   | 1,203,340   | 536,133  |
| 7,000      | 1,065,218   | 1,147,957   | 513,493  |
| 7,500      | 1,012,511   | 1,076,669   | 490,854  |
| 8,000      | 962,228   | 1,032,614   | 471,581  |
| 9,000      | 881,467   | 996,279   | 433,927  |
| 10,000     | 808,457   | 1,001,320   | 402,178  |
| 11,000     | 775,199   | 996,976   | 379,536  |
| 12,000     | 662,349   | 1,032,176   | 359,783  |
| 13,000     | 591,015   | 1,066,055   | 351,167  |
| 14,000     | 536,623   | 1,113,975   | 340,209  |
| 15,000     | 490,838   | 1,157,098   | 332,332  |
| 17,000     | 416,672   | 1,168,615   | 350,563  |
| 19,000     | 343,307   | 1,080,514   | 360,158  |
| 21,000     | 290,800   | 1,116,739   | 355,202  |
| 23,000     | 236,295   | 1,127,194   | 361,149  |
| 25,000     | 202,402   | 1,134,116   | 369,272  |
| 27,000     | 185,740   | 1,225,596   | 376,024  |
| 29,000     | 164,178   | 1,262,909   | 363,757  |
| 31,000     | 140,077   | 1,244,123   | 382,314  |
| 99,999     | 140,077   | 1,244,123   | 382,314  |

Note:

cfs = cubic feet per second

**Table 12L-6**  
**Flow versus Weighted Useable Area (WUA) Relationship for Winter-Run Chinook Salmon**  
**in the Sacramento River**

| Flow (cfs) | WUA (square feet)                           |  |   |
|------------|---|--|---|
|            | Keswick to Battle Creek Winter-run Spawning | Keswick to Battle Creek Winter-run Fry Rearing | Keswick to Battle Creek Winter-run Juvenile Rearing |
| 0          | 0   | 0  | 0   |
| 3,250      | 1,125,187                                   | 782,341  | 334,216   |
| 3,500      | 1,177,489                                   | 778,889  | 335,588   |
| 3,750      | 1,218,972                                   | 791,817  | 333,961   |
| 4,000      | 1,254,492                                   | 797,410  | 333,396   |
| 4,250      | 1,289,068                                   | 799,911  | 333,004   |
| 4,500      | 1,320,041                                   | 798,463  | 333,189   |
| 4,750      | 1,347,509                                   | 790,977  | 330,335   |
| 5,000      | 1,370,744                                   | 775,409  | 325,718   |
| 5,250      | 1,384,194                                   | 764,319  | 321,756   |
| 5,500      | 1,398,590                                   | 755,564  | 319,393   |
| 6,000      | 1,410,564                                   | 715,517  | 318,494   |
| 6,500      | 1,415,012                                   | 727,585  | 318,071   |
| 7,000      | 1,406,770                                   | 716,784  | 314,041   |
| 7,500      | 1,389,451                                   | 690,283  | 311,007   |
| 8,000      | 1,367,448                                   | 672,429  | 308,046   |
| 9,000      | 1,321,815                                   | 644,819  | 296,094   |
| 10,000     | 1,283,522                                   | 666,210  | 283,771   |
| 11,000     | 1,198,399                                   | 701,228  | 277,165   |
| 12,000     | 1,103,552                                   | 753,835  | 275,603   |
| 13,000     | 1,004,918                                   | 797,594  | 270,537   |
| 14,000     | 915,365                                     | 869,871  | 268,431   |
| 15,000     | 825,757                                     | 948,339  | 274,828   |
| 17,000     | 684,413                                     | 1,001,423                                      | 314,963   |
| 19,000     | 565,235                                     | 917,104  | 344,970   |
| 21,000     | 475,366                                     | 918,518  | 343,611   |
| 23,000     | 406,166                                     | 935,828  | 352,009   |
| 25,000     | 353,236                                     | 968,252  | 364,822   |
| 27,000     | 327,296                                     | 1,073,445                                      | 379,054   |
| 29,000     | 312,014                                     | 1,164,262                                      | 382,682   |
| 31,000     | 302,328                                     | 1,168,539                                      | 408,157   |
| 99,999     | 302,328                                     | 1,168,539                                      | 408,157   |

Note:

cfs = cubic feet per second

**Table 12L-7  
Flow versus Weighted Useable Area (WUA) Relationship for Steelhead/Rainbow Trout in the  
Sacramento River**

| Flow (cfs) | WUA (square feet)                             |
|------------|---|
|            | Keswick to Battle Creek<br>Steelhead Spawning |
| 0          | 0   |
| 3,250      | 271,412                                       |
| 3,500      | 278,641                                       |
| 3,750      | 281,518                                       |
| 4,000      | 281,229                                       |
| 4,250      | 280,488                                       |
| 4,500      | 282,045                                       |
| 4,750      | 282,780                                       |
| 5,000      | 283,534                                       |
| 5,250      | 285,728                                       |
| 5,500      | 288,401                                       |
| 6,000      | 289,884                                       |
| 6,500      | 289,103                                       |
| 7,000      | 284,623                                       |
| 7,500      | 276,950                                       |
| 8,000      | 268,176                                       |
| 9,000      | 251,698                                       |
| 10,000     | 232,933                                       |
| 11,000     | 210,724                                       |
| 12,000     | 189,312                                       |
| 13,000     | 167,383                                       |
| 14,000     | 146,119                                       |
| 15,000     | 126,295                                       |
| 17,000     | 93,806  |
| 19,000     | 70,820  |
| 21,000     | 58,872  |
| 23,000     | 46,682  |
| 25,000     | 44,177  |
| 27,000     | 41,301  |
| 29,000     | 35,380  |
| 31,000     | 32,295  |
| 99,999     | 32,295  |

Note:

cfs = cubic feet per second

**Table 12L-8**  
**Flow versus Weighted Useable Area (WUA) Relationship for Fall-Run**  
**in the Lower Feather River**

| Flow (cfs) | WUA (square feet)                     |  |
|------------|---------------------------------------|--|
|            | Low Flow Channel<br>Fall-run Spawning | Below Thermalito<br>Fall-run Fry Rearing |
| 0          | 0                                     | 0  |
| 3,250      | 3,460,980                             | 20,780,100                               |
| 3,500      | 5,903,400                             | 26,322,670                               |
| 3,750      | 8,565,240                             | 30,204,290                               |
| 4,000      | 11,197,250                            | 32,691,770                               |
| 4,250      | 13,691,620                            | 33,679,540                               |
| 4,500      | 15,979,160                            | 34,378,390                               |
| 4,750      | 18,011,420                            | 34,878,890                               |
| 5,000      | 19,778,950                            | 35,137,160                               |
| 5,250      | 21,271,740                            | 35,198,090                               |
| 5,500      | 22,472,430                            | 35,058,990                               |
| 6,000      | 23,416,740                            | 34,748,930                               |
| 6,500      | 24,090,230                            | 34,278,830                               |
| 7,000      | 24,525,810                            | 32,571,050                               |
| 7,500      | 24,736,140                            | 30,408,820                               |
| 8,000      | 24,741,090                            | 28,051,660                               |
| 9,000      | 24,567,120                            | 25,750,770                               |
| 10,000     | 24,248,470                            | 23,704,410                               |
| 11,000     | 23,821,070                            | 21,947,580                               |
| 12,000     | 22,655,140                            | 20,471,850                               |
| 13,000     | 21,237,340                            | 19,214,760                               |
| 14,000     | 19,662,700                            | 18,140,940                               |
| 15,000     | 18,012,660                            | 17,155,790                               |
| 17,000     | 16,416,190                            | 16,256,150                               |
| 19,000     | 14,861,290                            | 15,441,510                               |
| 21,000     | 12,004,900                            | 14,676,420                               |
| 23,000     | 9,588,350                             | 13,960,600                               |
| 25,000     | 7,178,580                             | 13,282,640                               |
| 27,000     | 5,454,150                             | 12,622,640                               |
| 29,000     | 4,264,050                             | 11,366,810                               |
| 31,000     | 3,523,410                             | 10,224,170                               |
| 99,999     | 3,523,410                             | 10,224,170                               |

Note:

cfs = cubic feet per second

**Table 12L-9  
Flow versus Weighted Useable Area (WUA) Relationship for Fall-Run  
in the Lower Feather River**

| Flow (cfs) | WUA (square feet)                      |   |
|------------|--|---|
|            | Low Flow Channel<br>Steelhead Spawning | Below Thermalito<br>Steelhead Fry Rearing |
| 0          | 0                                      | 0   |
| 3,250      | 757,810                                | 10,852,180                                |
| 3,500      | 846,400                                | 12,808,710                                |
| 3,750      | 884,980                                | 12,663,550                                |
| 4,000      | 919,660                                | 11,745,270                                |
| 4,250      | 971,890                                | 11,191,230                                |
| 4,500      | 1,031,790                              | 10,678,780                                |
| 4,750      | 1,075,030                              | 10,170,320                                |
| 5,000      | 1,092,780                              | 9,623,500                                 |
| 5,250      | 1,084,020                              | 9,023,130                                 |
| 5,500      | 1,067,460                              | 8,424,520                                 |
| 6,000      | 1,044,300                              | 7,847,810                                 |
| 6,500      | 1,031,830                              | 7,313,430                                 |
| 7,000      | 1,013,030                              | 6,209,280                                 |
| 7,500      | 989,930                                | 5,428,120                                 |
| 8,000      | 966,920                                | 4,806,330                                 |
| 9,000      | 939,150                                | 4,264,650                                 |
| 10,000     | 897,040                                | 3,780,190                                 |
| 11,000     | 841,560                                | 3,445,820                                 |
| 12,000     | 718,450                                | 3,251,770                                 |
| 13,000     | 591,180                                | 3,142,870                                 |
| 14,000     | 474,000                                | 3,037,770                                 |
| 15,000     | 378,050                                | 2,936,170                                 |
| 17,000     | 300,270                                | 2,788,390                                 |
| 19,000     | 238,510                                | 2,636,030                                 |
| 21,000     | 154,680                                | 2,464,440                                 |
| 23,000     | 100,720                                | 2,256,520                                 |
| 25,000     | 124,360                                | 2,051,450                                 |
| 27,000     | 171,570                                | 1,851,590                                 |
| 29,000     | 215,650                                | 1,523,520                                 |
| 31,000     | 237,410                                | 1,243,430                                 |
| 99,999     | 237,410                                | 1,243,430                                 |

Note:

cfs = cubic feet per second

**Table 12L-10**  
**Flow versus Weighted Useable Area (WUA) Relationship for Fall-Run Chinook Salmon in the**  
**Lower American River**

| Flow (cfs) | WUA (square feet)                           |
|------------|---|
|            | Sailor Bar to Rossmoor<br>Fall-run Spawning |
| 0          | 0   |
| 3,250      | 761,361                                     |
| 3,500      | 817,031                                     |
| 3,750      | 853,047                                     |
| 4,000      | 871,959                                     |
| 4,250      | 877,804                                     |
| 4,500      | 881,528                                     |
| 4,750      | 881,905                                     |
| 5,000      | 866,405                                     |
| 5,250      | 840,949                                     |
| 5,500      | 810,552                                     |
| 6,000      | 779,982                                     |
| 6,500      | 745,172                                     |
| 7,000      | 672,903                                     |
| 7,500      | 607,384                                     |
| 8,000      | 542,402                                     |
| 9,000      | 494,912                                     |
| 10,000     | 455,893                                     |
| 11,000     | 431,125                                     |
| 12,000     | 395,906                                     |
| 13,000     | 369,760                                     |
| 14,000     | 346,898                                     |
| 15,000     | 324,186                                     |
| 17,000     | 305,059                                     |
| 19,000     | 289,010                                     |
| 21,000     | 272,509                                     |
| 23,000     | 258,849                                     |
| 25,000     | 249,130                                     |
| 27,000     | 245,933                                     |
| 29,000     | 225,180                                     |
| 31,000     | 210,972                                     |
| 99,999     | 210,972                                     |

Note:

cfs = cubic feet per second

**Table 12L-11**  
**Flow versus Weighted Useable Area (WUA) Relationship for Steelhead/Rainbow Trout in the**  
**Lower American River**

| Flow (cfs) | WUA (square feet)                           |
|------------|---|
|            | Sailor Bar to Rossmoor<br>Fall-run Spawning |
| 0          | 0   |
| 3,250      | 244,184                                     |
| 3,500      | 259,200                                     |
| 3,750      | 271,081                                     |
| 4,000      | 275,989                                     |
| 4,250      | 282,068                                     |
| 4,500      | 285,223                                     |
| 4,750      | 285,665                                     |
| 5,000      | 280,536                                     |
| 5,250      | 273,113                                     |
| 5,500      | 264,182                                     |
| 6,000      | 257,478                                     |
| 6,500      | 242,542                                     |
| 7,000      | 223,125                                     |
| 7,500      | 204,398                                     |
| 8,000      | 186,065                                     |
| 9,000      | 173,712                                     |
| 10,000     | 163,188                                     |
| 11,000     | 149,814                                     |
| 12,000     | 135,625                                     |
| 13,000     | 126,901                                     |
| 14,000     | 118,107                                     |
| 15,000     | 108,736                                     |
| 17,000     | 101,952                                     |
| 19,000     | 95,945                                      |
| 21,000     | 89,863                                      |
| 23,000     | 85,313                                      |
| 25,000     | 80,198                                      |
| 27,000     | 82,740                                      |
| 29,000     | 75,103                                      |
| 31,000     | 70,711                                      |
| 99,999     | 70,711                                      |

Note:

cfs = cubic feet per second

## 12L.2 Results

This section includes the results of the WUA Analysis for the alternatives evaluated in the DEIR/EIS. The fisheries impact assessment and methodology is described in Chapter 12 Aquatic Biological Resources and in Appendix 12B Fisheries Impact Assessment Methodology and Appendix 12C Fisheries Impact Summary.

### 12L.2.1 Introduction

Total WUA values for detailed evaluation of spawning habitat of Chinook salmon and steelhead in Clear Creek, Sacramento, Feather, and American rivers are included in this appendix. This document includes summary tables comparing the total WUA, by the months corresponding to the specific species and life-stage. The summary tables are organized by river basin, species, and life-stage in the following order:

- Upper Clear Creek Spring-run Spawning WUA
- Total Clear Creek Spring-run Fry Rearing WUA
- Total Clear Creek Spring-run Juvenile Rearing WUA
- Lower Clear Creek Fall-run Spawning WUA
- Lower Clear Creek Fall-run Fry Rearing WUA
- Lower Clear Creek Fall-run Juvenile Rearing WUA
- Total Clear Creek Steelhead/Rainbow Trout Spawning WUA
- Total Clear Creek Steelhead/Rainbow Trout Fry Rearing WUA
- Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing WUA
- Sacramento River Battle Creek to Deer Creek Fall-run Spawning WUA
- Sacramento River Keswick to Battle Creek Fall-run Spawning WUA
- Sacramento River Keswick to Battle Creek Fall-run Fry Rearing WUA
- Sacramento River Keswick to Battle Creek Fall-run Juvenile Rearing WUA
- Sacramento River Keswick to Battle Creek Late-Fall-run Spawning WUA
- Sacramento River Keswick to Battle Creek Late-Fall-run Fry Rearing WUA
- Sacramento River Keswick to Battle Creek Late-Fall-run Juvenile Rearing WUA
- Sacramento River Keswick to Battle Creek Winter-run Spawning WUA
- Sacramento River Keswick to Battle Creek Winter-run Fry Rearing WUA
- Sacramento River Keswick to Battle Creek Winter-run Juvenile Rearing WUA
- Sacramento River Keswick to Battle Creek Steelhead Spawning WUA
- Feather River Low Flow Channel Steelhead Spawning WUA
- Feather River below Thermalito Steelhead Spawning WUA
- Feather River Low Flow Channel Fall-run Spawning WUA
- Feather River below Thermalito Fall-run Spawning WUA
- American River below Nimbus Fall-run Spawning WUA
- American River below Nimbus Steelhead Spawning WUA

For each species listed above, summary tables of WUA results by month are included. The tables include long-term average, and averages by water year type (SWRCB 40-30-30 Index). The tables also include the absolute and relative differences between alternatives.

WUA values for each river reach were estimated using the flows at the upstream end of all river reaches of interest. This approach does not consider the changes in flow along the river. WUA values are calculated and presented only on a monthly time-step, and not as seasonal or annual values. WUA values

are limited due to the monthly time-step of the CALSIM II results. The monthly time-step is most limiting during the fall through spring seasons when flows vary significantly on a daily basis due to hydrologic conditions. Hydrologic variability in the runoff and tributary flows cause significant variability of flows in the areas of interest for the WUA computations. Guidance on the appropriate use of these results is presented in Appendix 6B Water Resources System Modeling.

### 12L.2.2 Comparisons

Summary tables and exceedance plots of WUA for each of the species and river reaches listed above are provided for the following comparisons:

- Alternative A compared to No Action Alternative
- Alternative B compared to No Action Alternative
- Alternative C compared to No Action Alternative
- Alternative D compared to No Action Alternative

## 12L.3 References

- California Department of Water Resources (DWR). 2002. Phase 1: Evaluation of project effects on instream flows and fish habitat. Draft Report, SP-F16. Oroville Facilities Relicensing FERC Project No. 2100.
- California Department of Water Resources (DWR). 2004. Phase 2 Report, Evaluation of project effects on instream flows and fish habitat. SP-F16. Oroville Facilities Relicensing FERC Project No. 2100.
- U. S. Fish and Wildlife Service (USFWS). 2003. Comparison of PHABSIM and 2-D Modeling of habitat for steelhead and fall-run Chinook Salmon spawning in the lower American River. U.S. Fish and Wildlife Service, Sacramento, CA.
- U. S. Fish and Wildlife Service (USFWS). 2005a. Flow-habitat relationships for fall-run Chinook Salmon spawning in the Sacramento River between Battle Creek and Clear Creek. U.S. Fish and Wildlife Service, Sacramento, CA.
- U. S. Fish and Wildlife Service (USFWS). 2005b. Flow-habitat relationships for Chinook Salmon rearing in the Sacramento River between Keswick Dam and Battle Creek. U.S. Fish and Wildlife Service, Sacramento, CA.
- U. S. Fish and Wildlife Service (USFWS). 2006. Relationships between flow fluctuations and redd dewatering and juvenile stranding for Chinook Salmon and steelhead in the Sacramento River between Keswick Dam and Battle Creek. U.S. Fish and Wildlife Service, Sacramento, CA.
- U. S. Fish and Wildlife Service (USFWS). 2007. Flow-habitat relationships for spring Chinook Salmon and steelhead/Rainbow Trout spawning in Clear Creek between Whiskeytown Dam and Clear Creek Road. U.S. Fish and Wildlife Service, Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). 2011a. Flow-habitat relationships for fall-run Chinook Salmon and steelhead/Rainbow Trout spawning in Clear Creek between Clear Creek Road and the Sacramento River. U.S. Fish and Wildlife Service: Sacramento, CA.
- U.S. Fish and Wildlife Service (USFWS). 2011b. Flow-habitat relationships for spring-run Chinook Salmon and steelhead/Rainbow Trout rearing in Clear Creek between Whiskeytown Dam and Clear Creek Road. U.S. Fish and Wildlife Service: Sacramento, CA.

U.S. Fish and Wildlife Service (USFWS). 2013. Flow-habitat relationships for spring-run and fall-run Chinook Salmon and steelhead/Rainbow Trout rearing in Clear Creek between Clear Creek Road and the Sacramento River. U.S. Fish and Wildlife Service: Sacramento, CA.

**Appendix 12L**  
**Weighted Usable Area Analysis**  
**Results**

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**Alternative A Compared to No Action Alternative**

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**Table AQ-11-3a**  
**Upper Clear Creek Spring-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |
|--|---------------------------|
|  | Sep                       |
| <b>Long-term</b>   |                           |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |
| No Action Alternative  | 7,797                     |
| Alternative A  | 7,797                     |
| Difference   | 0                         |
| Percent Difference <sup>3</sup>  | 0.0%                      |
| <b>Water Year Types<sup>2</sup></b>  |                           |
| <b>Wet (32%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative A  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Above Normal (15%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative A  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Below Normal (17%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative A  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Dry (22%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative A  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Critical (15%)</b>  |                           |
| No Action Alternative  | 6,913                     |
| Alternative A  | 6,913                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| 1 Based on the 82-year simulation period   |                           |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |
| 3 Relative difference of the monthly average   |                           |

**Table AQ-11-3b**  
**Total Clear Creek Spring-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Nov                       | Dec     | Jan     | Feb     | Mar     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 316,870                   | 317,096 | 319,719 | 319,264 | 317,846 |
| Alternative A   | 316,870                   | 317,081 | 319,719 | 319,263 | 317,394 |
| Difference  | 0                         | -16     | 0       | 0       | -452    |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Alternative A   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,963 | 317,430 | 318,143 | 321,233 |
| Alternative A   | 318,856                   | 318,856 | 317,430 | 318,143 | 318,143 |
| Difference  | 0                         | -107    | 0       | 0       | -3,090  |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -1.0%   |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Alternative A   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Alternative A   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Alternative A   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-3c**  
**Total Clear Creek Spring-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Apr                       | May     | Jun     | Jul     | Aug     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 409,020                   | 484,633 | 394,677 | 249,322 | 251,370 |
| Alternative A                             | 409,020                   | 484,633 | 394,677 | 294,477 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 45,156  | -2,048  |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 18.1%   | -0.8%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 421,351                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative A                             | 421,351                   | 497,000 | 421,350 | 257,255 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 7,934   | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 3.2%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 415,719                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative A                             | 415,718                   | 497,000 | 421,350 | 346,932 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 97,610  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 39.2%   | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 406,868                   | 489,123 | 402,041 | 249,322 | 249,322 |
| Alternative A                             | 406,868                   | 489,123 | 402,041 | 317,789 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 68,467  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 27.5%   | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 410,086                   | 483,455 | 393,020 | 249,322 | 249,322 |
| Alternative A                             | 410,086                   | 483,455 | 393,020 | 294,993 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 45,671  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 18.3%   | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 376,516                   | 441,997 | 304,104 | 249,322 | 263,318 |
| Alternative A                             | 376,516                   | 441,996 | 304,104 | 294,701 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 45,380  | -13,996 |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 18.2%   | -5.3%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3d**  
**Lower Clear Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 186,712                   | 189,617 | 191,280 |
| Alternative A                             | 188,772                   | 189,617 | 191,269 |
| Difference                                | 2,060                     | 0       | -12     |
| Percent Difference <sup>3</sup>           | 1.1%                      | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,705 |
| Alternative A                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,785 |
| Alternative A                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | -80     |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 193,597                   | 193,597 | 193,597 |
| Alternative A                             | 193,597                   | 193,597 | 193,597 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 184,673                   | 185,956 | 185,956 |
| Alternative A                             | 184,673                   | 185,956 | 185,956 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 146,925                   | 164,853 | 176,139 |
| Alternative A                             | 161,005                   | 164,853 | 176,139 |
| Difference                                | 14,079                    | 0       | 0       |
| Percent Difference                        | 9.6%                      | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3e**  
**Lower Clear Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |
|---|---------------------------|---------|---------|---------|
|   | Jan                       | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |
| No Action Alternative                     | 473,449                   | 473,331 | 473,726 | 474,148 |
| Alternative A                             | 473,449                   | 473,331 | 474,148 | 474,148 |
| Difference                                | 0                         | 0       | 422     | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.1%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 467,469                   | 467,878 | 470,453 | 470,453 |
| Alternative A                             | 467,469                   | 467,878 | 470,453 | 470,453 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 472,142 | 469,262 | 472,142 |
| Alternative A                             | 473,830                   | 472,142 | 472,142 | 472,142 |
| Difference                                | 0                         | 0       | 2,880   | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.6%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 474,795                   | 474,795 | 474,795 | 474,795 |
| Alternative A                             | 474,795                   | 474,795 | 474,795 | 474,795 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 473,830 | 473,830 | 473,830 |
| Alternative A                             | 473,830                   | 473,830 | 473,830 | 473,830 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |
| No Action Alternative                     | 483,880                   | 483,880 | 483,880 | 483,880 |
| Alternative A                             | 483,880                   | 483,880 | 483,880 | 483,880 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3f**  
**Lower Clear Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | May                       | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 332,168                   | 309,022 | 256,126 | 256,868 | 295,108 |
| Alternative A                             | 332,168                   | 309,022 | 259,280 | 256,126 | 295,108 |
| Difference                                | 0                         | 0       | 3,153   | -742    | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 1.2%    | -0.3%   | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative A                             | 335,067                   | 318,200 | 258,847 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 2,720   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.1%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative A                             | 335,067                   | 318,200 | 262,094 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 5,968   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 2.3%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 333,498                   | 312,104 | 256,126 | 256,126 | 296,863 |
| Alternative A                             | 333,498                   | 312,104 | 253,646 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | -2,480  | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | -1.0%   | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 331,897                   | 308,825 | 256,126 | 256,126 | 296,863 |
| Alternative A                             | 331,897                   | 308,824 | 259,814 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 3,688   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.4%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 321,839                   | 276,656 | 256,126 | 261,194 | 284,872 |
| Alternative A                             | 321,839                   | 276,656 | 263,174 | 256,126 | 284,872 |
| Difference                                | 0                         | 0       | 7,048   | -5,068  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 2.8%    | -1.9%   | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3g**  
**Total Clear Creek Steelhead/Rainbow Trout Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |        |        |        |        |
|---|---------------------------|--------|--------|--------|--------|
|   | Dec                       | Jan    | Feb    | Mar    | Apr    |
| <b>Long-term</b>                          |                           |        |        |        |        |
| <b>Full Simulation Period<sup>1</sup></b> |                           |        |        |        |        |
| No Action Alternative                     | 84,076                    | 84,450 | 84,397 | 84,861 | 84,594 |
| Alternative A                             | 84,071                    | 84,450 | 84,397 | 84,594 | 84,594 |
| Difference                                | -5                        | 0      | 0      | -267   | 0      |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%   | 0.0%   | -0.3%  | 0.0%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |        |        |        |        |
| <b>Wet (32%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Alternative A                             | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Above Normal (15%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 87,334                    | 84,915 | 86,106 | 87,932 | 86,106 |
| Alternative A                             | 87,297                    | 84,915 | 86,106 | 86,106 | 86,106 |
| Difference                                | -37                       | 0      | 0      | -1,826 | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | -2.1%  | 0.0%   |
| <b>Below Normal (17%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Alternative A                             | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Dry (22%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Alternative A                             | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Critical (15%)</b>                     |                           |        |        |        |        |
| No Action Alternative                     | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Alternative A                             | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3h**  
**Total Clear Creek Steelhead/Rainbow Trout Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 205,170                   | 204,366 | 204,346 | 212,118 | 205,684 |
| Alternative A   | 205,169                   | 204,346 | 204,346 | 212,118 | 205,684 |
| Difference  | 0                         | -19     | 0       | 0       | 0       |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Alternative A   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 203,734                   | 203,866 | 203,734 | 212,960 | 203,238 |
| Alternative A   | 203,734                   | 203,734 | 203,734 | 212,960 | 203,238 |
| Difference  | 0                         | -132    | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | -0.1%   | 0.0%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Alternative A   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Alternative A   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Alternative A   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-3i**  
**Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 251,370 | 349,555 | 397,531 | 403,315 | 406,583 |
| Alternative A                             | 294,477                   | 249,321 | 349,555 | 401,845 | 403,315 | 406,547 |
| Difference                                | 45,156                    | -2,048  | 0       | 4,314   | 0       | -36     |
| Percent Difference <sup>3</sup>           | 18.1%                     | -0.8%   | 0.0%    | 1.1%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,350 |
| Alternative A                             | 257,255                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 7,934                     | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 3.2%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,596 |
| Alternative A                             | 346,932                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 97,610                    | 0       | 0       | 0       | 0       | -246    |
| Percent Difference                        | 39.2%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 411,695 | 411,695 | 411,695 |
| Alternative A                             | 317,789                   | 249,321 | 353,767 | 411,695 | 411,695 | 411,695 |
| Difference                                | 68,467                    | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 27.5%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 392,983 | 395,215 | 395,215 |
| Alternative A                             | 294,993                   | 249,321 | 353,767 | 392,983 | 395,215 | 395,215 |
| Difference                                | 45,671                    | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 18.3%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 263,318 | 324,987 | 312,402 | 348,577 | 370,663 |
| Alternative A                             | 294,701                   | 249,321 | 324,987 | 341,882 | 348,577 | 370,663 |
| Difference                                | 45,380                    | -13,996 | 0       | 29,480  | 0       | 0       |
| Percent Difference                        | 18.2%                     | -5.3%   | 0.0%    | 9.4%    | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3j**  
**Sacramento River Battle Creek to Deer Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 2,107,321                 | 2,387,073 | 2,143,639 | 1,924,747 |
| Alternative A                             | 2,160,080                 | 2,373,653 | 2,149,134 | 1,858,633 |
| Difference                                | 52,759                    | -13,421   | 5,495     | -66,114   |
| Percent Difference <sup>3</sup>           | 2.5%                      | -0.6%     | 0.3%      | -3.4%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,351,729                 | 2,228,013 | 1,705,869 | 1,892,666 |
| Alternative A                             | 1,429,452                 | 2,188,411 | 1,837,176 | 1,803,924 |
| Difference                                | 77,723                    | -39,601   | 131,307   | -88,742   |
| Percent Difference                        | 5.7%                      | -1.8%     | 7.7%      | -4.7%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,162,623                 | 2,438,077 | 2,076,818 | 1,815,501 |
| Alternative A                             | 2,315,387                 | 2,393,702 | 2,046,261 | 1,720,299 |
| Difference                                | 152,764                   | -44,375   | -30,557   | -95,202   |
| Percent Difference                        | 7.1%                      | -1.8%     | -1.5%     | -5.2%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,565,657                 | 2,482,964 | 2,311,339 | 1,709,439 |
| Alternative A                             | 2,567,753                 | 2,405,743 | 2,222,112 | 1,617,595 |
| Difference                                | 2,096                     | -77,221   | -89,227   | -91,844   |
| Percent Difference                        | 0.1%                      | -3.1%     | -3.9%     | -5.4%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 2,510,236                 | 2,430,603 | 2,405,256 | 1,858,949 |
| Alternative A                             | 2,553,716                 | 2,499,138 | 2,334,227 | 1,808,938 |
| Difference                                | 43,480                    | 68,534    | -71,029   | -50,010   |
| Percent Difference                        | 1.7%                      | 2.8%      | -3.0%     | -2.7%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 2,550,036                 | 2,503,533 | 2,570,884 | 2,453,389 |
| Alternative A                             | 2,521,725                 | 2,529,293 | 2,565,136 | 2,471,254 |
| Difference                                | -28,311                   | 25,759    | -5,748    | 17,865    |
| Percent Difference                        | -1.1%                     | 1.0%      | -0.2%     | 0.7%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3k**  
**Sacramento River Keswick to Battle Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |           |           |
|---|---------------------------|---------|-----------|-----------|
|   | Sep                       | Oct     | Nov       | Dec       |
| <b>Long-term</b>                          |                           |         |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |           |           |
| No Action Alternative                     | 778,334                   | 907,952 | 892,626   | 900,070   |
| Alternative A                             | 802,210                   | 905,657 | 890,457   | 847,973   |
| Difference                                | 23,876                    | -2,294  | -2,169    | -52,096   |
| Percent Difference <sup>3</sup>           | 3.1%                      | -0.3%   | -0.2%     | -5.8%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |           |           |
| <b>Wet (32%)</b>                          |                           |         |           |           |
| No Action Alternative                     | 431,343                   | 806,951 | 677,841   | 864,559   |
| Alternative A                             | 461,174                   | 783,894 | 729,292   | 800,403   |
| Difference                                | 29,831                    | -23,057 | 51,451    | -64,156   |
| Percent Difference                        | 6.9%                      | -2.9%   | 7.6%      | -7.4%     |
| <b>Above Normal (15%)</b>                 |                           |         |           |           |
| No Action Alternative                     | 749,702                   | 938,846 | 812,270   | 878,489   |
| Alternative A                             | 828,500                   | 921,968 | 796,946   | 795,088   |
| Difference                                | 78,798                    | -16,879 | -15,324   | -83,401   |
| Percent Difference                        | 10.5%                     | -1.8%   | -1.9%     | -9.5%     |
| <b>Below Normal (17%)</b>                 |                           |         |           |           |
| No Action Alternative                     | 1,006,086                 | 993,350 | 1,006,711 | 806,691   |
| Alternative A                             | 1,001,881                 | 957,342 | 964,556   | 756,910   |
| Difference                                | -4,205                    | -36,008 | -42,155   | -49,781   |
| Percent Difference                        | -0.4%                     | -3.6%   | -4.2%     | -6.2%     |
| <b>Dry (22%)</b>                          |                           |         |           |           |
| No Action Alternative                     | 972,748                   | 933,293 | 1,048,580 | 915,005   |
| Alternative A                             | 1,003,144                 | 982,295 | 1,008,915 | 868,888   |
| Difference                                | 30,397                    | 49,001  | -39,664   | -46,117   |
| Percent Difference                        | 3.1%                      | 5.3%    | -3.8%     | -5.0%     |
| <b>Critical (15%)</b>                     |                           |         |           |           |
| No Action Alternative                     | 1,001,451                 | 958,247 | 1,071,316 | 1,085,130 |
| Alternative A                             | 980,485                   | 977,913 | 1,069,020 | 1,078,797 |
| Difference                                | -20,967                   | 19,666  | -2,296    | -6,333    |
| Percent Difference                        | -2.1%                     | 2.1%    | -0.2%     | -0.6%     |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3I**  
**Sacramento River Keswick to Battle Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Dec                       | Jan       | Feb       | Mar       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,608,737                 | 1,574,899 | 1,568,308 | 1,566,903 |
| Alternative A                             | 1,473,793                 | 1,484,853 | 1,504,461 | 1,579,571 |
| Difference                                | -134,943                  | -90,046   | -63,847   | 12,668    |
| Percent Difference <sup>3</sup>           | -8.4%                     | -5.7%     | -4.1%     | 0.8%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,543,260                 | 1,323,817 | 1,350,593 | 1,341,053 |
| Alternative A                             | 1,351,773                 | 1,280,424 | 1,322,825 | 1,340,255 |
| Difference                                | -191,487                  | -43,393   | -27,768   | -798      |
| Percent Difference                        | -12.4%                    | -3.3%     | -2.1%     | -0.1%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,527,079                 | 1,516,092 | 1,442,185 | 1,401,447 |
| Alternative A                             | 1,324,551                 | 1,421,756 | 1,422,934 | 1,401,948 |
| Difference                                | -202,528                  | -94,336   | -19,251   | 501       |
| Percent Difference                        | -13.3%                    | -6.2%     | -1.3%     | 0.0%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,528,068                 | 1,679,907 | 1,622,139 | 1,676,705 |
| Alternative A                             | 1,397,557                 | 1,580,557 | 1,535,829 | 1,676,743 |
| Difference                                | -130,510                  | -99,350   | -86,311   | 38        |
| Percent Difference                        | -8.5%                     | -5.9%     | -5.3%     | 0.0%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,673,294                 | 1,756,027 | 1,778,361 | 1,751,504 |
| Alternative A                             | 1,591,566                 | 1,583,717 | 1,625,854 | 1,797,606 |
| Difference                                | -81,728                   | -172,310  | -152,508  | 46,102    |
| Percent Difference                        | -4.9%                     | -9.8%     | -8.6%     | 2.6%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,829,537                 | 1,783,512 | 1,788,265 | 1,816,696 |
| Alternative A                             | 1,799,697                 | 1,730,927 | 1,760,848 | 1,835,292 |
| Difference                                | -29,840                   | -52,585   | -27,417   | 18,596    |
| Percent Difference                        | -1.6%                     | -2.9%     | -1.5%     | 1.0%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3m**  
**Sacramento River Keswick to Battle Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 589,342                   | 599,607 | 592,785 | 537,381 | 429,924 |
| Alternative A                             | 574,973                   | 605,196 | 610,703 | 550,696 | 440,343 |
| Difference                                | -14,370                   | 5,590   | 17,918  | 13,315  | 10,420  |
| Percent Difference <sup>3</sup>           | -2.4%                     | 0.9%    | 3.0%    | 2.5%    | 2.4%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 471,613                   | 476,144 | 536,801 | 479,507 | 442,492 |
| Alternative A                             | 466,462                   | 476,206 | 538,482 | 478,164 | 437,565 |
| Difference                                | -5,151                    | 62      | 1,681   | -1,343  | -4,927  |
| Percent Difference                        | -1.1%                     | 0.0%    | 0.3%    | -0.3%   | -1.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 515,412                   | 542,841 | 610,695 | 544,981 | 409,839 |
| Alternative A                             | 507,991                   | 544,003 | 608,147 | 541,235 | 431,297 |
| Difference                                | -7,420                    | 1,163   | -2,548  | -3,745  | 21,458  |
| Percent Difference                        | -1.4%                     | 0.2%    | -0.4%   | -0.7%   | 5.2%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 630,261                   | 660,989 | 643,832 | 573,187 | 430,357 |
| Alternative A                             | 608,286                   | 666,522 | 639,767 | 582,226 | 448,648 |
| Difference                                | -21,975                   | 5,532   | -4,066  | 9,039   | 18,291  |
| Percent Difference                        | -3.5%                     | 0.8%    | -0.6%   | 1.6%    | 4.3%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 697,934                   | 694,137 | 624,081 | 558,512 | 421,092 |
| Alternative A                             | 667,896                   | 709,110 | 674,412 | 597,584 | 440,832 |
| Difference                                | -30,038                   | 14,973  | 50,331  | 39,071  | 19,739  |
| Percent Difference                        | -4.3%                     | 2.2%    | 8.1%    | 7.0%    | 4.7%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 707,729                   | 710,465 | 589,676 | 581,705 | 435,518 |
| Alternative A                             | 698,812                   | 718,451 | 640,265 | 610,197 | 444,987 |
| Difference                                | -8,917                    | 7,985   | 50,588  | 28,491  | 9,469   |
| Percent Difference                        | -1.3%                     | 1.1%    | 8.6%    | 4.9%    | 2.2%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3n**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Jan                       | Feb       | Mar       | Apr       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,095,631                 | 1,011,545 | 1,082,139 | 1,121,338 |
| Alternative A                             | 1,064,324                 | 991,931   | 1,092,075 | 1,156,832 |
| Difference                                | -31,307                   | -19,613   | 9,935     | 35,494    |
| Percent Difference <sup>3</sup>           | -2.9%                     | -1.9%     | 0.9%      | 3.2%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 712,720                   | 632,180   | 722,542   | 965,627   |
| Alternative A                             | 675,252                   | 623,133   | 723,888   | 968,725   |
| Difference                                | -37,468                   | -9,047    | 1,347     | 3,098     |
| Percent Difference                        | -5.3%                     | -1.4%     | 0.2%      | 0.3%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,052,345                 | 777,896   | 994,675   | 1,177,761 |
| Alternative A                             | 1,032,427                 | 765,286   | 1,003,040 | 1,174,184 |
| Difference                                | -19,918                   | -12,610   | 8,365     | -3,576    |
| Percent Difference                        | -1.9%                     | -1.6%     | 0.8%      | -0.3%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,307,850                 | 1,198,511 | 1,266,716 | 1,235,708 |
| Alternative A                             | 1,278,344                 | 1,159,311 | 1,278,644 | 1,231,513 |
| Difference                                | -29,506                   | -39,201   | 11,928    | -4,194    |
| Percent Difference                        | -2.3%                     | -3.3%     | 0.9%      | -0.3%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,337,674                 | 1,338,519 | 1,326,667 | 1,209,645 |
| Alternative A                             | 1,295,286                 | 1,305,172 | 1,353,790 | 1,307,224 |
| Difference                                | -42,388                   | -33,348   | 27,123    | 97,578    |
| Percent Difference                        | -3.2%                     | -2.5%     | 2.0%      | 8.1%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,357,906                 | 1,358,561 | 1,366,600 | 1,136,397 |
| Alternative A                             | 1,343,079                 | 1,352,504 | 1,368,608 | 1,234,332 |
| Difference                                | -14,827                   | -6,057    | 2,008     | 97,934    |
| Percent Difference                        | -1.1%                     | -0.4%     | 0.1%      | 8.6%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3o**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |
|---|---------------------------|-----------|-----------|
|   | Apr                       | May       | Jun       |
| <b>Long-term</b>                          |                           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |
| No Action Alternative                     | 1,370,922                 | 1,186,779 | 1,017,298 |
| Alternative A                             | 1,441,180                 | 1,216,620 | 1,008,751 |
| Difference                                | 70,258                    | 29,841    | -8,547    |
| Percent Difference <sup>3</sup>           | 5.1%                      | 2.5%      | -0.8%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,300,382                 | 1,105,290 | 1,008,377 |
| Alternative A                             | 1,307,642                 | 1,091,802 | 1,002,699 |
| Difference                                | 7,260                     | -13,488   | -5,678    |
| Percent Difference                        | 0.6%                      | -1.2%     | -0.6%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,421,089                 | 1,191,116 | 1,002,089 |
| Alternative A                             | 1,414,225                 | 1,163,970 | 1,000,075 |
| Difference                                | -6,864                    | -27,146   | -2,014    |
| Percent Difference                        | -0.5%                     | -2.3%     | -0.2%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,469,788                 | 1,248,644 | 1,012,620 |
| Alternative A                             | 1,463,909                 | 1,266,241 | 998,819   |
| Difference                                | -5,880                    | 17,597    | -13,800   |
| Percent Difference                        | -0.4%                     | 1.4%      | -1.4%     |
| <b>Dry (22%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,408,584                 | 1,217,440 | 1,034,076 |
| Alternative A                             | 1,609,082                 | 1,304,672 | 1,023,471 |
| Difference                                | 200,498                   | 87,232    | -10,605   |
| Percent Difference                        | 14.2%                     | 7.2%      | -1.0%     |
| <b>Critical (15%)</b>                     |                           |           |           |
| No Action Alternative                     | 1,301,756                 | 1,240,837 | 1,032,124 |
| Alternative A                             | 1,479,100                 | 1,349,740 | 1,020,044 |
| Difference                                | 177,344                   | 108,903   | -12,080   |
| Percent Difference                        | 13.6%                     | 8.8%      | -1.2%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3p**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Oct                       | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 543,438                   | 544,401 | 569,216 | 556,872 | 544,146 | 551,154 | 544,045 | 496,346 | 403,442 | 359,842 | 409,789 | 503,331 |
| Alternative A                             | 541,304                   | 540,457 | 541,236 | 539,282 | 531,991 | 555,880 | 559,528 | 507,734 | 412,721 | 362,357 | 415,189 | 510,896 |
| Difference                                | -2,134                    | -3,945  | -27,980 | -17,589 | -12,155 | 4,727   | 15,483  | 11,387  | 9,279   | 2,515   | 5,400   | 7,565   |
| Percent Difference <sup>3</sup>           | -0.4%                     | -0.7%   | -4.9%   | -3.2%   | -2.2%   | 0.9%    | 2.8%    | 2.3%    | 2.3%    | 0.7%    | 1.3%    | 1.5%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 501,023                   | 452,582 | 551,060 | 449,894 | 448,524 | 449,111 | 497,042 | 446,402 | 414,802 | 362,859 | 399,108 | 374,363 |
| Alternative A                             | 489,323                   | 469,096 | 514,325 | 435,065 | 444,133 | 449,067 | 498,453 | 445,355 | 410,470 | 366,623 | 406,041 | 382,472 |
| Difference                                | -11,700                   | 16,513  | -36,735 | -14,829 | -4,391  | -44     | 1,412   | -1,047  | -4,331  | 3,764   | 6,933   | 8,110   |
| Percent Difference                        | -2.3%                     | 3.6%    | -6.7%   | -3.3%   | -1.0%   | 0.0%    | 0.3%    | -0.2%   | -1.0%   | 1.0%    | 1.7%    | 2.2%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 551,852                   | 511,406 | 550,280 | 529,717 | 483,585 | 501,234 | 559,104 | 503,020 | 385,477 | 345,743 | 402,956 | 481,104 |
| Alternative A                             | 544,762                   | 505,248 | 506,318 | 511,690 | 477,416 | 502,339 | 556,902 | 499,634 | 404,636 | 349,646 | 416,685 | 512,788 |
| Difference                                | -7,090                    | -6,157  | -43,963 | -18,026 | -6,169  | 1,105   | -2,202  | -3,386  | 19,159  | 3,903   | 13,729  | 31,684  |
| Percent Difference                        | -1.3%                     | -1.2%   | -8.0%   | -3.4%   | -1.3%   | 0.2%    | -0.4%   | -0.7%   | 5.0%    | 1.1%    | 3.4%    | 6.6%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 579,788                   | 587,675 | 533,048 | 614,742 | 575,359 | 601,669 | 587,146 | 527,124 | 403,825 | 361,906 | 418,229 | 592,055 |
| Alternative A                             | 562,191                   | 565,061 | 505,942 | 597,111 | 556,459 | 606,525 | 584,165 | 534,742 | 419,864 | 366,146 | 433,370 | 586,518 |
| Difference                                | -17,597                   | -22,614 | -27,106 | -17,631 | -18,900 | 4,856   | -2,981  | 7,618   | 16,039  | 4,240   | 15,141  | -5,537  |
| Percent Difference                        | -3.0%                     | -3.8%   | -5.1%   | -2.9%   | -3.3%   | 0.8%    | -0.5%   | 1.4%    | 4.0%    | 1.2%    | 3.6%    | -0.9%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 556,035                   | 609,058 | 582,470 | 629,341 | 633,304 | 630,341 | 570,658 | 514,787 | 395,553 | 357,526 | 405,769 | 578,446 |
| Alternative A                             | 576,266                   | 589,933 | 562,182 | 602,804 | 607,892 | 643,017 | 613,936 | 548,138 | 413,028 | 356,889 | 415,464 | 589,638 |
| Difference                                | 20,232                    | -19,125 | -20,289 | -26,537 | -25,412 | 12,676  | 43,278  | 33,351  | 17,475  | -636    | 9,695   | 11,192  |
| Percent Difference                        | 3.6%                      | -3.1%   | -3.5%   | -4.2%   | -4.0%   | 2.0%    | 7.6%    | 6.5%    | 4.4%    | -0.2%   | 2.4%    | 1.9%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 565,618                   | 628,868 | 649,805 | 639,592 | 641,732 | 644,451 | 540,625 | 534,318 | 408,181 | 368,468 | 435,947 | 588,807 |
| Alternative A                             | 573,660                   | 627,363 | 644,218 | 629,931 | 634,526 | 651,061 | 584,127 | 558,872 | 416,888 | 369,602 | 411,891 | 580,919 |
| Difference                                | 8,041                     | -1,505  | -5,587  | -9,661  | -7,206  | 6,610   | 43,501  | 24,555  | 8,707   | 1,134   | -24,055 | -7,888  |
| Percent Difference                        | 1.4%                      | -0.2%   | -0.9%   | -1.5%   | -1.1%   | 1.0%    | 8.0%    | 4.6%    | 2.1%    | 0.3%    | -5.5%   | -1.3%   |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3q**  
**Sacramento River Keswick to Battle Creek Winter-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |           |
|---|---------------------------|-----------|-----------|-----------|-----------|
|   | Apr                       | May       | Jun       | Jul       | Aug       |
| <b>Long-term</b>                          |                           |           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |           |
| No Action Alternative                     | 1,273,557                 | 1,325,544 | 1,210,918 | 1,030,389 | 1,236,332 |
| Alternative A                             | 1,259,995                 | 1,334,427 | 1,242,576 | 1,050,528 | 1,251,546 |
| Difference                                | -13,562                   | 8,883     | 31,659    | 20,139    | 15,215    |
| Percent Difference <sup>3</sup>           | -1.1%                     | 0.7%      | 2.6%      | 2.0%      | 1.2%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,179,943                 | 1,252,131 | 1,237,662 | 1,057,112 | 1,206,236 |
| Alternative A                             | 1,178,828                 | 1,259,943 | 1,236,227 | 1,091,889 | 1,223,174 |
| Difference                                | -1,115                    | 7,811     | -1,435    | 34,778    | 16,939    |
| Percent Difference                        | -0.1%                     | 0.6%      | -0.1%     | 3.3%      | 1.4%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,312,020                 | 1,337,404 | 1,194,236 | 940,549   | 1,237,844 |
| Alternative A                             | 1,324,081                 | 1,349,564 | 1,237,633 | 966,935   | 1,273,463 |
| Difference                                | 12,062                    | 12,160    | 43,397    | 26,386    | 35,618    |
| Percent Difference                        | 0.9%                      | 0.9%      | 3.6%      | 2.8%      | 2.9%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,289,580                 | 1,356,300 | 1,216,732 | 1,052,999 | 1,264,000 |
| Alternative A                             | 1,298,373                 | 1,374,796 | 1,279,870 | 1,073,373 | 1,301,133 |
| Difference                                | 8,794                     | 18,496    | 63,138    | 20,374    | 37,133    |
| Percent Difference                        | 0.7%                      | 1.4%      | 5.2%      | 1.9%      | 2.9%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,333,828                 | 1,356,338 | 1,176,053 | 1,004,690 | 1,231,265 |
| Alternative A                             | 1,285,436                 | 1,373,222 | 1,225,121 | 998,418   | 1,253,932 |
| Difference                                | -48,393                   | 16,884    | 49,068    | -6,273    | 22,667    |
| Percent Difference                        | -3.6%                     | 1.2%      | 4.2%      | -0.6%     | 1.8%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |           |
| No Action Alternative                     | 1,328,825                 | 1,390,672 | 1,215,166 | 1,074,502 | 1,275,347 |
| Alternative A                             | 1,288,837                 | 1,375,387 | 1,243,948 | 1,096,018 | 1,229,672 |
| Difference                                | -39,989                   | -15,285   | 28,782    | 21,516    | -45,675   |
| Percent Difference                        | -3.0%                     | -1.1%     | 2.4%      | 2.0%      | -3.6%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3r**  
**Sacramento River Keswick to Battle Creek Winter-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Jun                       | Jul     | Aug     | Sep     | Oct     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 695,779                   | 792,708 | 684,769 | 756,465 | 729,568 |
| Alternative A                             | 676,682                   | 781,001 | 674,094 | 753,683 | 732,343 |
| Difference                                | -19,098                   | -11,707 | -10,675 | -2,782  | 2,775   |
| Percent Difference <sup>3</sup>           | -2.7%                     | -1.5%   | -1.6%   | -0.4%   | 0.4%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 677,191                   | 774,888 | 693,494 | 775,652 | 700,783 |
| Alternative A                             | 671,154                   | 752,903 | 682,456 | 753,062 | 689,791 |
| Difference                                | -6,037                    | -21,985 | -11,038 | -22,590 | -10,993 |
| Percent Difference                        | -0.9%                     | -2.8%   | -1.6%   | -2.9%   | -1.6%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 693,198                   | 850,461 | 672,867 | 692,622 | 734,168 |
| Alternative A                             | 671,247                   | 831,486 | 654,876 | 707,337 | 737,177 |
| Difference                                | -21,951                   | -18,975 | -17,991 | 14,715  | 3,009   |
| Percent Difference                        | -3.2%                     | -2.2%   | -2.7%   | 2.1%    | 0.4%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 691,867                   | 778,871 | 672,470 | 771,322 | 756,189 |
| Alternative A                             | 656,448                   | 768,539 | 648,739 | 767,976 | 754,771 |
| Difference                                | -35,419                   | -10,332 | -23,730 | -3,346  | -1,418  |
| Percent Difference                        | -5.1%                     | -1.3%   | -3.5%   | -0.4%   | -0.2%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 720,542                   | 806,251 | 688,452 | 754,208 | 742,558 |
| Alternative A                             | 695,360                   | 815,250 | 676,921 | 769,155 | 759,369 |
| Difference                                | -25,183                   | 8,999   | -11,531 | 14,947  | 16,811  |
| Percent Difference                        | -3.5%                     | 1.1%    | -1.7%   | 2.0%    | 2.3%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 706,055                   | 769,394 | 686,592 | 764,784 | 736,790 |
| Alternative A                             | 689,680                   | 754,561 | 700,533 | 761,488 | 752,999 |
| Difference                                | -16,375                   | -14,833 | 13,940  | -3,295  | 16,208  |
| Percent Difference                        | -2.3%                     | -1.9%   | 2.0%    | -0.4%   | 2.2%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3s**  
**Sacramento River Keswick to Battle Creek Winter-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,814                   | 287,297 | 307,322 | 316,631 | 316,906 | 326,631 | 329,515 | 336,672 | 327,273 | 318,869 | 308,301 |
| Alternative A                             | 274,127                   | 289,280 | 308,243 | 315,738 | 316,439 | 321,080 | 325,031 | 335,046 | 327,862 | 322,211 | 310,320 |
| Difference                                | 313                       | 1,982   | 921     | -893    | -467    | -5,552  | -4,484  | -1,626  | 589     | 3,342   | 2,019   |
| Percent Difference <sup>3</sup>           | 0.1%                      | 0.7%    | 0.3%    | -0.3%   | -0.1%   | -1.7%   | -1.4%   | -0.5%   | 0.2%    | 1.0%    | 0.7%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 274,464                   | 284,231 | 278,380 | 310,324 | 297,726 | 323,147 | 333,485 | 348,793 | 330,124 | 316,044 | 297,514 |
| Alternative A                             | 274,804                   | 286,624 | 277,905 | 307,476 | 302,093 | 316,382 | 329,941 | 348,025 | 329,689 | 316,455 | 297,340 |
| Difference                                | 341                       | 2,393   | -476    | -2,848  | 4,367   | -6,765  | -3,544  | -767    | -435    | 412     | -174    |
| Percent Difference                        | 0.1%                      | 0.8%    | -0.2%   | -0.9%   | 1.5%    | -2.1%   | -1.1%   | -0.2%   | -0.1%   | 0.1%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 271,464                   | 284,777 | 305,153 | 317,955 | 318,904 | 321,456 | 316,013 | 343,138 | 312,353 | 319,492 | 310,056 |
| Alternative A                             | 270,766                   | 289,349 | 312,891 | 315,317 | 317,825 | 311,714 | 307,868 | 342,594 | 312,328 | 319,353 | 309,153 |
| Difference                                | -698                      | 4,572   | 7,738   | -2,638  | -1,079  | -9,742  | -8,144  | -544    | -25     | -139    | -904    |
| Percent Difference                        | -0.3%                     | 1.6%    | 2.5%    | -0.8%   | -0.3%   | -3.0%   | -2.6%   | -0.2%   | 0.0%    | 0.0%    | -0.3%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,833                   | 290,015 | 326,657 | 322,995 | 323,633 | 321,908 | 329,350 | 320,143 | 324,840 | 324,307 | 314,899 |
| Alternative A                             | 275,438                   | 295,371 | 324,271 | 317,805 | 319,156 | 316,083 | 325,210 | 316,207 | 326,259 | 324,759 | 316,050 |
| Difference                                | 1,605                     | 5,356   | -2,386  | -5,190  | -4,477  | -5,825  | -4,140  | -3,936  | 1,419   | 452     | 1,151   |
| Percent Difference                        | 0.6%                      | 1.8%    | -0.7%   | -1.6%   | -1.4%   | -1.8%   | -1.3%   | -1.2%   | 0.4%    | 0.1%    | 0.4%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 272,988                   | 285,268 | 323,511 | 318,363 | 328,300 | 334,012 | 331,073 | 330,584 | 330,674 | 321,627 | 312,822 |
| Alternative A                             | 273,211                   | 289,065 | 325,929 | 321,626 | 324,558 | 330,296 | 325,279 | 327,828 | 332,648 | 330,243 | 318,966 |
| Difference                                | 223                       | 3,798   | 2,418   | 3,264   | -3,743  | -3,716  | -5,794  | -2,756  | 1,974   | 8,616   | 6,145   |
| Percent Difference                        | 0.1%                      | 1.3%    | 0.7%    | 1.0%    | -1.1%   | -1.1%   | -1.8%   | -0.8%   | 0.6%    | 2.7%    | 2.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 275,973                   | 296,335 | 325,357 | 318,949 | 331,522 | 333,796 | 332,270 | 332,359 | 333,749 | 313,884 | 315,436 |
| Alternative A                             | 275,864                   | 288,178 | 324,099 | 322,817 | 330,787 | 332,628 | 330,974 | 332,179 | 334,128 | 322,520 | 319,956 |
| Difference                                | -109                      | -8,157  | -1,257  | 3,868   | -735    | -1,168  | -1,297  | -180    | 379     | 8,636   | 4,520   |
| Percent Difference                        | 0.0%                      | -2.8%   | -0.4%   | 1.2%    | -0.2%   | -0.3%   | -0.4%   | -0.1%   | 0.1%    | 2.8%    | 1.4%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3t**  
**Sacramento River Keswick to Battle Creek Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 249,278                   | 238,717 | 217,403 | 235,967 | 263,071 |
| Alternative A                             | 246,882                   | 239,874 | 218,382 | 236,951 | 263,329 |
| Difference                                | -2,396                    | 1,156   | 980     | 984     | 258     |
| Percent Difference <sup>3</sup>           | -1.0%                     | 0.5%    | 0.5%    | 0.4%    | 0.1%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,191                   | 172,093 | 146,954 | 170,500 | 231,829 |
| Alternative A                             | 246,351                   | 166,661 | 147,274 | 170,680 | 231,604 |
| Difference                                | 160                       | -5,432  | 319     | 180     | -225    |
| Percent Difference                        | 0.1%                      | -3.2%   | 0.2%    | 0.1%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 253,111                   | 232,781 | 170,579 | 234,890 | 272,122 |
| Alternative A                             | 250,124                   | 240,847 | 169,207 | 236,424 | 272,264 |
| Difference                                | -2,987                    | 8,067   | -1,372  | 1,533   | 143     |
| Percent Difference                        | -1.2%                     | 3.5%    | -0.8%   | 0.7%    | 0.1%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 233,146                   | 280,645 | 258,868 | 268,847 | 280,039 |
| Alternative A                             | 229,817                   | 283,192 | 256,778 | 273,102 | 280,530 |
| Difference                                | -3,329                    | 2,547   | -2,090  | 4,255   | 492     |
| Percent Difference                        | -1.4%                     | 0.9%    | -0.8%   | 1.6%    | 0.2%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 244,265                   | 278,926 | 276,758 | 277,007 | 281,019 |
| Alternative A                             | 237,082                   | 284,051 | 282,678 | 277,986 | 280,737 |
| Difference                                | -7,183                    | 5,125   | 5,920   | 978     | -282    |
| Percent Difference                        | -2.9%                     | 1.8%    | 2.1%    | 0.4%    | -0.1%   |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 278,473                   | 279,778 | 279,456 | 278,965 | 274,994 |
| Alternative A                             | 279,401                   | 280,722 | 280,389 | 277,338 | 276,950 |
| Difference                                | 928                       | 944     | 933     | -1,627  | 1,956   |
| Percent Difference                        | 0.3%                      | 0.3%    | 0.3%    | -0.6%   | 0.7%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3u**  
**Feather River Low Flow Channel Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |           |
|---|---------------------------|---------|---------|---------|-----------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr       |
| <b>Long-term</b>                          |                           |         |         |         |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |           |
| <b>Wet (32%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Dry (22%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Critical (15%)</b>                     |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative A                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3v**  
**Feather River Below Thermalito Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|
|   | Dec                       | Jan        | Feb        | Mar        | Apr        |
| <b>Long-term</b>                          |                           |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |
| No Action Alternative                     | 6,966,027                 | 8,142,475  | 6,736,597  | 5,934,746  | 8,796,860  |
| Alternative A                             | 7,504,630                 | 8,174,326  | 6,642,784  | 5,811,997  | 8,936,074  |
| Difference                                | 538,603                   | 31,851     | -93,812    | -122,749   | 139,214    |
| Percent Difference <sup>3</sup>           | 7.7%                      | 0.4%       | -1.4%      | -2.1%      | 1.6%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 4,395,569                 | 4,584,094  | 2,373,443  | 1,647,945  | 4,560,151  |
| Alternative A                             | 4,961,438                 | 4,484,506  | 2,129,155  | 1,654,852  | 4,550,901  |
| Difference                                | 565,868                   | -99,589    | -244,287   | 6,908      | -9,250     |
| Percent Difference                        | 12.9%                     | -2.2%      | -10.3%     | 0.4%       | -0.2%      |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 5,447,753                 | 7,658,752  | 5,920,876  | 2,640,569  | 9,218,395  |
| Alternative A                             | 7,476,053                 | 7,734,819  | 5,697,276  | 2,403,989  | 9,218,133  |
| Difference                                | 2,028,300                 | 76,067     | -223,600   | -236,580   | -263       |
| Percent Difference                        | 37.2%                     | 1.0%       | -3.8%      | -9.0%      | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 8,138,570                 | 9,696,424  | 8,682,860  | 8,307,378  | 11,950,511 |
| Alternative A                             | 7,816,931                 | 10,120,487 | 8,120,542  | 7,544,743  | 11,950,532 |
| Difference                                | -321,639                  | 424,063    | -562,318   | -762,635   | 21         |
| Percent Difference                        | -4.0%                     | 4.4%       | -6.5%      | -9.2%      | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 8,647,942                 | 10,220,836 | 9,606,061  | 9,367,066  | 10,993,334 |
| Alternative A                             | 9,177,726                 | 10,504,177 | 9,894,050  | 9,812,204  | 11,088,790 |
| Difference                                | 529,784                   | 283,341    | 287,988    | 445,138    | 95,456     |
| Percent Difference                        | 6.1%                      | 2.8%       | 3.0%       | 4.8%       | 0.9%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |
| No Action Alternative                     | 10,162,789                | 11,405,541 | 10,430,981 | 10,600,440 | 10,580,890 |
| Alternative A                             | 10,169,462                | 10,843,144 | 10,766,874 | 10,205,302 | 11,409,280 |
| Difference                                | 6,673                     | -562,397   | 335,893    | -395,138   | 828,391    |
| Percent Difference                        | 0.1%                      | -4.9%      | 3.2%       | -3.7%      | 7.8%       |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-3w**  
**Feather River Low Flow Channel Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative A                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3x**  
**Feather River Below Thermalito Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 20,916,235                | 25,751,869 | 30,937,117 | 26,786,836 | 27,774,644 | 24,327,589 | 21,858,353 |
| Alternative A                             | 20,739,386                | 27,153,060 | 30,861,192 | 28,126,071 | 27,664,029 | 23,828,951 | 21,539,117 |
| Difference                                | -176,849                  | 1,401,191  | -75,925    | 1,339,235  | -110,615   | -498,638   | -319,235   |
| Percent Difference <sup>3</sup>           | -0.8%                     | 5.4%       | -0.2%      | 5.0%       | -0.4%      | -2.0%      | -1.5%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,118,200                | 20,580,977 | 28,301,798 | 22,268,848 | 20,379,631 | 14,601,037 | 11,988,425 |
| Alternative A                             | 11,688,180                | 22,380,568 | 28,391,043 | 24,173,059 | 19,782,908 | 13,727,004 | 12,089,929 |
| Difference                                | 569,980                   | 1,799,591  | 89,245     | 1,904,212  | -596,723   | -874,033   | 101,505    |
| Percent Difference                        | 5.1%                      | 8.7%       | 0.3%       | 8.6%       | -2.9%      | -6.0%      | 0.8%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,445,791                | 21,980,685 | 31,538,726 | 25,943,506 | 27,381,380 | 22,188,818 | 15,277,196 |
| Alternative A                             | 10,838,365                | 23,295,506 | 31,502,105 | 29,550,789 | 27,967,841 | 21,991,192 | 14,305,248 |
| Difference                                | -607,426                  | 1,314,821  | -36,621    | 3,607,284  | 586,461    | -197,626   | -971,948   |
| Percent Difference                        | -5.3%                     | 6.0%       | -0.1%      | 13.9%      | 2.1%       | -0.9%      | -6.4%      |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 28,581,418                | 29,036,048 | 33,778,305 | 31,820,720 | 31,742,507 | 28,868,790 | 27,324,335 |
| Alternative A                             | 27,446,187                | 31,374,366 | 33,788,077 | 30,953,341 | 33,316,788 | 27,035,288 | 25,942,523 |
| Difference                                | -1,135,231                | 2,338,318  | 9,772      | -867,379   | 1,574,281  | -1,833,502 | -1,381,812 |
| Percent Difference                        | -4.0%                     | 8.1%       | 0.0%       | -2.7%      | 5.0%       | -6.4%      | -5.1%      |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 29,279,920                | 30,492,957 | 32,802,634 | 28,370,477 | 32,986,400 | 32,154,799 | 31,508,592 |
| Alternative A                             | 28,980,910                | 32,396,812 | 32,829,253 | 30,306,913 | 32,961,911 | 32,611,064 | 31,626,692 |
| Difference                                | -299,010                  | 1,903,855  | 26,619     | 1,936,437  | -24,489    | 456,264    | 118,100    |
| Percent Difference                        | -1.0%                     | 6.2%       | 0.1%       | 6.8%       | -0.1%      | 1.4%       | 0.4%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 30,127,513                | 29,783,476 | 29,932,368 | 29,170,816 | 31,743,628 | 30,501,676 | 28,972,015 |
| Alternative A                             | 30,064,462                | 28,560,524 | 29,205,478 | 28,696,465 | 29,894,272 | 30,640,367 | 28,977,560 |
| Difference                                | -63,051                   | -1,222,951 | -726,890   | -474,351   | -1,849,355 | 138,691    | 5,545      |
| Percent Difference                        | -0.2%                     | -4.1%      | -2.4%      | -1.6%      | -5.8%      | 0.5%       | 0.0%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-3y**  
**American River Below Nimbus Fall-Run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |         |         |
|--|---------------------------|---------|---------|
|  | Oct                       | Nov     | Dec     |
| <b>Long-term</b>   |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |         |         |
| No Action Alternative  | 827,041                   | 745,838 | 733,512 |
| Alternative A  | 830,464                   | 749,989 | 729,688 |
| Difference   | 3,424                     | 4,151   | -3,824  |
| Percent Difference <sup>3</sup>  | 0.4%                      | 0.6%    | -0.5%   |
| <b>Water Year Types<sup>2</sup></b>  |                           |         |         |
| <b>Wet (32%)</b>   |                           |         |         |
| No Action Alternative  | 863,678                   | 695,911 | 756,770 |
| Alternative A  | 862,452                   | 703,402 | 750,283 |
| Difference   | -1,226                    | 7,490   | -6,487  |
| Percent Difference   | -0.1%                     | 1.1%    | -0.9%   |
| <b>Above Normal (15%)</b>  |                           |         |         |
| No Action Alternative  | 864,650                   | 809,210 | 773,094 |
| Alternative A  | 864,459                   | 809,803 | 761,458 |
| Difference   | -191                      | 593     | -11,636 |
| Percent Difference   | 0.0%                      | 0.1%    | -1.5%   |
| <b>Below Normal (17%)</b>  |                           |         |         |
| No Action Alternative  | 855,047                   | 786,167 | 735,078 |
| Alternative A  | 838,766                   | 786,373 | 727,499 |
| Difference   | -16,281                   | 206     | -7,579  |
| Percent Difference   | -1.9%                     | 0.0%    | -1.0%   |
| <b>Dry (22%)</b>   |                           |         |         |
| No Action Alternative  | 829,489                   | 797,542 | 726,260 |
| Alternative A  | 835,404                   | 827,392 | 736,114 |
| Difference   | 5,915                     | 29,850  | 9,854   |
| Percent Difference   | 0.7%                      | 3.7%    | 1.4%    |
| <b>Critical (15%)</b>  |                           |         |         |
| No Action Alternative  | 673,701                   | 666,034 | 652,587 |
| Alternative A  | 710,067                   | 632,564 | 646,213 |
| Difference   | 36,365                    | -33,470 | -6,375  |
| Percent Difference   | 5.4%                      | -5.0%   | -1.0%   |
| 1 Based on the 82-year simulation period   |                           |         |         |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |         |         |
| 3 Relative difference of the monthly average   |                           |         |         |

**Table AQ-11-3z**  
**American River Below Nimbus Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 237,250                   | 213,444 | 193,646 | 210,940 | 223,039 |
| Alternative A                             | 236,436                   | 212,720 | 194,348 | 209,836 | 223,237 |
| Difference                                | -813                      | -724    | 703     | -1,104  | 198     |
| Percent Difference <sup>3</sup>           | -0.3%                     | -0.3%   | 0.4%    | -0.5%   | 0.1%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,391                   | 142,753 | 126,539 | 179,362 | 186,932 |
| Alternative A                             | 244,687                   | 141,638 | 126,233 | 179,419 | 186,948 |
| Difference                                | -1,704                    | -1,115  | -306    | 57      | 16      |
| Percent Difference                        | -0.7%                     | -0.8%   | -0.2%   | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 251,716                   | 223,989 | 169,834 | 186,357 | 232,611 |
| Alternative A                             | 248,249                   | 219,031 | 167,824 | 186,411 | 232,759 |
| Difference                                | -3,467                    | -4,958  | -2,010  | 53      | 148     |
| Percent Difference                        | -1.4%                     | -2.2%   | -1.2%   | 0.0%    | 0.1%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 238,201                   | 242,568 | 210,277 | 239,992 | 235,413 |
| Alternative A                             | 235,986                   | 242,003 | 216,019 | 239,436 | 233,146 |
| Difference                                | -2,215                    | -565    | 5,741   | -556    | -2,267  |
| Percent Difference                        | -0.9%                     | -0.2%   | 2.7%    | -0.2%   | -1.0%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 232,740                   | 266,690 | 259,117 | 248,456 | 252,737 |
| Alternative A                             | 236,726                   | 259,643 | 259,330 | 245,567 | 257,021 |
| Difference                                | 3,986                     | -7,047  | 213     | -2,889  | 4,284   |
| Percent Difference                        | 1.7%                      | -2.6%   | 0.1%    | -1.2%   | 1.7%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 208,631                   | 242,217 | 245,244 | 213,774 | 232,714 |
| Alternative A                             | 206,840                   | 255,871 | 245,701 | 211,037 | 230,105 |
| Difference                                | -1,791                    | 13,654  | 456     | -2,737  | -2,608  |
| Percent Difference                        | -0.9%                     | 5.6%    | 0.2%    | -1.3%   | -1.1%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Alternative B Compared to No Action Alternative**

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**Table AQ-11-5a**  
**Upper Clear Creek Spring-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |  |
|--|---------------------------|--|
|  | Sep                       |  |
| <b>Long-term</b>   |                           |  |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |  |
| No Action Alternative  | 7,797                     |  |
| Alternative B  | 7,797                     |  |
| Difference   | 0                         |  |
| Percent Difference <sup>3</sup>  | 0.0%                      |  |
| <b>Water Year Types<sup>2</sup></b>  |                           |  |
| <b>Wet (32%)</b>   |                           |  |
| No Action Alternative  | 7,948                     |  |
| Alternative B  | 7,948                     |  |
| Difference   | 0                         |  |
| Percent Difference   | 0.0%                      |  |
| <b>Above Normal (15%)</b>  |                           |  |
| No Action Alternative  | 7,948                     |  |
| Alternative B  | 7,948                     |  |
| Difference   | 0                         |  |
| Percent Difference   | 0.0%                      |  |
| <b>Below Normal (17%)</b>  |                           |  |
| No Action Alternative  | 7,948                     |  |
| Alternative B  | 7,948                     |  |
| Difference   | 0                         |  |
| Percent Difference   | 0.0%                      |  |
| <b>Dry (22%)</b>   |                           |  |
| No Action Alternative  | 7,948                     |  |
| Alternative B  | 7,948                     |  |
| Difference   | 0                         |  |
| Percent Difference   | 0.0%                      |  |
| <b>Critical (15%)</b>  |                           |  |
| No Action Alternative  | 6,913                     |  |
| Alternative B  | 6,913                     |  |
| Difference   | 0                         |  |
| Percent Difference   | 0.0%                      |  |
| 1 Based on the 82-year simulation period   |                           |  |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |  |
| 3 Relative difference of the monthly average   |                           |  |

**Table AQ-11-5b**  
**Total Clear Creek Spring-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Nov                       | Dec     | Jan     | Feb     | Mar     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 316,870                   | 317,096 | 319,719 | 319,264 | 317,846 |
| Alternative B   | 316,870                   | 317,081 | 319,719 | 319,263 | 317,394 |
| Difference  | 0                         | -16     | 0       | 0       | -452    |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Alternative B   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,963 | 317,430 | 318,143 | 321,233 |
| Alternative B   | 318,856                   | 318,856 | 317,430 | 318,143 | 318,143 |
| Difference  | 0                         | -106    | 0       | 0       | -3,090  |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -1.0%   |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Alternative B   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Alternative B   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Alternative B   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-5c**  
**Total Clear Creek Spring-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |         |         |         |         |
|--|---------------------------|---------|---------|---------|---------|
|  | Apr                       | May     | Jun     | Jul     | Aug     |
| <b>Long-term</b>   |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |         |         |         |         |
| No Action Alternative  | 409,020                   | 484,633 | 394,677 | 249,322 | 251,370 |
| Alternative B  | 409,020                   | 484,633 | 394,677 | 263,685 | 249,321 |
| Difference   | 0                         | 0       | 0       | 14,364  | -2,048  |
| Percent Difference <sup>3</sup>  | 0.0%                      | 0.0%    | 0.0%    | 5.8%    | -0.8%   |
| <b>Water Year Types<sup>2</sup></b>  |                           |         |         |         |         |
| <b>Wet (32%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 421,351                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative B  | 421,351                   | 497,000 | 421,350 | 249,321 | 249,321 |
| Difference   | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 415,719                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative B  | 415,718                   | 497,000 | 421,350 | 299,375 | 249,321 |
| Difference   | 0                         | 0       | 0       | 50,053  | 0       |
| Percent Difference   | 0.0%                      | 0.0%    | 0.0%    | 20.1%   | 0.0%    |
| <b>Below Normal (17%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 406,868                   | 489,123 | 402,041 | 249,322 | 249,322 |
| Alternative B  | 406,868                   | 489,123 | 402,041 | 280,977 | 249,321 |
| Difference   | 0                         | 0       | 0       | 31,656  | 0       |
| Percent Difference   | 0.0%                      | 0.0%    | 0.0%    | 12.7%   | 0.0%    |
| <b>Dry (22%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 410,086                   | 483,455 | 393,020 | 249,322 | 249,322 |
| Alternative B  | 410,086                   | 483,455 | 393,020 | 249,321 | 249,321 |
| Difference   | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 376,516                   | 441,997 | 304,104 | 249,322 | 263,318 |
| Alternative B  | 376,516                   | 441,997 | 304,104 | 260,488 | 249,321 |
| Difference   | 0                         | 0       | 0       | 11,167  | -13,996 |
| Percent Difference   | 0.0%                      | 0.0%    | 0.0%    | 4.5%    | -5.3%   |
| 1 Based on the 82-year simulation period   |                           |         |         |         |         |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |         |         |         |         |
| 3 Relative difference of the monthly average   |                           |         |         |         |         |

**Table AQ-11-5d**  
**Lower Clear Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 186,712                   | 189,617 | 191,280 |
| Alternative B                             | 188,772                   | 189,617 | 191,269 |
| Difference                                | 2,060                     | 0       | -12     |
| Percent Difference <sup>3</sup>           | 1.1%                      | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,705 |
| Alternative B                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,785 |
| Alternative B                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | -80     |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 193,597                   | 193,597 | 193,597 |
| Alternative B                             | 193,597                   | 193,597 | 193,597 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 184,673                   | 185,956 | 185,956 |
| Alternative B                             | 184,673                   | 185,956 | 185,956 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 146,925                   | 164,853 | 176,139 |
| Alternative B                             | 161,005                   | 164,853 | 176,139 |
| Difference                                | 14,079                    | 0       | 0       |
| Percent Difference                        | 9.6%                      | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5e**  
**Lower Clear Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |
|---|---------------------------|---------|---------|---------|
|   | Jan                       | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |
| No Action Alternative                     | 473,449                   | 473,331 | 473,726 | 474,148 |
| Alternative B                             | 473,449                   | 473,331 | 474,148 | 474,148 |
| Difference                                | 0                         | 0       | 422     | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.1%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 467,469                   | 467,878 | 470,453 | 470,453 |
| Alternative B                             | 467,469                   | 467,878 | 470,453 | 470,453 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 472,142 | 469,262 | 472,142 |
| Alternative B                             | 473,830                   | 472,142 | 472,142 | 472,142 |
| Difference                                | 0                         | 0       | 2,880   | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.6%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 474,795                   | 474,795 | 474,795 | 474,795 |
| Alternative B                             | 474,795                   | 474,795 | 474,795 | 474,795 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 473,830 | 473,830 | 473,830 |
| Alternative B                             | 473,830                   | 473,830 | 473,830 | 473,830 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |
| No Action Alternative                     | 483,880                   | 483,880 | 483,880 | 483,880 |
| Alternative B                             | 483,880                   | 483,880 | 483,880 | 483,880 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5f**  
**Lower Clear Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | May                       | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 332,168                   | 309,022 | 256,126 | 256,868 | 295,108 |
| Alternative B                             | 332,168                   | 309,022 | 257,022 | 256,126 | 295,108 |
| Difference                                | 0                         | 0       | 896     | -742    | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.3%    | -0.3%   | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative B                             | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative B                             | 335,067                   | 318,200 | 258,147 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 2,021   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.8%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 333,498                   | 312,104 | 256,126 | 256,126 | 296,863 |
| Alternative B                             | 333,498                   | 312,104 | 256,052 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | -75     | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 331,897                   | 308,825 | 256,126 | 256,126 | 296,863 |
| Alternative B                             | 331,897                   | 308,824 | 256,126 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 321,839                   | 276,656 | 256,126 | 261,194 | 284,872 |
| Alternative B                             | 321,839                   | 276,656 | 260,314 | 256,126 | 284,872 |
| Difference                                | 0                         | 0       | 4,188   | -5,068  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.6%    | -1.9%   | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5g**  
**Total Clear Creek Steelhead/Rainbow Trout Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |        |        |        |        |
|---|---------------------------|--------|--------|--------|--------|
|   | Dec                       | Jan    | Feb    | Mar    | Apr    |
| <b>Long-term</b>                          |                           |        |        |        |        |
| <b>Full Simulation Period<sup>1</sup></b> |                           |        |        |        |        |
| No Action Alternative                     | 84,076                    | 84,450 | 84,397 | 84,861 | 84,594 |
| Alternative B                             | 84,071                    | 84,450 | 84,397 | 84,594 | 84,594 |
| Difference                                | -5                        | 0      | 0      | -267   | 0      |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%   | 0.0%   | -0.3%  | 0.0%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |        |        |        |        |
| <b>Wet (32%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Alternative B                             | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Above Normal (15%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 87,334                    | 84,915 | 86,106 | 87,932 | 86,106 |
| Alternative B                             | 87,297                    | 84,915 | 86,106 | 86,106 | 86,106 |
| Difference                                | -37                       | 0      | 0      | -1,826 | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | -2.1%  | 0.0%   |
| <b>Below Normal (17%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Alternative B                             | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Dry (22%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Alternative B                             | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Critical (15%)</b>                     |                           |        |        |        |        |
| No Action Alternative                     | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Alternative B                             | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5h**  
**Total Clear Creek Steelhead/Rainbow Trout Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 205,170                   | 204,366 | 204,346 | 212,118 | 205,684 |
| Alternative B   | 205,169                   | 204,346 | 204,346 | 212,118 | 205,684 |
| Difference  | 0                         | -19     | 0       | 0       | 0       |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Alternative B   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 203,734                   | 203,866 | 203,734 | 212,960 | 203,238 |
| Alternative B   | 203,734                   | 203,734 | 203,734 | 212,960 | 203,238 |
| Difference  | 0                         | -132    | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | -0.1%   | 0.0%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Alternative B   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Alternative B   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Alternative B   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-5i**  
**Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 251,370 | 349,555 | 397,531 | 403,315 | 406,583 |
| Alternative B                             | 263,685                   | 249,321 | 349,555 | 401,845 | 403,315 | 406,547 |
| Difference                                | 14,364                    | -2,048  | 0       | 4,314   | 0       | -36     |
| Percent Difference <sup>3</sup>           | 5.8%                      | -0.8%   | 0.0%    | 1.1%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,350 |
| Alternative B                             | 249,321                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,596 |
| Alternative B                             | 299,375                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 50,053                    | 0       | 0       | 0       | 0       | -246    |
| Percent Difference                        | 20.1%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 411,695 | 411,695 | 411,695 |
| Alternative B                             | 280,977                   | 249,321 | 353,767 | 411,695 | 411,695 | 411,695 |
| Difference                                | 31,656                    | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 12.7%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 392,983 | 395,215 | 395,215 |
| Alternative B                             | 249,321                   | 249,321 | 353,767 | 392,983 | 395,215 | 395,215 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 263,318 | 324,987 | 312,402 | 348,577 | 370,663 |
| Alternative B                             | 260,488                   | 249,321 | 324,986 | 341,882 | 348,577 | 370,663 |
| Difference                                | 11,167                    | -13,996 | 0       | 29,480  | 0       | 0       |
| Percent Difference                        | 4.5%                      | -5.3%   | 0.0%    | 9.4%    | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5j**  
**Sacramento River Battle Creek to Deer Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 2,107,321                 | 2,387,073 | 2,143,639 | 1,924,747 |
| Alternative B                             | 2,136,396                 | 2,374,683 | 2,106,285 | 1,859,856 |
| Difference                                | 29,075                    | -12,390   | -37,353   | -64,891   |
| Percent Difference <sup>3</sup>           | 1.4%                      | -0.5%     | -1.7%     | -3.4%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,351,729                 | 2,228,013 | 1,705,869 | 1,892,666 |
| Alternative B                             | 1,406,836                 | 2,194,411 | 1,731,480 | 1,807,842 |
| Difference                                | 55,107                    | -33,602   | 25,611    | -84,824   |
| Percent Difference                        | 4.1%                      | -1.5%     | 1.5%      | -4.5%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,162,623                 | 2,438,077 | 2,076,818 | 1,815,501 |
| Alternative B                             | 2,267,004                 | 2,390,997 | 2,015,452 | 1,721,141 |
| Difference                                | 104,381                   | -47,081   | -61,366   | -94,360   |
| Percent Difference                        | 4.8%                      | -1.9%     | -3.0%     | -5.2%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,565,657                 | 2,482,964 | 2,311,339 | 1,709,439 |
| Alternative B                             | 2,561,026                 | 2,410,654 | 2,205,814 | 1,611,245 |
| Difference                                | -4,631                    | -72,310   | -105,525  | -98,195   |
| Percent Difference                        | -0.2%                     | -2.9%     | -4.6%     | -5.7%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 2,510,236                 | 2,430,603 | 2,405,256 | 1,858,949 |
| Alternative B                             | 2,537,917                 | 2,515,569 | 2,329,000 | 1,810,371 |
| Difference                                | 27,680                    | 84,965    | -76,256   | -48,577   |
| Percent Difference                        | 1.1%                      | 3.5%      | -3.2%     | -2.6%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 2,550,036                 | 2,503,533 | 2,570,884 | 2,453,389 |
| Alternative B                             | 2,488,819                 | 2,495,665 | 2,559,008 | 2,475,540 |
| Difference                                | -61,217                   | -7,868    | -11,876   | 22,151    |
| Percent Difference                        | -2.4%                     | -0.3%     | -0.5%     | 0.9%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5k**  
**Sacramento River Keswick to Battle Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |           |           |
|---|---------------------------|---------|-----------|-----------|
|   | Sep                       | Oct     | Nov       | Dec       |
| <b>Long-term</b>                          |                           |         |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |           |           |
| No Action Alternative                     | 778,334                   | 907,952 | 892,626   | 900,070   |
| Alternative B                             | 785,426                   | 906,818 | 870,905   | 849,247   |
| Difference                                | 7,092                     | -1,134  | -21,721   | -50,823   |
| Percent Difference <sup>3</sup>           | 0.9%                      | -0.1%   | -2.4%     | -5.6%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |           |           |
| <b>Wet (32%)</b>                          |                           |         |           |           |
| No Action Alternative                     | 431,343                   | 806,951 | 677,841   | 864,559   |
| Alternative B                             | 454,175                   | 787,709 | 688,666   | 803,743   |
| Difference                                | 22,833                    | -19,242 | 10,825    | -60,816   |
| Percent Difference                        | 5.3%                      | -2.4%   | 1.6%      | -7.0%     |
| <b>Above Normal (15%)</b>                 |                           |         |           |           |
| No Action Alternative                     | 749,702                   | 938,846 | 812,270   | 878,489   |
| Alternative B                             | 797,962                   | 920,396 | 777,876   | 798,950   |
| Difference                                | 48,260                    | -18,451 | -34,395   | -79,540   |
| Percent Difference                        | 6.4%                      | -2.0%   | -4.2%     | -9.1%     |
| <b>Below Normal (17%)</b>                 |                           |         |           |           |
| No Action Alternative                     | 1,006,086                 | 993,350 | 1,006,711 | 806,691   |
| Alternative B                             | 993,681                   | 957,888 | 953,449   | 752,104   |
| Difference                                | -12,405                   | -35,462 | -53,262   | -54,587   |
| Percent Difference                        | -1.2%                     | -3.6%   | -5.3%     | -6.8%     |
| <b>Dry (22%)</b>                          |                           |         |           |           |
| No Action Alternative                     | 972,748                   | 933,293 | 1,048,580 | 915,005   |
| Alternative B                             | 983,773                   | 991,337 | 1,001,399 | 867,792   |
| Difference                                | 11,025                    | 58,043  | -47,181   | -47,213   |
| Percent Difference                        | 1.1%                      | 6.2%    | -4.5%     | -5.2%     |
| <b>Critical (15%)</b>                     |                           |         |           |           |
| No Action Alternative                     | 1,001,451                 | 958,247 | 1,071,316 | 1,085,130 |
| Alternative B                             | 950,115                   | 964,949 | 1,066,740 | 1,083,650 |
| Difference                                | -51,336                   | 6,702   | -4,576    | -1,480    |
| Percent Difference                        | -5.1%                     | 0.7%    | -0.4%     | -0.1%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5I**  
**Sacramento River Keswick to Battle Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |           |           |           |
|--|---------------------------|-----------|-----------|-----------|
|  | Dec                       | Jan       | Feb       | Mar       |
| <b>Long-term</b>   |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |           |           |           |
| No Action Alternative  | 1,608,737                 | 1,574,899 | 1,568,308 | 1,566,903 |
| Alternative B  | 1,472,017                 | 1,481,652 | 1,503,330 | 1,580,624 |
| Difference   | -136,719                  | -93,247   | -64,979   | 13,721    |
| Percent Difference <sup>3</sup>  | -8.5%                     | -5.9%     | -4.1%     | 0.9%      |
| <b>Water Year Types<sup>2</sup></b>  |                           |           |           |           |
| <b>Wet (32%)</b>   |                           |           |           |           |
| No Action Alternative  | 1,543,260                 | 1,323,817 | 1,350,593 | 1,341,053 |
| Alternative B  | 1,349,691                 | 1,266,247 | 1,323,020 | 1,340,628 |
| Difference   | -193,569                  | -57,570   | -27,573   | -425      |
| Percent Difference   | -12.5%                    | -4.3%     | -2.0%     | 0.0%      |
| <b>Above Normal (15%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,527,079                 | 1,516,092 | 1,442,185 | 1,401,447 |
| Alternative B  | 1,317,024                 | 1,435,995 | 1,424,781 | 1,422,514 |
| Difference   | -210,055                  | -80,097   | -17,404   | 21,067    |
| Percent Difference   | -13.8%                    | -5.3%     | -1.2%     | 1.5%      |
| <b>Below Normal (17%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,528,068                 | 1,679,907 | 1,622,139 | 1,676,705 |
| Alternative B  | 1,388,925                 | 1,585,594 | 1,544,410 | 1,680,438 |
| Difference   | -139,143                  | -94,313   | -77,729   | 3,733     |
| Percent Difference   | -9.1%                     | -5.6%     | -4.8%     | 0.2%      |
| <b>Dry (22%)</b>   |                           |           |           |           |
| No Action Alternative  | 1,673,294                 | 1,756,027 | 1,778,361 | 1,751,504 |
| Alternative B  | 1,585,445                 | 1,574,222 | 1,623,049 | 1,797,699 |
| Difference   | -87,850                   | -181,805  | -155,312  | 46,195    |
| Percent Difference   | -5.3%                     | -10.4%    | -8.7%     | 2.6%      |
| <b>Critical (15%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,829,537                 | 1,783,512 | 1,788,265 | 1,816,696 |
| Alternative B  | 1,818,851                 | 1,733,896 | 1,745,042 | 1,816,665 |
| Difference   | -10,686                   | -49,615   | -43,223   | -31       |
| Percent Difference   | -0.6%                     | -2.8%     | -2.4%     | 0.0%      |
| 1 Based on the 82-year simulation period   |                           |           |           |           |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |           |           |           |
| 3 Relative difference of the monthly average   |                           |           |           |           |

**Table AQ-11-5m**  
**Sacramento River Keswick to Battle Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 589,342                   | 599,607 | 592,785 | 537,381 | 429,924 |
| Alternative B                             | 573,829                   | 607,039 | 619,453 | 557,212 | 439,937 |
| Difference                                | -15,514                   | 7,432   | 26,668  | 19,831  | 10,013  |
| Percent Difference <sup>3</sup>           | -2.6%                     | 1.2%    | 4.5%    | 3.7%    | 2.3%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 471,613                   | 476,144 | 536,801 | 479,507 | 442,492 |
| Alternative B                             | 463,591                   | 475,931 | 547,932 | 480,567 | 436,525 |
| Difference                                | -8,022                    | -213    | 11,131  | 1,060   | -5,967  |
| Percent Difference                        | -1.7%                     | 0.0%    | 2.1%    | 0.2%    | -1.3%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 515,412                   | 542,841 | 610,695 | 544,981 | 409,839 |
| Alternative B                             | 509,444                   | 554,186 | 622,048 | 544,959 | 426,957 |
| Difference                                | -5,968                    | 11,345  | 11,352  | -22     | 17,117  |
| Percent Difference                        | -1.2%                     | 2.1%    | 1.9%    | 0.0%    | 4.2%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 630,261                   | 660,989 | 643,832 | 573,187 | 430,357 |
| Alternative B                             | 607,913                   | 674,672 | 666,819 | 603,223 | 448,501 |
| Difference                                | -22,348                   | 13,682  | 22,987  | 30,036  | 18,144  |
| Percent Difference                        | -3.5%                     | 2.1%    | 3.6%    | 5.2%    | 4.2%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 697,934                   | 694,137 | 624,081 | 558,512 | 421,092 |
| Alternative B                             | 667,723                   | 709,141 | 671,764 | 591,840 | 443,448 |
| Difference                                | -30,210                   | 15,004  | 47,684  | 33,328  | 22,355  |
| Percent Difference                        | -4.3%                     | 2.2%    | 7.6%    | 6.0%    | 5.3%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 707,729                   | 710,465 | 589,676 | 581,705 | 435,518 |
| Alternative B                             | 696,455                   | 711,902 | 638,094 | 629,909 | 445,052 |
| Difference                                | -11,274                   | 1,437   | 48,418  | 48,204  | 9,535   |
| Percent Difference                        | -1.6%                     | 0.2%    | 8.2%    | 8.3%    | 2.2%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5n**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Jan                       | Feb       | Mar       | Apr       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,095,631                 | 1,011,545 | 1,082,139 | 1,121,338 |
| Alternative B                             | 1,070,814                 | 988,146   | 1,097,091 | 1,176,281 |
| Difference                                | -24,818                   | -23,399   | 14,952    | 54,942    |
| Percent Difference <sup>3</sup>           | -2.3%                     | -2.3%     | 1.4%      | 4.9%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 712,720                   | 632,180   | 722,542   | 965,627   |
| Alternative B                             | 676,231                   | 615,624   | 721,691   | 988,504   |
| Difference                                | -36,489                   | -16,557   | -850      | 22,877    |
| Percent Difference                        | -5.1%                     | -2.6%     | -0.1%     | 2.4%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,052,345                 | 777,896   | 994,675   | 1,177,761 |
| Alternative B                             | 1,069,097                 | 765,913   | 1,025,653 | 1,201,260 |
| Difference                                | 16,752                    | -11,983   | 30,978    | 23,499    |
| Percent Difference                        | 1.6%                      | -1.5%     | 3.1%      | 2.0%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,307,850                 | 1,198,511 | 1,266,716 | 1,235,708 |
| Alternative B                             | 1,284,657                 | 1,154,201 | 1,294,895 | 1,288,260 |
| Difference                                | -23,193                   | -44,310   | 28,179    | 52,552    |
| Percent Difference                        | -1.8%                     | -3.7%     | 2.2%      | 4.3%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,337,674                 | 1,338,519 | 1,326,667 | 1,209,645 |
| Alternative B                             | 1,292,785                 | 1,305,475 | 1,353,796 | 1,306,201 |
| Difference                                | -44,889                   | -33,045   | 27,129    | 96,556    |
| Percent Difference                        | -3.4%                     | -2.5%     | 2.0%      | 8.0%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,357,906                 | 1,358,561 | 1,366,600 | 1,136,397 |
| Alternative B                             | 1,345,017                 | 1,347,786 | 1,366,067 | 1,232,627 |
| Difference                                | -12,889                   | -10,775   | -532      | 96,230    |
| Percent Difference                        | -0.9%                     | -0.8%     | 0.0%      | 8.5%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5o**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |
|---|---------------------------|-----------|-----------|
|   | Apr                       | May       | Jun       |
| <b>Long-term</b>                          |                           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |
| No Action Alternative                     | 1,370,922                 | 1,186,779 | 1,017,298 |
| Alternative B                             | 1,473,055                 | 1,241,423 | 1,007,711 |
| Difference                                | 102,133                   | 54,643    | -9,586    |
| Percent Difference <sup>3</sup>           | 7.4%                      | 4.6%      | -0.9%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,300,382                 | 1,105,290 | 1,008,377 |
| Alternative B                             | 1,343,442                 | 1,102,835 | 1,002,603 |
| Difference                                | 43,060                    | -2,455    | -5,774    |
| Percent Difference                        | 3.3%                      | -0.2%     | -0.6%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,421,089                 | 1,191,116 | 1,002,089 |
| Alternative B                             | 1,462,616                 | 1,184,197 | 999,718   |
| Difference                                | 41,527                    | -6,919    | -2,372    |
| Percent Difference                        | 2.9%                      | -0.6%     | -0.2%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,469,788                 | 1,248,644 | 1,012,620 |
| Alternative B                             | 1,563,774                 | 1,319,304 | 998,581   |
| Difference                                | 93,985                    | 70,660    | -14,039   |
| Percent Difference                        | 6.4%                      | 5.7%      | -1.4%     |
| <b>Dry (22%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,408,584                 | 1,217,440 | 1,034,076 |
| Alternative B                             | 1,600,349                 | 1,284,034 | 1,014,465 |
| Difference                                | 191,765                   | 66,593    | -19,611   |
| Percent Difference                        | 13.6%                     | 5.5%      | -1.9%     |
| <b>Critical (15%)</b>                     |                           |           |           |
| No Action Alternative                     | 1,301,756                 | 1,240,837 | 1,032,124 |
| Alternative B                             | 1,467,544                 | 1,444,144 | 1,027,295 |
| Difference                                | 165,788                   | 203,307   | -4,830    |
| Percent Difference                        | 12.7%                     | 16.4%     | -0.5%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5p**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Oct                       | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 543,438                   | 544,401 | 569,216 | 556,872 | 544,146 | 551,154 | 544,045 | 496,346 | 403,442 | 359,842 | 409,789 | 503,331 |
| Alternative B                             | 542,277                   | 533,684 | 541,184 | 540,379 | 531,036 | 557,538 | 567,072 | 513,240 | 412,312 | 360,763 | 412,853 | 503,360 |
| Difference                                | -1,161                    | -10,717 | -28,033 | -16,493 | -13,110 | 6,384   | 23,027  | 16,893  | 8,870   | 921     | 3,064   | 29      |
| Percent Difference <sup>3</sup>           | -0.2%                     | -2.0%   | -4.9%   | -3.0%   | -2.4%   | 1.2%    | 4.2%    | 3.4%    | 2.2%    | 0.3%    | 0.7%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 501,023                   | 452,582 | 551,060 | 449,894 | 448,524 | 449,111 | 497,042 | 446,402 | 414,802 | 362,859 | 399,108 | 374,363 |
| Alternative B                             | 490,983                   | 455,142 | 514,196 | 434,812 | 441,630 | 448,856 | 506,625 | 447,230 | 409,535 | 363,083 | 403,631 | 381,041 |
| Difference                                | -10,040                   | 2,560   | -36,864 | -15,081 | -6,895  | -254    | 9,584   | 828     | -5,267  | 224     | 4,523   | 6,679   |
| Percent Difference                        | -2.0%                     | 0.6%    | -6.7%   | -3.4%   | -1.5%   | -0.1%   | 1.9%    | 0.2%    | -1.3%   | 0.1%    | 1.1%    | 1.8%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 551,852                   | 511,406 | 550,280 | 529,717 | 483,585 | 501,234 | 559,104 | 503,020 | 385,477 | 345,743 | 402,956 | 481,104 |
| Alternative B                             | 545,195                   | 498,204 | 506,819 | 521,491 | 478,923 | 511,015 | 568,870 | 502,636 | 400,742 | 346,315 | 412,464 | 499,634 |
| Difference                                | -6,657                    | -13,202 | -43,462 | -8,225  | -4,661  | 9,780   | 9,766   | -384    | 15,265  | 571     | 9,508   | 18,530  |
| Percent Difference                        | -1.2%                     | -2.6%   | -7.9%   | -1.6%   | -1.0%   | 2.0%    | 1.7%    | -0.1%   | 4.0%    | 0.2%    | 2.4%    | 3.9%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 579,788                   | 587,675 | 533,048 | 614,742 | 575,359 | 601,669 | 587,146 | 527,124 | 403,825 | 361,906 | 418,229 | 592,055 |
| Alternative B                             | 562,063                   | 559,959 | 504,248 | 599,259 | 556,177 | 613,755 | 607,168 | 552,943 | 419,693 | 364,637 | 426,203 | 582,786 |
| Difference                                | -17,725                   | -27,717 | -28,800 | -15,484 | -19,183 | 12,087  | 20,022  | 25,819  | 15,868  | 2,731   | 7,974   | -9,268  |
| Percent Difference                        | -3.1%                     | -4.7%   | -5.4%   | -2.5%   | -3.3%   | 2.0%    | 3.4%    | 4.9%    | 3.9%    | 0.8%    | 1.9%    | -1.6%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 556,035                   | 609,058 | 582,470 | 629,341 | 633,304 | 630,341 | 570,658 | 514,787 | 395,553 | 357,526 | 405,769 | 578,446 |
| Alternative B                             | 579,827                   | 587,536 | 560,339 | 600,558 | 607,793 | 643,046 | 611,770 | 543,180 | 415,228 | 357,094 | 411,020 | 579,360 |
| Difference                                | 23,792                    | -21,521 | -22,131 | -28,783 | -25,511 | 12,705  | 41,113  | 28,393  | 19,675  | -432    | 5,251   | 914     |
| Percent Difference                        | 4.3%                      | -3.5%   | -3.8%   | -4.6%   | -4.0%   | 2.0%    | 7.2%    | 5.5%    | 5.0%    | -0.1%   | 1.3%    | 0.2%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 565,618                   | 628,868 | 649,805 | 639,592 | 641,732 | 644,451 | 540,625 | 534,318 | 408,181 | 368,468 | 435,947 | 588,807 |
| Alternative B                             | 571,084                   | 627,905 | 648,381 | 629,033 | 632,393 | 645,691 | 582,418 | 575,632 | 416,916 | 371,165 | 420,394 | 565,449 |
| Difference                                | 5,466                     | -963    | -1,425  | -10,559 | -9,340  | 1,240   | 41,792  | 41,314  | 8,735   | 2,698   | -15,553 | -23,358 |
| Percent Difference                        | 1.0%                      | -0.2%   | -0.2%   | -1.7%   | -1.5%   | 0.2%    | 7.7%    | 7.7%    | 2.1%    | 0.7%    | -3.6%   | -4.0%   |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5q**  
**Sacramento River Keswick to Battle Creek Winter-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |           |
|---|---------------------------|-----------|-----------|-----------|-----------|
|   | Apr                       | May       | Jun       | Jul       | Aug       |
| <b>Long-term</b>                          |                           |           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |           |
| No Action Alternative                     | 1,273,557                 | 1,325,544 | 1,210,918 | 1,030,389 | 1,236,332 |
| Alternative B                             | 1,257,479                 | 1,331,551 | 1,245,242 | 1,041,329 | 1,246,957 |
| Difference                                | -16,078                   | 6,007     | 34,324    | 10,940    | 10,625    |
| Percent Difference <sup>3</sup>           | -1.3%                     | 0.5%      | 2.8%      | 1.1%      | 0.9%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,179,943                 | 1,252,131 | 1,237,662 | 1,057,112 | 1,206,236 |
| Alternative B                             | 1,172,246                 | 1,258,707 | 1,234,864 | 1,064,165 | 1,216,446 |
| Difference                                | -7,697                    | 6,576     | -2,799    | 7,053     | 10,210    |
| Percent Difference                        | -0.7%                     | 0.5%      | -0.2%     | 0.7%      | 0.8%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,312,020                 | 1,337,404 | 1,194,236 | 940,549   | 1,237,844 |
| Alternative B                             | 1,306,613                 | 1,346,127 | 1,230,931 | 946,523   | 1,259,167 |
| Difference                                | -5,406                    | 8,723     | 36,695    | 5,975     | 21,322    |
| Percent Difference                        | -0.4%                     | 0.7%      | 3.1%      | 0.6%      | 1.7%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,289,580                 | 1,356,300 | 1,216,732 | 1,052,999 | 1,264,000 |
| Alternative B                             | 1,285,556                 | 1,379,511 | 1,281,613 | 1,061,250 | 1,281,312 |
| Difference                                | -4,024                    | 23,212    | 64,881    | 8,251     | 17,312    |
| Percent Difference                        | -0.3%                     | 1.7%      | 5.3%      | 0.8%      | 1.4%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,333,828                 | 1,356,338 | 1,176,053 | 1,004,690 | 1,231,265 |
| Alternative B                             | 1,301,911                 | 1,372,084 | 1,248,939 | 1,002,521 | 1,249,646 |
| Difference                                | -31,917                   | 15,746    | 72,887    | -2,170    | 18,381    |
| Percent Difference                        | -2.4%                     | 1.2%      | 6.2%      | -0.2%     | 1.5%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |           |
| No Action Alternative                     | 1,328,825                 | 1,390,672 | 1,215,166 | 1,074,502 | 1,275,347 |
| Alternative B                             | 1,293,614                 | 1,358,047 | 1,234,058 | 1,121,629 | 1,256,741 |
| Difference                                | -35,211                   | -32,626   | 18,893    | 47,127    | -18,606   |
| Percent Difference                        | -2.6%                     | -2.3%     | 1.6%      | 4.4%      | -1.5%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5r**  
**Sacramento River Keswick to Battle Creek Winter-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Jun                       | Jul     | Aug     | Sep     | Oct     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 695,779                   | 792,708 | 684,769 | 756,465 | 729,568 |
| Alternative B                             | 675,434                   | 784,573 | 675,544 | 749,938 | 732,897 |
| Difference                                | -20,345                   | -8,135  | -9,226  | -6,527  | 3,329   |
| Percent Difference <sup>3</sup>           | -2.9%                     | -1.0%   | -1.3%   | -0.9%   | 0.5%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 677,191                   | 774,888 | 693,494 | 775,652 | 700,783 |
| Alternative B                             | 671,676                   | 769,500 | 685,893 | 760,412 | 691,809 |
| Difference                                | -5,515                    | -5,388  | -7,602  | -15,240 | -8,975  |
| Percent Difference                        | -0.8%                     | -0.7%   | -1.1%   | -2.0%   | -1.3%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 693,198                   | 850,461 | 672,867 | 692,622 | 734,168 |
| Alternative B                             | 674,756                   | 844,321 | 661,474 | 694,905 | 735,525 |
| Difference                                | -18,442                   | -6,140  | -11,393 | 2,283   | 1,356   |
| Percent Difference                        | -2.7%                     | -0.7%   | -1.7%   | 0.3%    | 0.2%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 691,867                   | 778,871 | 672,470 | 771,322 | 756,189 |
| Alternative B                             | 656,115                   | 774,099 | 660,363 | 763,050 | 754,578 |
| Difference                                | -35,752                   | -4,772  | -12,106 | -8,272  | -1,612  |
| Percent Difference                        | -5.2%                     | -0.6%   | -1.8%   | -1.1%   | -0.2%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 720,542                   | 806,251 | 688,452 | 754,208 | 742,558 |
| Alternative B                             | 680,303                   | 807,794 | 674,561 | 761,232 | 761,932 |
| Difference                                | -40,239                   | 1,543   | -13,891 | 7,024   | 19,373  |
| Percent Difference                        | -5.6%                     | 0.2%    | -2.0%   | 0.9%    | 2.6%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 706,055                   | 769,394 | 686,592 | 764,784 | 736,790 |
| Alternative B                             | 699,492                   | 734,871 | 686,375 | 750,037 | 750,449 |
| Difference                                | -6,563                    | -34,523 | -218    | -14,747 | 13,659  |
| Percent Difference                        | -0.9%                     | -4.5%   | 0.0%    | -1.9%   | 1.9%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5s**  
**Sacramento River Keswick to Battle Creek Winter-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,814                   | 287,297 | 307,322 | 316,631 | 316,906 | 326,631 | 329,515 | 336,672 | 327,273 | 318,869 | 308,301 |
| Alternative B                             | 273,512                   | 288,610 | 306,815 | 315,623 | 314,572 | 320,459 | 325,278 | 335,074 | 328,529 | 323,692 | 310,938 |
| Difference                                | -302                      | 1,312   | -507    | -1,008  | -2,334  | -6,173  | -4,236  | -1,598  | 1,256   | 4,823   | 2,637   |
| Percent Difference <sup>3</sup>           | -0.1%                     | 0.5%    | -0.2%   | -0.3%   | -0.7%   | -1.9%   | -1.3%   | -0.5%   | 0.4%    | 1.5%    | 0.9%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 274,464                   | 284,231 | 278,380 | 310,324 | 297,726 | 323,147 | 333,485 | 348,793 | 330,124 | 316,044 | 297,514 |
| Alternative B                             | 273,974                   | 285,987 | 277,510 | 307,856 | 297,753 | 314,621 | 330,049 | 347,473 | 329,902 | 317,904 | 297,187 |
| Difference                                | -490                      | 1,756   | -871    | -2,468  | 27      | -8,526  | -3,435  | -1,319  | -222    | 1,861   | -327    |
| Percent Difference                        | -0.2%                     | 0.6%    | -0.3%   | -0.8%   | 0.0%    | -2.6%   | -1.0%   | -0.4%   | -0.1%   | 0.6%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 271,464                   | 284,777 | 305,153 | 317,955 | 318,904 | 321,456 | 316,013 | 343,138 | 312,353 | 319,492 | 310,056 |
| Alternative B                             | 270,342                   | 288,206 | 310,685 | 315,597 | 316,506 | 312,064 | 309,434 | 344,220 | 313,777 | 321,301 | 308,788 |
| Difference                                | -1,122                    | 3,429   | 5,532   | -2,358  | -2,398  | -9,392  | -6,579  | 1,082   | 1,423   | 1,809   | -1,268  |
| Percent Difference                        | -0.4%                     | 1.2%    | 1.8%    | -0.7%   | -0.8%   | -2.9%   | -2.1%   | 0.3%    | 0.5%    | 0.6%    | -0.4%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,833                   | 290,015 | 326,657 | 322,995 | 323,633 | 321,908 | 329,350 | 320,143 | 324,840 | 324,307 | 314,899 |
| Alternative B                             | 274,513                   | 293,059 | 323,563 | 317,829 | 318,422 | 316,390 | 325,360 | 316,623 | 328,750 | 328,678 | 319,176 |
| Difference                                | 680                       | 3,045   | -3,094  | -5,166  | -5,211  | -5,518  | -3,990  | -3,520  | 3,910   | 4,371   | 4,276   |
| Percent Difference                        | 0.2%                      | 1.0%    | -0.9%   | -1.6%   | -1.6%   | -1.7%   | -1.2%   | -1.1%   | 1.2%    | 1.3%    | 1.4%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 272,988                   | 285,268 | 323,511 | 318,363 | 328,300 | 334,012 | 331,073 | 330,584 | 330,674 | 321,627 | 312,822 |
| Alternative B                             | 272,628                   | 287,298 | 323,743 | 322,138 | 323,834 | 328,874 | 324,987 | 327,661 | 332,662 | 330,551 | 317,940 |
| Difference                                | -360                      | 2,030   | 233     | 3,776   | -4,467  | -5,137  | -6,086  | -2,922  | 1,988   | 8,923   | 5,119   |
| Percent Difference                        | -0.1%                     | 0.7%    | 0.1%    | 1.2%    | -1.4%   | -1.5%   | -1.8%   | -0.9%   | 0.6%    | 2.8%    | 1.6%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 275,973                   | 296,335 | 325,357 | 318,949 | 331,522 | 333,796 | 332,270 | 332,359 | 333,749 | 313,884 | 315,436 |
| Alternative B                             | 275,837                   | 291,471 | 321,506 | 320,132 | 330,695 | 333,625 | 331,128 | 331,705 | 333,846 | 322,517 | 322,765 |
| Difference                                | -136                      | -4,864  | -3,850  | 1,183   | -827    | -171    | -1,142  | -654    | 97      | 8,633   | 7,329   |
| Percent Difference                        | 0.0%                      | -1.6%   | -1.2%   | 0.4%    | -0.2%   | -0.1%   | -0.3%   | -0.2%   | 0.0%    | 2.8%    | 2.3%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5t**  
**Sacramento River Keswick to Battle Creek Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 249,278                   | 238,717 | 217,403 | 235,967 | 263,071 |
| Alternative B                             | 247,640                   | 241,688 | 217,252 | 237,962 | 263,888 |
| Difference                                | -1,638                    | 2,971   | -150    | 1,996   | 818     |
| Percent Difference <sup>3</sup>           | -0.7%                     | 1.2%    | -0.1%   | 0.8%    | 0.3%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,191                   | 172,093 | 146,954 | 170,500 | 231,829 |
| Alternative B                             | 248,059                   | 169,273 | 145,154 | 170,146 | 231,627 |
| Difference                                | 1,868                     | -2,820  | -1,800  | -354    | -202    |
| Percent Difference                        | 0.8%                      | -1.6%   | -1.2%   | -0.2%   | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 253,111                   | 232,781 | 170,579 | 234,890 | 272,122 |
| Alternative B                             | 252,056                   | 246,749 | 168,953 | 239,135 | 272,408 |
| Difference                                | -1,055                    | 13,969  | -1,626  | 4,244   | 287     |
| Percent Difference                        | -0.4%                     | 6.0%    | -1.0%   | 1.8%    | 0.1%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 233,146                   | 280,645 | 258,868 | 268,847 | 280,039 |
| Alternative B                             | 229,342                   | 283,281 | 253,819 | 276,674 | 281,685 |
| Difference                                | -3,805                    | 2,636   | -5,049  | 7,827   | 1,646   |
| Percent Difference                        | -1.6%                     | 0.9%    | -2.0%   | 2.9%    | 0.6%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 244,265                   | 278,926 | 276,758 | 277,007 | 281,019 |
| Alternative B                             | 237,586                   | 284,338 | 283,009 | 277,988 | 281,972 |
| Difference                                | -6,678                    | 5,412   | 6,252   | 981     | 953     |
| Percent Difference                        | -2.7%                     | 1.9%    | 2.3%    | 0.4%    | 0.3%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 278,473                   | 279,778 | 279,456 | 278,965 | 274,994 |
| Alternative B                             | 278,742                   | 281,025 | 280,466 | 278,521 | 277,381 |
| Difference                                | 268                       | 1,247   | 1,010   | -444    | 2,387   |
| Percent Difference                        | 0.1%                      | 0.4%    | 0.4%    | -0.2%   | 0.9%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5u**  
**Feather River Low Flow Channel Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |           |
|---|---------------------------|---------|---------|---------|-----------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr       |
| <b>Long-term</b>                          |                           |         |         |         |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |           |
| <b>Wet (32%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Dry (22%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Critical (15%)</b>                     |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative B                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5v**  
**Feather River Below Thermalito Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|
|   | Dec                       | Jan        | Feb        | Mar        | Apr        |
| <b>Long-term</b>                          |                           |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |
| No Action Alternative                     | 6,966,027                 | 8,142,475  | 6,736,597  | 5,934,746  | 8,796,860  |
| Alternative B                             | 7,286,480                 | 8,301,778  | 6,744,764  | 5,950,927  | 8,965,959  |
| Difference                                | 320,452                   | 159,303    | 8,167      | 16,181     | 169,099    |
| Percent Difference <sup>3</sup>           | 4.6%                      | 2.0%       | 0.1%       | 0.3%       | 1.9%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 4,395,569                 | 4,584,094  | 2,373,443  | 1,647,945  | 4,560,151  |
| Alternative B                             | 5,183,478                 | 4,481,394  | 2,355,248  | 1,659,159  | 4,560,517  |
| Difference                                | 787,909                   | -102,701   | -18,195    | 11,214     | 365        |
| Percent Difference                        | 17.9%                     | -2.2%      | -0.8%      | 0.7%       | 0.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 5,447,753                 | 7,658,752  | 5,920,876  | 2,640,569  | 9,218,395  |
| Alternative B                             | 6,984,534                 | 8,274,328  | 5,909,375  | 2,485,198  | 9,218,250  |
| Difference                                | 1,536,781                 | 615,576    | -11,501    | -155,371   | -145       |
| Percent Difference                        | 28.2%                     | 8.0%       | -0.2%      | -5.9%      | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 8,138,570                 | 9,696,424  | 8,682,860  | 8,307,378  | 11,950,511 |
| Alternative B                             | 7,227,404                 | 9,945,607  | 8,017,442  | 8,333,405  | 11,950,897 |
| Difference                                | -911,166                  | 249,182    | -665,418   | 26,028     | 386        |
| Percent Difference                        | -11.2%                    | 2.6%       | -7.7%      | 0.3%       | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 8,647,942                 | 10,220,836 | 9,606,061  | 9,367,066  | 10,993,334 |
| Alternative B                             | 8,730,570                 | 10,504,177 | 9,970,772  | 9,823,439  | 11,205,521 |
| Difference                                | 82,629                    | 283,341    | 364,711    | 456,373    | 212,187    |
| Percent Difference                        | 1.0%                      | 2.8%       | 3.8%       | 4.9%       | 1.9%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |
| No Action Alternative                     | 10,162,789                | 11,405,541 | 10,430,981 | 10,600,440 | 10,580,890 |
| Alternative B                             | 10,047,715                | 11,385,328 | 10,766,966 | 10,127,161 | 11,417,022 |
| Difference                                | -115,074                  | -20,213    | 335,985    | -473,280   | 836,132    |
| Percent Difference                        | -1.1%                     | -0.2%      | 3.2%       | -4.5%      | 7.9%       |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-5w**  
**Feather River Low Flow Channel Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative B                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5x**  
**Feather River Below Thermalito Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 20,916,235                | 25,751,869 | 30,937,117 | 26,786,836 | 27,774,644 | 24,327,589 | 21,858,353 |
| Alternative B                             | 20,461,117                | 26,555,778 | 30,774,911 | 28,045,241 | 27,999,857 | 24,055,452 | 21,888,898 |
| Difference                                | -455,118                  | 803,910    | -162,205   | 1,258,405  | 225,213    | -272,138   | 30,545     |
| Percent Difference <sup>3</sup>           | -2.2%                     | 3.1%       | -0.5%      | 4.7%       | 0.8%       | -1.1%      | 0.1%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,118,200                | 20,580,977 | 28,301,798 | 22,268,848 | 20,379,631 | 14,601,037 | 11,988,425 |
| Alternative B                             | 11,698,360                | 21,940,405 | 28,464,933 | 25,274,748 | 19,772,407 | 14,509,642 | 12,110,521 |
| Difference                                | 580,160                   | 1,359,428  | 163,135    | 3,005,900  | -607,224   | -91,394    | 122,096    |
| Percent Difference                        | 5.2%                      | 6.6%       | 0.6%       | 13.5%      | -3.0%      | -0.6%      | 1.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,445,791                | 21,980,685 | 31,538,726 | 25,943,506 | 27,381,380 | 22,188,818 | 15,277,196 |
| Alternative B                             | 10,616,135                | 22,308,158 | 31,390,214 | 29,301,768 | 28,547,714 | 22,055,437 | 14,630,806 |
| Difference                                | -829,656                  | 327,473    | -148,512   | 3,358,262  | 1,166,334  | -133,381   | -646,390   |
| Percent Difference                        | -7.2%                     | 1.5%       | -0.5%      | 12.9%      | 4.3%       | -0.6%      | -4.2%      |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 28,581,418                | 29,036,048 | 33,778,305 | 31,820,720 | 31,742,507 | 28,868,790 | 27,324,335 |
| Alternative B                             | 28,863,363                | 30,459,394 | 33,650,703 | 30,011,508 | 33,287,449 | 27,016,176 | 27,975,829 |
| Difference                                | 281,945                   | 1,423,346  | -127,602   | -1,809,212 | 1,544,942  | -1,852,614 | 651,494    |
| Percent Difference                        | 1.0%                      | 4.9%       | -0.4%      | -5.7%      | 4.9%       | -6.4%      | 2.4%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 29,279,920                | 30,492,957 | 32,802,634 | 28,370,477 | 32,986,400 | 32,154,799 | 31,508,592 |
| Alternative B                             | 27,745,465                | 30,695,272 | 32,510,831 | 29,440,327 | 32,961,911 | 32,483,988 | 31,540,473 |
| Difference                                | -1,534,455                | 202,315    | -291,803   | 1,069,850  | -24,489    | 329,188    | 31,881     |
| Percent Difference                        | -5.2%                     | 0.7%       | -0.9%      | 3.8%       | -0.1%      | 1.0%       | 0.1%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 30,127,513                | 29,783,476 | 29,932,368 | 29,170,816 | 31,743,628 | 30,501,676 | 28,972,015 |
| Alternative B                             | 28,562,929                | 30,039,916 | 29,205,591 | 28,404,845 | 31,666,203 | 30,641,072 | 28,754,691 |
| Difference                                | -1,564,584                | 256,441    | -726,776   | -765,971   | -77,425    | 139,396    | -217,324   |
| Percent Difference                        | -5.2%                     | 0.9%       | -2.4%      | -2.6%      | -0.2%      | 0.5%       | -0.8%      |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-5y**  
**American River Below Nimbus Fall-Run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |         |         |
|--|---------------------------|---------|---------|
|  | Oct                       | Nov     | Dec     |
| <b>Long-term</b>   |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |         |         |
| No Action Alternative  | 827,041                   | 745,838 | 733,512 |
| Alternative B  | 835,360                   | 753,926 | 731,867 |
| Difference   | 8,319                     | 8,088   | -1,645  |
| Percent Difference <sup>3</sup>  | 1.0%                      | 1.1%    | -0.2%   |
| <b>Water Year Types<sup>2</sup></b>  |                           |         |         |
| <b>Wet (32%)</b>   |                           |         |         |
| No Action Alternative  | 863,678                   | 695,911 | 756,770 |
| Alternative B  | 858,417                   | 697,230 | 754,889 |
| Difference   | -5,261                    | 1,319   | -1,881  |
| Percent Difference   | -0.6%                     | 0.2%    | -0.2%   |
| <b>Above Normal (15%)</b>  |                           |         |         |
| No Action Alternative  | 864,650                   | 809,210 | 773,094 |
| Alternative B  | 864,216                   | 812,009 | 764,641 |
| Difference   | -434                      | 2,799   | -8,453  |
| Percent Difference   | -0.1%                     | 0.3%    | -1.1%   |
| <b>Below Normal (17%)</b>  |                           |         |         |
| No Action Alternative  | 855,047                   | 786,167 | 735,078 |
| Alternative B  | 843,010                   | 789,544 | 726,349 |
| Difference   | -12,037                   | 3,377   | -8,729  |
| Percent Difference   | -1.4%                     | 0.4%    | -1.2%   |
| <b>Dry (22%)</b>   |                           |         |         |
| No Action Alternative  | 829,489                   | 797,542 | 726,260 |
| Alternative B  | 842,912                   | 828,077 | 733,459 |
| Difference   | 13,423                    | 30,535  | 7,199   |
| Percent Difference   | 1.6%                      | 3.8%    | 1.0%    |
| <b>Critical (15%)</b>  |                           |         |         |
| No Action Alternative  | 673,701                   | 666,034 | 652,587 |
| Alternative B  | 736,292                   | 665,903 | 653,263 |
| Difference   | 62,591                    | -131    | 675     |
| Percent Difference   | 9.3%                      | 0.0%    | 0.1%    |
| 1 Based on the 82-year simulation period   |                           |         |         |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |         |         |
| 3 Relative difference of the monthly average   |                           |         |         |

**Table AQ-11-5z**  
**American River Below Nimbus Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 237,250                   | 213,444 | 193,646 | 210,940 | 223,039 |
| Alternative B                             | 237,093                   | 212,539 | 195,163 | 210,459 | 223,589 |
| Difference                                | -157                      | -905    | 1,518   | -481    | 550     |
| Percent Difference <sup>3</sup>           | -0.1%                     | -0.4%   | 0.8%    | -0.2%   | 0.2%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,391                   | 142,753 | 126,539 | 179,362 | 186,932 |
| Alternative B                             | 245,959                   | 141,949 | 126,344 | 179,417 | 186,920 |
| Difference                                | -433                      | -804    | -195    | 55      | -12     |
| Percent Difference                        | -0.2%                     | -0.6%   | -0.2%   | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 251,716                   | 223,989 | 169,834 | 186,357 | 232,611 |
| Alternative B                             | 249,244                   | 221,573 | 167,599 | 186,843 | 232,571 |
| Difference                                | -2,472                    | -2,416  | -2,235  | 486     | -40     |
| Percent Difference                        | -1.0%                     | -1.1%   | -1.3%   | 0.3%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 238,201                   | 242,568 | 210,277 | 239,992 | 235,413 |
| Alternative B                             | 235,549                   | 244,969 | 217,539 | 239,919 | 232,156 |
| Difference                                | -2,652                    | 2,401   | 7,262   | -73     | -3,256  |
| Percent Difference                        | -1.1%                     | 1.0%    | 3.5%    | 0.0%    | -1.4%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 232,740                   | 266,690 | 259,117 | 248,456 | 252,737 |
| Alternative B                             | 236,081                   | 261,724 | 261,561 | 244,284 | 256,768 |
| Difference                                | 3,342                     | -4,966  | 2,444   | -4,171  | 4,031   |
| Percent Difference                        | 1.4%                      | -1.9%   | 0.9%    | -1.7%   | 1.6%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 208,631                   | 242,217 | 245,244 | 213,774 | 232,714 |
| Alternative B                             | 209,049                   | 244,839 | 246,135 | 216,222 | 234,290 |
| Difference                                | 418                       | 2,622   | 891     | 2,447   | 1,576   |
| Percent Difference                        | 0.2%                      | 1.1%    | 0.4%    | 1.1%    | 0.7%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

## **Alternative C Compared to No Action Alternative**

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**Table AQ-11-7a**  
**Upper Clear Creek Spring-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |
|--|---------------------------|
|  | Sep                       |
| <b>Long-term</b>   |                           |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |
| No Action Alternative  | 7,797                     |
| Alternative C  | 7,797                     |
| Difference   | 0                         |
| Percent Difference <sup>3</sup>  | 0.0%                      |
| <b>Water Year Types<sup>2</sup></b>  |                           |
| <b>Wet (32%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative C  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Above Normal (15%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative C  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Below Normal (17%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative C  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Dry (22%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative C  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Critical (15%)</b>  |                           |
| No Action Alternative  | 6,913                     |
| Alternative C  | 6,913                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| 1 Based on the 82-year simulation period   |                           |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |
| 3 Relative difference of the monthly average   |                           |

**Table AQ-11-7b**  
**Total Clear Creek Spring-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Nov                       | Dec     | Jan     | Feb     | Mar     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 316,870                   | 317,096 | 319,719 | 319,264 | 317,846 |
| Alternative C   | 316,870                   | 317,151 | 319,719 | 319,264 | 317,394 |
| Difference  | 0                         | 55      | 0       | 0       | -452    |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Alternative C   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,963 | 317,430 | 318,143 | 321,233 |
| Alternative C   | 318,856                   | 318,856 | 317,430 | 318,143 | 318,143 |
| Difference  | 0                         | -107    | 0       | 0       | -3,090  |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -1.0%   |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Alternative C   | 317,633                   | 318,045 | 317,022 | 317,022 | 317,022 |
| Difference  | 0                         | 411     | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.1%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Alternative C   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Alternative C   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-7c**  
**Total Clear Creek Spring-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Apr                       | May     | Jun     | Jul     | Aug     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 409,020                   | 484,633 | 394,677 | 249,322 | 251,370 |
| Alternative C                             | 409,020                   | 484,633 | 394,677 | 286,073 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 36,751  | -2,048  |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 14.7%   | -0.8%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 421,351                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative C                             | 421,351                   | 497,000 | 421,350 | 249,321 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 415,719                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative C                             | 415,719                   | 497,000 | 421,350 | 314,434 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 65,112  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 26.1%   | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 406,868                   | 489,123 | 402,041 | 249,322 | 249,322 |
| Alternative C                             | 406,868                   | 489,123 | 402,041 | 343,663 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 94,342  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 37.8%   | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 410,086                   | 483,455 | 393,020 | 249,322 | 249,322 |
| Alternative C                             | 410,086                   | 483,455 | 393,020 | 272,130 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 22,808  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 9.1%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 376,516                   | 441,997 | 304,104 | 249,322 | 263,318 |
| Alternative C                             | 376,516                   | 441,997 | 304,104 | 291,064 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 41,743  | -13,996 |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 16.7%   | -5.3%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7d**  
**Lower Clear Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 186,712                   | 189,617 | 191,280 |
| Alternative C                             | 188,772                   | 189,617 | 191,321 |
| Difference                                | 2,060                     | 0       | 41      |
| Percent Difference <sup>3</sup>           | 1.1%                      | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,705 |
| Alternative C                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,785 |
| Alternative C                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | -80     |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 193,597                   | 193,597 | 193,597 |
| Alternative C                             | 193,597                   | 193,597 | 193,907 |
| Difference                                | 0                         | 0       | 309     |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.2%    |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 184,673                   | 185,956 | 185,956 |
| Alternative C                             | 184,673                   | 185,956 | 185,956 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 146,925                   | 164,853 | 176,139 |
| Alternative C                             | 161,005                   | 164,853 | 176,139 |
| Difference                                | 14,079                    | 0       | 0       |
| Percent Difference                        | 9.6%                      | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7e**  
**Lower Clear Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |
|---|---------------------------|---------|---------|---------|
|   | Jan                       | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |
| No Action Alternative                     | 473,449                   | 473,331 | 473,726 | 474,148 |
| Alternative C                             | 473,449                   | 473,331 | 474,148 | 474,148 |
| Difference                                | 0                         | 0       | 422     | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.1%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 467,469                   | 467,878 | 470,453 | 470,453 |
| Alternative C                             | 467,469                   | 467,878 | 470,453 | 470,453 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 472,142 | 469,262 | 472,142 |
| Alternative C                             | 473,830                   | 472,142 | 472,142 | 472,142 |
| Difference                                | 0                         | 0       | 2,880   | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.6%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 474,795                   | 474,795 | 474,795 | 474,795 |
| Alternative C                             | 474,795                   | 474,795 | 474,795 | 474,795 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 473,830 | 473,830 | 473,830 |
| Alternative C                             | 473,830                   | 473,830 | 473,830 | 473,830 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |
| No Action Alternative                     | 483,880                   | 483,880 | 483,880 | 483,880 |
| Alternative C                             | 483,880                   | 483,880 | 483,880 | 483,880 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7f**  
**Lower Clear Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | May                       | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 332,168                   | 309,022 | 256,126 | 256,868 | 295,108 |
| Alternative C                             | 332,168                   | 309,022 | 258,257 | 256,126 | 295,108 |
| Difference                                | 0                         | 0       | 2,131   | -742    | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.8%    | -0.3%   | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative C                             | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative C                             | 335,067                   | 318,200 | 260,269 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 4,143   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.6%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 333,498                   | 312,104 | 256,126 | 256,126 | 296,863 |
| Alternative C                             | 333,498                   | 312,104 | 254,134 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | -1,992  | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | -0.8%   | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 331,897                   | 308,825 | 256,126 | 256,126 | 296,863 |
| Alternative C                             | 331,897                   | 308,825 | 258,033 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 1,907   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.7%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 321,839                   | 276,656 | 256,126 | 261,194 | 284,872 |
| Alternative C                             | 321,839                   | 276,656 | 266,010 | 256,126 | 284,872 |
| Difference                                | 0                         | 0       | 9,884   | -5,068  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 3.9%    | -1.9%   | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7g**  
**Total Clear Creek Steelhead/Rainbow Trout Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |        |        |        |        |
|---|---------------------------|--------|--------|--------|--------|
|   | Dec                       | Jan    | Feb    | Mar    | Apr    |
| <b>Long-term</b>                          |                           |        |        |        |        |
| <b>Full Simulation Period<sup>1</sup></b> |                           |        |        |        |        |
| No Action Alternative                     | 84,076                    | 84,450 | 84,397 | 84,861 | 84,594 |
| Alternative C                             | 84,095                    | 84,450 | 84,397 | 84,594 | 84,594 |
| Difference                                | 19                        | 0      | 0      | -267   | 0      |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%   | 0.0%   | -0.3%  | 0.0%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |        |        |        |        |
| <b>Wet (32%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Alternative C                             | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Above Normal (15%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 87,334                    | 84,915 | 86,106 | 87,932 | 86,106 |
| Alternative C                             | 87,297                    | 84,915 | 86,106 | 86,106 | 86,106 |
| Difference                                | -37                       | 0      | 0      | -1,826 | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | -2.1%  | 0.0%   |
| <b>Below Normal (17%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Alternative C                             | 85,398                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Difference                                | 143                       | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.2%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Dry (22%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Alternative C                             | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Critical (15%)</b>                     |                           |        |        |        |        |
| No Action Alternative                     | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Alternative C                             | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7h**  
**Total Clear Creek Steelhead/Rainbow Trout Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 205,170                   | 204,366 | 204,346 | 212,118 | 205,684 |
| Alternative C   | 205,169                   | 204,346 | 204,346 | 212,118 | 205,684 |
| Difference  | 0                         | -19     | 0       | 0       | 0       |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Alternative C   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 203,734                   | 203,866 | 203,734 | 212,960 | 203,238 |
| Alternative C   | 203,734                   | 203,734 | 203,734 | 212,960 | 203,238 |
| Difference  | 0                         | -132    | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | -0.1%   | 0.0%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Alternative C   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Alternative C   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Alternative C   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-7i**  
**Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 251,370 | 349,555 | 397,531 | 403,315 | 406,583 |
| Alternative C                             | 286,073                   | 249,321 | 349,555 | 401,845 | 403,315 | 406,709 |
| Difference                                | 36,751                    | -2,048  | 0       | 4,314   | 0       | 126     |
| Percent Difference <sup>3</sup>           | 14.7%                     | -0.8%   | 0.0%    | 1.1%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,350 |
| Alternative C                             | 249,321                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,596 |
| Alternative C                             | 314,434                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 65,112                    | 0       | 0       | 0       | 0       | -246    |
| Percent Difference                        | 26.1%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 411,695 | 411,695 | 411,695 |
| Alternative C                             | 343,663                   | 249,321 | 353,767 | 411,695 | 411,695 | 412,645 |
| Difference                                | 94,342                    | 0       | 0       | 0       | 0       | 950     |
| Percent Difference                        | 37.8%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.2%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 392,983 | 395,215 | 395,215 |
| Alternative C                             | 272,130                   | 249,321 | 353,767 | 392,983 | 395,215 | 395,215 |
| Difference                                | 22,808                    | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 9.1%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 263,318 | 324,987 | 312,402 | 348,577 | 370,663 |
| Alternative C                             | 291,064                   | 249,321 | 324,987 | 341,882 | 348,577 | 370,663 |
| Difference                                | 41,743                    | -13,996 | 0       | 29,480  | 0       | 0       |
| Percent Difference                        | 16.7%                     | -5.3%   | 0.0%    | 9.4%    | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7j**  
**Sacramento River Battle Creek to Deer Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 2,107,321                 | 2,387,073 | 2,143,639 | 1,924,747 |
| Alternative C                             | 2,151,864                 | 2,380,591 | 2,094,407 | 1,861,608 |
| Difference                                | 44,544                    | -6,483    | -49,232   | -63,138   |
| Percent Difference <sup>3</sup>           | 2.1%                      | -0.3%     | -2.3%     | -3.3%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,351,729                 | 2,228,013 | 1,705,869 | 1,892,666 |
| Alternative C                             | 1,412,605                 | 2,193,826 | 1,679,627 | 1,807,788 |
| Difference                                | 60,876                    | -34,187   | -26,241   | -84,878   |
| Percent Difference                        | 4.5%                      | -1.5%     | -1.5%     | -4.5%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,162,623                 | 2,438,077 | 2,076,818 | 1,815,501 |
| Alternative C                             | 2,292,985                 | 2,380,612 | 1,994,290 | 1,724,216 |
| Difference                                | 130,363                   | -57,465   | -82,527   | -91,286   |
| Percent Difference                        | 6.0%                      | -2.4%     | -4.0%     | -5.0%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,565,657                 | 2,482,964 | 2,311,339 | 1,709,439 |
| Alternative C                             | 2,563,859                 | 2,418,889 | 2,231,814 | 1,621,488 |
| Difference                                | -1,798                    | -64,075   | -79,524   | -87,951   |
| Percent Difference                        | -0.1%                     | -2.6%     | -3.4%     | -5.1%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 2,510,236                 | 2,430,603 | 2,405,256 | 1,858,949 |
| Alternative C                             | 2,526,869                 | 2,525,419 | 2,334,920 | 1,805,362 |
| Difference                                | 16,632                    | 94,816    | -70,336   | -53,587   |
| Percent Difference                        | 0.7%                      | 3.9%      | -2.9%     | -2.9%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 2,550,036                 | 2,503,533 | 2,570,884 | 2,453,389 |
| Alternative C                             | 2,569,306                 | 2,523,301 | 2,572,134 | 2,480,123 |
| Difference                                | 19,270                    | 19,767    | 1,251     | 26,734    |
| Percent Difference                        | 0.8%                      | 0.8%      | 0.0%      | 1.1%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7k**  
**Sacramento River Keswick to Battle Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 778,334                   | 907,952   | 892,626   | 900,070   |
| Alternative C                             | 798,215                   | 915,767   | 868,615   | 850,468   |
| Difference                                | 19,881                    | 7,816     | -24,010   | -49,602   |
| Percent Difference <sup>3</sup>           | 2.6%                      | 0.9%      | -2.7%     | -5.5%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 431,343                   | 806,951   | 677,841   | 864,559   |
| Alternative C                             | 456,005                   | 787,009   | 665,799   | 804,898   |
| Difference                                | 24,662                    | -19,942   | -12,042   | -59,661   |
| Percent Difference                        | 5.7%                      | -2.5%     | -1.8%     | -6.9%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 749,702                   | 938,846   | 812,270   | 878,489   |
| Alternative C                             | 817,769                   | 915,710   | 764,366   | 798,872   |
| Difference                                | 68,067                    | -23,136   | -47,904   | -79,618   |
| Percent Difference                        | 9.1%                      | -2.5%     | -5.9%     | -9.1%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,006,086                 | 993,350   | 1,006,711 | 806,691   |
| Alternative C                             | 997,944                   | 962,636   | 966,428   | 759,133   |
| Difference                                | -8,142                    | -30,714   | -40,283   | -47,558   |
| Percent Difference                        | -0.8%                     | -3.1%     | -4.0%     | -5.9%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 972,748                   | 933,293   | 1,048,580 | 915,005   |
| Alternative C                             | 976,651                   | 1,005,196 | 1,011,670 | 866,454   |
| Difference                                | 3,903                     | 71,903    | -36,910   | -48,551   |
| Percent Difference                        | 0.4%                      | 7.7%      | -3.5%     | -5.3%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,001,451                 | 958,247   | 1,071,316 | 1,085,130 |
| Alternative C                             | 1,019,449                 | 1,005,977 | 1,083,605 | 1,083,379 |
| Difference                                | 17,997                    | 47,730    | 12,288    | -1,751    |
| Percent Difference                        | 1.8%                      | 5.0%      | 1.1%      | -0.2%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7I**  
**Sacramento River Keswick to Battle Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Dec                       | Jan       | Feb       | Mar       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,608,737                 | 1,574,899 | 1,568,308 | 1,566,903 |
| Alternative C                             | 1,473,996                 | 1,489,892 | 1,505,261 | 1,582,652 |
| Difference                                | -134,740                  | -85,006   | -63,047   | 15,749    |
| Percent Difference <sup>3</sup>           | -8.4%                     | -5.4%     | -4.0%     | 1.0%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,543,260                 | 1,323,817 | 1,350,593 | 1,341,053 |
| Alternative C                             | 1,350,223                 | 1,272,058 | 1,323,445 | 1,340,087 |
| Difference                                | -193,037                  | -51,759   | -27,149   | -966      |
| Percent Difference                        | -12.5%                    | -3.9%     | -2.0%     | -0.1%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,527,079                 | 1,516,092 | 1,442,185 | 1,401,447 |
| Alternative C                             | 1,326,009                 | 1,430,232 | 1,419,570 | 1,427,036 |
| Difference                                | -201,070                  | -85,860   | -22,615   | 25,588    |
| Percent Difference                        | -13.2%                    | -5.7%     | -1.6%     | 1.8%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,528,068                 | 1,679,907 | 1,622,139 | 1,676,705 |
| Alternative C                             | 1,395,205                 | 1,588,890 | 1,536,272 | 1,678,403 |
| Difference                                | -132,863                  | -91,017   | -85,867   | 1,698     |
| Percent Difference                        | -8.7%                     | -5.4%     | -5.3%     | 0.1%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,673,294                 | 1,756,027 | 1,778,361 | 1,751,504 |
| Alternative C                             | 1,588,641                 | 1,594,953 | 1,630,138 | 1,797,583 |
| Difference                                | -84,653                   | -161,074  | -148,224  | 46,079    |
| Percent Difference                        | -5.1%                     | -9.2%     | -8.3%     | 2.6%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,829,537                 | 1,783,512 | 1,788,265 | 1,816,696 |
| Alternative C                             | 1,810,117                 | 1,748,437 | 1,761,394 | 1,829,719 |
| Difference                                | -19,421                   | -35,075   | -26,871   | 13,023    |
| Percent Difference                        | -1.1%                     | -2.0%     | -1.5%     | 0.7%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7m**  
**Sacramento River Keswick to Battle Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 589,342                   | 599,607 | 592,785 | 537,381 | 429,924 |
| Alternative C                             | 574,156                   | 606,825 | 610,404 | 551,059 | 441,665 |
| Difference                                | -15,186                   | 7,218   | 17,619  | 13,678  | 11,742  |
| Percent Difference <sup>3</sup>           | -2.6%                     | 1.2%    | 3.0%    | 2.5%    | 2.7%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 471,613                   | 476,144 | 536,801 | 479,507 | 442,492 |
| Alternative C                             | 465,699                   | 476,119 | 538,404 | 478,243 | 436,506 |
| Difference                                | -5,914                    | -25     | 1,603   | -1,264  | -5,986  |
| Percent Difference                        | -1.3%                     | 0.0%    | 0.3%    | -0.3%   | -1.4%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 515,412                   | 542,841 | 610,695 | 544,981 | 409,839 |
| Alternative C                             | 501,880                   | 552,850 | 608,063 | 535,870 | 431,178 |
| Difference                                | -13,532                   | 10,009  | -2,633  | -9,110  | 21,339  |
| Percent Difference                        | -2.6%                     | 1.8%    | -0.4%   | -1.7%   | 5.2%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 630,261                   | 660,989 | 643,832 | 573,187 | 430,357 |
| Alternative C                             | 607,972                   | 670,560 | 640,107 | 583,336 | 449,522 |
| Difference                                | -22,289                   | 9,570   | -3,725  | 10,149  | 19,165  |
| Percent Difference                        | -3.5%                     | 1.4%    | -0.6%   | 1.8%    | 4.5%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 697,934                   | 694,137 | 624,081 | 558,512 | 421,092 |
| Alternative C                             | 669,543                   | 709,101 | 672,327 | 592,930 | 444,387 |
| Difference                                | -28,391                   | 14,964  | 48,246  | 34,418  | 23,295  |
| Percent Difference                        | -4.1%                     | 2.2%    | 7.7%    | 6.2%    | 5.5%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 707,729                   | 710,465 | 589,676 | 581,705 | 435,518 |
| Alternative C                             | 698,891                   | 716,225 | 641,210 | 623,552 | 450,083 |
| Difference                                | -8,837                    | 5,760   | 51,533  | 41,847  | 14,565  |
| Percent Difference                        | -1.2%                     | 0.8%    | 8.7%    | 7.2%    | 3.3%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7n**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Jan                       | Feb       | Mar       | Apr       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,095,631                 | 1,011,545 | 1,082,139 | 1,121,338 |
| Alternative C                             | 1,071,029                 | 990,215   | 1,096,384 | 1,156,662 |
| Difference                                | -24,603                   | -21,330   | 14,245    | 35,324    |
| Percent Difference <sup>3</sup>           | -2.2%                     | -2.1%     | 1.3%      | 3.2%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 712,720                   | 632,180   | 722,542   | 965,627   |
| Alternative C                             | 677,920                   | 621,784   | 724,856   | 968,571   |
| Difference                                | -34,800                   | -10,396   | 2,314     | 2,944     |
| Percent Difference                        | -4.9%                     | -1.6%     | 0.3%      | 0.3%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,052,345                 | 777,896   | 994,675   | 1,177,761 |
| Alternative C                             | 1,053,972                 | 753,099   | 1,021,869 | 1,174,163 |
| Difference                                | 1,627                     | -24,797   | 27,194    | -3,598    |
| Percent Difference                        | 0.2%                      | -3.2%     | 2.7%      | -0.3%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,307,850                 | 1,198,511 | 1,266,716 | 1,235,708 |
| Alternative C                             | 1,284,183                 | 1,157,556 | 1,286,893 | 1,232,447 |
| Difference                                | -23,668                   | -40,955   | 20,177    | -3,261    |
| Percent Difference                        | -1.8%                     | -3.4%     | 1.6%      | -0.3%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,337,674                 | 1,338,519 | 1,326,667 | 1,209,645 |
| Alternative C                             | 1,299,754                 | 1,308,707 | 1,353,756 | 1,306,356 |
| Difference                                | -37,920                   | -29,813   | 27,089    | 96,710    |
| Percent Difference                        | -2.8%                     | -2.2%     | 2.0%      | 8.0%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,357,906                 | 1,358,561 | 1,366,600 | 1,136,397 |
| Alternative C                             | 1,348,052                 | 1,352,629 | 1,367,560 | 1,233,737 |
| Difference                                | -9,854                    | -5,932    | 960       | 97,340    |
| Percent Difference                        | -0.7%                     | -0.4%     | 0.1%      | 8.6%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7o**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |
|---|---------------------------|-----------|-----------|
|   | Apr                       | May       | Jun       |
| <b>Long-term</b>                          |                           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |
| No Action Alternative                     | 1,370,922                 | 1,186,779 | 1,017,298 |
| Alternative C                             | 1,440,548                 | 1,221,630 | 1,006,834 |
| Difference                                | 69,626                    | 34,851    | -10,464   |
| Percent Difference <sup>3</sup>           | 5.1%                      | 2.9%      | -1.0%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,300,382                 | 1,105,290 | 1,008,377 |
| Alternative C                             | 1,307,164                 | 1,091,446 | 1,002,779 |
| Difference                                | 6,782                     | -13,844   | -5,598    |
| Percent Difference                        | 0.5%                      | -1.3%     | -0.6%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,421,089                 | 1,191,116 | 1,002,089 |
| Alternative C                             | 1,414,029                 | 1,159,138 | 1,000,221 |
| Difference                                | -7,060                    | -31,978   | -1,869    |
| Percent Difference                        | -0.5%                     | -2.7%     | -0.2%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,469,788                 | 1,248,644 | 1,012,620 |
| Alternative C                             | 1,465,455                 | 1,270,659 | 998,696   |
| Difference                                | -4,334                    | 22,015    | -13,924   |
| Percent Difference                        | -0.3%                     | 1.8%      | -1.4%     |
| <b>Dry (22%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,408,584                 | 1,217,440 | 1,034,076 |
| Alternative C                             | 1,604,392                 | 1,288,167 | 1,017,981 |
| Difference                                | 195,808                   | 70,726    | -16,094   |
| Percent Difference                        | 13.9%                     | 5.8%      | -1.6%     |
| <b>Critical (15%)</b>                     |                           |           |           |
| No Action Alternative                     | 1,301,756                 | 1,240,837 | 1,032,124 |
| Alternative C                             | 1,481,243                 | 1,409,183 | 1,015,007 |
| Difference                                | 179,487                   | 168,346   | -17,117   |
| Percent Difference                        | 13.8%                     | 13.6%     | -1.7%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7p**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Oct                       | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 543,438                   | 544,401 | 569,216 | 556,872 | 544,146 | 551,154 | 544,045 | 496,346 | 403,442 | 359,842 | 409,789 | 503,331 |
| Alternative C                             | 547,167                   | 533,592 | 541,359 | 541,847 | 531,285 | 557,288 | 559,270 | 508,011 | 413,876 | 361,259 | 412,866 | 509,286 |
| Difference                                | 3,730                     | -10,810 | -27,857 | -15,025 | -12,860 | 6,134   | 15,224  | 11,665  | 10,434  | 1,418   | 3,077   | 5,955   |
| Percent Difference <sup>3</sup>           | 0.7%                      | -2.0%   | -4.9%   | -2.7%   | -2.4%   | 1.1%    | 2.8%    | 2.4%    | 2.6%    | 0.4%    | 0.8%    | 1.2%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 501,023                   | 452,582 | 551,060 | 449,894 | 448,524 | 449,111 | 497,042 | 446,402 | 414,802 | 362,859 | 399,108 | 374,363 |
| Alternative C                             | 490,641                   | 446,773 | 514,771 | 436,195 | 443,445 | 448,947 | 498,385 | 445,406 | 409,524 | 366,893 | 405,860 | 381,548 |
| Difference                                | -10,382                   | -5,810  | -36,289 | -13,698 | -5,080  | -164    | 1,343   | -996    | -5,278  | 4,033   | 6,752   | 7,185   |
| Percent Difference                        | -2.1%                     | -1.3%   | -6.6%   | -3.0%   | -1.1%   | 0.0%    | 0.3%    | -0.2%   | -1.3%   | 1.1%    | 1.7%    | 1.9%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 551,852                   | 511,406 | 550,280 | 529,717 | 483,585 | 501,234 | 559,104 | 503,020 | 385,477 | 345,743 | 402,956 | 481,104 |
| Alternative C                             | 543,873                   | 493,195 | 507,208 | 517,123 | 472,151 | 509,796 | 556,818 | 494,948 | 404,533 | 346,251 | 419,635 | 507,961 |
| Difference                                | -7,979                    | -18,211 | -43,072 | -12,593 | -11,433 | 8,562   | -2,286  | -8,072  | 19,056  | 508     | 16,679  | 26,857  |
| Percent Difference                        | -1.4%                     | -3.6%   | -7.8%   | -2.4%   | -2.4%   | 1.7%    | -0.4%   | -1.6%   | 4.9%    | 0.1%    | 4.1%    | 5.6%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 579,788                   | 587,675 | 533,048 | 614,742 | 575,359 | 601,669 | 587,146 | 527,124 | 403,825 | 361,906 | 418,229 | 592,055 |
| Alternative C                             | 563,354                   | 564,998 | 505,365 | 600,438 | 556,164 | 610,113 | 584,451 | 535,644 | 420,651 | 359,494 | 433,893 | 584,444 |
| Difference                                | -16,434                   | -22,677 | -27,683 | -14,304 | -19,196 | 8,444   | -2,695  | 8,520   | 16,826  | -2,412  | 15,664  | -7,611  |
| Percent Difference                        | -2.8%                     | -3.9%   | -5.2%   | -2.3%   | -3.3%   | 1.4%    | -0.5%   | 1.6%    | 4.2%    | -0.7%   | 3.7%    | -1.3%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 556,035                   | 609,058 | 582,470 | 629,341 | 633,304 | 630,341 | 570,658 | 514,787 | 395,553 | 357,526 | 405,769 | 578,446 |
| Alternative C                             | 588,169                   | 592,127 | 560,701 | 604,986 | 609,369 | 643,009 | 612,127 | 544,211 | 416,137 | 360,461 | 405,789 | 576,795 |
| Difference                                | 32,135                    | -16,930 | -21,769 | -24,355 | -23,935 | 12,668  | 41,470  | 29,425  | 20,585  | 2,935   | 20      | -1,651  |
| Percent Difference                        | 5.8%                      | -2.8%   | -3.7%   | -3.9%   | -3.8%   | 2.0%    | 7.3%    | 5.7%    | 5.2%    | 0.8%    | 0.0%    | -0.3%   |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 565,618                   | 628,868 | 649,805 | 639,592 | 641,732 | 644,451 | 540,625 | 534,318 | 408,181 | 368,468 | 435,947 | 588,807 |
| Alternative C                             | 592,548                   | 637,652 | 646,099 | 632,417 | 634,592 | 649,310 | 584,974 | 570,178 | 421,351 | 367,320 | 407,361 | 598,432 |
| Difference                                | 26,929                    | 8,784   | -3,706  | -7,175  | -7,141  | 4,859   | 44,348  | 35,860  | 13,170  | -1,147  | -28,586 | 9,625   |
| Percent Difference                        | 4.8%                      | 1.4%    | -0.6%   | -1.1%   | -1.1%   | 0.8%    | 8.2%    | 6.7%    | 3.2%    | -0.3%   | -6.6%   | 1.6%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7q**  
**Sacramento River Keswick to Battle Creek Winter-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |           |
|---|---------------------------|-----------|-----------|-----------|-----------|
|   | Apr                       | May       | Jun       | Jul       | Aug       |
| <b>Long-term</b>                          |                           |           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |           |
| No Action Alternative                     | 1,273,557                 | 1,325,544 | 1,210,918 | 1,030,389 | 1,236,332 |
| Alternative C                             | 1,260,795                 | 1,332,944 | 1,247,898 | 1,047,057 | 1,245,413 |
| Difference                                | -12,762                   | 7,400     | 36,980    | 16,668    | 9,081     |
| Percent Difference <sup>3</sup>           | -1.0%                     | 0.6%      | 3.1%      | 1.6%      | 0.7%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,179,943                 | 1,252,131 | 1,237,662 | 1,057,112 | 1,206,236 |
| Alternative C                             | 1,178,980                 | 1,260,461 | 1,233,877 | 1,096,686 | 1,222,352 |
| Difference                                | -963                      | 8,330     | -3,786    | 39,574    | 16,117    |
| Percent Difference                        | -0.1%                     | 0.7%      | -0.3%     | 3.7%      | 1.3%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,312,020                 | 1,337,404 | 1,194,236 | 940,549   | 1,237,844 |
| Alternative C                             | 1,324,129                 | 1,342,530 | 1,236,487 | 944,092   | 1,272,849 |
| Difference                                | 12,110                    | 5,126     | 42,251    | 3,543     | 35,005    |
| Percent Difference                        | 0.9%                      | 0.4%      | 3.5%      | 0.4%      | 2.8%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,289,580                 | 1,356,300 | 1,216,732 | 1,052,999 | 1,264,000 |
| Alternative C                             | 1,297,341                 | 1,373,696 | 1,281,056 | 1,031,753 | 1,301,800 |
| Difference                                | 7,761                     | 17,396    | 64,324    | -21,247   | 37,800    |
| Percent Difference                        | 0.6%                      | 1.3%      | 5.3%      | -2.0%     | 3.0%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,333,828                 | 1,356,338 | 1,176,053 | 1,004,690 | 1,231,265 |
| Alternative C                             | 1,295,288                 | 1,377,928 | 1,242,322 | 1,025,112 | 1,237,704 |
| Difference                                | -38,540                   | 21,590    | 66,269    | 20,421    | 6,438     |
| Percent Difference                        | -2.9%                     | 1.6%      | 5.6%      | 2.0%      | 0.5%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |           |
| No Action Alternative                     | 1,328,825                 | 1,390,672 | 1,215,166 | 1,074,502 | 1,275,347 |
| Alternative C                             | 1,280,350                 | 1,365,383 | 1,259,367 | 1,093,268 | 1,213,720 |
| Difference                                | -48,475                   | -25,289   | 44,201    | 18,766    | -61,626   |
| Percent Difference                        | -3.6%                     | -1.8%     | 3.6%      | 1.7%      | -4.8%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7r**  
**Sacramento River Keswick to Battle Creek Winter-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Jun                       | Jul     | Aug     | Sep     | Oct     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 695,779                   | 792,708 | 684,769 | 756,465 | 729,568 |
| Alternative C                             | 673,774                   | 781,510 | 676,260 | 754,359 | 736,799 |
| Difference                                | -22,006                   | -11,198 | -8,510  | -2,106  | 7,231   |
| Percent Difference <sup>3</sup>           | -3.2%                     | -1.4%   | -1.2%   | -0.3%   | 1.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 677,191                   | 774,888 | 693,494 | 775,652 | 700,783 |
| Alternative C                             | 672,352                   | 749,389 | 682,585 | 758,571 | 692,503 |
| Difference                                | -4,839                    | -25,499 | -10,910 | -17,082 | -8,280  |
| Percent Difference                        | -0.7%                     | -3.3%   | -1.6%   | -2.2%   | -1.2%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 693,198                   | 850,461 | 672,867 | 692,622 | 734,168 |
| Alternative C                             | 671,697                   | 843,471 | 654,995 | 704,068 | 740,207 |
| Difference                                | -21,501                   | -6,990  | -17,872 | 11,446  | 6,039   |
| Percent Difference                        | -3.1%                     | -0.8%   | -2.7%   | 1.7%    | 0.8%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 691,867                   | 778,871 | 672,470 | 771,322 | 756,189 |
| Alternative C                             | 655,892                   | 793,335 | 648,899 | 764,643 | 752,497 |
| Difference                                | -35,975                   | 14,465  | -23,571 | -6,679  | -3,692  |
| Percent Difference                        | -5.2%                     | 1.9%    | -3.5%   | -0.9%   | -0.5%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 720,542                   | 806,251 | 688,452 | 754,208 | 742,558 |
| Alternative C                             | 685,925                   | 797,029 | 681,321 | 761,026 | 764,571 |
| Difference                                | -34,617                   | -9,222  | -7,132  | 6,818   | 22,013  |
| Percent Difference                        | -4.8%                     | -1.1%   | -1.0%   | 0.9%    | 3.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 706,055                   | 769,394 | 686,592 | 764,784 | 736,790 |
| Alternative C                             | 681,565                   | 752,070 | 708,150 | 773,522 | 769,395 |
| Difference                                | -24,490                   | -17,324 | 21,557  | 8,739   | 32,605  |
| Percent Difference                        | -3.5%                     | -2.3%   | 3.1%    | 1.1%    | 4.4%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7s**  
**Sacramento River Keswick to Battle Creek Winter-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,814                   | 287,297 | 307,322 | 316,631 | 316,906 | 326,631 | 329,515 | 336,672 | 327,273 | 318,869 | 308,301 |
| Alternative C                             | 273,863                   | 288,613 | 307,871 | 316,972 | 314,569 | 320,486 | 325,591 | 334,806 | 328,137 | 322,279 | 310,270 |
| Difference                                | 49                        | 1,316   | 549     | 341     | -2,336  | -6,145  | -3,924  | -1,866  | 864     | 3,411   | 1,969   |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.5%    | 0.2%    | 0.1%    | -0.7%   | -1.9%   | -1.2%   | -0.6%   | 0.3%    | 1.1%    | 0.6%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 274,464                   | 284,231 | 278,380 | 310,324 | 297,726 | 323,147 | 333,485 | 348,793 | 330,124 | 316,044 | 297,514 |
| Alternative C                             | 274,900                   | 286,588 | 277,611 | 307,868 | 295,586 | 314,862 | 330,694 | 347,723 | 329,484 | 316,435 | 297,343 |
| Difference                                | 437                       | 2,357   | -770    | -2,457  | -2,139  | -8,286  | -2,790  | -1,070  | -640    | 391     | -171    |
| Percent Difference                        | 0.2%                      | 0.8%    | -0.3%   | -0.8%   | -0.7%   | -2.6%   | -0.8%   | -0.3%   | -0.2%   | 0.1%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 271,464                   | 284,777 | 305,153 | 317,955 | 318,904 | 321,456 | 316,013 | 343,138 | 312,353 | 319,492 | 310,056 |
| Alternative C                             | 269,950                   | 290,882 | 311,260 | 315,060 | 316,222 | 312,337 | 308,429 | 341,477 | 313,217 | 319,320 | 308,020 |
| Difference                                | -1,513                    | 6,105   | 6,107   | -2,895  | -2,682  | -9,119  | -7,584  | -1,661  | 864     | -173    | -2,036  |
| Percent Difference                        | -0.6%                     | 2.1%    | 2.0%    | -0.9%   | -0.8%   | -2.8%   | -2.4%   | -0.5%   | 0.3%    | -0.1%   | -0.7%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,833                   | 290,015 | 326,657 | 322,995 | 323,633 | 321,908 | 329,350 | 320,143 | 324,840 | 324,307 | 314,899 |
| Alternative C                             | 274,040                   | 295,567 | 323,774 | 318,194 | 319,194 | 314,409 | 325,402 | 316,088 | 327,519 | 324,746 | 316,095 |
| Difference                                | 207                       | 5,552   | -2,883  | -4,801  | -4,439  | -7,499  | -3,949  | -4,055  | 2,678   | 439     | 1,195   |
| Percent Difference                        | 0.1%                      | 1.9%    | -0.9%   | -1.5%   | -1.4%   | -2.3%   | -1.2%   | -1.3%   | 0.8%    | 0.1%    | 0.4%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 272,988                   | 285,268 | 323,511 | 318,363 | 328,300 | 334,012 | 331,073 | 330,584 | 330,674 | 321,627 | 312,822 |
| Alternative C                             | 273,802                   | 285,530 | 323,699 | 324,328 | 325,160 | 330,107 | 325,926 | 328,010 | 332,644 | 330,292 | 318,372 |
| Difference                                | 814                       | 262     | 189     | 5,965   | -3,140  | -3,904  | -5,147  | -2,573  | 1,969   | 8,665   | 5,550   |
| Percent Difference                        | 0.3%                      | 0.1%    | 0.1%    | 1.9%    | -1.0%   | -1.2%   | -1.6%   | -0.8%   | 0.6%    | 2.7%    | 1.8%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 275,973                   | 296,335 | 325,357 | 318,949 | 331,522 | 333,796 | 332,270 | 332,359 | 333,749 | 313,884 | 315,436 |
| Alternative C                             | 275,412                   | 287,244 | 327,750 | 326,151 | 332,765 | 333,479 | 331,414 | 332,177 | 334,097 | 323,006 | 321,579 |
| Difference                                | -561                      | -9,091  | 2,393   | 7,202   | 1,242   | -317    | -856    | -182    | 348     | 9,122   | 6,143   |
| Percent Difference                        | -0.2%                     | -3.1%   | 0.7%    | 2.3%    | 0.4%    | -0.1%   | -0.3%   | -0.1%   | 0.1%    | 2.9%    | 1.9%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7t**  
**Sacramento River Keswick to Battle Creek Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 249,278                   | 238,717 | 217,403 | 235,967 | 263,071 |
| Alternative C                             | 247,845                   | 240,550 | 217,728 | 237,380 | 263,313 |
| Difference                                | -1,433                    | 1,833   | 325     | 1,413   | 242     |
| Percent Difference <sup>3</sup>           | -0.6%                     | 0.8%    | 0.1%    | 0.6%    | 0.1%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,191                   | 172,093 | 146,954 | 170,500 | 231,829 |
| Alternative C                             | 248,291                   | 167,788 | 146,919 | 170,839 | 231,623 |
| Difference                                | 2,100                     | -4,305  | -36     | 339     | -206    |
| Percent Difference                        | 0.9%                      | -2.5%   | 0.0%    | 0.2%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 253,111                   | 232,781 | 170,579 | 234,890 | 272,122 |
| Alternative C                             | 251,736                   | 243,910 | 165,520 | 236,597 | 272,206 |
| Difference                                | -1,375                    | 11,130  | -5,058  | 1,707   | 85      |
| Percent Difference                        | -0.5%                     | 4.8%    | -3.0%   | 0.7%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 233,146                   | 280,645 | 258,868 | 268,847 | 280,039 |
| Alternative C                             | 231,346                   | 283,046 | 256,144 | 274,934 | 280,562 |
| Difference                                | -1,801                    | 2,401   | -2,724  | 6,087   | 523     |
| Percent Difference                        | -0.8%                     | 0.9%    | -1.1%   | 2.3%    | 0.2%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 244,265                   | 278,926 | 276,758 | 277,007 | 281,019 |
| Alternative C                             | 236,587                   | 283,769 | 283,177 | 277,980 | 281,558 |
| Difference                                | -7,678                    | 4,843   | 6,420   | 973     | 539     |
| Percent Difference                        | -3.1%                     | 1.7%    | 2.3%    | 0.4%    | 0.2%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 278,473                   | 279,778 | 279,456 | 278,965 | 274,994 |
| Alternative C                             | 279,121                   | 280,433 | 280,362 | 277,621 | 275,592 |
| Difference                                | 647                       | 655     | 906     | -1,345  | 598     |
| Percent Difference                        | 0.2%                      | 0.2%    | 0.3%    | -0.5%   | 0.2%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7u**  
**Feather River Low Flow Channel Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |           |
|---|---------------------------|---------|---------|---------|-----------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr       |
| <b>Long-term</b>                          |                           |         |         |         |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |           |
| <b>Wet (32%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Dry (22%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Critical (15%)</b>                     |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative C                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7v**  
**Feather River Below Thermalito Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|
|   | Dec                       | Jan        | Feb        | Mar        | Apr        |
| <b>Long-term</b>                          |                           |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |
| No Action Alternative                     | 6,966,027                 | 8,142,475  | 6,736,597  | 5,934,746  | 8,796,860  |
| Alternative C                             | 7,510,339                 | 8,225,997  | 6,657,004  | 5,845,942  | 8,935,191  |
| Difference                                | 544,312                   | 83,522     | -79,593    | -88,804    | 138,331    |
| Percent Difference <sup>3</sup>           | 7.8%                      | 1.0%       | -1.2%      | -1.5%      | 1.6%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 4,395,569                 | 4,584,094  | 2,373,443  | 1,647,945  | 4,560,151  |
| Alternative C                             | 5,307,512                 | 4,534,110  | 2,280,850  | 1,651,679  | 4,550,451  |
| Difference                                | 911,942                   | -49,984    | -92,593    | 3,734      | -9,700     |
| Percent Difference                        | 20.7%                     | -1.1%      | -3.9%      | 0.2%       | -0.2%      |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 5,447,753                 | 7,658,752  | 5,920,876  | 2,640,569  | 9,218,395  |
| Alternative C                             | 7,513,148                 | 8,111,595  | 5,405,602  | 2,507,646  | 9,217,905  |
| Difference                                | 2,065,395                 | 452,843    | -515,274   | -132,923   | -490       |
| Percent Difference                        | 37.9%                     | 5.9%       | -8.7%      | -5.0%      | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 8,138,570                 | 9,696,424  | 8,682,860  | 8,307,378  | 11,950,511 |
| Alternative C                             | 6,978,126                 | 10,090,062 | 8,121,521  | 8,054,269  | 11,951,978 |
| Difference                                | -1,160,444                | 393,638    | -561,339   | -253,109   | 1,466      |
| Percent Difference                        | -14.3%                    | 4.1%       | -6.5%      | -3.0%      | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 8,647,942                 | 10,220,836 | 9,606,061  | 9,367,066  | 10,993,334 |
| Alternative C                             | 9,136,982                 | 10,504,177 | 9,933,571  | 9,807,947  | 11,079,041 |
| Difference                                | 489,040                   | 283,341    | 327,510    | 440,881    | 85,707     |
| Percent Difference                        | 5.7%                      | 2.8%       | 3.4%       | 4.7%       | 0.8%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |
| No Action Alternative                     | 10,162,789                | 11,405,541 | 10,430,981 | 10,600,440 | 10,580,890 |
| Alternative C                             | 10,461,271                | 10,747,472 | 10,766,617 | 9,752,420  | 11,417,386 |
| Difference                                | 298,482                   | -658,069   | 335,636    | -848,021   | 836,497    |
| Percent Difference                        | 2.9%                      | -5.8%      | 3.2%       | -8.0%      | 7.9%       |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7w**  
**Feather River Low Flow Channel Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative C                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7x**  
**Feather River Below Thermalito Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 20,916,235                | 25,751,869 | 30,937,117 | 26,786,836 | 27,774,644 | 24,327,589 | 21,858,353 |
| Alternative C                             | 20,136,041                | 26,784,904 | 30,892,217 | 28,454,326 | 27,942,084 | 23,764,919 | 21,880,292 |
| Difference                                | -780,194                  | 1,033,035  | -44,899    | 1,667,491  | 167,440    | -562,670   | 21,939     |
| Percent Difference <sup>3</sup>           | -3.7%                     | 4.0%       | -0.1%      | 6.2%       | 0.6%       | -2.3%      | 0.1%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,118,200                | 20,580,977 | 28,301,798 | 22,268,848 | 20,379,631 | 14,601,037 | 11,988,425 |
| Alternative C                             | 11,908,410                | 22,748,334 | 28,462,005 | 25,232,220 | 20,055,620 | 14,097,314 | 12,050,700 |
| Difference                                | 790,210                   | 2,167,357  | 160,207    | 2,963,372  | -324,011   | -503,723   | 62,275     |
| Percent Difference                        | 7.1%                      | 10.5%      | 0.6%       | 13.3%      | -1.6%      | -3.4%      | 0.5%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,445,791                | 21,980,685 | 31,538,726 | 25,943,506 | 27,381,380 | 22,188,818 | 15,277,196 |
| Alternative C                             | 10,786,444                | 22,905,411 | 31,539,306 | 29,708,290 | 28,989,848 | 20,744,308 | 14,685,633 |
| Difference                                | -659,346                  | 924,727    | 580        | 3,764,784  | 1,608,468  | -1,444,510 | -591,563   |
| Percent Difference                        | -5.8%                     | 4.2%       | 0.0%       | 14.5%      | 5.9%       | -6.5%      | -3.9%      |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 28,581,418                | 29,036,048 | 33,778,305 | 31,820,720 | 31,742,507 | 28,868,790 | 27,324,335 |
| Alternative C                             | 26,775,787                | 30,607,531 | 33,860,370 | 30,183,140 | 33,248,467 | 27,029,187 | 28,246,648 |
| Difference                                | -1,805,631                | 1,571,483  | 82,065     | -1,637,580 | 1,505,959  | -1,839,603 | 922,312    |
| Percent Difference                        | -6.3%                     | 5.4%       | 0.2%       | -5.1%      | 4.7%       | -6.4%      | 3.4%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 29,279,920                | 30,492,957 | 32,802,634 | 28,370,477 | 32,986,400 | 32,154,799 | 31,508,592 |
| Alternative C                             | 26,747,294                | 31,332,740 | 32,463,966 | 30,408,816 | 32,961,911 | 32,621,772 | 31,579,380 |
| Difference                                | -2,532,626                | 839,783    | -338,668   | 2,038,339  | -24,489    | 466,973    | 70,788     |
| Percent Difference                        | -8.6%                     | 2.8%       | -1.0%      | 7.2%       | -0.1%      | 1.5%       | 0.2%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 30,127,513                | 29,783,476 | 29,932,368 | 29,170,816 | 31,743,628 | 30,501,676 | 28,972,015 |
| Alternative C                             | 29,648,919                | 28,128,812 | 29,690,122 | 29,232,912 | 30,261,136 | 30,638,416 | 28,396,355 |
| Difference                                | -478,593                  | -1,654,664 | -242,246   | 62,096     | -1,482,491 | 136,740    | -575,660   |
| Percent Difference                        | -1.6%                     | -5.6%      | -0.8%      | 0.2%       | -4.7%      | 0.4%       | -2.0%      |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-7y**  
**American River Below Nimbus Fall-Run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 827,041                   | 745,838 | 733,512 |
| Alternative C                             | 827,991                   | 749,713 | 731,576 |
| Difference                                | 951                       | 3,875   | -1,936  |
| Percent Difference <sup>3</sup>           | 0.1%                      | 0.5%    | -0.3%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 863,678                   | 695,911 | 756,770 |
| Alternative C                             | 858,266                   | 682,082 | 756,282 |
| Difference                                | -5,413                    | -13,829 | -489    |
| Percent Difference                        | -0.6%                     | -2.0%   | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 864,650                   | 809,210 | 773,094 |
| Alternative C                             | 865,500                   | 800,662 | 763,699 |
| Difference                                | 849                       | -8,548  | -9,396  |
| Percent Difference                        | 0.1%                      | -1.1%   | -1.2%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 855,047                   | 786,167 | 735,078 |
| Alternative C                             | 848,049                   | 791,307 | 727,270 |
| Difference                                | -6,998                    | 5,140   | -7,809  |
| Percent Difference                        | -0.8%                     | 0.7%    | -1.1%   |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 829,489                   | 797,542 | 726,260 |
| Alternative C                             | 841,156                   | 831,991 | 730,532 |
| Difference                                | 11,667                    | 34,449  | 4,272   |
| Percent Difference                        | 1.4%                      | 4.3%    | 0.6%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 673,701                   | 666,034 | 652,587 |
| Alternative C                             | 681,740                   | 673,356 | 652,515 |
| Difference                                | 8,038                     | 7,322   | -72     |
| Percent Difference                        | 1.2%                      | 1.1%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-7z**  
**American River Below Nimbus Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |         |         |         |         |
|--|---------------------------|---------|---------|---------|---------|
|  | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>   |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |         |         |         |         |
| No Action Alternative  | 237,250                   | 213,444 | 193,646 | 210,940 | 223,039 |
| Alternative C  | 236,931                   | 215,161 | 195,407 | 210,268 | 223,338 |
| Difference   | -318                      | 1,717   | 1,761   | -672    | 299     |
| Percent Difference <sup>3</sup>  | -0.1%                     | 0.8%    | 0.9%    | -0.3%   | 0.1%    |
| <b>Water Year Types<sup>2</sup></b>  |                           |         |         |         |         |
| <b>Wet (32%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 246,391                   | 142,753 | 126,539 | 179,362 | 186,932 |
| Alternative C  | 246,341                   | 142,160 | 126,714 | 179,420 | 186,942 |
| Difference   | -50                       | -593    | 175     | 58      | 10      |
| Percent Difference   | 0.0%                      | -0.4%   | 0.1%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 251,716                   | 223,989 | 169,834 | 186,357 | 232,611 |
| Alternative C  | 248,850                   | 225,595 | 168,043 | 187,001 | 232,809 |
| Difference   | -2,866                    | 1,606   | -1,792  | 644     | 198     |
| Percent Difference   | -1.1%                     | 0.7%    | -1.1%   | 0.3%    | 0.1%    |
| <b>Below Normal (17%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 238,201                   | 242,568 | 210,277 | 239,992 | 235,413 |
| Alternative C  | 235,924                   | 243,915 | 214,983 | 239,269 | 232,872 |
| Difference   | -2,277                    | 1,347   | 4,706   | -723    | -2,541  |
| Percent Difference   | -1.0%                     | 0.6%    | 2.2%    | -0.3%   | -1.1%   |
| <b>Dry (22%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 232,740                   | 266,690 | 259,117 | 248,456 | 252,737 |
| Alternative C  | 235,060                   | 264,660 | 263,054 | 245,819 | 256,891 |
| Difference   | 2,320                     | -2,030  | 3,937   | -2,637  | 4,154   |
| Percent Difference   | 1.0%                      | -0.8%   | 1.5%    | -1.1%   | 1.6%    |
| <b>Critical (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 208,631                   | 242,217 | 245,244 | 213,774 | 232,714 |
| Alternative C  | 208,607                   | 255,100 | 247,295 | 213,213 | 231,273 |
| Difference   | -24                       | 12,883  | 2,051   | -561    | -1,440  |
| Percent Difference   | 0.0%                      | 5.3%    | 0.8%    | -0.3%   | -0.6%   |
| 1 Based on the 82-year simulation period   |                           |         |         |         |         |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |         |         |         |         |
| 3 Relative difference of the monthly average   |                           |         |         |         |         |

## **Alternative D Compared to No Action Alternative**

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**Table AQ-11-9a**  
**Upper Clear Creek Spring-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |
|--|---------------------------|
|  | Sep                       |
| <b>Long-term</b>   |                           |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |
| No Action Alternative  | 7,797                     |
| Alternative D  | 7,797                     |
| Difference   | 0                         |
| Percent Difference <sup>3</sup>  | 0.0%                      |
| <b>Water Year Types<sup>2</sup></b>  |                           |
| <b>Wet (32%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative D  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Above Normal (15%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative D  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Below Normal (17%)</b>  |                           |
| No Action Alternative  | 7,948                     |
| Alternative D  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Dry (22%)</b>   |                           |
| No Action Alternative  | 7,948                     |
| Alternative D  | 7,948                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| <b>Critical (15%)</b>  |                           |
| No Action Alternative  | 6,913                     |
| Alternative D  | 6,913                     |
| Difference   | 0                         |
| Percent Difference   | 0.0%                      |
| 1 Based on the 82-year simulation period   |                           |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |
| 3 Relative difference of the monthly average   |                           |

**Table AQ-11-9b**  
**Total Clear Creek Spring-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Nov                       | Dec     | Jan     | Feb     | Mar     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 316,870                   | 317,096 | 319,719 | 319,264 | 317,846 |
| Alternative D   | 316,870                   | 317,081 | 319,719 | 319,270 | 317,394 |
| Difference  | 0                         | -16     | 0       | 6       | -452    |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,856 | 326,518 | 324,753 | 318,856 |
| Alternative D   | 318,856                   | 318,856 | 326,518 | 324,772 | 318,856 |
| Difference  | 0                         | 0       | 0       | 19      | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 318,856                   | 318,963 | 317,430 | 318,143 | 321,233 |
| Alternative D   | 318,856                   | 318,856 | 317,430 | 318,143 | 318,143 |
| Difference  | 0                         | -107    | 0       | 0       | -3,090  |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | -1.0%   |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Alternative D   | 317,633                   | 317,633 | 317,022 | 317,022 | 317,022 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Alternative D   | 315,998                   | 315,998 | 317,430 | 317,430 | 317,430 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Alternative D   | 310,996                   | 312,438 | 313,856 | 313,856 | 313,856 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-9c**  
**Total Clear Creek Spring-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Apr                       | May     | Jun     | Jul     | Aug     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 409,020                   | 484,633 | 394,677 | 249,322 | 251,370 |
| Alternative D                             | 409,020                   | 484,633 | 394,677 | 266,803 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 17,482  | -2,048  |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 7.0%    | -0.8%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 421,351                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative D                             | 421,351                   | 497,000 | 421,350 | 249,321 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 415,719                   | 497,000 | 421,350 | 249,322 | 249,322 |
| Alternative D                             | 415,718                   | 497,000 | 421,350 | 286,626 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 37,304  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 15.0%   | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 406,868                   | 489,123 | 402,041 | 249,322 | 249,322 |
| Alternative D                             | 406,868                   | 489,123 | 402,041 | 308,385 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 59,063  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 23.7%   | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 410,086                   | 483,455 | 393,020 | 249,322 | 249,322 |
| Alternative D                             | 410,086                   | 483,455 | 393,020 | 249,321 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 376,516                   | 441,997 | 304,104 | 249,322 | 263,318 |
| Alternative D                             | 376,516                   | 441,997 | 304,104 | 262,569 | 249,321 |
| Difference                                | 0                         | 0       | 0       | 13,247  | -13,996 |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 5.3%    | -5.3%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9d**  
**Lower Clear Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 186,712                   | 189,617 | 191,280 |
| Alternative D                             | 188,772                   | 189,617 | 191,269 |
| Difference                                | 2,060                     | 0       | -12     |
| Percent Difference <sup>3</sup>           | 1.1%                      | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,705 |
| Alternative D                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 197,705                   | 197,705 | 197,785 |
| Alternative D                             | 197,705                   | 197,705 | 197,705 |
| Difference                                | 0                         | 0       | -80     |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 193,597                   | 193,597 | 193,597 |
| Alternative D                             | 193,597                   | 193,597 | 193,597 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 184,673                   | 185,956 | 185,956 |
| Alternative D                             | 184,673                   | 185,956 | 185,956 |
| Difference                                | 0                         | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 146,925                   | 164,853 | 176,139 |
| Alternative D                             | 161,005                   | 164,853 | 176,139 |
| Difference                                | 14,079                    | 0       | 0       |
| Percent Difference                        | 9.6%                      | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9e**  
**Lower Clear Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |
|---|---------------------------|---------|---------|---------|
|   | Jan                       | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |
| No Action Alternative                     | 473,449                   | 473,331 | 473,726 | 474,148 |
| Alternative D                             | 473,449                   | 473,327 | 474,148 | 474,148 |
| Difference                                | 0                         | -4      | 422     | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.1%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 467,469                   | 467,878 | 470,453 | 470,453 |
| Alternative D                             | 467,469                   | 467,864 | 470,453 | 470,453 |
| Difference                                | 0                         | -14     | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 472,142 | 469,262 | 472,142 |
| Alternative D                             | 473,830                   | 472,142 | 472,142 | 472,142 |
| Difference                                | 0                         | 0       | 2,880   | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.6%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |
| No Action Alternative                     | 474,795                   | 474,795 | 474,795 | 474,795 |
| Alternative D                             | 474,795                   | 474,795 | 474,795 | 474,795 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |
| No Action Alternative                     | 473,830                   | 473,830 | 473,830 | 473,830 |
| Alternative D                             | 473,830                   | 473,830 | 473,830 | 473,830 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |
| No Action Alternative                     | 483,880                   | 483,880 | 483,880 | 483,880 |
| Alternative D                             | 483,880                   | 483,880 | 483,880 | 483,880 |
| Difference                                | 0                         | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9f**  
**Lower Clear Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | May                       | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 332,168                   | 309,022 | 256,126 | 256,868 | 295,108 |
| Alternative D                             | 332,168                   | 309,022 | 257,454 | 256,126 | 295,108 |
| Difference                                | 0                         | 0       | 1,328   | -742    | 0       |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.5%    | -0.3%   | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative D                             | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 335,067                   | 318,200 | 256,126 | 256,126 | 296,863 |
| Alternative D                             | 335,067                   | 318,200 | 255,403 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | -724    | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | -0.3%   | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 333,498                   | 312,104 | 256,126 | 256,126 | 296,863 |
| Alternative D                             | 333,498                   | 312,104 | 260,380 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 4,254   | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.7%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 331,897                   | 308,825 | 256,126 | 256,126 | 296,863 |
| Alternative D                             | 331,897                   | 308,824 | 256,126 | 256,126 | 296,863 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 321,839                   | 276,656 | 256,126 | 261,194 | 284,872 |
| Alternative D                             | 321,839                   | 276,656 | 260,964 | 256,126 | 284,872 |
| Difference                                | 0                         | 0       | 4,838   | -5,068  | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 1.9%    | -1.9%   | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9g**  
**Total Clear Creek Steelhead/Rainbow Trout Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |        |        |        |        |
|---|---------------------------|--------|--------|--------|--------|
|   | Dec                       | Jan    | Feb    | Mar    | Apr    |
| <b>Long-term</b>                          |                           |        |        |        |        |
| <b>Full Simulation Period<sup>1</sup></b> |                           |        |        |        |        |
| No Action Alternative                     | 84,076                    | 84,450 | 84,397 | 84,861 | 84,594 |
| Alternative D                             | 84,071                    | 84,450 | 84,393 | 84,594 | 84,594 |
| Difference                                | -5                        | 0      | -4     | -267   | 0      |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%   | 0.0%   | -0.3%  | 0.0%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |        |        |        |        |
| <b>Wet (32%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 87,297                    | 87,393 | 86,676 | 87,297 | 87,297 |
| Alternative D                             | 87,297                    | 87,393 | 86,662 | 87,297 | 87,297 |
| Difference                                | 0                         | 0      | -14    | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Above Normal (15%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 87,334                    | 84,915 | 86,106 | 87,932 | 86,106 |
| Alternative D                             | 87,297                    | 84,915 | 86,106 | 86,106 | 86,106 |
| Difference                                | -37                       | 0      | 0      | -1,826 | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | -2.1%  | 0.0%   |
| <b>Below Normal (17%)</b>                 |                           |        |        |        |        |
| No Action Alternative                     | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Alternative D                             | 85,255                    | 84,235 | 84,235 | 84,235 | 84,235 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Dry (22%)</b>                          |                           |        |        |        |        |
| No Action Alternative                     | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Alternative D                             | 81,334                    | 84,915 | 84,915 | 84,915 | 84,915 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |
| <b>Critical (15%)</b>                     |                           |        |        |        |        |
| No Action Alternative                     | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Alternative D                             | 76,579                    | 77,162 | 77,162 | 77,162 | 77,162 |
| Difference                                | 0                         | 0      | 0      | 0      | 0      |
| Percent Difference                        | 0.0%                      | 0.0%   | 0.0%   | 0.0%   | 0.0%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9h**  
**Total Clear Creek Steelhead/Rainbow Trout Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period   | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>  |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>   |                           |         |         |         |         |
| No Action Alternative   | 205,170                   | 204,366 | 204,346 | 212,118 | 205,684 |
| Alternative D   | 205,170                   | 204,346 | 204,346 | 212,118 | 205,684 |
| Difference  | 1                         | -19     | 0       | 0       | 0       |
| Percent Difference <sup>3</sup>   | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>   |                           |         |         |         |         |
| <b>Wet (32%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 205,835                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Alternative D   | 205,837                   | 203,238 | 203,238 | 212,960 | 203,238 |
| Difference  | 2                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 203,734                   | 203,866 | 203,734 | 212,960 | 203,238 |
| Alternative D   | 203,734                   | 203,734 | 203,734 | 212,960 | 203,238 |
| Difference  | 0                         | -132    | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | -0.1%   | 0.0%    | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Alternative D   | 204,512                   | 204,512 | 204,512 | 212,145 | 204,937 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>  |                           |         |         |         |         |
| No Action Alternative   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Alternative D   | 204,229                   | 204,229 | 204,229 | 212,083 | 205,787 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>   |                           |         |         |         |         |
| No Action Alternative   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Alternative D   | 207,342                   | 207,342 | 207,342 | 209,469 | 214,147 |
| Difference  | 0                         | 0       | 0       | 0       | 0       |
| Percent Difference  | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <sup>1</sup> Based on the 82-year simulation period<br><sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)<br><sup>3</sup> Relative difference of the monthly average |                           |         |         |         |         |

**Table AQ-11-9i**  
**Total Clear Creek Steelhead/Rainbow Trout Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 251,370 | 349,555 | 397,531 | 403,315 | 406,583 |
| Alternative D                             | 266,803                   | 249,321 | 349,555 | 401,845 | 403,315 | 406,547 |
| Difference                                | 17,482                    | -2,048  | 0       | 4,314   | 0       | -36     |
| Percent Difference <sup>3</sup>           | 7.0%                      | -0.8%   | 0.0%    | 1.1%    | 0.0%    | 0.0%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,350 |
| Alternative D                             | 249,321                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 421,350 | 421,350 | 421,596 |
| Alternative D                             | 286,626                   | 249,321 | 353,767 | 421,350 | 421,350 | 421,350 |
| Difference                                | 37,304                    | 0       | 0       | 0       | 0       | -246    |
| Percent Difference                        | 15.0%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | -0.1%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 411,695 | 411,695 | 411,695 |
| Alternative D                             | 308,385                   | 249,321 | 353,767 | 411,695 | 411,695 | 411,695 |
| Difference                                | 59,063                    | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 23.7%                     | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 249,322 | 353,767 | 392,983 | 395,215 | 395,215 |
| Alternative D                             | 249,321                   | 249,321 | 353,767 | 392,983 | 395,215 | 395,215 |
| Difference                                | 0                         | 0       | 0       | 0       | 0       | 0       |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%    | 0.0%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |
| No Action Alternative                     | 249,322                   | 263,318 | 324,987 | 312,402 | 348,577 | 370,663 |
| Alternative D                             | 262,569                   | 249,321 | 324,987 | 341,882 | 348,577 | 370,663 |
| Difference                                | 13,247                    | -13,996 | 0       | 29,480  | 0       | 0       |
| Percent Difference                        | 5.3%                      | -5.3%   | 0.0%    | 9.4%    | 0.0%    | 0.0%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9j**  
**Sacramento River Battle Creek to Deer Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 2,107,321                 | 2,387,073 | 2,143,639 | 1,924,747 |
| Alternative D                             | 2,160,018                 | 2,379,196 | 2,137,915 | 1,856,887 |
| Difference                                | 52,697                    | -7,877    | -5,724    | -67,860   |
| Percent Difference <sup>3</sup>           | 2.5%                      | -0.3%     | -0.3%     | -3.5%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,351,729                 | 2,228,013 | 1,705,869 | 1,892,666 |
| Alternative D                             | 1,430,885                 | 2,170,041 | 1,815,841 | 1,799,593 |
| Difference                                | 79,156                    | -57,972   | 109,973   | -93,073   |
| Percent Difference                        | 5.9%                      | -2.6%     | 6.4%      | -4.9%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,162,623                 | 2,438,077 | 2,076,818 | 1,815,501 |
| Alternative D                             | 2,247,387                 | 2,379,342 | 2,012,574 | 1,715,502 |
| Difference                                | 84,764                    | -58,735   | -64,244   | -99,999   |
| Percent Difference                        | 3.9%                      | -2.4%     | -3.1%     | -5.5%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 2,565,657                 | 2,482,964 | 2,311,339 | 1,709,439 |
| Alternative D                             | 2,580,927                 | 2,429,585 | 2,217,629 | 1,614,040 |
| Difference                                | 15,270                    | -53,379   | -93,710   | -95,399   |
| Percent Difference                        | 0.6%                      | -2.1%     | -4.1%     | -5.6%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 2,510,236                 | 2,430,603 | 2,405,256 | 1,858,949 |
| Alternative D                             | 2,559,546                 | 2,517,664 | 2,343,789 | 1,810,521 |
| Difference                                | 49,310                    | 87,060    | -61,467   | -48,428   |
| Percent Difference                        | 2.0%                      | 3.6%      | -2.6%     | -2.6%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 2,550,036                 | 2,503,533 | 2,570,884 | 2,453,389 |
| Alternative D                             | 2,562,084                 | 2,565,732 | 2,559,271 | 2,475,276 |
| Difference                                | 12,048                    | 62,199    | -11,613   | 21,887    |
| Percent Difference                        | 0.5%                      | 2.5%      | -0.5%     | 0.9%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9k**  
**Sacramento River Keswick to Battle Creek Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Sep                       | Oct       | Nov       | Dec       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 778,334                   | 907,952   | 892,626   | 900,070   |
| Alternative D                             | 801,169                   | 912,084   | 885,289   | 846,724   |
| Difference                                | 22,834                    | 4,132     | -7,337    | -53,345   |
| Percent Difference <sup>3</sup>           | 2.9%                      | 0.5%      | -0.8%     | -5.9%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 431,343                   | 806,951   | 677,841   | 864,559   |
| Alternative D                             | 462,053                   | 774,686   | 724,586   | 796,865   |
| Difference                                | 30,710                    | -32,265   | 46,745    | -67,694   |
| Percent Difference                        | 7.1%                      | -4.0%     | 6.9%      | -7.8%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 749,702                   | 938,846   | 812,270   | 878,489   |
| Alternative D                             | 791,151                   | 914,532   | 775,658   | 795,787   |
| Difference                                | 41,449                    | -24,314   | -36,613   | -82,702   |
| Percent Difference                        | 5.5%                      | -2.6%     | -4.5%     | -9.4%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,006,086                 | 993,350   | 1,006,711 | 806,691   |
| Alternative D                             | 1,010,273                 | 967,660   | 960,437   | 753,915   |
| Difference                                | 4,187                     | -25,690   | -46,274   | -52,776   |
| Percent Difference                        | 0.4%                      | -2.6%     | -4.6%     | -6.5%     |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 972,748                   | 933,293   | 1,048,580 | 915,005   |
| Alternative D                             | 1,002,300                 | 999,221   | 1,010,406 | 866,951   |
| Difference                                | 29,553                    | 65,927    | -38,173   | -48,054   |
| Percent Difference                        | 3.0%                      | 7.1%      | -3.6%     | -5.3%     |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,001,451                 | 958,247   | 1,071,316 | 1,085,130 |
| Alternative D                             | 1,000,285                 | 1,011,786 | 1,067,759 | 1,083,629 |
| Difference                                | -1,166                    | 53,539    | -3,557    | -1,501    |
| Percent Difference                        | -0.1%                     | 5.6%      | -0.3%     | -0.1%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9I**  
**Sacramento River Keswick to Battle Creek Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |           |           |           |
|--|---------------------------|-----------|-----------|-----------|
|  | Dec                       | Jan       | Feb       | Mar       |
| <b>Long-term</b>   |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |           |           |           |
| No Action Alternative  | 1,608,737                 | 1,574,899 | 1,568,308 | 1,566,903 |
| Alternative D  | 1,469,376                 | 1,482,172 | 1,506,666 | 1,577,495 |
| Difference   | -139,360                  | -92,727   | -61,642   | 10,592    |
| Percent Difference <sup>3</sup>  | -8.7%                     | -5.9%     | -3.9%     | 0.7%      |
| <b>Water Year Types<sup>2</sup></b>  |                           |           |           |           |
| <b>Wet (32%)</b>   |                           |           |           |           |
| No Action Alternative  | 1,543,260                 | 1,323,817 | 1,350,593 | 1,341,053 |
| Alternative D  | 1,338,012                 | 1,283,108 | 1,324,466 | 1,339,759 |
| Difference   | -205,248                  | -40,709   | -26,127   | -1,294    |
| Percent Difference   | -13.3%                    | -3.1%     | -1.9%     | -0.1%     |
| <b>Above Normal (15%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,527,079                 | 1,516,092 | 1,442,185 | 1,401,447 |
| Alternative D  | 1,319,127                 | 1,415,308 | 1,425,261 | 1,403,069 |
| Difference   | -207,953                  | -100,785  | -16,924   | 1,621     |
| Percent Difference   | -13.6%                    | -6.6%     | -1.2%     | 0.1%      |
| <b>Below Normal (17%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,528,068                 | 1,679,907 | 1,622,139 | 1,676,705 |
| Alternative D  | 1,386,899                 | 1,562,051 | 1,540,246 | 1,678,877 |
| Difference   | -141,169                  | -117,856  | -81,893   | 2,171     |
| Percent Difference   | -9.2%                     | -7.0%     | -5.0%     | 0.1%      |
| <b>Dry (22%)</b>   |                           |           |           |           |
| No Action Alternative  | 1,673,294                 | 1,756,027 | 1,778,361 | 1,751,504 |
| Alternative D  | 1,590,659                 | 1,575,955 | 1,624,997 | 1,793,534 |
| Difference   | -82,635                   | -180,072  | -153,364  | 42,030    |
| Percent Difference   | -4.9%                     | -10.3%    | -8.6%     | 2.4%      |
| <b>Critical (15%)</b>  |                           |           |           |           |
| No Action Alternative  | 1,829,537                 | 1,783,512 | 1,788,265 | 1,816,696 |
| Alternative D  | 1,818,549                 | 1,746,474 | 1,766,165 | 1,824,679 |
| Difference   | -10,989                   | -37,038   | -22,101   | 7,983     |
| Percent Difference   | -0.6%                     | -2.1%     | -1.2%     | 0.4%      |
| 1 Based on the 82-year simulation period   |                           |           |           |           |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |           |           |           |
| 3 Relative difference of the monthly average   |                           |           |           |           |

**Table AQ-11-9m**  
**Sacramento River Keswick to Battle Creek Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Feb                       | Mar     | Apr     | May     | Jun     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 589,342                   | 599,607 | 592,785 | 537,381 | 429,924 |
| Alternative D                             | 573,869                   | 604,683 | 600,036 | 543,664 | 445,605 |
| Difference                                | -15,473                   | 5,076   | 7,250   | 6,283   | 15,681  |
| Percent Difference <sup>3</sup>           | -2.6%                     | 0.8%    | 1.2%    | 1.2%    | 3.6%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 471,613                   | 476,144 | 536,801 | 479,507 | 442,492 |
| Alternative D                             | 467,095                   | 475,652 | 538,443 | 477,862 | 440,811 |
| Difference                                | -4,518                    | -493    | 1,642   | -1,644  | -1,681  |
| Percent Difference                        | -1.0%                     | -0.1%   | 0.3%    | -0.3%   | -0.4%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 515,412                   | 542,841 | 610,695 | 544,981 | 409,839 |
| Alternative D                             | 499,295                   | 544,940 | 607,787 | 540,578 | 436,296 |
| Difference                                | -16,117                   | 2,099   | -2,909  | -4,403  | 26,457  |
| Percent Difference                        | -3.1%                     | 0.4%    | -0.5%   | -0.8%   | 6.5%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 630,261                   | 660,989 | 643,832 | 573,187 | 430,357 |
| Alternative D                             | 607,577                   | 667,116 | 645,631 | 578,246 | 450,872 |
| Difference                                | -22,684                   | 6,127   | 1,798   | 5,059   | 20,516  |
| Percent Difference                        | -3.6%                     | 0.9%    | 0.3%    | 0.9%    | 4.8%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 697,934                   | 694,137 | 624,081 | 558,512 | 421,092 |
| Alternative D                             | 668,037                   | 708,443 | 635,599 | 563,681 | 453,581 |
| Difference                                | -29,897                   | 14,306  | 11,518  | 5,169   | 32,489  |
| Percent Difference                        | -4.3%                     | 2.1%    | 1.8%    | 0.9%    | 7.7%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 707,729                   | 710,465 | 589,676 | 581,705 | 435,518 |
| Alternative D                             | 699,210                   | 715,514 | 619,196 | 618,949 | 447,188 |
| Difference                                | -8,518                    | 5,048   | 29,520  | 37,244  | 11,670  |
| Percent Difference                        | -1.2%                     | 0.7%    | 5.0%    | 6.4%    | 2.7%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9n**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |
|---|---------------------------|-----------|-----------|-----------|
|   | Jan                       | Feb       | Mar       | Apr       |
| <b>Long-term</b>                          |                           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |
| No Action Alternative                     | 1,095,631                 | 1,011,545 | 1,082,139 | 1,121,338 |
| Alternative D                             | 1,064,298                 | 986,816   | 1,093,047 | 1,137,413 |
| Difference                                | -31,333                   | -24,729   | 10,908    | 16,075    |
| Percent Difference <sup>3</sup>           | -2.9%                     | -2.4%     | 1.0%      | 1.4%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 712,720                   | 632,180   | 722,542   | 965,627   |
| Alternative D                             | 680,426                   | 623,454   | 727,576   | 968,656   |
| Difference                                | -32,294                   | -8,727    | 5,034     | 3,029     |
| Percent Difference                        | -4.5%                     | -1.4%     | 0.7%      | 0.3%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,052,345                 | 777,896   | 994,675   | 1,177,761 |
| Alternative D                             | 1,032,861                 | 736,555   | 1,005,974 | 1,173,632 |
| Difference                                | -19,484                   | -41,340   | 11,299    | -4,128    |
| Percent Difference                        | -1.9%                     | -5.3%     | 1.1%      | -0.4%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |
| No Action Alternative                     | 1,307,850                 | 1,198,511 | 1,266,716 | 1,235,708 |
| Alternative D                             | 1,267,168                 | 1,151,311 | 1,278,025 | 1,244,343 |
| Difference                                | -40,683                   | -47,200   | 11,309    | 8,635     |
| Percent Difference                        | -3.1%                     | -3.9%     | 0.9%      | 0.7%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |
| No Action Alternative                     | 1,337,674                 | 1,338,519 | 1,326,667 | 1,209,645 |
| Alternative D                             | 1,293,087                 | 1,305,849 | 1,352,603 | 1,234,182 |
| Difference                                | -44,587                   | -32,671   | 25,937    | 24,537    |
| Percent Difference                        | -3.3%                     | -2.4%     | 2.0%      | 2.0%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |
| No Action Alternative                     | 1,357,906                 | 1,358,561 | 1,366,600 | 1,136,397 |
| Alternative D                             | 1,347,594                 | 1,353,900 | 1,366,832 | 1,196,928 |
| Difference                                | -10,312                   | -4,661    | 232       | 60,531    |
| Percent Difference                        | -0.8%                     | -0.3%     | 0.0%      | 5.3%      |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9o**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |
|---|---------------------------|-----------|-----------|
|   | Apr                       | May       | Jun       |
| <b>Long-term</b>                          |                           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |
| No Action Alternative                     | 1,370,922                 | 1,186,779 | 1,017,298 |
| Alternative D                             | 1,398,034                 | 1,199,637 | 1,003,896 |
| Difference                                | 27,112                    | 12,857    | -13,401   |
| Percent Difference <sup>3</sup>           | 2.0%                      | 1.1%      | -1.3%     |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,300,382                 | 1,105,290 | 1,008,377 |
| Alternative D                             | 1,307,424                 | 1,088,731 | 1,002,092 |
| Difference                                | 7,043                     | -16,559   | -6,285    |
| Percent Difference                        | 0.5%                      | -1.5%     | -0.6%     |
| <b>Above Normal (15%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,421,089                 | 1,191,116 | 1,002,089 |
| Alternative D                             | 1,412,876                 | 1,161,970 | 996,141   |
| Difference                                | -8,213                    | -29,146   | -5,948    |
| Percent Difference                        | -0.6%                     | -2.4%     | -0.6%     |
| <b>Below Normal (17%)</b>                 |                           |           |           |
| No Action Alternative                     | 1,469,788                 | 1,248,644 | 1,012,620 |
| Alternative D                             | 1,486,426                 | 1,257,852 | 997,987   |
| Difference                                | 16,638                    | 9,208     | -14,633   |
| Percent Difference                        | 1.1%                      | 0.7%      | -1.4%     |
| <b>Dry (22%)</b>                          |                           |           |           |
| No Action Alternative                     | 1,408,584                 | 1,217,440 | 1,034,076 |
| Alternative D                             | 1,455,993                 | 1,219,529 | 1,007,000 |
| Difference                                | 47,408                    | 2,088     | -27,075   |
| Percent Difference                        | 3.4%                      | 0.2%      | -2.6%     |
| <b>Critical (15%)</b>                     |                           |           |           |
| No Action Alternative                     | 1,301,756                 | 1,240,837 | 1,032,124 |
| Alternative D                             | 1,389,449                 | 1,379,845 | 1,017,800 |
| Difference                                | 87,693                    | 139,008   | -14,324   |
| Percent Difference                        | 6.7%                      | 11.2%     | -1.4%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9p**  
**Sacramento River Keswick to Battle Creek Late-Fall-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Oct                       | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     | Jun     | Jul     | Aug     | Sep     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 543,438                   | 544,401 | 569,216 | 556,872 | 544,146 | 551,154 | 544,045 | 496,346 | 403,442 | 359,842 | 409,789 | 503,331 |
| Alternative D                             | 544,573                   | 539,130 | 540,309 | 538,834 | 531,136 | 555,405 | 550,403 | 501,627 | 417,355 | 362,858 | 416,696 | 509,988 |
| Difference                                | 1,135                     | -5,271  | -28,907 | -18,037 | -13,010 | 4,251   | 6,357   | 5,281   | 13,914  | 3,016   | 6,907   | 6,657   |
| Percent Difference <sup>3</sup>           | 0.2%                      | -1.0%   | -5.1%   | -3.2%   | -2.4%   | 0.8%    | 1.2%    | 1.1%    | 3.4%    | 0.8%    | 1.7%    | 1.3%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 501,023                   | 452,582 | 551,060 | 449,894 | 448,524 | 449,111 | 497,042 | 446,402 | 414,802 | 362,859 | 399,108 | 374,363 |
| Alternative D                             | 485,876                   | 467,879 | 510,878 | 436,702 | 444,743 | 448,405 | 498,419 | 445,020 | 413,396 | 366,416 | 404,809 | 382,756 |
| Difference                                | -15,147                   | 15,297  | -40,182 | -13,191 | -3,781  | -706    | 1,377   | -1,382  | -1,405  | 3,557   | 5,701   | 8,394   |
| Percent Difference                        | -3.0%                     | 3.4%    | -7.3%   | -2.9%   | -0.8%   | -0.2%   | 0.3%    | -0.3%   | -0.3%   | 1.0%    | 1.4%    | 2.2%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 551,852                   | 511,406 | 550,280 | 529,717 | 483,585 | 501,234 | 559,104 | 503,020 | 385,477 | 345,743 | 402,956 | 481,104 |
| Alternative D                             | 543,037                   | 496,952 | 505,880 | 510,327 | 469,974 | 503,126 | 556,578 | 499,057 | 408,981 | 347,632 | 417,390 | 496,999 |
| Difference                                | -8,815                    | -14,454 | -44,401 | -19,390 | -13,611 | 1,892   | -2,526  | -3,963  | 23,504  | 1,889   | 14,434  | 15,895  |
| Percent Difference                        | -1.6%                     | -2.8%   | -8.1%   | -3.7%   | -2.8%   | 0.4%    | -0.5%   | -0.8%   | 6.1%    | 0.5%    | 3.6%    | 3.3%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 579,788                   | 587,675 | 533,048 | 614,742 | 575,359 | 601,669 | 587,146 | 527,124 | 403,825 | 361,906 | 418,229 | 592,055 |
| Alternative D                             | 564,932                   | 563,350 | 504,260 | 592,385 | 556,108 | 607,106 | 589,216 | 531,175 | 421,830 | 362,940 | 431,244 | 589,921 |
| Difference                                | -14,856                   | -24,326 | -28,788 | -22,357 | -19,251 | 5,437   | 2,070   | 4,051   | 18,006  | 1,034   | 13,015  | -2,134  |
| Percent Difference                        | -2.6%                     | -4.1%   | -5.4%   | -3.6%   | -3.3%   | 0.9%    | 0.4%    | 0.8%    | 4.5%    | 0.3%    | 3.1%    | -0.4%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 556,035                   | 609,058 | 582,470 | 629,341 | 633,304 | 630,341 | 570,658 | 514,787 | 395,553 | 357,526 | 405,769 | 578,446 |
| Alternative D                             | 585,183                   | 592,157 | 561,780 | 601,483 | 608,063 | 642,451 | 580,642 | 519,018 | 424,254 | 363,671 | 415,775 | 588,201 |
| Difference                                | 29,149                    | -16,900 | -20,690 | -27,858 | -25,241 | 12,110  | 9,984   | 4,232   | 28,702  | 6,145   | 10,006  | 9,755   |
| Percent Difference                        | 5.2%                      | -2.8%   | -3.6%   | -4.4%   | -4.0%   | 1.9%    | 1.7%    | 0.8%    | 7.3%    | 1.7%    | 2.5%    | 1.7%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 565,618                   | 628,868 | 649,805 | 639,592 | 641,732 | 644,451 | 540,625 | 534,318 | 408,181 | 368,468 | 435,947 | 588,807 |
| Alternative D                             | 588,617                   | 627,888 | 648,355 | 632,178 | 634,958 | 648,632 | 566,219 | 566,289 | 418,739 | 369,058 | 426,169 | 588,069 |
| Difference                                | 22,999                    | -980    | -1,450  | -7,414  | -6,775  | 4,181   | 25,593  | 31,971  | 10,558  | 590     | -9,778  | -738    |
| Percent Difference                        | 4.1%                      | -0.2%   | -0.2%   | -1.2%   | -1.1%   | 0.6%    | 4.7%    | 6.0%    | 2.6%    | 0.2%    | -2.2%   | -0.1%   |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9q**  
**Sacramento River Keswick to Battle Creek Winter-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |           |           |           |           |
|---|---------------------------|-----------|-----------|-----------|-----------|
|   | Apr                       | May       | Jun       | Jul       | Aug       |
| <b>Long-term</b>                          |                           |           |           |           |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |           |           |           |           |
| No Action Alternative                     | 1,273,557                 | 1,325,544 | 1,210,918 | 1,030,389 | 1,236,332 |
| Alternative D                             | 1,275,342                 | 1,331,473 | 1,260,232 | 1,060,771 | 1,253,571 |
| Difference                                | 1,785                     | 5,930     | 49,314    | 30,381    | 17,240    |
| Percent Difference <sup>3</sup>           | 0.1%                      | 0.4%      | 4.1%      | 2.9%      | 1.4%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |           |           |           |           |
| <b>Wet (32%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,179,943                 | 1,252,131 | 1,237,662 | 1,057,112 | 1,206,236 |
| Alternative D                             | 1,178,895                 | 1,261,597 | 1,239,895 | 1,090,930 | 1,216,784 |
| Difference                                | -1,048                    | 9,466     | 2,232     | 33,818    | 10,549    |
| Percent Difference                        | -0.1%                     | 0.8%      | 0.2%      | 3.2%      | 0.9%      |
| <b>Above Normal (15%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,312,020                 | 1,337,404 | 1,194,236 | 940,549   | 1,237,844 |
| Alternative D                             | 1,324,349                 | 1,349,244 | 1,253,758 | 960,002   | 1,271,370 |
| Difference                                | 12,329                    | 11,840    | 59,522    | 19,453    | 33,525    |
| Percent Difference                        | 0.9%                      | 0.9%      | 5.0%      | 2.1%      | 2.7%      |
| <b>Below Normal (17%)</b>                 |                           |           |           |           |           |
| No Action Alternative                     | 1,289,580                 | 1,356,300 | 1,216,732 | 1,052,999 | 1,264,000 |
| Alternative D                             | 1,298,787                 | 1,370,733 | 1,285,339 | 1,048,144 | 1,298,197 |
| Difference                                | 9,207                     | 14,433    | 68,607    | -4,855    | 34,197    |
| Percent Difference                        | 0.7%                      | 1.1%      | 5.6%      | -0.5%     | 2.7%      |
| <b>Dry (22%)</b>                          |                           |           |           |           |           |
| No Action Alternative                     | 1,333,828                 | 1,356,338 | 1,176,053 | 1,004,690 | 1,231,265 |
| Alternative D                             | 1,331,771                 | 1,360,461 | 1,278,420 | 1,056,052 | 1,259,881 |
| Difference                                | -2,058                    | 4,123     | 102,368   | 51,361    | 28,616    |
| Percent Difference                        | -0.2%                     | 0.3%      | 8.7%      | 5.1%      | 2.3%      |
| <b>Critical (15%)</b>                     |                           |           |           |           |           |
| No Action Alternative                     | 1,328,825                 | 1,390,672 | 1,215,166 | 1,074,502 | 1,275,347 |
| Alternative D                             | 1,323,308                 | 1,375,818 | 1,254,194 | 1,118,006 | 1,253,950 |
| Difference                                | -5,517                    | -14,854   | 39,029    | 43,504    | -21,397   |
| Percent Difference                        | -0.4%                     | -1.1%     | 3.2%      | 4.0%      | -1.7%     |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9r**  
**Sacramento River Keswick to Battle Creek Winter-run Fry Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Jun                       | Jul     | Aug     | Sep     | Oct     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 695,779                   | 792,708 | 684,769 | 756,465 | 729,568 |
| Alternative D                             | 667,183                   | 772,168 | 673,649 | 754,383 | 735,844 |
| Difference                                | -28,596                   | -20,540 | -11,120 | -2,081  | 6,276   |
| Percent Difference <sup>3</sup>           | -4.1%                     | -2.6%   | -1.6%   | -0.3%   | 0.9%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 677,191                   | 774,888 | 693,494 | 775,652 | 700,783 |
| Alternative D                             | 668,961                   | 751,967 | 685,857 | 754,034 | 689,812 |
| Difference                                | -8,230                    | -22,921 | -7,638  | -21,618 | -10,972 |
| Percent Difference                        | -1.2%                     | -3.0%   | -1.1%   | -2.8%   | -1.6%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 693,198                   | 850,461 | 672,867 | 692,622 | 734,168 |
| Alternative D                             | 662,823                   | 834,581 | 655,249 | 699,970 | 738,122 |
| Difference                                | -30,374                   | -15,880 | -17,617 | 7,348   | 3,954   |
| Percent Difference                        | -4.4%                     | -1.9%   | -2.6%   | 1.1%    | 0.5%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 691,867                   | 778,871 | 672,470 | 771,322 | 756,189 |
| Alternative D                             | 653,751                   | 781,322 | 649,752 | 772,189 | 750,869 |
| Difference                                | -38,117                   | 2,451   | -22,718 | 867     | -5,320  |
| Percent Difference                        | -5.5%                     | 0.3%    | -3.4%   | 0.1%    | -0.7%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 720,542                   | 806,251 | 688,452 | 754,208 | 742,558 |
| Alternative D                             | 665,771                   | 775,770 | 671,927 | 769,939 | 768,467 |
| Difference                                | -54,771                   | -30,481 | -16,526 | 15,731  | 25,909  |
| Percent Difference                        | -7.6%                     | -3.8%   | -2.4%   | 2.1%    | 3.5%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 706,055                   | 769,394 | 686,592 | 764,784 | 736,790 |
| Alternative D                             | 685,477                   | 737,443 | 696,063 | 765,444 | 766,838 |
| Difference                                | -20,578                   | -31,951 | 9,470   | 661     | 30,048  |
| Percent Difference                        | -2.9%                     | -4.2%   | 1.4%    | 0.1%    | 4.1%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9s**  
**Sacramento River Keswick to Battle Creek Winter-run Juvenile Rearing WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |         |         |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|   | Jul                       | Aug     | Sep     | Oct     | Nov     | Dec     | Jan     | Feb     | Mar     | Apr     | May     |
| <b>Long-term</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,814                   | 287,297 | 307,322 | 316,631 | 316,906 | 326,631 | 329,515 | 336,672 | 327,273 | 318,869 | 308,301 |
| Alternative D                             | 273,967                   | 289,869 | 307,923 | 316,133 | 316,369 | 320,990 | 325,065 | 335,272 | 327,434 | 320,554 | 309,060 |
| Difference                                | 153                       | 2,571   | 602     | -498    | -536    | -5,642  | -4,450  | -1,400  | 162     | 1,685   | 760     |
| Percent Difference <sup>3</sup>           | 0.1%                      | 0.9%    | 0.2%    | -0.2%   | -0.2%   | -1.7%   | -1.4%   | -0.4%   | 0.0%    | 0.5%    | 0.2%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |         |         |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 274,464                   | 284,231 | 278,380 | 310,324 | 297,726 | 323,147 | 333,485 | 348,793 | 330,124 | 316,044 | 297,514 |
| Alternative D                             | 274,630                   | 286,415 | 278,038 | 306,517 | 301,820 | 315,265 | 330,633 | 348,483 | 328,184 | 316,448 | 297,333 |
| Difference                                | 166                       | 2,184   | -342    | -3,807  | 4,095   | -7,882  | -2,852  | -309    | -1,940  | 404     | -181    |
| Percent Difference                        | 0.1%                      | 0.8%    | -0.1%   | -1.2%   | 1.4%    | -2.4%   | -0.9%   | -0.1%   | -0.6%   | 0.1%    | -0.1%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 271,464                   | 284,777 | 305,153 | 317,955 | 318,904 | 321,456 | 316,013 | 343,138 | 312,353 | 319,492 | 310,056 |
| Alternative D                             | 270,526                   | 289,805 | 309,239 | 314,995 | 316,695 | 312,062 | 307,586 | 341,270 | 312,409 | 319,261 | 309,070 |
| Difference                                | -938                      | 5,028   | 4,085   | -2,960  | -2,209  | -9,394  | -8,426  | -1,868  | 56      | -231    | -986    |
| Percent Difference                        | -0.3%                     | 1.8%    | 1.3%    | -0.9%   | -0.7%   | -2.9%   | -2.7%   | -0.5%   | 0.0%    | -0.1%   | -0.3%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 273,833                   | 290,015 | 326,657 | 322,995 | 323,633 | 321,908 | 329,350 | 320,143 | 324,840 | 324,307 | 314,899 |
| Alternative D                             | 274,074                   | 294,568 | 324,658 | 318,815 | 319,490 | 315,747 | 324,587 | 317,866 | 326,695 | 325,713 | 315,188 |
| Difference                                | 240                       | 4,553   | -1,999  | -4,180  | -4,143  | -6,161  | -4,764  | -2,278  | 1,855   | 1,406   | 289     |
| Percent Difference                        | 0.1%                      | 1.6%    | -0.6%   | -1.3%   | -1.3%   | -1.9%   | -1.4%   | -0.7%   | 0.6%    | 0.4%    | 0.1%    |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 272,988                   | 285,268 | 323,511 | 318,363 | 328,300 | 334,012 | 331,073 | 330,584 | 330,674 | 321,627 | 312,822 |
| Alternative D                             | 274,345                   | 289,180 | 325,315 | 322,913 | 325,166 | 330,860 | 324,815 | 327,776 | 332,550 | 324,129 | 313,072 |
| Difference                                | 1,357                     | 3,912   | 1,805   | 4,550   | -3,134  | -3,152  | -6,258  | -2,807  | 1,876   | 2,502   | 250     |
| Percent Difference                        | 0.5%                      | 1.4%    | 0.6%    | 1.4%    | -1.0%   | -0.9%   | -1.9%   | -0.8%   | 0.6%    | 0.8%    | 0.1%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |         |         |         |         |         |         |
| No Action Alternative                     | 275,973                   | 296,335 | 325,357 | 318,949 | 331,522 | 333,796 | 332,270 | 332,359 | 333,749 | 313,884 | 315,436 |
| Alternative D                             | 275,283                   | 292,966 | 325,748 | 324,807 | 330,729 | 333,632 | 331,414 | 332,200 | 334,024 | 319,363 | 321,292 |
| Difference                                | -690                      | -3,369  | 391     | 5,858   | -793    | -164    | -857    | -159    | 275     | 5,479   | 5,856   |
| Percent Difference                        | -0.2%                     | -1.1%   | 0.1%    | 1.8%    | -0.2%   | 0.0%    | -0.3%   | 0.0%    | 0.1%    | 1.7%    | 1.9%    |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9t**  
**Sacramento River Keswick to Battle Creek Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period  | Monthly WUA (Square Feet) |         |         |         |         |
|--|---------------------------|---------|---------|---------|---------|
|  | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>   |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b>  |                           |         |         |         |         |
| No Action Alternative  | 249,278                   | 238,717 | 217,403 | 235,967 | 263,071 |
| Alternative D  | 247,001                   | 239,825 | 216,671 | 237,274 | 264,015 |
| Difference   | -2,277                    | 1,108   | -732    | 1,307   | 944     |
| Percent Difference <sup>3</sup>  | -0.9%                     | 0.5%    | -0.3%   | 0.6%    | 0.4%    |
| <b>Water Year Types<sup>2</sup></b>  |                           |         |         |         |         |
| <b>Wet (32%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 246,191                   | 172,093 | 146,954 | 170,500 | 231,829 |
| Alternative D  | 246,605                   | 166,979 | 147,279 | 171,799 | 231,608 |
| Difference   | 414                       | -5,114  | 325     | 1,299   | -221    |
| Percent Difference   | 0.2%                      | -3.0%   | 0.2%    | 0.8%    | -0.1%   |
| <b>Above Normal (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 253,111                   | 232,781 | 170,579 | 234,890 | 272,122 |
| Alternative D  | 251,519                   | 241,518 | 161,130 | 236,914 | 272,221 |
| Difference   | -1,592                    | 8,737   | -9,449  | 2,024   | 99      |
| Percent Difference   | -0.6%                     | 3.8%    | -5.5%   | 0.9%    | 0.0%    |
| <b>Below Normal (17%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 233,146                   | 280,645 | 258,868 | 268,847 | 280,039 |
| Alternative D  | 230,521                   | 281,833 | 253,332 | 272,043 | 281,655 |
| Difference   | -2,626                    | 1,189   | -5,536  | 3,196   | 1,616   |
| Percent Difference   | -1.1%                     | 0.4%    | -2.1%   | 1.2%    | 0.6%    |
| <b>Dry (22%)</b>   |                           |         |         |         |         |
| No Action Alternative  | 244,265                   | 278,926 | 276,758 | 277,007 | 281,019 |
| Alternative D  | 236,213                   | 284,133 | 282,933 | 278,047 | 281,616 |
| Difference   | -8,052                    | 5,208   | 6,176   | 1,040   | 597     |
| Percent Difference   | -3.3%                     | 1.9%    | 2.2%    | 0.4%    | 0.2%    |
| <b>Critical (15%)</b>  |                           |         |         |         |         |
| No Action Alternative  | 278,473                   | 279,778 | 279,456 | 278,965 | 274,994 |
| Alternative D  | 278,751                   | 280,497 | 280,397 | 277,771 | 279,043 |
| Difference   | 277                       | 719     | 941     | -1,195  | 4,049   |
| Percent Difference   | 0.1%                      | 0.3%    | 0.3%    | -0.4%   | 1.5%    |
| 1 Based on the 82-year simulation period   |                           |         |         |         |         |
| 2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999) |                           |         |         |         |         |
| 3 Relative difference of the monthly average   |                           |         |         |         |         |

**Table AQ-11-9u**  
**Feather River Low Flow Channel Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |           |
|---|---------------------------|---------|---------|---------|-----------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr       |
| <b>Long-term</b>                          |                           |         |         |         |           |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |           |
| <b>Wet (32%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Dry (22%)</b>                          |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |
| <b>Critical (15%)</b>                     |                           |         |         |         |           |
| No Action Alternative                     | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Alternative D                             | 989,930                   | 989,930 | 989,930 | 989,930 | 1,031,830 |
| Difference                                | 0                         | 0       | 0       | 0       | 0         |
| Percent Difference                        | 0.0%                      | 0.0%    | 0.0%    | 0.0%    | 0.0%      |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9v**  
**Feather River Below Thermalito Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|
|   | Dec                       | Jan        | Feb        | Mar        | Apr        |
| <b>Long-term</b>                          |                           |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |
| No Action Alternative                     | 6,966,027                 | 8,142,475  | 6,736,597  | 5,934,746  | 8,796,860  |
| Alternative D                             | 7,468,414                 | 8,285,656  | 6,628,238  | 5,978,745  | 8,933,602  |
| Difference                                | 502,387                   | 143,181    | -108,359   | 43,999     | 136,742    |
| Percent Difference <sup>3</sup>           | 7.2%                      | 1.8%       | -1.6%      | 0.7%       | 1.6%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 4,395,569                 | 4,584,094  | 2,373,443  | 1,647,945  | 4,560,151  |
| Alternative D                             | 4,987,037                 | 4,458,691  | 2,009,380  | 1,652,090  | 4,550,877  |
| Difference                                | 591,468                   | -125,404   | -364,063   | 4,145      | -9,274     |
| Percent Difference                        | 13.5%                     | -2.7%      | -15.3%     | 0.3%       | -0.2%      |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 5,447,753                 | 7,658,752  | 5,920,876  | 2,640,569  | 9,218,395  |
| Alternative D                             | 7,365,588                 | 7,796,787  | 5,922,115  | 2,686,771  | 9,218,215  |
| Difference                                | 1,917,835                 | 138,035    | 1,239      | 46,201     | -180       |
| Percent Difference                        | 35.2%                     | 1.8%       | 0.0%       | 1.7%       | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |
| No Action Alternative                     | 8,138,570                 | 9,696,424  | 8,682,860  | 8,307,378  | 11,950,511 |
| Alternative D                             | 7,795,201                 | 10,161,878 | 8,153,866  | 7,768,824  | 11,950,320 |
| Difference                                | -343,369                  | 465,454    | -528,994   | -538,553   | -192       |
| Percent Difference                        | -4.2%                     | 4.8%       | -6.1%      | -6.5%      | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |
| No Action Alternative                     | 8,647,942                 | 10,220,836 | 9,606,061  | 9,367,066  | 10,993,334 |
| Alternative D                             | 9,188,526                 | 10,495,542 | 9,825,197  | 10,176,176 | 11,131,682 |
| Difference                                | 540,584                   | 274,707    | 219,136    | 809,110    | 138,348    |
| Percent Difference                        | 6.3%                      | 2.7%       | 2.3%       | 8.6%       | 1.3%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |
| No Action Alternative                     | 10,162,789                | 11,405,541 | 10,430,981 | 10,600,440 | 10,580,890 |
| Alternative D                             | 9,986,137                 | 11,562,528 | 10,766,549 | 10,260,566 | 11,328,271 |
| Difference                                | -176,652                  | 156,987    | 335,568    | -339,875   | 747,381    |
| Percent Difference                        | -1.7%                     | 1.4%       | 3.2%       | -3.2%      | 7.1%       |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9w**  
**Feather River Low Flow Channel Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference <sup>3</sup>           | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Alternative D                             | 24,623,964                | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 | 24,736,140 |
| Difference                                | 0                         | 0          | 0          | 0          | 0          | 0          | 0          |
| Percent Difference                        | 0.0%                      | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       | 0.0%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9x**  
**Feather River Below Thermalito Fall-run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |            |            |            |            |            |            |
|---|---------------------------|------------|------------|------------|------------|------------|------------|
|   | Sep                       | Oct        | Nov        | Dec        | Jan        | Feb        | Mar        |
| <b>Long-term</b>                          |                           |            |            |            |            |            |            |
| <b>Full Simulation Period<sup>1</sup></b> |                           |            |            |            |            |            |            |
| No Action Alternative                     | 20,916,235                | 25,751,869 | 30,937,117 | 26,786,836 | 27,774,644 | 24,327,589 | 21,858,353 |
| Alternative D                             | 21,321,725                | 26,813,231 | 30,681,541 | 28,077,685 | 27,724,804 | 23,677,840 | 22,023,888 |
| Difference                                | 405,491                   | 1,061,362  | -255,575   | 1,290,849  | -49,840    | -649,749   | 165,535    |
| Percent Difference <sup>3</sup>           | 1.9%                      | 4.1%       | -0.8%      | 4.8%       | -0.2%      | -2.7%      | 0.8%       |
| <b>Water Year Types<sup>2</sup></b>       |                           |            |            |            |            |            |            |
| <b>Wet (32%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,118,200                | 20,580,977 | 28,301,798 | 22,268,848 | 20,379,631 | 14,601,037 | 11,988,425 |
| Alternative D                             | 11,384,298                | 21,706,588 | 28,407,574 | 24,532,042 | 19,682,646 | 13,301,473 | 12,057,410 |
| Difference                                | 266,098                   | 1,125,611  | 105,775    | 2,263,195  | -696,985   | -1,299,563 | 68,985     |
| Percent Difference                        | 2.4%                      | 5.5%       | 0.4%       | 10.2%      | -3.4%      | -8.9%      | 0.6%       |
| <b>Above Normal (15%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 11,445,791                | 21,980,685 | 31,538,726 | 25,943,506 | 27,381,380 | 22,188,818 | 15,277,196 |
| Alternative D                             | 10,687,423                | 22,575,776 | 30,951,852 | 29,742,207 | 27,346,087 | 22,195,272 | 15,785,699 |
| Difference                                | -758,368                  | 595,092    | -586,873   | 3,798,702  | -35,293    | 6,454      | 508,503    |
| Percent Difference                        | -6.6%                     | 2.7%       | -1.9%      | 14.6%      | -0.1%      | 0.0%       | 3.3%       |
| <b>Below Normal (17%)</b>                 |                           |            |            |            |            |            |            |
| No Action Alternative                     | 28,581,418                | 29,036,048 | 33,778,305 | 31,820,720 | 31,742,507 | 28,868,790 | 27,324,335 |
| Alternative D                             | 31,208,259                | 30,519,698 | 32,870,211 | 30,560,740 | 33,389,172 | 27,156,781 | 26,915,638 |
| Difference                                | 2,626,841                 | 1,483,650  | -908,094   | -1,259,979 | 1,646,664  | -1,712,009 | -408,697   |
| Percent Difference                        | 9.2%                      | 5.1%       | -2.7%      | -4.0%      | 5.2%       | -5.9%      | -1.5%      |
| <b>Dry (22%)</b>                          |                           |            |            |            |            |            |            |
| No Action Alternative                     | 29,279,920                | 30,492,957 | 32,802,634 | 28,370,477 | 32,986,400 | 32,154,799 | 31,508,592 |
| Alternative D                             | 29,286,499                | 32,314,482 | 33,049,363 | 29,327,333 | 32,977,305 | 32,308,423 | 32,003,800 |
| Difference                                | 6,579                     | 1,821,525  | 246,729    | 956,857    | -9,096     | 153,624    | 495,209    |
| Percent Difference                        | 0.0%                      | 6.0%       | 0.8%       | 3.4%       | 0.0%       | 0.5%       | 1.6%       |
| <b>Critical (15%)</b>                     |                           |            |            |            |            |            |            |
| No Action Alternative                     | 30,127,513                | 29,783,476 | 29,932,368 | 29,170,816 | 31,743,628 | 30,501,676 | 28,972,015 |
| Alternative D                             | 30,005,670                | 29,538,993 | 29,232,978 | 29,324,018 | 31,041,017 | 30,637,896 | 29,179,199 |
| Difference                                | -121,843                  | -244,483   | -699,390   | 153,202    | -702,610   | 136,220    | 207,184    |
| Percent Difference                        | -0.4%                     | -0.8%      | -2.3%      | 0.5%       | -2.2%      | 0.4%       | 0.7%       |

<sup>1</sup> Based on the 82-year simulation period

<sup>2</sup> As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

<sup>3</sup> Relative difference of the monthly average

**Table AQ-11-9y**  
**American River Below Nimbus Fall-Run Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |
|---|---------------------------|---------|---------|
|   | Oct                       | Nov     | Dec     |
| <b>Long-term</b>                          |                           |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |
| No Action Alternative                     | 827,041                   | 745,838 | 733,512 |
| Alternative D                             | 834,351                   | 747,933 | 730,277 |
| Difference                                | 7,311                     | 2,095   | -3,235  |
| Percent Difference <sup>3</sup>           | 0.9%                      | 0.3%    | -0.4%   |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |
| No Action Alternative                     | 863,678                   | 695,911 | 756,770 |
| Alternative D                             | 863,010                   | 685,482 | 749,425 |
| Difference                                | -668                      | -10,430 | -7,345  |
| Percent Difference                        | -0.1%                     | -1.5%   | -1.0%   |
| <b>Above Normal (15%)</b>                 |                           |         |         |
| No Action Alternative                     | 864,650                   | 809,210 | 773,094 |
| Alternative D                             | 863,914                   | 805,703 | 761,628 |
| Difference                                | -737                      | -3,507  | -11,466 |
| Percent Difference                        | -0.1%                     | -0.4%   | -1.5%   |
| <b>Below Normal (17%)</b>                 |                           |         |         |
| No Action Alternative                     | 855,047                   | 786,167 | 735,078 |
| Alternative D                             | 847,583                   | 790,439 | 728,058 |
| Difference                                | -7,464                    | 4,272   | -7,021  |
| Percent Difference                        | -0.9%                     | 0.5%    | -1.0%   |
| <b>Dry (22%)</b>                          |                           |         |         |
| No Action Alternative                     | 829,489                   | 797,542 | 726,260 |
| Alternative D                             | 839,448                   | 819,960 | 731,497 |
| Difference                                | 9,959                     | 22,418  | 5,237   |
| Percent Difference                        | 1.2%                      | 2.8%    | 0.7%    |
| <b>Critical (15%)</b>                     |                           |         |         |
| No Action Alternative                     | 673,701                   | 666,034 | 652,587 |
| Alternative D                             | 719,613                   | 667,847 | 658,195 |
| Difference                                | 45,911                    | 1,813   | 5,608   |
| Percent Difference                        | 6.8%                      | 0.3%    | 0.9%    |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average

**Table AQ-11-9z**  
**American River Below Nimbus Steelhead Spawning WUA, Monthly WUA**  
**Long-term Average and Average by Water Year Type**

| Analysis Period                           | Monthly WUA (Square Feet) |         |         |         |         |
|---|---------------------------|---------|---------|---------|---------|
|   | Dec                       | Jan     | Feb     | Mar     | Apr     |
| <b>Long-term</b>                          |                           |         |         |         |         |
| <b>Full Simulation Period<sup>1</sup></b> |                           |         |         |         |         |
| No Action Alternative                     | 237,250                   | 213,444 | 193,646 | 210,940 | 223,039 |
| Alternative D                             | 236,659                   | 213,173 | 195,191 | 211,945 | 223,628 |
| Difference                                | -591                      | -271    | 1,546   | 1,005   | 589     |
| Percent Difference <sup>3</sup>           | -0.2%                     | -0.1%   | 0.8%    | 0.5%    | 0.3%    |
| <b>Water Year Types<sup>2</sup></b>       |                           |         |         |         |         |
| <b>Wet (32%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 246,391                   | 142,753 | 126,539 | 179,362 | 186,932 |
| Alternative D                             | 244,456                   | 141,209 | 126,253 | 179,345 | 186,953 |
| Difference                                | -1,935                    | -1,543  | -285    | -17     | 21      |
| Percent Difference                        | -0.8%                     | -1.1%   | -0.2%   | 0.0%    | 0.0%    |
| <b>Above Normal (15%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 251,716                   | 223,989 | 169,834 | 186,357 | 232,611 |
| Alternative D                             | 248,185                   | 218,590 | 166,934 | 186,313 | 232,678 |
| Difference                                | -3,531                    | -5,399  | -2,900  | -45     | 67      |
| Percent Difference                        | -1.4%                     | -2.4%   | -1.7%   | 0.0%    | 0.0%    |
| <b>Below Normal (17%)</b>                 |                           |         |         |         |         |
| No Action Alternative                     | 238,201                   | 242,568 | 210,277 | 239,992 | 235,413 |
| Alternative D                             | 236,310                   | 243,285 | 216,357 | 244,098 | 233,920 |
| Difference                                | -1,891                    | 717     | 6,079   | 4,106   | -1,493  |
| Percent Difference                        | -0.8%                     | 0.3%    | 2.9%    | 1.7%    | -0.6%   |
| <b>Dry (22%)</b>                          |                           |         |         |         |         |
| No Action Alternative                     | 232,740                   | 266,690 | 259,117 | 248,456 | 252,737 |
| Alternative D                             | 235,430                   | 264,826 | 263,222 | 245,853 | 256,590 |
| Difference                                | 2,690                     | -1,863  | 4,105   | -2,602  | 3,853   |
| Percent Difference                        | 1.2%                      | -0.7%   | 1.6%    | -1.0%   | 1.5%    |
| <b>Critical (15%)</b>                     |                           |         |         |         |         |
| No Action Alternative                     | 208,631                   | 242,217 | 245,244 | 213,774 | 232,714 |
| Alternative D                             | 210,489                   | 251,068 | 246,075 | 219,838 | 232,587 |
| Difference                                | 1,859                     | 8,851   | 831     | 6,064   | -127    |
| Percent Difference                        | 0.9%                      | 3.7%    | 0.3%    | 2.8%    | -0.1%   |

1 Based on the 82-year simulation period

2 As defined by the Sacramento Valley 40-30-30 Index Water Year Hydrologic Classification (SWRCB D-1641, 1999)

3 Relative difference of the monthly average