Weekly Assessment of CVP and SWP Delta Operations on ESA-listed Species

Bureau of Reclamation

January 09, 2023

## Chinook Salmon

### TABLES

#### TABLE 2. Historic migration and salvage patterns.Last updated 01/09/2023

| **Species** | **RedBluffDiversionDam** | **TisdaleRst** | **KnightsLandingRst** | **SacTrawlSherwoodCatchIndex** | **ChippsIslandTrawlCatchIndex** | **Salvage** |
| --- | --- | --- | --- | --- | --- | --- |
| Chinook, Winter-run, Unclipped | 96.9%(94.6%,99.2%) BY: 2013 - 2021 | 66.3%(42.0%,90.6%) BY: 2013 - 2021 | 67.0%(40.1%,94.0%) BY: 2013 - 2021 | 34.4%(4.9%,63.9%) BY: 2013 - 2021 | 4.9%(-2.8%,12.6%) BY: 2013 - 2021 | 16.4%(0.4%,32.4%) WY: 2013 - 2022 |
| Chinook, Spring-run, Unclipped | 13.5%(3.6%,23.3%) BY: 2013 - 2021 | 15.3%(0.2%,30.4%) BY: 2013 - 2021 | 24.6%(2.2%,47.0%) BY: 2013 - 2021 | 4.9%(-3.3%,13.0%) BY: 2013 - 2021 | 0.0%(0.0%,0.0%) BY: 2013 - 2021 | 0.0%(0.0%,0.0%) WY: 2013 - 2022 |
| Steelhead, Unclipped (January-December) |  |  |  |  |  |  |
| Steelhead, Unclipped (December-March) |  |  |  |  |  | 6.1%(-2.9%,15.1%) WY: 2013 - 2022 |
| Steelhead, Unclipped (April-June) |  |  |  |  |  | 0.0%(0.0%,0.0%) WY: 2013 - 2022 |

#### TABLE 3. Mean daily flow and percent change (Wilkins Slough, Deer Creek, Mill Creek; cfs from CDEC) and temperature and percent change (Knights Landing; °F from RST)

| **Date** | **Mill Creek (MLM): mean daily flow (cfs)** | **Mill Creek (MLM): flow percent change** | **Mill Creek (MLM): Alert** | **Deer Creek (DCV): mean daily flow (cfs)** | **Deer Creek (DCV): flow percent change** | **Deer Creek (DCV): Alert** | **Wilkins Slough (WLK): mean daily flow (cfs)** | **Knights Landing RST: water temperature (f)** | **Alert Triggered** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1/8/2023 | 1,747.4 | 179.2% | Flow>95cfs Change>50% | 2,166.8 | 146.9% | Flow>95cfs Change>50% | 24,401.6 |  |  |
| 1/7/2023 | 625.8 | -36.6% | Flow>95cfs | 877.6 | -40.0% | Flow>95cfs | 25,198.9 |  |  |
| 1/6/2023 | 986.8 | -53.2% | Flow>95cfs | 1,463.0 | -45.4% | Flow>95cfs | 23,013.5 |  |  |
| 1/5/2023 | 2,109.6 | 426.6% | Flow>95cfs Change>50% | 2,679.4 | 559.8% | Flow>95cfs Change>50% | 14,064.8 |  |  |
| 1/4/2023 | 400.6 | -0.5% | Flow>95cfs | 406.1 | -6.4% | Flow>95cfs | 15,137.8 | 40.5 | WLK>7500cfs and KNL<56.3F |
| 1/3/2023 | 402.6 | -14.1% | Flow>95cfs | 433.6 | -21.2% | Flow>95cfs | 18,637.2 | 41.0 | WLK>7500cfs and KNL<56.3F |
| 1/2/2023 | 468.7 | -36.2% | Flow>95cfs | 550.0 | -36.9% | Flow>95cfs | 23,377.3 |  |  |

#### TABLE 4. STARS model simulations for route-specific entrainment, travel times, and survival. Travel time is calculated in days.

| **Stock** | **Date** | **Route** | **Median Travel Time** | **Survival** | **Routing Probability** |
| --- | --- | --- | --- | --- | --- |
| Winter Chinook | 2023-01-08 | Overall | 3.57 | 0.81 |  |
| Winter Chinook | 2023-01-08 | Sacramento River | 3.02 | 0.82 | 0.67 |
| Winter Chinook | 2023-01-08 | Yolo Bypass | 7.58 | 0.73 | 0.07 |
| Winter Chinook | 2023-01-08 | Sutter Slough | 3.57 | 0.77 | 0.11 |
| Winter Chinook | 2023-01-08 | Steamboat Slough | 3.12 | 0.82 | 0.06 |
| Winter Chinook | 2023-01-08 | Interior Delta | 4.89 | 0.90 | 0.08 |
| Late-fall Chinook | 2023-01-08 | Overall | 2.09 | 0.67 |  |
| Late-fall Chinook | 2023-01-08 | Delta Cross Channel | NA | NA | 0.00 |
| Late-fall Chinook | 2023-01-08 | Georgiana Slough | 3.30 | 0.40 | 0.18 |
| Late-fall Chinook | 2023-01-08 | Sacramento River | 1.73 | 0.74 | 0.47 |
| Late-fall Chinook | 2023-01-08 | Sutter and Steamboat Slough | 2.12 | 0.74 | 0.35 |

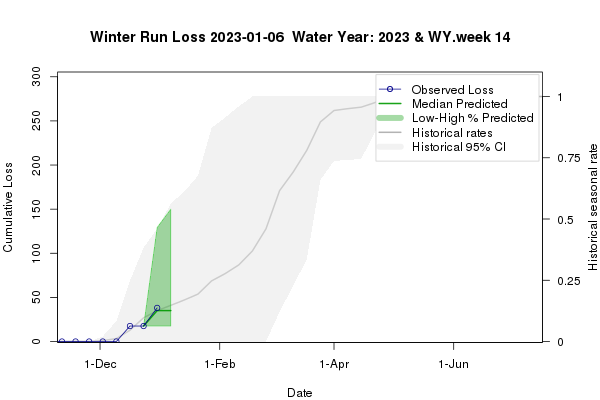
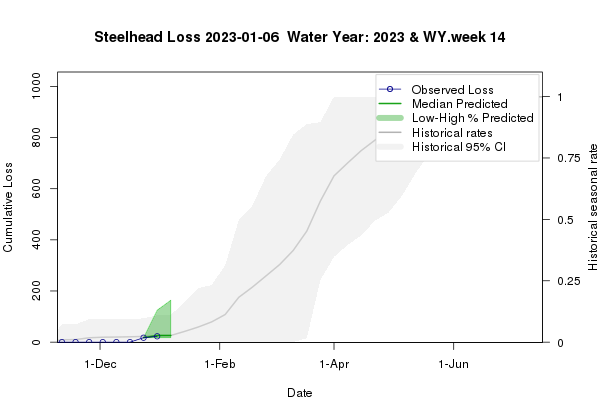
#### TABLE 5. a) WY 2022 loss and salvage predictor data: Predicted weekly loss of winter-run Chinook salmon and steelhead at CVP and SWP facilities.

| **Parameter** | **Modeled Current Week** | **Modeled Next Week** |
| --- | --- | --- |
| Predicted Steelhead, Median % | 9 | 0 |
| Predicted Steelhead, High % | 108 | 39 |
| Predicted Chinook Winter Run, Median % | 18 | 0 |
| Predicted Chinook Winter Run, High % | 112 | 21 |

#### TABLE 5. b) Environmental details, current and forecast.

| **Parameter** | **Data** | **Forecast** |
| --- | --- | --- |
| Temperature (Mallard Island, C) | 9.5 | 20 |
| Precipitation (5-d running sum, inches) | 1.15 | 0 |
| Old and Middle River Flows (cfs) | -3525 | -3039 |
| Sacramento River Flow (Freeport, cfs) | 62984 | 6993 |
| DCC Gates | closed | closed |
| San Joaquin River Flow (Vernalis, cfs) | 6692 | 262 |
| Export | 6886 | 1887 |

### FIGURES

#### Figure 1. Predicted weekly loss of steelhead and winter-run Chinook salmon at the CVP and SWP facilities