

**Delta Operations for Salmonids and Sturgeon (DOSS) Group**  
**Conference call: 12/27/2016 at 9:00 a.m.**

**Objective:** Provide advice to the Water Operations Management Team (WOMT) and National Marine Fisheries Service (NMFS) on measures to reduce adverse effects from Delta operations of the Central Valley Project and the State Water Project on salmonids and green sturgeon. DOSS will work with other technical teams. DOSS notes and advice can be found at: [http://www.westcoast.fisheries.noaa.gov/central\\_valley/water\\_operations/doss.html](http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html).

**CDFW:** Bob Fujimura, Ken Kundargi

**DWR:** Bryant Giorgi, Dan Yamanaka, Farida Islam, Kevin Reece

**NMFS:** Barb Byrne, Kristin McCleery

**Reclamation:** Tom Patton, Towns Burgess

**SWRCB:** Brittany Kammerer

**Agenda Items**

1. Agenda review and introductions
2. RPA Implementation review (For the DOSS Dashboard, click on the "Triggers & Indices" tab at: [www.baydeltalive.com/djfmfp](http://www.baydeltalive.com/djfmfp))
3. Smelt Working Group update
4. Current Operations
5. Hatchery Releases
6. Fish Monitoring: Salvage
7. Fish Monitoring: RSTs/trawls/seines
8. DOSS Estimates of Fish Distribution
9. DOSS advice
10. Next DOSS meeting

**Agenda Item 2.**

**RPA Implementation Review**

**Delta RPA Actions affecting operations during November:**

**Action IV.1.2<sup>1</sup> (DCC gate operations):**

- From December 1 to January 31, the gates will remain closed, with limited exceptions.

**Action IV.3<sup>2</sup> (Reduce likelihood of entrainment or salvage at the export facilities, including alert that indicates that export operations may need to be altered)**

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<sup>1</sup> For details, see pages 62-66 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations.%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations.%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

<sup>2</sup> For details, see pages 79-80 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations.%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations.%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

- The third alert (November 1-February 23: Knights Landing Catch Index (KLCI) or Sacramento Catch Index (SCI) >10) was not triggered over the past week.

| Date       | KLCI        | Seine SCI   | Trawl SCI   |
|------------|-------------|-------------|-------------|
| 12/20/2016 | 2.2         | No sampling | No sampling |
| 12/21/2016 | 0           | No sampling | 0           |
| 12/22/2016 | 0.6         | No sampling | No sampling |
| 12/23/2016 | 0           | 4.0         | 0           |
| 12/24/2016 | 0.6         | No sampling | No sampling |
| 12/25/2016 | No sampling | No sampling | No sampling |
| 12/26/2016 | No sampling | No sampling | No sampling |

- Since the action went into effect on 11/1/16, no salvage-based triggers that would require export reduction have been exceeded.
- Implementation of this action in WY 2017 ends 12/31/16.

#### Action IV.2.3<sup>3</sup> (OMR Management)

- Implementation of this action in WY 2017 begins 1/1/17.

#### Agenda Item 3.

##### Smelt Working Group update

Because of the federal holiday on Monday, 12/26/16, the Smelt Working Group rescheduled their call to 10 am on Tuesday, 12/27/16, after the DOSS meeting.

#### Agenda Item 4.

##### Current Operations (12/27/16)

| SWP                               |       | CVP                  |        |
|-----------------------------------|-------|----------------------|--------|
| <b>Exports (cfs)</b>              |       |                      |        |
| Clifton Court Forebay             | 3,500 | Jones Pumping Plant  | 3,500  |
| <b>Reservoir Releases (cfs)</b>   |       |                      |        |
| Feather - Oroville                | 1,750 | American - Nimbus    | 6,400* |
|                                   |       | Sacramento - Keswick | 10,000 |
|                                   |       | Stanislaus - Goodwin | 200    |
|                                   |       | Trinity - Lewiston   | 300    |
| <b>Reservoir Storage (in TAF)</b> |       |                      |        |
| San Luis (SWP)                    | 781   | San Luis (CVP)       | 419    |
| Oroville                          | 1,954 | Shasta               | 3,353  |
| New Melones                       | 616   | Folsom               | 415    |
| <b>Delta Operations</b>           |       |                      |        |

<sup>3</sup> For details, see pages 74-79 in Enclosure 2 of the 2011 Amendments to the 2009 RPA document at: [http://www.westcoast.fisheries.noaa.gov/publications/Central\\_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711\\_ocap\\_opinion\\_2011\\_amendments.pdf](http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations,%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf)

|                     |                   |                                     |         |
|---------------------|-------------------|-------------------------------------|---------|
| DCC                 | Closed            | Sacramento River at Freeport (cfs)  | ~43,000 |
| Outflow Index (cfs) | ~42,000           | San Joaquin River at Vernalis (cfs) | ~1,100  |
| E:I                 | 10% (14-day avg.) | X2                                  | > 61 km |

\*Reservoir releases are expected to decrease to 5,000 cfs by 12/29/16.

As of 12/26/16, both the daily OMR Index and 5-day OMR Index are ~ -6,300 cfs.

Factors controlling Delta exports:

**12/20/16-12/27/16:** Voluntary export reductions to 3,500 cfs at each project (7,000 cfs combined exports) for OMR and turbidity management for the protection of Delta smelt.

**Agenda Item 5.**

**Hatchery Releases**

The second spring-run surrogate group of genetic late-fall run Chinook (~81,000 fish) was released into Battle Creek from Coleman National Fish Hatchery (CNFH) on Wednesday, 12/21/16. The purpose of this experimental late-fall release is to provide insight into the migratory behavior and fate of yearling spring Chinook salmon emigrating from the upper Sacramento River and its tributaries.

**Agenda Item 6.**

**Fish Monitoring: Salvage**

Unclipped juvenile Chinook salmon (including winter-run-sized Chinook) were salvaged for the first time in WY 2017. Most of the fish salvaged last week were ad-clipped juvenile Chinook from the recent CNFH releases of late-fall run Chinook salmon. A few more large Chinook salmon, not classified to race were also salvaged last week.

### DOSS Weekly Salvage Update

Reporting Period: December 19-December 25, 2016  
 Prepared by Bob Fujimura on December 26, 2016 21:00

#### Preliminary Results -Subject to Revision

| Criteria               | 19-Dec | 20-Dec | 21-Dec | 22-Dec | 23-Dec | 24-Dec | 25-Dec | Trend |       |
|------------------------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| <b>Loss Densities</b>  |        |        |        |        |        |        |        |       |       |
| Wild older juvenile CS | 0.42   | 1.30   | 0      | 0      | 0      | 0      | 0      | ↗     | 0.25  |
| Wild steelhead         | 0      | 0      | 0      | 0      | 0      | 0      | 0      | →     | 0     |
| <b>Exports</b>         |        |        |        |        |        |        |        |       |       |
| SWP daily export       | 6,851  | 8,864  | 6,860  | 5,767  | 6,295  | 6,715  | 6,806  | ↘     | 6,880 |
| CVP daily export       | 7,017  | 6,995  | 6,953  | 6,908  | 6,942  | 6,933  | 6,965  | ↘     | 6,959 |
| SWP reduced counts     | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     | →     | 0%    |
| CVP reduced counts     | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     | 0%     | →     | 0%    |

Loss Density = fish lost/TAF; water export = AF; Trend = compared to previous week; wild = adipose fin present  
 Loss = estimated number of fish lost at the CVP and SWP Delta export facilities based on estimated salvage (see below)  
 Reduced counts = percentage of time that routine salvage sample time were less than 30 min per 2 hours of salvage and export operations  
 Yellow highlighted dates indicate brief salvage outage occurred  
 Tan highlighted dates indicate where preliminary salvage estimates were used

### Chinook Salmon Weekly/Season Salvage and Loss

Combined salvage and loss for both CVP and SWP fish facilities  
 Race determined by size at date of capture; hatchery = adipose fin missing;

| Category        | Weekly Total |            |       | Season Total |            |
|-----------------|--------------|------------|-------|--------------|------------|
|                 | Salvage      | Loss       | Trend | Salvage      | Loss       |
| <b>Wild</b>     |              |            |       |              |            |
| Winter Run      | 8            | 21         | ↗     | 8            | 21         |
| Spring Run      | 0            | 0          | →     | 0            | 0          |
| Late Fall Run   | 4            | 3          | ↗     | 4            | 3          |
| Fall Run        | 4            | 3          | ↗     | 4            | 3          |
| Unclassified    | 2            | NC         | ↘     | 70           | NC         |
| <b>Total</b>    | <b>18</b>    | <b>26</b>  |       | <b>86</b>    | <b>26</b>  |
| <b>Hatchery</b> |              |            |       |              |            |
| Winter Run      | 28           | 82         | ↗     | 32           | 100        |
| Spring Run      | 0            | 0          | →     | 0            | 0          |
| Late Fall Run   | 268          | 533        | ↗     | 310          | 633        |
| Fall Run        | 34           | 61         | ↗     | 56           | 115        |
| Unclassified    | 0            | 0          | →     | 6            | NC         |
| <b>Total</b>    | <b>330</b>   | <b>676</b> |       | <b>398</b>   | <b>848</b> |

Trend = weekly loss per race; Salvage = estimated number of fish collected by the CVP and SWP fish protective facilities per unit of time  
 NC = can not be calculated

### Steelhead Weekly/Season Salvage and Loss

Combined salvage and loss for both CVP and SWP fish facilities

| Category     | Weekly Total |          |       | Season Total |           |
|--------------|--------------|----------|-------|--------------|-----------|
|              | Salvage      | Loss     | Trend | Salvage      | Loss      |
| Wild         | 0            | 0        | →     | 4            | 17        |
| Hatchery     | 0            | 0        | →     | 0            | 0         |
| <b>Total</b> | <b>0</b>     | <b>0</b> |       | <b>4</b>     | <b>17</b> |

State Water Project loss = salvage x 4.33; Central Valley Project loss = salvage x 0.68

Generated by Bob Fujimura on December 24, 2016

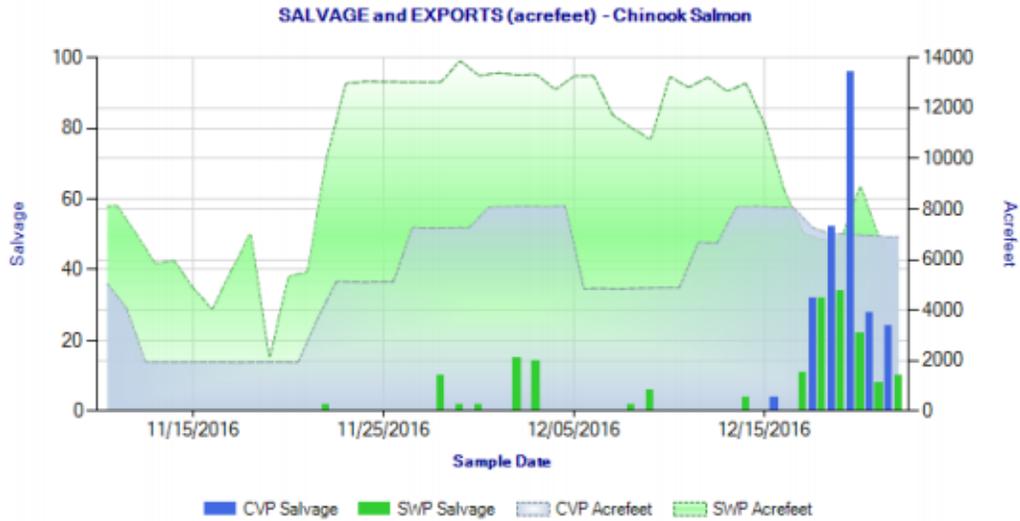


Figure 1. Daily salvage of Chinook Salmon (all races) and water exports from the state and federal fish salvage facilities during Nov 11 through Dec 22, 2016. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

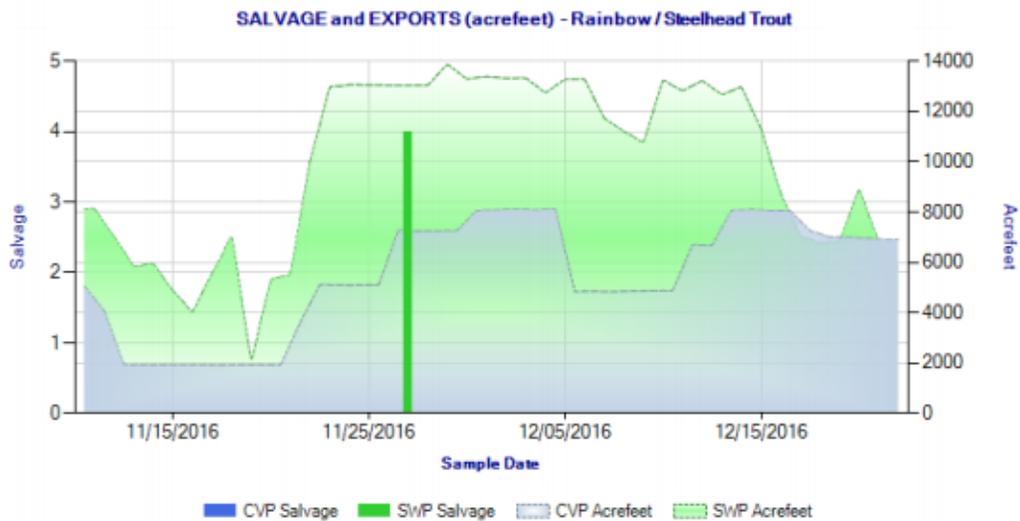


Figure 2. Daily salvage of Steelhead and water exports from the state and federal fish salvage facilities during Nov 11 through Dec 22, 2016. Graph obtained from the DFG salvage monitoring web-page: <http://www.dfg.ca.gov/delta/apps/salvage/SalvageExportCalendar.aspx>.

**Agenda Item 7.**

**Fish Monitoring:** The following table presents fish monitoring data summarized over the identified sampling dates. Unless otherwise noted, any reported sizes are fork length.

| Location             | Chippis Is. Midwater Trawl <sup>A</sup> | Sacramento Trawl <sup>A</sup> | Beach Seines <sup>A</sup> | Knights Landing RST <sup>B</sup> | Tisdale RST <sup>C</sup> | GCID RST <sup>D</sup>                           | Mossdale Kodiak Trawl <sup>A</sup> |
|----------------------|-----------------------------------------|-------------------------------|---------------------------|----------------------------------|--------------------------|-------------------------------------------------|------------------------------------|
| Sample Date          | 12/19, 12/21                            | 12/19, 12/21, 12/23           | 12/20, 12/22, 12/23       | 12/18-12/26                      | 12/19-12/22              | 12/20-12/23                                     | 12/19, 12/21, 12/23                |
| FR Chinook           | 1                                       | 6                             | 7                         | 74                               |                          | 10 juveniles                                    |                                    |
| SR Chinook           |                                         |                               | 1                         | 60                               | 9                        | 1 juvenile                                      |                                    |
| WR Chinook           |                                         |                               |                           | 7                                | 1                        | 41 juveniles<br>2 smolts                        |                                    |
| LFR Chinook          | 5                                       |                               | 1                         |                                  |                          | 14 smolts                                       |                                    |
| Ad-Clipped Chinook   | 65                                      | 2                             |                           | 4 LFR                            |                          | 70 LFR smolts<br>26 WR juveniles<br>8 WR smolts |                                    |
| Delta Smelt          | 1                                       |                               |                           |                                  |                          |                                                 |                                    |
| Longfin Smelt        | 13                                      |                               |                           |                                  |                          |                                                 |                                    |
| Steelhead (ad-clip)  |                                         |                               |                           |                                  |                          |                                                 |                                    |
| Steelhead (wild)     |                                         |                               |                           |                                  |                          |                                                 |                                    |
| Green Sturgeon       |                                         |                               |                           |                                  |                          |                                                 |                                    |
| Flows (avg. cfs)     |                                         |                               |                           | 20,914                           | 18,125                   | 1,814                                           |                                    |
| W. Temp. (avg. °F)   |                                         |                               |                           | 45.7                             | 44.3                     | 49.9                                            |                                    |
| Turbidity (avg. NTU) |                                         |                               |                           | 63.2                             | 48.2                     | 24.7                                            |                                    |

<sup>A</sup>Data reported in the 12/18 to 12/24 DJFMP sampling summary.

<sup>B</sup>Knights Landing RST sampling period was from 12/18 at 2:15 pm to 12/26 at 12:45 pm. The trap was raised on 12/24 at 8:00 am due to the holiday and resumed on 12/26 at 9:15 am.

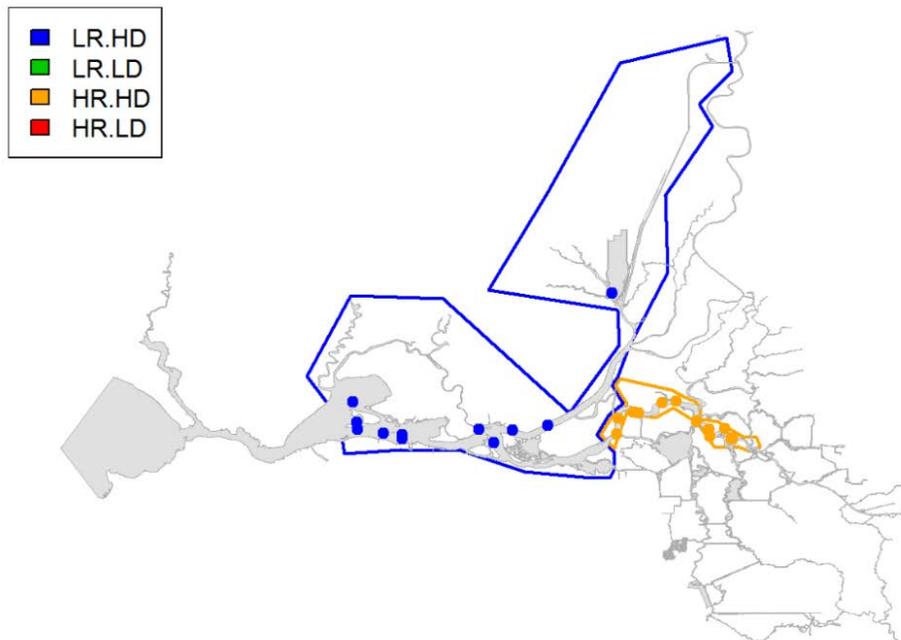
<sup>C</sup>Tisdale RST sampling period was from 12/19 at 10:00 am to 12/22 at 10:00 am.

<sup>D</sup>GCID sampling period was from 12/20 at 8:00 am to 12/23 at 8:00 am. On 12/23 the trap was pulled due to predicted high flows and heavy debris.

### Enhanced Delta Smelt Monitoring (EDSM) Catch

| Week | Dates           | Number of Sites | Species        | Low Risk, High Density (LR.HD) | Low Risk, Low Density (LR.LD) | High Risk, High Density (HR.HD) | High Risk, Low Density (HR.LD) | Total Catch |
|------|-----------------|-----------------|----------------|--------------------------------|-------------------------------|---------------------------------|--------------------------------|-------------|
| 1    | Dec 15 - Dec 22 | 23              | FR Chinook     | 2                              | Not sampled in Week 1         | 0                               | Not sampled in Week 1          | 2           |
|      |                 |                 | SR Chinook     | 1                              |                               | 1                               |                                | 2           |
|      |                 |                 | WR Chinook     | 0                              |                               | 0                               |                                | 0           |
|      |                 |                 | Tagged Chinook | 3                              |                               | 4                               |                                | 7           |
|      |                 |                 | Delta Smelt    | 17                             |                               | 7                               |                                | 24          |

Map of Sampling Locations (USFWS)



### Agenda Item 8.

#### DOSS Estimates of Fish Distribution

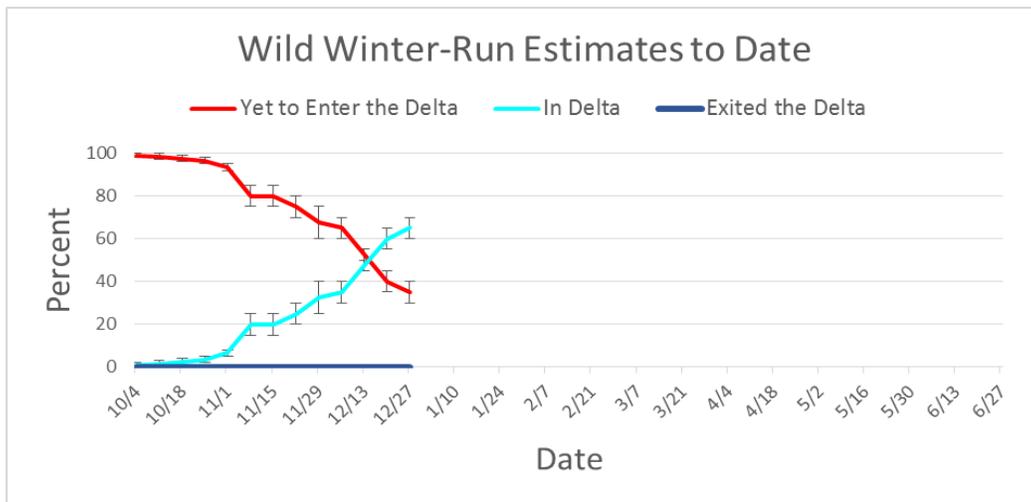
DOSS estimates of the current distribution of listed Chinook, as a percentage of the population, are based on recent monitoring data and historical migration timing patterns.

| Location                                           | Yet to Enter Delta (Upstream of Knights Landing) | In the Delta                        | Exited the Delta (Past Chipps Island) |
|----------------------------------------------------|--------------------------------------------------|-------------------------------------|---------------------------------------|
| Wild young-of-year (YOY) winter-run Chinook salmon | 30% - 40%<br>(Last week: 35% - 45%)              | 60% - 70%<br>(Last week: 55% - 65%) | 0%<br>(Last week: same)               |
| Wild young-of-year (YOY) spring-run Chinook salmon | 60% - 75%<br>(Last week: 70% - 80%)              | 25% - 40%<br>(Last week: 20% - 30%) | 0%<br>(Last week: same)               |

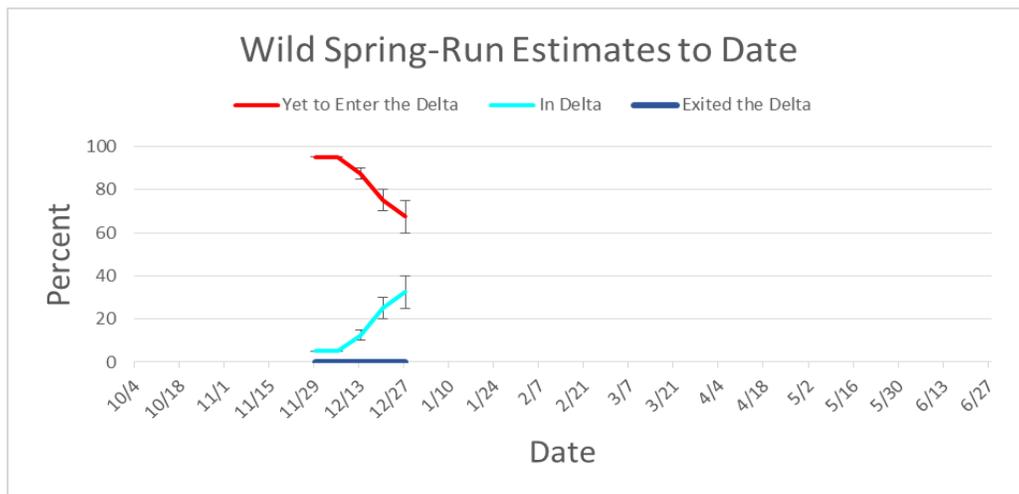
#### Rationale for changes in distribution

**Wild winter-run Chinook:** Over the past week, 7 juvenile winter-run were observed at Knights Landing, 1 at Tisdale, and 43 at GCID. Because of this observed catch, DOSS shifted the distribution ranges by 5-10% into the Delta. Young-of-year winter-run-sized fish have not yet been observed exiting the Delta at Chipps Island, so DOSS estimates that 0% have exited the Delta.

**Wild spring-run Chinook:** Over the past week, 60 juvenile spring-run were observed at Knights Landing, 1 at GCID, and 9 at Tisdale. The high catch of spring-run-sized fish at Knights Landing indicates movement into the Delta. No spring-run have been observed at Chipps Island and are not expected to have exited the Delta this early in the season.



WY 2017 wild winter-run distribution estimates to date.



WY 2017 wild spring-run distribution estimates to date.

**Agenda Item 9.**

**DOSS Advice to NMFS and WOMT: None**

**Agenda Item 10.**

**Next Meeting:** The next DOSS conference call will be on **1/3/16 at 9am.**