

Sacramento River Drainage Spring-run Chinook Salmon *Workshop on the State of the Science for Population Estimates*

Workshop Objective

The objective of this public, virtual workshop is to convene subject-matter experts in order to develop the best possible approach to accurately estimating the population of spring-run Chinook salmon in the Sacramento River drainage (hereafter spring run)¹. This workshop will help to more accurately inform management actions, particularly given that spring run are vulnerable to extinction in the next 50 years or less, including requirements described in California's Department of Water Resources' incidental take permit as part of State Water Project operations.

With that objective, the workshop will broadly tackle **four themes**:

- 1) the state of knowledge of spring-run **distribution and life history**;
- 2) the extent and nature of spring-run **adult and juvenile monitoring** and gaps;
- 3) spring run **identification tools**, including genetic and length-at-date tools, and their tradeoffs;
- 4) current approaches to producing and using **juvenile production estimates (JPEs)** and identify knowledge gaps for producing a JPE for spring-run.

The Delta Science Program is organizing the event, given its mission to provide unbiased, best possible science on issues critical to managing the Bay-Delta system, in coordination with California's Department of Water Resources (DWR) and the California Department of Fish and Wildlife (CDFW).

Workshop Agenda

The workshop will span three consecutive half days, from 9:00am to 12:30pm, and be held virtually via Microsoft Teams. The first day (Tuesday September 8) will be in plenary and feature informational presentations relating to the four workshop themes in order to tee up discussions and breakout sessions. The second day (Wednesday September 9) will be dedicated entirely to six concurrent thematic breakout sessions. The breakout sessions will be facilitated and will aim to collaboratively answer key questions (see agenda below). Participants will reconvene on the third day (Thursday September 10) in plenary where breakout session facilitators will present the group's input for discussion and next steps. The full, annotated agenda is outlined below.

Workshop Materials

The workshop will be informed by five "fact sheets". Four of these fact sheets serve as background documents for each workshop theme (life history and distribution; monitoring; run identification tools; JPE approaches). These fact sheets were written exclusively for

¹ For the purposes of this scientific workshop the fact sheet authors are using the U.S. Endangered Species Act terminology Central Valley spring-run Chinook salmon, given that most of the scientific literature employs this term and recognizing that this evolutionarily significant unit includes naturally spawned spring-run Chinook salmon originating from the Sacramento River and its tributaries, and also spring-run Chinook salmon from the Feather River Hatchery Spring-run Chinook Program.

this workshop by scientists with expertise in the system and in various aspects related to spring-run Chinook ecology. The fact sheets incorporate existing scientific knowledge and offer questions as food for thought for the breakout sessions. The fifth fact sheet was prepared by DWR and CDFW and provides background information on the management context related to this workshop and the incidental take permit.

Outputs from the workshop are expected to include video recordings of the workshop presentations, and ultimately a scientific article synthesizing information gathered from the fact sheets and workshop discussions.

Day One: Tuesday September 8th, 9:00—12:30

Time	Item	Facilitator/Presenter	Background document
9:00	Welcome and workshop overview	Julie Leimbach (facilitator)	Workshop Agenda (this document)
9:05	Opening remarks	Louise Conrad , Deputy Executive Officer, Delta Stewardship Council	<i>Not applicable</i>
9:10	Opening remarks	Carl Wilcox , Policy Advisor to the Director for the Delta, CDFW	<i>Not applicable</i>
9:15	Context-setting presentation	Ted Sommer , Lead Scientist, DWR Brooke Jacobs , Environmental Program Manager, CDFW	Management context fact sheet
9:25	“Mentimeter” icebreaker	Julie Leimbach	
9:30	Spring-run distribution and life history, including updates on NOAA’s 5-year viability assessment	Rachel Johnson , Research Fisheries Biologist, NOAA	Life history fact sheet
9:50	Spring-run state of monitoring and key gaps	Flora Cordoleani , Project Scientist, National Marine Fisheries Service	Monitoring fact sheet
10:10	Q&A and Discussion	Julie Leimbach	<i>Not applicable</i>
10:25	<i>Break</i>	<i>Not applicable</i>	<i>Not applicable</i>
10:40	Tools for spring-run identification	Daphne Gille , Environmental Program Manager, DWR	Run identification tools fact sheet
11:00	Spring-run lifecycle modelling	Adam Duarte , Research Wildlife Biologist, USDA Forest Service and OSU	<i>Not applicable</i>
11:20	Juvenile production estimate approaches	Peter Nelson , Senior Environmental Scientist DWR	JPE approaches fact sheet
11:40	Q&A and Discussion	Julie Leimbach	<i>Not applicable</i>
11:55	“Mentimeter” recap	Julie Leimbach	<i>Not applicable</i>
12:00	Overview of day two	Julie Leimbach	<i>Not applicable</i>

Day Two: Wednesday September 9th, 9:00—12:30

Time	Concurrent breakout sessions*	GROUP 1 Facilitator / Notetaker	GROUP 2 Facilitator / Notetaker	Questions to be addressed
9:00	Monitoring and gaps	Flora Cordoleani (NOAA) / Kassie Hickey (PSMFC)	Brooke Jacobs (CDFW) / Mike Eakin (CDFW)	<ol style="list-style-type: none"> 1. <i>What is the common understanding of information on this topic?</i> 2. <i>What are the most critical gaps that need to be filled?</i> 3. <i>What are the tradeoffs (i.e., pros and cons) to filling those gaps?</i>
9:00	Run identification tools	Pascale Goertler (DSC) / Chris Kwan (DSC)	Brett Harvey (DWR) / Kaylee Griffiths (DSC)	<i>(same as above)</i>
9:00	JPE approaches	Pete Nelson (DWR) / Jada White (PSMFC)	Towns Burgess (USBR) / Molly Williams (DSC)	<i>(same as above)</i>
10:30	<i>Break</i>	<i>Not applicable</i>	<i>Not applicable</i>	<i>Not applicable</i>
11:00— 12:30	<i>Continued:</i> Monitoring and gaps	Flora Cordoleani (NOAA) / Kassie Hickey (PSMFC)	Brooke Jacobs (CDFW) / Mike Eakin (CDFW)	<i>(same as above)</i>
11:00— 12:30	<i>Continued:</i> Run identification tools	Pascale Goertler (DSC) / Chris Kwan (DSC)	Brett Harvey (DWR) / Kaylee Griffiths (DSC)	<i>(same as above)</i>
11:00— 12:30	<i>Continued:</i> JPE approaches	Pete Nelson (DWR) / Jada White (PSMFC)	Towns Burgess (USBR) / Molly Williams (DSC)	<i>(same as above)</i>

*the life history workshop theme is relevant to all breakout sessions and as such does not have a dedicated breakout session

Day Three: Thursday September 10th, 9:00—12:30

Time	Item	Facilitator/Presenter
9:00	Resume Plenary and Overview of Day Two	Julie Leimbach
9:05	Presentations of breakout session discussions (x6)	Breakout session facilitators (x6)
9:35	Plenary discussion	Julie Leimbach
11:35	Synthesis of breakout sessions	Ted Sommer , Lead Scientist, DWR Louise Conrad , Deputy Executive Officer, DSC
12:00	Closing	Julie Leimbach