Charge to the Independent Review Panel for the Spring-run Chinook Juvenile Production Estimate

Orientation and Focus

The California Department of Fish and Wildlife (CDFW) issued an Incidental Take Permit (ITP) to the California Department of Water Resources (DWR) for the continued operation of the State Water Project (SWP) in 2024. The 2024 ITP requires the development of a Juvenile Production Estimate (JPE) for spring-run Chinook Salmon (SRJPE) to support the development of future measures to minimize the impacts of water operations on spring-run and development of a spring run life cycle model.

The goal of this independent scientific peer review is to review the scientific approach developed for calculating an annual SRJPE and provide recommendations to DWR. Feedback from this review will be incorporated into the draft SRJPE plan and submitted to CDFW and NMFS for approval before implementation.

Product

The panel will work together to co-author a single review report. The report will be prepared according to the template provided by the Delta Science Program (DSP) and the schedule outlined in the Scope of Work.

Review Panel Membership

Up to 5 independent reviewers, including a panel chair and lead author, will draft a single review report.

Panel Format

The review panel will convene virtually for 1-4 closed teleconference meetings prior to presenting their initial findings at a public meeting. The first meeting will be a kickoff meeting shortly after materials are distributed to the reviewers and will include DSP and the reviewers. The goal of the meeting is to orient them to the process and general topic. The second kickoff meeting will be held with DSP, DWR, and the Planning Team, and reviewers will have an opportunity to ask clarifying questions about the charge and background documents. Reviewers may hold subsequent virtual meetings as needed during the review period.

The DSP will coordinate all correspondence between the reviewers and DWR and the Planning Team.

The reviewers will create a slide deck of their initial findings and provide it to the DSP two (2) weeks prior to the public meeting. The panel's final report is due to the DSP 30 days after the public meeting.

Panel Responsibilities

1. Read and review technical reports that describe relevant background and SRJPE model documents.

2. Participate in a kickoff meeting with the DSP, virtually or in person, to initiate the review and clarify any questions.
3. Participate in open dialogue meeting with the Delta Science Program, DWR, and the Planning Team, virtually or in person.
4. Participate in public meeting with DWR and allow for dialogue on workable ways to improve the SRJPE and JPE process.
    a. Provide slide deck of initial findings 2 weeks before public meeting.
5. After the public meeting, write up final findings and submit review to the DSP.

Scope

- Provide a technical evaluation of the scientific approach developed for calculating an annual SRJPE including its scientific rigor and recommendations to make the approach more robust.
- Evaluate the ability of the SRJPE to describe characteristics (e.g. abundance, source, timing) of the juvenile spring-run population entering the Delta.
- Evaluate the ability of the SRJPE to inform a spring-run Life Cycle Model
- Provide clear and implementable recommendations for high level changes as well as specific recommendations to improve the ability of the JPE to achieve the intended uses described above.

Questions

Reviewers will address the following questions:

1. To what extent does the proposed SRJPE provide an annual estimate of the number of spring-run juveniles entering the Delta that reasonably approximates the true number including the error associated with that estimate?
    a. Are there additional ways to evaluate the ability of the SRJPE to approximate the true number of spring-run juveniles entering the Delta?

2. How could the proposed SRJPE plan make more effective use of historical and current data?
    a. Are there additional data/monitoring needs or modifications to existing monitoring approaches that could be considered?

3. Does the proposed SRJPE plan include adequate contingencies for unplanned events such as the loss of adult and juvenile monitoring program data due to extreme events?

4. Are there additional ways to reduce uncertainties (e.g. changes to modeling or monitoring) in the SRJPE model as it relates to:
        a. Accounting for the diverse life history strategies exhibited by the Central Valley spring-run population (e.g., How can the SRJPE model incorporate yearlings?).

b. The proposed periodic model updates and whether they provide sufficient opportunities for improvement as new monitoring or science (e.g. Parentage-Based Tagging) become available?
c. Any other observed concerns or deficiencies in the modeling approach?

5. Are there any suggestions for how to deal with the challenges described for modeling Feather River natural production (described in the In-season Outmigrant Report), which are caused by more complicated run structure than other tributaries and by large releases from the Feather River Hatchery, including unmarked fry release groups?

Materials to be Reviewed

Review documents

1. Introduction and IPR Materials Package Overview
2. Monitoring and Data Overview
3. SRJPE Integrated Forecast Model
4. BT-SPAS-X Tributary Outmigrant Abundance Model at Rotary Screw Traps
5. BT-SPAS-X Mainstem Outmigrant Abundance Model at Rotary Screw Traps
6. PLAD Run-assignment Model
7. Stock-Recruit Model
8. In season-Outmigrant Model
9. Smolt Survival Model

Supplemental Materials

1. Chapter 4 Appendix A Capture Abundance Tributaries All Run
2. Chapter 4 Appendix B Capture Abundance Tributaries Spring Run
3. Chapter 5 Appendix A Capture Abundance Mainstem All Run
4. Chapter 5 Appendix B Capture Abundances Mainstem Spring Run
5. Chapter 7 Appendix A Pearson Correlations
6. Chapter 7 Appendix B Posterior Distributions
7. Chapter 8 Appendix A Weekly Outmigration Timing Uncertainty
8. Chapter 8 Appendix B Annual Out-of-Sample Error

Timeline

Panel Review: Commences December 2025
Final Letters: March 2026