Comments for the SWRCB
San Joaquin River Flow objectives for San Joaquin Basin
Fall-run Chinook

State Water Resources Control
Board Scoping Meeting

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Within the living memories of California’s elders are vivid accounts of salmon and steelhead in staggering abundance...
94% decrease over 10 years
• San Joaquin salmonid populations continue to decline – immediate action is needed
• All three fish agencies support adopting the salmon doubling goal
• Improved flows are key to improving salmonid habitat and populations
Figure 35. Estimated yearly natural production, and in river escapements of San Joaquin System adult fall-run Chinook salmon. The San Joaquin System is the sum of the Stanislaus, Tuolumne, and Merced Rivers. 1952 - 1966, and 1992 - 2010 numbers are from CDFG Grand Tab (February 2, 2011). Baseline numbers (1967 - 1991) are from Mills and Fisher (CDFG, 1994).
• Improved flows on individual tributaries to the San Joaquin (Stanislaus, Tuolumne, and Merced rivers) are important for salmon doubling in each tributary
• Improved flows on each tributary should contribute to flows at Vernalis (ecological fair share)
Figure 32. Estimated yearly natural production and in river escapement of Stanislaus River adult fall-run Chinook salmon. 1952 – 1966 and 1992 - 2010 numbers are from CDFG Grand Tab (February 2, 2011). Baseline numbers (1967 - 1991) are from Mills and Fisher (CDFG, 1994). Data was not available for 1982.

Goal = 22,000 (Final Restoration Plan)

1967-1991 Average = 10,868

1992-2010 Average = 5,334
Figure 33. Estimated yearly natural production and in river escapement of Tuolumne River adult fall-run Chinook salmon. 1952 - 1966, and 1992 - 2010 numbers are from CDFG Grand Tab (February 2, 2011). Baseline numbers (1967 - 1991) are from Mills and Fisher (CDFG, 1994).
Merced

Figure 34. Estimated yearly natural production and in river escapement of Merced River adult fall-run Chinook salmon. 1952 - 1966, and 1992 - 2010 numbers are from CDFG Grand Tab (February 2, 2011). Data was not available for 1952 - 1953, and 1955 - 1956. Baseline numbers (1967 - 1991) are from Mills and Fisher (CDFG, 1994).
• Improved flows should be based on a percent of unimpaired flow and mimic the natural hydrograph
• All flow-related salmonid life-cycle requirements should be considered during key months (February though June, October) as well as the rest of the year
• Flows should be maintained in the tributaries, mainstem San Joaquin, and Delta
• Inundated floodplains are needed for rearing habitat
Flow: The master variable

Effects

- Productivity
- Water quality
- Contaminants
- Non native species
- Diversions
- Bathymetry
- Barriers

Which cause

- Habitat Quality
- Habitat Quantity
- Habitat Accessibility/Connectivity

Which yield

Population Effects

Flow

Effects Which yield Which cause

Habitat Quality
Habitat Quantity
Habitat Accessibility/Connectivity
The Pattern Matters

This is the same volume!

= Better for species & ecological systems

= Bad for species & ecological systems
Inundated floodplains are superior rearing habitat.
• Flows should be implemented using an adaptive management framework based on strong science, monitoring, and evaluation

• The implementation plan should incorporate specific biological objectives, model development and application, and specific monitoring at the appropriate scale
Example of Adaptive Management

Objective: Juvenile salmon survival through the Delta of 0.5

Define specific and measurable objectives:

Use models to determine what flows meet biological objective and alternate ranges

40% unimpaired flow

60% unimpaired flow

80% unimpaired flow

Implement initial flow standards

Monitor: Were objectives achieved with flow levels prescribed?

Yes

Continue present flow standards and monitoring in case of change in the future

No

Modify flow standards

Yes

Continue present flow standards and monitoring in case of change in the future

No

Modify flow standards

Figure 4-5: DOI, 2/8/11
Summary

• San Joaquin salmonid populations continue to decline – immediate action is needed
• We support adopting the salmon doubling goal
• Improved flows on individual tributaries and at Vernalis are important to salmon doubling
• Improved flows should mimic the natural hydrograph and inundate floodplains
• An adaptive management framework should be based on strong science, monitoring, and evaluation
• New FERC licenses on the Tuolumne and Merced should include flow objectives based on % unimpaired flows that contribute to salmon doubling