

Water Flow and Temperature Considerations for Multi-Species/Run Management on the Sacramento River

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March 7, 2019

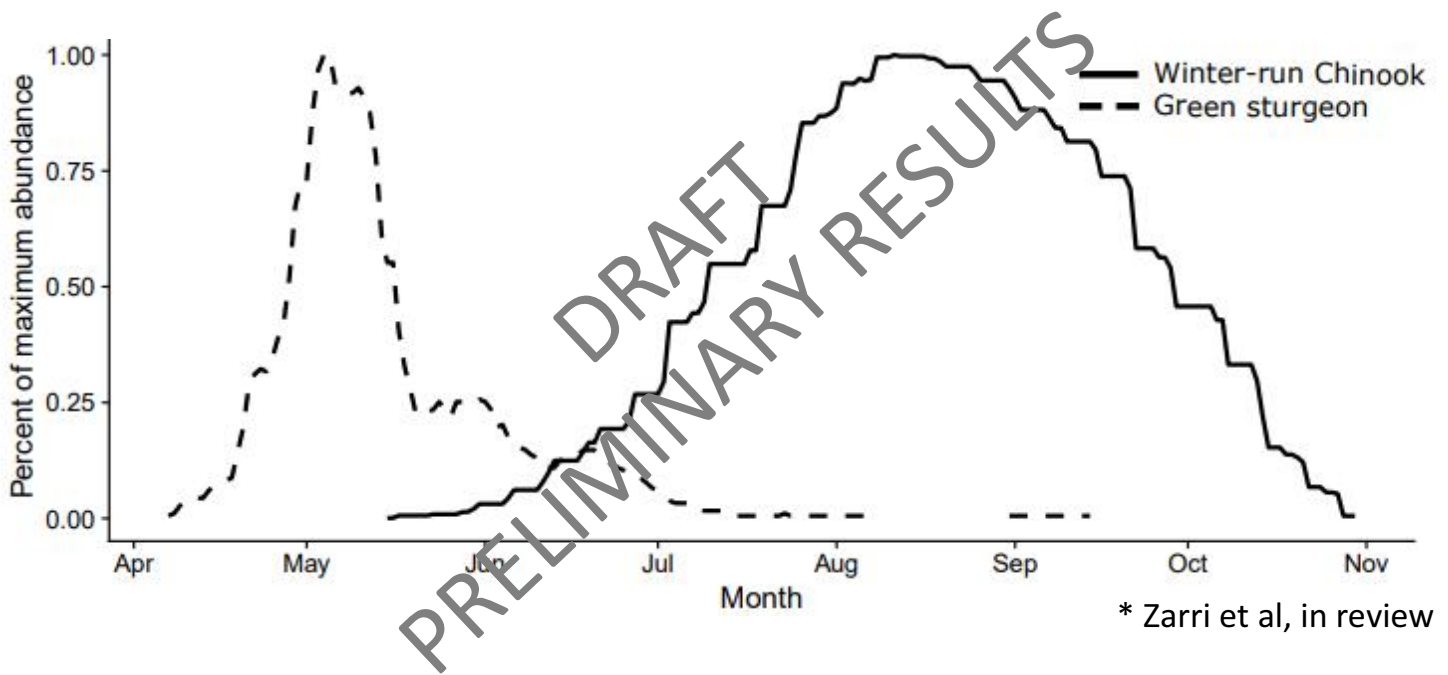


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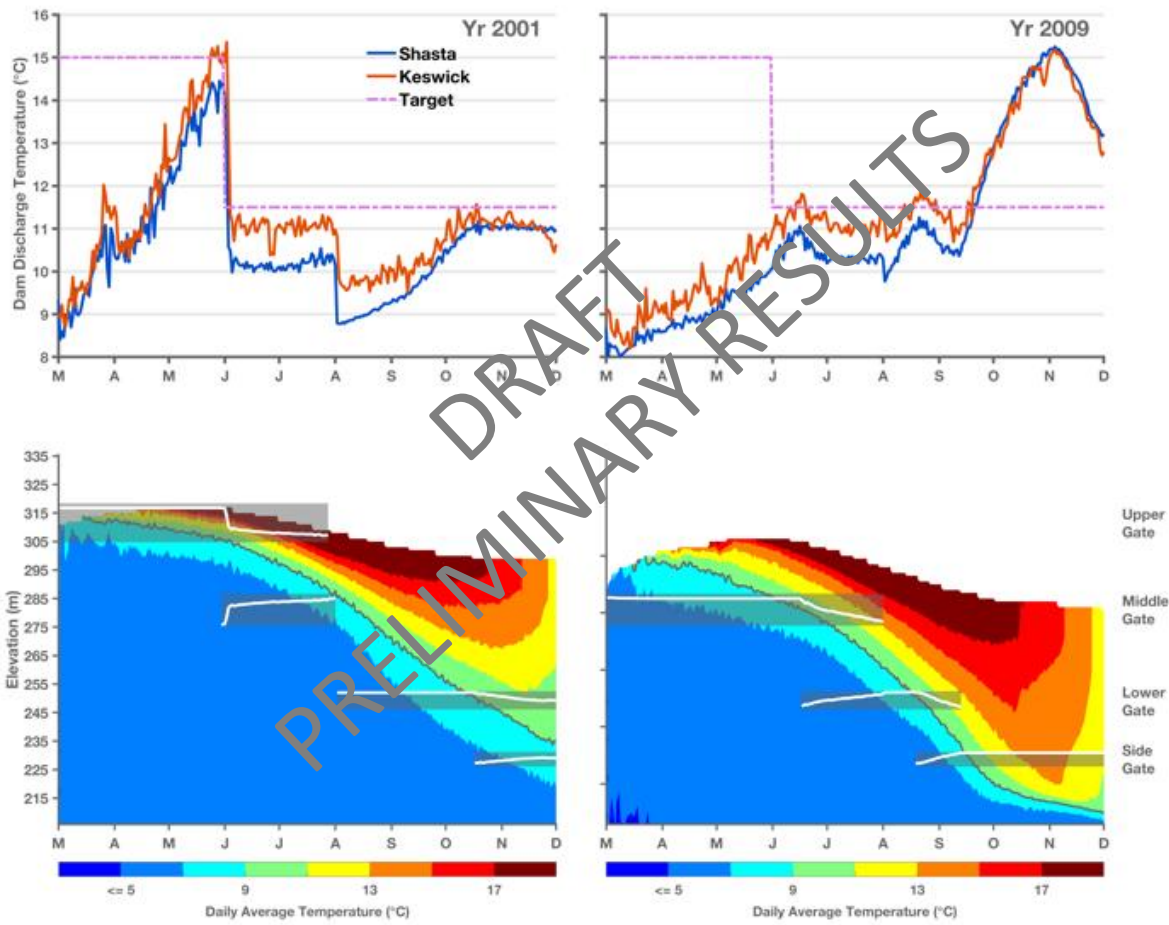
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Can Shasta be managed to for sturgeon and winter-run?



Low/Warm release for sturgeon and high/cold for winter-run

Green Sturgeon and Winter-Run Chinook



Spring-Run and Winter-Run Chinook



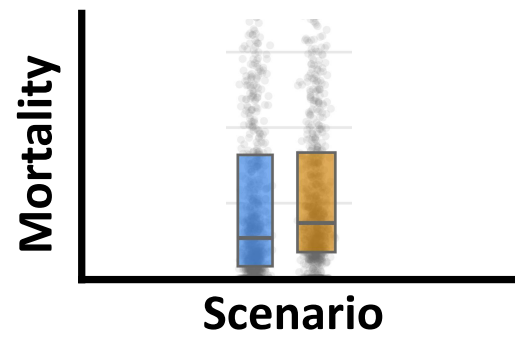
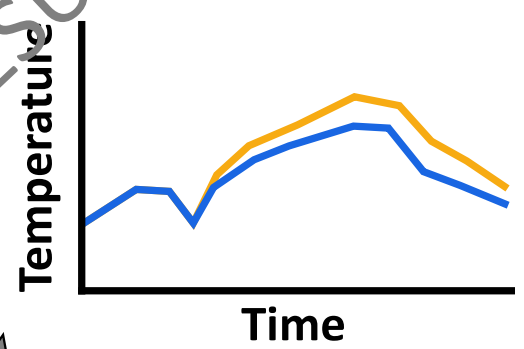
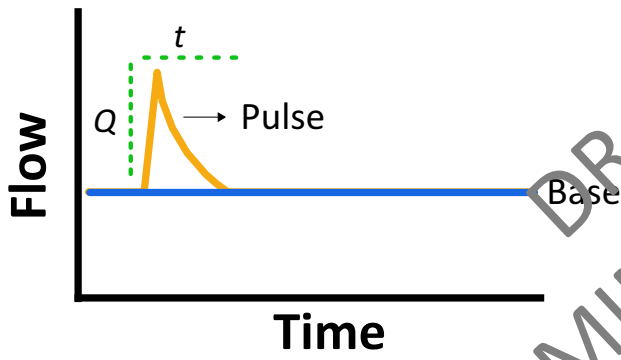
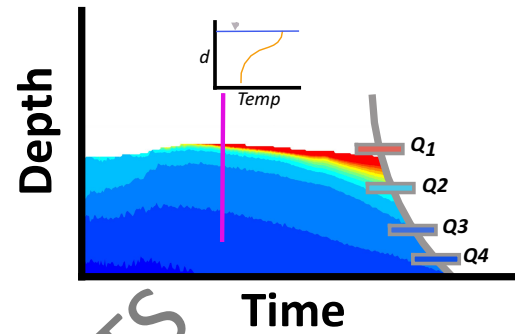
How would a managed pulse to stimulate spring-run migration impact winter-run?

Asses impacts of spring pulse

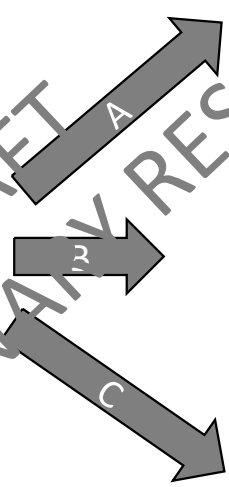
A = Reservoir storage (total and cold pool)

B = Temperature (reservoir discharge and in-river)

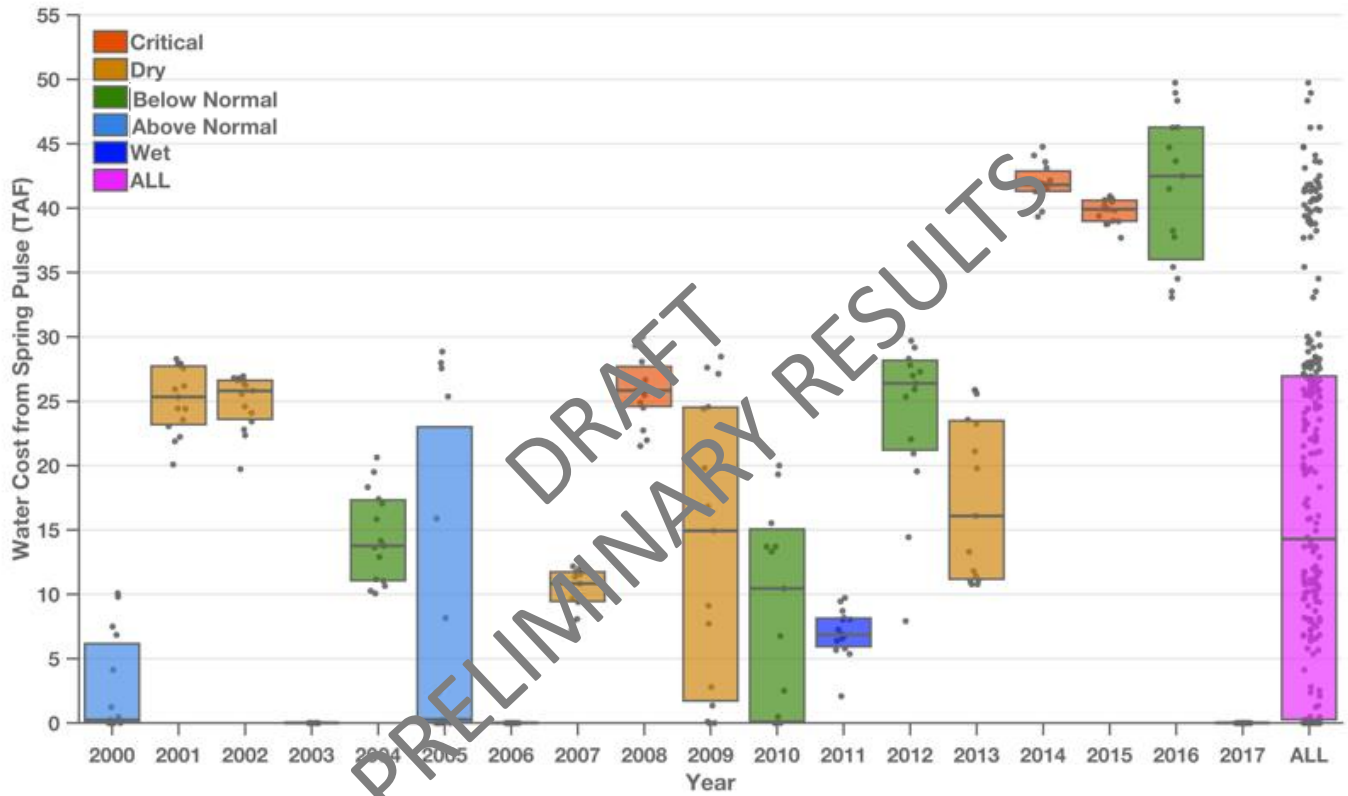
C = Winter-run temperature-dependent egg mortality



DRAFT PRELIMINARY RESULTS



(1) Pulse water cost



NOTE: Box encompasses 25th and 75th percentile of water cost associated with sensitivity to pulse start date, Results hereafter use date associated with highest water cost

(4) Winter-run egg survival



Distribution of temperature-dependent egg mortality increase associated with simulated pulse, boxes encompasses 25th and 75th percentile associated parameter uncertainty from 50 ensembles

Conclusion/Thoughts

- Understanding constraints is important
- Multi-species/run management success likely year dependent
- Modeling and is useful to help understand management options and constraints

