Shasta management questions

1. Temperature optimization: How can we best stretch cold water during temperature management season when it is limited?
   A. Are there certain thresholds and temperature tolerances that would allow for better optimization to reduce temperature dependent mortality when cold water is limited?
   B. How can optimization be done during times of climate change/high temperatures? Are buffers needed to get predicted outcomes?

2. Forecasting: How can we minimize the number of years where we need to stretch cold water pool by creating tradeoffs of adverse effects at different life stages and temperature tolerances?
   A. How can we appropriately assess risk in the spring, prior to any irretrievable expenditure of resources/allocations of water, in order to maximize the likelihood of an adequate cold water pool in end of June, without unnecessarily curtailing allocations/deliveries?
   B. Is it possible to create a decision support tool that could display these risks and uncertainties and allow managers to then choose the risk tolerance level?
   C. Are there spring metrics that can predict the stability of lake stratification, or lack thereof?
   D. What is the relationship between carryover storage levels and likliihood of adequate cold water the next spring.
   E. Are there certain conditions/thresholds where it is so unlikely that adequate cold water will be available that temperature management is not reasonable to attain in any circumstance/operation?

3. Species Viability and variability: Can this very endangered species be managed to have temperature dependent mortality that would lead to recovery years, versus protection only years, per the Australia model, and still allow for recovery?
   A. Can the life cycle model be run to get at this?

4. Climate: How to effectively develop tools that mange for recent conditions, and don't rely on past averages

5. Interactions: temperature and pathogens; temperature and predation, temperature/food/energy

6. Operations - - TCD, Whiskeytown, Trinity, power peaking, etc. Are any of these knobs effective?