

Management Questions

Changing conditions / baselines

- How does the model incorporate and/calibrate to changing baselines (fish screens, improvements to passage, etc.)?

Other models

- Comparison among alternative LCM (NMFS model, CVPIA model, GGSA model, Cramer model, IOS, etc.) - convergence of results and trends?
- How does inSalmo fit into the modeling efforts?
- Comparison among competing egg mortality models used for the WRLCM and the Shasta temperature LTO re-consultation?

Ocean life stages

- What are the effects of ocean harvest regulation on adult escapement? On age structure?
- Is the population less resilient to e.g. drought due to harvest impact rates on age-4 and age-5 winter run?
- What is the contribution of hatchery production to abundance in the ocean and escapement?
- What is the level of fry-ocean entry survival required to produce a positive (>1) cohort replacement rate on average?
- What is the level of ocean survival required to produce a positive (>1) cohort replacement rate on average?

Policy

- What are the effects of each NMFS RPA on survival and abundance individually and in combination?
- What are the appropriate time scales to apply the model results?
- What is the impact of alternative flow/export scenarios (say, Sacramento River Flows, Vernalis flows, Delta exports) on juvenile outmigration success of a single yearclass? On population growth rate over a 30 year timeframe?
- What is the contribution of exports (e.g., I:E. OMR, DCC gate closure, etc.) and salvage to population abundance and survival of juveniles in the Delta and adult escapement

Policy continued: Shasta water management

- What are the population level impacts of different balances on the downstream compliance location, water temperature targets, and risk of running out of cold water at the end of the season?
- What is the significance of temperature-dependent mortality of juvenile winter-run Chinook compared to other sources of mortality (within and across years)?
- Will there be water temperature predictions and egg-fry mortality below all Central Valley rim dams?

Habitat (hopefully most capacity questions covered earlier)

- What response metric in the model is most appropriate to use to compare different restoration options?
- What is the contribution of upstream habitat restoration (e.g., gravel augmentation, channel margin habitat, side channels, etc.) in improving growth and survival in the mainstem rivers?
- What is the role of floodplain in improving growth and survival within the Delta and coastal habitat?
- What is the role of shallow water tidal restoration in the Delta on growth and survival within the Delta and coastal habitat - how can habitat criteria be validated and applied to growth/survival?
- Will model ever explicitly include growth (for evaluating the effectiveness of restoration options)?
- How will proposed changes in Fremont Weir incorporated?

Time scale of model application and results

- What is the appropriate time scale when thinking of how to apply the model?

Reintroduction

- What is the outcome of alternative reintroduction plans, for example various distribution of effort between Battle Creek and above Shasta Dam?

Misc.

- What will be the impact of Sites Reservoir?

Categorization of questions based on model capabilities

| | | |
|-------|--|---|
| YES | Model currently and directly addresses this question | |
| MAYBE | Model can address this question with modifications | Are there other models that are more appropriate? |
| NO | Model is suited to address this question | Are there other models that are more appropriate? |

