Shasta Lake Water Resources Investigation Sept. 2008 Administrative Draft EIS

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Purpose of the Meeting

- Meeting among USFWS (Sacramento FWO, Red Bluff FWO), CDFG, NOAA Fisheries, USFS (and possibly EPA and Corps) to discuss:
  1. What is our “environmentally preferred alternative” and “least environmentally damaging alternative?”
  2. Adaptive Management of the Cold Water Pool in CP4---how should the water be annually allocated?
  3. Restoring Floodplain and Riparian Habitat in CP5
  4. Need for increased storage for environmental needs
  5. Trading off species (benefiting salmonids at the expense of rare terrestrial species in the vicinity of Shasta Lake)
  6. Can the impacts to the rare terrestrial species be adequately mitigated?
  7. How the current alternatives could be improved
  8. Are the benefits to salmonids worth $623 million (60% of the cost of the project)?

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SLWRI Alternatives

- No Action (No dam raise)
- CP1 (6.5-ft Raise)
- CP2 (12.5-ft Raise)
- CP3 (18.5-ft Raise)
- CP4 (18.5-ft Raise)
  - 378,000 acre-ft dedicated cold water pool with adaptive management plan but not specified how the water would be annually allocated
  - Spawning gravel augmentation (one-time only)
  - Identified in Draft EIS as **"Federally Preferred"** alternative
- CP5 (18.5-ft Raise)
  - Shoreline and tributary enhancement around Shasta Lake (should be mitigation for loss of riverine habitat anyway)
  - Riparian/Floodplain Enhancement along Sacramento River (Keswick – Red Bluff) (already identified as mitigation for altered flows)
  - Spawning gravel augmentation (one-time only)
  - Identified in Draft EIS as **"Environmentally Preferred"** and **"Least Environmentally Damaging"** alternative

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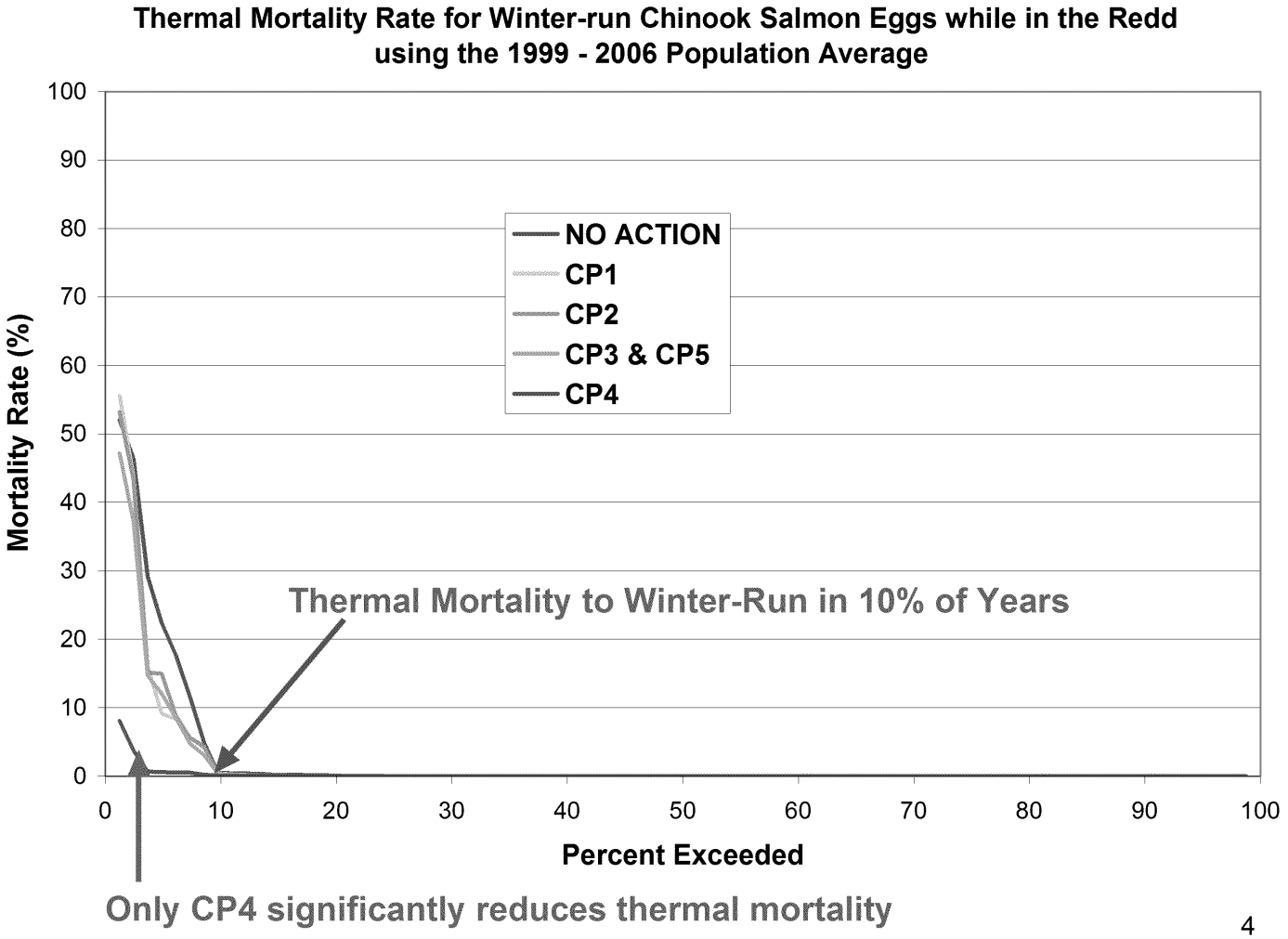
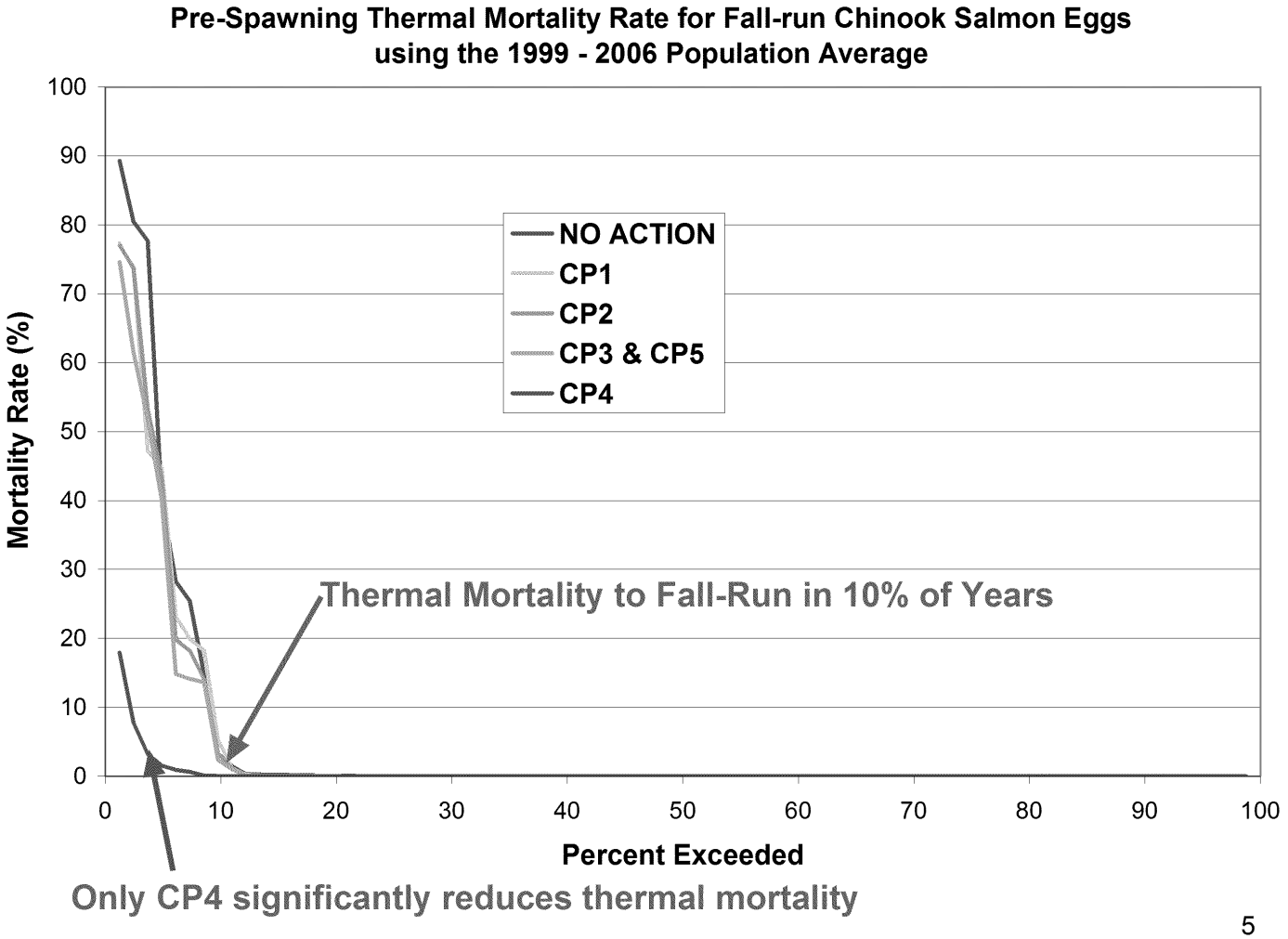

Thermal Mortality Rate for Winter-run Chinook Salmon Eggs while in the Redd using the 1999 - 2006 Population Average
Mortality Rate (%)
100
90
80
70
60
50
40
30
20
10
0
NO ACTION
CP1
CP2
CP3 & CP5
CP4
Thermal Mortality to Winter-Run in 10% of Years
0
10
20
30
40
50
60
70
80
90
100
Percent Exceeded
Only CP4 significantly reduces thermal mortality


Pre-Spawning Thermal Mortality Rate for Fall-run Chinook Salmon Eggs
using the 1999 - 2006 Population Average
Mortality Rate (%)
Percent Exceeded
NO ACTION
CP1
CP2
CP3 & CP5
CP4
Thermal Mortality to Fall-Run in 10% of Years
Only CP4 significantly reduces thermal mortality

Project Impacts: Shasta Lake Vicinity

- Loss of Habitat for 7 Rare Endemic Species near Shasta Lake (potential for Federal listing under Endangered Species Act as a result of the project)
  - Shasta snow-wreath
    - 9 of 21 known occurrences (43%) lost
    - CALFED ROD prohibits direct mortality
    - Draft EIS proposes transplanting but the shrub is rhizomatous;10,000s of stems would have to be transplanted
  - 4 Terrestrial Mollusks (petitioned for Federal listing)
  - Shasta salamander, Shasta huckleberry
- Loss of Nesting Habitat for Western Purple Martin
- Loss of Habitat for 9 Aquatic Mollusks petitioned for Federal listing ???

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Project Impacts: Downstream

- Alter Sacramento River Flow Regime
  - Impact Cottonwood Regeneration (SRA cover and yellow-billed cuckoo) and Geomorphic/Flood Flows
  - Riparian/floodplain restoration proposed as mitigation but no details
- Potential Impacts to Yolo Bypass and Delta

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Temperature Control Device

- Not clear if repairing the “leakage” of the temperature control device (TCD) at Shasta Dam is proposed as part of the project
  - Preliminary modeling shows benefits from repairing TCD same as enlarging cold water pool in CP4 (Reclamation would not provide the modeling data because “it has not be QA/QC” and “there is not sufficient time or funding” to complete the QA/QC)
  - Is it technically feasible to repair the TCD?
  - Should include an alternative that repairs TCD without raising Shasta Dam

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Adaptive Management of the Cold Water Pool in CP4

- How would the water be annually allocated?
  - Firm water account (regardless of water year type)?
  - Variable depending on water year type?
  - Portion of any increase in storage that would not have occurred pre-project (but the reservoir would fill only during wet years at a frequency of “1 in 3 years ” to “1 in 5 years”)
- Could unused portions be carried over into the following year(s)?

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Summary

- Approving the dam raise would be trading off species (benefit salmonids at the expense of 8 – 17 species in the vicinity of Shasta Lake)
- How significant are the benefits for salmonids? Are the benefits worth $623 million (60% of the cost of the project)?
- How important is the additional storage for environmental needs? What amount of water is worth the impacts to the rare terrestrial species? How should the water be annually allocated?
- Adaptive management plan for the cold-water pool?
- How could the alternatives be improved to achieve an "environmentally preferred" alternative?
- Propose a new alternative? No Action + Repair TCD?

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