San Joaquin River Restoration Program
Fisheries Management Work Group
Technical Feedback Meeting
CSU-Stanislaus
September 8, 2008

Agenda

- Introductions and meeting purpose
- Review of progress to date and reach-by-reach limiting factors
- Alternative floodway concepts
- Restoration strategy
  - Decision Tree
  - Definitions
  - Example routing
- Next steps and future meetings
Meeting Purpose

- Reach-by-reach limiting factors and objectives
  - Follow-up from last meeting
  - Review of changes, next steps
- Alternative Floodway Concepts
  - Your input and insights on floodplain concepts
- Introduce Restoration Strategy
  - Decision Tree
  - Your input and insights

Review of Progress to Date and Reach-By-Reach Limiting Factors
Available Documents

- Chinook Salmon Temporal Occurrence and Environmental Requirements
- Conceptual Model of Stressors and Limiting Factors for Chinook Salmon
- Temperature Model Selection
- Temperature Model Sensitivity Runs
  - Sets 1 & 2
  - Set 3
- Quantitative Fisheries Model Selection
- Initial Program Alternatives Report

All documents all available on the project website at: www.restoresjr.com

Life Stage Conceptual Model
Spawning and Incubation

Arrow weights are presented as relative importance only.
San Joaquin River Reaches

Taking the Next Step – Reach by Reach Limiting Factors

- Conceptual Models are general representations of system-wide factors and impacts
- Reach-by-reach assessment needed because:
  - Not every reach has the same limiting factors
  - Need process to identify and prioritize future actions/projects by reach
- Reach-by-reach assessment conducted to:
  - Prioritize limiting factors by reach
  - Prioritize objectives by reach
Reach-by-Reach Limiting Factors

- Reach-by-reach limiting factors are ranked based on the expected effect on abundance
  - Primary – Abundance could be adversely affected to the extent that Restoration Goal may not be met
  - Secondary – Anticipated low or negligible impact on abundance
- All the limiting factors and their priorities are based on existing conditions

Draft Adult Migration Limiting Factors

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<th>Reach 1</th>
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PP = Primary Priority  
SP = Secondary Priority
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### Draft Spawning and Incubation
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### Draft Fry/Juvenile Rearing Limiting Factors

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### Alternative Floodway Concepts
Where Do We Build Rearing Habitat?

Floodplain Design Concepts

- Key questions to address:
  - How do you design your floodway for hydraulic capacity and fisheries benefits?
  - How do you evaluate floodplain types?
  - How much floodplain do you need?
Planning the Floodway

50% wetted cross-section width
< 18 inches mean depth
< 1.5 ft/s at 4,500 cfs
riparian ribbon

What type of ecological benefit does this provide?

Planning the Floodway

Cost for land, fill, easements, etc.

Ecological Benefit Threshold A
Ecological Benefit Threshold B
Cost Threshold #2
Cost Threshold

Floodway Width (ft)

Ecological Benefit Units

Cost

0 50 100 150 200 250 300 350 400 450

0 500,000 1,000,000 1,500,000 2,000,000 2,500,000 3,000,000 3,500,000
Alternative Floodway Concepts

Concepts denote an overall roughness factor for engineering analysis. Each floodway/floodplain type will be a mosaic of habitats.

Concept A

Reach 2B: Conveyance to Riparian Ribbon → Lower Roughness
Reach 4B/ESB: Riparian Ribbon to Forest Corridor → Higher Roughness
All Other Reaches: Actions common to all Alternatives

Reach 1A, 1B, and 4B1 rearing. Mirrors life history pattern of spring-run Chinook salmon in Butte Creek.
**Concept B**

Reach 2B: Riparian Ribbon to Forest Corridor → Higher Roughness
Reach 4B/ESB: Conveyance to Riparian Ribbon → Lower Roughness
All Other Reaches: Actions common to all Alternatives

Reach 1A, 1B, and 2B rearing. Mirrors life history pattern of spring-run Chinook salmon in Mill and Deer creeks.

**Concept C**

Reach 2B: Conveyance + to Forest Corridor → Medium Roughness
Reach 4B/ESB: Conveyance + to Forest Corridor → Medium Roughness
All Other Reaches: Actions common to all Alternatives

Reach 1A and 1B rearing, with variable habitat and possible rearing in Reach 2B and 4B/ESB. Variable life history.
Concept D

Reach 2B: Conveyance to Riparian Ribbon → Low Roughness
Reach 4B/ESB: Conveyance to Riparian Ribbon → Low Roughness
All Other Reaches: Actions common to all Alternatives

Reach 1A and 1B rearing. Lower reaches function as migration corridor with modest investment in 2B and 4B.

Concept D2?

Reach 2B: Conveyance → Very Low Roughness
Reach 4B/ESB: Conveyance → Very Low Roughness
Reach 1: Higher Investment in Rearing Habitat
All Other Reaches: Actions common to all Alternatives

Reach 1A and 1B rearing. Lower reaches function as migration corridor with limited investment in 2B and 4B.
Restoration Strategy

- Why have a restoration strategy?
  - Guide future actions
  - Sets up the adaptive management process
- Will be a foundational concept in the Fish Management Plan
Purpose and Intended Use of Action Routing Process

- Tool to screen potential future actions:
  - Full implementation
  - Pilot project
  - Targeted research
  - Discarded
- Transparent process to address limiting factors
- Based on DRERIP Decision Tree for Routing Actions
Action Routing Process – Part 1

All Paragraph 11 actions routed as “Primary” to full implementation
Definitions

- **Magnitude**
  - Assesses the size or level of the outcome, either positive or negative, as opposed to the scale of the Action.

- **Certainty**
  - Describes the likelihood that a given Restoration Action will achieve a certain Outcome.

- **Worth**
  - Combines the magnitude and certainty of positive outcomes to convey the cumulative “value” of a Restoration Action toward achieving an outcome.

- **Risk**
  - Combines the magnitude and certainty of negative outcomes to convey the cumulative “potential” for a Restoration Action to result in an adverse, or negative outcome.
Action Routing Process

Example

Action Routing Example – Part 1
Action Routing Example – Part 2

Discussion
Next Meetings

- October 7
- November 4
- Meetings at CSU Stanislaus
- 1:00 p.m. to 3:00 p.m.