


Comments on Proposed Methods to Develop Flow Criteria for
Priority Tributaries to the Sacramento-San Joaquin Delta

Prepared for SWRCB
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SWRCB Flow Criteria Development Goals


- Scientifically defensible
- Watershed scale
- Cost-effective
- Timely



The Cost of Salmon Recovery

“It is estimated that the cost for implementing recovery actions will range from \$1.04 to 1.26 billion over the next 5 years, and over \$10 billion over the next 50 years.”

National Marine Fisheries Service. 2009



The Value of Fish, Hydropower, and Water in California


| | |
|------------|---|
| Salmon | \$255 mil to 2 Billion |
| Hydropower | \$34 Billion |
| Water | Urban \$8 Billion Agriculture \$35 Billion |

CDFG 2009, Southwick Assoc. 2009, Cooley et al. 2008, 2010 U.S. Energy Information Administration

Key Component of ELOHA – Watershed Scale

“ELOHA framework rests on the premise that although every river is unique, many exhibit similar ecological responses to flow alteration. ELOHA assumes that this relationship holds for all rivers of that type.”


Nature Conservancy 2012



Is ELOHA Scalable to Multiple Watersheds?

- Tributaries with dams could not be compared due to different hydrologic regime
- Approach may not be applicable to all tributaries in the watershed even without dams
- Flow – ecology relationships variable and many times weak

(Davies et al. 2013; Arthington et al. 2012; McManamay et al. 2013)



General Concerns with "Scientifically Defensible"

- Justification for revising the thorough, collaborative, and more common IFIM method questionable
 - Is IFIM Broke? 38 FERC studies on 23 CV tributaries
- Application of new ELOHA/hybrid method in West Coast regulated streams seems questionable
- New, hybrid methodology contradictory to "scientifically defensible"?
- More detailed plan needed for evaluation

Step 1: Identify Public Trust and Existing Beneficial Uses

Re-allocation of water to protect the public trust is a process that requires the collection of significant information to weigh and balance existing and proposed uses

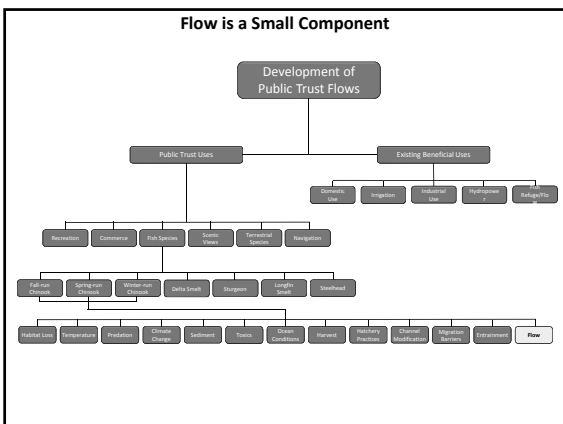
| Identify Public Trust Uses | Identify Existing Beneficial Uses |
|---|---|
| <ul style="list-style-type: none"> ● Recreation ● Fish Species ● Navigation ● Terrestrial Species ● Commerce ● Scenic views | <ul style="list-style-type: none"> ● Irrigation ● Domestic Use ● Industrial Use ● Hydropower generation ● Existing fish and wildlife flows |

Step 2: Identify Fish Species that Require Protection

- Steelhead
- Fall-Run Chinook Salmon
- Spring-Run Chinook Salmon
- Winter-Run Chinook Salmon
- Sturgeon
- Delta Smelt
- Longfin Smelt

Step 3: Identify Method of Protection

| | |
|--|--|
| <ul style="list-style-type: none"> ● Habitat Loss ● Temperature ● Predation ● Climate Change ● Sediment ● Toxics | <ul style="list-style-type: none"> ● Ocean Conditions ● Ocean Harvest ● Hatchery Practices ● Channel Modification ● Migration Barriers ● Entrainment ● Flow |
|--|--|



Existing Challenges/Suggested Solutions

Existing Challenges

1. Current process focuses on a small piece of the puzzle
2. Flow is a difficult tool because of the indirect connection to survival and the process of re-allocation
3. Overwhelming amount of information

Suggested Solutions

1. Develop a plan from top down, not bottom up
- 2(a). Choose tools that re more directly related to fish survival (predation or ocean harvest)
- 2(b). Choose tools more streamlined then re-allocation of existing water rights (predation and habitat projects)
3. Develop checklists with stakeholders and focus on public trust uses that need protection

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Flow is a Small Component

