

Comprehensive Evaluation of the EWA: Evaluation Framework, Potential Criteria and Evaluation Steps

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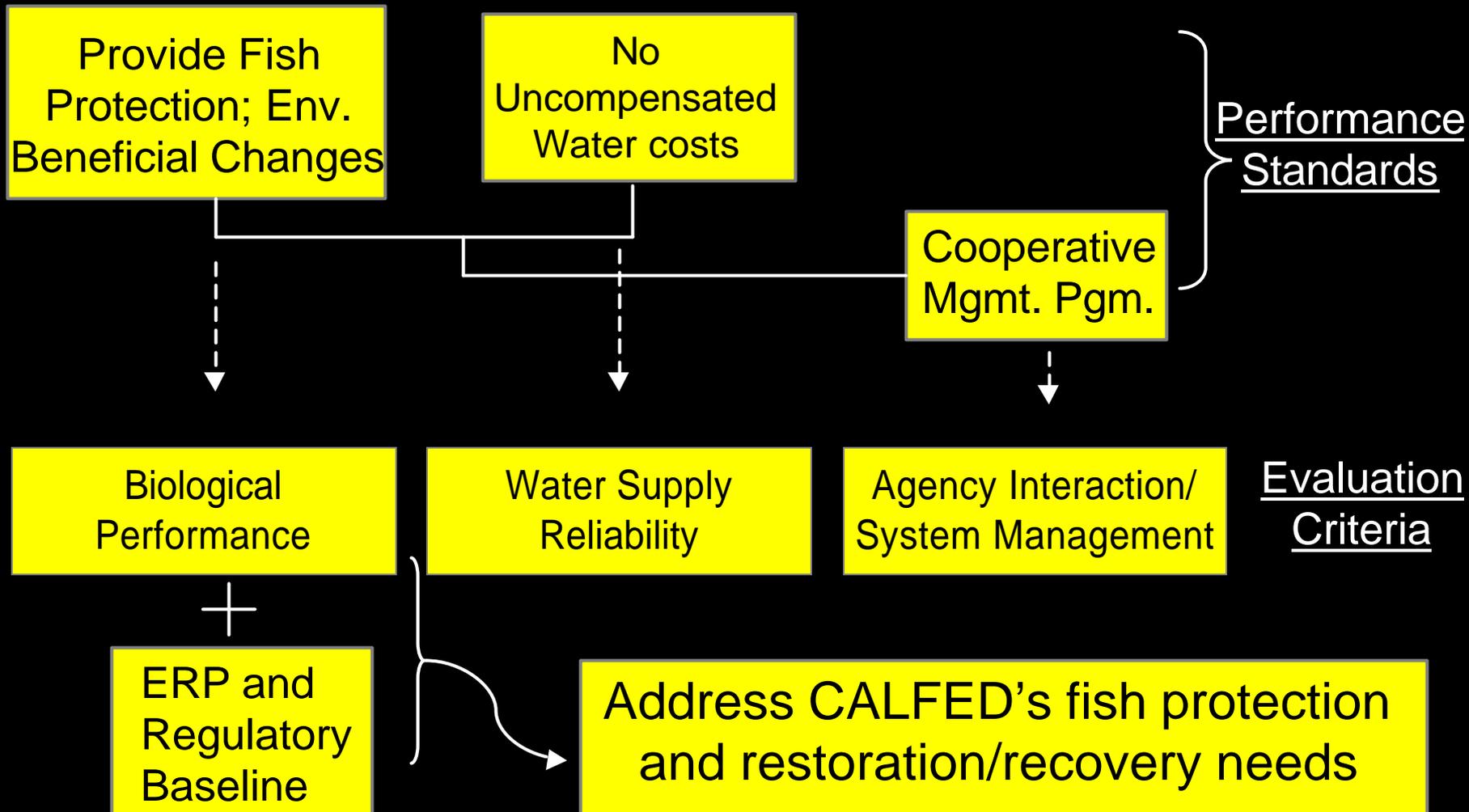
Conclusions

- An EWA evaluation must be comprehensive (consider more than biological performance and water supply reliability)
- Establishing an appropriate evaluation framework is critical to the success of any evaluation
- Establish evaluation framework based on the EWA purpose statement
- Dedicated team should conduct an annual comprehensive evaluation and less-frequent multi-year evaluation
- Evaluation results used by managers/policy makers to ultimately decide EWA success or failure

EWA Purpose

The EWA is a cooperative management program whose purpose is to provide protection to the fish of the Bay-Delta Estuary through environmentally beneficial changes in the operations of the State Water Project and the federal Central Valley Project, at no uncompensated water cost to the projects' water users. The EWA is intended to provide sufficient water, combined with the Ecosystem Restoration Program and the regulatory baseline, to address CALFED's fishery protection and restoration/recovery needs.

Evaluation Framework Based on Statement of Purpose



Potential Evaluation Criteria

- Water supply reliability (export supply reliability)
- Biological performance
- Water quality
- Agency interactions/system management
- Collateral benefits/impacts
- EWA resilience
- EWA economics
- Program stability/sustainability

Water Supply Reliability

- Changes in export water amount
- Changes in the certainty of receiving water allocations
- Changes in reservoir storage (upstream carry-over, San Luis low point)

Biological Performance

- Meeting species regulatory requirements (e.g., incidental take levels)
 - Was EWA needed to meet regulatory requirements?
 - How many fish were saved from entrainment loss?

Biological Performance

- Changes in the survival of specific cohorts or life stages
- Changes in spawning population size
- Changes in listing status
- Changes in habitat quality (stream flows, water temperature, VAMP, DCC operations)
- Hypothesized biological cost vs. benefit relative to other actions (improving upstream habitat quality vs. reducing direct mortality)

Ten Step Annual Evaluation Process

- Detailed comparison of annual water operations with and without EWA
- Assess ability to meet regulatory requirements and preserve water supply reliability
- Assess changes in cohort/life stage survival (Estuary and upstream)
- Assess changes in spawning population size
- Assess changes in water quality in the Delta and upstream

Ten Step Annual Evaluation Process

- Assess agency interactions/system management
- Assess EWA economics
- Assess program stability/sustainability
- Assess program resilience
- Assess collateral benefits/impacts

Multi-year Evaluation

- Multi-year comparison of water operations with and without EWA
- Re-analyze results of annual evaluations in the context of multi-year trends
- Evaluate effects of changes in habitat quality
- Evaluate hypothesized biological cost vs. benefit relative to other actions
- Examine role of EWA in listed species status reviews

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