Operational Scenario for Stage 1

Operational Scenario

An operational scenario may combine the certainty of stricter standards with the flexibility of an environmental water account. Stricter standards are most appropriate for species with predictable times of vulnerability and for which there is a good understanding of their sensitivities. Active management, wherein decisions are made based on real-time data, is most suited for those species whose needs are likely to shift greatly from year to year. Adaptive management is most suited for those species whose sensitivity to entrainment is poorly understood, and an experimental approach can be used to improve understanding. Both active and adaptive management benefit from the flexibility of an environmental water account.

Standards adequate to protect all species that might be at risk in all years are certain to have major adverse effects on water project operations, including biologically significant aspects. In addition, the mechanisms behind indirect mortality, the role of export operations on migratory success and indirect mortality, and the importance of these effects on the adult population levels of longfin and delta smelt, are all poorly understood. Adaptive management is the preferred CALFED method for addressing such uncertainty. Adult populations of smelt vary by orders of magnitude from year to year and population sizes of most salmon vary strongly in response to hydrological conditions three years earlier. These annual fluctuations in adult population sizes tend to heighten concerns about entrainment effects in years when populations are small. Active management decision-making using an environmental water account can reduce these concerns by emphasizing protection of species in years when their populations are at greatest risk.

Environmental Water Account (EWA)Concept

An environmental water account can provide the flexible but firm basis for active and adaptive management. This flexibility can allow the manager of the EWA to provide more protections for ESA species that strict standards, while water supply and water quality are improved. The EWA is a way to shift from the current project operations in a way to increase biological protection with harming water users. An EWA account can have a combination of water and money assets that would allow an EWA manager to reduce direct and indirect morality and enhance the ecosystem. For example, an EWA could be used to reduce exports at critical times that cannot be will defined in advance, by drawing out of the account (storage south of the Delta) to make the exporters whole, or use EWA money assets to purchase replacement water. The account could be filled by purchases, trades, or flexing an environmental standard (at the discretion of the EWA manager). The account could be held in surface reservoirs, groundwater and or option contracts in locations upstream, in-Delta, and /or south of the Delta.

EWA assets grow over time by:

- Refillable, high priority storage
- Water options and purchases
- Access to facilities for diversion and transport

- Water conservation/reclamation
- Ability to grant variances to export standards
- Contingency fund

Water User assets grow over time by:

- Expanded access to diversion facilities
- Increased storage
- Water transfers
- Water in exchange for mortality reductions

Process

CALFED will be developing a combination of prescriptive standards and EWA that move the program progressively towards recovery of the species. A workable combination of water and money dollar assets will be developed for an EWA that would allow non-continuous management for supply , fish and quality.

There are several problems to be overcome such as: how can protection be afforded to species early in the water year when the account may be empty? How can environmental water be stored for later use in a system limited by storage? How can protection be ensured when protective needs exceed the water available?

Basic decisions needed for an EWA?

- What are the default operational rules
- Sharing future export/storage capacity increases
- Sharing of pumping above default rules
- Environmental priorities for existing facilities
- Decision making authority
- Regulatory certainty
- Who pays
- Carryover of ecosystem credits from year to year
- Other uses of ecosystem credits
- Initial funding and type of ecosystem credits

Other EWA discussion points

- Relationship to upstream water
- Fungibility of EWA credits
- Operating/Accounting Procedures
- Environmental priorities for storage and conveyance facilities
- Biological aiming points
- Decision making authority
- Regulatory certainty

Operational Issues

- Access to/ Sharing of new and existing facilities for EWA water
- Secured debt/ delayed payback of EWA water
- Actual amount of environmental protection possible, given EWA assets