

The California Bay-Delta is a system that has undergone significant anthropogenic changes for more than a century.

**The committee concludes that reversing or even slowing the declines of the listed species cannot be accomplished immediately.**

# Delta Smelt

**Most actions were judged to have a sound conceptual basis.**

## **OMR**

**The committee concludes that until better monitoring data and comprehensive life-cycle models are available, it is scientifically reasonable to conclude that high negative OMR flows in winter probably adversely affect smelt populations.**

Threshold values to use in the action and benefits to smelt population are not clearly supported by the data.

# Delta Smelt

## **X2**

**Sound conceptually. The committee concludes that how specific X2 targets were chosen and their likely beneficial effects need further clarification.**

## **Tidal Habitat**

**Conceptual foundation weak**

**Phased implementation recommended**

# Salmonids

**On balance the actions are scientifically justified**

**Benefits (and costs) sensitive to the specific triggers, thresholds, and flows specified**

**Difficult to ascertain to what extent the collective actions will appreciably improve survival**

# Salmonids

**The committee concludes that the rationale for increasing San Joaquin River flows has a stronger foundation than does the prescribed export action**

**Need to consider possible 'negatives' (e.g., MeHg)**

**Effects of actions on smelt not clear.**

**The committee concludes that the RPAs lack an integrated quantitative analytical framework that ties the various actions together within species, between smelt and salmonid species, and across the watershed. This type of systematic, formalized analysis, although likely beyond the two agencies' legal obligations when rendering two separate biological opinions, is necessary to provide an objective determination of the net effect of all their actions on the listed species and on water users.**