ENTRAINMENT EFFECTS ON FISH POPULATIONS

QUESTIONS FOR AFS

1) Both direct measurements and sophisticated modeling have shown that tidal effects greatly overwhelm both river flow and water project pumping effects in delta hydrodynamics except in areas very close to the project pumps, and elsewhere during extreme high (uncontrolled) river flow events. Yet, these analyses rely solely on hydrodynamic modeling runs yielding monthly average results, which completely masks tidal hydrodynamics. Some scientists feel strongly that use of monthly average modeling results may have compromised some of the important conclusions reached in this analysis. How should CALFED test the conclusions of this analysis to assure that they are consistent with actual hydrodynamic processes occurring within the Delta?

2) Please investigate, and if possible validate, population level cause-and-effect conclusions related to fish abundance and the monthly average location of the 2 ppt isohaline in the Spring.

3) There is considerable disagreement among biologists and hydrologists as to whether the actual influence of state and federal project pumps is sufficient to affect populations of migratory and non-migratory fishes outside a rather small "zone of influence" close to the facilities. Issues involved include both habitats and hydrodynamics. These disagreements affect critical assumptions used in these analyses, and affect conclusions. Specifically, how should CALFED proceed to resolve these disagreements?

4) There is disagreement among biologists regarding the sufficiency of data sets and the appropriateness of "traditional" data reduction methods which underlie these analyses. Specifically, how can CALFED generate assurances that underlying data sets and data reduction methods are sufficiently robust to support assumptions and conclusions reached in these analyses?

5) The "Qualifiers" section of this report indicates that population-level conclusions were not attempted by the species teams because such conclusions would involve analyses which would have been too complex and time-consuming, given process constraints. Since other factors (e.g. excessive harvest levels of salmon outside the "problem identification area") are thought by many biologists to overwhelm in-Delta differences among CALFED Alternatives, specifically how can CALFED protect against wrong conclusions being made at the policy level based on the comparatively narrow scope of these analyses?