The National Research Council's Committee on Sustainable Water and Environmental Management in the California Bay-Delta released its first report this morning (also available through the National Academies Press web site, with registration). On a quick review of the summary, the conclusions are unsurprising — the Committee finds that the provisions of the Biological Opinions for protecting Delta smelt and winter-run chinook salmon are scientifically justified and conceptually sound, but that there is a great deal of uncertainty about the precise triggers for pumping restrictions. Seems to me we already knew exactly that, but there's no harm in having yet another authoritative voice say so.

The report makes several useful contributions to the ongoing management debate.

First:

> The committee concludes that reversing or even slowing the declines of the listed species cannot be accomplished immediately. Even the best-targeted methods of reversing the fish declines will need time to take effect amid changing environmental conditions such as multi-year droughts and continued pressures on the system from other human-caused stresses. Especially for fishes whose populations are very low already, the effects of any actions will be difficult to detect at first, and detecting them will be made more difficult by the effects of other environmental changes and uncertainties inherent in sampling small populations.

Again, this was already well known among those working on the Delta ecosystem, but the big water users seem to have managed to obscure it in the public discussion with their loud and repeated complaints that it has not been proven that export restrictions are helping the fish. Inevitably, when a population has been allowed to dwindle to the extent these fish species have, recovery cannot be immediate, and even detecting positive effects will be difficult and may take considerable time. It is unreasonable to demand, and the ESA wisely does not require, that benefits be immediate or obvious.

Second:

> The committee considered a variety of possible actions not in the RPAs, and concluded that none of them had received sufficient documentation or evaluation to be confident at present that any of them would have the potential to provide equal or greater protections for the species while requiring less disruption of

> delta water diversions.

So much for the conspiracy theories that FWS and NMFS were deliberately adding to the water users' pain

Third, the Committee highlighted data and modeling improvements that would improve understanding of the effects of various management actions. I would like to have seen more discussion of the difficulties and time lags involved in gathering and interpreting that additional information, but that may be in the body of the report (so far I've only had time to read the summary), or the Committee may plan to consider it in their next report.

Finally,the committee quite sensibly calls for better integration of the smelt and salmon BiOps:

> 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.

The committee promises to address the integration issue more fully in its next report. I'll be looking forward to that one.