

# **Comments on the March 2008 draft of the State Water Resources Control Board (SWRCB) staff report “Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling.**

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## **Comments Related to Questions**

### 1. How will baseline be defined?

I have no idea. I guess it depends upon what the law says. As most of us know, there is a growing paradigm that baselines are shifting, and have been for a long time (*sensu* Jeremy Jackson at SIO). Therefore, we really don't know what “natural” or “normal” is.

Specifically for:

#### a. Track II?

Same answer. I really have no idea. Probably we will have to follow legal guidelines. This will also depend upon the target organisms and/or habitats that are most impacted by either impingement or entrainment (i.e. gobies, rockfishes, etc.)

#### b. Interim restoration?

Same answer as for a above.

### 2. Have current, statewide and individual power plant impingement and entrainment impacts been correctly estimated?

These are based upon various 316b studies and are not uniform across all studies and locations. So, each is as accurate as the study that was performed. I really don't know how to make them all conform to each other.

Relative to trophic or ecosystem impacts, this has been a nagging question for some time. There was some effort in some studies to assess losses of invertebrate as well as fish larvae, which helps. But going up the trophic system will have to be some guesswork and some semi-quantitative assessment. It is something that modelers could certainly do. Fishery biologists are doing this more and more in what they call "ecosystem modeling." However, it is still in its infancy. Many are using Ecopath and Ecosim developed, respectively, by Dan Pauly and Carl Walters. This could be tried. One person who could help a lot with this is John Field at NMFS Santa Cruz Lab. There are others who could help as well.

3. Are the proposed interim controls effective and feasible to prevent mortality and reduce takes of wildlife?

a. Tetrapod exclusion screens?

I do not perceive these to be problematic. The take was very low. There might be creative ways to simply prevent vertebrates with lungs from entering the area, but do not have any other ideas.

b. Flow reduction (and possible screening)?

They are a start, but are not really effective. It would be very difficult, especially with something like entrainment of fish larvae at a huge plant like that at Diablo Canyon, to prevent, or even reduce, the loss due to entrainment. Meshing is going to be problematic due to fouling and the need for constant cleaning. In my opinion, impingement is not a major problem anyway, except at SONGS, which has, to my knowledge, been reduced.

c. Restoration?

I think these measures need to be more clearly described. I also feel strongly that in many cases, this will be the only effective solution.

4. For Track I, are adverse impacts associated with conversion to closed-cycle cooling adequately considered?

This is out of my expertise. I presume there will be air pollution, aesthetic, noise, and other considerations to be made. Certainly, they need to be assessed before these plants are converted to closed-cycle cooling.

Isn't that what El Segundo is planning? Have they attempted or been forced to attempt this in an EIR or EIS?

5. For Track II, should the proposed policies require monitoring appropriate to determine actual percent reductions in mortality?

I did not find anything on this in the document. It certainly would need to be considered, especially if a given power plant was proposing to try and reduce mortality. How it would be measured is difficult and would require either direct tagging and tracking organisms or obtaining age-specific indices of target species for which age classes might be reduced by mortality.

This would have to be worked on seriously by the TWG or ERP, in conjunction with the power companies and the environmental consultants that would do the work.

6. Should restoration projects be monitored to determine compliance?

Yes, I believe so. This would, once again, have to be discussed with TWG/ERP folks and environmental consulting firms that would do the work. It would be parallel, I presume, to work done initially to assess the losses, both from impingement and entrainment and have some connection to either supplementing or correcting those losses.

We have discussed this at many hearings and in many meetings. It is difficult and plant/system-specific. For example, if the main losses are goby larvae, then goby habitat would need to be restored or constructed. Then, techniques to survey gobies, being developed and used in southern California restoration sites, would need to be implemented to assess goby recruitment and success in these sites. Other techniques might be needed for blennies, rockfishes, wetfishes, etc.

7. Should there be remediation if restoration does not comply?

Yes, I believe there should be. How it is done should be determined as stated above, using the TWG/ERP and industry folks working out details.

### **Comments On Other Scientific Issues**

The scientific names of all fishes need to be included the first time they are used, or there should be a table listing them all so one knows which scientific name the common name refers to. Once each is defined, then use one or the other. This starts on page 13, but continues wherever species are discussed. Also, the convention to capitalize the genus name is correct, but not for common names (at

least yet), and species names have no caps. All scientific names should be italicized.

I will leave the details that John brought up about several statements in the section starting on page 12 (Biological and Cumulative Effects...) to him and the authors. He is much more familiar with those than I am. There is some more information on CEQA Guidelines to better assess Cumulative Impacts on pages 75 and 76. But it doesn't help determine just how this is going to be done.

### **Comments on Policy**

I really have none. Policy is not one of my strong points.

### **Editorial Comments on Report**

I have very few comments on this report. This is mainly because it is written much better and is more comprehensible. I agree with John Steinbeck that numbering the sections and Subsections would be helpful.

I also think that the acronym list is still incomplete. For example, CUR (page 4), MWh (pages 4 and 7), and MGD (page 21) are not listed. And, there are undoubtedly more.

I agree also with John about the footnotes being confusing since they both numbered and lettered.

The labeling on some figures (for example: Figures 1& 2) is too small.

I only perused the remainder of the draft, reading the CEQA wording as carefully as I could. But I did not go through the plant-by-plant details. I wouldn't know if they were accurate for any plants except, perhaps, Diablo Cove, Moss Landing, and Morro Bay. I presume others will be so knowledgeable.

I certainly whipped through the economic sections.