

## North Totten Inlet Mussel Farm Proposal

### Summary of the Thurston County Independent Technical Review Committee (ITRC) re: Final Requests for Technical Reports Received in October/November 2008

December 4, 2008

#### NewFields Northwest report (November 2008)

- 1) No major changes anticipated but a couple of issues were not addressed from the prior review. Both Dr. Jack Rensel and Dr. Roger Newell clearly lay these out, suggest specific language, and provide a limited number of minor editing comments as PDF sticky notes.
- 2) The report misses the opportunity to summarize that a major ecosystem benefit of shellfish culture is that the regular harvest of mussels will cause a net removal of nitrogen from the nutrient-enriched South Puget Sound. Dr. Rensel and Dr. Newell provide specific language and places to make these small but important alterations. Use of the Rodhouse model in particular needs a bit more explanation. The figure illustrating it is difficult to understand and apparently extracted directly from that former study without explanation that the results shown in that figure are not specific to the North Totten Inlet proposal.
- 3) Newell identified that the NewFields Northwest calculations suggest that only about 8% of the peak summer phytoplankton (as carbon) in North Totten Inlet (NTI) is consumed by primary grazers, which seems fairly low. Rensel did some quick calculations using numbers that were available in the report to indicate that phytoplankton consumption could be at least two times higher. Dr. Newton may also be able to verify if the NewFields estimates match those of carbon consumption predicted from some of her models. (Her comments are forthcoming.) It may be that the NewFields calculations are correct; we do know that Puget Sound can be very productive, but the ITRs stress that this particular calculation should be reviewed for accuracy.
- 4) The report relies on published work by Bayne and Scullard (1977) indicating that mussels excrete amino-N and urea in addition to ammonia. More recent studies, reviewed by Hawkins and Bayne (1992), indicate that mussels excrete neither amino-N nor urea. Dr. Newell has provided the citations to this latest publication in the PDF file he edited, so the recommended changes need to be considered. This publication is a chapter in a book edited by Gosling that is already cited by NewFields, so they should not have any problems accessing this literature.

We anticipate a day or perhaps two days at the most for the above work by NewFields, but we do recommend that the study be revised and relabeled with a new completion date.

**Important Request:** Please send a Word file (without color figures, if necessary) showing tracked changes so the ITRs can quickly review the NewFields response to these requests. Alternatively, please prepare a transmittal letter indicating page numbers on which revisions were made to respond to these requests.

### **Brooks reports with date of issue: October 2008**

Dr. Rensel found that most of his concerns were addressed in the Brooks reports but identified two interpretations of data in the supplemental water column study that were incorrect. The two shortcomings exist but that they do not influence the primary report by NewFields Northwest or other parts of the proposal, so we recommend simply ignoring the two conclusions. Dr. Rensel provided a summary of his comments regarding these matters and a more detailed discussion as an appendix to explain the situation.

### **Evans Hamilton report with cover date: May 2008 (footer date June 16, 2008)**

- 1) Dr. Kawase made a few minor comments on the Evans-Hamilton 2008 drogoue study that involve making a few of the appendix figures legible.
- 2) Dr. Kawase also recommended that the current meter data be subject to a routine mathematical filter to ensure the accuracy of results for surface and bottom water currents. A simple effect to this filtering may be achieved by simply removing the top and bottom cells in the data set, a common practice). The results of this analysis can then be inserted into a couple of places in the NewFields Northwest report and also in the prior Evans Hamilton report that handled the current meter data. The upper and near bottom layers of data are commonly suspect in acoustic Doppler data collections and are often deleted. This analysis will remove some of the high velocity observations that are potentially artifacts, but still show the site to have strong water currents. Altering the current meter record is a relatively simple task.
- 3) Once the above is completed, the data can be more appropriately summarized by construction of a current vector averaging technique and displayed as a polar vector diagram as explained in Dr. Kawase's comments. The purpose of this exercise is to show which direction of flow dominates. He believes it will likely show movement to the NE and towards the mouth of the inlet.

Detailed comments and overview letter reports are provided to substantiate the above summary and to help with finalizing the reports. The ITRs do not feel that these changes should be difficult or time-consuming, but that they are important to substantiate issues in the technical reports on which EIS preparation will rely.