

Comments on Delta Stewardship Council Staff May 14, 2012 Draft of the Delta Plan  
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Presented herein are our comments on the Delta Stewardship Council May 14, 2012 Staff draft Delta Plan Chapter 6. Improve Water Quality to Protect Human Health and the Environment. *“This chapter on Page 210 provides Factors Influencing Water Quality in the Delta. This section provides an overview of factors that influences water quality in the Delta and existing water quality regulations”*

Overall, many of the technically invalid or otherwise inadequate approaches and issues that we commented on in our comments on previous drafts of the Delta Plan have been corrected in this so-called final staff draft. However, there remain several chronic problems with the DSC staff draft that incorrectly present information on Delta water quality issues or reflect a staff biased in presentation of information on Delta water quality issues. The most important of these remaining problems is the DSC staff’s failure to include adequate information on Delta nutrient water quality issues. As discussed below, the failure to mention, much less address, the work of several Delta ecosystem experts that pointed out the unreliability of information on N/P ratios in the draft plan, as well as information presented at the CWEMF workshop panel of experts presentations on Delta nutrient water quality issues. These are examples of biased presentation of information in this so-called final staff draft. The DSC needs the services of qualified experts who will reliably report on these issues for incorporation in the Delta Plan. These issues are discussed below.

#### Specific Comments

Page 212 Table 6-2 TMDLs Approved and under Development in the Central Valley, Delta, and Suisun Bay should include Putah Creek as a Delta tributary for which a TMDL is to be developed for mercury. Information on Putah Creek mercury pollution is available at,

Lee, G. F., and Jones-Lee, A., “LEHR Superfund Stormwater Runoff and Putah Creek Mercury Issues,” *Journal Remediation*, 19(2):123-134, Spring (2009).  
<http://www.gfredlee.com/SJR-Delta/LEHRrunoffHgRemediation.pdf>

Lee, G. F., and Jones-Lee, A., “Summary of Slides – Putah Creek Mercury Water Quality Issues,” Report of G. Fred Lee & Associates, El Macero, CA, Presented to Delta Tributaries Mercury Council, December 2 (2008).  
<http://www.gfredlee.com/SJR-Delta/PutahHgMineSummary.pdf>

Lee, G. F., and Jones-Lee, A., “Runoff of Mercury from UCD/DOE LEHR Superfund Site – Putah Creek Mercury Issues,” PowerPoint Slides for Presentation to Delta Mercury Tributaries Council, Sacramento River Watershed Program  
[<http://www.sacriver.org/issues/mercury/dtmc/> ], December 2 (2008).  
<http://www.gfredlee.com/SJR-Delta/PutahHgMinesli.pdf>

Page 212, Table 2 is out of date. The US EPA adopted the revised regulatory program discussed in this paragraph as a proposed regulatory program. This paragraph needs to be updated with current information on the topic discussed.

Page 219 the sidebar for “Disinfection Byproducts” states near the end of the first paragraph: *“U.S. Environmental Protection Agency has established regulations for these contaminants and set the maximum contaminant levels (MCL) to prevent health effects (40 Code of Federal Regulations Part 141).”*

That statement is not accurate; the US EPA drinking water MCLs for disinfection byproducts allow some level of human health impact such as increased cancer risk and other health impacts in order to reduce the cost of treating drinking water.

On Page 221 in the “Nutrient Ratios” section, the DSC staff has persisted in providing a technically unfounded biased in reporting information on the potential impact of nutrient ratios on the Delta aquatic food web by only reporting on the statements made by Glibert without discussing and presenting reference to several published reports by Delta ecosystem experts with high degrees of expertise on this topic. As discussed in our comments on earlier drafts of the staff Delta Plan with references to the pertinent literature, several publications concerning the Delta food web including some of our own, discuss that the Glibert findings concerning nutrient ratios impacts are based on unreliable evaluation of existing information. We discussed these issues in:

Lee, G. F., and Jones-Lee, A., “Comments on the Adequacy of C. Dahm’s Discussion of Delta Eutrophication Issues & Delta N/P Ratios as a Cause of Adverse Impact on Delta Fish,” Comments to Delta Stewardship Council, Report of G. Fred Lee & Associates, El Macero, CA, November 17 (2011). <http://www.gfredlee.com/SJR-Delta/DSC-Comments-Dahm-Eutroph.pdf>

Lee, G. F., and Jones-Lee, A., “Comments on the DSC Staff Fifth Draft of Chapter 6 Devoted to Delta Water Quality Issues in the Delta Plan,” Comments Submitted to Delta Stewardship Council, Sacramento, CA, by G. Fred Lee & Associates, El Macero, CA, August 21 (2011). <http://www.gfredlee.com/SJR-Delta/DeltaPlan5DraftCh6Comm.pdf>

Lee, G. F., and Jones-Lee, A., “Comments on Revised Delta Plan Staff Draft Chapter 6 ‘Improve Water Quality to Protect Human Health and the Environment’ as Presented in the Fourth Staff Draft of the Delta Plan,” Comments Submitted to Delta Stewardship Council, Sacramento, CA, by G. Fred Lee & Associates, El Macero, CA, June 14 (2011). <http://www.gfredlee.com/SJR-Delta/DeltaPlan4DraftCh6Comm.pdf>

In order to present a balanced, technically valid discussion of the nutrient ratio issues, this section needs to be expanded to include the reference to those Delta food web experts who have discussed the technical deficiencies and unreliability of the approach used by Glibert, including:

James E. Cloern, Alan D. Jassby, Jacob Carstensen, William A. Bennett, Wim Kimmerer,

Ralph Mac Nally, David H. Schoellhamer, Monika Winder, “Perils of correlating CUSUM-transformed variables to infer ecological relationships (Breton et al. 2006, Glibert 2010),” in press.

As discussed in our comments on the third staff draft of the Plan, J. Cloern, an internationally recognized expert on Delta ecosystem issues, also reported on this issue at a National Academy of Science (NAS)–National Research Council (NRC) meeting, “Sustainable Water and Environmental Management in the California Bay-Delta,” held on July 13-15, 2010 in Sacramento, CA. At that meeting Cloern explicitly stated that Glibert’s approach for evaluating the impact of N/P ratios on Delta fish is not technically valid.

Page 221 in the last bulleted paragraph just above the “Dissolved Oxygen” section states: *“The role of nutrient enrichment in the spread and productivity of these nonnative aquatic plants is unknown. Further research is required on the potential links between invasive aquatic plants in the Delta and nutrient inputs.”*

Based on more than 40 years of work on impacts of nutrient on excessive growths of aquatic plants there is no doubt that the very high nutrient inputs to the Delta are a major factor contributing to excessive growths of aquatic weeds in the Delta. That conclusion was confirmed in presentations at the California Water Environmental Modeling Forum as discussed in our previous comments on the DSC staff draft reports referenced above and at, Technical Workshop on Overview of Delta Nutrient Water Quality Problems: Nutrient Load – Water Quality Impact Modeling, March 25, 2008 available at <http://www.cwemf.org/workshops/NutrientLoadWrkshp.pdf>.

Lee, G. F., and Jones-Lee, A., “Delta Nutrient-Related Water Quality Problems,” PowerPoint Slides Presented at CALFED Science Conference, Sacramento, CA, October 24 (2008). [http://www.gfredlee.com/SJR-Delta/CALFED\\_SciConf10-08.pdf](http://www.gfredlee.com/SJR-Delta/CALFED_SciConf10-08.pdf)

Lee, G. F., and Jones-Lee, A., “Synopsis of CWEMF Delta Nutrient Water Quality Modeling Workshop – March 25, 2008, Sacramento, CA,” Report of G. Fred Lee & Associates, El Macero, CA, May 15 (2008). [http://www.gfredlee.com/SJRDelta/CWEMF\\_WS\\_synopsis.pdf](http://www.gfredlee.com/SJRDelta/CWEMF_WS_synopsis.pdf)

“Overview of Delta Nutrient Water Quality Problems: Nutrient Load – Water Quality Impact Modeling,” Agenda for Technical Workshop sponsored by California Water and Environmental Modeling Forum (CWEMF), Scheduled for March 25, 2008 in Sacramento, CA (2008). [http://www.gfredlee.com/SJR-Delta/CWEMF\\_Workshop\\_Agenda.pdf](http://www.gfredlee.com/SJR-Delta/CWEMF_Workshop_Agenda.pdf)

Page 223 presents “Applying Adaptive Management in Water Quality Decisions,” a discussion of an adaptive management of addressing the residual low-DO problem in the SJR Deep Water Ship Channel (DWSC). That discussion does not incorporate or discuss the current information available on the current low-DO problem. As discussed in our comments to the DSC referenced above, we served as the PIs for a CALFED-supported, \$2-million study of the low-DO problem in the SJR. We have continued to present updated information on the current situation that leads to current low DO. Our comments are on our website in the Watershed Studies – SJR Watershed and Delta section at <http://www.gfredlee.com/psjriv2.htm>.

Contrary to the information provided in the so-called final staff draft concerning the need to further reduce the ammonia discharges in the city of Stockton domestic wastewaters, the current low-DO problem is driven by the excessive discharge of nutrients from the Grasslands area upstream in the SJR watershed that leads to the development of excessive algae in the SJR that die and decompose in the DWSC. Our reports discuss the issues that need attention to eliminate the residual low-DO problem the SJR DWSC. Our discussion of these issues was ignored by the DSC staff in developing the May 2012 draft Plan. The readers of that draft Plan should be made aware of this information to begin to support work on controlling the residual low-DO problem.

While we strongly support a well-developed, technically strong, adaptive management approach for addressing Delta water quality management issues, the framework for an adaptive management approach must be based on an adequate understanding and appropriate use of reliable information on the issues of concern. The adaptive management example presented for addressing the residual low-DO problem in the SJR DWSC is not based on a reliable presentation of the understanding of the current causes and issues that need to be addressed.

By far one of the most egregious demonstrations of bias in the staff draft discussion of Delta nutrient water quality issues is the failure of the DSC staff to mention, much less provide reference to, the refereed paper by Dr. Van Nieuwenhuysse. As noted in our review of the DSC third staff draft Chapter 6, the work of Dr. Van Nieuwenhuysse should be mentioned at this location in Chapter 6. We stated in our comments on the third staff draft of Chapter 6: *“In his CWEMF nutrient workshop presentation entitled, “Impact of Sacramento River Input of Phosphorus to the Delta on Algal Growth in the Delta,” Dr. Erwin Van Nieuwenhuysse summarized his recent paper describing the response of average summer chlorophyll concentration in the Delta to an abrupt and sustained reduction in phosphorus discharge from the Sacramento County Regional Sanitation District wastewater treatment facility. His presentation provides important information on the impact of Sac Regional phosphorus discharge on Delta planktonic algae in the Delta, and is available at, <http://www.cwemf.org/workshops/DeltaNutrientsWrkshp/VanNieuwenhuysse.pdf>.*

*“As discussed in the van Nieuwenhuysse workshop presentation and published paper, vanNieuwenhuysse, E., “Response of Summer Chlorophyll Concentration to Reduced Total Phosphorus Concentration in the Rhine River (Netherlands) and the Sacramento–San Joaquin Delta (California, USA),” Can. J. Fish. Aquatic, Sci. 64(11):1529-1542 (2007). [<http://www.ingentaconnect.com/content/nrc/cjfas/2007/00000064/00000011/art00006>]*

*and the Lee and Jones-Lee CWEMF workshop presentation, backup information, and papers referenced in their presentations, it is well-established that reducing the phosphorus loads and in waterbody concentrations effects reductions in the phytoplankton biomass in Delta waters. This occur even in situations in which the available phosphorus concentrations in the waterbody remain surplus compared to growth-rate-limiting concentrations. The decrease in planktonic algae in the Delta associated with decreased phosphorus loads to the Delta is important information that must be discussed in a creditable discussion of the impact of nutrients on Delta water quality.*

*The changes in the Delta ecosystem that occurred associated with Sac Regional decreased phosphorus discharges rather than the change in N/P ratios as discussed in the DSC staff third draft are a more likely cause of changes in the fish production than the change in the N/P ratios discussed by the staff in the third draft.”*

Page 225 line 44 defines benthic as “deep water.” That is not a proper definition of benthic; benthic organisms are bottom-dwelling organisms, independent of the depth of the water.

Another major deficiency in this version of the Delta Plan, and another on which we have provided detailed discussion in our comments on previous drafts of the Delta Plan, is the absence of a detailed review of the impacts of alterations in the flow of the Sacramento River water into and through the Delta on Delta water quality issues. As discussed in our previous comments, changing the flow of the Sacramento River through and/or around the Delta will have a major impact on how pollutants added to the Delta and those discharged within the Delta impact beneficial uses of the Delta. These issues need to be evaluated prior to adoption of altered Sacramento River flows.

Questions or comments on these comments should be directed to Dr. G. Fred Lee at [gfredlee33@gmail.com](mailto:gfredlee33@gmail.com).