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email to:

Christine Joab and others interested in SJR/Delta Nutrient-Related Water Quality Issues:  
Central Valley Regional Water Quality Control Board  
Rancho Cordova, CA

Subject: Comments on Developing Nutrient Criteria for SJR Delta

In a number of Dr. Jones-Lee's and my writings of last fall and winter concerning residual oxygen demand in the SJR DWSC, including:

Lee, G. F., and Jones-Lee, A., "Issues in Controlling Residual Oxygen Demand in SJR DWSC That Leads to Violations of DO WQO," PowerPoint Slides, G. Fred Lee & Associates, El Macero, CA, February (2011).

<http://www.gfredlee.com/SJR-Delta/Issues-Ox-Demand-DWSC-Ppt.pdf>

Lee, G. F., and Jones-Lee, A., "Issues in Controlling the Residual Oxygen Demand in the SJR DWSC That Leads to DO WQO Violations," Report of G. Fred Lee & Associates, El Macero, CA, November 3, 2010; updated February 6 (2011).

<http://www.gfredlee.com/SJR-Delta/Residual-Ox-Demand-DWSC.pdf>

we noted that ultimately the excessive growth of algae in the SJR, which is the primary cause of the residual oxygen demand in the DWSC, will be impacted by the implementation of nutrient criteria/objectives in the SJR.

We have previously suggested that the US EPA could be the driving force to cause the SWRCB/CVRWQCB to develop nutrient criteria in the SJR, much as the US EPA is doing in other parts of the US. This past week I received a copy of the Delta Stewardship Council's latest draft of the "Plan" to implement the goals of the legislature aimed at improving aquatic life resources and developing reliable water exports from the Delta. That "March 18, 2011 Second Staff Draft Delta Plan" is available at

[http://www.deltacouncil.ca.gov/docs/draft\\_delta\\_plan/Second\\_Draft\\_Staff\\_Delta\\_Plan\\_2011\\_03\\_18.pdf](http://www.deltacouncil.ca.gov/docs/draft_delta_plan/Second_Draft_Staff_Delta_Plan_2011_03_18.pdf). That draft contains "Chapter 6 Improve Water Quality" in which the first recommended action is, "*WQ R1. The State Water Resources Control Board and Regional Water Quality Control Boards should develop and adopt nutrient criteria for the Delta and Delta watershed by January 1, 2014.*" If that Water Quality recommendation is adopted by the Council and properly implemented, it could be a major step in controlling the excessive fertilization of the SJR that leads to the residual algal oxygen demand load in the DWSC. The deliberations of the Delta Stewardship Council toward developing technically valid nutrient water quality objectives that are needed to regulate nutrient discharges in the SJR watershed that is adversely impacting Delta water quality could also be a major step in beginning to address several other nutrient related

water quality problems in the Delta and in the waters exported from the Delta. In addition to low-DO conditions, SJR/Delta nutrient-related water quality impairments include excessive growths of aquatic weeds, water hyacinth, and egeria; and tastes and odors in water supplies that use Delta waters as a source in Southern California. These water quality issues were discussed in the California Environmental Water Modeling Forum (CWEMF) Delta Nutrient Workshop that Dr. Anne Jones-Lee and I organized for the CWEMF in March 2008. The workshop presentations are located at <http://www.cwemf.org/workshops/NutrientLoadWrkshp.pdf>.

The primary nutrient control issue in the SJR and its tributaries is the appropriate control of available nutrients in discharges from irrigated agriculture. As discussed in our writings on this issue [see [www.gfredlee.com](http://www.gfredlee.com) in Surface Water Quality Section, Impact of Agriculture on Water Quality subsection at <http://www.gfredlee.com/pwwqual2.htm#agwaiver>] one of the major problems with the current CVRWQCB Irrigated Lands Regulatory Program is its failure to properly address the large amounts of nutrients derived from irrigated agriculture in the SJR watershed. Proper implementation of technically sound nutrient water quality criteria/objectives is key to addressing the water quality problems caused by nutrient discharges from agriculture in the SJR and Delta.

Based on my more than five decades of work in the development of nutrient criteria and their implementation into management programs to control excessive fertilization of waterbodies, it will be important to avoid the significant problems that are arising in the current US EPA efforts to develop nutrient criteria for Florida based on statistical correlations without proper regard to cause and effect relationships between nutrients and their impacts. Those issues are discussed in several issues of our Stormwater Runoff Water Quality Newsletters, NL 1-3, 5-1, 9-1/2, 9-8, 10-4, 10-5, 10-6, 10-7, 10-13, 11-2, 11-5, 11-9, 12-3, 12-5, 12-6, 12-7/8, 13-3, and 14-1 available at, <http://www.gfredlee.com/newsindex.htm>.

If you have questions on our writings on these issues please contact me. If we can be of assistance in developing nutrient water quality criteria/objectives for the Central Valley, please let us know.

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