CALIFORNIA DEPARTMENT OF
FOOD & AGRICULTURE
A. G. Kawamura, Secretary

January 11, 2008

Ms. Isabel Baer
Environmental Scientist
Bay Delta/Special Projects Unit
P.O. Box 2000
Sacramento, CA 95812-2000

Dear Ms. Baer:

The Department of Food and Agriculture respectfully submits the following comments with regards to Resolution 2007-0079 adopted by the State Water Resources Control Board on December 4, 2007 and the upcoming water rights workshop scheduled for January 22, 2008 on the pelagic organism decline (POD).

We are concerned that the State Water Resources Control Board (SWRCB) is placing disproportionate emphasis on the pyrehtrroids pesticides vis a vis the POD. While there are a number of chemical stressors in the Delta, Resolution 2007-0079 only requires further study of these stressors, while for pyrethroids it specifically calls for implementation of control measures. Resolve 14 reads as follows:

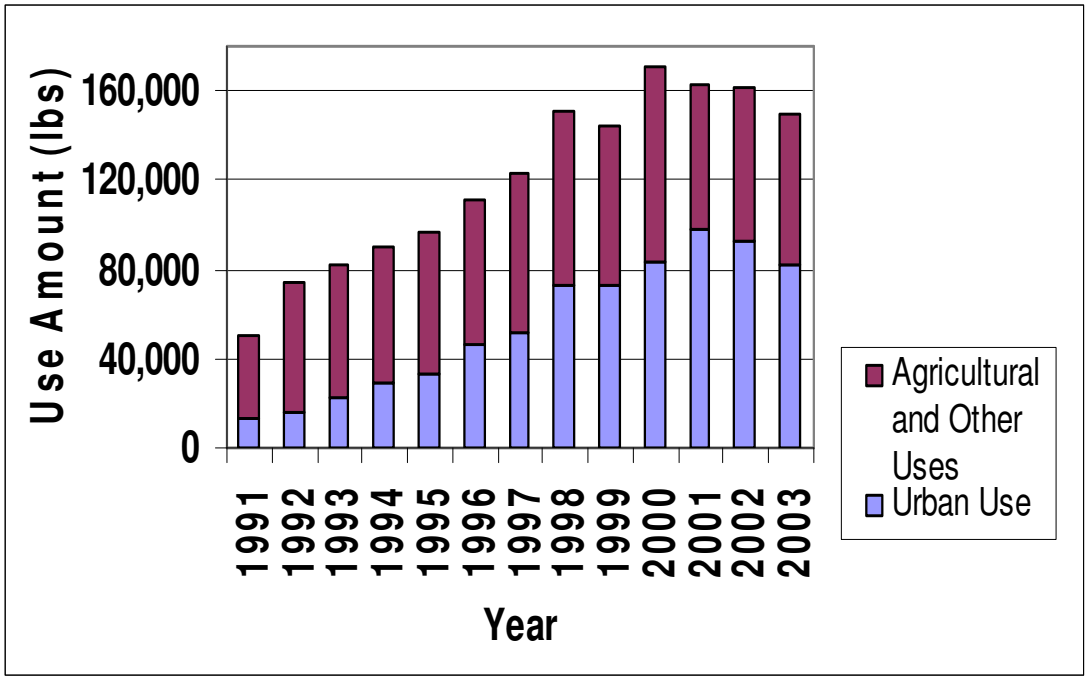
> *The Water Boards will encourage the Department of Pesticide Regulation (DPR) to expedite their pyrethroid pesticide re-registration process and provide agricultural commissioners with guidance on pesticide use restrictions that could be implemented in the interim. The Water Boards will work with DPR and Delta county agricultural commissioners to consider the feasibility of special restrictions on pesticide use on Delta islands and lands on the Delta's periphery.*

First of all, as noted, the Department of Pesticide Regulation (DPR) is undergoing a re-evaluaiton of pyrethroid pesticides for the purpose of identifying the need for any additional control measures. To adopt control measures in advance of the conclusions of the re-evaluation prejudices and short-circuits this effort. Does the SWRCB have any

data to suggest that pyrethroids are impacting pelagic organisms at all or at least beyond that of the other known chemical stressors to justify such actions?

It has been suggested and it appears that the SWRCB is disproportionate concern with pyrethroid insecticides stems from the incorrect hypothesis that there is a correlation between the concomitant increased use of pyrethroids and POD. This assumption appears to be based on the decline of use of organo-phosphosphorus (OP) insecticides for dormant spraying of orchards and the replacement with pyrethroids. This hypothesis is in fact incorrect. Figure 1, re-printed here with permission from the San Francisco Estuary Institute and presented at the 2006 Calfed Science Conference shows that pyrethroid use in the Central Valley peaked in 2000 and has been in the decline since.

Figure 1: Historic Urban and Agricultural Pyrethroid Use in the Central Valley



It is important to note that from the period of 1991 to 2003, pyrethroid agricultural use in the Central Valley doubled while that of urban uses increased 6 fold. The urban uses are actually underestimated as the over the counter sales of pyrethroids for home use are not monitored. Since many household insecticides contain pyrethroids and many lawn fertilizers products are blended with pyrethroids, the actual urban use is probably much greater than indicated. It can been seen from Figure 1 that the monitored urban

use exceeds the agricultural use in the Central Valley. This observation is of concern relative to the proposed actions in resolve 14 because any "interim" control actions by the Agricultural Commissioners as a result of this Resolution will target primarily agricultural uses.

Weston et al.[1] have shown high levels of toxicity and high frequency of pyrethroid insecticides in sediments of suburban water bodies. They attributed the source to be structural pest control and household use, particular from lawn applications. These observations occurred in the Central Valley city of Roseville where no prior agricultural activity had occurred. It is also interesting to note that the levels of toxicity and the frequency exceed those from Central Valley agricultural water bodies.

Given that there are a number of municipalities that discharge stormwater directly to Delta waterways, including to sensitive Delta areas (Pittsburgh and Antioch) it is conceivable that these municipalities could be contributing to the observed toxic events. Thus, any actions the SWRCB finds necessary to undertake in relation to pyrethroid insecticides should consider the source of the impairment (agricultural versus urban).

As was noted previously, the SWRCB appears to focus disproportionably on pyrethroid insecticides over other chemical stressors. The SWRCB has been aware for decades through the Toxic Substance Monitoring Program and other studies of the presence of industrial chemicals in Delta waterways. These include polychlorinated biphenyls (PCBs). Work of David Ostrach also presented at the 2006 Calfed Science Conference shows that striped bass were severely compromised as a result of infectious disease. These fish also were positive for cytochrome P4501A1 induction a biomarker of contaminant exposure and bioindicator of adverse sublethal effects. Other studies by Dr. Ostrach and colleagues have shown vitellogenin biomarker indicative of endocrine disruption and for which he has attributed in part to PCB exposure and multiple stressors. It should be noted that the SWRCB has omitted PCBs from its Toxic Hotspot Clean up Plan.

Information developed to date has not shown the incidents of toxicity to be the source of the POD. In fact, Calfed sponsored researchers have stated this in many public meeting. Yet there are those who seek to exploit every incidence of an exceedance or toxic event as the cause of the POD. We urge the SWRCB to await the result of the synthesis report and to provide funding to undertake the necessary investigation to understand the role of contaminants on the POD. We would like to inform you that in the interim, we are working with the agricultural community to implement control actions

[1] D. P. Weston, R. W. Holmes, J. You, and M. Lydy. 2005. Aquatic Toxicity Due to Residential Use of Insecticides. Environmental Science and Technology 39: 9778-9784.

in Delta smelt critical habitat and we urge you to dedicate Proposition 50 and 84 funds for this purpose.

In conclusion, we urge the SWRCB to base their regulatory activities on sound and complete science. The agricultural and agricultural chemical industry are working on developing measures and practices to reduce the off-site migration of pesticides. Efforts are currently underway to promote the use of these practices by farmers in sensitive areas. We urge the SWRCB to consider the role of other chemical stressors and in particular legacy industrial chemicals such as PCBs. And in the event, that information is developed that requires additional action from pyrethroid use, we urge to consider the source of the impairment whether agricultural or urban.

Thank you for the opportunity to provide comment. If you have any questions on these comments, please direct them to Al Vargas of my staff at (916) 651-0444.

Sincerely,

Steven Shaffer
Director,
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