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Mr. Charles Hoppin, Chair
California State Water Resources Control Board
P.O.Box 100
Sacramento, California 95812-0100

Dear Mr. Hoppin:

I am writing this letter in response to the California State Water Resource Control Board's (CSWRCB) proposed amendments to Division 3 Tile 23 of the California Code of Regulations. I am the Winegrowing and Plant Science Advisor for the University of California Cooperative Extension Service, and have served in that capacity since 1991. I have a Master of Science Degree in Plant, Soil and Water Science from the University of Nevada Reno (1979). I have conducted and published research in collaboration with Dr. Steve Lindow of UC Berkeley, on the ecology of ectomorphic bacteria responsible for ice nucleation that cause frost damage to susceptible plants during frost events, and how to manage these populations in orchard and vineyard floor management systems. I have also conducted and published research on remediation for frost damaged grape vines, and the effect of freezing temperatures on potential vine yield reductions. I have also contributed to the most recent comprehensive study of agricultural water use in the Russian River Watershed, including the amount used in our county during a frost protection event. Finally, I have lectured at UC Davis Extension viticulture classes on the nature of frost events, and how to protect vineyards from frost damage.

I am very concerned about these regulations that are being proposed to label sprinkler frost protection as a non-beneficial use of water. My biggest concern centers around the quality of science that has been used to justify the regulations, beginning with the National Marine Fishery Service's (NMFS) and California Fish and Game's assessment of fish kills following the extreme frost event that occurred on April 21st, 2008. The sampling techniques and post mortem evaluations utilized an extremely small sample size both in terms of actual fish numbers (10 fish) and spatial distribution along the Russian River (one location). NMFS biologists appear to attribute most fish strandings during spring months to changes in water levels caused by sprinkler frost protection. Yet we know from experience that water levels rise and fall in the Russian River watershed on a seasonal basis and are affected by many factors, including rainfall and evapotranspiration. We also know that there is a huge natural mortality of salmonid fry from a variety of factors, most of them as a consequence of the watershed's natural history. Dewatering as a result of water diversions may very well be a minor cause, and the risk factor should be carefully assessed by professional researchers knowledgeable in the disciplines of inland fisheries and hydrology as well as proper statistical sampling and analysis before the proposed regulations are put in place. In the case of the main stem of the Russian River, growers have now created enough off stream water storage that the chances of a repeat of the conditions that may have created the April 21st, 2008 fish kills are remote—there is enough off stream capacity to offset almost 91 cubic feet per second diversions that formerly would have been required for frost protection.

Another major concern is the complete lack of economic analysis if sprinkler frost protection is no longer allowed as a way of protecting vines from frost, both to the individual grower and our region. My research has shown that frost injury will cause somewhere between a 50 –85% loss of yield in affected vineyards. The amount of water that is used most years in the Russian River watershed for frost protection is somewhere between 2000-4000 acre feet. This is a very small amount of water that produces huge positive benefits to our region in terms of employment, property equity, economic activity and tax base for all levels of government including local, state and federal sectors. Without frost protection, we would lose dependable crop production on somewhere between 4000 to 7000 acres, which is a large portion of the 18,000 acres estimated to be in production in our county.

Additionally, there are the costs of compliance with the regulations which will include installation and maintenance of flow meters to measure stream flows, water meters on all pumps, total water use reporting, and associated paperwork.

I am at a loss to understand your position on how sprinkler frost protection can be considered a non-beneficial use of a public trust resource without a robust scientific investigation on the negative effects on salmonids, and a concurrent economic analysis of the wine grape industry in our region. My own experiences and understanding of frost protection reaches a completely opposite view. Furthermore, there is still the lingering question as to whether these changes in regulations are going to produce the desired outcome of improved salmonid numbers in the Russian River watershed. There is considerable information that there are numerous other factors that would have to be addressed before salmonid populations have a reasonable chance of recovery.

Finally, there is no discussion of other water diverters on the Russian River and its tributaries, which are mostly municipal water providers. Isn't there a concern about their impact on fish during critical low flow periods? Is there any plan or regulation to minimize their diversions when water levels are low?

Before these proposed regulations are implemented, I recommend that your agency considers the following:

- Peer review of the science behind the changes in the proposed recommendations by qualified fisheries biologists, hydrologists and frost protection experts. If you are unsure of who to request for this assistance, I can provide you with names both within the UC system and other land grant schools.
- A thorough economic analysis on the impact of these regulations on the affected producers, and income to the local economy if frost protection is no longer a beneficial use of water
- An analysis on the loss of income to local, state and federal coffers if these vineyards are no longer able to produce fruit.
- A more holistic look at the Russian River watershed that considers ALL diversions, not just the farmers diverting water for frost protection. In reality, this is a very small amount of allocated water resources.
- Practical alternatives that can prevent potential fish strandings that still allow agriculture to thrive and continue as an important economic sector in our community. Sprinkler frost protection is still the only method to prevent damage to frost sensitive crops when temperatures fall below 27 degrees F, which is common in our region.

Thank you for your attention to my concerns. I am pledged to help our community work through this important issue. I want to be sure that all stakeholders are carefully listened to and considered before these very far reaching proposed amended regulations are implemented.

Sincerely:

Glenn McGourty, Winegrowing and Plant Science Advisor