From: Larry Warnberg
To: Rockett, Derek (ECY)
Subject: Draft NPDES comments
Date: Sunday, November 09, 2014 2:04:59 PM

Hello Derek:
Thanks for the Notice regarding the Public Comment period for imidacloprid. Please accept my questions and comments for the record.

From the Fact Sheet:
Page one, it is stated that "The objective of the proposed action is to preserve and maintain the beneficial uses of Willapa Bay and Grays Harbor."
It has been established by J. Ruesink and colleagues that these estuaries have benefitted from the two varieties of native burrowing shrimp, which contribute major ecosystem support as detritivores, substrate aeration, and nutrient balance. Even the non-native Japanese oyster industry has benefitted from the positive contributions of shrimp to overall water quality. The use of an aquatic pesticide to kill native shrimp to protect non-native oyster culture should not be permitted. Shrimp populations have declined precipitously over the past decade for unknown reasons. It is very risky to remove any shrimp by deliberate poisoning.

Page 6-7: "Beds that reach this density (10 burrows per square meter) are not suitable for commercial production of shellfish without burrowing shrimp control. Without the ability to manage burrowing shrimp, shellfish beds wold begin to degrade until they reach a point where they cannot be farmed (personal communication with Willapa/Grays Harbor Oyster Growers Association members, Feb. 2014)."
It is not surprising that some Growers who rely on pesticide control of shrimp would argue that they cannot farm successfully without killing shrimp. But where are the Facts? It is well known among marine biologists that the number of burrows on the surface of exposed tideland bears little correlation to the actual number of shrimp residing in the area. Other species, particularly polychaetes (worms) burrow and leave similar surface holes that are not easily differentiated from shrimp burrowing activity. There is currently no reliable measure of shrimp density. The general decline of shrimp populations on the West Coast suggests caution before permitting a few commercial shellfish farmers from depleting these important foundation species any further. Burrowing shrimp are not incompatible with all methods of oyster culture. I farmed successfully with stake culture for 25 years in Willapa Bay without killing shrimp, as do many other growers. There are good alternatives to pesticide use, the permit should be denied.

Page 7: "At the time of this writing, much of the once-used, deeded commercial tidelands in Washington State remain heavily populated by burrowing shrimp, which contribute to the soft sandy muddy substrates that are unsuitable for shellfish production."
No published evidence supports this claim. In fact, there is much evidence that the shrimp populations have declined. During the past decade Growers have had difficulty finding enough shrimp-infested beds to fill their allowed quota for pesticide treatment with carbaryl. Under the proposed permit there is no requirement for a scientific determination of burrowing shrimp density. No competent objective staff from Ecology or Agriculture will conduct the survey to determine if the Action Threshold has been reached. Growers alone are entrusted to survey for shrimp density, using the unreliable burrow count to determine if a parcel is in need of pesticide treatment. Without a reliable method of measuring the impact of shrimp on oyster culture, this permit should be denied.

Page 10: "Suspended cultures, such as long-line and stake culture, are primarily used in areas that are not suitable for bottom culture."
It is good to see that there are alternatives culture methods acknowledged. The majority of shellfish growers on the West Coast do not use pesticides, only a few companies in SW Washington State. There are proven effective non-chemical alternatives available to shellfish growers. There is no compelling need to permit the use of a non-selective pesticide which kills a wide range of invertebrates.

Page 12: "As with stake culture, control of burrowing shrimp is required to prevent stakes from leaning or falling over."
There is no published scientific evidence to support this claim. I raised oysters successfully for many

years in Willapa Bay, as have many other growers. Sure, there is maintenance required, that's what farming is about. Relying on a wide-spectrum pesticide to kill shrimp is unnecessary and risks impairment of water quality.

Page 19: "Shrimp populations have been declining in both bays since the mid-1990's."
There is no published scientific data to show shrimp populations have stabilized, or increased. The permit to kill shrimp is certainly premature, until there is clear evidence that the population is rebounding.

Page 29: "Aerial applications must be on beds exposed at low tide."
This time restriction is too wide. Spraying could occur right up to the moment the tide floods over a treated area, greatly increasing the risk of off-site drift with the current.

Page 58: "The Permittee may apply imidacloprid only when the action threshold is met. The shrimp burrowing density shown to significantly impact oyster and clam aquaculture is 10 burrows per square meter."
As noted above, there is a very weak correlation between surface burrow count and density of actual shrimp. The measurement method is unreliable, so the ActionThreshold is meaningless. The Growers' IPM plan is incomplete without a reliable method of measuring shrimp density. Until a reliable method is developed, this permit should be denied.

Finally, the Fact Sheet omits any reference to the cost of developing and issuing the Permit. Who will pay? How much? When Ecology developed the first NPDES permit for carbaryl in 2003 it was estimated that the cost would be $50,000, to be paid by the Permittee, as specified in State law. But the Growers somehow managed a special exemption, paying only a few hundred dollars, passing along the cost to other Permittees, or the taxpayer. Will the Growers again be exempted from paying the actual cost of developing and issuing the proposed permit?

Thanks for accepting my comments and questions.
Appreciatively, Larry Warnberg
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From:	Larry Warnberg
To:	Rockett, Derek (ECY)
Subject:	well done
Date:	Thursday, December 04, 2014 6:05:13 PM

Hi Derek:
Just a note to thank you and colleagues for conducting the workshop. You did a professional job, kept the process moving, listened to our concerns.
I didn't press the issue on cost of the Permit and how much the Growers will pay, time was short for so many questions, but I sure hope they get the full bill. If you ask Kelley Susewind you may get the story of how the Growers were given a $50 K estimate for development of the original NPDES permit for carbaryl in 2003, but they lobbied our now deceased State Senator Sid Snyder to pass a bill in the Legislature that reduced the Growers' cost to $300 per year. Doesn't seem fair to the taxpaying public, and a discounted Permit is especially unwelcome for those of us who have worked hard for many years to keep toxics out of the Bay.
Barry sure surprised us when he showed the SIZ map that excluded the south half of Willapa Bay from spraying. I strongly support that restriction.
I assume the annual Burrowing Shrimp Committee will meet in the Spring as usual, perhaps I'll see you there.
Appreciatively, Larry