

I appreciate the opportunity to submit written formal comments for the proposed use of pesticide on Washington State tidelands, specifically about the use of the pesticide imidacloprid on commercial shellfish beds in Willapa Bay and Grays Harbor.

I support Alternative 1 of the Imidacloprid draft Supplemental Environmental Impact Statement (DEIS). I am a biologist by trade and live on a peninsula surrounded by intensive shellfish aquaculture in South Puget Sound. I also help grow oysters above knee-deep muddy substrate with great success by using alternative shellfish growing methods. Attached are questions for the Washington State Department of Ecology concerning the DEIS.

1. Do we know the full extent of food web impacts from the use of the pesticide Imidacloprid in estuarine ecosystems?

1a. What are the impacts to the adult and juvenile crab?

1b. Is juvenile crab more susceptible to impacts due to their use of near shore habitats?

1c. What are the impacts to other crustaceans that are important food sources for biota?

1d. Will the use of Imidacloprid reduce the food source of vertebrates at or around application sites? If so, what types of vertebrates and for how long?

1e. Do mud shrimp provide ecosystem services? If so, what impacts are associated with the control of these organisms?

2. If the use of pesticide on tidelands is approved, I am concerned this decision will be a precedent that this approved use can be applied to other aquatic ecosystems in Washington State. Will the approval of Imidacloprid use increase the use of pesticide in aquatic ecosystems throughout Washington State?

3. Shellfish have a positive societal image due to the advocacy of shellfish growers and consumers. How will the use of Imidacloprid impact the perception that shellfish aquaculture is a green industry? What impact would the use of Imidacloprid on a food source (oysters) have on consumers as well as other shellfish growers outside of Willapa Bay and Grays Harbor? If there is an impact to the shellfish harvest due to the reduction in demand how would this reduction impact the ecosystem services of commercial aquaculture in Washington State?

4. What impact will the proposed use have on humans associated with Willapa Bay and Grays Harbor? Would the proposed use have an impact on Native American tribe's diet?

5. What is the fate and transport potential of Imidacloprid once added to estuarine ecosystems? If applied to estuarine ecosystems will Imidacloprid and its breakdown products move outside the application area? If so, what are the impacts?

6. What is the half-life of Imidacloprid and associated breakdown products in estuarine environments, especially in organic rich embayments?

7. What impact would Imidacloprid application have on pollinators?

Thank you,

Seth Book