## Melinda Mueller

I oppose the use of imidacloprid to control burrowing shrimp. This shrimp species is native, not invasive, and performs important ecosystem functions (such as bioturbation). Though they are a "pest" in regards oyster farming, "Their effects may, however, have knock-on effects across the entire ecosystem, and may buffer it from the hazards of nutrient enrichment and increase primary and secondary productivity by increasing the amount of dissolved inorganic nitrogen (1)."

Furthermore, neoniconotinoid pesticides, such as imidacloprid, pose a significant threat to other species and to ecosystems as a whole. They are known to be toxic to birds, fish, and aquatic invertebrates other than shrimp (2, 3). "Of the neonicotinoids, imidacloprid is the most toxic to birds and fish (4)." These pesticides also pose significant threats to honeybees and other pollinators (5), whose productivity is crucial to Washington agriculture and ecosystems.

Finally, near-shore spraying risks pesticide contamination of shellfish that are harvested commercially and by individuals.

The use of this pesticide is not a safe or appropriate action.

- (1) R. James, A. Atkinson & Alan C. Taylor (2005). "Aspects of the physiology, biology and ecology of thalassinidean shrimps in relation to their burrow environment". In R. N. Gibson, R. J. A. Atkinson & J. D. M. Gordon. Oceanography and Marine Biology: An Annual Review. 43. CRC Press. pp. 173–210. ISBN 978-0-8493-3597-6.
- (2) Morrissey, Christy A., et al. "Neonicotinoid contamination of global surface waters and associated risk to aquatic invertebrates: a review." Environment International 74 (2015): 291-303.
- (3) Fishel, Frederick M. "Pesticide toxicity profile: neonicotinoid pesticides." University of Florida, IFAS (2005). "Of the neonicotinoids, imidacloprid is the most toxic to birds and fish."
- (4) Alaux, Cédric, et al. "Interactions between Nosema microspores and a neonicotinoid weaken honeybees (Apis mellifera)." Environmental microbiology 12.3 (2010): 774-782.
- (5) Henry, Mickaël, et al. "A common pesticide decreases foraging success and survival in honey bees." Science 336.6079 (2012): 348-350.