Dr. Sandra E. Shumway
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Dear Dr. Shumway,

In 2017, *Polydora websteri*, a marine polychaete pest and cosmopolitan invader, was positively identified in Washington State for the first time using morphological traits and gene sequences (Lopes et al., *in review*). *P. websteri* and some of its congeners are notorious invaders, burrowing into the shells of wild and cultured shellfish. To oyster industries worldwide - including those on the U.S. Gulf and Atlantic Coasts - *Polydora* spp. are noxious pests, depreciating product value and necessitating expensive changes to aquaculture practices. In the enclosed manuscript, “Minimizing the impacts of a cryptogenic aquaculture pest: protecting shellfish aquaculture from shell-boring polychaetes,” we provide important context for the risks associated with *Polydora* invasion into historically uninfested regions such as Washington State, and offer recommendations that will prevent *Polydora* range expansion and impact, and will minimize the likelihood of future introductions of shell-harbored pests.

Washington State aquaculture produces 45% of the molluscs cultured in the US (2013, USDA) and is an iconic industry that supports rural communities, protects water quality, and collaborates closely with research and restoration programs. Historically, Washington State estuaries have been free of shell-boring *Polydora* infestation, with no known native or introduced species, until last year. This may explain why no monitoring or regulations exist in the state to manage against invasion by *Polydora* or any invasive species harbored in live oyster shells, despite live shellfish stock being translocated regularly. While the point and mode of invasion are not known, translocated oysters are considered the primary means of introduction for *Polydora*; translocated oysters are estimated to be the source of at least 20% of all non-native species to the Northeast Pacific Ocean (Wonham and Carlton 2005).

Once introduced, aquatic invasive species are rarely eradicated, and the most feasible option is to limit further geographic spread of the invader. *P. websteri’s* presence in Washington State is not only a risk to Washington shellfish aquaculture, but to local ecosystems and native shellfish species that are actively being restored. Whether *P. websteri* has been present but dormant, or recently introduced is unknown, but high infestation intensity in some locations indicates that abundances may be growing.

It is vital that stakeholders recognize, investigate, and control the threat of *Polydora* before the problem becomes widespread. This manuscript provides a springboard for such actions by providing a review of *Polydora* spp. that is specifically framed for a historically unaffected region, Washington State. We recommend mitigation actions to the wide group of stakeholders impacted by infestation (shellfish aquaculturists, resource managers, tribal groups, native species restoration programs). Publication in the *JSR* will notify a diverse audience of the newfound threat of *Polydora* at this critical, early stage, and will directly improve the outlook for Washington State shellfish.

This manuscript is not under consideration by another journal, nor has it been published, and all authors approve the manuscript and its submission to the *Journal of Shellfish Research*. Thank you for your consideration.

Sincerely,
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References

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