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**Geoduck as indicators of environmental change**

Laura H. Spencer1, Micah Horwith2, Alex Lowe3, Emma Timmins-Schiffman4, Brook L Nunn4, Steven Roberts1

1School of Aquatic and Fishery Sciences, University of Washington, 1122 NE Boat St, Seattle, WA 98105

2Washington State Department Of Natural Resources Aquatics Program 1111 Washington St. SE Olympia, WA 98504

3Department Of Biology, University Of Washington, 24 Kincaid Hall Seattle, Washington 98195

4Department of Genome Sciences 3720, University of Washington, 15th Ave NE Seattle WA 98195-5065

*Submitter email:* [lhs3@uw.edu](mailto:lhs3@uw.edu)

The Pacific geoduck (*Panopea generosa*) is the largest clam native to the Pacific Northwest and is a burgeoning aquaculture species due to growing export demands from Asia. In Washington State, geoduck support important commercial fisheries via farmed and wild populations in Puget Sound and Willapa Bay. As a sedentary, calcifying bivalve occupying mostly subtidal sediment, geoduck are likely to be impacted by climate stressors, which have already been documented as trending towards warmer, more acidic marine conditions. In summer 2016 we performed two trials in which sibling juvenile geoduck were out-planted in five sites throughout Washington State, each site containing cohorts placed inside and outside eelgrass beds. Geoduck were enclosed to minimize predation, water chemistry was continuously monitored, and after four weeks of exposure geoduck gill tissue was taken for protein analysis. Specifically, shotgun proteomic analyses was performed and revealed expression pattern associated with local conditions. Together these results demonstrate protein profiles can provide valuable information on local conditions including how environmental change can influence bivalve physiology.