



Does geoduck aquaculture change the bathymetry of nearby beaches?

The Salish Sea is one of a few locations worldwide that provides suitable conditions for aquaculture production of the Pacific Geoduck (*Panopea generosa*). Pacific Geoduck aquaculture is a lucrative business for many local farmers in Puget Sound, however, the state of Washington does not currently lease state-owned intertidal lands for this purpose.

When geoduck are harvested, water is pumped into the ground which liquefies the sediment enough to extract the target geoduck. Studies measuring the disturbance to infaunal benthic communities pre and post-harvest indicate that the impacts from geoduck harvest are not greater than regular seasonal disturbance (Vanblaricom et. al. 2015). There has not yet however, been a comprehensive study of the sediment and elevation dynamics at geoduck aquaculture sites pre and post-harvest.

AAMT is interested in whether there is measurable change to the sediment and elevation of the surrounding beach imposed by geoduck aquaculture activity. To do so, we have partnered with a small number of private shellfish companies at two locations to monitor sediment movement and grain size at regular intervals until final harvest (a duration of approximately five years). At these sites, multi-beam sonar is being used to map small changes in the surrounding bathymetry, and sediment samples are being collected to analyze any change in grain size.

Multi-beam sonar data collected will be post processed and converted into bathymetry attributed grids. Sediment accumulation and scour at each site and sampling event will be calculated by subtracting consecutive surveys from the first pre-harvest surveys. A full report for site one should be available from WADNR in Winter 2021.



AAMT's multibeam sonar system is configured to collect data in the shallow intertidal. Shown here is the sonar operating in 1 to 2m of water.

Why does this matter to DNR?

WADNR aims to the foster water dependent uses while ensuring environmental protection. Geoduck aquaculture is important in Washington's local economy. It is important to know what large or small scale impacts, if any, geoduck aquaculture has on the deposition of sediment.

Site one, planted in 2016 will likely be harvested in 2020. We will continue to monitor this site until harvest occurs and post-harvest for one year. Site two, planted in September 2019 is scheduled for harvest in 2025. We plan to monitor both sites intensively.

For more information

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