

Abstract

The Puget Sound is a diverse and essential marine habitat within the Pacific Northwest. The sound's health and marine ecosystem is a major part of the regional economy and culture. However, surges of saxitoxin, which can cause paralytic shellfish poisoning (PSP), have been impacting Washington State's economy as well as the health of its inhabitants. *Alexandrium catenella* is a dinoflagellate native to the Puget Sound, and can be responsible for the bioaccumulation of saxitoxin within regional shellfish. In the winter months, it lies dormant within sediments in the form of cysts before blooming under warmer conditions in the spring/summer. In effort to better monitor the situation and gain further understanding of which areas are most severely affected, the University of Washington, Tacoma partnered with the Washington State Department of Ecology's Puget Sound Ecosystem Monitoring Program to analyze sediment samples from Elliot Bay near Seattle, WA. In this study, sediment samples collected from around Elliot Bay were processed and analyzed under microscope for the presence of *Alexandrium* cysts. Consistent multi-year monitoring of sediment cysts aids scientists in better understanding the conditions that allow *A. catenella* to bloom in mass, while also allowing for earlier and more accurate predictions of PSP outbreaks throughout the Puget Sound.