Cyst Mapping of Alexandrium catenella in Surface Sediments of Puget Sound from 2013-2021

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Cyst Mapping of *Alexandrium catenella* in Surface Sediments of Puget Sound from 2013-2021

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**HARMFUL ALGAE PROBLEM**

*Alexandrium catenella* is a dinoflagellate that produces saxitoxin, a powerful neurotoxin, known to bioaccumulate in filter-feeding shellfish. Mammals consuming these shellfish can experience paralytic shellfish poisoning, a severe toxin-induced illness. *Alexandrium* overwinters in seafloor sediments as a cyst, and in the spring and summer, when environmental conditions are right, these cysts can germinate and become vegetative cells within the water column. Identification and enumeration of cysts are used to determine regions where there is a greater potential for these harmful algae to bloom.

**UWT ALEXANDRIUM QUICK FACTS**

- Most locations with cysts in 2013
- Highest concentration of 190 cysts/cc in 2014
- Cysts present each year in Bellingham Bay
- No sampling in 2020 due to COVID
- 2021 cysts found in Bellingham Bay, Inner Budd Inlet, and North of Hood Canal
- Low cyst counts possibly due to sampling in spring

**UNDERGRADUATE RESEARCH**

Each year the sediment samples are analyzed by undergraduate researchers for grain-size distribution, total organic content percentage, harmful algae abundance, and microplastic concentration as part of a summer research experience. *A. catenella* cysts were processed by sieving, fixing, etching, and staining the cysts for identification using a modified Yamaguchi et al. (1995) standard microscopy method.


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