

Focus on: Sediment Quality in Bellingham Bay



Bellingham Bay urban shoreline (photo by Nick Kelly).

Bellingham Bay sediments evaluated

In June 2017, we sampled surface sediments at 30 monitoring stations in Bellingham Bay as part of the Department of Ecology's Marine Sediment Monitoring Program - Urban Bays surveys. We published results in an [interactive story map](#)¹. This story map provides a summary of findings from analyses of physical, biogeochemical, and chemical contaminant parameters measured in sediment samples, as well as the composition of sediment-dwelling invertebrate communities. These results are also compared to those from our previous survey conducted in 2010.

Summary of Findings

Habitat

Clay content and total organic carbon increased between 2010 and 2017 outside of the Nooksack Delta.

Chemical contamination

Overall, chemical concentrations decreased between 2010 and 2017. However, not all contaminants

¹<https://storymaps.arcgis.com/collections/aaec1a6656ff43e098d209c75ce00244?item=10>

²<https://storymaps.arcgis.com/collections/aaec1a6656ff43e098d209c75ce00244>

³<https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Sound-science/Marine-sediments>

decreased – some increased and some remained unchanged. Washington State Sediment Quality Standards were met at all stations sampled in 2017. Polycyclic aromatic hydrocarbons (PAHs) tended to occur in specific locations, while metals showed a closer relationship with organic matter and grain size.

Benthos

Although benthic (bottom-dwelling) communities throughout the bay were in poor condition in both 2010 and 2017, all measures of abundance and diversity improved over the years. Community composition changed from being dominated by one group of worms in 2010 to being dominated by two different species of worms in 2017.

Associations

Benthic communities in shallower areas tended to have greater abundance and biomass than those found at deeper locations. Benthos corresponded primarily to depth, grain size, and organic matter. Although habitat and chemical parameters explained some of the variability in these communities, about half the variability in the benthos remained unexplained by measured parameters.

Related Links

[Collection of interactive story maps on sediment quality in Puget Sound](#)²

[Marine sediments - Washington State Department of Ecology](#)³

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