



Apr 27th, 4:00 PM - 4:30 PM

The presence of *Alexandrium catenella* harmful algal bloom cysts in Port Gardner, WA in 2019

Caitlyn McFarland
University of Washington Tacoma

Julie Masura
University of Washington Tacoma

Cheryl Greengrove
University of Washington Tacoma

Follow this and additional works at: <https://cedar.wvu.edu/ssec>

 Part of the [Fresh Water Studies Commons](#), [Marine Biology Commons](#), and the [Natural Resources and Conservation Commons](#)

McFarland, Caitlyn; Masura, Julie; and Greengrove, Cheryl, "The presence of *Alexandrium catenella* harmful algal bloom cysts in Port Gardner, WA in 2019" (2022). *Salish Sea Ecosystem Conference*. 239.
<https://cedar.wvu.edu/ssec/2022ssec/allsessions/239>

This Event is brought to you for free and open access by the Conferences and Events at Western CEDAR. It has been accepted for inclusion in Salish Sea Ecosystem Conference by an authorized administrator of Western CEDAR. For more information, please contact westerncedar@wvu.edu.

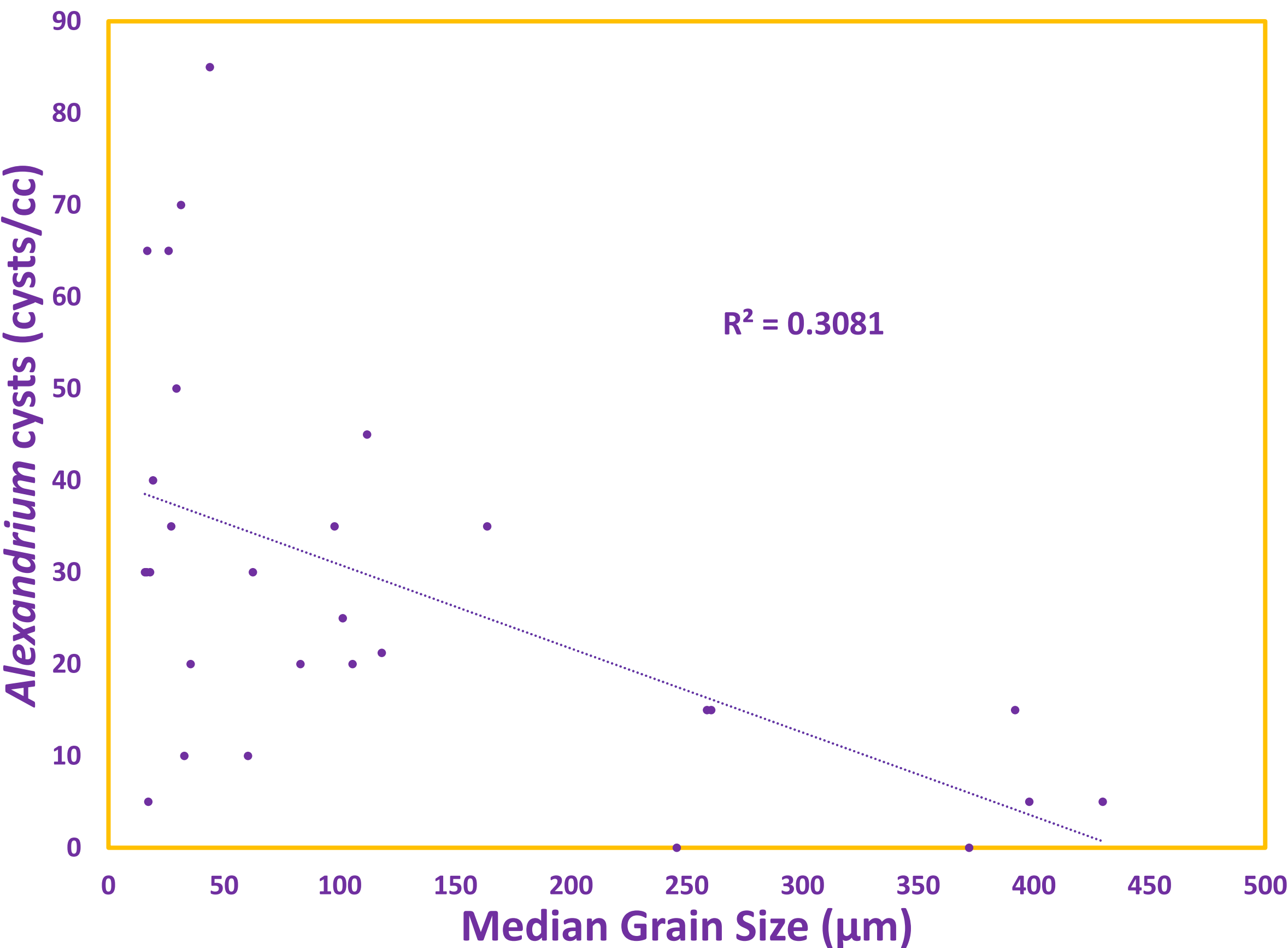
The presence of *Alexandrium catenella* harmful algal bloom cysts in Port Gardner, WA in 2019



Caitlyn McFarland, Julie Masura, Cheryl Greengrove

- Introduction
- Harmful algal blooms of the dinoflagellate, *Alexandrium catenella* cause paralytic shellfish poisoning in the Pacific Northwest
 - This study was conducted during 2019 as an effort to quantify the amount of *Alexandrium* cysts in Port Gardner near Everett, WA. There has not been a prior extensive analysis before by UWT for harmful algal blooms within in this bay.
 - Information from findings will be given to the Department of Ecology’s PSEMP monitoring group.

Results

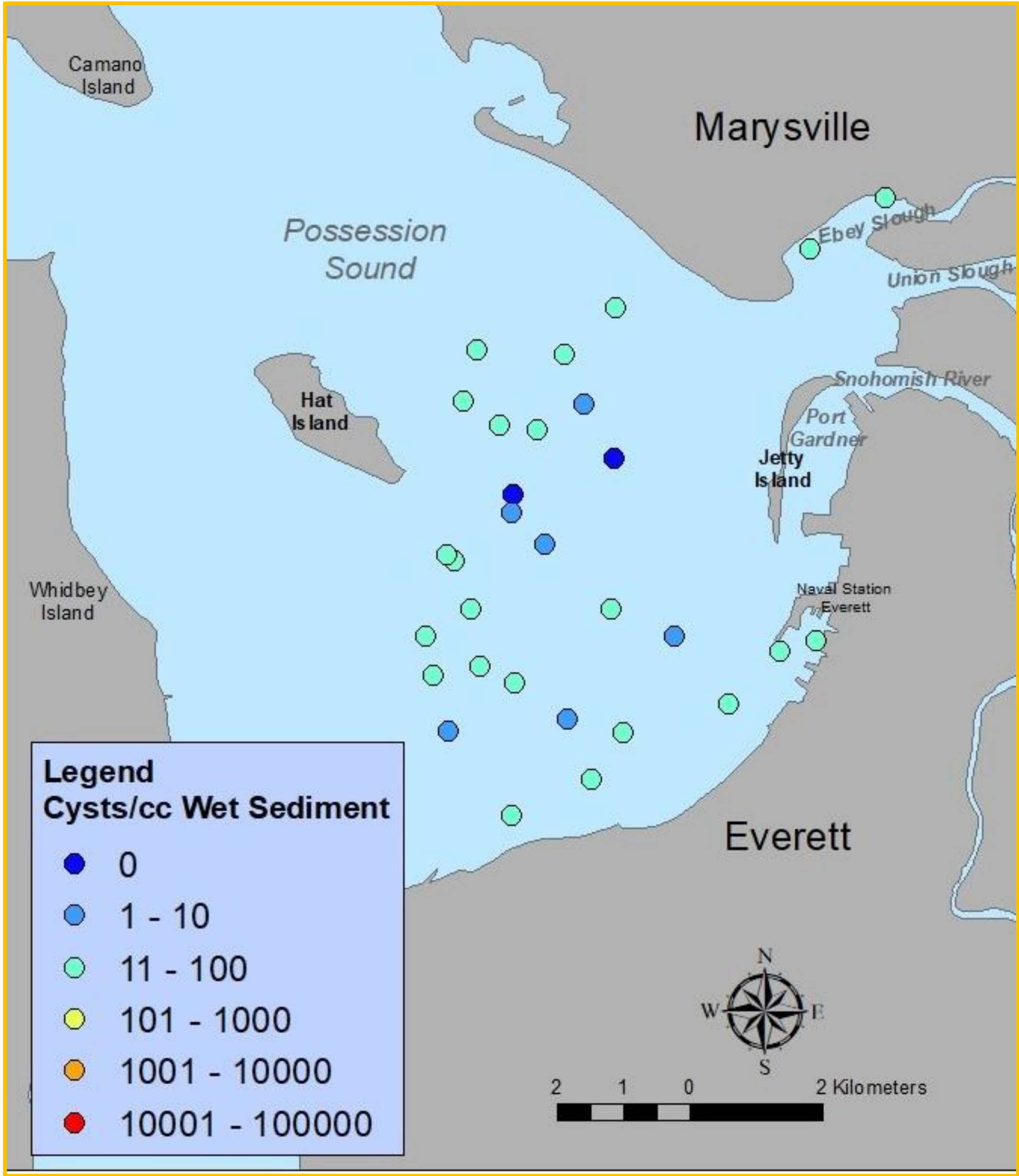
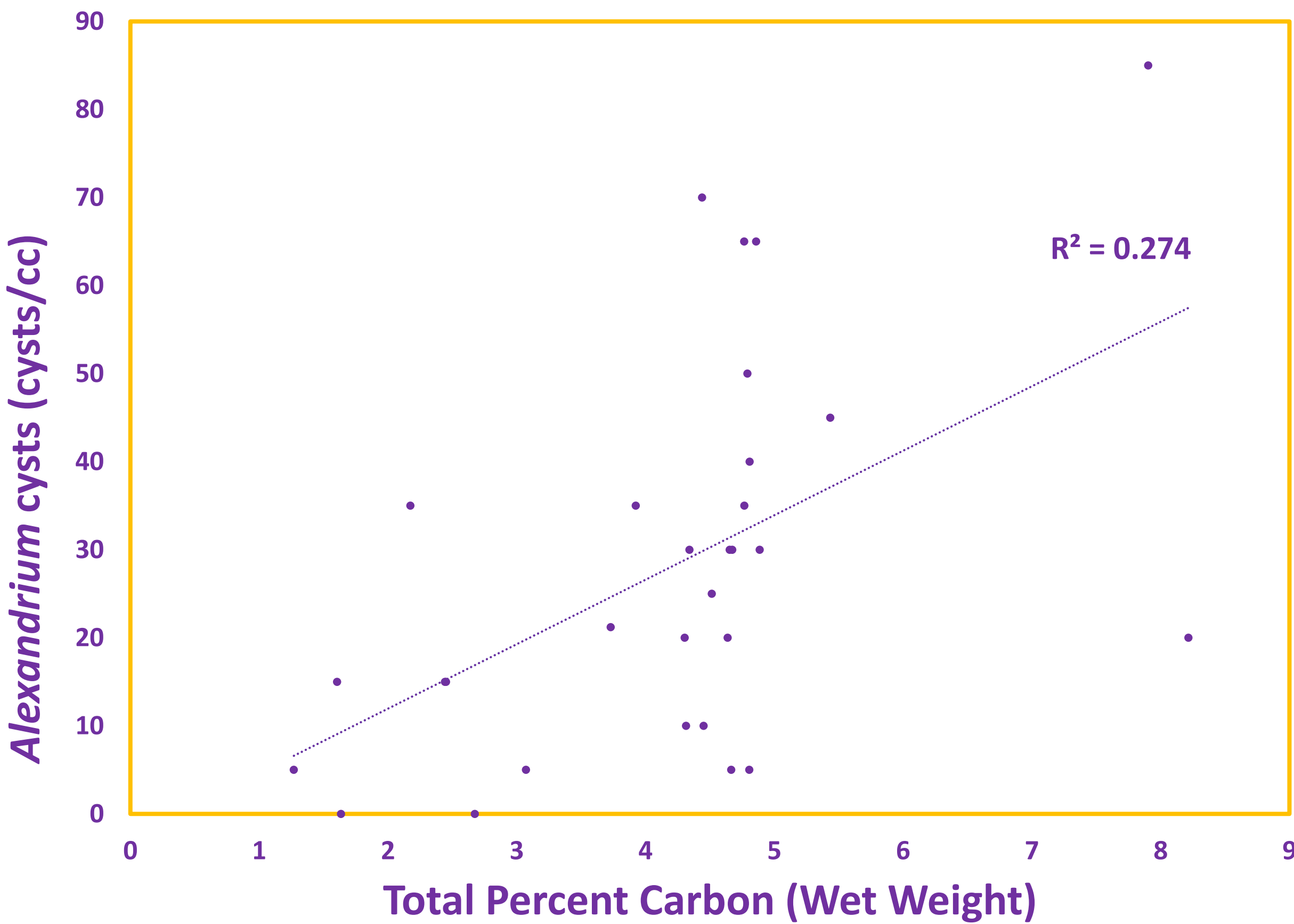


Above: Median Grain Size vs Cyst Count

- A correlation coefficient of 0.3081 was found for median grain size vs wet cyst quantification.
- A correlation coefficient of 0.2152 was found for total organic content vs wet cyst quantification.

Alexandrium catenella cysts were found at all but 2 stations. The minimum average wet cyst count was 0 cysts/cc at 2 stations east of Hat Island. The maximum average wet cyst count was 85 cysts/cc at a station next to Naval Station Everett. The average wet cyst count for all stations was 28 cysts/cc.

Below: Total Organic Carbon vs Cyst Count.



Above: Map of Port Gardner Stations and Cysts/cc

Discussion and Conclusion

- Port Gardner contained low amounts of *Alexandrium catenella* cysts and vegetative cells in 2019 at most sample sites. A consistent presence of *Alexandrium* cysts indicates a need for continued monitoring in this bay.
- When compared with TOC and PSA data, significant correlations were found between cyst quantification and organic content/particle size, contrasting other studies in 2019 within Puget Sound.
- Port Gardner sediment is considered contaminated from historic oil discharge, lumber operations, and various mills/factories along the Snohomish River. It is unclear whether the contamination of the sediment influences *Alexandrium* cyst presence.
- Future study of harmful algal blooms throughout the region will continue annually while the organism is still present in Puget Sound waters.

Sources

For more information:
jmasura@uw.edu



Acknowledgements

➤ Thank you to Danny Dyer and for running the PSA analysis for this project