

Project goals included:

- Gaining an understanding of the causes of excess sea lettuce growth and its associated odor problem.
- Helping watershed residents understand the problem and what, if anything, they could do to alleviate it.
- Assessing the health risk posed by hydrogen sulfide (H₂S) gases from the decomposing seaweed.

A steering committee of local Dumas Bay residents, city officials, and Ecology staff met on a regular basis to help plan efforts for the grants.

The management grant provided education and outreach to watershed residents. The city held a Natural Yard Care Workshop for residents in the Joe's Creek and Lakota Creek watersheds to provide much needed education to residents about best management practices for their homes. It purchased portable air monitors and placed them at four residences along the beach to detect any presence of H₂S. The city developed notification procedures in case H₂S levels failed meet health standards.

The research grant consisted of collecting algae from the three outlet streams that flow into Dumas Bay; comparing sea lettuce samples from different areas in Puget Sound; and performing an environmental audit of the Twin Lakes Golf Course.

Milestones and outcomes

Dr. Timothy Nelson from Seattle Pacific University led the research grant and has been studying the effects of the sea lettuce throughout Puget Sound. Dr. Nelson concluded that Dumas Bay has a limited amount of nitrogen and therefore additional nitrogen inputs to the bay would result in excess algal growth. Sampling stations at the mouth of Joe's Creek and Lakota Creek (near the effluent of the sewage treatment plant) revealed high levels of nitrogen-based fertilizers, which may be a primary contributor to the amount of sea lettuce present in Dumas Bay.

Preliminary findings however, showed that Dumas Bay is not unusual in the amounts of algae compared to other areas in Puget Sound. What does make Dumas Bay unique, however, is that there are three streams that flow into the bay that help the algae stay moist when the tide is out, thereby keeping the algae viable and allowing it to grow and accumulate nitrogen. Twin Lakes Golf Course was also noted as being a significant contributor of nitrogen, according the published environmental audit report by Herrera Environmental.



Photo by Jacinda Howard, The Mirror

The Dumas Bay Saltwater Algae Management Project ended on June 30, 2011. During the project, the air monitoring stations along the shoreline detected no increases in H₂S. Federal Way SWM, however, remains committed to the project and will continue to consult with Washington State Health and Emergency Management in documenting future H₂S levels, and maintain notification procedures when human health is at risk. In addition to the city of Federal Way, local agencies and residents remain active in the project and will continue to help assess the amounts of sea lettuce and H₂S present in Dumas Bay.

The city of Federal Way will also continue to engage all participating agencies and residences to help provide new information and help protect the overall health of Puget Sound.

Partners

Participants involved in the Dumas Bay grants include the Washington State Department of Ecology; Dr. Timothy Nelson, Ph.D.; Will Appleton, P.E., City of Federal Way Surface Water Manager; Dan Smith, City of Federal Way Surface Water Manager; Hollie Shilley, City of Federal Way Water Quality Specialist and NPDES Coordinator; and the Dumas Bay Steering Committee.

Contact

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