



Funds Distribution Report

Recipient Organization:
Whidbey Watershed Stewards

Address:
P.O. Box 617
Langley, WA 98260

Contact:
(360) 579-1272
<http://www.whidbeywatersheds.org>

Organization's General Goals:

Whidbey Watershed Stewards is working with the Whidbey Island community to promote watershed stewardship, habitat enhancement, and environmental education for all ages. Whidbey Watershed Stewards promotes nearshore and watershed health by linking water, land, wildlife and people on Whidbey Island through education, research, and restoration.

Date of Award:	Level:
2017 Q4	\$2,501 to \$5,000

For more information, please read the attached report from Whidbey Watershed Stewards.

8802 27th Ave NE
Tulalip, WA 98271

TulalipCares.org

Tulalip Charitable Fund Grant Report – Year 2018 – 2019 – Q4 2017 14.2

Whidbey Watershed Stewards (whidbeywatersheds.org)

Rick Baker, Executive Director

Amy McInerney, Director - Education

Langley Middle School Oceanography Program

This year we made some adjustments to our program due to budget restraints and logistical issues with the school district. Mainly, with the 6th and 7th grade our outside, plankton and water chemistry sampling shifted more to a staff collection in the morning and take to the classroom for the students to analyze. The students still got an experience collecting the samples themselves initially, after, due to bus costs and logistical issues, staff collected the samples, students did the analysis in their classroom. As a long time, informal educator, I wasn't totally happy with this trend, but, ultimately, felt we introduced them to scientific concepts about earth/ocean systems and increased an appreciation for the environment, reinforcing their knowledge in the process. Actually, in the 7th grade I think our efforts were more effective. We spent a lot more time than we used to on graphing and interpretation of the data. At the end of the year, students, when prompted, demonstrated a higher awareness and understanding of the current environmental threats in the Salish Sea. So, our shift to the classroom had an unanticipated outcome, a marked increase in critical thinking and 21st century skills from previous years.

With the 6th grade we focused on biological limiting factors. This and studying plankton adaptations still seems to be the best way to introduce oceanography to students. One of our most successful activities continues to be when students have to design their own plankton using bits of sponges, toothpicks, clay and paper clips, the goal, their design must float in a tank, mid water, not sink or surface. It becomes a competition, students love it. We still look at plankton each month and chart changes in population makeup winter to summer, tracking the diatom bloom we see in the spring. Also, we introduce the relationship between the living and nonliving ocean. We get into all of this in more depth with the 7th graders. These students look at the difference in sea water chemistry from surface to bottom and a large portion of our analysis focused on ocean acidification.

In addition, we introduced the 7th grader to the webpage for the Pacific Northwest Regional Ocean Observing System (NANOOS) who manage the buoys and gliders within the Puget Sound that collect the same data the students collect at the marina. Through this process they learned about remote sensing, buoys and robots (gliders), computer modeling, in other words - Technology. Students used their data and the buoy data for a science project they present in class at the end of the year.

This year the 8th grade students designed and built their own "student buoys" which they deployed off the Langley Marina. The buoys had data loggers that recorded temperature and light penetration in the harbor over a period of one week. Students retrieved and downloaded data into their lap tops. Later, in the classroom we graphed and analyzed the data. Eighth grade students also built their own hydrophones. After we tested them in the lab, we spent a morning at the marina listening to the sea, we were able to record some boats leaving the marina using our cell phones. Part of the curriculum for this project focused on the way boat traffic noise affects Orca inability to use their sonar to hunt in the Salish Sea with the boat traffic increasing each year.

For the 6th graders we ended the school year aboard a research vessel. Students collect plankton, learn navigation and did water chemistry on the Salish Sea.

Evaluation

Anecdotal - All teachers, educators and volunteers involved in this program observed student develop a mastery of the subject matter and an increased sophistication in the level of questions students asked. Also observed was an elevated level of excitement of the students, adults and teachers who participated in the program.

Our Ocean Awareness Program is delivered to approximately 200- 6th, 7th graders, 45 - 8th graders and about two-dozen adult volunteers, teachers and chaperones over a period of a school year. In addition, many of these students have come up through our environmental program at our Outdoor Classroom watershed program starting in kindergarten, attending every year, culminating as graduates of middle school ocean program.

