

Tulalip Charitable Contributions Funds Distribution Report

NAME OF AGENCY:	Seattle Aquarium Citizen Science Program
ADDRESS:	1415 Western Avenue, Seattle, WA 98101-2051
CONTACT:	(206) 838-3917; www.seattleaquarium.org
GENERAL GOALS:	Inspiring Conservation of Our Marine Environment, is reflected

ENERAL GOALS: Inspiring Conservation of Our Marine Environment, is reflected in everything we do-exhibits, events, conservation and education programs, research activities and more. This important work wouldn't be possible without support from our community, members, staff and volunteers.

SPECIFIC USE FOR THIS AWARD:

With your generous gift, Citizen Science held the 1st Annual Marine Conservation Forum at Seattle Aquarium in late May, 2012, to celebrate our successes and discuss conservation concerns with high school students, community members, elected officials, and scientists.

In 2012, despite the continued economic doldrums and fewer available resources for schools, Citizen Science served 450 students, 14 teachers, two University of Washington graduate GK-12 program instructors, one volunteer and 10 Aquarium staff who participated in the field program in 2012. The 13 participating high schools reflected ethnic and economic diversity in the greater Seattle area, with 70% of public schools reporting 40% or higher participation in USDA Free or Reduced Lunch program. The Muckleshoot Tribal School and Chief Kitsap Academy do not participate in the USDA lunch programs, but are located in low-income Tribal communities in Puget Sound

For more information regarding the specific uses of the award, see the following pages from The Seattle Aquarium.



In 2012, despite the continued economic doldrums and fewer available resources for schools, Citizen Science served 450 students, 14 teachers, two University of Washington graduate GK-12 program instructors, one volunteer and 10 Aquarium staff who participated in the field program in 2012. The 13 participating high schools reflected ethnic and economic diversity in the greater Seattle area, with 70% of public schools reporting 40% or higher participation in USDA Free or Reduced Lunch program. The Muckleshoot Tribal School and Chief Kitsap Academy do not participate in the USDA lunch programs, but are located in low-income Tribal communities in Puget Sound.

Outreach activities, which included surveying 11 public and two tribal beaches in King, Kitsap, and Snohomish counties, averaged 20 contact hours per student. The high-quality data students generated was made available to County and State resource agencies, as well as to the general public.

Perhaps the best example of our success this year has been our partnership with marine conservation stakeholders and community members in the greater Puget Sound. Citizen Science held the 1st Annual Marine Conservation Forum at Seattle Aquarium in late May, 2012, to celebrate our successes and discuss conservation concerns with high school students, community members, elected officials, and scientists.

The Marine Conservation Forum featured a panel of community members who each gave a 3-5 minute presentation on Puget Sound marine conservation from their personal perspective. Community members included: Mike O'Brien, Seattle City Council; Shiro Kashiba, local author and sushi chef; Betty Pasco, Suquamish elder and artist; Nathan Brown, Cedar River Council and King County Department of Natural Resources; and Paul Williams, fisheries biologist for the Suquamish Tribe. Students from the Citizen Science program also gave presentations on their marine conservation concerns, and interacted with community members and the audience through question and answer sessions.

The forum also featured Ramon Stephens, minority recruiter for the University of Washington, who discussed options for college and how students can participate in marine conservation through the arts or other career paths. Ramon is also a performance artist, and composed original music about marine conservation that he performed at the forum. Students from the Suquamish Early College High School showed a short documentary film they'd made, "Our

Home," at the forum followed by a student representative who talked about the students' efforts to raise awareness of the effects of ocean acidification on local coastal Tribes.

These successes did not happen without some real challenges, however. The Citizen Science program expansion to 13 schools in 2011 more than doubled the staffing requirements due to trainings—we wanted to ensure the high quality of our teaching/learning experiences, and at the same time maintain quality control of data gathering on the monitoring days.

Though our goal for program sustainability is to retain schools and teachers, it is inevitable that teachers move positions within districts as well as change the courses they teach from year to year. Changes in school faculty and course offerings mean that these new teachers need to be trained to get up to speed. This also increases the cost of program staffing. In 2011-12, we had two new teachers and one new school as teachers' positions changed for the school year. Additionally, teachers who had to leave the program in 2011-12 would like to return to the program in 2012-13 so we will have to adjust our program to accommodate additional students next field season.

Nature provided another challenge, because monitoring events are at the mercy of the tide schedule. The low tides that occurred early in the year unfortunately overlapped with spring vacations, state testing, and athletic events; later in the spring, during April and May, we had very limited low tide days, so field days extended into the second week of June. One of the major challenges is scheduling field days at the end of the school year and taking students out of school from other classes. Some students had difficulty obtaining permission to participate in field trips away from school.

This is a challenge we face every year, but with additional schools, it makes logistics even more difficult. We have now reached capacity for the program and will have to be strategic in our programming if we are to continue with 13 schools or expand numbers of students served.

Finally, with geographic expansion, we also spent more time and resources on travel to the various schools and monitoring sites. Although we planned for this, we understimated the time it took due to traffic congestion, ferry schedules, and coordination of staff transportation. It all worked out in the end, but it is very challenging to schedule across widely dispersed venues and among part-time temporary staff.

Despite these challenges, this is the best year we have had so far for our program!

Citizen Science couldn't happen without the partnerships and collaborations we have formed with various schools, organizations and agencies across Puget Sound. These include:

Suquamish and Muckleshoot Tribal Fisheries, who directly help with projects; King County Department of Natural Resources and Parks, which accepts data and provides advisement on beach conservation issues;

City of Seattle Parks and Recreation, which accepts data and provides beach venues; City of Burien, City of Mukilteo, City of Des Moines , which provide beach venues; Washington Department of Fish and Wildlife (WDFW), which provides scientific advisement;

Seven School Districts and 13 schools, which provides student and teachers WSU Island County Beach Watchers Program, which assists with data management; University of Washington/WDFW NatureMapping Program, which accepts data; University of Washington GK12 program, which places graduate students in classrooms to work with our program and help participating high school students.

All of these collaborations are important to the program, and we will continue our relationships with these organizations throughout the life of the project (to 2020).



Citizen Scientists Identify the Habitat

Citizen Science Final Report

Citizen Scientists establish plots along the profile line





Citizen Scientists Set the Profile Line

Citizen Science Final Report



Citizen Scientists from Mukilteo High School get a lesson in identification at the Seattle Aquarium before hitting the beach.



1483 Alaskan Way, Pier 59 Seattle, Washington 98101-2015

206.386.4300 www.seattleaquarium.org

BOARD OF DIRECTORS

OFFICERS

*Randy Tinseth Chairman *James C. Gurke Immediate Past Chair *Neal Holland Treasurer *Susan Gates Secretary **Robert W. Davidson President & CEO

PAST CHAIRS

Ted Ackerley John C. Blackman Dan M. Guy III J. Terry McLaughlin *Stuart T. Rolfe *George V. Willoughby Jr.

DIRECTORS **William C. Arntz *Mary L. Bass

*Gini Beck **Dianne Bell Kevin Blair** **John R. Braden *Lesley Canfield Ken Collins David D. Dicks Patricia J. Dill **Bob** Donegan *Will Einstein Dennis Forsyth Pam Guinn J. Brian Hill *Neal Holland Linda K. Johnson *Stephanie Kornblum Mark E. Kramer Katherine A. Krogslund Erin J. Letey Lisa C. Luther Melissa Mager Karissa Marker Greg Massey Steve Moore Gregory P. Owens Robert W. Power Casey J. Schuchart Gary S. Smith *Gary T. Smith **Amy Sprangers** Linda Springmann Eric V. Steinwinder Scott C. Trethewey Alex Washburn Thomas J. Weiland **Christopher Williams**

*Executive Committee **Ex-Officio March 5, 2014

Marilyn Sheldon Tulalip Tribes Charitable Fund 8802 27th Avenue NE Tulalip, WA 98271

Dear Ms. Sheldon:

l am writing today to thank you and the Tulalip Tribes Charitable Fund for your generous grant in support of marine conservation education.

We are pleased to inform you that our Youth Ocean Advocates Program enjoyed record participation this year offering young people a unique opportunity to engage in ocean conservation activities through service-learning and volunteering. Our Citizen Science Program has grown to 14 high schools reaching more students than ever in hands-on inquiry-based marine education. Our Beach Naturalists inspired and educated thousands of visitors at local beaches throughout King County.

We are grateful to the Tulalip Tribes for your support over the past year, and for everything you do to make the Puget Sound region a better place to live.

The dem

Sincerely,

Robert W. Davidson

President & CEO

To les



Date: March 5, 2014

Report: Q4 2012 14.2

URL: <u>www.seattleaquarium.org</u>

In February, 2013, the Tulalip Tribes Charitable Fund generously awarded the Seattle Aquarium a grant to support our marine education programs. We are pleased to provide you with this final report detailing our activities this past year.

Citizen Science

Citizen Science, a hands-on inquiry-based marine education program, supports regional educational and environmental conservation priorities in the Pacific Northwest. Using the intertidal environment of Puget Sound, the program gives diverse and disadvantaged high school students meaningful watershed experiences. Students monitor, gather and communicate scientifically significant data, sharing their results with schools, local governments and environmental agencies. The program empowers students to become effective community leaders prepared to take action to resolve issues facing the Puget Sound ecosystem and to make personal behavioral changes that help the environment.

In 2013, nearly **300 high school students** participated in the Citizen Science program. The schools involved reflect the socio—economic and ethnic diversity of the general population of the Puget Sound region. The program served **14 Seattle high schools**, including two tribal schools, several inner city schools, and many low-income students in the community.

Each Citizen Science student participant received **10 hours of Aquarium staff instruction** at the Seattle Aquarium, in the field and in the school classroom. Students **collected nearshore monitoring data on 16 area beaches**. The high-quality data students generated was made available to County and State resource agencies, including King County, City of Seattle, Washington Department of Fish and Wildlife's *NatureMapping for Beaches*, as well as to the general public.

Over the summer, the Aquarium partnered with the BEACON Center at the University of Washington to offer BEACON internships to **6 outstanding Citizen Science high school students**. They had the unique opportunity to learn about green chemistry and sustainability

Seattle Aquarium Final Report Q4 2012 14.2

practices, while helping academic researchers and Mt Baker Bio develop molecular genomic methods for monitoring biodiversity. Over their 6 week internships, these students completed cutting edge research projects to better understand environmental effects on populations of aquatic organisms.

In August, the BEACON interns gave their own symposium at the University of Washington and gave presentations on the following topics:

- Environmental effects on beach health and oyster gene expression Etilet Maipi & Ahmed Ali Temporal.
- Changes in invertebrate intertidal communities in a disturbed area in Puget Sound Maighread Clark & Maddy Schneider.
- Molecular identification of chlorophyte communities in Puget Sound -Tierra Schanbeck & Robert Hicks.

Through Citizen Science, teachers and scientists build relationships to gain a new understanding of how to achieve respective goals while seeking different outcomes. Teachers are provided opportunities for additional professional development in marine science through summer workshops, networking, and year-around Aquarium events where they work directly with scientists and resource managers.

In early August, a collaborative team from the University of Washington and the Seattle Aquarium worked with Louise Mead from the BEACON Center at the University of Washington to host a workshop for **16 teachers from communities in rural and coastal Washington and Puget Sound**. The weeklong teacher workshop – *Think Evolution* - focused on the connection between evolutionary change and the marine environment. During the workshop, teachers and instructors visited the intertidal environment to implement field investigations and learn about the diversity on the coast.

Youth Ocean Advocates

The goal of the Ocean Advocates Program is to **create an ocean literate citizenry prepared to advocate for the conservation of the marine environment**. The Youth Ocean Advocates Program is based in several research studies that look at the influence young people have on their elders; the effect of volunteering on students' academic success; and the efficacy of service-learning in developing young people's sense of connection to their communities, engagement in social and political change, and future philanthropic activity.

By offering young people the opportunity to engage in sustained conservation activities that allow a progression, both in the amount of involvement and the level of knowledge acquired over time, we are educating both the next generation of ocean-literate citizens and the adults in their lives. And by engaging youth in activities that encourage—indeed, demand—critical thinking, commitment, and mastery of knowledge, we are contributing to the academic and social success of the youth who participate.

In 2013, highlights of our Youth Ocean Advocates Program include:

- Launched our "Creativity Inspiring Conservation" program. **Youth artists created 44 pieces examining ocean conservation issues**. They worked with 8 professional artists to create their pieces. Hosted an opening reception at the Aquarium, featuring the youth's work, with over 200 people in attendance. Work can be viewed at <u>http://www.seattleaquarium.org/creativity</u>.
- Implemented an elective "Continuing Education" series for youth interpreters and campaign volunteers that allowed youth to explore topics we haven't traditionally examined. Examples of these opportunities included a "Photo Night" with professional photographers teaching youth how to shoot photos in an Aquarium setting, a movie night where we discussed the film Blackfish, a public speaking class, field trips to the Elwha Dam and the University of Washington Fish Collection, and much more.
- **269 youth** were involved as either youth interpreters or youth campaign members in 2013.
- Youth Campaign hosted **two beach cleanups on World Ocean Day**, in addition to participating in habitat restoration of the Duwamish River.
- Youth volunteers donated \$5,000 to conservation organizations with money raised from their Facepainting Booth.
- Youth served over 29,000 hours in 2013, setting a record for number of hours served by youth volunteers. Youth volunteers served 30% of the total volunteer hours at the Aquarium in 2013.
- **10 youth** participated in the Northwest Zoo and Aquarium Alliance Youth Summit at Oregon Zoo, with youth from five zoos and aquariums sharing their work.

Beach Naturalists

For thirteen years, our **Beach Naturalists** have been on the frontlines of the Aquarium's efforts to educate the public about protecting the health of the Sound. Aquarium-trained volunteer naturalists communicate with thousands of visitors to our local beaches every year—visitors who leave a little wiser than when they arrived.

In 2013, **221 Beach Naturalists served at 11 Beaches throughout King County over 19 low tide days between May and August**. Naturalists were also available at the Hiram Chittenden Locks on June 29, July 6 and July 27 to conduct salmon conversations with visitors in partnership with Friends of the Cedar River Watershed. In all, Naturalists engaged in **52,266 conversations with Beach visitors—4,498 of which specifically addressed issues pertaining to salmon and the nearshore**.

Of the 221 volunteer Naturalists that we trained this year, 75 were new and 146 were returning—a 66% return rate. We also had 15 young people under the age of 18 who participated with their Naturalist parents.

Seattle Aquarium Final Report Q4 2012 14.2

We thank the Tulalip Tribes for your generous partnership as we continue inspiring conservation of our marine environment in hopes of a better future.



Citizen Science Student Symposium Presentation



Citizen Scientist Interns at the University of Washington



Citizen Scientists Monitoring

Seattle Aquarium Final Report Q4 2012 14.2



Beach Naturalists



Creativity Inspiring Conservation Artwork, Miguel



Creativity Inspiring Conservation Artwork, Shyla