

Puget Creek

RESTORATION SOCIETY

Winter 2008

The Lowly Barnacle Plays an Important Role in the Marine Food Chain

by Christina Kuntz

Fun Events

Puget Creek

Restoration Work

2nd Saturday of each month

9:00 a.m. to Noon

Meet at 3505 North Alder Way.

Parking available along Ruston Way and west side of Alder. Walk half of a block on N. Alder Way to the entrance to Puget Park.

Look for PCRS banner.

We will provide refreshments, work boots, and gloves.

Parks Appreciation Day

April 19, 2008

9:00 a.m. to Noon

Earth Day Event

April 26, 2008

9:00 a.m. to Noon

This issue

Student Youth Job Training Internship	2
Calling Future Board Members	2
Student Volunteerism	3
Join PCRS!	4

Barnacles are tiny, little organisms about 2-5 cm long. They are often easy to overlook because they are so small, and thus may seem insignificant. But think again! These little organisms are no weaklings and have been affecting the earth's marine environment for millions of years. Rocks found that are 150 million years old reveal the presence of these little creatures, and the ancestors of barnacles have existed more than some 400 million years.

Looking more closely at an actual barnacle, one will find that it has many details that have enabled it to have such a long survival history. A barnacle is encircled by five to six plates that form a cone-shaped shell and four additional plates that are capable of opening and closing the top of this shell. They are found attached to a variety of different places, including tide pools, large rocks, ships, or even other organisms where they attach themselves to hard surfaces by means of an extremely strong cement. This cement has been found to be stronger than epoxy, does not melt or crack at extremely high and low temperatures. Research is being conducted on possible



ways of manufacturing this cement. Barnacles are also being researched in hopes



of possibly finding alternative ways of filling teeth, mending broken bones, and repairing broken ships. Once the barnacles have securely attached their heads to their new home, they wait for food to float by. When they are underwater, the plates covering the top of their shell wall open, allowing twelve feathery barbed legs called cirri to sweep the water above for possible food sources. As the water flows by them, the cirri engage in a process called filter feeding, where they absorb oxygen and strain plankton, their main food source. Once the cirri bring the plankton particles back into the shell, mouthpieces in the shell scrapes off the food particles. As the tides go out and they are above water, the barnacles hide in a hard shelter to conserve water.

When a barnacle's fertilized eggs eventually hatch into larvae, they leave the shell of their parents and go into the water for the first time by themselves. They spend the rest of their youth swimming around. During this swimming period the barnacle has no resemblance to its adult form, and solely consists of one shell and six cirri. After shedding its shell, in a process called molting, it finds a new

(Continued on page 2)

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The Puget Creek Restoration Society protects, enhances, and restores the Puget Creek Watershed and similar streams, wetlands, and green spaces. We serve the South Puget Sound communities and invite their participation through hands-on restoration, research, education, advocacy, and by promoting a sense of stewardship.

*A tax-exempt 501(c)(3)
nonprofit organization*



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The Lowly Barnacle (continued)

(Continued from page 1)

home where it usually stays for the rest of its life. Here it uses its incredibly strong adhesive to secure itself to a hard surface. Once it is secure it undergoes a process called metamorphosis where it eventually develops into its true adult form.

Barnacles are a naturally occurring organism in Puget Sound. Often, they are seen as pests to those with boats because they are so hard to get off once they latch on. However, the barnacles are an important part of the larger food chain. Predators of barnacles, such as worms, snails, starfish, fish, and birds, all often rely on barnacles as a key food source. If the food chain is altered in anyway it affects not only one animal, but also all those connected to it through the food web. Humans today have played a major role in alternating the food web in ecosystems all over the world. Washington State, particularly around Puget Sound, has one of the highest rates of human population increase in the United States. Recently, research has been done on the affects of humans and what needs to be done in order to conserve marine ecosystems, like those in which barnacles play a key role. Growth and development in the region are threatening the health and preservation of this complex and fragile ecosystem. Pollution is one of the main factors killing not only barnacles but other marine life as well. We often hear of the affects on seals, salmon, and other animals, but tend to overlook the affects on smaller species such as barnacles. Because of the increasing amount of people in the region, oil spills put dangerous chemicals into the waters, toxic contaminants continue to rise, and spreading pavement increases water pollution through the storm water runoff. Greenhouse gasses are causing higher water temperatures all over the world,

including the Puget Sound waters. Because more snow is melting in the mountains, summer stream flows are at an all time high. Reports say that 59 percent of Puget Sound's fresh and marine waters have been impaired. However, because of local governments and organizations, new pollution controls have been made, efforts have increased in keeping toxic mercury out of the waters, and programs are improving for managing storm water and septic systems. Often it may seem like the easiest thing to do is to watch as people in the community around us make conservation efforts; however, the importance for everyone to become involved in conserving Puget Sound is apparent now more than ever.

Calling Future Board Members!

Now is the time for you to sign up for next year's board positions. If you are interested, please contact us for an application. Board meetings are the third Monday of each month, 6:30 p.m., at 702 Broadway Suite 101, Tacoma.

ATTENTION Teachers and Students!

Hands-on Learning Opportunity

Puget Creek Restoration Society is pleased to offer high school and college students an opportunity to improve their technical and social skills through the Student Youth Job Training Internship (SYTI) program. Participants in the approximately 60-hour volunteer program gain valuable experience through involvement in a variety of activities such as field work, office work, and outreach efforts.

For information, please contact
Annie Watkins
(253)779-8890

Student Volunteerism and Community Involvement

Observations of a Sophomore and a Senior at University of Puget Sound

by *Grace Oppenheimer and Mark Rosasco*

College: most envision it as a time for bad cafeteria food, all night paper writing, and that desperate want to sleep in and skip your classes. A time to be on your own; the opportunity to discover yourself and what you want and need in life. In the midst of these self-centered stereotypes, people forget the students who are volunteering, working, and giving back to their community. The Puget Creek Restoration Society gives us that chance to make a difference, ditch the stereotypes, and get involved through their volunteer programs.

On Mondays, Wednesdays, and Fridays, 40 students fill a classroom preparing for Biology 101 at the University of Puget Sound. About 5% of these students are planning on becoming a biology major. This class focuses on getting these students involved in the community in hopes of sparking an interest and appreciation, despite their lack of understanding of Punnett squares, Darwin, or chlorophyll. One way of doing this is by getting the students out in to the wild of our community: studying the flora and fauna of parks near to and far from our campus, visiting and discussing ex-situ programs such as zoos, and volunteering with local environmental organizations such as the Puget Creek Restoration Society. This exposure to our community is vital.

Student involvement is one of the best ways to help improve our local community and conservation efforts. These students are willing, hard working, and dedicated to their cause. Students who are volunteering are adamant on leaving their footprint through their work and they are fortunate to have willing

organizations giving them the resources and opportunities that they need to contribute to their society. These organizations recognize the value of involving student leaders in the community and in their programs. Students can be an indispensable resource to these organizations through their dedication and hard work, but the organizations are in turn indispensable in the impact they have on students.

The value of volunteering is not lost on student leaders. It is more than something that is added to a resume, volunteering reinforces the sense of community and belonging which every student is trying to discover for themselves. It gives them a sense of completion and satisfaction. The collegiate experience that is devoid of selfless volunteering is empty and lacks pride and accomplishment. Students who actively contribute to their community ultimately have greater satisfaction with their time at college and form better bonds and memories.

In addition, faculty recognizes the value of volunteering as well. Giving back has evolved from an extracurricular activity to an extra credit assignment to an expectation. Professors have worked volunteering into their curriculum and see it as a vital part of

the learning process, no matter their field of study. Professors have more and more urged and required students to get involved as they acknowledge both the pedagogical and environ-

mental benefits of active students. The students' experiences enhance the classroom environment through various accounts. Through real life interaction, students apply theoretical ideas and concepts to actual situations. Volunteering raises awareness and promotes more discussion and debate amongst students and faculty.

Working with Puget Creek Restoration Society affords students the opportunity to become more involved in their community. This organization helps students give back by involving them with various conservation and restoration projects within the region. Opportunities such as stream clean up, office assistance, erosion prevention, and rebuilding of destroyed habitats are examples of the projects in which students can contribute to their community. These projects, although often labor intensive, involve the students with local issues and problems and help them become involved with other local leaders and volunteers. The connections afforded by these projects are indispensable to students in their collegiate experience, and their willingness and dedication to improve the community is a valuable asset that should not be overlooked.

Starbucks Restoration Activity Volunteers on February 10, 2008



Join the Puget Creek Restoration Society

Note: The PCRS is a 501c(3) organization and your dues are tax deductible.

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ E-mail: _____

Membership Dues - Please choose one:

_____ Business - \$50/year

_____ Family - \$30/year

_____ Individual - \$20/year

_____ Work nine or more volunteer hours

_____ Other

Which of the following types of activities are you interested in? *Please check all that apply.*

_____ Office work

_____ Research

_____ Restoration activities

_____ Education/Outreach

_____ Legislative issues

_____ Salmon enhancement projects

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