After four sampling seasons spanning two years, 80 citizens representing all 12 counties bordering the US Salish Sea recently gathered at Fort Worden State Park to talk about micro-plastics in our marine waters and on our beaches.

**Micro-plastics! Are we kidding? Who cares about micro-plastics?**

You'd be surprised how many people care about small plastic debris floating around our oceans and the Salish Sea, sinking to the bottom or washing up on our beaches. Many people want to address the fact that ~25 million tons of plastics debris each year is accumulating in the environment worldwide (primarily in landfills, waterways, and oceans) hoping that we figure ways to reduce and eliminate this blight and threat to wildlife, human health and well-being.

The Port Townsend Marine Science Center (PTMSC), is working with volunteer groups around the region to learn about this issue in our home waters. We’ve all heard of the great Pacific Garbage Patch (Google it) and we’re hearing more and more about the threat of chemicals leaching from plastic containers or packaging into food, water and cosmetics. This is, to say the least, disconcerting. It was this concern that spurred PTMSC to establish a beach sediment sampling study in the US Salish Sea in 2008.

The study, carried out by citizen scientists under the supervision of PTMSC’s Jen Kingfisher and Nancy Israel, has two overarching goals: (1) to sample beaches around Puget Sound to determine how much and where micro-plastics are accumulating; and (2) to educate citizens about the issue of micro-plastics so that they can in turn educate their peers and community members.

**What is a citizen scientist and what is meant by micro-plastic?**

A citizen scientist is someone who is trained to use specific methods and procedures to collect information or data under the guidance of a scientist. Scientists used to do all their own research with the help of graduate or undergraduate students. Now, it is broadly recognized that trained volunteers can carry out many scientific procedures with accuracy and consistency, allowing scientists to gather and process more data. Additionally, volunteers want to help and be involved in research as a way of continuing their learning and community involvement. In the PTMSC micro-plastics study to date, over 600 citizen scientists have logged over 4700 hours.

Micro-plastic is a term used for small plastic bits in the size range of 5 millimeters (1/8th inch) or smaller. PTMSC picked this size range because of its potential for being ingested by marine life and because it is a size that beach cleaners tend to leave behind.
Summit keynote speaker, environmental scientist Dr. Joel Baker, walked us through some weighty plastics facts in a delightfully humorous manner. Featuring his current study in South Sound to develop sampling and quantification methods for documenting micro-plastics in seawater and in marine sediments, he presented some initial findings showing, yes, small plastic debris is floating on and below the surface of seawater in every area that he is investigating. Dr. Baker set the tone for the Summit by recognizing the mounting concern associated with the world’s use and disposal of plastics but stressed the need for creating a rational framework to evaluate the problem and impacts.

From there, we featured the work of all the volunteers over the last two years in the PTMSC study. Jen Kingfisher presented the methods and preliminary findings to date (see summary on page 3). The project volunteers then had the chance to ask questions which quickly evolved into a healthy citizen science discussion, wherein volunteers gave valuable feedback to PTMSC. This session represented the true heart of the project – people caring enough about the health of our marine waters to do something about it. Washington Sea Grant’s Citizen Science Specialist, Kate Litle, facilitated the session and listened closely, as did everyone. From the northwest reaches around the San Juan Islands to the southern inlets around Olympia, volunteers spoke up and deepened their commitment to this project.

The Summit also hosted a guest from the Chesapeake Bay area, Courtney Arthur, of the National Oceanographic and Atmospheric Administration’s (NOAA), Marine Debris Program. She provided a national overview of what professionals and volunteers are doing in the study and removal of marine debris. NOAA is using professional scientists to do beach sediment sampling on Chesapeake Bay that has similarities to our study. We all began thinking about the value of a national standardized approach.

One thing was clear to all – PTMSC is leading a one-of-a-kind program. Studying micro-plastic debris on beaches through a coordinated, 12-county effort, using volunteer citizen scientists, is unprecedented in this country. Our project is a first in this emerging area of concern. We basked in this knowledge for about five minutes and then rolled up our sleeves and began the discussion of where to take this research next.

PTMSC would like to thank our sponsors for their generous support.
Port Townsend Marine Science Center
Micro Plastics Beach Study, Preliminary Summary

Jen Kingfisher

Port Townsend Marine Science Center staff and volunteers, along with partnering community groups, have biannually sampled beach sediments from sandy beaches in all twelve counties bordering the US Salish Sea since 2008. The goal of this study is to characterize the spatial (and temporal) extent of plastics on US Salish Sea beaches.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fragments</td>
<td>Pieces of hard plastic</td>
</tr>
<tr>
<td>Foams</td>
<td>Polystyrene, insulation, etc.</td>
</tr>
<tr>
<td>Pellets</td>
<td>Pre-production plastics pellets (nurdles)</td>
</tr>
<tr>
<td>Films</td>
<td>Pieces of bags or wrappers</td>
</tr>
<tr>
<td>Filaments</td>
<td>Fishing line, rope or synthetic cloth</td>
</tr>
<tr>
<td>Cigarette Parts</td>
<td>Cigarette filters</td>
</tr>
<tr>
<td>Glass</td>
<td>Glass fragments and shards</td>
</tr>
<tr>
<td>Other</td>
<td>Rubber, metal and other debris</td>
</tr>
</tbody>
</table>

Table 1 – Categories used to describe types of debris

Sandy beaches were sampled based primarily on ease of access. During the first year (Fall 2008 and Spring 2009), 15 beaches were sampled, and the second year (Fall 2009 and Spring 2010), 32 beaches were sampled. At each beach, 7.5 liters of beach substrate were collected from three 1m² areas in the highest wrack line, the highest line of deposited debris. The substrate was placed through a series of two sieves, thus separating the material into “large” (5-20 mm) and “small” (1-5 mm) size classes. Natural material was discarded while the anthropogenic debris was sorted into 8 debris categories (Table 1), weighed and counted.

Data show variability on a number of different scales: variability over time such as, a beach that had significant debris one sampling, did not consistently have significant debris in subsequent sampling; variability on each beach such as, one 1m² might have a high debris count, whereas another 1m² on the same beach during the same sampling might not; and, there was considerable variability between urban and rural beaches.
Greater amounts of plastic, by weight and by count, were collected at beaches with more than 5 miles of fetch from the south. So far we have found no correlations with other geomorphological characteristics like drift cell properties, obstructions or broad backshores.

The strong positive relationship between small pieces of foam and large pieces of foam in a given 1m² indicated that large pieces of foam likely travel to beaches and disintegrate while on the beach.

If we assume that 1/3 of the 2,144km of US Salish Sea coastline is sandy, and a conservative 10% of debris is not in the highest wrackline, and that the average beach width is 25m, we can estimate that US Salish Sea beaches hold 6 metric tons of plastic, along with 3.4 metric tons of glass, cigarette butts and other debris, for a grand total of 9.4 metric tons of debris on US Salish Sea beaches.

Table 2 – Average weight (g/m²) for debris in each category at 12 sites for Fall 2008, 2009 and Spring 2009, 2010

<table>
<thead>
<tr>
<th>Category</th>
<th>Average (g/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Debris</td>
<td>3.896</td>
</tr>
<tr>
<td>Pellet</td>
<td>0.0167</td>
</tr>
<tr>
<td>Fragment</td>
<td>1.892</td>
</tr>
<tr>
<td>Foam</td>
<td>0.400</td>
</tr>
<tr>
<td>Filament</td>
<td>0.104</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>0.157</td>
</tr>
<tr>
<td>Glass</td>
<td>0.595</td>
</tr>
<tr>
<td>Other</td>
<td>0.656</td>
</tr>
</tbody>
</table>

We would like to thank our Partners!
Beach Watchers of Clallam, Jefferson, Island, Snohomish, Skagit and San Juan Counties
Kitsap Shore Naturalists
People for Puget Sound
Home Port Learning Center
Citizens for a Healthy Bay
Dungeness Spit Volunteers
South Sound Green
Saint Martins University
New Market Skills Center

Hands-on Summer Science Camps at the PTMSC

Coastal Explorers Day Camp
Ages 8-12 • July 5 – 9
Ready, set, explore! Spend the week examining the varied natural environments of beach, glacial bluff, forest, pond and meadow—a perfect camp for nature loving kids who want to explore it all!

Residential Whale Camp
Ages 9-13 • July 11-17
Spend an exciting week on Puget Sound with marine scientists and artists, who will take you into the world of whales—orca, minkes, grays, humpbacks and others—with fun activities that merge art with science.

Marine Biology Day Camp
Ages 9-13 • August 9-13
Dive into science! Spend a week discovering where marine animals live and what they need to survive life on the shore and in the sea—a perfect camp for budding marine biologists and kids who love exploring outside.

To register or for more information, go to www.ptmsc.org or call 360.385.5582, ext. 104.

Jr. Explorers Day Camp
Ages 5-7 • August 2-6
(Sorry! This camp is full.)
Teachers from around the state will once again in August have the chance to delve into Scientific Inquiry. Inquiry is the process that scientists—and students—use to learn about the natural world through exploration, questioning, making discoveries and searching for new understanding. This will be our third season running the program, and this year, in addition to our August workshop, we are offering a special session of the workshop for local teachers in June. We’ve been lucky to have support from the Jefferson County Community Foundation for our June workshop and from Discuren for our August workshop.

Our Approaches to Inquiry workshop is based on some exciting materials developed by the Institute for Inquiry, part of the Exploratorium in San Francisco. We’ve added some activities of our own that help teachers learn ways of using inquiry while exploring the beautiful environment here at Fort Worden State Park.

Approaches to Inquiry doesn’t hand teachers a set of lessons to use back at school. Instead they learn how to shift lessons they currently teach so that students have more decisions to make, more chances to ask their own questions and more practice figuring out ways to answer those questions. These changes can have a big payoff for students—with more responsibility they often become more motivated, independent learners.

Our workshops have received some wonderful testimonials, including this unsolicited comment from a teacher well into the school year: *I just wanted you to know I've had an amazing semester with inquiry. I really felt my students got a deeper understanding of concepts than they did before with the un-shifted labs.*

Approaches to Inquiry runs from August 17-21. It is open to teachers, grades 5-10. The cost, just $200, covers tuition, materials, and room and board at Fort Worden Conference Center. Teachers can earn credits or clock hours if they choose. For more information, call 360-385-5582 or visit http://www.ptmsc.org/education/teacher.html. We are still taking applicants!

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**Summer Lecture: Killer Whale Tales with Jeff Hogan**

**Aug. 7, 2010 at 2:30**

Follow Jeff as he falls asleep one night and dreams of becoming a killer whale. He follows the matriarch of “J pod,” and experiences the complex relationships whales share with each other and the environment around them. Waking from the dream, Jeff returns to the real world with a new curiosity and the desire to make a difference. The story is told through performance, slides, video and real orca calls.

Then participate in activities created to introduce you to current orca research. Identify orca whales, track their movements and learn basic whale behaviors. Gain a new understanding of these wonderfully complex animals.

Jeff Hogan started Killer Whale Tales in 2000 with the goal of bringing the living science of the field into classrooms and museums. Combining his interests of teaching, photography, science, psychology and theatre, Jeff has created a program in which participants experience the world as the animals around them do. Jeff brings over 20 years of education experience and eight years of orca research to his position.

Bring your friends and families! Free with the price of admission.
A great deal has been accomplished toward our dream of making a home for the skeleton of an orca, which was found dead near Dungeness Spit in 2002, carrying one of the highest loads of PCBs and DDT of any marine mammal ever tested. Our vision is to make an exhibit that will give voice to her story and be the educational centerpiece for discussing toxic contamination in the marine food web and what we can do about it.

PTMSC has presented to almost 1,000 local youth; cleaned and prepared the orca bones; molded and cast the teeth; and is in the process of creating a “bone atlas” (three dimensional photography of each bone) for online access; architects have been creating drawings and designs for an expanded exhibit space; putting into action plans for raising the funds to pay for the construction and programs.

Even with all this progress, we are learning that good work cannot be rushed. The plan was to have the bones ready for the recent visit of Lee Post, the “Boneman” of Homer, Alaska, who will be articulating the skeleton. Prior to his visit, however, staff working with the bones realized that they would not be cleaned and free of oils in time for his visit. Cleaning the oil from the bones involves several steps of soaking and drying, some of which work best in warmer weather. The final steps are to whiten the bones, which is enhanced by exposure to direct sunlight, but protected from rain and curious animals. Therefore staff and volunteers will use the sunnier weather of the summer to complete the finishing process. Articulation of the skeleton is now scheduled to occur in 2011.

The latest on the bones

During his recent visit, Post raved about the condition of the orca bones, stating that “even the largest and best museums in the US do not have a skeleton of this quality.” He also said, “This skeleton is one of probably five in the whole country that have been articulated and displayed.” Her skull shows some oddities like evidence of Brucellosis, (usually found in cattle), that might have further compromised her health.

While Post was in Port Townsend, he visited with the many community members who have been involved with the Orca Project to discuss the final preparation of the bones and the articulation process. The bones will not be coated with anything to allow for continued scientific study in the future. Post’s assessment was that the skeleton will make an ideal specimen for an educational display and lauded the efforts of the PTMSC to involve a wide spectrum of the community throughout the entire project.

Volunteer opportunities

- If you have a secure greenhouse or sun porch and would be willing to bone-sit for the summer, please contact Chrissy McLean at cmclean@ptmsc.org.
- The week of June 21st will be the final Bone Atlas photography sessions. This is the most thorough documentation of orca bones to have ever occurred. Be a part of this historic project! Contact Heather Jones at 360.385.5582 or hjones@ptmsc.org to get involved.

What’s the difference between the Orca Project and the Orca Campaign?

The Orca Campaign is the fundraising arm of the Orca Project. We have already raised $350,000 toward “the Project,” including a $150,000 Institute of Museum and Library Sciences grant. We are submitting numerous grant applications and we will also be raising funds from individuals. Once the architectural and engineering plans are completed we will have our campaign goal. Henry and Karen Nichols have agreed to be our Honorary Campaign Chairs—thank you! Other visionary individuals have already made contributions (see the last page of this newsletter for a list).

An Orca Open House is scheduled for August 18th, on a late summer afternoon/evening at the Natural History Exhibit we will kick off the campaign and introduce the Orca Project to our members and the public. Cookies and beverages will be served. We hope you will consider donating to this important project. Please contact JoAnne Heron to get involved, 385.2148, ext. 101 or jheron@ptmsc.org.
Did you know that most Americans believe they know more about the environment than they actually do? Just 12% can pass a basic quiz on energy awareness; about 80% are influenced by incorrect or outdated information; and only 41% can correctly define the term “watershed” in a multiple choice format.

For the past year, PTMSC staff, AmeriCorps members and interns have been writing public service announcements for the Earth Gauge project, sponsored by the National Environmental Education Foundation. This project, in partnership with the American Meteorological Society, is working to convey environmental information to the public through a trusted media source – broadcast meteorologists. Because there is a natural link between weather and the environment, broadcast meteorologists are uniquely poised to educate the public about key environmental topics in their communities.

Public service announcements are distributed to local meteorologists, who use them to educate the public about key environmental topics in their communities.

Here are two of the 10 messages PTMSC contributed for the summer season:

**Deceptively Dry Drizzle: Water Conservation in Western Washington**

Think that our persistent drizzly weather means Western Washington has an overflowing water supply? Think again! Dripping in at 38.6 inches, Seattle ranks a rather shocking 56th out of 100 major U.S. cities in average rainfall. While we do have frequent rain, the actual volume remains relatively low. With climate change and a predicted population increase of 46% by 2030, the pressure on the water supply is expected to become even greater.

Tip: While the dry weather of summer may be enjoyable after a damp winter, these parched months also prove to be the time of highest water usage. While partaking in water-intensive summer activities like caring for your lawn, try to reduce the amount you use. You can also consider conserving water year-round by installing water-saving appliances in your home. Look for the EPA's new “WaterSense” decal; it serves as an excellent clue about a device’s efficiency.

**Paralytic Shellfish Poisoning (PSP)**

Plankton, the tiny plants and animals that are the base of the marine food web, are everywhere in Puget Sound. They are vital to our ecosystems and provide 50-75% of the oxygen that we breathe. Most plankton is good but there are some “bad” ones that contain toxins, which can be released when triggered. A certain kind of plankton, called dinoflagellates, are responsible for the Paralytic Shellfish Poisoning (PSP) events seen in the Salish Sea area. These events occur mostly during the summer months when conditions like sunlight, temperature and nutrients are favorable and the plankton are able to reproduce at a rapid rate. During a PSP event, the harmful plankton is so numerous in the gut of clams, mussels or oysters that the shellfish becomes unsafe for human consumption. If these shellfish are consumed, symptoms such as tingling, nausea or even death can occur. PTMSC volunteers help monitor PSP events by participating in a long-term NOAA project, called “Sound Toxins” which tracks toxin-producing phytoplankton at four sites in Jefferson County.

Tip: To prevent harm from PSP make sure to check the PSP Red Tide Hotline 1-800-562-5632 for current beach closures before harvesting clams, mussels or oysters. Cook all shellfish thoroughly. Make sure you seek medical attention immediately if you notice any of the early warning signs of PSP such as tingling in the lips or tongue.
**Schedule of Events**

### JUNE

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Fri.</td>
<td>Summer Opening Day</td>
</tr>
<tr>
<td>11</td>
<td>Fri.</td>
<td>Flotsam Tank Opens</td>
</tr>
<tr>
<td>11 - 30</td>
<td></td>
<td>“Plastics Are Forever” Art Display</td>
</tr>
</tbody>
</table>

### JULY

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 - 10</td>
<td>Coastal Explorers Day Camp</td>
</tr>
<tr>
<td>10</td>
<td>Puffin Cruise 6 – 9 pm</td>
</tr>
<tr>
<td>11 - 17</td>
<td>Whale Camp with Centrum</td>
</tr>
<tr>
<td>24</td>
<td>Puffin Cruise 6 – 9 pm</td>
</tr>
<tr>
<td>31</td>
<td>Puffin Cruise 6 – 9 pm</td>
</tr>
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### AUGUST

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 6</td>
<td>Junior Explorers Day Camp</td>
</tr>
<tr>
<td>7</td>
<td>Puffin Cruise 6 – 9 pm</td>
</tr>
<tr>
<td>9 - 13</td>
<td>Marine Biology Day Camp</td>
</tr>
<tr>
<td>18</td>
<td>Orca Open House, Evening</td>
</tr>
</tbody>
</table>

### SEPTEMBER

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Adventuress Sail 10 am - 4 pm</td>
</tr>
<tr>
<td>10</td>
<td>Fall Hours Begin</td>
</tr>
</tbody>
</table>

### Weekly Public Interpretive Programs at 2:30 pm:

- Saturdays: Natural History Exhibit
- Sundays: Marine Exhibit

Check www.ptmsc.org for the schedule of programs

### 2010 Summer Nature Walks

Where: Meet at NHE portico  
When: Fridays  
Fee: Free with cost of admission

#### June

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Marine Birds walk 2:30 pm</td>
</tr>
<tr>
<td>25</td>
<td>Low tide walk, 10:00 am; low tide -2.0 ft, 9:55 am</td>
</tr>
</tbody>
</table>

#### July

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Native Plants Walk, 2:30 pm</td>
</tr>
<tr>
<td>9</td>
<td>Low tide walk, 10:00 am; low tide -2.0 ft, 8:48 am</td>
</tr>
<tr>
<td>16</td>
<td>What Washed Up Today? 2:30 pm</td>
</tr>
<tr>
<td>23</td>
<td>Low tide walk, 10:00 am; low tide 1.1 ft, 9:00 am</td>
</tr>
<tr>
<td>30</td>
<td>Beach Secrets Walk, 2:30 pm</td>
</tr>
</tbody>
</table>

#### August

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Low Tide walk, 10 am; low tide 1.1 ft, 7:33 am</td>
</tr>
<tr>
<td>13</td>
<td>Native Plants walk, 2:30 pm</td>
</tr>
<tr>
<td>20</td>
<td>Beach Secrets walk, 10 am, low tide 0.1 ft, 7:54 am</td>
</tr>
<tr>
<td>27</td>
<td>Bug Hunt, 2:30 pm</td>
</tr>
</tbody>
</table>
What’s New at the Burke Museum

Presenting a New Exhibit

The International Conservation Photography Awards

Now on view through Sept. 6, 2010

Check the website for events!

www.burkemuseum.org

Beluga Whale
Photo by Franco Banfi, 2009

Adventuress Sail
Saturday, September 4
10 am – 4 pm

Tickets: $75 per person
($70 for PTMSC, Burke Museum, Audubon or WOS members)

Reservations and information:
(360) 385-5582 ext. 104, (800) 566-3932 or cruises@ptmsc.org

Discounts available for children and groups

Puffin Cruises
Saturdays, July 10, 24, 31 6 pm - 9 pm
Saturday, August 7 6 pm - 9 pm

Tickets: $55 per person
($50 for PTMSC, Burke Museum, Audubon or WOS members)

Reservations and information:
(360) 385-5582 ext. 104, (800) 566-3932 or cruises@ptmsc.org

Discounts available for children and groups
New and Renewing Members

Through May 15, 2010

Individual
Leslie Aickin
Kathy & Dirk Anderson
Bud Babcock
Joanne Bailey
Cheryl Bentley
Barbara Blackie
Leah Brown
James Burke
JoAnn Bussa
Dorothy Curren
Patricia Derouchey
Peg Furey
Joan & Celia Goff
Jim & Wilma Hackman
Amy Hiatt
Anne Metcalfe
Michael Morrissey
Andy Palmer
Kit Pennell
Conrad and Diane Pimer
Bob & Anne Reeves
Rosalyn Roberts
Bob and Janet Stevenson
Richard Stickland
Lois Twelves
Claudia Welch
Donald & Carol Young
Sarah Young
Sarah Zablocki

Family
J Alcaraz
Ross Anderson & Mary Rothschild
Janeen Armstrong
Rosina Banks
Dan Bishop
Luther Black & Christina Wright
Boulanger/Patric Household
Tom & Rosalyn Branigan
Varn Brooks & Karen Lull
Kris & Patty Bruland
Michael & Hilda Cahn
Rowell Campbell
Karen Chang
Larry & Donna Coffey
Dale Crytzer & Sue Raley
Janet Dallett & David Mathieson
Carrie & Matt Day
Leo & Pat de Grijs
Jim Emery
Betty Faulkner
Katie & Keith Fleming
Ted & Lynn Gifford
Kathleen & James Gilmore
Richard & Jody Glaubman
Scott Hagerty & Jennifer Tavares
Neil Harrington & Renee Barlbault
Pete & Deborah Helsell
Carl & Barbara Hill
Bruce & Marilyn Hudson
Julie & Ian Jablonski
Greg & Pam Jensen
Tom and Karen Jones
Penny & Randal Kelley
David & Alice King
Renee & Jim Klein
Cynthia Knudson
Jane & Charlie Kopriva
Nik Lance
Ellen Larkin & Dan Packard
Ned & BJ Luce
Jim and Jane MacNab Dow
Jane McDanials
Rebekah & Todd McGuire
Judy & Jack McKay
Chrisy McLean & Kevin Long
Sarah McNulty
Everett & Stephanie Moran
Kathleen Muir & Jack Manning
Dolores Neal
Ron & Sharon Niccoli
Kathryn Peterson
Ann Pougiales & Charles MacNab
M.J. Pruitt
Karen & Harvey Putterman
Pat Ryan
Phil Schenck
Kati Schmerfer
Nancy Shipleys
Susan & Vince Skidmore
Linda Kay Smith & Bill Wise
Robert & Donna Snow
Bud & Kathleen Stavney
Jerry & Deborah Stinson
Shelly Strom
John Swanner
Sharon Thomsen
Betty & Therald Todd
Tonina Family
David and Anita Weakley
Maren Wemore
Richard Wotj & Carolyn Latteier
Vicki Young
Dick Zinn

Friend
Meggen Chadsey
Me'l Christensen & Seth Rolland
Weldon & Virginia Clark
Pamella DenOtter & Dana Kovac
Phillippe & Marian Meany
Neil & Anita Potthoff
Peggy & Wayne Siscoe
Mark & Dorothy Westlund

Patron
Bonnie Corra
Stephanie Snyder & David Nechak

Sustaining
Admiralty Audubon Society
Lynn Anderson & Peter Albrecht
Normandie & John D. Anderson
Mike Cornforth & Linda Martin
Robert & Constance Davis
Karen & Tony DeLorenzo
Jean Dunbar
Carolyn & Chris Eagan
Kathryn Edens
Mary Jane Gossman
Jerry Higgins
Bud & Evelinn Kannenberg
Chelcie & Kathy Liu
Beth Lorber
Gus & Judy McCutchen
Bob & Betty Peteie
Philip Pilgrim
Laura Rosenberg
Sharon Schlenrner
Janine Scott
Charles Simenstad & Stephanie Martin
David Simpson
Martha & Robert Van Etten
Jo & George Yount
Rick and Debbie Zajiccek

Business/Professional
Port Townsend Sails, Inc.
Sport Townsend
Sunrise Coffee
Sunshine Propane
Washington Native Plant Society - Olympic Chapter

Octopress Sponsor
Hadlock Dental Center
J.R. Kint

Benefactor
Port Townsend Hospitality

Thank you to
Craig Wester for donating a high-quality tripod.
Taylor Shellfish for providing clams and mussels for our animals.
Michael Machette, Kitty Reed, Scott Burns, and Virginie Bourgue for their contributions to the Terroir lecture and winetasting event.
Joe and Rachel Gaspers for envisioning and setting up the Flotsam Tank.
Special thanks to the auction Fund-A-Need donors

under $100
Kate & Art Burke
Kevin Harris
Lucas Hart
Kathleen Kler & David Haakenson
Clara & Jim Mason
James McGovern
Eveleen Muehlethaler and Karmen Meier
Cyne and Andy Okinczyc
Jim Purcell
Doug Rogers
Tom and Patty Satterlee
Richard and Nancy Schneider
Camille Speck

$100 and up
Maurice and Christine Carpenter
Soozie and Dan Darrow
Mari Friend

John and Monica Kobasic
Collete Kostelec & Richard Talbot
Kathryn and Neill Lamka
Dane Long
John MacElwee
Clara & Jim Mason
Marc and Laurie Perrett
Jim Purcell
Jim Whitaker & Dianne Roberts
Peggy Whyte

$250 and up
Jean Dunbar
David & Alice King
Chelcie & Kathy Liu
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Judith Adler, Sheila Bender, Hannah Kane, Francesco Tortorici and Joan Cole, Soroptimist International of PT, Thelma Zirkelbach, and $2,000 from the D.V. and Ida McEachern Charitable Trust

Contributions to the scholarship fund are always accepted and can be sent to:
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