

# OLYMPIC COAST NATIONAL MARINE SANCTUARY

## OLYMPIC COAST DISCOVERY CENTER



V O L U N T E E R   N E W S L E T T E R   -   A U G U S T   2 0 1 2

### Thank You, Volunteers!

July was a busy month in the Olympic Coast Discovery Center with Junior Oceanographers and visitors from across the United States and around the world coming to learn about Olympic Coast National Marine Sanctuary. Many also came to enjoy our cool, damp weather. Thanks to everyone who staffed the visitor center to welcome our guests and share your knowledge of the area.

Our top volunteer for July was Sue Griffith, who worked in the OCDC 28 hours and wrote an article for the newsletter. Way to go, Sue!



Thank you also to Bruce and Gerri, Art, Evan, Ilse, Elizabeth, Genie, Jim and Trish, Jim, Cayenne, Pat, Anita, and Douglas for volunteering, as well as Americorps volunteer Shannon who completed her service contract with 24 hours in the OCDC.

I'd also like to thank Suzanna for counting and rolling \$65 in coins from the donation box, and for organizing and counting our logo wear. Thank you, Suzanna.

Since the Discovery Center opened on Memorial Day weekend we have had 4299 visitors from 35 states and 16 foreign countries. Among the most popular comments in the guest book were "Awesome," "Cool," "Learned a lot," and "I want to be a marine biologist." Thanks to Trish for compiling the statistics on a slow afternoon!

### Monitoring the health of our oceans

*By Sue Griffith*

OCNMS volunteers Miriam Bobkoff, Sue Griffith, and John Wonderly were privileged to cruise off the coast of Washington, May 24th to May 26th, 2012, aboard the University of Washington research/survey vessel *Thomas G. Thompson*. Goals of the cruise were to deploy both a NEMO surface and NEMO subsurface moorings, conduct a Biosonics acoustic imaging survey, and conduct Conductivity(salinity) Temperature Depth (CTD) casts at the NEMO mooring site and various other stations. Rather than give a travelogue-style report of the cruise, I thought it would be more interesting, and certainly more informative, to describe a portion of that research and my small part in it.

Jacqueline had told me before I left Port Angeles that she hoped I would be able to use the experiences I had on the cruise when talking to visitors in the Discovery Center. The three of us left Port Angeles with the understanding that we would be observers only during our time on the

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### VOLUNTEER NEWSLETTER - AUGUST 2012

Thompson, but reality was something quite different. UW physical oceanographer and Chief Scientist Jan Newton told us, “Data is expensive!” and at \$30,000 per day charter fee for the *Thompson*, she was correct. Scientists had been planning this cruise for almost a year, and would make use of every moment while on board. Most worked round the clock, snatching only an hour of sleep now and then. Jan was only too grateful to put me to work on the CTD casts.

The CTD casts were to check the composition of seawater coming into Puget Sound and Hood Canal. We would be testing oxygen content, carbon dioxide content, nutrients, and phytoplankton (chlorophyll). Twenty-four computer controlled niskin bottles mounted on a circular frame (rosette), were swung over the side of the ship and lowered to the sea floor. Then as the rosette was slowly raised, the computer triggered the opening of the bottles at various depths until all 24 had been filled. The rosette was swung back on board and lowered to the deck.



That was where my part in the process began. First of all, to work on the back (work) deck of the ship everyone had to wear a hard hat and a work vest (special life vest.) Five people were involved in the collection process: one scientist who was the director, and four samplers. Each sampler had a specific job: oxygen, CO<sub>2</sub>, nutrients, chlorophyll. My job was chlorophyll collection done in brown opaque bottles so no stray light could continue chlorophyll production in the phytoplankton after the samples had been collected.

The director had the clipboard with the lists of samples to be collected. She would call out, “Chlorophyll sample C<sub>12</sub>, bottle 7.” I would confirm, “C<sub>12</sub>, bottle 7,” then would pick up the brown sample bottle labeled C<sub>12</sub> and move to the rosette. Finding niskin bottle 7, I would open the spigot and fill/rinse/empty the bottle three times. This would remove any trace material that may have been in the sample bottle, leaving only water from the assigned depth. Then I would fill the bottle to overflowing and screw on the lid. After confirming with the director that sample C<sub>12</sub> was complete I would place it with the other samples to be tested. Then it would be on to the next until all 24 samples had been completed. A lot of very cold water ran over your hands in this process making for numb fingers.





As soon as we were finished with the sampling, word would be radioed to the bridge and the Thompson would set sail for the next sampling site. The CTD rosette and niskin bottles would be prepared for the next samples, and then we would move into the lab, which was adjacent to the work deck. Nutrient and CO<sub>2</sub> samples were frozen for later testing at UW labs, but the oxygen and chlorophyll samples were tested immediately. Jan and her crew would work furiously trying to be finished with the testing before the call would come down from the bridge that we were approaching the next sampling station. Then it was back on with the life vests and hard hats and out to the work deck to lower the CTD rosette over the side to the ocean bottom. As soon as the bottom was reached, Jan went to the computer lab to remotely trigger the opening and closing of the niskin bottles at the proscribed depths.



You will be aware that I haven't mentioned eating or sleeping in this process yet. We were late to almost every meal and blessed the kitchen crew for holding food for us. As for sleeping we did very little: an hour snatched here or there while sailing to the next sampling station.

You can be assured that Miriam, John, and I came away with a new appreciation for these oceanographers who are monitoring the health of our oceans. I also had a whole wealth of first-hand information about testing of water quality in the Marine Sanctuary, Straits, and Sound; how it applies to oyster farming and other shell fish issues; the amount of nutrients in our waters that provide for the wealth of marine life found here; why the oxygen content/CO<sub>2</sub> content of the water is changing; and more—to talk about with visitors to the Discovery Center.

### Seabirds on B.C. coast eating bellyfuls of plastic: study

VANCOUVER — Seabirds eat everything from twine and candy wrappers to Styrofoam, and their stomach contents show there's been a dramatic increase in plastic pollution off the Pacific Northwest coast in the last four decades, a new study suggests. University of British Columbia researcher Stephanie Avery-Gomm said the amount of plastic a northern fulmar gobbles up provides a snapshot of the garbage that ends up in a big part of the Pacific Ocean. The results of the study mirror that of various European countries' research done last year of the notoriously polluted North Sea, although the situation seems to be improving there.



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Necropsies of 67 of the beached gull-like seabirds collected between October 2009 and April 2010 from the coasts of B.C., Washington and Oregon indicated nearly 93 per cent of them had bellyfuls of plastic. One bird had 454 pieces of plastic in its gut.

As a result of the study Avery-Gomm believes plastic pollution should be monitored annually and people need to be aware of the long-term effects of what they're tossing out. "Anything that gets into a river, anything that gets into the sewage system, anything that ends up on a beach is probably headed straight for the ocean."

The graceful northern fulmars breed in Alaska, are cousins of the albatross and are oceanic creatures that don't often venture onto shore. They also don't regurgitate the plastic they consume from the surface of the ocean. Ingesting it can directly kill the birds or cause gastrointestinal blockage, lacerations and reduced feeding.

While many countries have documented plastic debris in the marine environment, no standard technique has been used, and the lack of consistent methodology has made it difficult to monitor trends or to compare plastic pollution between different regions of the world, the study says.

About 260 marine species, including turtles, fish and seabirds are known to become entangled in plastic or eat it.

Northern fulmars are ideal biological monitors of trends in plastic pollution because they have a vast migratory range, forage just about anything in the environment and are prone to washing up on beaches in sufficient numbers.

The first study of plastic ingestion in the birds was conducted south of the Alaska Peninsula in 1980 by

the University of Alaska. It found that 58 per cent of the birds collected between 1969 and 1977 had consumed plastic. The current study shows that the incidence of plastic ingestion among northern fulmars is 92.5 per cent. The mass of plastic that's eaten also increased dramatically — from 0.04 grams in 1969-1977 to 0.385 grams in the current study, she said, adding the average northern fulmar weighs about 800 grams.



Avery-Gomm said further study is needed, possibly combining the efforts of Canadian and American researchers."It would be totally feasible to have a Canada-U.S. collaborative effort where people in Alaska collect fulmar there, we collect fulmar here, Washington and Oregon and California all collect their fulmar and we all dissect them according to these internationally standardized protocols and compare results. That's what they're doing in the North Sea."



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Her concerns about the awareness of disposing plastic were echoed by Karen Wristen, spokeswoman for the Living Oceans Society. “At the national level there needs to be some kind of response beyond voluntary beach cleanups that’s going to deal with the amount that accumulates on public lands,” Wristen said. “And of course, globally, we need to raise awareness in other nations of exactly the same problems, and getting them working on them. It is a huge, huge problem to deal with and one that can’t simply be solved at one level.”

## Reflections

More than eight years have come and gone since the first OCDC volunteers were trained in June of 2004. So much has happened since then....

Jim, Becky, Rose, Anita, Jamye, Jaci and I were all in the first docent training class, graduating just in time for CoastFest and the grand opening of the Olympic Coast Discovery Center. That summer Don Perry offered us a Heritage Tour of Port Angeles, and we learned about the colorful history of the waterfront area.



In 2005 the Lower Elwha Klallam hosted Tribal Journeys. We watched as about fifty tribal canoes arrived, their paddlers asking for permission to come ashore at Hollywood Beach. Then it was out to the tribal center to help prepare and serve dinner for 5000 guests. It was crazy being part of something that BIG and exciting!

That winter Heidi went on maternity leave, and Bob asked me to fill in while she was away. No one realized then how long she would be gone. Special thanks to Rob for offering to help as I suddenly stepped into a new role.

2006 brought new challenges as Olympic Coast Discovery Center docents were invited to attend ONP interpretive training and develop campfire talks to share at Mora Campground on summer weekends. Bill focused on shipwrecks and maritime heritage while Rose made and gave away hundreds of sea otter puppets. During training we met Greg Marsh, and I was so impressed by his comments on how to interact with visitors that he has since been part of our volunteer training ever since.

In September OCNMS hosted a workshop for leadership from all the sanctuaries. During a break several participants discussed how they could encourage volunteers to visit other sanctuaries with limited travel budgets. The idea of volunteer exchanges was born, and by March Jim and Becky, Judy, Ruth and I were off to Maui to visit Hawaiian Islands Humpback Whale National Marine Sanctuary. Our week was filled with adventures, learning from sanctuary staff, tribal elders, researchers, park rangers and students. We came home exhausted, and ready to share what we learned with visitors to the Discovery Center.

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The years flew by. Art and Veronica, Sherrill, Genie, Jim, Bruce and Gerri, Carol, Lisbeth, Douglas, Nancy and Roy attended volunteer training, and joined our docent team to welcome visitors to the Discovery Center, and help with school groups and community festivals. A day at sea on the *RV Tatoosh* rewarded volunteers for hours worked during the summer season. Greg McCormick left and Jacqueline took his place as Education Specialist. Heidi and Lucas occasionally dropped in to say “Hello,” but Heidi was enjoying being a mom and not ready to come back to work.



By 2010 another volunteer exchange was planned; this time OCNMS hosted staff and volunteers from Thunder Bay. Almost all of us were involved as host families, drivers, and tour guides. After exploring Salt Creek, Hurricane Ridge, Sol Duc Falls, the Elwha, Lake Crescent and the Hoh Rainforest, we spent two days in Neah Bay. The Makah hosted Tribal Journeys and we were there to help, never expecting that we would be directing traffic or offering taxi service in golf carts. I’m sure our guests returned to Alpena with stories to tell!

The following spring Miriam, Suzanna, Elizabeth, Joan and Sue joined our volunteers. In late June Jim and Trish, Bruce and Gerri, and I were off for a week in Alpena. We toured their amazing new visitor center, snorkeled a shipwreck, hiked with a naturalist, looked for fossils, and assisted with their Maritime Festival on July 4. Returning to Port Angeles we had an opportunity to tell members of the City Council and Feiro board how a waterfront marine center has revitalized a small town similar to Port Angeles. Our presentation was well received and may have sparked a similar initiative here.

And so we come to 2012. Evan, Trish (officially), Pat, Cayenne, and Ilse joined us, and have been a wonderful addition to the OCDC team. Since the Olympic Coast Discovery Center opened in 2004 we have greeted 71,250 guests from across the country and around the world. Each visitor’s experience has been enriched by your presence, and the message they take away comes largely from their interaction with you. Thank you everyone!

While I am giving the job back to Heidi, and someone new will probably be hired next April, I am not leaving the country for more than a week or two at a time. If you want to join me for birding, beach walks, or garden talk my email address is [jlamonts2@wavecable.com](mailto:jlamonts2@wavecable.com).