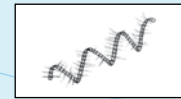


Students Remove 'Death Caps' from Seabright Beach



Securing Our Future



The Shrinking Base of the Ocean Food Web

odyssey NEWS

Independent Evaluation Demonstrates Ocean Science Program's High Impact On Youth

Appplied Survey Research (ASR) of Watsonville has completed its evaluation of O'Neill Sea Odyssey's program for the 2009-2010 school year. The report found that the free, ocean-going science and ecology program for area schools has a high impact especially among low-income youth. The evaluation is available at www.oneillseaodyssey.org.

The evaluation showed that OSO served 193 classes and 5,166 students last year. 95% came from the Santa Cruz, Santa Clara, and Monterey Counties. Many of our students were from low income communities with half of our students receiving free or reduced price meals at school.

Participating teachers gave our program great ratings in every topic. From 94% - 100% of teachers indicated students had learned a lot from the OSO program. Of the topics taught in the classroom, most teachers/group leaders said that students had learned a lot in the "Marine Science station" (100%) followed closely by the "Ecology station" (96%) and the "Sailing and Navigation station" (95%).

The Student Survey showed that the OSO program promotes substantial



increases in environmental awareness. 76% of students agreed with the survey questions regarding environmental knowledge and responsible behavior before the program, compared to 97% after the program.

When student surveys were divided into lower and higher income groups, results indicated that although both groups substantially increased their environmental knowledge, "lower income" students showed a greater change (71% to 96%) and caught up with the "higher income" students by

the end (81% to 97%).

Overall the ASR report showed that OSO successfully provides a quality marine science education program to a diverse group of students. The OSO program is as always, provided to schools and groups for free and requires all groups to provide a community service project to earn their trip. Last year there were over 200 community projects completed by OSO students. The OSO staff and board look forward to providing this dynamic program for years to come. ♦



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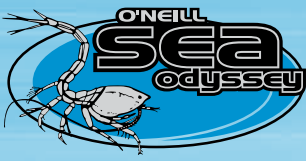
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Securing Our Future



BY JACK O'NEILL
& BRIDGET O'NEILL,
CO-CHAIR/FOUNDER
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On behalf of O'Neill Sea Odyssey (OSO), we'd first like to thank you for your on-going commitment and support of OSO's program for area youth, which has made a great difference in our efforts to help create a new generation of ocean and watershed stewards.

Thanks to you, over 55,000 youth have participated in our program!

Because you are reading this, you are a generous supporter of our work and we thank you for that. We would like to ask you to take one more step and consider leaving a lasting contribution through naming OSO's permanent fund at the Community Foundation for Santa Cruz

County in your estate plan.

There are other options available to you as well, which will enable you to leave a legacy for future generations and reap some significant financial benefits for yourself. Those options include: a beneficiary designation in your retirement account, gifts from a will of living trust, an annuity that will provide you with lifetime income, gifts of real estate, or charitable lead trusts.

By now, you are familiar with the challenges of keeping an ocean education program alive in today's economy. At OSO, as with other service organizations, the demand for our services is up while the resources and funding available to meet that demand is way down.

OSO provides a vital service by giving the next generation the skills and tools needed to protect our ocean from multiple threats, while meeting their scholastic goals. Yet, schools have come to depend not only on our free, ocean-going field program, but also on the curriculum at our virtual learning center at www.oneillseaodyssey.org. Teachers, especially from lower-income schools, use OSO curriculum to meet mandated education standards using ocean concepts, something not usually found in textbooks.

We hope you will consider being part

of our legacy. OSO would be honored to meet with you to discuss ways to support our permanent fund. Please contact Dan Haifley at (831) 465-9390 or at dhaifley@oneillseaodyssey.org, or fill out the enrollment form in this newsletter and mail it to us. Thank you again for your support! ♦

(“Webster” continued from outer cover) the Santa Cruz Beach Boardwalk, Ventana Winery, and Vine Hill Winery for the dinner wine and silent auction items; Stagnaro Brothers; and Far West Marine. for the dinner wine and silent auction items; Stagnaro Brothers; and Far West Marine.

Silent Auction items were donated by: Chef Works; Smith's China; Shampoo Chez; Todd Frazier of Bayside Marine; Rose Brancatelli of Lavish Salon; Karl Ruhne; Leslie Haws; Peggy Poindexter; Joe Caesar and Linda Ribordy; and Galaham Zuanich. Volunteers who helped set the stage for the event were: Steve and Ann Niemann; Lynette and Lorenzo Rota; and Hank Cureton and Barbara Karleen. Finally, thanks to the folks from the O'Neill Sea Odyssey: Dan Haifley, Adam Steckley, and Laura Barnes.

Judy and I wish to thank those who support this event by buying tickets and participating. Many have been coming to this dinner every year. This year's event raised approximately \$5,000 for the Adam Webster Memorial Fund. *(Cont. next pg.)*

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Students Remove “Death Caps” from Santa Cruz’s Seabright Beach



Gault students used the plastic bottlecaps they found to make an educational art project.

that had ingested plastic in the Midway Island area of the Pacific Ocean. The Midway Atoll catches plastic trash, much of which is washed to the sea from land, which moves through the Pacific Gyre. Plastic pieces are mistaken for food by marine mammals and birds, but because they contain no nutritional value a diet of them leads to starvation. One solution to death cap pollution the students thought of were the use of plastic bottle caps that were designed to stay on the bottle with a tether.

The Gault School students are participants in the Ocean Protectors program, a collaborative effort between Save Our Shores and O’Neill Sea Odyssey. Ocean Protectors is a marine debris and storm water education program that includes beach cleanups, hands-on marine debris education, and a fun storm water education program onboard the Team O’Neill catamaran, as well in a shore-side education center.

The Ocean Protectors program aims to create watershed and ocean stewardship among lower income youth, targeting an audience that has the capacity for environmental stewardship, yet few opportunities to learn it in a structured setting. During the 2010-2011 school years, out of the 17 classes participating, 7 are from the City of Santa Cruz supported by Measure E education funds, and 10 are from the City of San Jose, funded by the California Coastal Commission’s Whale Tail grants program. ♦

On September 17, 2010, a group of eager 4th grade students from Gault Elementary School removed over 8 pounds of trash, including 200 bottle caps they dubbed “death caps”, from Seabright Beach in Santa Cruz. Inspired to put their learning to good use, the students then created a display board to raise awareness about death caps and the effect they have on the marine environment.

Death caps are plastic caps separated from water bottles. “We call them death caps because they float in the water and are often mistaken for jellies and are eaten by fish and birds,” said Gault Elementary School Teacher Buzz Gray. “The plastic remains in their stomachs and they will eventually die of starvation.”

The death caps display board is designed to educate the consumer about their impact on the marine environment. Mr. Gray and his students derived the idea for the display by viewing YouTube videos of albatross

(‘Webster’ cont.) This article is a modified version of one written by Tom and Judy Webster for the Spinnaker Sheet—which is the newsletter of the Santa Cruz Yacht Club. ♦

Leave a Legacy for Youth and the Ocean

Have you considered leaving a lasting contribution by naming OSO’s permanent fund at the Community Foundation for Santa Cruz County in your estate plan? You can leave a legacy and reap some significant financial benefits. Those options include: a beneficiary designation in your retirement account, gifts from a will of living trust, an annuity that will provide you with lifetime income, gifts of real estate, or charitable lead trusts.

OSO provides a vital service by giving the next generation the skills and tools needed to protect our ocean from multiple threats, while meeting their scholastic goals. Yet, schools have come to depend not only on our free, ocean-going field program, but also on the curriculum at our virtual learning center at www.oneillseaodyssey.org. Teachers, especially from lower-income schools, use OSO curriculum to meet mandated education standards using ocean concepts, something not usually found in textbooks. If you are interested, please contact Dan Haifley at (831) 465-9390 or at dhaifley@oneillseaodyssey.org, or fill out the form at right and mail it to us. ♦

I have named OSO in my estate plan (we will contact you relative to recognition)
 I would like to talk to someone about a gift to OSO in my estate plan
 I wish to learn more about the OSO/Community Foundation’s gift annuity program
 I would like the recommended language for including OSO in my estate plan

Name(s): _____

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The Base of the Ocean's Food Web is Shrinking

BY DAN HAIFLEY,
EXECUTIVE DIRECTOR

The 55,000 youth that have sailed with O'Neill Sea Odyssey's science and environment program have collected, and learned about, plankton from Monterey Bay. One type are phytoplankton, which are tiny, drifting plants that form the base of the ocean's food web and are responsible for half of the Earth's oxygen produced by plant life.

But a study in the July 29, 2010, edition of the journal *Nature* found that the worldwide volume of phytoplankton has shrunk an average of 1 percent a year over the previous year during the past century, including a 40 percent drop since 1950. Their decline will affect species that depend on them, as well as the Earth's ability to produce oxygen and keep its climate cool.

Phytoplankton are found in both salt- and freshwater environments. They live at the water's surface where, through photosynthesis, they use sunlight to convert carbon dioxide and nutrients into new plant material. These tiny organisms also consume nutrients from deeper, colder waters.

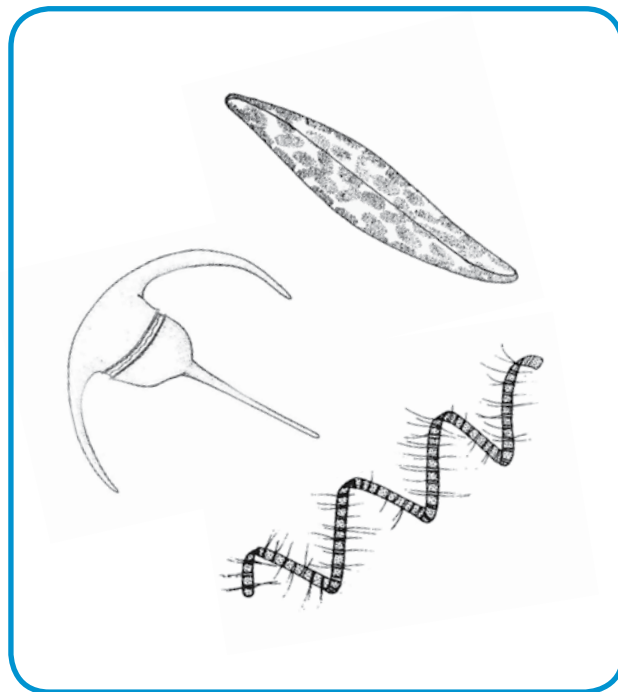
Phytoplankton are the source of about half of the Earth's organic material. They move 100 million tons of carbon dioxide daily from the atmosphere into

organic matter, and then either sink to the ocean floor when they die or get digested by other life. By sequestering such large volumes of atmospheric CO₂, phytoplankton play a central role in moderating our climate.

The study combined satellite observations along with analyses of the concentration of chlorophyll pigment, and measurements taken at sea since 1899 using a Secchi disk. The Secchi disk was invented in 1865 by a priest named Pietro Angelo Secchi. The disk measures ocean clarity, which has an inverse relationship to plankton density. The study used over 400,000 pieces of data collected between 1899 and 2008.

The study's authors, Daniel G. Boyce, Marlon R. Lewis and Boris Worm of Dalhousie University in Nova Scotia, Canada, found that phytoplankton mass decreased in eight of the 10 regions studied. The most significant declines were in the equatorial Pacific, south and equatorial Atlantic, and Arctic Ocean. Only the Indian Ocean has not shown a decline, in fact its southern region showed growth.

The study found that in most regions surveyed, rising temperatures in the ocean's surface have increased stratification within the water column. As a result, water layers, which get colder as they get deeper, do not mix with each other as easily as they did previously. Phytoplankton, therefore, have diminished access to nutrients that they use from deeper waters.



Dinoflagellates, chain and pennate diatoms, pictured above, are all species of phytoplankton.

There are indications that global warming may be a cause of the increased water temperatures that are driving the decline. But by itself it would not explain reduced production in areas such as the Arctic Ocean, where plankton growth is driven primarily by sunlight. Other factors, such as wind and ocean circulation and regional temperature variations, are likely to play an important role.

Some of the study's findings were not surprising. Plankton growth has increased in coastal areas with heavier agricultural, nutrient-rich runoff. Periods of ocean warming have led to declines in phytoplankton volume while cooling periods have led to increases. Such variations have been observed during climate patterns such as the El Niño Southern Oscillation in the Pacific, the Arctic Oscillation or the North Atlantic Oscillation.

This column appeared in the Santa Cruz Sentinel on August 21, 2010. ♦





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Birdies for Charity is a fun way to support O'Neill Sea Odyssey's free, ocean-going youth science program, supported by the AT&T Pebble Beach golf tournament in February, 2011. You would pledge an amount per birdie at the tournament.

100% of collected pledges go directly to OSO, plus the Monterey Peninsula Foundation will provide a 15% match. To pledge funds, go to <https://birdies.attpbgolf.com/give.php> and click on 'Pledge your favorite charity,' then enter O'Neill Sea Odyssey.

You can also guess the number of birdies scored and win prizes, including airline tickets and a Florida golf package, if you guess correctly. Use the pledge form at <https://birdies.attpbgolf.com/pdfs/2011-b4c-pledge-form.pdf> ♦

8th Annual Adam Webster Memorial Fund Event a Huge Success

BY TOM WEBSTER

On Saturday, October 23rd my wife, Judy Webster, and I hosted the 8th Annual Adam Webster Memorial Fund Silent Auction and Dinner at the Santa Cruz Yacht Club. The Fund supports the inclusion of youth with special needs in OSO's program.

To prepare for the event, Judy, along with help from Ann Niemann and Barbara

Karleen transformed the club into a fall wonderland with beautiful centerpieces and table settings. While they were transforming the club, Steve Niemann and I worked in the kitchen to prepare for Chef Scott Delk of Johnny's Harborside to come in and perform his magic.

Guests started to arrive at 5:00 and were greeted by the music of JazzA. As guests mingled and browsed through the Silent Auction items, JazzA provided cool jazz sounds and a little swing for some great rounds of dancing. They were also treated to appetizers of Duck Crostini, Skewered Carpaccio, and Beggar's Purse.

At the end of the delicious autumn-themed meal, I introduced the volunteers. When Chef Scott entered the room he was greeted with cheers and a standing ovation.

It certainly was a meal that will be hard to beat next year. We then began to auction off all of the center pieces, extra wine, all the while trying to get everyone's attention as the Giants game was in the bottom of the last inning. Once the Giants won, everyone returned to the event and the drawing for the "Pot-O-Gold" was held. Ann Niemann won and graciously donated much of it back to the Fund.

An event like this cannot happen without the support of volunteers and donors. We would like to thank: Sheri Moise of Johnny's Harborside, their Executive Chef Scott Delk and their wait staff; Dick Swank of Swank Farms in Hollister for donating all of the fruit and vegetables, (*Webster' continued on pg. 2*)



oneillseaodyssey.org