Spring 2017

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Ocean Currents

Dear Friends and Crew,

Our 2017 season is off to a great start. During our first week we saw the effect of limited sunny days; there was a great diversity of zooplankton (animal plankton) but far fewer phytoplankton (plant plankton) in our student's plankton samples. Then, almost overnight starting April 4th, the nets came up choked with phytoplankton, specifically lots of chain diatoms. The first big phytoplankton bloom of the season is in full swing!

Visibility for the live dive has been excellent. A wolf eel who started the season a little camera shy is becoming quite a ham and has come out of its den to see our diver on several trips. Sea spiders are one of my favorite creatures and they seem abundant this season. We are seeing them on most dives with the males carrying around clusters of eggs. Scurrying brittle stars with their serpent-like arms have also been a treat.

All of our staff and volunteers this year are exceptional. Their commitment to the value of science, their love and passion for working with youth and caring for Puget Sound brings me hope everyday. The Seattle Foundation's Give Big campaign is coming up next month. Please take a moment to read about it on page 1 and consider giving so that we can continue to provide top notch marine science and watershed conservation education to all students, no matter their ability to pay.



Sincerely,

Pat Maxwell

Executive Director

Support Pacific Marine Research During Give Big

Please mark your calendars for the annual Seattle Foundation's Give Big Day of Giving for nonprofits on Wednesday, May 10th. Giving on this day helps us maximize our donations through the possibility of matching funds and heightened visibility. We are celebrating our new boat, newly revamped board of directors, new scholarship program, and new urgency in environmental stewardship. We are starting to book our 2017-2018 school year trips and would love to offer as many scholarships as we can. Simply visit the Give Big website below and make your pledge. We greatly appreciate your support!

www.givebigseattle.org/PacificMarineResearch



OUR MISSION

"To Educate and Train the Future Stewards of Puget Sound"

Seven Ways to Support Marine Science Afloat This Spring

- Donate to our **Give Big** campaign and help us earn matching funds (see page 1). Also be sure to check if your employer will match your donation to Pacific Marine Research (see page 5).
- Use www.amazonsmile.com and select Pacific Marine Research as your beneficiary. Amazon will donate a portion of your qualified purchases to our organization.
- Visit our Wish List online in the Donate section of www.marinescienceafloat.org and consider donating needed equipment or services.
- Purchase a Gyotaku print from our second-grade partners from Columbia Elementary School (see page 3).

- Buying or selling a home? Pacific Marine Research Board Member David Todd, a Real Estate Broker with Seattle's Lake and Company, will donate up to 25 trip scholarships for each sale he makes. Call him at 206-734-5151 or email davidt@lakere.com and tell him Pacific Marine Research sent you.
- We are accepting reservations for the 2017-2018 school year. Email contact information for your favorite teacher or youth group leader to fieldtrips@marinescienceafloat.org and we will send them Marine Science Afloat program details.
- Share your story with us. Email your
 Marine Science Afloat memories to engage@
 marinescienceafloat.org to help strengthen our
 message as we reach out to corporate sponsors and
 media partners.

The Penpoint Gunnel: Now Hatching!

CREATURE FEATURE

Pacific Marine Research Executive Director Pat Maxwell nominated this month's Creature Feature after a personal experience with this crafty critter.

"Several years ago, I added a bright green penpoint gunnel to an aquarium, which did not have any green algae to hide in. To my surprise within a day or so we no longer had a green gunnel it had turned red to match the color of the seaweed in its current habitat!"

January thru March the penpoint gunnels spawn, laying clusters of eggs which one or both parents coil around and tend during their development, protecting them from predators and keeping them clean and oxygenated.

When the eggs hatch, the young average 1/2 inch (13 mm) in length and head toward the light so they can begin their life foraging on zooplankton. The kids grow fast and will be 3/4 to

one inch in length (20-40mm) by April/May and 4 to 5 inches(100-120mm) by the end of summer. Full grown they reach 4 to 8 inches long (120-200mm) but some have been

found as long as 1.5 feet (460mm). When full grown, they have a long, almost eel-like appearance and feed on crustaceans and mullosks.

They are often found in kelp beds and sea grasses, and the beautiful green, maroon and brown colors of this individual can vary depending on its environment and diet. The penpoint gunnel can even breathe air if forced out of the water as a result of hiding under a rock or in seaweed that is exposed during low tide. On these occassions, their ability to camouflage keeps them from being a meal for passing sea birds.





Here is a photo of a beautiful Dad or Mom penpoint gunnel tending their brood of developing eggs in an abandoned, partially hollowed piling in Puget Sound. Check out the eyes of the young developing in the eggs!

Penelope, Loghan, Gavin, Emma & Kiran Columbia Elementary School, Mukilteo, WA

STUDENT STEWARDS OF THE MONTH

Last month Pacific Marine Research Executive Director Pat Maxwell spoke with a group of five second-graders about our Marine Science Afloat program. Gavin, Kiran, Emma, Penelope and Loghan are from Columbia Elementary School in Mukilteo, Washington and wanted to better understand how they could protect Puget Sound.

The students were participating in the Destination Imagination program, a hands-on system of learning that fosters students' creativity, courage and curiosity through open-ended academic challenges in the fields of STEM (science, technology, engineering and mathematics), fine arts and service learning. Destination Imagination teams showcase their learning at tournaments nationwide. As part of that program, they developed a community service project to raise money for our

Marine Science Afloat™ program. The team made Gyotaku prints of a rockfish. The process involved painting a real fish and "stamping" the image on a piece of paper. The students donated 40 prints to Pacific Marine Research, and we loved them so much, we turned one into a limited edition photograph.

The first 40 participants in this fundraiser will receive one of the unique originals the students made during their project PLUS an 8X10 unframed photograph for \$50. A limited number of 11X14 prints are also available. As of April, the students have already earned \$1,200 towards their goal of sponsoring an entire trip for a school.

The second graders developed the entire program on their own, from project design to pricing and we are so proud of them...and we aren't the only ones.



Penelope, Loghan, Gavin, Emma, and Kiran the "Cinco-headed Imagininjas" from Columbia Elementary School in Mukilteo, WA

The team was chosen to represent their school at the state competition!

See the student's appeal below and visit our online store to order.



To order, visit PMR's online store at www.marinescienceafloat.org

"Would you like to buy a Gyotaku painting and a scholarship for \$50? This donation will buy one kid from the Seattle area a one day field trip with their class to go on the Spirit of 76 with the Pacific Marine Research team of scientists. They will learn about the Puget Sound habitat and sea life. You will get an original Gyotaku fish print made by team Cinco-Headed Imagininjas as part of their Destination Imagination Service Project Challenge - Ready, Willing & Fable! Gyotaku is an ancient Japanese traditional art form used by fishermen to measure, record, and make art with healthy and beautiful fish. You can support the Puget Sound fish community by helping educate kids like us on fish and the habitat they need."

Thank you,

Penelope, Loghan, Gavin, Emma and Kiran The Cinco-headed Imagininjas

STAFF SPOTLIGHT

Dan Lombardo Lead Shipboard Instructor

In this issue we are happy to profile Dan Lombardo. This is Dan's second year with Pacific Marine Research as a naturalist/educator. He has a bachelor's degree in biology with a focus on Marine Invertebrates and Salmon ecology.

Where are you from?

I'm from Edmonds, WA, and have lived in the area all of my life. I went to Chase Lake and Westgate Elementary Schools, and was in the Challenge Program at both. I attended College Place Middle and Edmonds Woodway High School (Class of '98).

AM a Marine Biologist." I love sharing what I learn about the amazing creatures we share this ocean planet with.

What is your favorite thing about the Marine Science Afloat trips?

The best part of my day on the boat is hearing kids' amazing ideas for ways to protect Puget Sound. It often reflects what they've learned that day, and lets us know we're doing a good job. Once in a while, a student has an original and creative idea that really gives me hope for the future. I like seeing that they're thinking about new solutions.



There's an old saying about crops, often attributed to Confucius:

"If your plan is for one year, plant rice. If your plan is for ten years, plant trees. If your plan is for one hundred years educate children."

What inspired you to teach marine biology?

I've been teaching marine biology as long as I can remember. Even as a little kid I'd walk the beach, turn rocks, and tell people about what I found. When I was about six I was at Brackett's Landing in Edmonds, teaching other kids about the shore crabs under a rock when one of their parents asked me "Oh, do you want to be a marine biologist when you grow up?" I replied, "I

Favorite sea creature and why?

Sockeye salmon. They are incredible athletes and make the ultimate sacrifice for their children. They make the largest migrations at sea of all the salmon species, feeding on arctic krill. When they return to the rivers to spawn, they can swim 900 miles upriver, despite deadly dams and reservoirs, predators, warming waters, and fishermen. They then spawn and die. This whole journey without a single bite of food.



Dan Lombardo with Pacific Marine Research Board Member Shelly Hall at the Seattle Aquarium's Ocean Careers Day.

Do you have a favorite memory from any of the trips?

The day that we interrupted plankton hauling to watch two humpback whales swimming by was a pretty good one. I'm always game to give scientific analysis a brief pause in order to appreciate nature.

Why should people donate to Pacific Marine Research?

I think it's important to acknowledge that the environmental fight will not be over in our lifetimes. If we are to restore this planet well enough for human life to continue here, we're going to need to inspire the next generation to be better stewards of its natural wonders than we have been. Education, especially hands-on education, can help them make a connection to the natural world that will both help them understand it, and keep them taking care of it.



Sockeye Salmon travel up to 900 miles to spawn without a single bite of food.

What is Marine Science Afloat™?

Students learn to love and appreciate Puget Sound on our 5 1/2 hour hands-on scientific expedition aboard the Spirit of 76 floating classroom. Haul in the plankton nets! Spy into the invisible watery world in the microscope lab! Meet your slimy and squishy underwater neighbors! And most importantly - Learn how your daily actions can help protect this magnificent, but delicate ecosystem that we all share. Follow along with our team of scientific divers as they explore the depths beneath the boat and introduce us to the animals below with our LIVE underwater video system.



Trips depart Bell Harbor Marina in Seattle from mid-March to mid-June and focus on grades 3-12. For information about school and youth group field trips, please contact fieldtrips@marinescienceafloat.org or call (206) 361-1919. We are now booking trips for the 2017-2018 school year. We also do custom group and corporate team building trips. Email us for information.

Interested in working with us? Visit www.marinescienceafloat.org for information about volunteer and paid positions.

Will your employer match your charitable donations?

Help us double your impact! Check with your employer, many companies including

Microsoft, Home Depot, Boeing, Starbucks, Wells Fargo, and Alaska Airline to name a few,
will match all or part of your gift to us. Some, like Microsoft, will also donate cash for employee volunteer
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