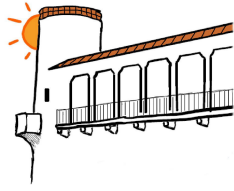




Division of Biology and  
Biological Engineering



# Kerckhoff Marine Lab Newsletter



*Winter 2025*



# Director's Note

Happy New Year from KML! 2024 has been an exceptional year for our Newport Beach marine laboratory, and we are excited to share some of the latest developments. We started the year with a Caltech-supported full exterior renovation of our 96-year-old building, repairing weather-damaged concrete, updating aging sewer pipes, railings, and doors, and adding a fresh coat of paint. Thanks to grant funding, we also were able to install a state-of-the-art seawater system and new intake pumps, delivering fresh, filtered seawater to both exterior and interior laboratories. Our lab manager, Stephen Ranson, is especially excited about the automated filtration system, which replaces the former 50-year-old inefficient sand filtration towers with a sleek, automated drum filter for on-demand water delivery — it is a joy witnessing Stephen's enthusiasm when he's giving tours of the new facilities and I love hearing the rush of seawater flowing through the building! These enhancements have dramatically improved the efficiency and sustainability of our operations, positioning us for the next phase of expanding our research and education capabilities on site.

Our public Science and Sunsets program, now in its second year, is continuing to attract new members of all ages to our growing KML community, with an entertaining evening of general interest science presentations, hands-on demonstrations, food, drinks, live music, and stunning Newport Beach sunsets. In September, we held our first annual beach clean-up at China Cove, co-hosted with the Newport-Balboa Rotary Club. Volunteers on the beach and in the harbor (on SCUBA) collected over 40 bags of trash, including a few surprise stowaways. We plan to do this again in September for national beach clean-up day—stay tuned! We also enjoyed hosting our KML friends and new visitors for a beautiful December evening under the stars to watch the boat parade and interact with members of the lab. Our community engagement events have been one of the highlights for me. I've loved having the opportunity to bring people together to share the latest science and help to cultivate appreciation for the beauty and importance of our ocean and coastal ecosystems. We're excited to continue these efforts and provide additional opportunities to interact and exchange with the team at KML. Of course, none of these events would be possible without our committed team of interns, volunteers, and support from the community, and we are incredibly appreciative of their enthusiasm and dedication to KML's mission.

Looking back on our journey, I'm proud of what we've achieved over the past three years and excited to build on this momentum. In the New Year, we are planning for new research and engineering projects focused on Newport's rich coastal ecosystems and continuing internship opportunities for high school and college students. We are thrilled to be part of the Corona Del Mar neighborhood, and looking forward to furthering our connections with educational tours and workshops, community events, and more! If you are interested in future events at KML and have not yet signed up on our list serve, please email [info-kml@caltech.edu](mailto:info-kml@caltech.edu). If you would like information about how you can help to support KML in our next phase of development, please reach out to Stephen or myself (Victoria), and we would be happy to discuss. You can also make a tax-deductible donation directly using the 'donate' button on our website. We are deeply appreciative of the donations we have received thus far. Your support is crucial in helping us achieve our mission of promoting ocean education and cutting-edge research in Orange County. Thank you for considering joining us in this important work. I'm looking forward to new scientific adventures, reconnecting with KML friends, and inspiring future generations about the importance of ocean conservation! Enjoy the newsletter!

*-Dr. Victoria Orphan*



# New Seawater System



KML wrapped up a full renovation of their seawater system in 2024. Much of the previous system was originally installed in the 1960s, with modifications over the decades since. This new system uses a state-of-the-art system with an automated drum filter and UV sterilization to provide filtered seawater to the entire lab 24/7. Filtered water is pumped to the tower where it then gravity feeds to nearly every room within KML. Having reliable and efficient access to seawater is imperative to the operations at any marine lab and we couldn't be more excited about the improvements this will provide to research and education.

**Upper Left:** Original sand filters installed in the 1960s-1980s that had significant damage and inefficiencies.

**Upper Right:** Newly installed filtration system that uses a drum filter (large black tank) and UV sterilization to provide filtered water to the lab.

**Lower Left:** Original seawater intake pumps on the KML pier that required heavy maintenance and were inefficient.

**Lower Right:** Newly installed intake pumps that offer increased flow at a fraction of the electrical cost.



# Holiday Event



We had a wonderful time hosting our 2nd annual holiday event here at KML in December, during the 2024 Newport Beach Christmas boat parade. We welcomed over 100 guests to partake in one of the best locations to view the boat parade. Food, music, silent auction, and lab activities were available for guests during the event including the opportunity to tour the lab and design your own ornament that could be crushed in simulated deep sea ocean pressure. We plan to continue hosting this event during December in 2025 as well!

## Kerckhoff Marine Lab Holiday Event

**Upper Left:** KML decorated for the holidays

**Upper Right:** Guests during the event.

**Lower Left:** Boats passing by the KML pier during the event.

**Lower Right:** Guests holding their crushed ornaments.



# KML Volunteers

## Molly Morrison (August 2023-Present)

My name is Molly Morrison and I was born and raised here in Newport Beach. I was always at the beach or paddling and sailing inside Newport Harbor.

For locals, KML/China Cove is the turn around point to head back into the harbor so I knew the building very well from the water. After graduating from Cal State Monterey Bay with my BS in Marine Science in 2022, I went to Orange Coast College to become a certified life support operator and got my certificate in Aquarium Science. It was there that the former aquarium director and professor, Rob Ellis, got in contact with Stephen, KML's lab manager, and I joined the lab in August of 2023.

I cannot choose one thing I like most about the lab. I love the work environment that Stephen and Victoria have created and being able to be near the beach. I also love that I am able to work inside this historic building I have always grown up seeing from the water. Some of the things I do at the lab are aquarium maintenance, animal husbandry and identification, assisting with animal collections, managing our social media accounts, and going through the historical documents and items throughout the lab. I also run our iNaturalist guide and project, which help educate the public on what organisms can be found in China Cove and the surrounding areas. I am also the shell and bone curator at the lab, which means I collect, prepare, and identify all the shells and bones I collect or that are given to me.

Some facts about me are that I freedive/snorkel both inside the harbor and off the coast. I enjoy swimming through the kelp forests and seeing the sun rays through the giant kelp blades. I am an avid beachcomber and shell collector. I have approximately >200 shells, ranging from 3mm to 8in. Around 98% of my shell collection was collected by me with the majority of the shells coming from China Cove. Some of the shells I collect get turned into jewelry. I am a nature photographer but I also take pictures of military aircraft, when the chance arises, especially during the Pacific Airshow. I am also a big motosports fan. I love watching WEC, Formula 1, IMSA, and Indycar.



**Left:** Molly Morrison



**Right:** One of Molly's favorite shells: Three Winged Murex, *Pteropurpura trialata*, found at China Cove. It is the largest one she's ever seen (6.5cm).

# iNaturalist

iNaturalist is a free platform that helps people identify the biodiversity around them while also creating valuable data for science. It is a way to connect the public to scientists and naturalists across the globe. It is also a place where people can create guides and projects for the public or private use.

**China Cove Organisms** Print

This guide contains the organisms and shells commonly found in China Cove, California. These organisms and shells can also be found in the areas around China Cove.

All 134

Search Search

Sort - Grid Card

**A. GOT SHELLS?**

List of shells 65

**ANIMAL TYPE**

Barnacles 3

Birds 11

Clam 17

Crabs 3

Fishes 18

Guitarfish 1

Marine Mammal 2

Mussels 6

Rays 2

Scallop 3

Sea Slug 3

Sea Stars 1

Shrimp 2

**Eelgrass**<sup>1</sup>  
*Zostera marina*

**Sea Pansy**<sup>2</sup>  
*Ranilla koelikeri*

**Topsmelt**<sup>3</sup>  
*Atherinops affinis*

**California Round Ray**<sup>4</sup>  
*Urolophus halleri*

**Recluz's Moon Snail**<sup>5</sup>  
*Glossaulax recluziana*

**Great Blue Heron**<sup>6</sup>  
*Ardea herodias*

**California Corbina**<sup>7</sup>  
*Menticorpus undulatus*

**Xantus Swimming Crab**<sup>8</sup>  
*Acheilus xantusi*

**Pacific Eggcockle**<sup>9</sup>  
*Lentorcardium subrotatum*

**Mussel Blenny**<sup>10</sup>  
*Hypsoblennius jenkinsi*

**Western Mud Nassa**<sup>11</sup>  
*Phrontis tarula*

**Aggregating Anemone**<sup>12</sup>  
*Anthopolium elegantissimum*

Our guide is called China Cove Organisms. It contains different species of algae, plants, marine mammals, crustaceans, mollusks, etc that are commonly found in China Cove and the surrounding areas. The guide is routinely updated by Molly when new organisms have been found by herself, someone from the lab (past and present), or that have been documented, such as through our iNaturalist project.

Our project is called China Cove Wildlife. This is where pictures taken within China Cove are automatically added. It allows us to track observations that pertain to marine life within China Cove.

**China Cove Wildlife**

**About** Members 5

Join the Kerckhoff Marine Lab in documenting the diversity of organisms, specifically marine organisms, in China Cove, California. By contributing to our project, you become a citizen scientist in helping us see what is found here!

[Read More >](#)

[Project Journal](#)

**Overview** 104 OBSERVATIONS 85 SPECIES 55 IDENTIFIERS 13 OBSERVERS Stats

**Recent Observations** View All

**Genus Anoplodactylus** 19 days ago

**Cigar Comb Jellies**  
Genus Beroe 4 a month ago

**Pacific Sea Gooseberry**  
*Pleurobrachia bachei* 1 a month ago

**Rough Piddock**  
*Zirfaea pilsbryi* 13 days ago

# KML Social Media

We've recently updated our social media accounts! Follow us on all the platforms for the latest updates and news!



**Facebook:**

***Kerckhoff Marine Lab - Caltech***



**Instagram:**

***kerckhoff\_marine\_lab***



**YouTube:**

***Kerckhoff Marine Laboratory***



**LinkedIn:**

***Kerckhoff Marine Laboratory***



**TikTok:**

***kerckhoffmarinelab***

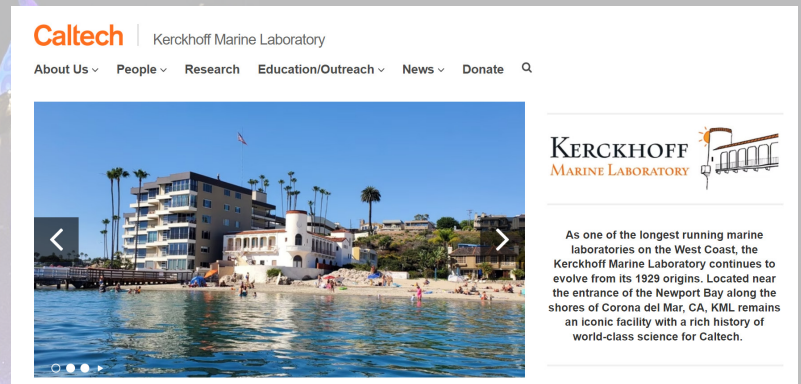


**Threads:**

***kerckhoff\_marine\_lab***

# For More Info

**Check out our Website:**  
**<https://kml.caltech.edu>**



**Join our Mailing List:**  
**[kml-info@caltech.edu](mailto:kml-info@caltech.edu)**

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**Newsletter**

**Support KML:**



**Our Linktree:**



For all other inquiries about how to access or support KML please contact:  
**Stephen Ranson ([sranson@caltech.edu](mailto:sranson@caltech.edu)) or call us at 949-675-2159.**