BETWEEN the TIDES

Friends of Fitzgerald Marine Reserve

June 2025

Reef Check Foundation's Kelp Forest Monitoring Program Fitzgerald Marine Reserve and the Central Coast

by True Barnes: Central Coast Regional Manager of the Reef Check Foundation, Recipient of an FFMR Bob Breen Memorial Scholarship

On any given morning in late summer, a team of divers rolls backwards into the treacherous waters off of the coast near Mavericks, off Pillar Point 4 miles north of Half Moon Bay. Armed with underwater slates, transect tapes, and data sheets, they're not just out for a dive, they're conducting a scientific survey to monitor and assess the health of California's kelp forests. (Photos 1 & 2)

This is the work of the Reef Check Foundation[1], a volunteer-based marine monitoring program that empowers community scientists to collect high-quality ecological data. Our mission is to inspire people to take action for our reefs and oceans, to collect data on reef health, and assess climate change impacts to be used by marine resource managers, scientists, and policymakers. Our hope is that our work and dedication will be used to develop ecologically sound and economically sustainable solutions for reef conservation and restoration.

One of Reef Check's missions in California is to assess the functioning of the state's network of Marine Protected Areas[2] (MPAs) that line our coastline. Working with volunteers from local dive communities, universities, federal and state agencies, and conservation organizations, we train divers to become skilled and certified citizen scientific underwater surveyors. Our volunteers learn to identify specific indicator species among sea stars, urchins, kelp, rockfish, and so much more. They also learn to follow rigorous protocols to track how these species and their habitats change over time. Reef Check's Central Coast region (spanning from Half Moon Bay to Morro Bay) surveys over 45 sites each year, most of which are connected to an MPA to evaluate how well this management plan works throughout time.

In 2017, Dan Abbott, the Director of Reef Check's Kelp Forest Monitoring Program decided it was high time to evaluate Fitzgerald Marine Reserve. The reserve holds a spectacular and healthy bull kelp forest ecosystem containing many species of subtidal invertebrates and fish.

He and a small team of Reef Check divers chose two sites:

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Photo 1: Reef Check diver taking data.
Photo: Sage Ono

Photo 2: Bull Kelp Forest.
Photo: Marco Mazza

Friends of Fitzgerald Marine Reserve

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Our Mission:
The protection and preservation of the Fitzgerald Marine Reserve as a unique intertidal and coastal environment through the promotion of educational and experiential activities for students, visitors, and researchers.

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Coming Back to Fitzgerald Marine Reserve

True Barnes (Photo 5)

Growing up in the Half Moon Bay area, I got the chance to spend much of my childhood exploring the tidepools and coastal foothills. Visiting the reserve became a regular part of my life, feeling anemones close under my fingertips, watching hermit crabs scuttle between pools, and listening to oystercatchers call as they zipped back and forth over the rocks. Over time, I developed a deep appreciation for this unique tidal ecosystem.

My time at Half Moon Bay High School expanded my appreciation and interest under the guidance of my Marine Ecology teacher Joseph Centoni. Taking Marine Ecology brought out my passion in this subject, giving me the opportunity to excel in a way I had not done before, while being exposed to the tools I would later use for my career.

Receiving the Bob Breen Memorial Scholarship, named after Fitzgerald's first Naturalist Ranger, was a turning point. The scholarship helped fund my undergraduate studies in Fisheries, Wildlife, and Conservation Sciences at Oregon State University, where I became a PADI dive instructor and immersed myself in marine biology. Learning to SCUBA dive transformed a subject I saw as interesting and a potential career path into a lifetime purpose.

After returning to California and earning my AAUS (American Academy of Underwater Sciences) scientific diving certification, I joined Reef Check as a volunteer diver. I was immediately drawn to the combination of rigorous dive-based science and the community of driven, dedicated staff and volunteers. In 2024, I became Central Coast Regional Manager, overseeing sites from San Mateo County, Monterey, and San Luis Obispo, including the very waters I grew up exploring. (Photo 6)

It's a rare gift to give back to the place that raised you. Working with Reef Check in Half Moon Bay and Fitzgerald Marine Reserve is incredibly exciting, not only because I get to see the reserve from a different angle, but because of the work I do. I'm deeply grateful to the Friends of Fitzgerald Marine Reserve for their support of young scholars like me and for their ongoing commitment to public education and coastal stewardship. ◆

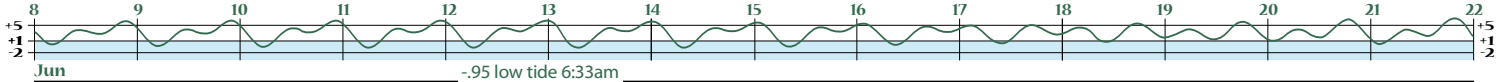
True Barnes, land mode (Photo 5) and sea mode (Photo 6)
r: Surveying a kelp forest, Photo: Bruce Sudweeks

The graph displayed across the page bottoms shows tides for 6/8/25 to 10/26/25 at Princeton Harbor. Where the date appears is midnight. Reefs are accessible for exploring at low tides during hours when FMR is posted as "Open." Low tides at least +1 or below are best for tidepooling. See: https://fitzgeraldreserve.org/lowtides

Good low spring/summer tides are in the early morning. They change to evening tides in September. There are almost equally low tides several days before and several days after the noted low tide dates.

The lowest tides this period at Princeton Harbor:

-.95	6/12	6:33am	-.79	8/21	4:20am
-1.91	6/25	5:35am	-.27	9/6	4:49am
3rd lowest tide of 2025			-.24	9/18	3:12am
-.94	7/11	6:12am	-.94	10/09	7:21pm
-1.39	7/23	4.37am	-.36	10/12	10:38pm
-.66	8/8	5:07am	-.07	10-23	6:50pm



Reef Check *continued from page 1*

Half Moon Reef and Flat Rock—one site outside of the reserve and one site within—to compare the differences between a recently protected and a non-protected marine ecosystem. (Figure 1) These sites were not a popular choice in the diver community. The coastline near Mavericks is known for its turbulence and occasionally unfriendly wildlife, and Half Moon Bay is not a place suited for recreational diving. However, volunteers still answered the call, and in 2018 two new sites were added: Hurricane Ridge, outside the MPA, and Beach Street within the MPA and adjacent to Fitzgerald Marine Reserve's Ranger Station.

These sites are not easy to survey. Wave and weather conditions need to be almost perfect, but can change quickly. Underwater visibility can also be a hurdle as the turbulent coastline stirs up silt and nutrients. Due to that, there are only a few days in the year in which this area can be surveyed. Yet collecting our data has become more important than ever. Using that data, agencies and researchers can assess the resilience of coastal ecosystems in the face of threats like climate change, warming waters, and sea star wasting disease. Recent years have seen a dramatic loss of bull kelp and an explosion in purple sea urchin populations, a trend we're working to understand and, with our partners, help mitigate through targeted restoration efforts. Fitzgerald Marine Reserve is an important area to understand as the bull kelp forest present is largely intact with certain species of kelp and invertebrates showing higher populations and health than in other parts of the California Coast. Because of this, our staff, volunteers, and exceptionally intrepid boat captain, Phil Sammet, continue to survey these sites, even when the call to dive is on short notice or not in ideal conditions. (Photo 3)

This vital work is made possible in part through funding from SeaTrees[3], a program by Sustainable Surf that supports coastal restoration projects around the world. By partnering with Reef Check, SeaTrees is helping fund community-driven kelp forest monitoring and urchin removal efforts right here in the Half Moon Bay Coastside. Their support enables us to train more divers, expand our data collection, and contribute to the broader movement of ocean regeneration: restoring not just ecosystems, but the climate benefits they provide.

What makes Reef Check unique is our belief that conservation works best when local communities are directly involved. Many of our divers have no prior science background; they just care deeply about the ocean. By giving them the tools to monitor and protect their own coastlines, we're building a grassroots movement for ocean health. (Photo 4) ◆

Figure 1: Map of Reef Check monitoring sites

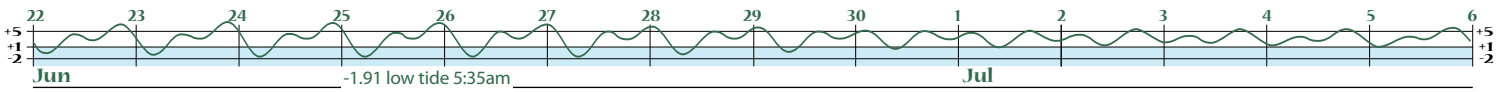
Photo 3: Diving off Phil Sammet's boat, The Siren

Photo 4: The Reef Check Team in 2022. Photo: Marco Mazza

[1] https://www.reefcheck.org/

[2] https://wildlife.ca.gov/conservation/marine/MPAS

[3] https://seatrees.org/ See our article on SeaTrees and Kelp Forest Restoration in our March 2025 issue, page 2.



Algae-Palooza 2025

by Kathyrn Barton, FFMR Volunteer Naturalist and Member, Between the Tides Editorial Board

The dried specimens will be used in a variety of ways: for volunteers in the training class, to bring along on school visits, and as displays at the visitor center.

On a recent beautiful Sunday morning a group of FFMR volunteers gathered to collect algae for making dried, pressed specimens. The volunteers were following in the footsteps of hundreds of years of botanists who have used pressing and drying as a means of preserving plants for science. Scientists at the University of Bologna in the 16th century are reported to be the first to use this method. In the intervening centennia, universities have built large reference collections of pressings. Plants that are fully dry and stored in dry conditions can last for hundreds of years. In our modern era these preserved plants have been used not only as references for species but also as sources of DNA—something the Italian professors probably never dreamed of.

Collecting was done at Mavericks Beach (Pillar Point Harbor) since this area allows collection of seaweeds from the beach wrack (up to 10 pounds). Seaweeds were brought to the visitor center at Fitzgerald Marine Reserve where the group worked outside at long tables to rinse the algae, arrange them on paper and assemble them into "sandwiches" with blotter paper and cardboard. These sandwiches were put into custom presses made by Gregg Langlois specifically for this purpose.

As usual when the sun shines and there is a good low tide, there were many visitors on the Marine Reserve grounds. Many were curious to see what was happening with the algae and the presses. It was a great opportunity to describe and revel in the rich biodiversity of our wonderful ocean park.

In addition to FMR volunteers, we were joined by two young scientists: Dr. Jose Avila Peltroche and Sam Alcott. Jose is a visiting scientist/postdoctoral researcher at the Carnegie Institution for Science on the Stanford Campus. He is a specialist in algae and has traveled the world in his studies. He was especially helpful in identifying the algae we had collected. Sam is a graduate student in Climate Physics at UC Berkeley and is eager to expand science at the junction of physics and ecology. It was invigorating and encouraging to see the enthusiasm and energy of future science embodied by these two and it gives us confidence in our next generation of wilderness stewards.

The dried specimens will be used in a variety of ways: for volunteers in the training class, to bring along on school visits, and as displays at the visitor center. This was the first time for "Algae-palooza" at FMR and the group came away with many ideas for how to improve the collection and pressing process in the future. Future events are planned and we hope will generate more excitement for our beautiful algae. See more photos on the top of the next page ➥

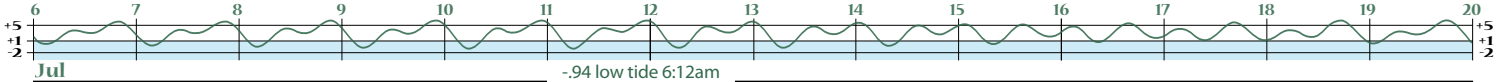
Sarah starting her algae page

Karen choosing her algae

Kristen's page ready for the press

Cynthia getting a page for the press

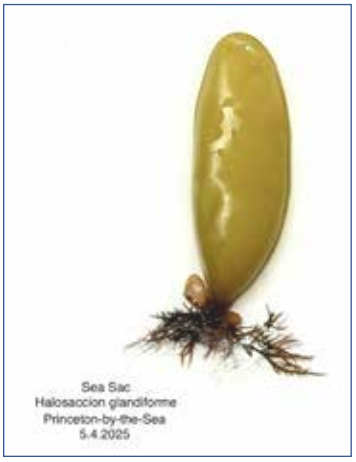
Barbara, Jose and Sam identifying specimens and laying them on the press



Gregg tightening the press

Pressed specimens on the press

We need a bigger press!



Portrait of Professor Lucca Ghini, Italian physician and botanist, the creator of the first modern herbarium, with his herbarium (plant book) circa 1544. https://espores.org/es/es-jardines/ulisse-aldrovandi-los-hermanos-ambrosini-y-el-jardin-botanico-de-bolonia/

Marine Related Podcasts

by Kathryn Barton, FFMR Volunteer Naturalist

A lot of us like to listen to podcasts while we walk, do household chores or drive. Here is a short list of podcasts you may want to check out for tidepool, climate and ocean related topics.

Rising Tide —The Ocean Podcast—Blue Frontier Foundation: Ocean science, climate science, conservation and exploration are covered by a crew based in the Bay Area.

https://bluefront.org/category/podcast/

The Rising Tides Podcast (This one has a similar name to the one above but is distinct from it.): Based at the University of South Florida, this is a collaboration between the Departments of Journalism and researchers at USF's College of Marine Science.

https://www.usf.edu/marine-science/news/2025/the-rising-tides-podcast-explores-cutting-edge-ocean-technologies-in-marine-science.aspx

The Deep Sea Podcast: Focused on deep sea topics, The Deep Sea Podcast calls itself "a Punk Take on a Science Podcast."

https://www.armatusoceanic.com/episodes

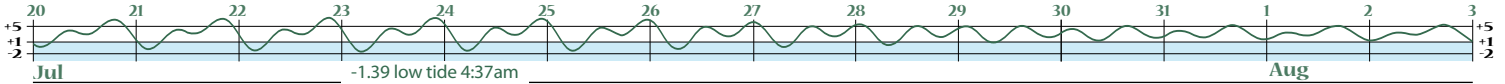
Golden State Naturalist: This podcast covers California topics more generally.You may want to check out the episodes on "Sea Level Rise and the California Coast" (Oct 31, 2024) and "Tide Pools" (March 1, 2024) among others

https://www.goldenstatenaturalist.com/

The NOAA Ocean Podcast: Covers topics from corals to coastal science.

https://oceanservice.noaa.gov/podcast/

This is just a sampling and there are no doubt others that are excellent.If you know of any other ocean related podcasts you enjoy, please let one of us know so we can let others know about it.



2025 FFMR Volunteer Training Class

by Susan Evans

Sponges live anywhere from a few years to a thousand years

Great Horned Owls can only look straight ahead but they compensate (and get their extraordinary night vision) by being able to turn their heads 270 degrees left or right from the forward-facing position because their neck has 14 vertebrae, which is twice as many as humans!

Our Galapagos travelling student, Abbe, was wearing light blue flippers when she presented her report about the Blue Footed Booby. She even managed to dance in the flippers when demonstrating the mating dance!

This year we welcome 14 new volunteers into the Friends of FMR program. They are: Michel Adar, Abbe Braitman, Kathleen Clark, Jen Gale, Kaua Hermosura, Janet Himel, Micah Lee, Roger Mascio, Tracy Nappi, Brandie Romero, Brittaney Shade, Kaitie Soto, Bella Tinoco, and Barbara Williams-Sheng. Here are some highlights from this year's class:

Our usual trip to the harbor turned out to be far from usual. In class with Bill Kennedy we were reminded of some fun facts: sponges live anywhere from a few years to a thousand years and flatworms copulate when the male "punches" a hole in the females' skin. And who doesn't love hearing about "the retractable crown of ciliated tentacles" of the lophophore which is the feeding organism for bryozoan. After all this glorious talk, real life drama did happen. One student, while laying down low on the pier to view animals underneath, had her cell phone accidentally slide right out of her jacket pocket into harbor waters! Efforts to retrieve the phone (in 18 foot water) with long netted poles were sadly unsuccessful. Goodbye 6000 photos.

Starting in September 2024, sign-ups for the 2025 class were sparse. When I heard several people weren't signing up because of upcoming travels, I decided to extend the number of allowed absences for the class. (As an overall rule, whoever might be missing classes were reminded of their responsibilities to make up missed work and possibly attend missed classes the following year.)

Two of these students agreed to say something about their adventures: Janet Himel travelled to St. Barts in the Caribbean. On snorkeling adventures she saw fish, rays and sea turtles. She even swam along the surface keeping pace with a sea turtle below. Janet rescued many turtles venturing onto busy roads and her family called her the turtle whisperer.

Abbe Braitman travelled to the Galapagos and saw sea lions everywhere. "We snorkeled daily and the sea lions would skillfully swim around us but we were told not to engage them as even the small ones were very strong." Other animals seen were iguanas, tortoises, penguins, fish and seabirds (including the Blue-footed Boobies).

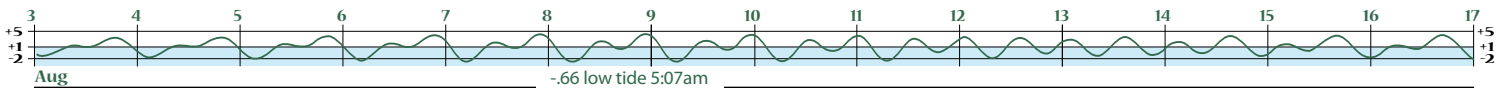
Student bird reports were refreshingly delightful. I couldn't help but be impressed by the confidence and composure of students delivering their information. Our Galapagos travelling student, Abbe, was wearing light blue flippers when she presented her report about the Blue Footed Booby. She even managed to dance in the flippers when demonstrating the mating dance! Another student captivated us with fun facts about the Great Horned Owl. Their eyes are held in place by bony structures so they can only look straight ahead. However, they compensate (and get their extraordinary night vision) by being able to turn their heads 270 degrees left or right from the forward-facing position because their neck has 14 vertebrae, which is twice as many as humans!

Thank you to Tom Ciotti for delivering his solo lecture on both the history and plants on our bluff, and even on his birthday!

Thank you to Joseph and Irina for sharing reef time with the class. Spring vacations had a way of colliding with our schedule this year, thus throwing off the low-tide-time availabilities for speakers. Joseph and Irina didn't miss a beat as they both rattled off geology and tidepool ecology factoids as if they had been doing this for years! When I first mentioned this reef sharing idea to Irina, her comments were: "Happy to share. That totally works! What a creative solution!" We are always glad when Irina can point out the 2 million year old fossilized whale bone. By the way, By-the Wind Sailors (Velella-velella) were scattered beachside.

Thank you to Nicole Thometz for reminding us of our harbor seal facts: Females mate 1-2 months postpartum, gestation is 10 months and lactation 4-6 weeks. Harbor seals are a species of least concern but threats include entanglement, harassment, habitat degradation and contaminants.

Also thank you to Jean Replicon for the Mollusk lecture, Joseph Centoni for his lectures and labs at HMB High School, Carol Ferguson, Linda Ciotti and Elaine Reade for jacket/clothing ordering and Ron Olson(and all other volunteer naturalists) for mentoring students. ◆



Classroom tidepool fun with Kaitie, Barbara, Brittaney and Kathleen

Pillar Point Harbor, Bill and Barbara

Phidiana Hilton (top) and Acanthodoris rhodoceras (bottom)

CONGRATULATIONS to THE CLASS of 2025.

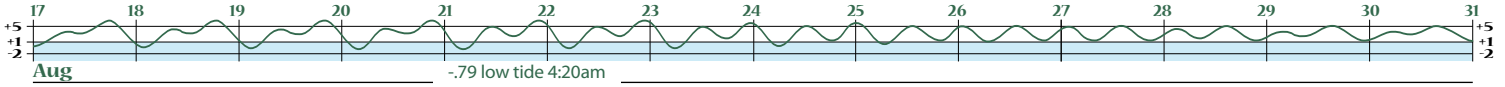
We wish you many happy years of tidepooling!

Pillar Point: Front: Susan, Roger, Barbara, Janet, Brittaney, Michel; Back: Kaua and friend, Kathleen, Ron

Pillar Point Harbor: Seated:Tracy, Kaitie and Micah; Standing Front: Barbara, Janet, Susan, Bill, Ron; Back: Kathleen, Jen, Kaua and Roger

Graduates

The whole class: Front kneeling: Kaitie, Tracy, Michel, Bella, Micah; Back: Kaua, Abbe, Susan, Janet, Barbara, Roger, Jen, Brandie, Brittaney and Kathleen



The Blue Beaches of Spring

by Debbie Rogers

Editor's note: Our beaches have been littered with By-The-Wind-Sailors (aka Velella velella) this spring. Hundreds of thousands if not millions are deposited by the high tides. This article by Deb Rogers can also be found on our website with several more vibrant photos at: https://fitzgeraldreserve.org/creature-feature-velella-velella-by-the-wind-sailors Also, new Creature Feature articles are added to the webpage so check back regularly to find out more about our tidepool locals.

Velella washed up on the beach. This specimen has its "sail" pointing to the left, or to ten o'clock. These are the most common in the northern hemisphere. Velella with sails pointing to the right, or to two o'clock are most common in the southern hemisphere.

One of the most astounding and beautiful sights at the tide pools is a sometimes ankle-deep blanket of blue brought by the westerly winds in late spring or early summer. This glossy, iridescent blue cover may envelop the entire beach area and is comprised of millions upon millions of Velella velella, By-the-Wind Sailors. It's a mesmerizing sight to behold.

Someone observing this for the first time may think the beach is covered with blue cellophane. A closer look reveals the great multitudes of animals whose misfortune it was to be pushed ashore by the wind and washed up on the reef and sand.

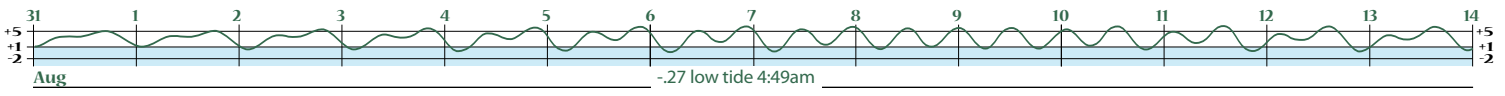
Velella velella that have recently washed up on the beach are in their colorful blue glory and feel very slimy and slippery to the touch because they still have their soft tissues and tentacles intact.

Velella velella are part of the phylum Cnidaria, related to sea anemones, corals and jellies. They are carnivores and feed on fish eggs, copepods and zooplankton. Although they are close relatives of the Portuguese Man-of-War, which gives dangerously painful stings, Velella velella do not pose a stinging threat to people.

These creatures are floating (pelagic) colonies of hydroids, often mistakenly referred to as jellies. They spend their lifetime drifting and floating great distances in the open sea. They have no means of guiding themselves but have little sails, about an inch tall, of transparent material similar to the chitin that makes up our fingernails. This sail, mounted on top of a gelatinous, elliptical float which grows to about four inches long, catches the wind and propels the colony through the water in search of food. The little tentacles which cover the underside of the float are individual creatures hanging down into the water.

These little tentacles, also called hydranths or polyps, have specialized jobs. A large polyp in the center distributes the digested food, while other polyps specialize in reproduction. Like anemones, Velella velella reproduce by budding off medusae which become free-swimming animals that act like little jellies. Eventually, these medusae release gametes into the sea, which combine and produce swimming larvae that eventually become a new colony. Velella velella that have recently washed up on the beach are in their colorful blue glory and feel very slimy and slippery to the touch because they still have their soft tissues and tentacles intact. Those that are still alive can be seen floating and sailing around the tide pools, held aloft by gas chambers in their structure. Others lie in great heaps on the sand and reef.

Within a few days after the initial stranding, the soft tissue either decomposes or is consumed by tide pool carnivores. Sea anemones have been known to experience great growth spurts during Velella velella strandings! This natural recycling can cause quite a stench. All that remains of the unfortunate colonies after these first few days is the transparent, plastic-looking "skeleton." Eventually, all the little skeletons will be washed from the beach and returned to the sea. The following year, in the late spring when the westerly winds blow again, the cycle will repeat itself. Giant ribbons of blue, which when observed from the air look like an oil spill, will return to the San Mateo coast, and once again the beaches will be covered by the vibrant blue Velella velella blanket. ◆



Message from President Ron Olson

Spring is the time of year when we celebrate new life. We can see it all around FMR. We can see it along our trails with new growth on bushes and the fresh color of our flowers. Our tidepools, once barren rocks, are now covered with fresh coats of algae and sea grass.

This is also the time when harbor seals have their pups. As soon as pupping season starts, the main beach access to our tidepools is closed to the public and remains closed until all of the pups have been weaned. We can still observe their haul out area from our bluffs, a safe distance away.

This year's pupping season started a little later than usual. Our second pup born at FMR was at Ross Cove, at the southern end of our park, on March 25th. On that day, this seal pup's life almost came to an abrupt end. A visitor from the local area went down to Ross' Cove to enjoy nature. Once on the beach, she noticed a woman with three dogs off leash. As she approached the woman, she noticed that the woman was actually in contact with a newborn harbor seal pup. Human interaction with pups is a major reason for pup abandonment.

Our visitor made several calls for help. The staff from the Marine Mammal Center arrived, were directed to the pup and immediately began rendering assistance.The male pup was alert but quiet. He was slightly underweight (at 19.4 lbs) and still had his lanugo coat. This is commonly found in premature births. He also had a slight umbilical infection. By sunset this pup was on his way to the Marine Mammal Center for further treatment. Since then he has put on weight and his wound has healed.

When someone aids in the rescue of a marine mammal, they are given the honor of bestowing a name. Our harbor seal pup was given the name "Firefall." After he has recovered, he will be returned to the wild. You can visit the Marine Mammal website to check up on Firefall's progress.

As we look down from the bluffs to observe the harbor seals hauling out, it looks like an ideal life. Catchin' some rays. Chillin' on the beach with my homies. Although it sounds great, nothing could be farther from the truth. Only one third of all newborn harbor seals reach their first birthday. Interactions with humans, dogs and coyotes are major factors that contribute to their deaths. Although they are superb swimmers, sharks and boat strikes take their share. Throw in parasites and diseases caused by contaminated runoff and it's a wonder that we have any harbor seals at all.

As summer approaches and harbor seal weaning ends, we will once again have our main access to tidepools available to us. Our pups will have survived the first of many challenges. Do what you can to keep them safe. Pay attention to the cone lines that are there to protect them. If you see a harbor seal lift its head or move away, you're too close. Let's do what we can to ensure that we can enjoy these magnificent creatures for years to come. ◆

What to do if you see someone breaking the law at FMR?

The Marine Mammal Protection act prohibits getting within 50 yards of seals, dolphins and sea lions (within 100 yards of whales). If you see someone breaking the law, it is safest to call the Park Rangers and alert them. Our job as volunteers is education —we do not recommend that our volunteers confront rule breakers. If you feel you can do so safely, you may want to say something like ***"Did you know that getting close to a seal pup can be deadly for the pup? The mothers often abandon pups that have had human interaction. In fact there is a law that says you can't get closer then 50 yards to a seal."*** People often respond better if they understand the "why" behind the rules. ◆

Only one third of all newborn harbor seals reach their first birthday. Interactions with humans, dogs and coyotes are major factors that contribute to their deaths.

Marine Mammal Center Hotline

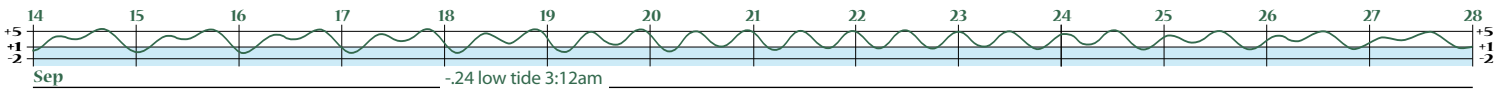
(415) 289-SEAL (7325)

https://www.marinemammalcenter.org/

FMR Park Ranger

(650) 355-8289

Do what you can to keep olur harbor seals safe. Pay attention to the cone lines that are there to protect them. If you see a harbor seal lift its head or move away, you're too close.



Harbor Seal Surveys at Fitzgerald Marine Reserve

prepared by:

***Sarah Codde**, Marine Ecologist, Inventory & Monitoring Program, Point Reyes National Seashore*

***Dru Devlin,** Beach Watch Research Associate, Greater Farallones Association, NOAA Affiliate*

...a noticeable drop in the total number of seals during the molting season has been observed since 2019, with counts consistently falling below the long-term average of 267 seals.

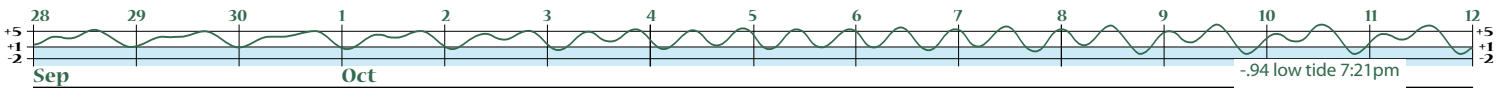
Fitzgerald Marine Reserve is a vital refuge for harbor seals, and long-term monitoring shows just how important this protected spot is. The surveys conducted here are part of the Central California Harbor Seal Monitoring Program, a collaborative effort that spans from San Mateo to Mendocino counties. Point Reyes National Seashore leads the effort and has coordinated the broader monitoring effort since 2005, bringing together federal and state agencies, non-profits, and universities to track harbor seal populations along the central California coast. Tracking trends in the harbor seal populations is critical to help resource managers identify stressors that may be impacting the population and develop potential mitigation measures to ensure a healthy ecosystem.

At Fitzgerald Marine Reserve, a San Mateo County park ranger conducted harbor seal surveys in the early years of the monitoring program. In 2012, the surveys at the reserve transitioned to the Greater Farallones Association as part of Beach Watch. Fitzgerald Marine Reserve is one of six San Mateo County survey sites, along with Point San Pedro, Cowell Ranch, Purisima Creek, Pescadero, and Pebble Beach. These surveys are carried out by trained volunteers who are skilled in identifying local marine mammals and documenting beach conditions. Their work provides essential data for understanding long-term trends in the harbor seal population.

In the spring months (March–May), female harbor seals give birth to a single pup (this is known as the breeding season). Surveys are conducted every other week during the breeding season, except during the peak of the season (mid-April to early May) when surveys are done weekly to ensure the maximum number of pups born is observed. In the summer months (June–July), surveys are conducted every other week during their molting season, when harbor seals shed their old fur and grow a new layer. Volunteers count the number of seals hauled out onshore, categorize them by age (pups or adults/immatures), and record any disturbances. During molting, when age distinctions are harder to make, all seals are counted together.

Over the past 20 years, breeding season counts have remained relatively stable, with a peak in 2015, and a slight decrease in adult/immature counts since 2021. On average, 216 adults/immatures and 41 pups are counted during the breeding season. However, a noticeable drop in the total number of seals during the molting season has been observed since 2019, with counts consistently falling below the long-term average of 267 seals. Similar declines have been reported at other central California sites, though the cause remains unknown.

Data from the program is shared with NOAA and other marine mammal researchers. Findings from this regional effort helped prompt a statewide harbor seal survey in summer 2024, led by the National Marine Fisheries Service. This aerial survey of the entire California coast will help determine whether population shifts are occurring more broadly and how the current numbers compare to the last statewide survey in 2012. Annual survey results from the Central California Harbor Seal Monitoring Program are published by Point Reyes National Seashore and can be found on the National Park Service website under Pinniped Monitoring https://www.nps.gov/im/sfan/pinnipeds.htm

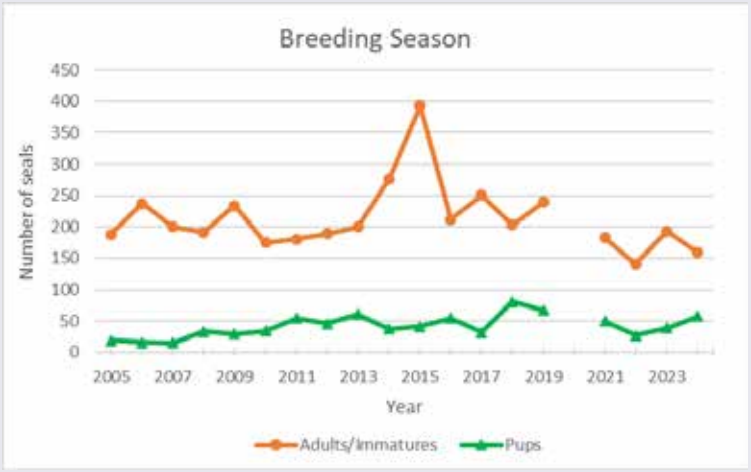


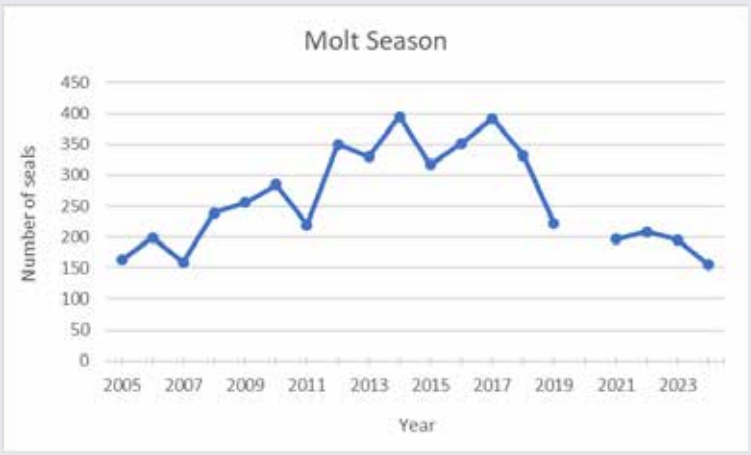
Harbor Seal Counts at Fitzgerald Marine Reserve (2005–2024)

These graphs show long-term monitoring data for harbor seals at Fitzgerald Marine Reserve from 2005 to 2024, focusing on three categories: adults/immatures, pups, and molting season counts.

- Adult/immature counts have remained relatively stable with some fluctuations, with a peak in 2015 and a slight decrease since 2021.
- Pup counts show annual variability, with a notable increase in 2018.
- Molt season counts peaked in 2014 and 2017 but have shown a marked decline since 2019, continuing through 2024.
- No data were collected in 2020 due to survey interruptions.

These trends help researchers track changes in harbor seal population dynamics over time and contribute to broader regional assessments along the Central California coast. ◆



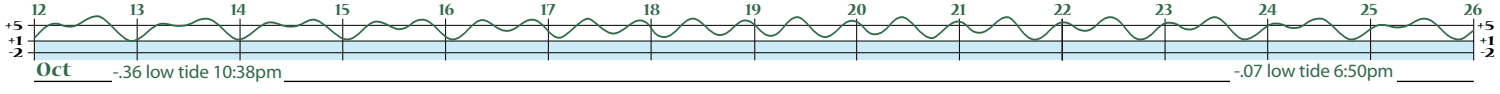


Land Acknowledgment Statement

The Friends of Fitzgerald Marine Reserve acknowledges that the Reserve is located on the unceded ancestral homeland of the Ramaytush Ohlone Peoples. As guests, we recognize that we benefit from the beauty and diversity of this land and seashore. We wish to pay our respects by acknowledging the ancestors and relatives of the Ramaytush community and by affirming their sovereign rights as First Peoples to govern their communities and preserve their cultures. Finally, we seek to honor the Ramaytush community's sacred relationship with ocean and marine ecosystems by educating the Reserve's visitors and protecting the Reserve for future generations.

We want to hear from you.

What do you like about the newsletter? What type of articles would you like to see in *Between the Tides*? What article could you write for us? Please contact the Editorial Board at: betweenthetides.editorialboard@gmail.com and we will be in touch. See you out on the reef!



FMR bookmark

Sea Anemone

Hermissenda and Sea Urchins

Purple Sea Star

Hermit Crab (held in fingers)

FITZGERALD MARINE RESERVE

Letter to the Editors: It's been fascinating to watch my three-year-old grandson's vocabulary expand, from yes, and no, bye-bye, mama, etc. to "That's funny grandma," or "Stay grandma" (they have two dogs, so he's learned to say "stay" in a very authoritative voice, and of course I obey). But I must say I was surprised the other day when he noticed my Fitzgerald bookmark on the table and pointed at the green photo and said "anemone"! A 4-syllable word that he never hears in a normal conversation! Turns out my son had taken him to the Reserve several months earlier, and they saw anemones, but I never would've imagined he would remember such an unusual, long word. ***Perhaps we've got a budding marine biologist in the family!*** ***—Martie Sautter, Montara***

Do what you can to keep olur harbor seals safe. Pay attention to the cone lines or stop signs that are there to protect them. If you see a harbor seal lift its head or move away, you're too close.

Friends of Fitzgerald Marine Reserve

Donation Chair, P.O. Box 669, Moss Beach, CA 94038, or through our website: **https://www.fitzgeraldreserve.org/donations/**

Contribution Levels:

❑ $25 ❑ $100 ❑ $1000

❑ $50 ❑ $500 ❑ Other _____

❑ I want to double the value of my gift through my employer's matching gift program (please enclose the matching gift forms).

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