

# BETWEEN the TIDES

F r i e n d s   o f   F i t z g e r a l d   M a r i n e   R e s e r v e

June 2021

Check out our revamped website with some terrific new videos (including our new 2021 pups!): [www.fitzgeraldreserve.org](http://www.fitzgeraldreserve.org)

**MAY 3, 2021:**

## REOPENING DAY AT FITZGERALD MARINE RESERVE

*by Linda Ciotti*

With much anticipation, May 3 arrived and the beaches and tidepools at FMR reopened to the public after having been off-limits since March 2020. It was a perfectly sunny day although a little nippy when Tom and I arrived at 7:30 Monday morning to get set up and ready to welcome visitors back to FMR when it officially opened at 8:00 AM.

Marsha Cohen and I had spent some time earlier in the week to select some exhibits for display at both the main ramp entrance at Moss Beach, and also at the top of Seal Cove stairs at the southern access point. San Mateo County Parks Rangers and Parks Aides were also on site to help with the set-up at both locations and also were busy getting ready to welcome visitors.

Tom took the Seal Cove location and I handled the

main ramp area. We had laminated tidepool guides to hand out to visitors, which they could return to us on their exit, as well as exhibit boards explaining the history, geology, and tidepool critters visitors might encounter during their visit.

We had a number of volunteers who had signed up to help out during the full day to act as greeters at the two table locations, and also to rove on the beaches and tidepools to answer questions and help visitors. The remains of the whale carcass that had washed up April 3 was still evident on the beach at Seal Cove which attracted some attention, although at that point there wasn't a lot to see, except for some of the whale bones.

Big thanks to the following volunteers who arrived throughout the day to help: Julie Walters, Elaine Reade, Beth Roellig, Victoria Knight, Paul Gater,

*continued on page 2*



*photo - Rob Cala*



*photo - Rob Cala*



*photo - Julie Walters*

Gray Whale rib



*photo - Julie Walters*

Gray Whale vertebra



*photo - Julie Walters*

Gray Whale fluke



*photo - Julie Walters*

Rob Cala, Elaine Reade, Deryck Marsh

## Friends of Fitzgerald Marine Reserve

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To inspire the preservation  
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## Reopening Day *continued from page 1*

Karen Kalumuck, Barbara Dye, Marsha Cohen, Jeanette Hyer, Steve Slomka, "T" Whitson, Dan Woodard, Al Kordesch, Mike Davis, Kimberly Pratt, Sara Anderson and Ron Olson.

In addition, Seal Sitters Cathy Coulman, Audrey West and Vidyut Lingamneni were on hand at the cone line on the main beach to help visitors view the harbor seals and some

of this year's pups using the spotting scope. They also offered information about these animals and explained why it is important not to disturb our resident harbor seal population.

Everyone was impressed by the visitors who arrived who were as happy as we were that the beaches and tidepools were open again! The crowds were not too large which made tidepooling more enjoyable for everyone. Throughout the day there were only a few incidents encountered by volunteers and staff

where visitors were unclear about what was allowed on the beach and tidepools, even though greeters were reminding everyone as they arrived of the rules and regulations in place to protect the sensitive habitat.

All and all it was a great re-opening for everyone: it was nice to have volunteers back in action, helping visitors after such a long time.

If you are interested in visiting Fitzgerald Marine Reserve to observe the marine life found in this special location, please view the following videos, produced by Ranger Rob Cala. These will help prepare you to visit FMR and explain the important rules and protocols in place so you can experience the wonder of the tidepools while protecting the entire habitat for future generations.

<https://vimeo.com/533774730>

<http://fitzgeraldreserve.org/video>

**WE LOOK FORWARD TO  
SEEING YOU AT FMR  
IN THE FUTURE!**



photo - Elaine Reade



photo - Elaine Reade



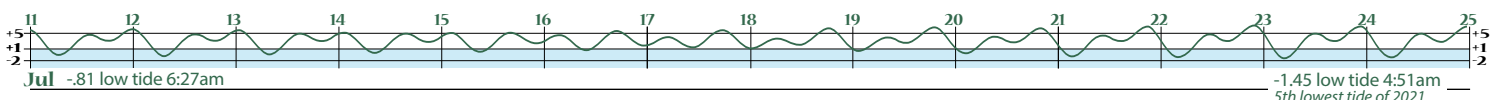
photo - Elaine Reade

The graph displayed across the page bottoms shows tides for 7/11/21 to 11/28/21 at Princeton Harbor. Where the date appears is mid-night. The reefs are accessible for exploring during low tides—at least +1 or below. This area is shaded light blue. See: [fitzgeraldreserve.org/lowtides/](http://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 are:

-0.81	7/11	6:27 am	-0.33	9/17	2:41 am
-1.45	7/23	4:51 am	-0.59	10/09	7:46 pm
	<i>5th lowest tide of 2021</i>		.05	10/23	7:13 pm
-0.55	8/09	6:01 am	-1.43	11/06	6:38 pm
-0.85	8/21	4:34 am		<i>7th lowest tide of 2021</i>	





# Gray Whale Washes Ashore at Fitzgerald

by Julie Walters

On the afternoon of Friday, April 2, Sue Pemberton,\* a curatorial assistant at the California Academy of Sciences who happens to live in El Granada, was riding her bike along Weinke Way in Moss Beach and stopped to look for migrating gray whales. What she saw was not what she expected. About a mile offshore she could see what appeared to be the carcass of a whale floating out in the distance.

Fitzgerald Marine Reserve (FMR) rangers, along with Janine Miller, an FMR docent who lives close by, continued to watch the floating carcass, periodically giving updates to Sue.

Then on the following day, April 3, the whale washed ashore on Seal Cove Beach at FMR. A crew from the Marine Mammal Center along with others from the California Academy of Sciences were assembled and began the necropsy that same day.

This is what they discovered:

- The recently deceased female gray whale was 13 meters long (approximately 42.65 feet).
- The whale was either an older female, or a younger female that did not have a calf this year. Sue determined this because the whale did not have any milk in her mammary glands.
- The good news is that this whale was not malnourished and appeared to have found enough food while passing through our area.
- There was some trauma on the right of the head plus a gash that could possibly be from a propeller strike.

The cause of death is undetermined at this time but these last clues point to a possible encounter with a large ship. The crew collected tissue samples and a pathologist at the Marine Mammal Center will attempt to make a determination on the cause of death.

On April 21, as the whale began to decompose further, Sue took a second look at the back of the whale's skull and did not observe any broken bones in that area. Sue says that all the typical ship strike clues are not present with the whale found at Fitzgerald. This is because, as far as she could see, there was no damage to the spine, which is what typically happens when a ship hits a whale.



Barbie Halaska, Necropsy Manager at the Marine Mammal Center, beginning a necropsy. Photo by Sue Pemberton/California Academy of Sciences

The pathologist at the Marine Mammal Center is also reviewing the deaths of three other whales that recently washed ashore in the Bay Area at Muir Beach, Crissy Field and the Berkeley Marina. At least one of these is thought to be a ship strike victim.

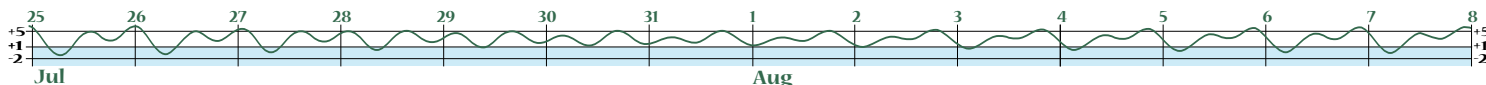
What will happen with the decaying carcass?

This decomposing whale will help to feed local animals such as ravens, gulls and even coyotes, which have been feasting on its remains. Some of the bones and baleen from this whale will be displayed in the FMR Visitor Center.

\*Fitzgerald docents may remember a continuing education event a few years ago that Sue gave entitled "Dead Whales Do Tell Tales." ♦



The bristly baleen plates of a gray whale filter, sift, sieve or trap the whales' favourite prey from seawater inside their mouths. Baleen is made out of keratin, the same protein that makes up our fingernails and hair.



# Continuing Education—Terrestrial Vegetation of Fitzgerald Marine Reserve

## A walk in the woods...

by Karen Kalumuck

*This tour was the culmination of my attempt to catalog the vegetation at FMR in a guidebook, which currently includes over 100 species, and is still growing.*

“Under the spreading chestnut tree / The village smithy stands.”\* While there was no blacksmith beneath the chestnut tree that grows near the former homestead at Fitzgerald Marine Reserve (FMR), recently there were 22 FFMR volunteer naturalists, led by myself, exploring and discussing this tree and scores of other plants that populate the 35 acres of FMR land. We met on April 19, while the reef was still closed to the public. True to the nature of FFMR volunteers, lively discussion, questions, answers, speculations, corrections, confusions (what IS that plant?), laughter and camaraderie were the order of the day. And WOW was it great to see everyone again!

This tour was the culmination of my attempt to catalog the vegetation at FMR in a guidebook, which currently includes over 100 species, and is still growing. The chestnut tree,

*Castanea sativa*, is a bit of a mystery. It's a sweet chestnut, a tree that was found in huge numbers along all of the U.S. East coast until a parasitic fungus destroyed them in the early 20th century. (The fungus is still killing the trees there.) Most likely, it and many of the other non-native plants at FMR were planted as ornamentals, or by folks moving to the area and wishing to bring a bit of “home” with them. Few people thought about invasive species back then.

Like the tidepools, the vegetation is never quite the same from visit to visit at FMR. Some flowering plants make but a brief appearance; bushes bud, then flower, and the flowers become berries or seedpods. On that April day, we were treated to seeing some of the cypress trees heavily laden with “male cones”—tiny tan structures that produce copious amounts of pollen. Flick-



Male “cones” containing pollen on a Monterey Cypress branch. Photo by Karen Kalumuck

ing a branch released clouds of pollen, and a few of those grains may have fertilized the ova inside the familiar, much larger “female cones,” to make seeds for a new generation of trees.

Early in the tour, near the bridge, the group brought up several amazing “fun facts.” First, we encountered a tree mallow (*Malva arborea*), and a bull mallow (*Malva nicaeensis*). The sweet treat “marshmallow” was originally derived from a closely related type of mallow, called (you guessed

it) the marsh-mallow (*Athaea officinalis*). Egyptians, as long as 2000 years ago, extracted the internal goo of this plant that grew in marshes, and cooked it into the confection. It was



Bull mallow. A closely related mallow was the original source of “marshmallow.” Photo by Karen Kalumuck

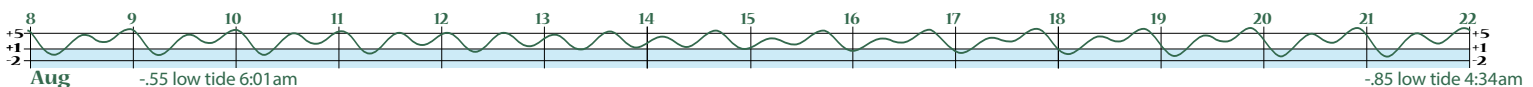
regarded as so special that it was reserved for gods and royalty!

The horsetail ferns which grow under and near the bridge over the San Vicente Creek for much of the year are much more ancient than the dinosaurs. The ferns evolved 360 million years ago, while it was more than 100 million years later when the “terrible lizards” made the scene. These primitive plants contain silica, making them abrasive, and Native Americans used the ferns as an abrasive cleanser, and for polishing wood and bone. Stem segments, which easily come apart, were given to children as toys. It is said that the structure of the fern was an



Volunteers explore the sweet chestnut tree. Photo by Elaine Reade

*Native Americans gave stem segments of horsetail fern, which easily come apart, to children as toys.*





inspiration to the inventors of Tinkertoys (thanks, Carol Preston!). And I just learned that the pattern of shortening segments as one looks from the base to the tip of the fern inspired John Napier to invent logarithms (thanks, Wikipedia!).

“Strawberry Hill,” the area adjacent to the harbor seal overlook, was beginning to sprout many native wildflowers. The beach strawberry (*Fragaria chiloensis*) is providing considerable ground cover and blooming with white flowers. A stand of Douglas irises (*Iris douglasiana*) appear as if they are practically jumping out of a Van Gogh painting. The strawberries produced fruit much like domestic strawberries and were a source of food for Native Americans, while the leaves of the irises were used in basketry. Also abundant were our state flower, California poppies (*Eschscholzia californica*), whose boiled flowers were used as a treatment for head lice; beautiful varied lupine, dwarf checkermallow, and suncups. The tendrilled vines of the California Manroot, or wild cucumber, covered huge areas of willows. As an early season plant, it dies back before smothering any other natives.

Prior to the arrival of Europeans, the vegetation at FMR would have consisted largely of coastal “scrub” plants, such as coyote bush and arroyo willow (found at the reserve), as well as coffeeberry bushes and many other seasonal flowering plants. Nearly every plant was used by the Native Americans for food, medicine, shelter, or the tasks of daily life. Arroyo willow was used in basketry, and for thatching, firewood, and fishing poles. Stinging nettle fibers were crafted into twine and fishing net, and were used in the treatment of skin ailments. Coastal tarweed produced the seeds that were used in “black pies,”

an important staple food. Yarrow tea treated stomach aches and wounds; it has been shown by contemporary scientists that yarrow has anti-inflammatory properties.

We learned together that rather than just a sea of green hosting a lot of cypress trees, the closer you look, the more you realize that there are scores of different species that are part of the green, and that the cast of characters changes seasonally. Dozens of other wildflowers have bloomed since the tour, and many more will be emerging throughout the summer.

What’s next? Perhaps we’ll do more continuing ed tours, so that we volunteer naturalists can have ways to engage visitors even when the tides are high. We can pass along the images of Native Americans constructing arrows and baskets, gathering foods and medicines, on the very land they are walking upon. It’s my hope that the guide will be made available to the public, perhaps through our newly re-designed website.

While the tidepools will always be the “stars” of Fitzgerald Marine Reserve, the land and vegetation have their own histories and stories. Learning about them has dramatically changed how I look at the sea of green. Hopefully we can pass along a bit of the terrestrial lore to our visitors, to provide them an even richer experience of FMR.

\*Quote from The Village Blacksmith by Henry Wadsworth Longfellow, 1842. Kudos to volunteer naturalist Dan Woodward who recited the poem in its entirety while we marveled at the beauty of this chestnut tree. ♦



*Young horsetail ferns. The design of the plant was inspiration for both Tinkertoys and logarithms. Photo by Karen Kalumuck*

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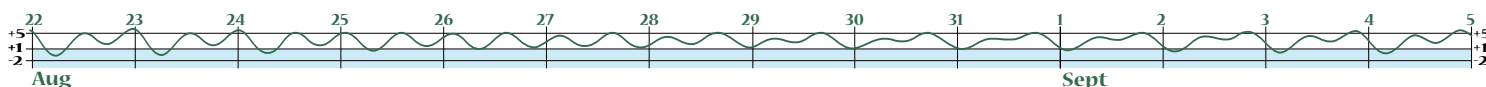
*Prior to the arrival of Europeans... Nearly every plant was used by the Native Americans for food, medicine, shelter, or the tasks of daily life.*

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## Harbor Seals

The harbor seal count as of May 14 was 119 adults and immatures and 50 pups. For their protection you are advised to maintain a distance of 300 feet. All marine mammals are federally protected by the Marine Mammal Act. If you see a stranded marine mammal on the beach immediately notify the Marine Mammal Center, (415) 289-7325.

**It is normal for a mother seal to leave her young pup alone on the beach for up to 24 hours while she feeds. You may not see the mother offshore, but if she sees you near her pup, she may not think it’s safe to come back and could abandon her pup.**



# Beyond The FMR Reef: Spotting Whales, Pelagic Birds and More This Summer

by Robin Agarwal

*Enormous leatherback turtles, with mouths streaming sea nettles at both corners.  
Dolphins, gregarious and playful, leaping high or zipping below the surface of the waves.  
Great white sharks, cruising for a meal or a mate.  
Improbably-designed ocean sunfish, with babies the size of Frisbees and adults the size of a car door.  
Transient killer whales, beautiful and social, led by their wise matriarchs on hunting expeditions.  
Seabirds, wheeling and diving for fish and krill.  
And oh yes, the glorious, never-to-be-forgotten sight of a group of humpback whales bursting through the surface  
in unison, mouths agape as they vertical lunge-feed cooperatively through a shimmering ball of anchovies.*



Gray whale (*Schrichtius robustus*)



Humpback whale (*Megaptera Noraeango*)



Orca, aka Killer whale (*Orcinus orca*)



Long-beaked dolphin (*Delphinus capensis*)

With the advent of sunny weather and the much-awaited easing of Covid-19 restrictions in many Bay Area counties, whale-watching and pelagic bird tours are ramping up for what promises to be an excellent summer for observing wildlife along the California coast. The offshore waters from Monterey Bay to the Farallon Islands are well known for world-class looks at an astonishingly long list of marine life. Very few places in the world can boast of the ease with which even a casual observer can hop on a boat and collect year-round observations of multiple species of cetaceans, pinnipeds and the astonishing marine creatures that we really thought we'd never see in real life.

## Whales and Dolphins from Shore

Shore-based whale watching has certain advantages: it is free, it can be done on your own schedule, and if you know you're prone to seasickness, it may be your only comfortable option.

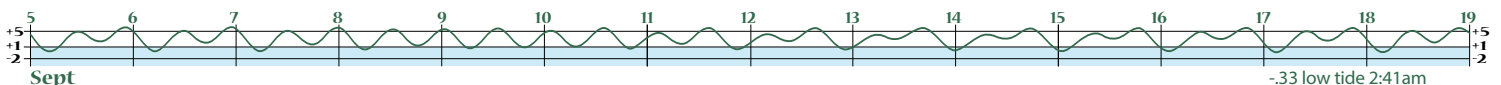
Over the years, I've seen a surprisingly long list of species from shore in San Mateo, Santa Cruz and Monterey counties. Humpback whales (spring through fall) and migrating gray whales (December-May) can be seen from many beaches and cliffs; look for their blows. Killer whales and Risso's dolphins are rarer visitors to the shallower waters of Monterey Bay. Bottlenose dolphins range up and down the coast, either individually or in small pods, and occasionally appear in the surf break along with local surfers. Harbor porpoises are best seen at the mouth of the San Francisco Bay, either from adjacent cliffs or by peering down from the Golden Gate Bridge.

Shore-based whale watching is best done in the morning, with the sun at your back for best lighting. In the morning, there is generally less wind, which dissipates the whale blows, and fewer whitecaps, which can look a lot like a pod of dolphins. Binoculars help tremendously, of course, as does patience.

## Get On a Boat: What You'll See

For much better looks, though, you need to meet our local marine life up close. Unless you own a boat, this means booking a whale-watching day tour leaving for three general areas from one of five local harbors: San Francisco (Farallon Islands: whales and birds), Princeton Harbor (Offshore San Mateo and San Francisco counties, primarily birds but excellent whales as well), and Santa Cruz, Moss Landing and Monterey (Monterey Bay: whales, sharks and birds). Tours are typically half-day circuits, though all-day trips give you extra time for searching and observation.

"Right now we're seeing humpback whales on a daily basis, plus killer whales on some days," says Kate Cummings, owner, captain and naturalist of Blue Ocean





Whale Watch. “We’ve had some dolphin sightings as well: Risso’s dolphins, Pacific white-sided dolphins, northern right whale dolphins and bottlenose dolphins. Humpback whales are always a treat, especially when they arrive to feed in Monterey Bay in good numbers, as that increases our chances of seeing social behaviors, like breaching. We had an unexpected, rare sighting of Baird’s beaked whales on May 4th.”

According to marine biologist Eric Austin Yee, deep water animals are a little easier to encounter in the Monterey Bay than in most places in the world, because the Monterey Bay submarine canyon, which runs west from Moss Landing, allows for deeper water within the bay and closer to land. That’s why organizations that study the canyon, including Moss Landing Marine Laboratories and the Monterey Bay Aquarium Research Institute (MBARI), are located in Moss Landing. “Currents, wind, and sea surface temperature are factors that affect what animals we see, and what they’re doing,” says Cummings. “Whales are going to go where the food is most abundant, and that changes all the time.”

This rule is also true for some of our area’s cold-blooded species. Young great white sharks congregate in certain sandy “rookery” areas during the summer to feed and avoid larger predators, and at least two tour operators, Sea Goddess Whale Watching out of Moss Landing and Sea Spirit Whale Watching out of Santa Cruz, offer regular dedicated half-day shark tours to observe them. Similarly, when the summer sea nettles bloom in large numbers, you might see ocean sunfish (we have two species of mola in our area, *M. mola* and *M. tecta*) and even a few rare leatherback sea turtles, which come to the Monterey Bay every year, especially to gorge on these sea nettles

Pro tips: what’s closest/convenient for the humans might not be the closest spot to the wildlife action. It might be worth it to get up extra early and take a tour that begins where you might have the best chance of seeing the whales, dolphins and other sea life you’re most interested in. Don’t have a big greasy breakfast, and dress like you’re going skiing: layers that you might peel off as the morning progresses. Most of the tour operators post their daily sightings on their websites or to social media, so use this resource, along with weather information, to decide when, where and with whom to book your trip.

### Keeping the Whales Safe

Marine life viewing guidelines are established by the National Oceanic and Atmospheric Administration (NOAA). In our area, boats must remain at least 100 yards from whales and at least 50 yards away from dolphins, porpoises, seals, and sea lions. (Federal law has specific distance requirements for some species in other states.)

Most whale-watching captains are quite experienced in avoiding interfering with natural behaviors while still giving passengers good views. “When viewing whales, we never approach them from directly behind or cut in front of their path,” says Cummings. “If many whales are around, we drive very slowly and pay attention to where different whales or groups of whales have gone down for dives and where they might surface again. Paralleling whales and mirroring their travel speed and direction is best for the whales and the passengers. We’re aiming for indifference, and if we observe any avoidance behaviors we leave the area.”

Whales and other marine life have not read these government regulations, however, and occasionally do approach boats on their own. If that happens, captains put their boats in neutral and wait until it is safe to proceed.

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Long-beaked dolphin (*Delphinus capensis*)



Short-beaked dolphin (*Delphinus delphis*)



Risso's dolphin (*Crampus griseus*)



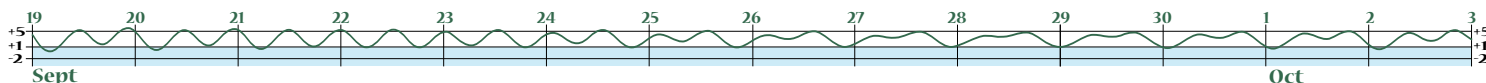
White-sided dolphin (*Lagenorhynchus acutus*)



Common bottlenose dolphin (*Tursiops truncatus*)



Northern right whale dolphin (*Lissodelphis borealis*)



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*"When viewing whales, we never approach them from directly behind or cut in front of their path," says Cummings. "If many whales are around, we drive very slowly and pay attention to where different whales or groups of whales have gone down for dives and where they might surface again."*

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*At the top of many birders' pelagic Most-Wanted list is the short-tailed albatross.... these birds can move hundreds of miles in a day. So even if you know one was in California on a certain date, by the next day, it could be in Oregon, and in a few days back in Alaska where the population goes during the non-breeding season.*

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## Birding Offshore Northern California

While you can see many seabirds aboard a whale-watching tour, if you want to get serious, you can flip that equation and go after birds first and whales second if you're on a dedicated pelagic birding tour. Like other marine life, birds follow their food, too, and water temperature is another key component of what makes that food available.

Pelagic birding routes often go further afield than whale-watching tours. "For birds, it is key to get offshore, to the continental shelf, and for whales that is not always necessary," said Alvaro Jaramillo, owner and guide of Alvaro's Adventures. "So bird trips move more, and are longer. We go to underwater canyons, and the scum lines or "rips" are great for phalaropes and sometimes terns. The truly deep-water bird species avoid being close to shore, even when deep water is present close to shore."

"We went out for the first time this year on May 15," he added. "What we found was that the water was cold. Very cold! For a short period, we were in 46F water, which was perhaps the coldest water we have ever seen out there. In contrast, last year we had our warmest water temp ever in fall." He went on to report, "The birds were diverse; best was the number of albatross. Through the day, we saw over 50 black-footed albatross, with 26 around our boat at a single spot! Laysan albatross is always much rarer, and we did see two of them. Some migrant birds were moving, like red-necked phalarope, but unfortunately we did not find jaegers or Sabine's gulls moving out there. We did see a killer whale in the distance, and although we could not get a photo, consolation was a group of Risso's dolphins a bit later on in the day."

At the top of many birders' pelagic Most-Wanted list is the short-tailed albatross. "Short-tailed albatross are rare worldwide, with only just over 1000 individuals left on earth," said Jaramillo. "They are always a great find here in California, so two reported by a research boat earlier in the season was enough to spark some interest. As expected, we did not find one; these birds can move hundreds of miles in a day. So even if you know one was in California on a certain date, by the next day, it could be in Oregon, and in a few days back in Alaska where the population goes during the non-breeding season."

Jaramillo explained that with pelagic birds, an interesting sighting can come out of nowhere and disappear just as quickly. "There are these amazing adrenalin rush events, as when a south polar skua is spotted, or a Laysan albatross, or anything that is less common. I find whale-watching a longer-term endeavor: you see the whales, you approach, you stay a while. But seldom does a whale just come out of nowhere and disappear into the blue like birds do, although killer whales do often show up like that."

## Once You're Back on Land...

If you photographed the marine life you saw on your trip, you can make your shots more useful by sharing your observations with scientists via several different apps. "The best way for amateur naturalists to support marine mammal conservation is to get involved in citizen science programs like Happywhale or participate in whale censuses or surveys," says Yee.

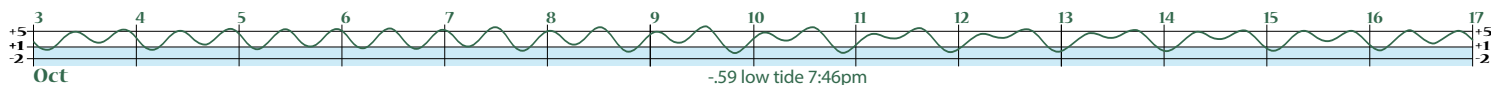
[Happywhale.com](http://Happywhale.com) identifies and catalogs humpback whale fluke photos worldwide, enabling scientists to track individual whales as they migrate. They'll also send you email updates on where "your" whales have been re-spotted. Two other apps log your observations and make the data available to scientists: eBird.org (birds only) and iNaturalist.org (all life, and it includes an astonishing species identification algorithm that automatically suggests identifications for your photos). ♦



Black-footed Albatross (*Phoebastria nigripes*)



Laysan's Albatross (*Phoebastria immutabilis*)





## Volunteer Spotlight: Scott Snow

It was 2004. Two years earlier, my wife Jill and our recently adopted dalmatian-mix Pepper had moved to the Bay Area from Greenwich Village, New York City. We loved New York City, but we were ready for a change after living through the one-two punch of the dot com bust and 9/11. Jill wanted to be close to her parents so they could be near their future grandchildren and I wanted to be close to more consistent surf. While we loved the beaches and mountains around NYC, and even the forests, ocean, bay, river, and parks in the city, we also both wanted to be closer to nature and wilderness. It was as good a time as any to head west.

As we established ourselves in San Francisco we started exploring the natural areas around the city. Jill knew what to expect because she grew up here, but I was surprised to be disappointed. Hiking around much of the Bay Area was composed of walking on dirt roads in open non-native grassland, or coastal scrub. The trails were crowded with people carrying on loud conversations. There are few natural lakes. And the rules. So many rules. If your family includes a canine you can't walk on any of the good trails. And wilderness camping was impossible unless you drove 3-5 hours North or East, often in heavy traffic. And then, you might still be in forest that is carved up by logging roads, or trampled by BLM-permitted grazing cows complete with loud cow bells. In short, even the national forests here offered little of the magic of the forest I grew up with.

The Pacific Ocean, however, did not disappoint. During the winter, weeks could go by with back-to-back swells steamrolling in from the Aleutians and slamming into Ocean Beach. When they reached our shore their troughs would collide with the ocean floor, jacking up the waves to 6, 8, 10, 12 and sometimes 20+ feet. Being out on a surfboard, a mile from shore, in heavy fog, being carried sometimes a couple miles down the coast on longshores, by yourself, and feeling that wave energy raise you up 10 feet from trough to peak and back down, while evaluating whether you had the skill, strength and bravery (or insanity) to paddle into one of these monsters a split second before detonation definitely exceeded my expectations. It was terrifying. But it was also the wilderness I was seeking. You could find solitude

in a natural environment that was rich in life including the largest wild animals and fiercest predators on earth.

So it was on a day in 2004 when I was exploring the coast on my return from a surf session that I finally heeded the call of the tiny brown "Wildlife Viewing" sign on Rt 1 and pulled off to visit the Fitzgerald Marine Reserve (FMR) for the first time. I connected immediately in such a powerful way that it's hard to describe. Exploring the tidepools and hunting for all its magical creatures was like being immersed in a miniature world similar to snorkeling on a coral reef as I had done once in Jamaica. It connected me to my childhood where my younger brother and I grew up exploring the forests in North Jersey, North Carolina, and Virginia. I loved catching wild animals like box turtles, crawfish, salamanders, and bull frogs, enjoying them for a short while, and letting them go free. I also grew up hunting and fishing so the sport of hunting for animals in the coralline algae forests of the tidepools triggered that primitive urge and joy. I was so excited about my experience that on my way back along the beach I ran up to a volunteer naturalist walking in the same direction and peppered her with questions. That same day I enrolled to enter the FMR training class of 2004.

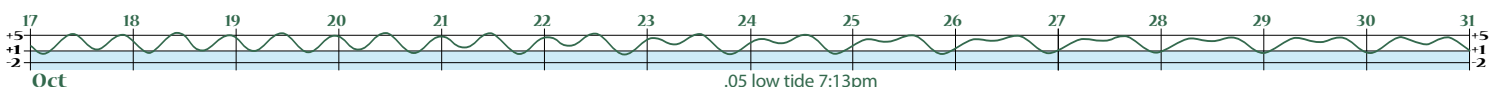
In the 17 years that I've been volunteering at Fitzgerald lots has changed in my life. Jill and I raised two boys (now 13 and 16), Pepper died at 15, and Jill died at 49 after a heroic ten-year battle with breast cancer. I've helped lead four startups to varied levels of success. I've made and lost friends. My family has survived the pandemic. And I've been fortunate to find love again with my partner Laura. I've also found wilderness pockets in the Bay Area and even learned to better appreciate the grassy oak hills and coastal scrub. One thing that has stayed constant since that day in 2004 has been my volunteering at FMR to help protect the reef and educate the next generation. And another thing that hasn't changed is the joy FMR and those young people give me in return. I can't tell you how happy I am to get back on the reef now that FMR has reopened. In fact, I'm going to grab my green jacket and go right now! ♦



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*Exploring the tidepools and hunting for all its magical creatures was like being immersed in a miniature world similar to snorkeling on a coral reef as I had done once in Jamaica.*

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# Rockaway Ocean Conservation Stewards

by Mark Hubbell

*...in 2017, completely unaware of the ravages of sea star wasting syndrome, I began photographing the area on a regular basis, with a digital camera, and posting images of ochre stars as large as 17" across on social media.*



I am not a scientist. The bliss of ignorance has largely defined my 40-year relationship with our shoreline—shimmying down cliffs by rope or butt-slide in search of new places to fish and forage. There is one particularly favorite place—a rocky foreshore at the base of a steep hillside—being remote enough to prevent fewer than the most proficient and determined from accessing. As memories of Linguini Con Cozze a la Marko serves up, in the late 1980s through 1990s the mussel population was spread extraordinarily thick across every rocky surface in the spray zone. It was common to see many large mussels up to 8" long. Anecdotally, as I recall, sea stars were not particularly as prevalent.

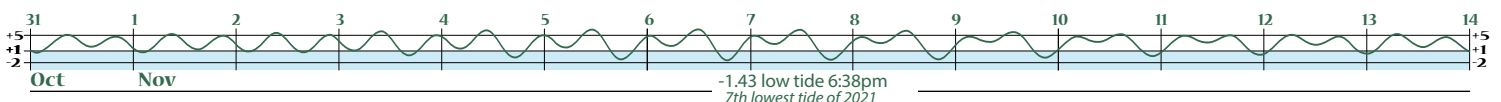
After a relatively long hiatus, due to an injury, I began returning to this spot in 2016. Over the previous decade and a half, the sea had begun to carve an easier access point, although only during a very low tide. Taking advantage of this accessibility later in 2017, completely unaware of the ravages of sea star wasting syndrome, I began photographing the area on a regular basis, with a digital camera, and posting images of ochre stars as large as 17" across on social media. Someone in the know passed these on to a local naturalist who contacted me to inquire when these photos were taken. After letting her know that they were recent, she told me that there was something very special going on out there.

In 2019, while on one of my regular photographing missions to

these tidepools, I had the good fortune of meeting Sarah Cohen PhD, Department of Biology at San Francisco State University. Sarah was leading a group of students out to conduct a survey of the sea star population. After discussing her

objectives of establishing more regularly scheduled counts, we agreed it would be best to organize locals to maintain her program in Pacifica. Along with a group of very dedicated and talented stewards—James Kremer PhD, Marj Davis, Eileen Campbell, Lizelle Saure, Trista Barrantes, Matthew Warren PhD, Amy Hanley, Julie Walters, Karen Kalumuck, Peter Finnegan, Deirdre Finnegan Martin, and Meredyth Duncan—we became the group “Rockaway Ocean Conservation Stewards,” as named by Fitzgerald Marine Reserve docent, Julie Walters.

This May, 2021, marks our first full year of systematic data collection—see chart at right. We have two adjoining 10 meter x 10 meter counting zones, A (North) & B (South). Even though the two sections adjoin, the rock structure within are quite different, so the counts differ accordingly. SFSU requested that we format our collection data on ochre stars greater than 5" wide, ochre stars less than 5" wide, and bat stars of any size. Ideally, we have two people counting in each zone and one recording the data. For safety, one counter should be watch-





TOTAL AREA (Zone A + Zone B)		COUNT DATE	MAY 9 2020	JUNE 7 2020	JULY 6 2020	JULY 22 2020	AUG 20 2020	OCT 17 2020	NOV 14 2020	DEC 14 2020	JAN 09 2021	FEB 27 2021	MAR 27 2021	APR 18 2021	MAY 1 2021
SPECIES/SIZE															
Ochre Star < 5"			129	172	87	108	91	102	86	58		33	61	63	20
Ochre Star > 5"			311	314	180	247	196	143	129	33		69	36	60	121
But Star			9	14	12	3	1	3	0	3		2	3	3	6
TOTAL			449	500	279	358	288	248	215	94	No Count	124	100	126	147
NOTES															
NORTH ZONE (A)		COUNT DATE	MAY 9 2020	JUNE 7 2020	JULY 6 2020	JULY 22 2020	AUG 20 2020	OCT 17 2020	NOV 14 2020	DEC 14 2020	JAN 09 2021	FEB 27 2021	MAR 27 2021	APR 18 2021	MAY 1 2021
SPECIES/SIZE															
Ochre Star < 5"			74	127	44	53	46	74	51	40		31	37	49	4
Ochre Star > 5"			273	252	162	212	157	112	113	56		46	12	33	54
But Star			0	5	0	0	0	0	0	2		0	1	1	0
TOTAL			347	384	206	265	203	186	164	98	No Count	77	50	83	58
NOTES															
SOUTH ZONE (B)		COUNT DATE	MAY 9 2020	JUNE 7 2020	JULY 6 2020	JULY 22 2020	AUG 20 2020	OCT 17 2020	NOV 14 2020	DEC 14 2020	JAN 09 2021	FEB 27 2021	MAR 27 2021	APR 18 21	MAY 1 2021
SPECIES/SIZE															
Ochre Star < 5"			52	45	43	53	45	28	15	13		22	24	14	10
Ochre Star > 5"			38	62	18	35	39	31	16	17		23	24	27	67
But Star			9	9	12	3	1	3	0	1		2	2	2	6
TOTAL			99	116	73	91	85	62	31	31	No count	47	50	43	83
NOTES															

ing the waves and relaying the data, while the other is likely on all-fours, searching crevices beneath the boulders. Naturally, most of the group



was enamored with the whoppers while the biologists were especially interested in the health of the new generation—those under 5". SFSU has also installed and maintained ocean temperature loggers in our collection zones.

**Note:** There are some radical differences between

the initial counts and those after June 7th. These can be largely attributed to process corrections—replacing the initial 'soft' perimeters, defined by natural features, to loose cord and tape-measured boundaries in July and August, then with pre-assembled fixed rope boundaries. The lack of low tides during daylight prevented any counts for Sept. 2020. Dangerous surf conditions prevented counts in January 2021.

Based upon our conversations about the experience, speaking for the group I would say:

— We all enjoyed a sense of accomplishment in creating an historical record for posterity of our beloved shoreline.

— There is a very rewarding satisfaction from being in such a magnificent natural environment for the purpose of protection—stewardship.

— We learned a lot, made mistakes—learned more from those, developed new processes and equipment, trained ourselves. There weren't any documented instructions appropriately fitting our mission. It takes a while to create and develop a trained team. With a roster of almost twenty-some members, we're now a kick-ass team going into 2021!

Our goals for the future are:

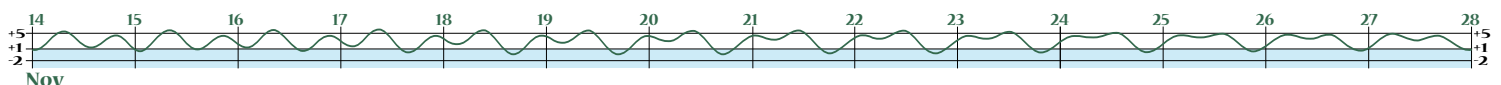
— Expanding our monitoring zones for the inclusion of a growing team membership.

— Participating in the enactment of protection policies germane to this unique environment.

If you have any questions or comments, feel free to contact me at [mark.podc@gmail.com](mailto:mark.podc@gmail.com)



*We all enjoyed a sense of accomplishment in creating an historical record for posterity of our beloved shoreline.*



**Fun photos and info from a new video on our revamped website:  
"Introduction to Fitzgerald Marine Reserve,"  
produced and directed by San Mateo County Park Ranger Rob Cala.**

<http://fitzgeraldreserve.org/video>



Visitors often want to know what makes these funny-face holes in the rocks. It's a rock-boring clam (*Penitella penita*). These clams drill a hole in the rock with their shell and can live there for 20 to 50 years. They eat by taking in seawater through their inhalant siphon and filter the organic materials for food, primarily phytoplankton.

<p>Dear Friends,</p> <p>It would take many pages for me to express the wonder &amp; gratitude I feel to you for opening up a big beautiful world to so many of my students over the years, so be aware that this small card will fall short.</p> <p>Thank you. <u>THANK YOU</u>. For the last number of years, you have funded transportation to enable my class of low-income 3rd graders to visit the Reserve. We have enjoyed, learned, marveled, &amp; been inspired. →</p>	<p>April 9, '21</p> <p>Gifts like that are unquantifiable, immeasurable, &amp; powerful. Thank you for making a difference. I remain forever grateful.</p> <p>Sincerely, Sue Granzella Lorenzo Manor Elementary</p>
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## Friends of Fitzgerald Marine Reserve

Donation Chair, P.O. Box 669, Moss Beach, CA 94038, or through our website: [www.fitzgeraldreserve.org](http://www.fitzgeraldreserve.org)

### 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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