

BETWEEN the TIDES Friends of Fitzgerald Marine Reserve July 2019

We've Been Celebrating! First 50th Anniversary Event: History Day, March 16, 2019

We've had a terrific time so far this year celebrating "Fifty Years of Stewardship" of our precious marine reserve. In March we celebrated three aspects of our history: geologic, natural and human with a series of lecture stations throughout the reserve with Rangers and FFMR docents at each to discuss the various topics with visitors. A group of three new tri-panel informational display signs were created for the event, some of which you'll see in the pages of this newsletter.



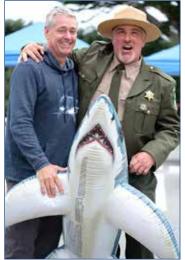


Tom Ciotti describes the geologic history of the reserve with visitors who were especially fascinated by the whale fossils—the round fossil is a whale intervertebral disc.

50th Anniversary event, 50 Years of Stewardship: May 11, 2019 Sponsored by San Mateo County Parks and the Friends of Fitzgerald Marine Reserve

The second event in June was a celebration to recognize the many individuals and agencies that have fostered stewardship, education and research at the reserve over the past 50 years. Speeches, awards, amazing food, and booths of the marine steward organizations made for an exciting day. (See page 2 for a list of the organizations.)







left: David McGuire of Shark Stewards clowns around with Ranger Rob Cala, Master of Ceremonies for the event. right: Rusty Rosenberg of the Marine Mammal Center chats with a group of Girl Scout Brownies.

Friends of Fitzgerald Marine Reserve

P.O. Box 669 Moss Beach, CA 94038 Phone: 650.728.3584 www.fitzgeraldreserve.org

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Our Mission:

To inspire the preservation of our unique intertidal environment through education and the support of research.

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FFMR Banner & 50th Anniversary Banner photos: Rob Cala

Fitzgerald's Partners in Stewardship

These organizations joined us to celebrate 50 Years of Stewardship on May 11, 2019

California Academy of Sciences
California Fish & Wildlife
California State Parks
California Whale Rescue
Fitzgerald Marine Reserve Seal Sitters
Friends of Fitzgerald Marine Reserve
NOAA



Friends of Fitzgerald Marine Reserve



Pacific Beach Coalition

Pacifica Beach Coalition
POST
San Mateo County Parks Foundation
Shark Stewards
Surfrider
The Marine Mammal Center



San Mateo Coast State Beaches



California Whale Rescue

Our thanks also to New Leaf Community Market and San Mateo County's Lookmobile, and special thanks to Clarice Soleil Photography and Flowing Wave Studios.

The graph displayed across the page bottoms shows tides for 7/14/19 to 12/1/19 at Princeton Harbor. Where the date appears is midnight. The reefs are accessible for exploring during low tides—at least +1 or below. This area is shaded light blue. See: http://fitzgeraldreserve.org/resources and click on "Tides" for a more detailed tide chart.

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:

		I
78	7/16	5:16 am
-1.31	8/1	5:31 am
4th lo	owest tide	e of 2019
96	9/20	1.23 am

-.36 9/26 3:08 am
-.90 10/29 6:22 pm
-.63 11/15 6:26 pm
-1.25 11/27 5:06 pm

-1.25 11/27 5:06 pm 5th lowest tide of 2019

Illustrious Speakers, Honorees and Intrepid Rangers

A beautiful celebratory day featured a long list of movers and shakers of the various organizations that interact with FMR, demonstrating the value of the reserve to the Coastside community, the county and the state.

Supervisor Don Horsley, from the San Mateo County Board of Supervisors, presented Friends of Fitzgerald Marine Reserve with a resolution honoring their work for the reserve, and a resolution in honor of Bob Breen, the first ranger of Fitzgerald Marine Reserve. I was honored when he acknowledged my effort and recognized the work we continue to do.

Elmer Martinez Saballos, District Representative of the Office of Senator Jerry Hill, presented a proclamation in honor of Fitzgerald Marine Reserve.

Other guest speakers included Peggy Jensen, Director, San Mateo County Parks; Tim Sullivan, former county ranger

with Bob Breen; Mary Breen; Tom Neisen, marine biologist and Professor Emeritus, San Francisco State University; Tom Ciotti, a former and current President of Friends of Fitzgerald Marine Reserve; Mary Delong, a former president of Friends of Fitzgerald Marine Reserve; and Jon Miller, San Francisco Giants announcer who with his wife Janine is a strong parks advocate.

Of course, priority one is for the wildlife and natural resources, but people are embedded in the fabric and character of FMR. It echoes human spirits for generations to come which is why the 50th year is pretty cool to experience for me personally. An ocean of story telling constantly revealed via the "big dramas in small ponds," as I like to say:-)

Nature will always be the cure for all that ails us!

And a humble reminder of how frail we are when we don't respect it. We observe and experience so much cyclical change right here, right now, and continually learn...hopefully for the better!

— Rob Cala, Park Ranger and Master of Ceremonies



San Mateo County Parks Director Peggy Jensen applauds everyone for their work on behalf of Fitzgerald Marine Reserve.



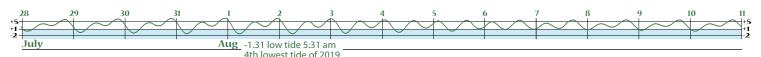
Supervisor Don Horsley with Ranger Rob Cala holding the resolution honoring Bob Breen, first Fitzgerald Marine Reserve Supervising Naturalist.



Ranger Darrick Emil, Mary DeLong, Linda Ciotti and Tom Neisen of the Friends of Fitzgerald with the congratulatory plaque from the San Mateo County Parks "In Appreciation for Dedicated Stewardship, Education and Public Outreach Since 1969"



From left first row: Rangers Emil, Ford-Peterson, Hart, Cala, and Del Carlo, Peggy Jensen, San Mateo County Parks Director, and Nicholas Calderon, Asst. Parks Director; 2nd row from left: Ranger Tolmasoff and Neil Merrilees, a parks commissioner.



Tom Ciotti Describes Fitzgerald's Mount Rushmore

If Fitzgerald could have its own version of Mount Rushmore carved in its cliffs, there would be five individuals represented.

The first (our Washington if you will) is Cecelia Goldthorpe. She and her husband built and lived in the home directly to the north of the main entrance. She began the efforts to convince the SMC Board of Supervisors (then presided over by James Fitzgerald) to purchase the property at the corner of California and Nevada Streets to create a park with access to the intertidal and the State Legislature to designate the adjacent intertidal a marine life refuge.

The second is **James Fitzgerald** who was wise enough to act on Cecelia's suggestion and hire a top-notch lobbyist to draft legislation and to lobby the State Legislature on behalf of SMC.

That lobbyist was George Pottoroff, a lawyer who, with Cecelia, successfully lobbied the State Legislature for four

years which resulted in the James V. Fitzgerald Marine Life Refuge.

The fourth is **Bob Breen**, the first Supervising Naturalist at the Reserve and the co-founder of FFMR.

The fifth is

Virginia Welch, co-founder and first President of FFMR.

These key people involved in founding FMR and FFMR have been followed by countless more amazing people over the decades, protecting and nurturing the reserve to what it is to-day. Our heart-felt thanks to all of them.

—Tom Ciotti, President, Friends of Fitzgerald Marine Reserve





Aqua Accolades to Tom and Linda Ciotti by Mary DeLong

Today as we gather to celebrate 50 years of Fitzgerald, I would like to say something about Tom & Linda Ciotti. They

Linda and Tom Ciotti

have a lovely symbiotic relationship. Although Tom and Linda have no larvae of their own, they have spawned and mentored many new docents over the tides of time. They are treasures of Fitzgerald but as you know it is now a Marine Protected Reserve so there is no taking them. We want them around forever.

I want to thank Tom for doing an amazing job as top snail. He has been scupling around for an annilid showing off his feather duster, his stipe, and his bi-

valves. He knows the history of FMR as well as any 100-year-old anemone.

Linda, Linda, Linda. She is truly the star. She is a *Pycnopodia Helanthoides*. She is as clever as an octopus. She is

as beautiful as a hermissenda. She has the staying power of the strongest bissle thread, Barnacle glue and tube feet put together. She has a tough carapace but inside she is soft as a jelly. She is the upwelling of FFMR, providing nutrients so we can all thrive.

Today, we bestow upon Linda a new award. *The*



Mary DeLong, Ranger Rob Cala and Linda Ciotti

Grand Mussel Award. This is to honor her for her years of organizing, coordinating and keeping the Friends of Fitzgerald Marine Reserve a strong, vibrant, fun group.



This From Steven Slomka

Editor's note: This letter was submitted before Steve Slomka resigned as President of the FFMR Board of Directors.

Greetings All —

I want to start out by thanking some folks who've made FFMR what it is today. Bob Breen had a vision. Tom and Linda Ciotti have put their hearts and souls into it. Board member Tom Niesen pitched in hugely, along with lots of other folks whose efforts have brought us to a 50th Anniversary of stewardship. And they have certainly made the Fitzgerald Reserve MUCH better than they found it. Thank you all.

In 2012, a year after my wife passed away, as I tried to reconstruct a life, I enrolled in the FFMR docent training. I had a marine biology experience in high school, as an assistant intern at the Marine Biology Lab at Woods Hole. I liked the docent class, loved leading tours, still do. Over time, I began sending regular emails with links to other marine-oriented articles, photos and videos. I was asked to sit on the Board, and in March, was elected president of Friends of Fitzgerald Marine Reserve with 100% of the electoral college vote. No abstentions.

Over the past seven years, I've come to love the Fitzgerald Reserve, the light playing through the trees on the hilltop, all the myriad algae forms, the truly nutty invertebrate creatures, the tides, the harbor seals and the one hidden red anemone I visit on every tour. It's a magical place to me and I've definitely

come to love it over the years. In fact, my motto is: "Love it while we've got it."

Given climate change and other environmental pressures, there's no guarantee as to how long FMR will still

to how long FMR will still be here. If an ageless monument like Notre Dame Cathedral can burn down in a day, our fragile ecosystem studded with anemones, nudibranchs and sea stars sometimes seems like it's hanging by a thread.

But we do love it and we connect with other people who do. It's our job to help preserve what we've got and introduce it to others who can love it too. I treasure parent chaperones who ask about bringing their kids back. But there are many folks, neighbors, who've never been out on the tidepools. These are people we reach out to, to help them experience what we experience. Let's love it while we've got it and introduce it to others.

Thanks for all you do. We all made this 50th Anniversary possible.

Steve Woodstock+50









left to right: Jon Miller, SF Giants announcer, opened the day; so many interesting and informative organizational booths; Joseph Centoni, once a summer Junior Ranger, now the HMB High School Marine Biology teacher, chatting with Keith Mangold of FFMR; Michele Beasley of the San Mateo County Parks Department with Heyerdahl the Seal (photo Rob Cala) and FFMR's special mermaid, Kelly Huber.



These girls loved the seal puppets at the Seal Sitters' Booth



Kids enjoyed the mural, games, art projects and food.



Kumi Ishida found a decorative way to show off her many volunteer naturalist pins.



2019 FFMR Training Class

by Susan Evans



Lunch break with Tia, Gemma, Galen, Ed, Beth, Jesse and Justine



Training class in Joseph's classroom



Prepared for a wet day on the reef: Front: Kody, Jesse, Joyce, Justine, Back: Darren, Jacob, Galen, Gemma, Olivia, Angeline, Beth and Ed

2019! This was the year where the class had to change and adapt to weeks, almost months, of rain. We were sea palms bending with the waves. On day one, as he was giving his history talk, Tom Ciotti saw the skies open up, rain poured, and we knew today's bluff walk was not to be.

For our second class we visited Joseph Centoni's classroom at Half Moon Bay High School. All around us were dazzling aquariums, student reports suspended from the ceiling, microscopes, cabinets filled with exotic shells. One almost felt like there were 4th of July fireworks and a spawning timed to the full moon all at the same time! Students examined urchin parts under microscopes (and projected onto a large screen from a microscope camera) were the lively and elusive pedicellariae and tube feet.

Our third class (again with Joseph) saw rain off and on the whole morning. Afternoon tidepooling was not looking good. However, around one o'clock, the skies cleared and off we went for our first adventure to the reef. We were lucky. To be found: lots of sea stars (bat, leather and ochre), a six-rayed star, brooding anemones, a budding giant green anemone, kelp with bryozoan and goose-neck barnacles and mating kelp crabs! Plus carpooling efforts were paying off: Gemma was riding with Jesse and Beth was travelling with Angeline.

A Sunday class visit to Mavericks found ten students eagerly exploring marine life. Unfortunately, there were strong, cold, brisk winds which forced us to huddle like penguins to share our finds. Jody and Jacob found and shared a beautiful four-inch long sea lemon nudibranch.

Late February and early March brought more cold temperatures and occasional "misty-wet" downpours. The 2019 FFMR Training Class was turning into a 2019 FFMR Boot Camp! But the bold and beautiful/hardy went forth to find (even on one day) six nudibranchs! Dressed in yellow jackets, sheltering hoods, clear plastic cover coats and colorful and brightly patterned scarves, students braved the elements like camouflaging octopuses, daring and darting between oncoming surging waves.

Mid-March we visited the harbor. Bill Kennedy introduced us to many worms, bryozoans and tunicates on ropes and buoys, and a local fisherman invited us to see his large "pet" acorn barnacles attached to floaters in front of his boat. Another fisherman was selling large red urchins. I asked to hold one and students were able to observe tube feet and the Aristotle's Lantern moving underneath. Tom Niesen was unable to join us and we continue to wish him well.

Geology with Irina was filled with all her usual cheerfulness and exuberance and, after six weeks, we had a beautiful, sunshiny day! Who could not love geology??? We saw many fossils and siltstone-layered rocks.

Adam and Jane cancelled their bird lecture and Donna Pomeroy was their replacement. Donna, indeed, knows her birds and she and hubby carried scopes so we could view local coastal birds.

Karen Madsen gave her usual excellent marine mammal talk. We viewed the hauled out harbor seals from the cliff but, unfortunately, no pups. We later learned that there was a birth one hour later!

Thanks to Ron Olsen and Roger Hoppes for their mentoring wisdom and classroom help. Thanks to Patti Miller for binder copying and Paul Gater for

Dressed in yellow jackets, sheltering hoods, clear plastic cover coats and colorful and brightly patterned scarves, students braved the elements like camouflaging octopuses, daring and darting between oncoming surging waves.

the low-tide sheet. Thanks to Carol Ferguson for delivering jacket/shirt orders to anxiously waiting students.

Thank you to all our wonderful instructors for sharing patience, knowledge and expertise.

And, finally, CONGRATULATIONS to: Olivia Bond, Angeline Chen, Darren Cummings, John Fiorini, Jacob George, Galen Goyer, Tia Kowal, Justine Lange, Jane Meyer, Ed Milner, Kody Morello, Gemma Rice, Beth Roellig, Joyce Tang and Jesse Wentworth for all your perseverance, endurance, kindness, laughter and good work!

You are now GRADUATES and please PROUDLY wear your green jackets!

Editor's Note:

And many thanks to Susan Evans for undertaking this daunting, time-consuming project. Her continued dedication to the training has won her the profound gratitude of everyone in the program.





Gooseneck barnacles on algae



Treasure hunt with Joseph



On the reef with Ed, Jane, Beth and Gemma



At last! Our green jackets!



Geology: On top of the rocks



Lab work with Angeline, Tia, Justine and Olivia

The next four pages represent selections from informational panels created for our 50th Anniversary celebrations featuring the geologic, natural and human histories of the reserve. Visit our website to view all 11 panels.

The Geologic History of Fitzgerald Marine Reserve

San Andreas and San Gregorio Faults

Several large cracks in the earth called geological faults are all part of the greater San Andreas fault system and run through the reserve and out into the ocean. These faults formed the cliffs over 20 million years ago. In some places you can find fossils of animals that lived while the rock was being formed, including sea shells, impressions of fish, and bones from an extinct manatee and whales.

The Purisima Formation

When you step out onto the reef at the reserve, the gray and brown rocks beneath your feet are part of what geologists call the Purisima Formation. The beds of rock tilt gently towards deeper water. This rock was laid down in flat layers at the bottom of the sea between 5 and ~2.5 million years ago. The area was further shaped by earthquakes, wave action, erosion and surge activity.



The San Gregorio fault, an active earthquake-producing fault like the San Andreas, goes right through the Reserve.



The tidepool rocks are part of the \sim 2.5 – 5 million-yearold Purisima Formation that was deposited in a marine environment similar to what exists offshore today. Geology shapes the tidepools! Deeper channels are often due to cracks in the rocks or erosion of softer layers.



The rocks on the north end of the Reserve are folded into a U-shape. It is called the "Moss Beach Syncline" and formed due to tectonic forces that bent the layers.



Surge Channels are formed by the differential weathering of the reef materials by the ocean. They are sometimes cut below the tidal level and thus never drain, even during the lowest tides.

In 1997, archaeologists found a Native American cooking site (a hearth dated ~1270-1400 A.D.) that was moved by the fault with one part 15 ft away from the other! It must have taken a magnitude 7 or greater earthquake to move the hearth that far at once!

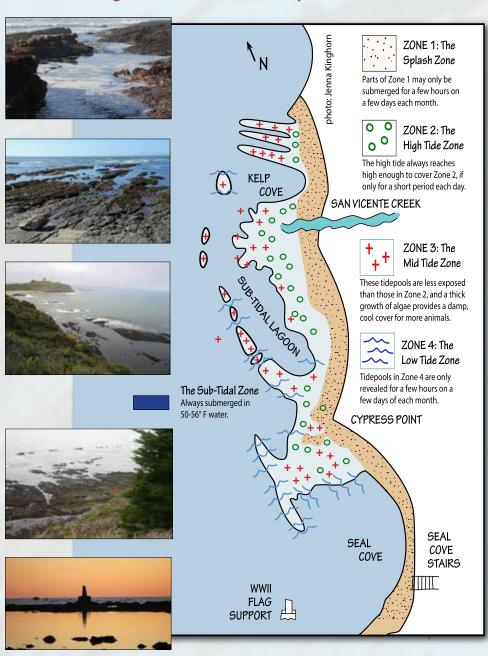
The Natural History of Fitzgerald Marine Reserve

Tidal Zones: Areas Subject to Tidal Action

There are four commonly recognized tidal "zones" based on exposure during tidal periods, wave action and shoreline features. The presence or absence of water, temperature, wave action, variation in salinity (saltiness), exposure to light, and other factors determine what organisms are able to live happily in each zone.

At Fitzgerald Marine Reserve tides can vary from a high tide of almost +7 feet (reaching into the Splash Zone) to a low tide of almost -2 feet (revealing the Low Tide Zone). The reefs are accessible for exploring during low tides of 1.0 foot or below.

Fitzgerald Marine Reserve Map of Tide Zones



Representative Inhabitants

FINGERED LIMPET (Lottia digitalis)



Limpets are mollusks with cone-shaped shells. When covered by a high tide, the inch-long limpet lifts its shell and moves around to find food.

HERMIT CRAB (Pagurus samuelis) held in fingers



Living in abandoned snail shells, Hermit crabs are very active and can move from dry areas into tidepools as needed to cool themselves down, obtain oxygen, and scavenge food.

SEA SACS (Halosaccion glandiforme)



This hollow-bodied alga keeps itself filled with water so it doesn't dry out during low tides.

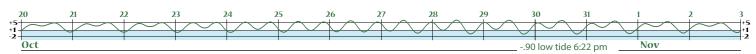
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GIANT GREEN ANEMONE (Anthopleura xanthogrammica)



This large, solitary anemone may reach a size eight inches across, and such a large anemone might be 75 years old.



The Human History of Fitzgerald Marine Reserve

A Brief History and Key Events of the Coastside and Moss Beach

- ~3000 BC-1776 Chiguans first human settlers/stewards
- 1769 Gaspar de Portolà discovers San Francisco Bay
- 1769-1821 Spanish build Missions & Presidios, take over the land leading to the destruction of the Chiquans' way of life
- 1822 Mexican independence from Spain, take over the land and establish huge ranchos on Coastside
- 1848 California becomes a part of US
- 1849 Gold Rush–Americans and other immigrants take over Mexican lands on the Coastside
- 1881 Encouraged by reports of a railroad to be built, J. F. Weinke buys 3,000 acres from ranchero Victoriano Guerrero, builds a hotel which brought tourism, plants cypress trees, and names the site Moss Beach
- 1907 R. Guy Smith Promoter/ Electrician/Realtor comes to the coast
- 1908–1920 Railroad brings tourists
- 1912 Charles Nye Sr. builds hotel, restaurant on what is now reserve
- 1934 State Route Hwy 1 provides vehicle access
- 1947 Doelger bluff house, land developer
- 1963-1968 Goldthorpe envisions marine reserve
- 1969 San Mateo County establishes Reserve
- 1970 >800 citations for removing sea life
- 1972 Marine Mammal Protection Act and 1st class of volunteer docents
- 1983 Added Seal Cove
- 1985 Friends of FMR formed



Rancho Corral de Tierra, was given in 1839 by Governor Pro-Tem Manuel Jimeno to Francisco Guerrero y Palomares. This rancho extended from Martini Creek south along the Pacific coast past Montara to Arroyo de en Medio just south of El Granada, and included the present-day communities of Moss Beach and Princeton-bythe-Sea.



J.F. Weinke, founder of Moss Beach, went out every morning to catch his breakfast eel. Eel fishing is still popular on the coast but it's illegal to do so in the reserve.



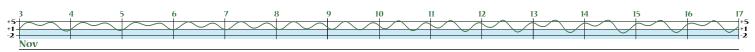
Wading at El Granada Beach

Nye's Reef Restaurant. Note all the abalone shells decorating the interior.



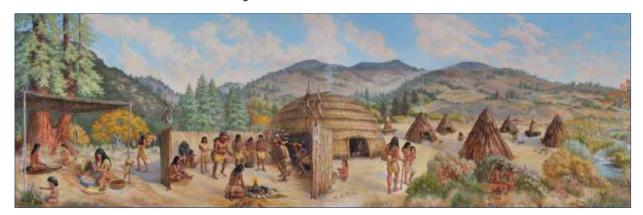


Ocean Shore Railroad #8 at Moss Beach Station c 1915.



Our Third 50th Anniversary Event Coming in September! Celebrating the Chiguan People: First Stewards of This Coastal Area

Check our website for dates and details as the time nears.



A mural by artist Ann Thiermann depicts a Quiroste village based on expedition journals. (San Mateo County Parks Department)

Migrating from Asia over 12,000 years ago, early peoples found California's fertile coastal terraces. Believing that they themselves came from the earth, the Ohlone developed a way of life centered on caring for the land. When European explorers arrived, they welcomed the foreigners who would change their way of life forever.

In 1994 archaeologists examined one of several shell mounds (middens) at the marine reserve. As well as many shell fragments, they found stone tools, roasting pits, and porpoise bones.

In 1997, they found a Chiguan cooking site (a hearth dated ~1270-1400 A.D.) that was moved by the San Gregorio fault with one part 15 ft away from the other. They calculated it would have taken a magnitude 7 or greater earthquake to move the hearth that far at once.



Ohlone Indians in a Tule Boat in the San Francisco Bay
• Louis Choris c. 1822

The Human History of Fitzgerald Marine Reserve ~ continued

- 1987 First Junior Ranger Camp
- 1990 Marine Resources Protection Act
- 1995 Excavation of a worked rock that may be up to 10,000 years old
- 1997 Found Native American cooking site (a hearth dated ~1270-1400 A.D.)
- 1999 Marine Life Protection Act
- 2010 New stairway
- May 1, 2010 Fitzgerald included in 18 new Marine Protected Areas (MPAs)
- 2012 New parking/drainage
- 2016-17 Upgraded Visitor Center



James V. Fitzgerald, a San Mateo County supervisor, led the county's effort to save a popular marine reserve in Moss Beach in 1969.

1988 2nd Junior Ranger Camp

Tidepool Quiz.
Ranger Bob Breen
is shown at Moss
Beach reviewing a
lesson on the food
chain of marine
animals with
youngsters who
participated in
the recent Junior
Ranger Program.



We've Been Celebrating!



Mary Larenas, talented face painter, at the Seal Sitters booth.



California Fish and Wildlife



Ranger Reunion: Jessica Donald, FFMR, Rangers Matt DelCarlo, Rob Cala, Sarah Lenz and Tim Sullivan.



Rangers-to-be?

Harbor Seals

Most common of all marine mammals at Fitzgerald



Salova, a male harbor seal pup was rescued and treated for lungworms and malnutrition at The Marine Mammal Center. He was released back into the intertidal zone at FMR in 2008.



Ms. Bliss

Harbor Seal Count April 13, 2019

Linda Ciotti reports: Great news! On April 13 the following numbers of harbor seals were observed within the boundaries of FMR:

> 186: total adults and immatures 11: pups!!!!

Interestingly, the majority of the seals were observed at Frenchman's Reef, followed by the main beach at FMR.

"IF YOU SEE a seal pup on the beach, don't touch! Mom may just be fishing, and won't return if she sees you. Call at once if you think a seal is orphaned or sick: The Marine Mammal Center 415/289-SEAL anytime, or alert a local ranger," advises Mary Jane Schramm, Media & Public Outreach Specialist, NOAA Greater Farallones National Marine Sanctuary.



	Friends of Fitzgerald Marine Reserve Donation Chair, P.O. Box 669, Moss Beach, CA 94038, or through our website: www.fitzgeraldreserve.org						
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□ \$50	□ \$500	□ Other	Address				
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