

# 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 2012

## Continuing Education Debuts with Doug Mason as Featured Speaker

The first FFMR Continuing Education event, co-ordinated by Linda Ciotti and hosted by Mary DeLong and Jamie Rioto, was held Sunday, April 15, in Princeton. The featured speaker was Doug Mason, noted nudibranch expert. Mason, a science teacher at California High School in San Ramon, spoke of the decline of nudibranchs in the Central California coastal region.

Mason began by explaining that most common nudibranch larvae in our area are planktonic, and feeding on other plankton enables them to drift in the water table for weeks or months, up to hundreds of kilometers from their place of origin. Only a few species (*Doto amyra* and *Phidiana hiltoni*), are lecithotrophic—their larvae feed on the egg yolk and thus are limited in their travel.



*The class, left to right: Julie Walters, Doug Mason, Susan Evans, Jan Pelinka, Piming Lai, Kris Lannin*

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He discussed one of the studies in which he had participated; that study provided data for a publication entitled “Climate-index response profiling indicates larval transport is driving population fluctuations in nudibranch gastropods from the northeast Pacific Ocean.” From 2007 to 2009 quarterly timed counts of nudibranchs were conducted in fixed interval areas at three sites that had previously been studied between the 1960s and 1990s. Evaluation of past counts and use of various statistical indices by Stewart Schultz, lead author and statistician, resulted in rejection of food sources and water temperature as causes of the recent decline of nudibranchs. The scientists concluded that the decline is related to recruitment-limiting, off-shore larval advection (movement by currents) caused by unusually strong El Nina conditions, and also to a positive correlation with the ENSO



*Aeolidia papillosa (Shag rug)*

*continued on page 3*

## Friends of Fitzgerald Marine Reserve

P.O. Box 669  
Moss Beach, CA 94038  
Phone: 650.728.3584  
[www.fitzgeraldreserve.org](http://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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Sasha Greenawalt

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# April Nudibranch Survey

The ninth quarterly nudibranch survey was held April 9 at FMR. Julie Walters coordinated the efforts of 12 volunteers, a record number.

The total nudibranch count, tallied by Julie, was 139, the second highest since counts started in April of 2010. The total number of species seen was 19 with *Triopha maculata* accounting for 45%. That was the largest number of any one species seen. The *Doto kya* was a new find, and it was thought that a *Cuthona abronia* was seen (so small it was difficult to verify). The rarely found *Hallaxa Chani*, first found in the December 2011 survey, appeared again for this count.

### The count by area was as follows:

**Syncline:** 26 Dominant species: *Phidiana Hiltoni*

**Creek to Cypress Point:** 46 Dominant species: *Triopha maculata*

**Cypress Point to Seal Cove:** 67 Dominant species: *Triopha maculata* followed by *Diaulula sandiegensis*

Thanks to the following volunteers who spent a very early Monday morning looking for these tiny creatures: Jennifer Brey, Tom Ciotti, Anne-Ly Crump Garay, Susan Evans, Sasha Greenawalt, Bill Kennedy, Sandi Meyer, Tom Niesen, Jan Pelinka, Leslie Pelinka, Carissa Shipman, Julie Walters

A detailed account of the survey is as follows: *Acanthodoris lutea* (5), *Aeolidia papillosa* (8), *Cadlina luteomarginata* (2), *Cadlina modesta* (4), *Cuthona abronia* (1 unverified), *Dendronotus albus* (1), *Diaulula sandiegensis* (16), *Doriopsilla albopunctata* (6), *Doto kya* (1), *Geitodoris heathi* (1), *Hallaxa Chani* (1), *Hermisinda crassicornis* (6), *Limacia cockerelli* (2), *Peltodoris nobilis* (3), *Phidiana hiltoni* (9), *Rostanga pulchra* (4), *Triopha maculata* (62), *Berthella californica* (3)

Many thanks to Julie Walters for all of her organizing efforts, survey details and pictures. ♦



Carissa Shipman from the Academy of Sciences and two *Phidiana hiltoni* special assistants counting nudibranchs.

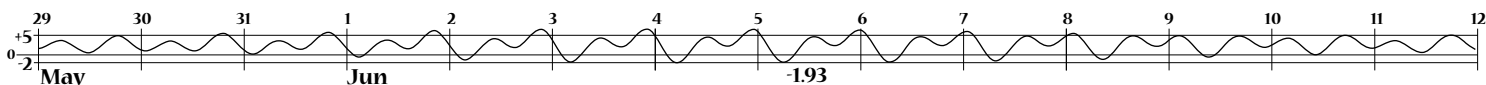


The graph displayed across the page bottoms shows tides for 5/29/12 to 10/16/12. Where the date appears is midnight. The reefs are accessible for exploring during low tides—at least 0 or below. See: <http://fitzgeraldreserve.org/resources> and click on “Tides” for a more detailed tide chart.

*Good summer tides are in the early morning. There are almost equally low tides several days before and several days after the noted low tide dates.*

The lowest tides this period are:

-1.93	6/5	5:58 am
-.78	6/20	6:00 am
-1.58	7/3	4:57 am
-.54	7/19	5:35 am
-.94	8/1	4:41 am





**Continuing Education** *from page 1*

(El Nino/Southern Oscillation) climate index. They believe that populations will rebound with the return of El Nino.

Mason presented beautiful slides of nudibranchs and discussed various nudibranch features. He showed a diagram of several radulae, [the radula can be loosely defined as a tongue], explaining that the shape of the organ is determined by the nudibranch's food source. He described an interesting mechanism in some opisthobranchs, called sacoglossans, that are closely related to nudibranchs. It is now thought that these organisms absorb zooxanthellae from their prey (mostly cnidarians), incorporate the zooxanthellae's DNA, and use it to manufacture sugar that fuels the opisthobranch.

We learned that the best time to look for nudibranchs is just after peak tide in calm water, so we headed to the tidepools, where Mason offered informative comments and answered our questions. The most unusual

finds were the *Doto amyra*, the *Dedronotus subramosus*, and a carnivorous chiton.

Thanks to Doug for his highly informative and entertaining presentation in the classroom and on the reef. Additional thanks to Linda, Mary and Jamie, and also to Susan Evans and Jennifer Brey for the photos.

*Besides his nudibranch research, Doug Mason enjoys nature photography, birding, and traveling.* ♦

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*Doug Mason—on his knees. (It seems that studying small creatures in the tide pools often involves being on your knees or fully prone, as the graduating naturalists featured on page 6 will testify!)*



*Dendronotus subramosus*



*Doto amyra*



*Berthella californica*



*Veiled chiton*

## Friends of Fitzgerald Marine Reserve

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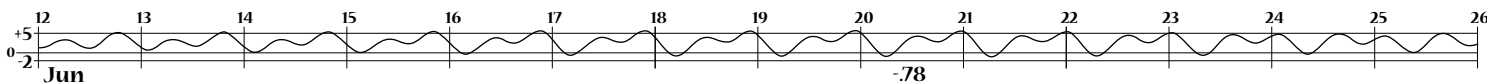
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# A Sea In Flames: The Deepwater Horizon Oil Blowout

by Carl Safina; reviewed by Jenna Kinghorn, Crown Publishers (New York) 2011; 352 pages

*Editors Note:* Shortly after the second anniversary of the BP gulf oil spill a Louisiana U.S. District Judge gave primary court approval of an estimated \$7.8 billion settlement for payment of more than 100,000 claims by individuals and businesses. There is no cap on the amount so payout may be higher, and the settlement does not cover claims by the U.S. government or Gulf states. The judge set a November 8 fairness hearing to hear objections (and there appear to be many) and will then consider final approval. SG & JP

Remembering the shock and outrage and eventual deep despair that afflicted me as the waking nightmare of the Deepwater Horizon oil blowout unfolded in the spring and summer of 2010, I was not sure I could bring myself to read this book. But I'm glad I did. Far from bringing back the despair, this latest work from award-winning author, ecologist, and marine conservationist Carl Safina gave me new hope.

Safina felt the shock, anguish and helplessness that so many citizens expressed in the early days of the disaster. That emotion comes through clearly in his writing. So does the outrage that followed when it came to light that BP did not have a plan in place for capping a blowout, that they were making it up as they went along. And the outrage is multiplied when it comes out that the company's public estimate of 1000 barrels a day escaping into the Gulf was woefully inadequate, that in fact 5000 barrels a day was closer to reality, and that the Deepwater Horizon blowout might well eclipse the Exxon Valdez spill.

He spends much of the first 10 pages of the book explaining the process of drilling for oil, leaving the reader amazed that it ever actually works. "To simplify, imagine pushing a pencil into the soil. Pull the pencil out. Slide a drinking straw into that hole to keep it open...At the scale of pencils-as-drills, you're going down about 180 feet...you have to seal all those spaces, make it, in effect, one tapering tube, absolutely tight.

"And here's why: the last, narrowest straw pokes through the lid of a (very big) pop bottle with lots of soda containing gas under tremendous pressure...And you'd better keep your finger on the top of the straw, or you're going to have a big mess...If it starts to fizz uncontrollably, and you can't regain control, you can get hurt; people can die."

Using transcripts and interviews with the men and women working aboard the Deepwater Horizon—some of whom die, or watch their friends do so—Safina explains the chain of deadly mistakes that led up to the blowout. He takes the reader on a tour of the cleanup and prevention methods being tried on the surface. He resurrects BP's attempts to plug the leaking hole. And he catalogs the losses: of human life, of escaped oil and the money it represents, of damaged habitat and dead fish, of ruined shellfish beds and poisoned birds, of lost fishing and restaurant business, of beaches and resorts closed and tourist dollars gone.

At the end of the summer, Safina is able to meet with two of the government officials he holds responsible for the federal government's lamentable performance in the early days of the crisis: Coast Guard Admiral Thad Allen and NOAA Administrator Dr. Jane Lubchenco. They are amazingly frank and open in their discussion, agreeing that they made serious mistakes, and also pointing out that the practices and laws surrounding oil spills are decades old and inappropriate for deepwater oil spills. One such law requires the company that owns the source of the oil to take charge of the spill cleanup, and that very law hampered government agents' ability to independently assess the damage.

The most heartening aspect of the discussion with Allen and Lubchenco, and of the book, is the clear message that government officials and oil spill responders are trying to learn from the mistakes made during this disaster, so that they will not repeat the mistakes in the future. And that there will be future crises like this one is inevitable. "Oil is toxic and nasty," Lubchenco says. "There are no choices that are risk-free." ♦

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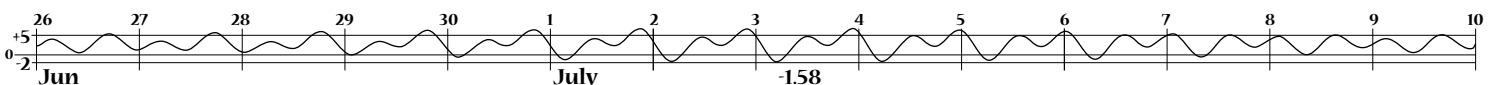
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# Meet the Editors: Janet Pelinka and Sasha Greenawalt

by Linda Ciotti

*Between the Tides'* new editors, Janet Pelinka and Sasha Greenawalt, became friends four years ago on a Sierra Club mule pack trip. After hearing of FFMR's volunteer naturalist program from naturalist Susan Evans, they enrolled in our 2011 training class. Since then they have been a very active duo, volunteering for tours together as a team and monitoring the coast for the MPA Watch program. As reported in the December 2011 issue of *Between the Tides*, Janet and Sasha have also taken on the role as Editors of BTT.

Janet was raised in the Bay Area and has lived in the South Bay for 40 years. She has two daughters and five grandchildren. She has always

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Sasha has been a scuba diver for 25 years and Janet celebrated her 70th birthday by getting certified in the Cayman Islands....When asked about her favorite diving spot, without hesitation, Sasha said "Belize."

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been concerned about the environment. "Our family was 'green' before 'green' was even defined." She has transmitted this concern to her daughters and proudly says, "I think they have become better stewards of the earth than I am." Janet studied Environment Science at San Jose State and worked as a Toxics Control Officer at the Environmental Protection Agency, conducting inspections, responding to public inquiries and speaking at seminars.

In addition to being an FFMR volunteer naturalist, she is also a member of the Stevens Creek Watershed Counsel in Cupertino, and has participated in invertebrate surveys and water quality testing for approximately seven years. In her spare time, Janet likes to hike, garden, play golf, downhill ski and read.

Sasha Greenawalt was born in Chicago, lived in Seattle as a teenager, and came to California to attend Stanford University, where she graduated with a degree in Russian. After a year in graduate school studying philosophy at the

University of Washington, she returned to the Bay Area and worked at "Ramparts" magazine in Berkeley, where she became a copy editor. While living in Berkeley she volunteered at the Berkeley Free Clinic and eventually earned a license in medical technology, doing hospital laboratory work for 16 years.

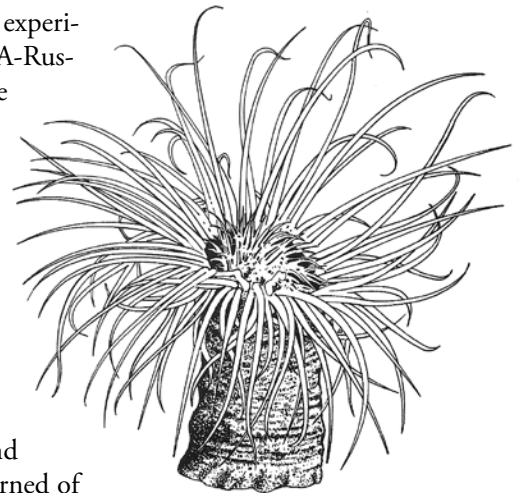
In 1981, the year of the first Space Shuttle flight, she began working at Ames Research Center on studies involving space research. Having worked for eight years in laboratories doing human research, in 1989 she was hired to be a Crew Training Coordinator, training astronauts to perform biological experiments on the effects of microgravity on various species, from plants, frogs and quail to Rhesus monkeys. In addition to Shuttle experiments, she worked on a joint NASA-Russian Space Agency program for the Mir Space Station and was able to use the language skills she acquired at Stanford. In 1998, Sasha was diagnosed with Parkinson's Disease but she continued to work until 2005.

After retiring, she enrolled in a Marine Biology class at Mission College that took field trips to Fitzgerald Marine Reserve. And when she met Susan Evans and learned of the volunteer naturalist training class at FMR, she and Janet agreed to take the class together. Sasha has been a scuba diver for 25 years and Janet celebrated her 70th birthday by getting certified in the Cayman Islands. They took a dive trip together to Honduras last year and hope to take more. When asked about her favorite diving spot, without hesitation, Sasha said "Belize."

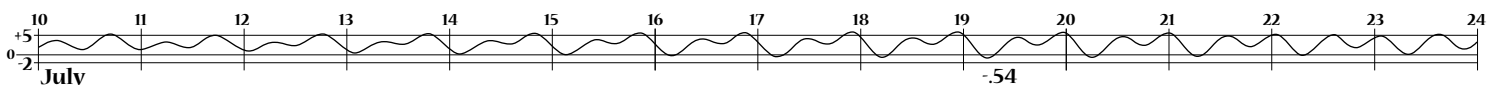
FFMR is pleased to have two recent volunteers become actively involved so quickly with our organization. ♦



Sasha (left) and Janet at the tidepools



Sea Anemone





# New FFMR Naturalists Graduate in March

by Karen Madsen, Susan Evans and Linda Ciotti

*We are pleased to welcome 18 new volunteers to our FFMR Naturalist ranks. Be sure to say 'hi' to them as they begin to lead tours and spend time out on the reef. They are an awesome group of enthusiastic new volunteers and we are so happy to have them join us!*



Geology field exploration with Gary Mason.



Birdwatching at Mavericks with J.P. Jones.



Class at Pillar Point Harbor in January.

*Look for them this spring sharing their newly found knowledge with school classes out on the tidepools.*

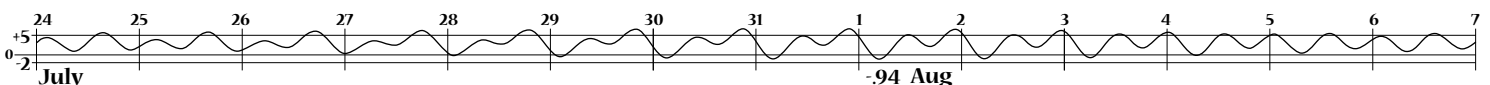
Our new volunteers were treated to a full 9 weeks of classes, with great lectures by all of our instructors, including a few of our own FFMR board members: Joseph Centoni, Tom Niesen, Sarah Lenz, Linda Ciotti and Tom Ciotti. We also welcomed a few new instructors this year: Gary Mason, Geology class (from HMB High School), Doreen Gurrola, Marine Mammals class (from the Marine Mammal Center), and Paul Jones, Birds class. New classes on Geology and Birds were added to this year's training program and they were well received by the students. Joseph taught our trainees about Tides, Tidepool Ecosystems, Cnidarians, Echinoderms, Arthropods and Algae. (Whew...thanks for handling the bulk of the subject matter, Joseph.) Tom N. did an encore performance of his popular Sponges, Bryozoans, Tunicates and Worms class at Pillar Point Harbor and also taught the class on Mollusks. Sarah oriented the new students to FMR with a history of the reserve and how it's protected. Tom C. provided an overview of FFMR and all of the great things we're up to, and Linda C. provided information on the expectations and logistics of being an FFMR volunteer. Finally, Carol Preston

(from NOAA) taught a class on Interpretive Techniques to give the new volunteer naturalists a few tips on leading great tours. The training program concluded with a fabulous graduation party at Tom and Linda's home.

This year we tried something new: we formed a team to plan and organize the training program (we thought it would be a good idea to spread the work around a little and give Linda a bit of a break). We ended up getting to spread the fun around too. The core training team consisted of Karen Madsen (lead), Susan Evans and Anne-Ly Crump Garay. Linda and Tom Ciotti were also part of the team, serving as expert consultants. Carol Davies and Diann Chethik offered their assistance to the training team as well and their help was invaluable in setting up the classroom, advertising the training class and assisting at all the class sessions. Joseph Centoni was instrumental in planning the overall class schedule and updating the training manual. Thanks to everyone who contributed to the success of the 2012 training program.

Here's a peek behind the scenes for a sense of how we put together the training program. When we began our work last summer, the first and most challenging task for the team was to find a suitable space for our class sessions. After much searching, Susan and Anne-Ly found a suitable space at the El Granada Sanitation District offices. Our summer planning meetings found us discussing possible speakers and trying to coordinate a class schedule with the tides. We were overjoyed when we discovered that every other week had a good low tide for afternoon tidepooling. We planned our classes with morning lectures and afternoon field trips (the students loved the format).

The final push came as we made the training binders, finalized the class list (the class was limited to 20 students and we ended up with a



waiting list), sent out all the final program details to the students and put the finishing touches on a revamped mentoring program. Susan took the lead in putting together a well-received Mentor Program for our training.

Finally, our preparation paid off. Our first class was held on January 7, a gorgeous day with a minus low tide and a roomful of excited students. We wrapped up the training program on March 10 with a fun graduation celebration.

We received great feedback from the class. Here is a sampling of things our students enjoyed most about the training (with a few of our own thoughts thrown in for good measure).

“Finally, I was able to understand tides.”

“Absolutely loved the dock scavenger hunt at Princeton Harbor.”

“I enjoyed learning the geology of the area.”

“Learning all aspects of marine biology.”

“Understanding the diversity of the life in the intertidal zone and the various relationships. Survival strategies. Methods of reproduction.” (Yes, the sex life of invertebrates is strange and fascinating.)

New volunteer and birder extraordinaire, Jean Bronstein, quickly spotted a Kingfisher on our Bird Walk, but the real highlight of the walk for many students was the whales we spotted just off Mavericks beach.

We can't begin to tell all of our new graduates how excited and appreciative we are that 100% of their class has already led, shadowed, roved or done Ranger Station duty. We wish them many happy years ahead with all sorts of fun tidepooling. And, if you are interested in being a part of next year's training program, please let Linda Ciotti know....we welcome new ideas and energy! ♦



*Class picture: Back Row: Sandra Gleichmann, Roger Hoppes, Jeanette Hyer, Steve Slomka, Gael Erickson, Darrick Emil Bottom row: Tina Huie, Ocean Terwilliger, Diana Proctor, Kris Liang, Maria Koretz, Mira Gillet, and Piming Lai, Bathing Beauty: Sam Hutkins (Missing: Jean Bronstein, Sun Kim, Young Choon Kim and Lucy Thurston)*

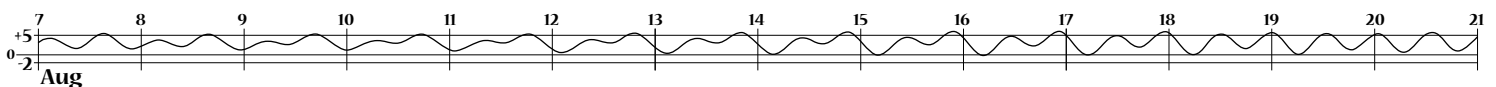
## **New volunteer Kris Lannin has this to say about her training experience:**

Syncline, sea squirts and nudis, oh my! The FFMR Volunteer Naturalist Training Program is an outstanding opportunity to join an enthusiastic and supportive group dedicated to promoting and protecting Fitzgerald Marine Reserve. The organizers, teachers, curriculum, and outdoor explorations really increased my appreciation and love for FMR – it's easy to see how the Friends have that effect on thousands of children and adults each year.

The program is well-organized and comprehensive, delving into everything from geology to mammals, but completely manageable for folks like me who work full-time (who didn't know the difference between a harbor seal and a sea lion). The group really invested themselves in our success, taking time whenever we requested it to mentor us on the reef. I learned more than I ever expected, and have thoroughly enjoyed all of the continuing education classes I've participated in. This is truly a first-class volunteer operation, I'm so glad I made it off the waiting list and into the class! Thanks a million FFMR! ♦



*Joseph Centoni at FMR stairs with class in March.*





# 2012 Harbor Seal Pupping Season



Mom and baby harbor seal. Fish Guy Photos, [www.fishguyphotos.com](http://www.fishguyphotos.com)

Rangers, naturalists and visitors alike were diligent in their efforts to spot and protect newborn pups again this year. The May count indicated a population of 48 pups and 159 adults, compared with a 2011 count of 55 pups and 220 adults.

Interactions between mothers and pups are frequent and intense, as bonding is critical to the pups' survival. A pup's unique vocalization (a bleating noise that sounds like "maa") allows it to be located and recognized by its mother. During pupping season the males usually reside separate from the mothers and don't interfere with nursing.

As Linda Ciotti reminds us, it is up to the volunteers to protect the seals on weekends, since the county no longer has a designated ranger assigned to FMR. FMR recently requested the Marine Mammal Center to assist in monitoring visitor activity around harbor seal haulouts. Because rangers have less time to designate the prohibited zone with cones, it is everyone's responsibility to educate uninformed park visitors about the importance of observing seals from a distance.

The Marine Mammal Center's 24-hour response number is 415-289-SEAL. ♦

Pupping season is over now, typically occurring between March and May. During that time, pups can be observed nursing, resting and warming up on the shore, occasionally sporting a white (laguno) coat that is quickly replaced with adult-colored fur. Weighing 20-24 lbs at birth, they gain approximately 25 lbs during their 4-6 week nursing period. These precocious pups can swim at birth and dive for as long as two minutes when only a few days old. When they tire, they are often carried by their mothers, piggyback style.

*...it is everyone's responsibility to educate uninformed park visitors about the importance of observing seals from a distance.*

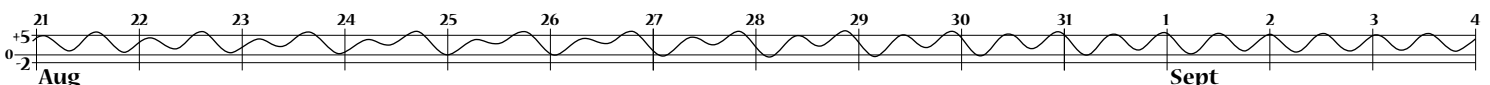
## Janine Miller: observations while walking the bluffs with a friend

During the lowest tides last month we spotted indications of harbor seal births. There was lots of commotion from the ravens and sea gulls eating the afterbirth. One time we saw a mother and baby right after the birth; we could tell because the umbilical cord was still attached to the baby. At first the mother did not react to the birds' presence. She was probably trying to recover from the delivery. She eventually took a weak lunge at the birds. I was surprised because I have never seen a harbor seal be aggressive.

I loved watching the mother and baby enter the water for the first time together; somehow the mother gets the baby on her back and they swim to the reef farther out. We saw 5 births this year ranging from blood spots on the beach to the baby still being connected to the umbilical cord. I also enjoyed seeing the babies nursing. ♦

*We saw 5 births this year ranging from blood spots on the beach to the baby still being connected to the umbilical cord.*

*There was lots of commotion from the ravens and sea gulls eating the afterbirth.*





## Harbor Seal Pup (?) Rescue

As reported by Kris Liang on April 11, “A tiny seal pup was rescued this morning in Seal Cove. I called the Marine Sanctuary at 8:20 this morning, thankfully they were able to re-route a volunteer in Pacifica, who arrived 20-30 minutes later.

The little creature was about 18” long, still had his umbilical cord attached, was completely stuck inside one of the tide pools very close to the beach. He/she was barking his/her poor head off. There was an adult swimming in the water very close by until the seal was removed. The volunteer gently removed ‘Cora’ (they let me name her) from the pool, wrapped him/her in his jacket and left before the crowds arrived around 9:00 am.”

And later... ”I have some embarrassing news to report. I visited the Marine Mammal Center’s website to track the status of the pup I found a few weeks ago.

Ummm...it was an elephant seal pup—not a harbor seal pup.” ♦



## Welcome to Ranger Matthew Auda-Capel

Matthew Auda-Capel is the newest Ranger in the Mid-Coast section of the San Mateo County Parks. He is a native of San Francisco and has been coming to Fitzgerald his entire life on field trips in school and with friends and family.

He attended College at UC Santa Cruz, studying literature, geology and Latin, and lived and worked in Big Sur for two years before running conservation crews with the Student Conservation Association in San Mateo County Parks.

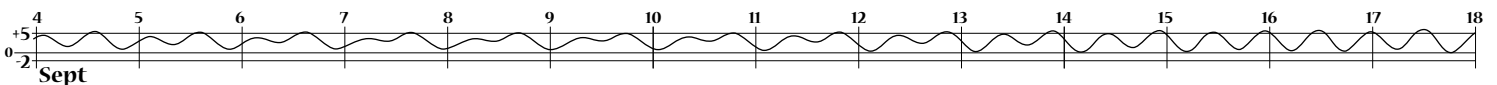
Matthew is extremely fond of open spaces and spends much of his free time hiking and backpacking, so he is right at home ranging the parks of San Mateo County. Previously he worked at Memorial Park near Pescadero, and although he misses the grand redwood forests, he is happy to be working at Fitzgerald Marine Reserve and San Pedro Valley Park.

Now that he is closer to home he looks forward to a continuing relationship with the phocine, piscine, hominid and other denizens of Northern San Mateo County. Matthew thanks us for welcoming him into our midst. ♦

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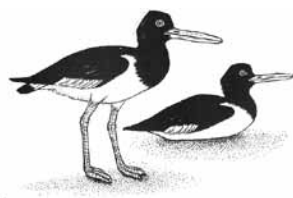
*Now that he is closer  
to home he looks  
forward to a  
continuing relationship  
with the phocine,  
piscine, hominid and  
other denizens of  
Northern San Mateo  
County.  
[To some of us,  
that's: seals, fish,  
humans and other  
County frequenters.]*

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# Adventures at Frenchman's Reef Moss Beach to Princeton

by Julie Walters



Oyster Catcher

Frenchman's Reef is actually part of Fitzgerald Marine Reserve. It's the rarely explored area south of the Seal Cove stairs and below the Moss Beach Distillery. You can access it one of two ways: from Ross Cove on the south end near Pillar Point or from the Seal Cove stairs at the northern end.

From the south: Park at the parking lot near Pillar Point Marsh, walk up and over the hill toward the large satellite dish and go down one of the steep paths to the beach below. This will put you at Ross Cove/Whaleman's Harbor. Head north or right.

From the north: From the Seal Cove stairs turn left or south once you reach the rocky beach and continue past the Moss Beach Distillery located on the cliffs above.



Great Blue Heron



Anemone

## Overview

There are three reefs along this stretch: the northernmost one called Distillery Reef, followed by Frenchman's North and Frenchman's South. Distillery Reef is the easiest one to access, Frenchman's South the most difficult and only reachable during a good low tide. To fully explore this area requires more than one visit.

Prior to heading down to the beach and reef, you may want to look at the reef from the cliffs above. You can get a great overview from the bluff-top trail which runs between Ross Cove and Ocean Blvd south of the Moss Beach Distillery. This will allow you to see which areas may, or may not be, accessible. The view from the cliff will also allow you to see the curved shape of

the reefs; one curves inland and the other away from the shore.

## Predominant species found here:

- Very large sea stars, in particular knobby stars over 12" in diameter, leather stars and sunflower stars. Look for the sunflower stars in the bottom of surge channels. Bat stars are plentiful and range in color from yellow to orange to grayish blue.
- Harbor seals – Remember to keep a minimum of 300 feet away from these animals. These reefs are a favorite resting spot for seals.
- Very large gumboot chitons
- Limpets, mussels and sea urchins
- Giant green anemones
- Nudibranchs
- Colorful sponges and tunicates underneath overhangs. Get down low and look under these low rock ledges and you'll see a colorful world where a variety of species live.
- Birds—You will see a great abundance of birds here because there are fewer people. Look for Oyster Catchers, herons, egrets and barn swallows near the shore.

## What you should know

Best time to visit: Low tide of -0.5 or lower. Allow a minimum of 2 hours.

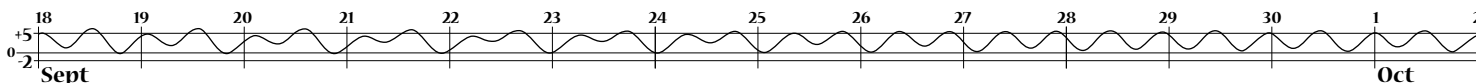
Once you start out from either end you will need either to return the way you came or continue on until you reach either Ross Cove or the Seal Cove stairs. This is critical; there are no intermediate access paths between the beach and the cliffs above. Plan ahead for your visit. Make sure that the tide is low enough so that if you go out on the reef you will not be cut off from the shore by the returning tide.

The cliffs just south of the Moss Beach Distillery are continually crumbling and eroding; stay away from the cliff face.

This is a marine protected area: No dogs; no collecting of shells or animals is allowed on the beach or reef. However, dogs are allowed on the bluff top trail.



Gumboot chiton





## A colorful history

Ross Cove/Whaleman's Harbor: In the 1860s, Portuguese whalers looked for whales from the cliffs above the cove (near the present day Pillar Point radar installation). Upon sighting a whale, the whalers would then launch their boats from Whaleman's Harbor, below. You may be able to find whalebones or sea glass in the sand.

Prior to 1933, during Prohibition, the San Mateo Coast was an ideal spot for rum-running, bootleggers and "speakeasies"—establishments that sold illegal alcohol. Often at night alcohol was brought in from boats offshore by Canadian rum-runners. Imagine how treacherous it would have been in the darkness and fog to be offshore in a small boat, transporting barrels and bottles of illegal whiskey. Boats would land on the beach; the alcohol was then dragged up the steep cliffs and loaded into waiting vehicles for transport to San Francisco.

This is a fascinating area, both historically and biologically. Enjoy! ♦

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*Prior to 1933, during Prohibition, the San Mateo Coast was an ideal spot for rum-running, bootleggers and "speakeasies."*

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*Aerial view of Frenchman's reef—image from Google Earth.*



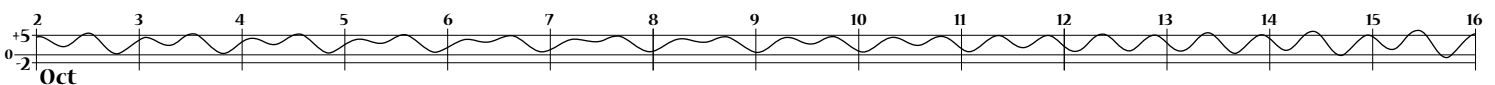
*Looking north from Ross Cove toward Frenchman's Reef.*



*Curved reef*



*Exposed reef*



## Betty Sills Informs Visitors

When visitors to Fitzgerald Marine Reserve walk down the path to the beach they are often greeted by a very special person, FFMR naturalist Betty Sills. Positioned on the bluff overlooking the tidepools, she is usually surrounded by inquisitive visitors while she exhibits shells, whisks, rocks, bones and many other items of interest. She is accompanied by Celia, a 4 foot harbor seal replica which she made last year. Sills' goal is to educate and excite everyone who stops to visit her about the magic of the tidepools and the harbor seals.



Harbor Seal

Sills reluctantly gave up docenting on the



Betty identifies some of the tidepool creatures for a visitor. Below:



Some of her exhibit items.

tidepools when she needed surgery on her shoulder. Unwilling to risk a fall and incur another injury in the slippery algae, but still desiring to be a part of FFMR, she developed her own educational program which she now shares with visitors. She is also a docent at the California Academy of Sciences. There she guides and informs visitors of the many wonders of the Academy. She has even researched moon rocks (there is one on display there), has become an expert on the

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*Visitors emit squeals of joy when they spot a mother seal and pup involved in playful antics.*

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Apollo space missions, and expanded the moon rock exhibit.

It is especially exciting when Sills brings two spotting scopes to the bluffs. Visitors emit squeals of joy when they spot a mother seal and pup involved in playful antics. Sills does need assistance. She can't attend the scopes and the display at the same time. If you are interested in assisting her in this endeavor please contact her at [bsills5516@sbcglobal.net](mailto:bsills5516@sbcglobal.net), or Linda Ciotti at [L8428@aol.com](mailto:L8428@aol.com). ♦



Betty's spotting scope always attracts a curious eye.

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*Sills' goal is to educate and excite visitors about the magic of the tidepools and the harbor seals.*

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