

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

S e p t e m b e r 2 0 1 8

FFMR 2018 Bob Breen Scholarship Awards

by Tom Ciotti, FFMR President

Decades ago Bob Breen, Supervising Naturalist at FMR for 35 years and a founder of FFMR, started a marine biology class at Half Moon Bay High School (HMBHS). In 2001 Bob and FFMR initiated awarding a college scholarship to an outstanding graduating senior from Bob's class. The scholarship is awarded annually at HMBHS's Scholarship Night at which various community organizations, including FFMR, give scholarships to graduating seniors. Joseph Centoni, currently the teacher of the class Bob started, chair of the HMBHS's Science Department, and FFMR Board Member, was the first Bob Breen Scholarship recipient. Over the years FFMR has increased the number and value of the scholarships. For the past several years we have awarded three scholarships, each for \$5,000.

The 2018 HMBHS Scholarship Night was the evening of May 31. Joseph Centoni, Linda Ciotti, and I attended on behalf of FFMR. Parents, friends, scholarship presenters, and others gathered at the HMBHS auditorium to proudly watch the almost 125 students who were to be given scholarships enter and be seated in the auditorium to continuous applause. After opening remarks from Principal John Nazar the awarding of scholarships began.

Scholarships are awarded in alphabetical order by presenter, so presenters whose names begin with A through E precede FFMR. But the wait is worth it because it is exhilarating to witness the generosity of the community, the excitement and joy of the scholarship recipients, and the student camaraderie. Some organizations award so many scholarships that the entire auditorium stage is crowded with students. Our scholarships are among the highest in value and always elicit an audible gasp from the students when their amounts are announced. Until his passing, Bob always presented the scholarships. Now, the President of FFMR gets that honor. So it was with pleasure that I presented 2018 Bob Breen Scholarships to: True Barnes; Makenna Colucci; and Tamlyn Schafer.

True Barnes is heading off to Oregon State University where he will study ecology and evolutionary biology with a minor in music. After receiving his scholarship he wrote to us:

continued on page 2

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(l to r) Joseph Centoni, Makenna Colucci, True Barnes, Tamlyn Schafer, Tom Ciotti

Friends of Fitzgerald Marine Reserve

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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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Scholarships, continued from page 1

Receiving this scholarship has been one of the proudest achievements of my life and it meant so much to me that it came from an organization that I love and support....As a Montara resident and someone who has been in Mr. Centoni's class for three out of my four years in high school, Fitzgerald Marine Reserve has been a go to place for me when it comes to scientific studies, relaxation, or just plain fun and wonder.

Makenna Colucci is going to U. C. Santa Barbara to study environmental science. Coincident with her receiving our scholarship, her mother, Karen, was communicating with my wife, Linda, about enrolling Makenna's younger brother, Clark, in FFMR's Junior Naturalist Summer Camp. The day after Scholarship Night Karen was looking at Makenna's Scholarship Certificate (which I had signed) and put Linda and me together. She emailed Linda:

I had never experienced Scholarship Night before and when Tom called her name it was such a huge surprise. The generosity of the Friends of Fitzgerald is simply amazing....Makenna goes to Fitzgerald often to visit the tide pools and explore. She was the one who introduced it to Clark, who now loves it. It's one of her happy places.

Linda and I had the opportunity to talk with Makenna about her college plans when she and Karen dropped Clark off at our summer camp. We were able to introduce her to a 2016 Bob Breen Scholarship recipient who is also studying environmental science at U.C. Santa Barbara.

Tamlyn Schafer, who was the valedictorian of her class, will attend U.C. Berkeley. She wrote FFMR a thank you letter stating:

I will be a freshman majoring in environmental science at U.C. Berkeley next year. My goal is to pursue environmental policy making and marine protection. I hope to someday use my studies to support environmental justice right here on the coastside.

FFMR congratulates these three outstanding young people on their academic achievements and wishes them success in college.

GO COUGARS!!!!



Correction

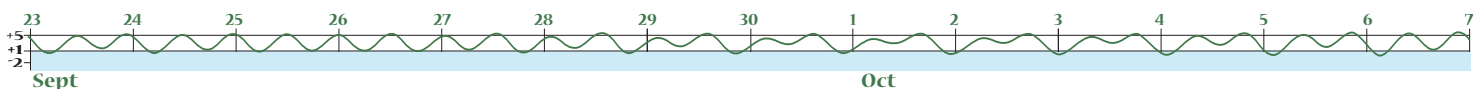
This is DAVE HANKIN. In the print version of the June BTT issue the Volunteer Spotlight title mistakenly read DAN HANKIN. We sincerely apologize to Dave and all our readers for this embarrassing error.

The graph displayed across the page bottoms shows tides for 9/23/18 to 2/10/19. 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.

September brings in the winter afternoon low tides. They change to morning low tides in March. There are almost equally low tides several days before and several days after the noted low tide dates.

The lowest tides this period are:

-0.51	10/27	7:22pm	-1.52	12/23	5:07pm
-0.63	11/08	5:00pm	4th lowest tide of 2018		
-1.19	11/25	6:08pm	-0.68	1/5	4:29pm
-0.81	12/07	4:44pm	-1.55	1/21	4:53pm
			lowest tide of 2019		
			-0.37	2/3	4:10pm





BROODING ANEMONE



ANEMONE, FIGHTING TENTACLES



BELL JELLY



BAT STAR



**MONKEY FACE
PRICKLEBACK EEL**

**Photographs by
Rob Cala**

Rob Cala is a San Mateo County
Park Ranger and avid photographer.

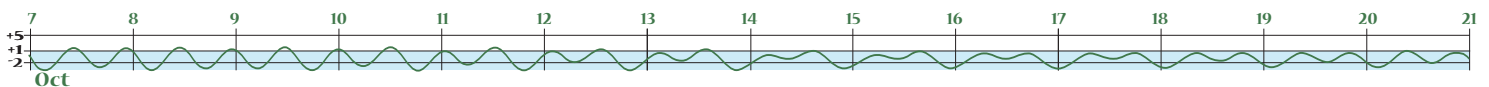
A display of Rob's photos can be seen at robcalamedia.com



LINED CHITON



OYSTER CATCHER



Spotlight on Allison Adams



While I spent the majority of my childhood far from the ocean, ever-present in my subconscious was a distant memory of the year and a half our family lived on Merritt Island, Florida, and our regular afternoons at the beach when I was about five years old. My mother told me that the day after we arrived, I left our beachside motel room at dawn and went for a walk on the beach by myself. My attraction to the sea was irresistible!

We later moved to landlocked Dallas, Texas, where we stayed for the remainder of my childhood, so my love for the ocean would remain unexplored for many years, time I instead spent pursuing my love for dance.

After earning a Bachelor of Fine Arts degree in ballet from Texas Christian University in Fort Worth, I spent a year in Paris, France, working as an au pair, learning to speak French, and taking ballet classes. Upon my return to Texas, I discovered my true dance-love in flamenco, abandoned my idea of being a ballerina, and made my career as a flamenco dancer, teacher and choreographer. Thanks to flamenco, I had the privilege of touring the United States and Canada with a dance company three times, working for two short and tempestuous weeks in Charo's variety show in Honolulu, moving to Seattle, then to San Francisco in 1996, and spending six months in Spain.

My love for dance and the ocean converged at one point in an unexpected way. I found myself on the island of Puerto Rico for five days as a member of the José Greco Flamenco Dance Company, performing in one of the biggest theaters I have ever been in. It was a prestigious company as far as flamenco goes, and it was my first real paying dance job, so my thrill level was sustained at "off the charts" for the entire tour. As exhilarating as that was for me, I felt equally thrilled to be on an island surrounded by the warm breezes

and sparkling tropical water of the Caribbean Sea. However, this time the attraction to the sea became more concrete, awakening my scientific curiosity, as I witnessed the magic of the bioluminescent bay and heard stories of the resident humpback whales, and I longed to explore those waters.

That longing took a backseat to my dance career until about 2003. By then I was happily married and living in San Francisco. Feeling the need for a change, I decided to leave the field of dance and see if my love for the ocean could turn into a profession. City College of San Francisco's oceanography class set me on my way when we took a field trip to Fitzgerald Marine Reserve (while I was eight months pregnant!). The beauty of the reserve and my fascination with the miniature worlds of tide pools immediately inspired me to both become a docent, which I did in 2011, and to pursue a master's degree in marine biology. This pursuit would end up taking 15 years! I spent many of those years taking math and science classes to prepare for applying to the master's program in marine science at San Francisco State University.

Those years also gave me plenty of time to enjoy taking kids on tours of the tidepools, to get my own plankton net and microscopes, and to create workshops for other school groups. I also gave birth to my son, Evan, who is 14 years old now, became a widow five years ago, and gave up on getting the master's degree.

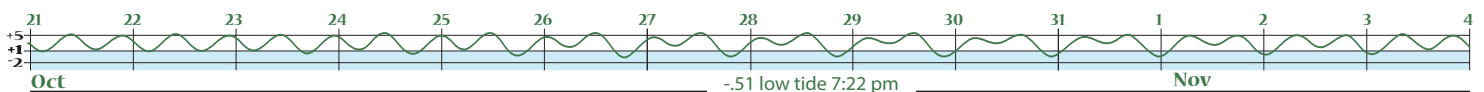
After my husband passed, I found a radical way to deal with the grief: renting out my house and traveling around the world with my son for

one year. We chased the summer seasons around the globe, spending time in Europe, Africa, Asia and the South Pacific. Our trip was proof of the cosmopolitan makeup of San Francisco public schools, as many of our destinations were centered on the families of Evan's classmates, including in Ireland, South Africa, Qatar and New Zealand. Kenya was the highlight for me, where we lived in the bush, working in a school, ➡

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May 19 Nudibranch Survey

It was early and it was cold, but 12 stalwart souls trekked out to Pillar Point for the May 19 nudibranch survey. Getting out was relatively easy with a -1.4 tide, and the water was clear. With survey lists in hand we spread out to various pools to search for the intriguing little sea slugs.

We found 140 nudibranchs: *Triopha maculata* was the most common (43) with *Phidiana hiltoni* coming in second (21). Keen eyes spotted 10 of the tiny *Doto amyra* and 14 *Dendronotus subramosus*. Here is the rest of the count: 14 *Hermis-senda crassicornis*, 10 *Dendronotus venus-tus*, 7 *Hermis-senda opalensence*, 4 each *Flabellina triliniata* and *Doriopsilla albopunctata*, 3 *Tenellia lagunae*, 2 each *Doropsilla fulva*, *Limacia cockerelli*, and *Rostanga pulcra*, and 1 each *Abronica abronia*, *Peltodoris nobilis*, *Acanthodoris rhodoceras*, *Triopha catalinae* and *Cuthonia divae*.



Triopha maculata
• Scott Snow

Those who participated were Ariel Bauman, Susan Evans, Dave Hankin, Jeanette Hyer, Meredith Greene, Deryck Marsh, Janet Pelinka, Kacie Sorfleet, Terrance Whitson and two guests.

Next survey to be announced. ◆

Sea Star Survey

by Julie Walters

A total of 140 sea stars were observed over two hours by four volunteers—32 ochre stars, 5 bat stars, 20 leather stars, 80 six ray or small-scale stars such as *Henricia pumila* or *Leptasterias hecactis*, and 2 brittle stars

My personal observations were that most of the ochre stars were what I would consider sub-adults; less than six inches in diameter. About half of the ochres were seen in the low tide zone near the urchin beds at Frenchman's. The purple sea urchins are definitely increasing in numbers.

The mussel beds seem to be quite small at Frenchman's which was surprising considering the reduced star population. We did not observe any Knobby stars or pink bay stars.

Next Sea Star Survey

Mark your calendars for our second sea star count:

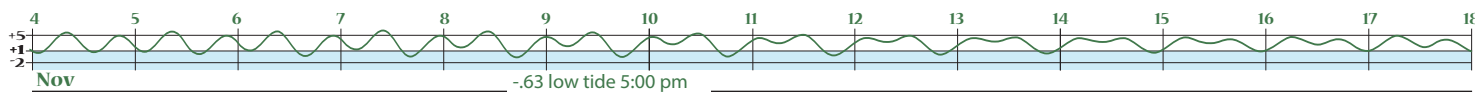
Saturday, December 22, 3-5 PM.
Low tide of -1.3 is at 4:20 PM.
Sunset is at 4:55 PM. If it rains that day, we'll reschedule for the following day. ◆



➡ making friends, and learning some of the kids' songs and dances. I also gained a completely different perspective on water, since we got our water from wells or rain tanks and carried it in buckets to the house for cooking or to the yard for washing clothes. We finished our stay in Kenya with another water experience—hanging out on a beautiful white sand beach in the town of Watamu on the Indian Ocean. I felt right at home scuba diving and exploring Watamu's tide-pools, finding eels, crabs and a few other vaguely familiar critters.

Returning home to San Francisco in the fall of 2016 and to volunteering at FMR felt like returning to the fold, reminding me where I belonged, prodding me to revisit my goal of graduate school. In January of 2018, I applied to San Francisco State University's new RIPTIDES program and was accepted! I will begin this fall, studying zooplankton among other things, in Wim Kimmerer's lab, and eventually earning a master's degree in interdisciplinary marine and estuarine science. That won't stop me from spending time at FMR! I look forward to seeing you on the reef! ◆

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studying zooplankton
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and estuarine science.*



2018 JUNIOR NATURALIST SUMMER CAMP

by Juliette Applewhite

June 22 marked the end of our annual weeklong Friends of Fitzgerald Marine Reserve Junior Naturalist Summer Camp. We were able to offer a 3:1 counselor to camper ratio this year, with additional daily help from Tom and Linda Ciotti. Our awesome crew this year included Ron Olson, Janet Pelinka, Karen Madsen, Allison Adams, David Hankin, and Deborah Landman.

Katherine Wright, from the San Mateo County Park Department, and Juliette Applewhite led the camp, along with several guest teachers, including Mark Hylkema, Irina Kogan, Kim Powell, and Glenn Gutleben.

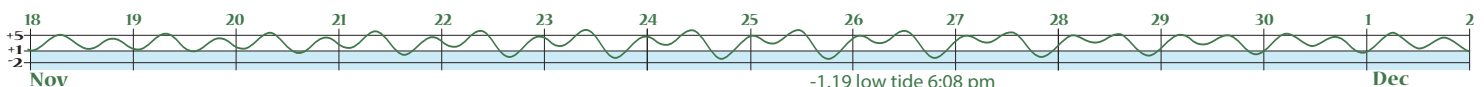
We chose the week of June 18th due to the low tides, with camp beginning at 9:00 am on Monday with a low tide of -0.8. The campers spent a lot of time at the beach exploring during low tides throughout the week and also spent parts of their days singing camp songs, like the SCAT song, The Tide-pool shuffle, Sea Star, Plankton Soup and more.

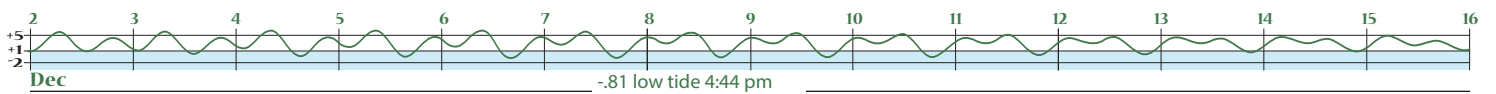
We divided the camp into theme days. Monday was devoted to exploring the tide-pools, watching the awesome video at the visitor hut, learning about harbor

seals and making seal puppets. Tuesday was primarily spent learning about the original residents of Fitzgerald. Mark Hylkema, who is the Associate State Archeologist and Anthropology Professor at Foothill College, brought several tools and spoke to us about the Ohlone's way of life. We offered three different activities for the kids to experience a small slice of their life.

Wednesday marked an adventure in faults, sand, and fossils. Irina taught us about faults and then walked us to the fault. We looked at sand through a microscope, thanks to Glenn, and Kim led us in a wonderful pastels and water color art project. And, of course, the camouflage game was a huge success. Thursday began with camp songs and tidepools. We learned about jellyfish and then created some very beautiful and diverse jelly fish lanterns. The afternoon was devoted to Marine Debris, Conservation, and Stewardship led by Kim. The naturalist leaders then took a topic to teach individually.

Friday brought us beach day! We spent the morning tidepooling and playing, back at camp for lunch, and then games and singing on the beach. A great time was had by all! We look forward to next year's adventures! ♦





Get Into Your Sanctuary Day

by Kathleen Hayes

August 4th, 2018 marked the 2nd anniversary of the Friends of Fitzgerald Marine Reserve's (FFMR) participation in the "Get Into Your Sanctuary Day" celebration. This year proved to be just as action-packed as last year. Our volunteers came out in force to meet and greet hundreds of visitors and to celebrate the glorious combination of a low tide and great weather.

"Get Into Your Sanctuary Day" is a two-day event sponsored by NOAA's Office of National Marine Sanctuaries to raise awareness through a series of special activities about the value of our sanctuaries as iconic destinations for responsible recreation.

At Fitzgerald Marine Reserve, volunteers from FFMR were stationed down at the cone line offering visitors views through the spotting scopes of the harbor seals sunning themselves on the beach. Volunteers with binoculars shared visions of the seals from atop the wind-swept bluffs. And down at the Visitor Hut there was a virtual hub of endless activity led by our very own Kumi and her battalion of volunteers. Throughout the day, volunteers immersed themselves in the tide-pools—roving, interacting with visitors, and answering questions.

I did not think we could top last year's efforts by FFMR, but this year was just as special. It's always so much fun to come together as a group and field all of the questions from the visitors, get people excited about where they are,

and watch the visitors interact with the shells, pelts and other hands-on exhibits we set up for the day.

A rough headcount for Saturday recorded 408 visitors to the park between 8am and 3pm. Lots of visitors were from out-of-town including many from out of the country. There were moments down at the Visitor Hut where multiple languages were spoken at one time as interpreters and family members helped educate their companions on some of the games and educational exhibits the Friends volunteers had on display.

In addition to all of the education displays and games that covered the front deck, volunteer Carol Ferguson set up shop to sell postcards, hats, sweatshirts and books. She was a one-woman show for hours while other volunteers busied themselves inside the hut and on the front deck.

All of the volunteers made an impact on our guests that day. One guest in particular took the time to express his gratitude: "I just want to thank all of you for doing

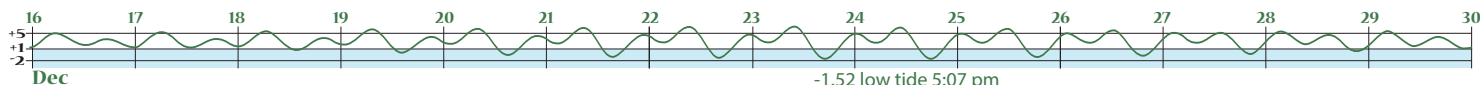
what you do. I see so much more when I interact with the volunteers. It's like when you go to a museum and a docent is present; you simply learn so much more and it makes the whole experience better."

Thank you to all of our volunteers for making "Get Into Your Sanctuary Day" better for all of our visitors. ♦



Volunteers with binoculars shared visions of the seals from atop the wind-swept bluffs.

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Seymour Center Visit

On Saturday, July 28, FFMR naturalists and their guests visited the Seymour Marine Discovery Center in Santa Cruz. Upon arrival we were greeted by a Seymour representative who gave us a brief talk about the center and its mission. The Seymour Marine Discovery Center is a non-profit public facility. Part of UCSC's Long Marine Lab, the Seymour Center is dedicated to offering marine science and ocean conservation education to the public. It features hands-on

exhibits, an aquarium, guided tours and educational programs for students of all ages.

A volunteer docent then led us on an outdoor tour of the facility that boasts the largest displayed whale skeleton in the world: 87 feet long. Our tour ended at the center's dolphin pools in time to view the daily feeding activity of the three resident dolphins. There we were also treated to a glimpse of an endangered Hawaiian Monk Seal. ♦

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July 4th Parade in Half Moon Bay

by Linda Ciotti

Once again FFMR was well represented at the Annual Old-Fashioned July 4th Parade in Half Moon Bay. We missed King Neptune as our lead marcher this year, but we did have a jellyfish (Carol Ferguson), a giant kelp (Jeanette Hyer), a rare purple octopus (Jody Stewart), a generous brown octopus (Diann Chethik); of course our mascot Sealia joined the proceedings together with her new pup escorted by Marsha Cohen.



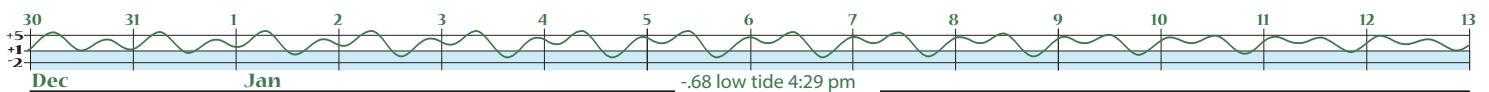
(left) Carol Ferguson as a jellyfish, and our mascot, Sealia, and her pup escorted by Marsha Cohen

The rest of the gang donned crab hats and distributed our traditional salt water taffy to all the kids lining the parade route. The rest of our contingent included Candice Abellon, Tom and Linda Ciotti, Ariel Bauman, Paul Gater, Ann Hurley, and Deryck Marsh. And we came home with another blue ribbon! ♦



l to r: Candice Abellon, Jody Stewart, Ariel Bauman

l to r: Ann Hurley, Deryck Marsh, Paul Gater



Snails on the Reef

by Sasha Greenawalt

Black turban snails can live anywhere from 7 to 30 years.

Found on the tops of the giant kelp canopy, the brown turban snail slowly wanders about the kelp fronds, rasping the film of diatoms on the kelp's surface with its file-like tongue.

The leafy hornmouth snail's radula drills through the protective shell of its prey, whereupon it injects digestive enzymes into the animal's body and then sucks out the dissolved tissue.

As a scavenger the dire whelk preys on limpets, barnacles, chitons, worms, and other animals, specializing in finding and eating injured animals.

Some definitions that may be of help:

- **Aperture:** opening to the snail shell
- **Flange:** a projecting flat rim, collar or rib on an object
- **Operculum:** a horny disc attached to the snail's foot that acts as a door when the animal pulls itself inside its shell. Protects it from desiccation and predation
- **Radula:** feeding organ, covered with backward curving fine teeth, adapted for grazing, scraping, grasping or cutting
- **Varix:** (varices, pl) A thickened lip or flange that develops at regular intervals as a snail's shell grows
- **Whorl:** A single, 360 degree turn in the spiral growth of a mollusc shell



The **black turban snail** (*Tegula funebris*) is a medium-sized marine sea snail found along the Pacific coast of North America where it is one of the most abundant snail species. It inhabits rocky shores in the high to mid-intertidal zones; juveniles are found mostly under rocks and among coarse sands. Empty black turban snail shells are often inhabited by another common intertidal animal, the hermit crab. Most adult turban snails have shells which are purple-black and about 1 to 1¼ inches in diameter, with four rounded whorls. Individuals can live anywhere from 7 to 30 years, which explains why the tops of their shells are almost always worn to the underlying white shell layer.

The black turban snail is primarily herbivorous; it scrapes soft algae off the rocks with its radula. Predators of the black turban snail include sea stars, crabs, octopuses, sea gulls, and sea otters. Experiments have shown that *T. funebris* will flee if it detects a predator nearby, and if already in motion, can quadruple its speed. If the anterior portion of the snail is touched by a predator, it can raise the front of its foot and make a 90° turn to escape. If it detects a predator while on a steep surface, it can detach itself and roll down the incline.

Archaeological evidence shows that humans have utilized black turban snails for over 12,000 years. It is estimated that the average human would

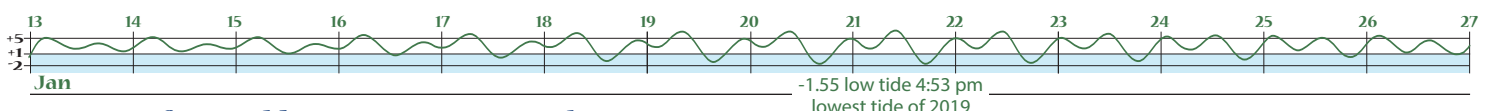
need to consume around 400 snails a day to meet his caloric needs if it were the only food consumed. The snail's eggs are laid in a protective case. Direct reproduction results in offspring that are miniatures of the adult snail.



The **brown turban snail** (*Tegula brunnea*) lives on the Pacific coast from Oregon to the Santa Barbara Islands. Its shell ranges from orange to bright brown in color and up to 1½ inches in size. Found on the tops of the giant kelp canopy, it slowly wanders about the kelp fronds, rasping the film of diatoms on the kelp's surface with its file-like tongue. The loss of giant kelp due to the predation of the unchecked increase in sea urchin populations (due to sea star die off) could be a possible threat to the fate of this snail.

The snail's main predators include *Pisaster ochraceus* and sea otters. The brown turban snail flees (snail style) from both the scent and touch of ochre sea stars but ignores non-predaceous sea stars. If the brown turban is dislodged and lands on a soft bottom it may pick up pieces of gravel and move them around its foot until the weight counterbalances it and helps it to turn upright.

To reproduce, the separate sexes broadcast milky sperm and bright grass-green eggs into the sea, where fertilization occurs.

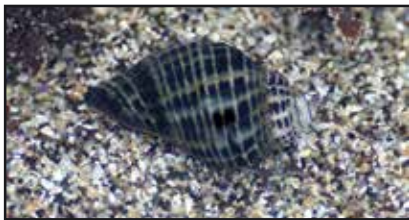




The **blue top snail** (*Calliostoma ligatum*) is a large snail, up to 1 inch in length and width. The base color is brown to pink with light tan raised cords, and the aperture is white. Its conical structure has about seven convex whorls. It eats the kelp it grows on, as well as bryozoans, hydroids, and diatoms. It frequently uses its radula to rasp on, that is to bite, its non-predators, sea stars as well as snails. This snail is found in tide pools and as deep as 100 feet in the ocean.



Found on rocks in the low intertidal and subtidal zones, the **leafy hornmouth snail** (*Cerastostoma foliatum*) is a carnivore that eats mostly barnacles and bivalves. Its radula drills through the protective shell of its prey, whereupon it injects digestive enzymes into the animal's body and then sucks out the dissolved tissue. The body whorl on this snail has three wide flanges or varices. The outer lip of the aperture has a protruding tooth near the anterior end. Its coloring is gray or white to yellow-brown on the body; the interior is white. It can be found from Sitka Alaska to San Diego, in rocky areas near barnacles and bivalves. An interesting feature of this snail: The varices cause the shell to land aperture downwards when dropped through water. Shells from which the varices were removed most often landed aperture up.



The **angular unicorn snail** (*Acanthina spirata*) is a predatory sea snail with a unique common name. This snail can be found from Washington to Baja California, but is uncommon north of California. Up to 1½ inches long, it has broken brown bands that spiral around the shell with a light grey background and a distinguishing row of teeth on the blue-white aperture. The spiral ridges are dark gray, brown, or greenish and often make a checkered pattern.

In reproduction there are 17 to 46 embryos encased in a capsule. Some embryos only reach an early stage of development, while others continue development and eat these “nurse eggs.” *A. spirata* lack a planktonic larval stage and instead hatch as juveniles. Like the hornmouth, the unicorn snail uses its radula to drill into its prey's shell or it can use its spine to pry open the plates of its prey.

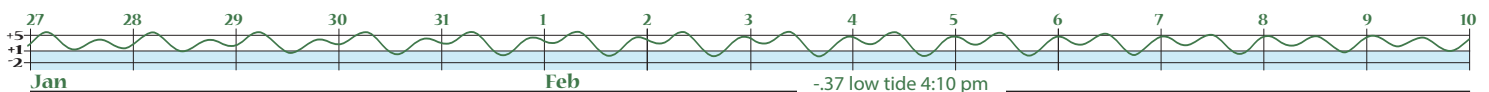


Watch for the **dire whelk** (*Lirabuccinum dirum*) on rocks or in gravel. It ranges from Alaska to Monterey, California, being most abundant in British Columbia, Washington and Oregon. The dire whelk shell has nine or so evenly spaced ribs on its spire (the top portion of the shell), including the whorls found there. Thin, unevenly spaced lines cover the body of the shell giving the whelk a somewhat striped appearance. These lines can be clearly seen along the shell's edge inside the shell opening. As a scavenger it preys on limpets, barnacles, chitons, worms, and other animals, specializing in finding and eating injured animals. The proboscis can extend the length of its shell enabling the whelk to digest worms in their tubes, or to feed on prey that are being eaten by the everted stomach of *Pisaster ochraceous*.

Females deposit low, convex egg capsules in clusters on rock walls of crevices from September to May. Most of the eggs in a cluster (“nurse eggs”) do not develop fully and are used as food by those that do develop. They can live 15 years.



Look for the **eroded periwinkle** (*Littorina planaxis*) on rock faces in the high intertidal and splash zones. Its shell is small—about ¾ inch—and dirty brown; it has two whorls and is usually eroded at the tip. Out of reach of the tide, the eroded periwinkle lives out of the water most of the time, scraping films of diatoms, blue-green algae and green algae off rocks. When not feeding or crawling, it prevents water loss by secreting a mucous film to attach its foot to surfaces. The mucous seal and operculum, which fits snugly into the shell, are so effective that the periwinkle remains alive for two or three months without being submerged under water. It needs only to get its gills wet from the water's spray. When a periwinkle population is thriving, it can considerably erode rock faces. ◆



Registration for 2019 FFMR Volunteer Naturalist Training Class

The 2019 FFMR Volunteer Training Class will consist of 11 Saturday classes, plus six additional hours spent at the reserve with a mentor. The classes will be held at or near the reserve. The proposed schedule is: February 2, 9, 16; March 2, 9, 16, 23, 30; April 6, 13 and 27 (times to be determined).

Volunteer naturalists must be at least 18 years old, physically capable of navigating the rocks and reef, and must volunteer a minimum of six hours per month. More information can be found at <http://www.fitzgeraldreserve.org/>

SPACE is LIMITED-Your Registration Form and Fee must be received by Jan. 25, 2019. No refunds will be available after Jan. 25.

Mail the completed Registration Form with \$70 check made payable to FFMR to:
Susan Evans, FFMR Training Class, P.O. Box 602, Half Moon Bay, CA. 94019

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Email: _____

How did you hear about the Training Class?

Tell us a little about yourself (any prior volunteer experience, education, travel or experiences relating to marine science).

For more information contact susanmtnvw@aol.com.

Friends of Fitzgerald Marine Reserve

Membership Secretary, P.O. Box 669, Moss Beach, CA 94038, or through our website: www.fitzgeraldreserve.org

Contribution Levels:

- \$25 \$100 \$1000
 \$50 \$500 Other _____

Name _____

Address _____

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

City _____ State _____ Zip _____

Email _____