BETWEEN the TIDES

Friends of Fitzgerald Marine Reserve

December 2023

A Shellfish Toxin Mystery

by Gregg Langlois, FFMR Volunteer Naturalist

Editor's note: This is a follow-up article to Langlois' article "A Brief History of Paralytic Shellfish Poisoning in California" in our June 2023 issue. In that article, Langlois describes a 1927 investigation which revealed that the toxin responsible for paralytic shellfish poisoning is caused by the dinoflagellate Alexandrium. The toxin was later identified as Saxitoxin, which blocks sodium channels in neuron and muscle cells, preventing nerve transmission and causing peripheral paralysis and sometimes death. This follow-up article describes the discovery of a second form of shellfish poisoning, Amnesic Shellfish Poisoning, which causes over-excitation of nerve cells and a variety of neurological symptoms that can lead to death.

Our story begins approximately 3000 miles northeast of Monterey Bay at Prince Edward Island (PEI), Canada, an incredibly productive mussel aquaculture area. If you order mussels at a local restaurant or fish market, they probably come from PEI. In mid-November 1987, mussel harvesting season was in full swing. Despite the bitter cold (2°C) (35.6°F), it seemed to be a typical year. But five hundred miles away in Montreal, a patient with an acute digestive disorder was admitted to a local hospital. Days later in New Brunswick, physicians were treating two patients with apparent food poisoning from mussels. Gastrointestinal symptoms were followed within 48 hours by neurologic symptoms, including severe headache, confusion, and loss of short-term memory. The neurologic symptoms were not typical of paralytic shellfish poisoning (PSP), common to the PEI region. Nor were they typical of other known marine toxins, all of which are produced by dinoflagellates more commonly found in warmer water. The mouse bioassay results for mussels from the markets were also atypical of PSP, exhibiting a characteristic hind limb scratching behind the ears. Over the next month there were more than 250 reported illnesses and three deaths associated with this mysterious toxin. For survivors of the severest symptoms, loss of short-term memory was permanent. The syndrome would come to be known as Amnesic Shellfish Poisoning (ASP).

Thus began an incredible effort by over 50 scientists in several labs to identify this deadly toxin and determine its source. PSP was ruled out, as were chemical contaminants like pesticides. Despite the link to mussels, there was no immediate government effort to survey phytoplankton in harvest areas. On December 10 a University of PEI professor grabbed his small net and accompanied the local mussel farmer to collect phytoplankton. He observed a thick monoculture of slender diatom chains (Figure 1). A diatom concentrate was sent to the mouse bioassay lab, which reported identical symptoms to the toxic mussels. Additionally, cell mass was greatest in mussel beds associated with illnesses. This diatom, *Pseudo-nitzschia multiseries,* seemed a likely culprit, however none of the 10,000-plus diatom species were known to produce toxin. Was *Pseudo-nitzschia* producing toxin or was it acquiring it from another source?

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Figure 1. Two chains of the diatom Pseudo-nitzschia sp. *Note: cells overlap in a 'stair-step' fashion. Each cell has two chloroplasts (green) with the nucleus (transparent in this image) between them.*

The neurologic symptoms were not typical of paralytic shellfish poisoning (PSP), common to the PEI region.

Friends of Fitzgerald Marine Reserve

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

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

Fall

4th in the series, Celebrating the Seasons at Fitzgerald Marine Reserve by photographer Brody Scotland (BrodyQ.com)

Brody Q Scotland is a local photographer who has recently completed a year-long photo project at the Fitzgerald Marine Reserve and has hopes for an eventual exhibition of the images. You can find selected photos from the project at https://bit.ly/BQFitzgerald, or her main website at BrodyQ.com

We want to hear from you.

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

King Tides are Coming

For more information, visit California King Tides Project:
https://www.coastal.ca.gov/kingtides/

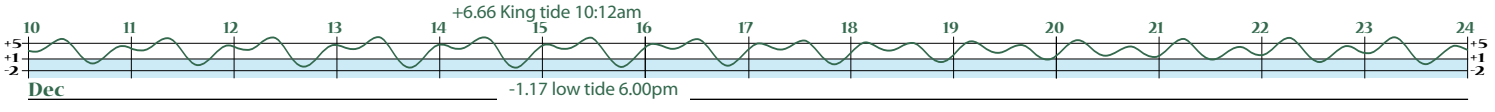
December 13	9:41am	+6.6
December 26	9:12am	+6.6
January 11	9:29am	+6.69
January 12	10:18 am	+6.66
February 9	9:22 am	+6.7

The graph displayed across the page bottoms shows tides for 12/10/23 to 4/28/24 at Princeton Harbor. Where the date appears is midnight. Reefs are accessible for exploring at low tides during hours when FMR is posted as "Open." Low tides at least +1 or below are best for tidepooling. See: https://fitzgeraldreserve.org/lowtides

The winter afternoon low tides 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 at Princeton Harbor:

-1.17	12/14	6:00pm
-1.31	12/26	4:42pm
2024		
-1.57	1/11	4:45pm
3rd lowest tide of 2024		
-.73	1/23	3:36pm
-1.33	2/09	4:23pm
5th lowest tide of 2024		
-.31	2/21	3:18pm
-.9	3/08	3:14pm
-.42	4/04	2:07pm
-1.08	4/11	7:21am
-.73	4/27	7:39am



Shellfish Toxin *continued from page 1*

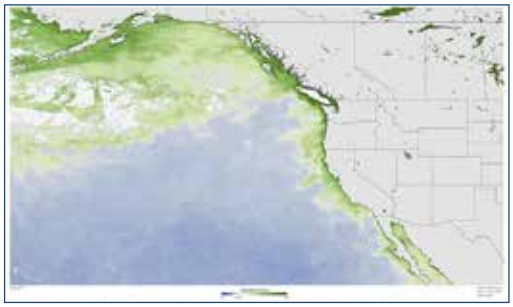
The lab chemists discovered that the toxin was water-soluble, so that portion of the mussel extracts was analyzed to determine the mass and chemical structure of the unknown toxin. A computer search of the national science laboratory produced a match: the likely suspect was domoic acid (DA). DA was identified in 1959 as the active ingredient in a Japanese red alga, *Chondria armata,* which had been used as a drug to treat parasitic worm infections for thousands of years. This toxin is also a potent neuroexcitatory amino acid: it activates cell receptors for glutamic acid, the primary excitatory neurotransmitter in our central nervous system involved in learning and memory. DA is 30 to 100 times more potent than glutamic acid. An elevated dose causes over-excitation of cells, leading to cell death, hence the neurologic symptoms described earlier.

On December 18, 1987, the researchers publicly announced the discovery of DA as the culprit for the mysterious shellfish poisonings. A process that reasonably could take months to years was completed in a mere 17 days after the Canadian researchers' efforts began. Quizzically, they also announced the source to be *Chondria*, despite its low abundance throughout PEI and the phytoplankton observations and toxicity testing that pointed to *Pseudo-nitzschia*. Eventually, in May 1988, it was acknowledged that the UPEI professor "was probably" correct that *Pseudo-nitzschia* was the source. In July 1991 it was shown definitively that pure cultures containing only *Pseudo-nitzschia* produced DA.

Two months later, in September 1991, 3000 miles southwest of PEI, an increasing number of seabirds were sick and dying in northern Monterey Bay. Hundreds of pelicans were present, drawn by a large school of anchovy. A state Fish and Wildlife veterinarian noted a variety of common neurological symptoms, including hind-limb scratching of the pouch. Various chemical and pathogen suspects were ruled out, one by one. Pelican stomach contents were tested by PSP mouse bioassay at the California Department of Public Health (CDPH). An alert laboratory scientist extended the assay beyond the normal endpoint, eventually observing hind limb scratching behind the ears, atypical for PSP but typical for DA as documented in PEI. The Canadian lab identified DA in the bioassay extracts and anchovies. Anchovy stomach contents were packed with *Pseudo-nitzschia australis* and *P. multiseries,* different species than in PEI. A neurotoxin known only from Nova Scotia was now along the Pacific coast!

CDPH analyzed all incoming shellfish samples to determine the geographic extent of toxicity, using Canada's 20 parts per million (ppm) alert level. DA was found in almost all coastal counties between Santa Barbara and Del Norte. Alert levels were present in mussels, razor clams, and anchovy. The annual mussel quarantine was extended, a public health warning was issued for anchovy and razor clams, and the Dungeness crab fishery was suspended from California to Washington. Washington also reported 11 DA poisonings from razor clam consumption.

Anchovy stomach contents were packed with Pseudo-nitzschia australis *and* P. multiseries, *different species than in PEI. A neurotoxin known only from Nova Scotia was now along the Pacific coast!*



Map of the "warm water blob," a toxic algal bloom on the West Coast of North America in July 2015, photo: NOAA

This event led to a permanent DA monitoring effort, consisting of routine shellfish testing and a volunteer-based phytoplankton monitoring program for early detection of toxic blooms. Monitoring expanded to include other potentially contaminated seafood, including Dungeness and rock crab and spiney lobster. CDPH has analyzed over 15,000 samples for DA since 1991, resulting in numerous public health alerts and fisheries closures. The largest DA event, associated with the "warm water blob," occurred in 2015-16, causing extended closures of crab and razor clam fisheries from California to Alaska. DA levels reached 380 ppm in razor clams, 1300 ppm in anchovies (viscera), and 280 ppm in Dungeness crab (viscera, with lower alert levels in meat).

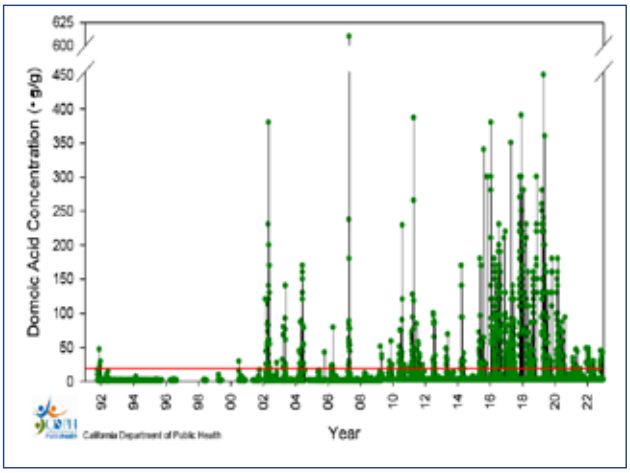


Figure 2. Domoic acid concentrations in California bivalve shellfish, 1991 to 2022

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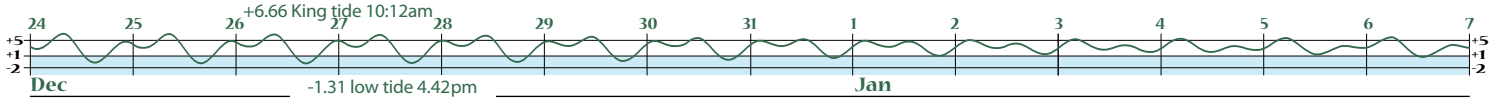


Saving Our Beaches

Check out the following link for an interesting and timely article "Saving Our Beaches" written by Lennie Roberts of Green Foothills (greenfoothills.org):

https://www.greenfoothills.org/saving-our-beaches/?utm_campaign=newsletter&utm_medium=email&utm_source=everyaction&emci=b2c9126f-e871-ee11-b004-00224832eb73&emdi=5ed43a97-3a73-ee11-b004-00224832eb73&ceid=5128824

This photo shows the accelerated erosion on bluffs in Moss Beach when adjacent areas are armored with rip-rap (boulders). The bluffs in the foreground lost about 10 feet in January 2023. Photo: Steven King

Shellfish Toxin *continued from page 3*

DA events develop quickly: in 2015, levels of DA in mussels from the Santa Cruz pier increased from just detectable to three times the alert level within one week. There is also tremendous variability in DA magnitude from year to year (Figure 2). Fortunately, there have been no reported human illnesses or deaths in California from DA poisoning. However, the pelican poisonings raised concerns for other seafood-foragers. An unusual stranding event of California sea lions occurred between San Luis Obispo and San Mateo counties in 1998. Otherwise healthy, they exhibited various neurologic symptoms. An investigation by the Marine Mammal Center determined that DA was the cause, resulting in the first documented case of DA poisoning in marine mammals. More recently, strandings of hundreds to thousands of marine mammals, mostly California sea lions, along with a significant number of dolphins, occurred in Southern California in 2002, 2006, 2007, 2017, 2022, and 2023.

While research continues on predictive tools for *Pseudo-nitzschia* blooms and DA production, near real-time surveillance via seafood testing and phytoplankton observations remain the most reliable approach for public health protection. ◆

An unusual stranding event of California sea lions occurred between San Luis Obispo and San Mateo counties in 1998. Otherwise healthy, they exhibited various neurologic symptoms.

For more information on the state monitoring program:

https://www.cdph.ca.gov/Programs/CEH/DRSEM/pages/emb/shellfish/marine-biotoxin-monitoring-program.aspx

Further reading:

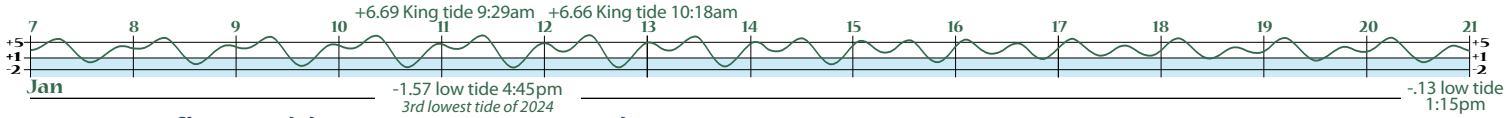
- Quilliam, M.A., Wright, J.L.C.1989. The amnesic shellfish poisoning mystery, Anal. Chem., 61(18).

- Work, T.M. et al. 1993. Epidemiology of domoic acid poisoning in brown pelicans and Brandt cormorants in California, J. Zoo and Wildlife Medicine, 24(1).

- Gulland, F. 2000. Domoic acid toxicity in California sea lions (Zalophus californianus) stranded along the central California coast, May-October 1998. Report to the National Marine Fisheries Service Working Group on Unusual Marine Mammal Mortality Events. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-OPR-17, 45 p.

About the author:

Gregg Langlois managed the California Department of Public Health's Marine Biotoxin Monitoring Program for 28 years. He has an M.S. in marine ecology that included frequent trips to the San Mateo coast. He joined FFMR in 2022 and is enjoying the opportunity to explore and share the intertidal with students and visitors.



A Message from Board President Ron Olson

The end of the year is a time to reflect. This year started out with great hopes for the future: rains gave hope for the end of our devastating drought; yet, record storms soon followed that drastically changed our park. Heavy rains and wind toppled trees that changed the character of Fitzgerald Marine Reserve. The most significant damage was to our bridge that crosses over San Vicente Creek resulting in unimaginable consequences. With our bridge out, it became difficult for visitors and neighbors to access our bluffs and Seal Cove stairs on foot. Some of our school tours as well as our summer camp were canceled due to safety concerns and limited park access. Due to storm damage across the state, our bridge replacement has been delayed. It truly frustrates visitors, volunteers and park workers alike.

All of this would make one feel that the year was a complete disaster, but there are several success stories to be told.

While all of our naturalists complete a vigorous training program, their varied backgrounds help them to express their love of FMR in different ways. Some with a background in teaching volunteered at Half Moon Bay kindergarten classrooms to help students understand the importance of our rocky shore ecosystems. Several other naturalists brought their love of nature to the Visitor Center. The addition of our gray whale skeleton provided the opportunity for those with an interest in marine mammals to share their knowledge. Naturalists with a fascination with algae and small marine animals brought out their microscopes to share the experience with visitors. Refresher classes were provided to keep naturalists up to date on a variety of subjects. Other naturalists looked at ways to improve our Seal Sitter program. Online classes, followed up with shoreline mentoring, have started with the goal to more closely monitor our harbor seal population as well as to improve the visitor experience. Road Shows have been provided by other naturalists at various events, including Earth Day at Pacifica and Summerfest at Coyote Point, with the goal of educating the public.

We have already started to map out our 2024 calendar. We expect a full naturalist training class this winter. We will continue to offer training for existing naturalists to help make the visitor experience more meaningful. We are also excited to participate in the redesign of the picnic area, which was severely damaged by previous storms. We welcome the efforts made to help us share FMR with underserved communities. We will continue to provide our services at the Visitor Center, at the tidepools and on the bluffs, as well as offsite in classrooms and events.

Our enthusiastic group of volunteer naturalists will be here to make your visit meaningful and enjoyable. The future of Fitzgerald Marine Reserve looks bright. ◆

Naturalists with a fascination with algae and small marine animals brought out their microscopes to share the experience with visitors.

Honoring and Remembering Sasha Greenawalt

We are sad to let you know that Sasha Greenawalt FFMR Volunteer Naturalist and long-time co-editor of *Between the Tides* passed away in September. Sasha is remembered fondly, especially for her enthusiasm in sharing her knowledge with the public out on the Fitzgerald reefs.

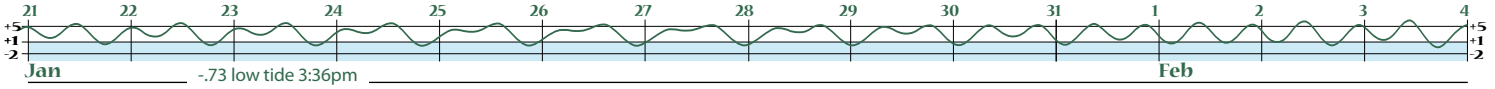
Sasha was born in Chicago, lived in Seattle as a teenager, and came to California to attend Stanford University where she graduated with a degree in Russian. She later worked at "Ramparts" magazine in Berkeley, where she became a copy editor. While living in Berkeley she volunteered at the Berkeley Free 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 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.

After retiring, she enrolled in a Marine Biology class at Mission College that took field trips to Fitzgerald Marine Reserve. These trips inspired her to become a Volunteer Naturalist. In December 2011 she volunteered to serve as co-editor of *Between the Tides* newsletter with her friend Janet Pelinka.

Sasha was intrepid in her love of adventure. She loved to kayak, was a scuba diver for 25 years and enjoyed camping in the desert.

She was diagnosed with Parkinson's in the late 1990s. Nevertheless, she continued her volunteer work for Fitzgerald. In June 2021 she and Janet both retired from their long and highly-acclaimed terms as editors of the Fitzgerald newsletter. Sasha moved to Albuquerque, New Mexico to be near her twin sister. She passed away on September 3, 2023. ◆



Youth Voices for a Brighter Future

by Miranda Holeton

Environmental attorney at Sher Edling LLP, and former FMR Ranger

I can't help but think of the utter climate chaos the planet experienced in 2023.

One way I stay optimistic in the midst of all this chaos is to think about kids.

As I reflect on the past year, I can't help but think of the utter climate chaos the planet experienced in 2023. To name just a few events: California sustained "the longest stretch of continuous atmospheric river conditions in the 70 years that records have been collected;" June through August ranked as the planet's hottest summer in the 174-year meteorological record; heavier-than-usual monsoon rains displaced hundreds of thousands in India and Pakistan; and 6,500 wildfires burned a record 45.7 million acres across Canada. The effects of these climatic events are simultaneously global and hyper-local. FMR experienced this firsthand. Storm surges tore apart the bottom of the ramp leading down to the beach. Elderly cypress trees fell victim to high winds and rain-soaked soil. The pedestrian bridge, a critical access point to the bluff trails, was also destroyed.

So what now? Well, one way I stay optimistic in the midst of all this chaos is to think about kids. What does their future look like? What kind of world will we leave behind for them? These questions inspire me and fuel my work as an environmental attorney. Kids today are also taking these considerations seriously. For example, a group of kids in Montana just won a landmark lawsuit when a judge found the state government's failure to consider climate change when approving fossil fuel-related permits to be unconstitutional. And in the next article, you'll hear from two exceptionally inspiring kids, Riya and Isha (aka "Da Potato Sisters"), who discuss their love for nature and the role they want to play in making the world a better place. The future looks bright! ◆

The Atmospheric Rivers Program, June 23, 2023

In December 2022 and January 2023, California experienced nine back-to-back atmospheric rivers; the longest stretch of continuous atmospheric river conditions in the 70 years that records have been collected. These atmospheric rivers led to impressive rainfall and snowfall totals and record-breaking floods.

Judge Rules in Favor of Montana Youths in a Landmark Climate Case

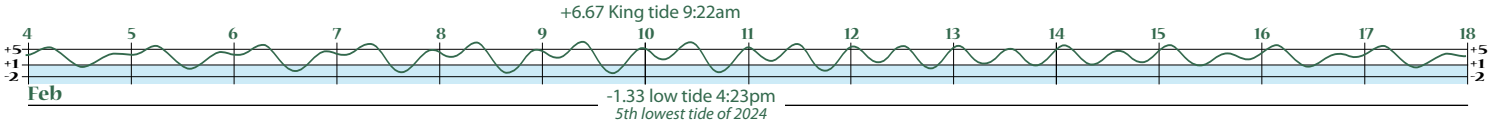
The court found that young people have a constitutional right to a healthful environment and that the state must consider potential climate damage when approving projects.

[1] The Atmospheric Rivers Program, June 23, 2023, https://storymaps.arcgis.com/stories/109b3b7524034628918be55282ab578f

[2] NOAA, The World Just Sweltered Through its Hottest August on Record, Sept 14, 2023, https://www.noaa.gov/news/world-just-sweltered-through-its-hottest-august-on-record#:~:text=June%2DAugust%202023%20was%20also,1.44%20degrees%20C)%20above%20average

[3] Oliver Milman, After a record year of wildfires, will Canada ever be the same again? The Guardian, Nov. 9, 2023, https://www.theguardian.com/world/2023/nov/09/canada-wildfire-record-climate-crisis

[4] David Gelles and Mike Baker, Judge Rules in Favor of Montana Youths in a Landmark Climate Case, Aug. 14, 2023, NY Times, https://www.nytimes.com/2023/08/14/us/montana-youth-climate-ruling.html



Da Potato Sisters

by Riya and Isha

Da Potato Sisters, Riya and Isha

Hello! Our names are Riya and Isha (otherwise known as Da Potato Sisters). We are 12 and 8 years old, we live in Fremont, and we love nature! We have always had a strong connection with nature, as we love to go on hikes and snorkel whenever we can. One of our main hobbies is volunteering at parks and doing trash pickups. We also recently attended the MPA Collaborative Network's Community Forum on Coastal Climate Change. All of these activities, along with watching documentaries like "Epic Adventures With Bertie Gregory" and listening to podcasts such as "30 Animals That Made Us Smarter" has inspired us to start educating people about the wonders of our planet by creating our very own podcast!

Our podcast is called "Exploring the World with Da Potato Sisters." You can find us on Spotify, Google, Amazon, and Apple Podcasts! So far, we have produced 9 episodes. In the podcast, we talk about animals and their unique habitats, from rocky ocean pools, all the way into the muddy marshlands that are helping humans fight climate change. We even interviewed Mr. Tom Ciotti for our podcast so he could tell us all about the tidepools at Fitzgerald Marine Reserve! Our podcast is aimed to raise awareness and hopefully connect kids like us with scientists who are actually studying changes. We want to show our listeners that climate change is happening currently and is not an issue that we can delay solving. And of course, we love to make funny animal-related jokes.

We talk about animals and their unique habitats, from rocky ocean pools, all the way into the muddy marshlands that are helping humans fight climate change.

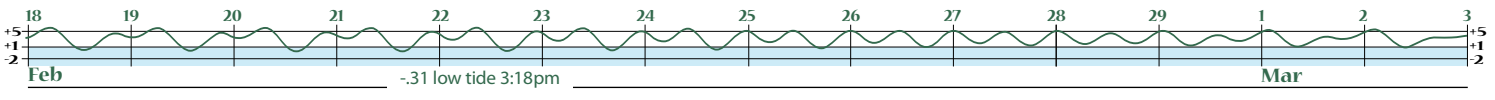
We wanted to make the podcast because it pains us to think that the animals that we love, like the fish that look like Dory/Nemo, or the animal characters that you see/read in your favorite books, are all being impacted by issues like climate change. It is shocking to see that, in the few million years humans have been on Earth, the health of our planet has been on a steep downhill rate. Scientists say that our generation might be the last generation that can do anything to stop or slow the impact of climate change. That is a lot of pressure!

This is why we started our podcast. If we do not learn about these issues first, we will not be able to solve them. We think that when kids start learning, they will start caring. If that happens, we hope that the animals we love will be around in real life for generations to come and won't turn into just some mythical creatures people will hear about from their elders. Da Potato Sisters hope that we can help more people our age to learn about animals, plants, and how we can save them. If everyone does their part to help the environment, we will speed up our progress toward a more sustainable future.

The link for our podcast can be found here:
https://podcasts.apple.com/us/podcast/exploring-the-world-with-da-potato-sisters/id1706360588 ◆

Our podcast is aimed to raise awareness and hopefully connect kids like us with scientists who are actually studying changes.

We want to show our listeners that climate change is happening currently and is not an issue that we can delay solving.



Highlights of the Oct 28 Geology tour to Pillar Point for FFMR Volunteer Naturalists

by Irina Kogan, Geologist,
Director of Landscape Conservation, Peninsula Open Space Trust

The rocks making up Pillar Point are the same rock formations that make up the cliffs at Fitzgerald Marine Reserve. The rocks are of the Purisima Formation, a 3- to 5-million-year-old marine siltstone, and have a greenish-brown, layered appearance. A thin layer of much younger marine terrace deposits that are roughly 100,000 years old is also present and caps a portion of the headland. Round concretions weathering out of the rocks and tafoni, a honeycomb erosional texture forming as a result of evaporating salt spray, were observed at the base of the bluff by the tidepools.

The Purisima rock units are not flat and are tilted toward the northwest. As our field trip group walked along Mavericks Beach toward the tidepools, we observed a brown, blocky, sandy unit starting at the top of the cliff by the breakwater and descending to sea-level on the bluffs near the tidepools. There was evidence of a few minor faults along the cliff as well. Aerial photo images of Pillar Point and acoustic images of the surrounding seafloor indicate that the tilted rocks are part of a series of syncline and anticline folds that characterize this area. The orientation of the offshore rocks also explains why the Mavericks surf break can be so big.

The San Gregorio fault, an active fault that is the westernmost fault of the San Andreas system, comes on shore at Pillar Point marsh and extends north past the entrance to Fitzgerald Marine Reserve. Motion along the fault is responsible for the abrupt change of elevation between the low-lying airport and Pillar Point bluff. In fact, there are multiple active strands of the fault. Pillar point bluff is being lifted up and moved northwest along these faults relative to the rocks at Half Moon Bay airport. And the San Gregorio fault is not just present on land—it can also be traced offshore in the acoustic seafloor images.

Dynamic geology and the dynamic ocean have shaped this raw and stunning landscape. It was a gorgeous and really fun day! ◆

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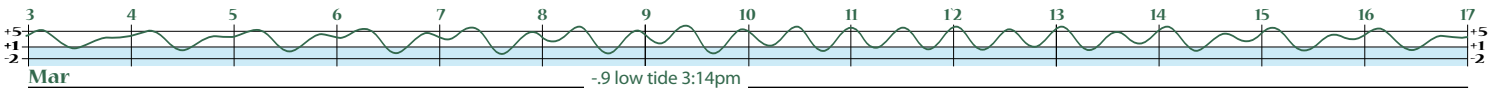


Seal Cove History: The Final Chapter?

by Tom Ciotti, FFMR Volunteer Naturalist

In a March 2020 article in this newsletter I wrote about George Sidney Smith III (GSS III) and his wife Susan, the couple who, in 1887, built the first home in the Seal Cove area of what is now the Fitzgerald Marine Reserve. In preparing that article I spent a great deal of time searching for information about the Smiths and their Seal Cove home which they called the "Big Red House." At that time I doubted anything more than what I covered in the March 2020 article about the Smiths' presence at Seal Cove would ever be discovered. Boy, was I wrong!

In July 2022 I was contacted by Greg Smith, the Smith's great grandson. Greg had been researching his family's history and had seen my March 2020 article online. Greg was aware of his great grandparent's Seal Cove home but had never been to Moss Beach and had little information about the home. I shared all the information I had with Greg and he provided me with the information he had gathered about his family. One of the first things he sent me was a Smith family tree he had put together covering four-and-a-half generations starting with GSS III's father, GSS II.

According to Greg, GSS II was an Anglican minister and Professor at Trinity College in Dublin, Ireland. He had four children all born in Ireland: GSS III, Charitie Lees Smith, Thomas Orde Smith, and Arthur Smith. GSS III attended Trinity College, became an Anglican minister like his father and married Susan who had been born in British Columbia of Irish parents and had gone back to Ireland. As a young woman, GSS III's sister Charitie became a well-known writer of religious poetry and hymns. His brother, Thomas, became a medical doctor, married Susan's sister, Annie, and emigrated first to Australia and then to California in 1905. Greg had no information about the third son, Arthur. GSS III and Susan had three sons born in Ireland: GSS IV, William Honor Smith, and Henry Lees Smith. Greg provided the photo above of GSS III, Susan, Charitie, Thomas, three of Thomas' sons, GSS IV and an unnamed dog.

Smith family photo

According to Greg, political unrest in Ireland caused GSS III to abandon his ministerial career and emigrate to California with Susan and his three sons in 1879. The 1880 U.S. Census Data reports GSS III and his family living in Oakland, CA. As reported in my March 2020 article, GSS III attended the U.C. Berkeley School of Medicine and began medical practice in San Francisco.

According to Greg, political unrest in Ireland caused GSS III to abandon his ministerial career and emigrate to California with Susan and his three sons in 1879.

Greg also sent me a short biography of Charitie that appears in a 2019 issue of Hymnology Archive. According to that biography she led an interesting, albeit sometimes unfortunate, life. She was married three times. Her first husband died only a few years after their marriage—leaving her with a substantial inheritance. After an unsuccessful second marriage in Ireland, she decided to join GSS III in Oakland around 1887. She became interested in prison reform and in 1889 established a boarding house in Oakland for ex-convicts. Much to the dismay of her brother she fell in love with one of her boarders (who had allegedly attempted to murder a policeman and had been convicted of forgery), and reportedly enticed him to marry her in 1891 by purchasing him a "ranch" at Seal Cove. She was 50 at that time and he was 25! The unusual aspects of that marriage engendered media interest and were reported in the Oakland Tribune.

I have been unable to verify through San Mateo County property records whether Charitie actually purchased property at Seal Cove. The 1900 U.S. Census Data lists her and her husband as living with GSS III and Susan at Seal Cove as "boarders." Charitie and her third husband separated in 1901 and divorced in 1915. Newspaper accounts of their divorce reported she was served with divorce papers at her brother's Seal Cove home.

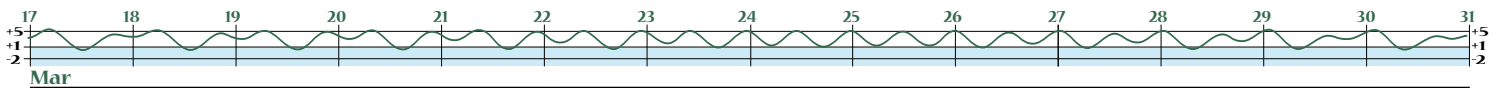
Lastly, Greg sent me a transcript of a portion of a letter he had received around 2002 from his relative, Marion Smith, relating her experiences visiting Seal Cove in her youth. Marion was the grandniece of GSS III and Susan. Her brother, Arthur Smith, wrote the 1996 article for this newsletter that is referenced in my March 2020 article. Marion was born in 1916 so her recollections are likely from the 1920s or later—some 30+ years after the Smiths are believed to have built their Seal Cove home. As the excerpts below demonstrate, Marion's recollections are informative, charming, and give us a first-hand glimpse of life at Seal Cove a century ago.

After the Sidney Smiths had arrived from Ireland they purchased 17 acres of land 25 miles south of San Francisco overlooking the Pacific Ocean, with Cypress trees surrounding the land side. On this land was an old Victorian home with 11 very large & high-ceilinged rooms, & 2 single apartments for visitors. It rested on land that looked down on the waters below.

The 3 or 4 bedrooms that faced the ocean side offered sleepers the relentless sound of the waves washing up on the shore, which was very conducive to a good nights sleep. On the other side of the house, one settled in to hear owls hooting all night in the Cypress trees.

Martha Whittever was Little Grandma's maid (We-children called Aunt Sue "Little Grandma"), and Martin

continued on page 10



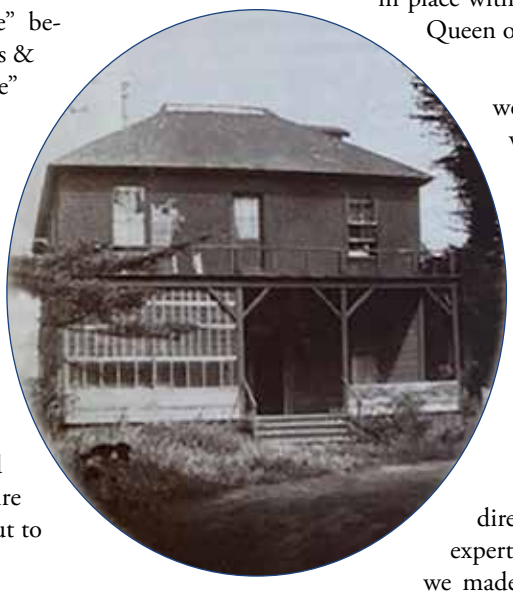
Seal Cove History *continued from page 9*

Sprinkman their handyman. There was also a "cottage," so named, on a small incline, about 100 ft. or so from the big house. An overflow of visitors were often occupants of this small space.

"Uncle" (George Sidney Smith III) & Little Grandma named their property "Seal Cove" because of the many seals that lived in the waters & played among the rocks. Later on "Seal Cove" was on the map in that area.

They had 3 sons: George Sidney, Honor, and Harry.

As a child, I remember the story of Honor, their middle son, that he was a most awkward, frail, and "different" boy in his youth. Feeling that he would benefit from working on a ship, Uncle and Little Grandma sent Honor to sea. Sadly, they never heard from him after that! He just never returned, and they were never informed as to what happened to him. She used to retire to her upstairs room at Seal Cove and look out to sea, praying for his return—very sad!



The Big Red House

At Seal Cove, we children spent most of our time down on the beach. A narrow path from the house led us there, where we romped in the waves, collected sea shells and played with the long, rubbery ropes of kelp. We loved to dig down into the sand and see the sand fleas pop up and out…Those years were wonderful ones and remain very poignant to this day.

Like the late night TV ads for kitchen gadgets, this is the point where I exclaim, "BUT WAIT!! THERE'S MORE!"

In late August 2022, David Smith (no relation to the Seal Cove Smiths) visited FMR and told Ranger Rob Cala his grandfather and father had stayed at Seal Cove with GSS III and Susan. Rob told me about this and I contacted David. David told me that everything he knew about the Seal Cove Smiths and their home was contained in a chapter, titled "Seal Cove Days" of a book his father had written about David's family history. David sent me a copy of that chapter.

According to the chapter, David's grandfather, Frank, an evangelist and hymn writer, was hired by GSS III in 1912 to come from New Mexico with his family (which included David's father) to live at Seal Cove and collaborate in writing hymns, with GSS III writing the lyrics and Frank the music. Frank and his family stayed at Seal Cove for 5 months in 1912 and returned often in subsequent years. The chapter provides another first- hand glimpse of what life was like at Seal Cove in the early 20th century.

At Seal Cove, we children spent most of our time down on the beach. A narrow path from the house led us there, where we romped in the waves, collected sea shells and played with the long, rubbery ropes of kelp.

The Smiths were always informal at lunchtime, but the evening dinner hour became dress-up time. Doctor Smith wore a tuxedo and Mrs. Smith, slender and willowy, usually wore a lace collar that extended from her fitted blouse to well up under her ears. It was held in place with small bone stays, matching the style of the Queen of England.

The Smiths were so Old World you wouldn't believe it. Mrs. Smith used a little silver bell at mealtimes to summon the Swedish cook who was also the waitress. The cook was dressed in black with a white apron and a "do-wacky" on her head. She looked as though she was prepared to serve royalty.

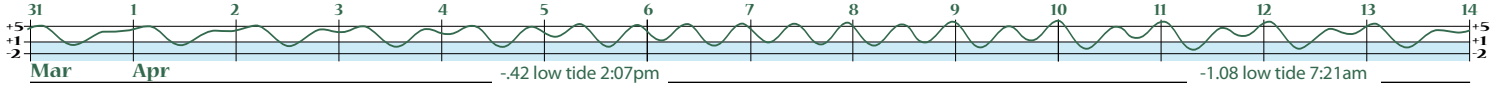
After dinner, it was song time. The three-manual, foot pumped reed organ in the front room had a tone that emulated a pipe organ.

Mother officiated at the organ, Father directed us as a chorus, and Mrs. Sidney Smith expertly played the concertina. What grand music we made! All except Dr. Smith who ensconced his body in a comfortable chair where he slyly folded his hands across his ample belly and enjoyed just plain and fancy listening…

The Smiths had built two small lean-tos for meditation and prayer that were open to the west, facing the sea, well sheltered from heavy breezes or biting winds. Each had a bench with a backrest fastened against the back wall where one could go to read a book or perhaps the Bible. The lean-tos had no windows, just the open west side that gave an endless view of the Pacific Ocean. Being close to nature and the rapturous view of the restless ocean was an inspiration, even to us little people. I didn't do any reading there, however, and I don't remember being prayerful. I just loved to go out and enjoy the solitude of the small windbreak. I could imagine standing on the bridge of a huge oceangoing vessel. I could hear the crash of the breakers, but they could do me no harm. I was high above mundane reality, thinking big thoughts that I shared with no other human beings.

The chapter also confirms, as I had suspected, that Seal Cove was a second, summer home for the Smiths and perhaps a rental property at other times during the year. The chapter also included a very special piece of information about the Smiths' "Big Red House" I had only dreamed of ever discovering—a full front photo of it!

So now I am back to doubting anything more about the Smiths' presence at Seal Cove will ever be discovered. But with hope that I will again be wrong. ◆



Registration for 2024 FFMR Volunteer Naturalist Training Class

The 2024 FFMR Volunteer Naturalist Training Class will consist of 10 Saturday classes, plus 6 additional hours spent at the reserve with a mentor. The classes will be held on the coastside near the Reserve and at the Reserve. The proposed schedule for 2024 is: Feb. 10, 17, 24; March 2, 9, 16, 23, 30; April 6, 13. The times of the classes have yet to be determined. Volunteer naturalists must be physically capable of navigating rocks, the reef and must be 18 years of age. Volunteer naturalists are required to volunteer a minimum of 6 hours per month.

Space is limited. Your Registration Form and Fee must be received prior to the deadline to hold a space. Registration deadline is February 5, 2024. No refunds available after February 5.

Mail the completed Registration Form with a $80 check made payable to FFMR to:

Susan Evans
FFMR Training Class
P.O. Box 72
Half Moon Bay, CA. 94019

For more information please e-mail Susan Evans at susanmtnvw@aol.com
or visit our web site: www.fitzgeraldreserve.org

Name: _____

Address: _____ City _____ State: _____ Zip: _____

Phone (cell and/or landline): _____

Email: _____

How did you hear about the training class? _____

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

_____

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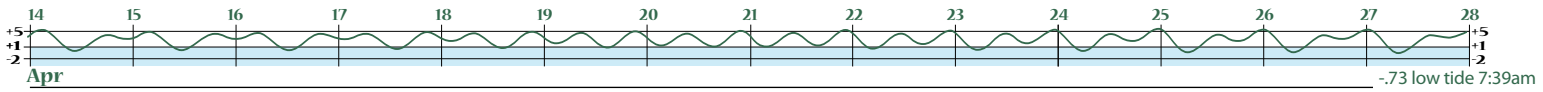
Land Acknowledgment Statement

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



Hope Suchsland Says Farewell to FFMR

A farewell note from Hope Suschland who resigned as FFMR Treasurer this summer. We thank her for her invaluable service and wish her well in her future adventures.

I attended the 2005 volunteer naturalist training class at the urging of my friend and walking buddy Betty Cosgrove. Betty was a volunteer and, in conversation, I mentioned that I was working in finance. She knew that the Treasurer position was open for the Friends of Fitzgerald Marine Reserve and encouraged me to apply. Well that led me to becoming the Treasurer ever since.

I have been honored to be involved with the Friends and will miss seeing everyone when I move out of the area. I am excited to use the knowledge that I have gained through my experience to continue to explore nature and share my love of nature with others.

Thanks much,

Hope

See front page article "A Shellfish Toxin Mystery."

Mussel socks are cut from the longline and are placed into insulated containers during the harvest process

"Our story begins approximately 3000 miles northeast of Monterey Bay at Prince Edward Island (PEI), Canada, an incredibly productive mussel aquaculture area. If you order mussels at a local restaurant or fish market, they probably come from PEI."

Image: https://www.princeedwardisland.ca/en/information/fisheries-tourism-sport-and-culture/mussels

See page 7 "Da Potato Sisters"

Scanning electron micrograph of a sea bear (echiniscus granulatus). Image: Science Photo Library

Da Potato Sisters podcasts are informative but also lots of fun. Here's a little of what Riya and Isha have to say about Tardigrades:

-- Tardigrades are also known as sea bears (large growl sound).

-- There are giant bears living in the ocean!? I never heard of those. Are they bears that always get bad grades because they're tardy? (giggle giggle) You know like tardy grades, get it?

-- Okay, let's move on.

-- That was a good joke!

-- Back to sea bears. They are 1/2 millimeter in size. There are 1,300 species of sea bears.

-- Tardigrades have interesting body systems. They are related to insects because they are covered in cutical and have similar exoskeletons.

Listen in—learn—and enjoy!

https://podcasts.apple.com/us/podcast/exploring-the-world-with-da-potato-sisters/id1706360588

Friends of Fitzgerald Marine Reserve

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

Contribution Levels:

❑ $25 ❑ $100 ❑ $1000

❑ $50 ❑ $500 ❑ Other _____

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

Name _____

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