

Office of National Marine Sanctuaries  
National Oceanic and Atmospheric Administration



GREATER FARALLONES NATIONAL MARINE SANCTUARY

# SUPERINTENDENT'S QUARTERLY REPORT

OCTOBER THROUGH DECEMBER, 2016

## NOAA / Farallones Sanctuary Presents Climate Resilience Summary at White House

California's North-Central Coast and Russian River Watershed is one of seven areas participating in a national collaborative landscape partnership with federal agencies and regional partners. Each partnership developed actions and tools to conserve and restore important lands and waters in their landscapes, making them more resilient to a changing climate. The results were summarized in a *Resilient Lands and Waters Initiative* report, released as a key part of President Obama's Interagency Council on Climate Preparedness and Resilience's [Priority Agenda](#) for Enhancing the Climate Resilience of America's Natural Resources. A first of its kind, the comprehensive commitment across the federal government supports resilience of America's vital natural resources.

The California North-Central Coast and Russian River Watershed partnership site includes 3,295 square miles of coast and ocean, including NOAA's [Greater Farallones National Marine Sanctuary](#), and 1,485 square miles of the Russian River watershed, a NOAA [Habitat Focus Area](#). Here, federal, state, county, city and local governments, universities, non-profit organizations and private land owners are working to understand the impacts of climate change on this region.

In November the sanctuary, in partnership with fisheries staff, presented a story map representing the sanctuary's climate program and NOAA's Blueprint restoration efforts in the Russian River to the President's Council on Environmental Quality at the White House Executive Office. The cross-NOAA collaboration resulted in the extension of the "Our Coast Our Future" online sea level rise decision support tool to Sonoma County, which helps people understand, visualize, and anticipate vulnerabilities to sea level rise and storms.

The initiative is essential to coordinating among agencies and providing expert-driven, scientifically sound assessments to help natural resource managers prioritize actions to protect and restore the most vulnerable habitats, wildlife and ecosystem benefits to communities.



## MANAGEMENT

### *Finding Solutions to Climate Change*

#### **Conducting International Climate Workshops**

The Climate Program Coordinator at Greater Farallones National Marine Sanctuary, in partnership with EcoAdapt and the Commission for Environmental Cooperation (CEC), created a Rapid Vulnerability Assessment (RVA) tool and piloted this tool at two climate vulnerability assessment workshops for marine protected area (MPA) managers in December 2016. In Victoria, British Columbia, 18 MPA managers, representing Parks Canada, Fisheries and Oceans Canada, and Olympic Coast National Marine Sanctuary and National Park in Washington convened December 1 and 2. In Ventura, California, 29 MPA managers, representing the Mexican government, El Vizcaino Biosphere Reserve and Isla Guadalupe in Mexico, and Channel Islands National Marine Sanctuary and National Park in California convened December 7-8. The RVA tool will be refined from workshop participant input and results will be presented to CEC staff in February 2017, with application to other MPAs in North America soon to follow.

The development of this tool will enable MPA managers across North America to better understand climate impacts to their resources and increase their capacity to respond.

#### **National Estuaries Conference Profiles Farallones Climate Change Work**

The significant work of the Greater Farallones Sanctuary Climate Program, and the critical role played by the Sanctuary Advisory Council, was presented to attendees of the 8<sup>th</sup> National Summit on Coastal and Estuarine Restoration: "Our Coasts, Our Future, Our Choice" on December 15, 2016 in New Orleans, Louisiana. From the development of Climate Vulnerability Assessments to beginning implementation of adaptation responses, attendees learned from multiple agencies regarding successful examples of climate adaptation planning. The Sanctuary presented in a session with Point Blue Conservation Science, Stanford's Center for Ocean Solutions, USC Sea Grant, and the NOAA Sentinel Site Program.

#### **Coastal Natural Infrastructure and Sea Level Rise**

As a member of the Technical Advisory Committee for the "Identification of Natural Infrastructure Alternatives for Adapting to Sea Level Rise" project under California's Fourth Climate Assessment, Greater Farallones National Marine Sanctuary Climate Program Coordinator participated in the first of two workshops on October 4 in San Francisco. The goal of the workshop was to provide expertise on an appropriate definition of coastal natural infrastructure and successful case studies that demonstrate the efficacy of these methods. Project deliverables include a case studies report detailing how and where natural infrastructures, such as salt marshes, and sandy beach-dune habitats, have been implemented. It also set technical standards for project design and implementation.

Coastal Natural Infrastructure provides ecological, recreational, and economic benefits to local communities as an effective alternative to traditional coastal armoring. This project will give property owners, coastal managers and regulators the tools they need to understand and implement natural infrastructure.

#### **Greater Farallones Climate Work Highlighted At Natural Areas Conference**

On October 18 in Davis, California ocean climate change staff presented the significant work of the Greater Farallones Sanctuary Climate Program to attendees of the 2016 Natural Areas Conference, "Climate Change Adaptation and Natural Areas Management: Turning Words to Action." From the development of Climate Vulnerability Assessments, to beginning implementation of adaptation responses, attendees learned from multiple agencies regarding successful examples of climate adaptation planning. The sanctuary presented in a session with EcoAdapt, the California Landscape Conservation Cooperative, the Washington Department of Fish and Wildlife, and the US Forest Service.

## CONSERVATION SCIENCE, RESEARCH

#### **Beyond The Golden Gate Research Symposium Profiles Regional Science Efforts**

On December 1 in Tiburon, California at the Beyond the Golden Gate Research Symposium, an overflow crowd of

160 researchers, resource managers, educators and the public attended forty rapid-fire oral presentations providing synopses of current and planned research and monitoring projects throughout the region. Twenty-two project posters were presented. The symposium represented a broad range of disciplines, including geography and mapping, habitat ecology, oceanographic processes, influences on productivity, sediment and marine debris transport, coastal erosion, predator-prey relationships, climate change impacts planning, resource management issues, status and trends. The Farallones and Cordell Bank national marine sanctuaries, Point Reyes National Seashore, Bodega Marine Laboratory, San Francisco State University, NOAA Sentinel Site Collaborative, Greater Farallones Association, Point Blue, and SF Bay National Estuarine Research Reserve co-hosted the symposium. Farallones staff and partners co-authored eight abstracts. PDFs of the presentations and posters are posted at <http://www.sfbaynerr.org/goldengate2016/>.

promote awareness of the regulations of each MPA and enhancing protection of MPAs. Of the 14 collaboratives throughout the state, eight are within three of the sanctuaries. Both Greater Farallones and Monterey Bay NMSs are highly involved in monitoring, stewardship, outreach and protection of the MPAs nested within the sanctuaries.



MPA group



Whale researcher John Calambokidis/CRC

## Monitoring To Understand Long-Term Trends

**Scientists, Educators Participate in MPA Workshop**  
Farallones Conservation Science and Education and Outreach staff participated in a marine protected areas (MPA) workshop on October 27<sup>th</sup>. The workshop was hosted by the statewide MPA collaborative effort. Over 150 people participated in the workshop from two state MPA Collaboratives, Golden Gate and Central Coast MPA Collaborative. The goals of the workshop were to develop a mission statement and initiate the development of a strategic plan. MPA Collaboratives primarily work towards outreach, stewardship and community engagement within the MPAs. The collaboratives also

## Coastal Monitoring - Beach Watch

**New Beach Watch Volunteer Monitors Graduate**  
On November 19 the Greater Farallones Association and NOAA Greater Farallones Conservation Science staff graduated a class of new Beach Watch volunteer recruits. Twenty-four people underwent 60 hours of intensive training over a period of four weeks. Their trainings continue into the field with another two to three mentored surveys over the next two months, for a total of 80 hours of initial training. Beach Watch surveys now extend from Manchester Beach, Mendocino County through Año Nuevo, San Mateo County, sampling 56 beaches every two weeks. Volunteers were recruited to backfill positions left vacant due to veteran volunteers retiring from the program. Beach Watch has a volunteer retention rate of about 85%, so new volunteers are needed only every two to three years. Funding for training the new volunteers was provided through grants obtained by the Greater Farallones Association. The Beach Watch project, a NOAA award winning and world renowned citizen science monitoring project, collects data vital to sanctuary management, including coastal erosion, human uses, oil pollution, and seabirds as ecosystem health indicators.



## ***Sanctuary Ecosystem Assessment Surveys (SEAS, ACCESS Surveys)***

### **ACCESS Cruises Find Abundant Whales, Adult Krill**

Greater Farallones (GFNMS) and Cordell Bank National Marine Sanctuaries (CBNMS) completed the final ACCESS (Applied California Current Ecosystem Studies) research cruise for the year, 17-21 September. ACCESS is a joint project of CBNMS, GFNMS, and Point Blue Conservation Science. ACCESS is an important sentinel site monitoring project investigating the status and trends of sanctuary resources, ecosystem health, and response to climate change.

Scientists collected data on oceanographic parameters, prey availability, and bird and mammal abundance and distribution along predetermined transect lines and intra- and inter-annual trends to understand changes in the ocean ecosystem and to determine how the ecosystem responds to oceanographic drivers. Significant observations included higher than average whale abundances, distributed closer inshore than observed in previous years. Gelatinous zooplankton continued to remain high among the prey samples. There were aggregations of adult-sized krill, which had been conspicuously absent in recent years. As in the earlier cruises this year the team struggled with rough sea conditions and canceled the last two days of the cruise, completing only five of the seven planned transect lines.

## **RESOURCE PROTECTION**

### ***Protecting Seabirds***

#### **Sanctuary Wildlife Etiquette Highlighted at REI Stores**

This winter, staff of the Sanctuary's Seabird Protection Network and Education team completed a series of five public presentations at REI stores in the Bay Area. The presentations were geared towards paddlers and the general public wishing to learn more about Greater Farallones National Marine Sanctuary and wildlife-friendly practices to promote while enjoying and exploring our national marine sanctuaries.

Paddlers, boaters, and other recreationists can unintentionally disturb sensitive marine wildlife, especially breeding or resting seabirds and marine mammals.

Partnering with REI in education and awareness not only provides a direct opportunity to excite the general public about national marine sanctuaries, but also an avenue to target local ocean users and paddlers who are most likely to spend time in sanctuary waters and potentially disturb wildlife.

### **Seabird Protection Network Presents to Golden Gate Audubon Society**

This fall sanctuary staff from the Seabird Protection Network (Network) presented to 60 members of the Golden Gate Audubon Society as part of the society's Speaker Series. Topics included historical eggging on the Farallon Islands, restoration efforts resulting from oil spills, sanctuary programs, and specific efforts by the network to reduce disturbance to seabirds and other marine life. Audience members ranged from ornithologists to casual birdwatchers and children.

Golden Gate Audubon Society (GGAS) members are knowledgeable about birdlife, but many are unaware of the sanctuary's role in protecting seabirds and reducing disturbance to seabird and marine mammal colonies. The presentation provided an opportunity to further increase public knowledge regarding the sanctuary, its inhabitants, and its fascinating history. In addition, the presentation served as a platform to educate the next generation of conservationists and invite naturalists to participate in sanctuary programs.

### ***Protecting Habitats***

#### **Working For a Sustainable Tomales Bay**

Sanctuary Staff attended the 7th State of Tomales Bay Conference at the Inverness Yacht club and presented a short update on the Tomales Bay Mooring Program and seagrass restoration currently underway. The conference was sponsored by the Tomales Bay Watershed Council to build local collaboration and stewardship through science, policy and practice. The event was well attended, and a series of presentations summarized a variety of work, from the top of the watershed to the bay.

Sanctuaries are one of many partners concerned about sustaining the health and ecosystem function of Tomales Bay.

### GFNMS Co-Hosts Enforcement Training with Golden Gate MPA Collaborative

On October 12, Greater Farallones National Marine Sanctuary (GFNMS) co-hosted an enforcement meeting with the Golden Gate Marine Protected Areas (MPA) Collaborative at the National Park Service's Red Barn Conference Center in Point Reyes, CA. The group met to discuss sanctuary resource protection priorities and enforcement issues within GFNMS and Cordell Bank National Marine Sanctuary (CBNMS), with special focus on the State Marine Protected Areas that fall within the sanctuaries' boundaries. Enforcement officers from NOAA Office of Law Enforcement, the National Park Service, Marin County Sheriff's Department, and the California Department of Fish and Wildlife were in attendance to learn more about the science behind MPAs and sanctuaries regulations as well as discuss enforcement strategies.

### Reducing Impacts from Vessels

Many grounded vessels are located in biologically sensitive areas, and their continued presence poses a threat to sanctuary resources, including wildlife and habitat integrity. Vessels are comprised of chemical-laden wood and plastic, on-board fuel and other harmful substances. Removal prevents further breaking up and resultant marine debris, and damage to resources.

### Contraband-laden *Panga* Grounds at Año Nuevo

On November 27th, a *panga*, or small Mexican skiff carrying a large shipment of marijuana grounded at Año Nuevo State Beach in San Mateo County. Homeland Security Investigations (HSI), one of the federal agencies tasked with responding to smuggling activities, apprehended three suspects on board the *panga* as well as additional suspects in vehicles on shore, waiting to receive the shipment. That same day, USCG was able to remove approximately six 15-gallon fuel tanks with varying amounts of fuel in each, plus two outboard engines and several batteries from the vessel to eliminate any pollution threat. HSI then contracted Vessel Assist out of Santa Cruz to remove the vessel for evidence. The salvage was successfully completed on December 5th and the vessel transported to San Diego to an HIS impound for evidence.

### Boston Whaler Breaks off Mooring, Grounds

On Thanksgiving morning, November 24th, a 20-foot Boston whaler broke off its mooring inside Bolinas Lagoon channel, drifted out into Bolinas Bay, and grounded on the beach near the Seadrift Community, in Marin County. The owner of the vessel worked quickly to remove all fuel tanks and gear immediately. USCG also responded at once, and did not observe any sheen or pollution release. Because there was no damage to the boat, the owner was able to float it during the evening high tide and return to his mooring.

## EDUCATION

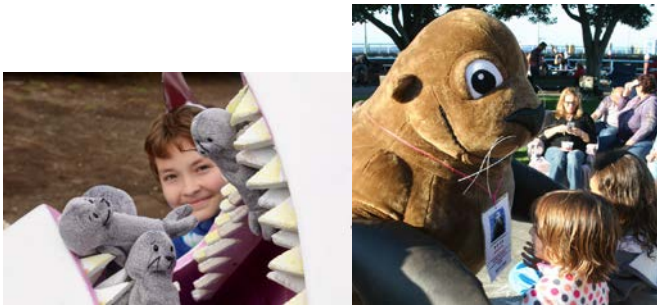
### Increasing Awareness of the Sanctuary

#### Outreach & Events - Public Programs

### SharktoberFest Draws Enthusiastic Crowds

About 600 people descended on Farallones sanctuary headquarters in the San Francisco Presidio Saturday, October 15th for SharktoberFest, an annual celebration of the return of white sharks to their fall feeding grounds. SharktoberFest creates awareness of the sharks' place in the marine ecosystem, as a system of biological checks-and-balances for seal and sea lion populations. It emphasizes the need for white shark conservation. Cosponsored with the Greater Farallones Association, and Shark Stewards, SharktoberFest featured shark experts, a Science Station, shark artists and photographers, live sharks, films and hands-on activities like *Sharkitecture 101*. NOAA Fisheries, Pacific Shark Research Center, Randall Museum and others brought their special focuses to the event. "Sanctuary Sam" – the Office of National Marine Sanctuaries' sea lion (costume) mascot, served as official Ambassador at the event.





Photos: Monika Krach/GFA: Shark art; "feeding" the shark game; learning the shark & seal marine food web! Sanctuary Sam and friends.

SharktoberFest provides the community with an annual on-site educational and entertaining way to learn about an ecologically important ocean predator. It responsibly presents information and provides opportunities for involvement in shark conservation, all in a fun and informative context.

### Big Whale Research Dazzles Soirée Gathering

At Greater Farallones' Big Whale Soirée, a multimedia presentation by Jeremy Goldbogen, Ph. D., on big whale biomechanics held 175 adults spellbound as they learned how blue whales and other rorquals (types of baleen whales) capture maximum quantities of prey with minimal effort. The sanctuary co-sponsored the November 19 event with the Greater Farallones Association and Bay Model Visitor Center in Sausalito, California.

Goldbogen heads the Goldbogen Laboratory at Hopkins Marine Station, Stanford University. With Crittercam® imagery and animation he demonstrated how whales execute highly complex underwater maneuvers, and their special anatomical adaptations and behaviors.

Goldbogen correlated these "tools" with shifts in prey types and availability. (see

<http://goldbogen.stanford.edu/>)

Attendees also enjoyed live blues music and whale art printmaking amid underwater ambience, and a local whale disentanglement group tabled the event.

### Sanctuary Explorations Series

The Sanctuary Explorations Series provides monthly opportunities for the public to connect with and experience our national marine sanctuaries. Building a strong public sanctuary constituency as well as inspiring

ocean literacy, conservation ethics and wildlife etiquette through experiential learning are the goals for the series.

### Fostering Responsible Paddling, Enjoyment Amidst Glowing Marine Life

Greater Farallones National Marine Sanctuary education staff partnered with Point Reyes Outdoors October 22 to lead an evening bioluminescence kayak excursion. Twenty-four Sanctuary Explorers experienced the eerie phenomenon of bioluminescence in the sheltered waters of Tomales Bay. They launched their kayaks and enjoyed the sunset while paddling to a quiet beach where they enjoyed a dessert picnic and hot cocoa. Then, setting out again in the deepening dark, they watched as tiny plankton, called dinoflagellates, created their bioluminescent magic. The Sanctuary Explorers learned about the history, local animals, and the science behind bioluminescence while also learning basic paddling skills, water safety skills and very important wildlife viewing etiquette.

### Tidepool Adventures & Etiquette at Pillar Point

In December, Greater Farallones National Marine Sanctuary education staff and docents provided an afternoon tidepool adventure for Sanctuary Exploration participants. Twenty-four participants explored the amazing intertidal habitat at the edge of the sea while learning how the animals and algae survive under ever-changing conditions. They also learned proper tidepool etiquette to explore and view tidepool life in a respectful, safe manner. Participants found chitons, anemones, nudibranchs, leather stars, ochre stars, and several species of algae.

### Other Outreach

Sanctuary partners often provide venues through which we can communicate information on the sanctuary and ocean issues to sectors the sanctuary doesn't ordinarily reach. This quarter, the sanctuary "tabled" or spoke at several partner events, reaching over 160 people.

### Divers Learn about GFNMS, White Shark Protections

On November 2, a GFNMS educator traveled to San Jose to give a presentation to Diver Dan's Dive Club. A total of 18 adults listened to a presentation covering the ecological significance of GFNMS and the work the

Sanctuary does to protect these resources. The presentation also included a special section on white shark biology and the legislation and management policies we use to protect this special population that frequents the GFNMS at certain times of the year.

### **Squid Stars at "Ick Pop Wow Science Night"**

On October 25 Farallones sanctuary staff led 80 Kindergarten-8th grade students in small group squid dissections. Over 200 students and their families celebrated scientific curiosity and hands-on science at the annual St. Brendan School of San Francisco's "Ick Pop Wow" Science Night, a 2.5-hour program. While searching for squid beaks, ink sacs, gills, all three squid hearts, and many other organs, students learned about squid anatomy and adaptations. Students also had an opportunity to try printmaking using hand-carved linoleum art blocks.

### **Plankton "Invade" Sunset Elementary School**

Over 120 students and their families celebrated the study of plankton at an auditorium presentation followed by hands-on activity stations at Sunset Elementary School's Science Night. On November 17th, Sanctuary staff and volunteers gave a presentation on the diversity and importance of plankton in our ocean and explored projected slides of live samples collected from San Francisco Bay. Following the presentation, staff led Ocean Acidification demonstrations, hands-on microscope stations, build-your-own plankton races, and printmaking, using hand-carved linoleum art blocks.

### **White Shark Season Brings Outreach Opportunities**

On November 28, GFNMS Education staff traveled to the Pacifica Community Center to table at a Sharktoberfest event hosted by Pacifica Beach Coalition. A total of 80 adults and children visited the GFNMS table and learned about the 16 different sharks that live in our sanctuary by looking at shark jaws and other artifacts. The display included sanctuary maps, and the educator highlighted special Farallones sanctuary white shark conservation measures. The audience was also informed of the recent expansion of the GFNMS that took place in 2015 into north coast waters.

### **Sanctuary Staff Lead Seabird Science Workshops at Ulloa Elementary Science Night.**

Sanctuary staff taught a total of 60 students during three seabird science workshops on November 9th at Ulloa Elementary School. In support of Ulloa's Science Technology, Engineering, Art, and Math (STEAM) Night sanctuary staff provided presentations and hands-on activities exploring seabird adaptations using a costume dress-up activity and the life cycle of Common Murres using a giant hand-painted board game. Since sanctuary staff also teach an annual 18 hour after school program for Ulloa Elementary students, sanctuary staff are viewed as part of the school community.

### ***GFNMS Visitor Center***

The Greater Farallones National Marine Sanctuary Visitor Center educates diverse audiences of the general public along an environmental literacy continuum, including developing awareness, building a knowledge base, changing behavior, and building a stewardship ethic. Drop-in visitors come from the Bay Area and all over the world. Total walk-in traffic numbered 4,341 visitors.

School programs include plankton netting for view under the microscope, searching for shore crabs and activities in the Visitor Center to learn about animal adaptations. Students take part in indoor as well as outdoor activities on Crissy Field Beach in the Golden Gate National Recreation Area.

Farallones sanctuary Visitor Center field trip programs promote ocean literacy and provide standards-based interactive programs inside the center and in the field for kindergarten through high school. Visitor Center field trips served 435 students this quarter.

### ***Weekend Family Workshops***

Weekend family workshops are held twice a month at GFNMS facilities at Crissy Field, Presidio. These programs foster connections within the sanctuary community and provide ocean education to children of all ages. This quarter 215 people participated in them.



Topics included salmon, squid, building a Remotely Operated Vehicle (ROV), "assembling" a white shark, and crab studies. Also, ninety children attended three different ocean-themed birthday party workshops at the Pier Classroom and Visitor Center.

The programs engage ocean enthusiasts of all ages – Including some who have never seen the ocean floor, or who have never taken part in a dissection.



### **At-Your-School (AYS) Programs**

The At Your School (AYS) programs served schools throughout the San Francisco Bay area, primarily during the school term. The AYS program has reached tens of thousands of Bay Area students with programs such as the Crab Cab, Seabird Shuttle and Sharkmobile. AYS is an outreach program of Greater Farallones National Marine Sanctuary designed to promote environmental literacy and increase students' awareness and knowledge of coastal and marine life. It includes standards-based interactive classroom programs for kindergarten through twelfth grade. AYS served 1,284 students this quarter.

### **AYS/Fisherman in the Classroom**

The Fisherman in the Classroom program brings together sanctuary educators and working fishermen to classrooms, to team-teach students at middle and high school levels. Students learn the challenges, economics and rewards of salmon and Dungeness crab fishing in sanctuary and adjacent waters, and the relationship between the fisherman and sanctuary conservation policies. Sustainable fishing and the importance of healthy watersheds were also discussed. The fishing industry and community is an important partner for Greater Farallones National Marine Sanctuary and National Marine Fisheries Service. Working with schools and fisherman continues to help develop connections between youth, marine sanctuaries and the fishing community. The teaching team typically employs fishing-

related props like an industrial crab trap, fishing lures and hooks, and delivers a presentation on commercial fishing in Central California. In many cases they are able to perform dissections on a hatchery Chinook salmon. Two hundred sixty students received this program this quarter.

### **Sanctuary Customizes Crab Curriculum for Students**

On October 21st Farallones education staff presented a customized Crab Cab program to fifty-two students in Kindergarten through 5th grade at the Bolinas-Stinson School that focused on the invasive European green crab and native crab species in Bolinas Lagoon. This dynamic hands-on program included a crab costume dress-up, a scientific investigation of live crabs, and dissection of invasive European green crabs removed from Bolinas Lagoon as part of local conservation and restoration efforts. All four 60-minute programs were partially funded by a scholarship from the Bolinas-Stinson Community Fund. By tailoring programs to local sanctuary resource protection issues and local funding opportunities, the sanctuary can bring conservation issues to life while receiving program-sustaining revenue.

*Significance: The At Your School program brings specimens, live animals and engaging activities into classrooms around the San Francisco Bay Area with the goal of connecting students with their National Marine Sanctuaries and increasing ocean literacy through hands-on learning.*

### **Oceans After School**

The "Oceans After School" (OAS) program connects students in grades three through five with ocean life in their local marine sanctuary. Our educators foster connections within the sanctuary community and provide ocean education to children across the San Francisco Unified School District. A total of eighty-one students took part in OAS programs this quarter.

This fall the Farallones sanctuary partnered with Sunnyside Elementary school and the Stonestown YMCA of San Francisco to bring 24 new students into the Oceans after School program.

### **Richmond District After-School Collaborative**

This quarter the Greater Farallones Association partnered with the Richmond District After School Collaborative to



bring ocean education to 57 students across three schools in San Francisco. Through the sanctuary's "Oceans After School" program, students were enrolled in a nine-week after-care class where they received weekly instruction on various topics in marine biology. Students participated in hands-on activities ranging from squid dissections to microscope-assisted plankton explorations. Students from Argonne Elementary were also able to attend an onsite field trip at the GFNMS facilities, where they went crab fishing and drove remotely operated vehicles (ROVs) from the pier classroom.

### ***LIMPETS – Long-term Monitoring Program & Experiential Training for Students***

The Long-term Monitoring Program and Experiential Training for Students – LIMPETS – is a statewide national marine sanctuary program that trains teachers and students to get involved in real scientific investigations and become ocean stewards. It reaches over 6,000 students annually, exposing them to California's sanctuaries and engaging them as ocean stewards.

The Farallones LIMPETS team hosts teacher training workshops, thus allowing even more students to experience the program. Teacher workshops expand teacher knowledge and ultimately increase the number of student citizen scientists doing science along our shores. It also introduces new teachers from a diversity of communities to the national marine sanctuary program.

LIMPETS provides an in-depth STEM (Science, Technology, Engineering and Math) program for youth in California's sanctuaries. Long-term, ecological data collected by students are valuable to local organizations and agencies. This quarter 352 students took part in LIMPETS work.

---

## **2017 Calendar Updates**

### **FEBRUARY**

- 1: Sanctuary Advisory Council Meeting, Pt. Reyes Station.

- 4: Elephant Seal Walk, Año Nuevo State Park, 11:30am-2pm. Experience two-ton gnarly seals during pupping season at a major rookery! Reservations: [sara.heintzelman@noaa.gov](mailto:sara.heintzelman@noaa.gov)

### **MARCH**

- 6: Tidepool trip, details TBD

### **APRIL**

- 22: Gray Whale Watching Trip, Half Moon Bay, 9am-12pm

### **MAY**

- 24: Sanctuary Advisory Council meeting, Bodega Bay

**Advisory Council:** Greater Farallones NMS Advisory Council meets four times each year. For specific meeting dates and venues, visit the SAC web page at [http://farallones.noaa.gov/manage/sac\\_meetings.html](http://farallones.noaa.gov/manage/sac_meetings.html) Agendas are generally posted within one or two weeks prior to meeting dates.

**NOTE:** Each month the Visitor Center offers special Weekend Family Workshops with themes such as sharks, squid, salmon, plankton and now ROVs! These programs can also be the focus for your exclusive birthday parties or other special events. For booking programs for individuals, or for your special event programs, contact [Justin.Holl@noaa.gov](mailto:Justin.Holl@noaa.gov).

## **CONTACT INFORMATION**

**NOAA/Greater Farallones National Marine Sanctuary**  
991 Marine Drive, Presidio of San Francisco  
San Francisco, CA 94129 - <http://Farallones.noaa.gov>  
Phone 415/ 561-6622; fax 415/ 561-6616

**Greater Farallones Association (non-profit)**  
PO Box 29386  
San Francisco, CA 94129  
[www.Farallones.org](http://www.Farallones.org)  
Phone 415/ 561-6625; fax 415/ 561-6616

---

## GET INVOLVED, AND STAY INFORMED!

Visit the Greater Farallones Association website for updates, details and registration for sanctuary expeditions: [www.farallones.org](http://www.farallones.org), as well as the Association Facebook page. The Farallones sanctuary Facebook is also now up and running at [Facebook.com/the Farallones sanctuary](https://www.facebook.com/theFarallonesSanctuary).

To learn how you can become involved in the sanctuary visit: <http://Farallones.noaa.gov>; or to subscribe to Upwelling, the Farallones Marine Sanctuary Association newsletter: visit <http://www.Farallones.org>.

To learn more about the Sanctuary Advisory Council visit: [http://Farallones.noaa.gov/manage/SanctuaryAdvisory Council.htm](http://Farallones.noaa.gov/manage/SanctuaryAdvisoryCouncil.htm)

## NOAA / GREATER FARALLONES NATIONAL MARINE SANCTUARY STAFF

Maria Brown, Superintendent: [maria.brown@noaa.gov](mailto:maria.brown@noaa.gov)

Brian Johnson, Deputy Superintendent:

[brian.johnson@noaa.gov](mailto:brian.johnson@noaa.gov)

Adam Contreras, IT Coordinator:

[adam.contreras@noaa.gov](mailto:adam.contreras@noaa.gov)

Carol Preston, Education & Outreach Coordinator:

[carol.a.preston@noaa.gov](mailto:carol.a.preston@noaa.gov)

Courtney Buel, Marine Science Educator:

[Courtney.buel@noaa.gov](mailto:Courtney.buel@noaa.gov)

Doug George, Geological Oceanographer and Coastal

Scientist: [doug.george@noaa.gov](mailto:doug.george@noaa.gov)

Jan Roletto, Research Coordinator: [jan.roletto@noaa.gov](mailto:jan.roletto@noaa.gov)

Jenn Gamurot, Sanctuary Advisory Council Coordinator,

[Jenn.Gamurot@noaa.gov](mailto:Jenn.Gamurot@noaa.gov)

Justin Holl, Visitor Center Manager: [justin.holl@noaa.gov](mailto:justin.holl@noaa.gov)

Karen Reyna, Resource Protection Coordinator:

[karen.reyna@noaa.gov](mailto:karen.reyna@noaa.gov)

Kate Bimrose, Bolinas Lagoon Project & Marine Debris

Specialist: [kate.bimrose@noaa.gov](mailto:kate.bimrose@noaa.gov)

Mary Jane Schramm, Media & Public Outreach

Specialist: [maryjane.schramm@noaa.gov](mailto:maryjane.schramm@noaa.gov)

Max Delaney, Resource Protection Specialist:

[max.delaney@noaa.gov](mailto:max.delaney@noaa.gov)

Peter Winch, Visitor Center Naturalist:

[pwinch@farallones.org](mailto:pwinch@farallones.org)

Rachel Rhodes, Administrative Assistant:

[Rachel.rhodes@noaa.gov](mailto:Rachel.rhodes@noaa.gov)

Rietta Hohman, Visitor Center Instructor:

[rietta.hohman@noaa.gov](mailto:rietta.hohman@noaa.gov)

Sage Tezak, GIS Manager: [sage.tezak@noaa.gov](mailto:sage.tezak@noaa.gov)

Sara Hutto, Ocean Climate Initiative Coordinator:

[sara.hutto@noaa.gov](mailto:sara.hutto@noaa.gov)

Sean Denny, Seabird Protection Network Program:

[sean.denny@noaa.gov](mailto:sean.denny@noaa.gov)

## GREATER FARALLONES ASSOCIATION STAFF

Robert J. Wilson, Acting Co-Executive Director:

[rwilson@farallones.org](mailto:rwilson@farallones.org)

Francesca Koe, Acting Co-Executive Director:

[Francesca.Koe@gmail.com](mailto:Francesca.Koe@gmail.com)

Adrian Skaj, Finance Officer: [askaj@farallones.org](mailto:askaj@farallones.org)

Abby Nickels, LiMPETS Coordinator:

[anickels@farallones.org](mailto:anickels@farallones.org)

Dru Devlin, Research Associate: [ddevlin@farallones.org](mailto:ddevlin@farallones.org)

Kirsten Lindquist, Ecosystem Monitoring Manager:

[klindquist@farallones.org](mailto:klindquist@farallones.org)

Monika Krach, LiMPETS Outreach:

[mkrach@farallones.org](mailto:mkrach@farallones.org)

Taylor Nairn, Beach Watch Data Manager,

[tnairn@farallones.org](mailto:tnairn@farallones.org)

## Follow Greater Farallones National Marine Sanctuary:



Follow [National Marine Sanctuaries](#) and our [Earth is Blue Campaign](#) on:

