Office of National Marine Sanctuaries National Oceanic and Atmospheric Administration



GREATER FARALLONES NATIONAL MARINE SANCTUARY

Superintendent's Quarterly Report January through March, 2020

Seeking Sanctuary in the Time of Pandemic

The first few months of 2020 found us on the threshold of a profound sea change in how we live and work. A tiny microorganism has altered how we perceive our species' place on the planet, and has forced the restructuring of many aspects of our society: what we do, where we go, who we approach, how we feel and express those feelings. Changes are rippling through all aspects of our lives and our livelihoods.

As a national marine sanctuary, Greater Farallones remains mission-focused on conserving and restoring, where possible, the ocean's biological and maritime heritage resources, through conservation-directed science, education and outreach, stewardship, and management. Knowing the value of direct experience, wherever possible these were face to face, and hand to hand. In some cases – such as in our research, classrooms, trainings, field trips, and workshops – it was hand to tentacle, or hand to gelatinous-blob-of-zooplankton; very three-dimensional, and personal. In the past, electronic communications were used as a secondary supplement or surrogate for personal interaction, especially where travel logistics were challenging.

This suddenly changed; we now carry on with our work almost exclusively through virtual means, via teleconferencing, videoconferencing, v-meetings, and webinars. To enhance our effectiveness, we have been polling constituents on optimal ways to reach out to them, assessing the suitability of various distance learning and communications platforms to our projects, and also suit the community's needs and capabilities.



Though we have temporarily suspended Beach Watch monitoring surveys, visitor center activities, some research cruises, lectures, and other activities, the sanctuary will continue to meet this new challenge and protect this amazing place. We hope you will continue to follow our work online, and learn how to keep engaged in our sanctuary family. You will always find us at "home" at <u>https://farallones.noaa.gov</u>

Together we remain strong.

Photo: Robert Schwemmer /NOAA

MANAGEMENT

Sanctuary Advisory Council

The Greater Farallones Sanctuary Advisory Council advises the sanctuary superintendent, working with various experts and community representatives to provide recommendations for management strategies.

Greater Farallones Advisory Council Meets, Welcomes New Member

The Greater Farallones Advisory Council met in February. A new member, Julian Rose, was sworn in, joining the council in the maritime seat. Rose previously served in the U.S. Navy, attended the California Maritime Academy, and is currently a Port Captain with direct involvement in the movement of 200+ vessels per year in and out of San Francisco Bay. The council heard from NOAA Law Enforcement, the U.S. Coast Guard, and sanctuary staff on enforcement activities in the sanctuary; from Greater Farallones Visitor Center Manager, Justin Holl, on K-12 marine science activities (including a lively "crab dance" demonstration); and from Sonoma County on their coastal planning for climate impacts. Lastly, after hearing from its U.S. Fish & Wildlife Service (USFWS) members on their proposed Farallon Islands invasive mouse eradication project, the council passed a resolution requesting the sanctuary seek more information from USFWS on potential impacts from the project.



U.S. Fish & Wildlife Service briefing on Farallon Islands invasive mouse problem. Photo: Brian Johnson/NOAA



Sonoma Co. Supt. Lynda Hopkins' representative gives public comment on FWS mouse eradication. Photo: Mary Jane Schramm/NOAA

CONSERVATION SCIENCE

Monitoring To Understand Long-term Trends

Beach Watch

Beach Watch is a collaborative effort of GFNMS and the Greater Farallones Association, which provides ongoing data collection to understand the status and trends of sanctuary coastal resources, ecosystem health, and response to climate change. Beach Watch provides valuable information to sanctuaries and partner agencies on a variety of management issues, including user compliance with state and federal laws, climate change, wildlife disturbance, and status and trends of coastal wildlife.

Long-term coastal monitoring halted during COVID-19 Shelter in Place Order

On March 19 Greater Farallones Conservation Science staff coordinated messages to partner state, federal, and research agencies and science volunteers alerting them of the suspension of Beach Watch shoreline surveys due to the Shelter in Place Health Order issued by the Bay Area Counties. Partners were notified that until the order is lifted, the sanctuary will be unable to provide updates to current tar ball deposition patterns, oiled wildlife, unusual bird or mammal strandings, or human use activities. In an emergency, if a Unified Command is formed and it is deemed that shoreline surveys are needed (e.g., shoreline or wildlife reconnaissance, sandy beach, and beached bird surveys), NOAA can reinstate staff and Beach Watch shoreline surveys. Suspension of surveys reduces our ability to share skills and expertise among federal management agencies, NGOs, tribes, and other stakeholders, who help maintain a healthy coastal environment.



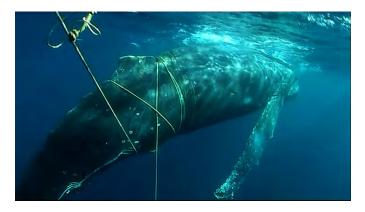
Tar balls often indicate oil spills from vessels, and are tracked during Beach Watch surveys. Unusual quantities may signal a spill, requiring response. If attributable to a Responsible Party, damages may be recovered. Photo: NOAA-OR&R

Sanctuary Ecosystem Assessment Surveys (SEAS, ACCESS Surveys)

ACCESS - Applied California Current Ecosystem Studies

Scientists prepare for upcoming research cruises

Farallones sanctuary and association scientists are getting ready for a number of research cruises this year, including the ongoing ACCESS ecosystem assessment surveys, and also cruises to look at specific questions, such as the presence of whales in areas likely to result in whale entanglement with fishing operations gear.



Entangled humpback. Photo taken under NOAA permit #6202

Rocky Intertidal Coastal Monitoring

Sampling rocky intertidal life at Farallon Islands In late February, Greater Farallones Conservation Science staff sampled rocky intertidal plots on Southeast Farallon Island, with staff from NOAA Restoration Center, Point Blue Conservation Science, and San Francisco State University. The team sampled for target indicator species: mussels, owl limpets, surf grass, sea stars, and the red algae *Endocladia*. Data from the long-term (22 years) biodiversity plots will be incorporated in a Master's thesis study of the status and trends of the pristine intertidal communities at the South Farallon Islands.

RESOURCE PROTECTION

Adapting to a Changing Climate

Farallones staff help deliver climate learning exchange for ONMS

On January 14, 2020, Farallones staff helped deliver the second offering of the "Climate Learning Exchange" for the Office of National Marine Sanctuaries (ONMS). This interactive web course provided an overview of the climate change adaptation and management planning process, tools for incorporating climate change considerations into your work, and examples of how others in ONMS are working to understand and address climate impacts. Three Farallones sanctuary representatives participated in delivering course material for both segments, and over the two trainings, 22% of all ONMS staff participated. Climate change will impact all aspects of our work at ONMS.

This learning exchange was a first-of-its-kind forum for ONMS staff to learn about and discuss the implications of these impacts.

Greater Farallones represents marine sanctuaries at UN Climate Conference

In December, the Greater Farallones National Marine Sanctuary superintendent represented NOAA's ONMS at the 25th United Nations **Climate Change Conference of the Parties** (UNCOP-25) in Madrid, co-chaired by Chile and Spain. ONMS participated in a panel on Global Climate Action in Marine Protected Areas (MPAs) with representatives from the United Kingdom, France, Chile, Costa Rica, and the U.S. They discussed fulfilling commitments in the memorandum of understanding between the United States and Chile on protected area cooperation. A goal was to include climate change as a consideration for management decisions, and expanding ONMS' opportunities for international cooperation on climate change mitigation through well managed MPAs.

Protecting Natural Habitats

Farallones convenes virtual meeting for UNEP Marine Protected Area Network

On February 25, 2020, Greater Farallones sanctuary hosted one of 14 virtual "hubs" for the North American Marine Protected Area Network (NAMPAN). Coordinated by the United Nations Environment Programme (UNEP) North America Office, NAMPAN serves as an independent forum to coordinate activities among Canada, Mexico, and the United States. The meeting was convened across 14 U.S. sites as a forum for key stakeholders from marine and coastal protected areas to develop strategic priorities and share ideas and best practices for collaboration. The Farallones hub had 13 participants: local, state, and federal entities and NGO representatives. NAMPAN

aims to increase collaboration across the United States, Mexico, and Canada. This meeting was an opportunity to influence NAMPAN's priority activities.

Protecting Seabird Colonies

Preventing wildlife disturbance along our coast

Greater Farallones Seabird Protection Network staff attended the 47th Annual Pacific Seabird Group (PSG) meeting in February in Portland, Oregon. The conference consisted of discussions and presentations on topics related to seabird ecology, behavior, conservation, and management. PSG members shared the latest findings, ideas, and innovations to advance the conservation of Pacific seabirds.

Greater Farallones presents at partners in stewardship training

On March 7, staff presented to 15 attendees of the Stewards of the Coast and Redwoods coastal volunteer orientation training in Bodega Bay. This included an overview of the National Marine Sanctuary System, and guidance on reporting wildlife disturbance incidents. These volunteers conduct seabird monitoring and other activities on the Sonoma coast, providing valuable eyes on the water. They also serve as a source of information for coastal visitors, so educating them about Greater Farallones sanctuary and its regulations empowers them to educate others.



Common murre chick and parent. Photo: NOAA

EDUCATION

Inspiring an Ocean Conservation Ethic

Get into Your Sanctuary: Recreation and Tourism

NOAA's Office of National Marine Sanctuaries (ONMS) Travel and Tourism Strategy directs sites to "enhance visibility of responsible recreation opportunities in national marine sanctuaries" as a driver for coastal economies.

Sanctuary Exploration Series

Tide pool excursion reveals food chain dynamics at the ocean's edge

Greater Farallones National Marine Sanctuary education staff and docents provided a tide pool adventure for 24 Sanctuary Exploration participants at Pillar Point on Saturday, December 14, 2019. Participants explored the diverse intertidal habitat at the edge of the sea while learning how the animals and algae survive under ever-changing conditions.

On these field trips, explorers also learned proper tide pool etiquette to explore and view tide pool life in a safe and respectful manner. Participants found chitons, anemones, urchins, nudibranchs, ochre sea stars, many species of algae, and observed snowy egrets foraging in the intertidal zone, and black-crowned night herons roosting in nearby trees.



Participants peer into calm pools for glimpses of sculpin, chitons, even the occasional octopus!

Armada of seabirds, dolphins, seals, and seabirds greet Farallones whale watchers Greater Farallones National Marine Sanctuary education staff partnered with the Oceanic Society to provide an opportunity to watch the gray whale migration on Saturday, January 18. Thirty-four Sanctuary Explorations program participants got out on the water during morning and afternoon trips. Despite a beautiful day at sea, whales remained elusive. However, marine mammals including harbor porpoises, dolphins, sea lions, and harbor seals were spotted along with many seabirds, including common murres, cormorants, brown pelicans, and many types of gulls. Participants not only learned about the natural history of gray whales and the conservation efforts to protect this amazing species, but also learned good whale watching practices and etiquette.



Common murres in conference as they ride the swell while whale watchers envy their sea-"legs."



Sometimes harbor seals "bottle" - hang vertically at the surface. Their characteristic behavior can help us identify them from a distance. Photos: Sara Heintzelman/NOAA

GFNMS Superintendent's Quarterly Report, Jan-March, 2020



Dolphin's dorsal fin slices through the water. GFNMS is habitat to Pacific white-sided, common, bottlenose, Risso's, and northern right whale dolphins, plus several other small cetacean species. Photo: Sara Heintzelman/NOAA

Farallones Sanctuary Explorations bring adventurers into giant elephant seal rookery

Seventeen intrepid Sanctuary Explorations participants enjoyed a special in-depth experience of Año Nuevo State Park's famous elephant seal colony on February 8. After an exclusive glimpse into the latest research and discoveries, they embarked on a walk to observe them firsthand, guided by Reserve Director Patrick Robinson and sanctuary and state parks interpretive naturalists. Año Nuevo is one of the largest mainland breeding colonies of northern elephant seals in the world!

Every year up to 10,000 elephant seals – the males reaching over 5,000 lbs. – visit to breed, give birth, and molt. Participants watched males battle for prime beach real estate and the right to mate, while females nursed their newborn pups. Participants learned about the fascinating natural history, behavior, and ecology of northern elephant seals while observing them during this fun and dynamic walk.



Elephant seal pups nurse for about 28 days, growing from around 75lbs to about 250lbs thanks to ~55% fat-rich milk. Photo: Sara Heintzelman/NOAA



DEFEAT! A male elephant seal retreats into the surf after a vocal stand-off with the bull in the foreground. Elephant seals use posturing and threat vocalizations to gain ascendancy without risking injury from competitors. Note winner's smug expression. Photo: Sara Heintzelman/NOAA

Farallones Field Camps

Farallones Winter Field Camp

The Farallones Winter Field Camp, an experiential outdoor program for youth, took place on January 2 and 3, 2020. A field-based camp provides young people with direct experiences to connect with their national marine sanctuaries and increase their ocean literacy through exploration and discovery. A total of 21 campers, ages 8-12, participated. The camp entailed 16 hours of marine science lessons with a focus on sandy beach science, and included a field trip to the Marin Headlands. Students investigated real scientific methods used to study sand crabs, learned about seaweed adaptations, conducted a beachthemed scavenger hunt, caught sight of dolphins and sea lions in the wild, and during a mini beach clean-up, learned about the impacts of garbage on sea life.

Visitor Center

Greater Farallones sanctuary Visitor Center serves ocean enthusiasts of all ages, from the San Francisco Bay Area and all over the world. It is located in San Francisco's Presidio National Park in the Golden Gate National Recreation Area and welcomes drop-in visitors, offers structured programs for various ages and interests, and hosts special events. This quarter, 2,988 walk-in visitors dropped by. Visitor centers promote ocean literacy as well as other sanctuary education programs, through naturalists and exhibits.

School programs include plankton netting for view under a 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 adjacent Crissy Field.

Visitor Center Field Trips

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 356 students this quarter.

Weekend Family Workshops

Weekend family workshops were held every month at Greater Farallones National Marine Sanctuary facilities prior to the shelter in place order. These programs foster connections within the sanctuary community and provide ocean education to children between ages four and 10. Family workshop programs are particularly engaging for young and curious ocean enthusiasts - and their parents interested in learning about marine creatures. By providing thematic programs for family workshops at GFNMS facilities, we foster connections within the sanctuary community and provide ocean education to children between ages four through 10. This guarter 128 children and adults participated.

Some activities included interactive food web games and assembling a life-size model of a leatherback. At the second workshop participants learned about some important organisms in the sanctuary food web. They also learned about squids through a dissection of their anatomy, and then used the remains as bait to go crab fishing off the pier to discover the diversity of crabs by catching, observing, identifying, and releasing them. Families increase connections with Farallones sanctuary through marine workshops Sanctuary education staff hosted two family programs on the Greater Farallones National Marine Sanctuary pier before the holidays in December; 35 children and adults attended. The first workshop focused on endangered leatherback sea turtles. Participants learned about their life cycle and the impacts of humans on this species.

In January and early February a total of 88 children and adults attended workshops: on the sanctuary food web, plankton, crab, squid, salmon, and marine mammals such as pinnipeds and sea otters.

On March 1, 40 children and adults learned about the diversity of crabs in the sanctuary and their anatomy, caught and released several rock crabs, and learned about the important local crab fishing industry with which many participants are connected, as consumers.

Fisherman in the Classroom

The Fisherman in The Classroom promotes the principles of ocean literacy, sustainable fishing practices, and the value of commercial fishing in sanctuary waters.



From January 1st to March 10. 2020, 502 high school students in San Francisco, Oakland, and Napa met with a local fisherman, and using handson teaching techniques involving industrial crab traps and salmon fishing gear, learned about

the lifestyles and challenges of being a fisherman in Central California.

Photo: Mary Jane Schramm/NOAA

A GFNMS education specialist led the presentations, with an introduction to the sanctuary system and then explained the importance of fishing communities to our west coast sanctuaries.

Schools served this quarter included Galileo High School, San Francisco; Oakland Preparatory School, Oakland; Drew School, San Francisco; Washington High School, San Francisco; Lowell High School, San Francisco; Valley Oak High School, Napa; and St. Helena High School, St. Helena, Napa.

At Your School Programs

The At Your School (AYS) programs serve schools throughout the San Francisco Bay area and beyond, primarily during the school term. The AYS program has reached tens of thousands of students with programs such as the Crab Cab, Seabird Shuttle, Sharkmobile, and Ocean Acidification. AYS is an outreach program of Greater Farallones 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. A total of 350 students took part in AYS programs this quarter.

Oceans after School

Using the endless appeal of our local marine wildlife and habitats, the Sanctuary Education Team offers 18 hours of fun, hands-on, lively marine science learning through after-school programs that cover topics such as sharks, salmon, seabirds, whales, squid, and plankton. These enrichment programs are dynamic, interactive, and integrated into state standards. Sanctuary marine science educators deliver the programs during a nine-week window and primarily serve low-income, under-served students. A total of 257 students completed the program this quarter.

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 become involved in real scientific investigations and become ocean stewards. It is a citizen science program that monitors the coastal ecosystems of California and helps youth develop a scientific understanding of the ocean. LiMPETS monitors the biology in rocky intertidal and sandy beach ecosystems and aims to provide publicly accessible, scientifically sound, long term data to inform marine resource management and the scientific community. The statewide LiMPETS network reaches over 6,000 students annually. This past quarter, the program served 461 students from area schools.

Teachers learn to analyze LiMPETS data, incorporate climate themes in class

The Greater Farallones Long-term Monitoring Program and Experiential Training for Students (LiMPETS) team hosted an Advanced Teacher Workshop on Introduction to Data Analysis for five high school teachers at the Greater Farallones National Marine Sanctuary (GFNMS) campus. Teachers learned to incorporate NOAA datasets related to climate change impacts, including El Niño Southern Oscillation-Multivariate ENSO Index (ENSO-MEI) and Sea Level Rise Viewer, along with scientific literature on marine heat waves into their LiMPETS data analysis activities, generated graphs using the LiMPETS database and with Excel. Teachers worked together to compare seasonal patterns of Pacific mole crab abundance at two California beaches and discussed how they might incorporate these lessons into their classrooms.

Media/Communications

Broadening public understanding of the ocean's link to our collective welfare garners

support for NOAA's national marine sanctuaries, often working with other agencies and partners. Keeping the sanctuary's work in the public eye increases public knowledge of issues, appreciation for our efforts, and offers opportunities for personal involvement in conservation. These will help us achieve our goals, enrich individuals' lives, and enhance the health of our planet.

NBC Investigative report covers sanctuaries' whale/ship strike reduction program

On February 25, 2020, NBC Bay Area aired its report on the Vessel Speed Reduction program to minimize whale deaths from ship strike by the California national marine sanctuaries, the shipping community, air quality control districts, and other partners. Reducing large vessel speeds to 10 kts. on whale feeding grounds will not eliminate all collisions, but they will be less likely to be lethal. It may also offer a critical few seconds' advantage in which a whale might take evasive action to avoid collision.

The sanctuaries have been working with the NBC news team and others to produce an accurate picture of the extent of the problem in this region, with some of the busiest shipping traffic on the West Coast.

In areas where significant anthropogenic impacts affect a species recovery, as with



endangered blue whales, it is necessary that industry and government work with conservationists and the scientific community to

develop effective and lasting solutions to these problems.

Coverage at:

'Ship Strikes' Kill Whales at Highest Levels in <u>More Than a Decade</u> <u>https://www.nbcbayarea.com/investigations/s</u> <u>hip-strikes-kill-whales-at-highest-levels-in-</u> <u>more-than-a-decade-despite-govt-program-to-</u> <u>slow-down-vessels/2238072/</u> <u>https://www.nbcbayarea.com/tag/investigativ</u> <u>e/</u>

Photo: John Calambokidis/Cascadia Research

2020 Calendar Updates

Note: all public activities are subject to COVID-19 restrictions in effect at the time.

May

21 Sanctuary Advisory Council webcast meeting, Google Meet link: <u>meet.google.com/jbx-phhz-ipp</u>; Or by phone: +1 339-788-5371 - use PIN: 524 367 251#

June

TBD: Farallones Sanctuary Explorations, contact <u>sheintzelman@farallones.org</u>

July

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- 18 Sanctuary Explorations: Bioluminescence paddle at Drake's Estero. Contact <u>sheintzelman@farallones.org</u>
- 30 to Get Into Your Sanctuary (GIYS) online
- Aug 3 events; see website listings at <u>https://farallones.noaa.gov</u>

### August

- 1 GIYS Farallones Nature Cruise; contact sheintzelman@farallones.org
- 24 Sanctuary Advisory Council meeting, Half Moon Bay, CA

#### September

- 26 Sharktoberfest! At GFNMS campus. Watch for details on GFNMS website
- TBD Sanctuary Explorations, TBD. Contact <u>sheintzelman@farallones.org</u>

#### November

19 Advisory Council meeting, San Francisco

NOTE: Future sanctuary advisory council meeting information will be updated on the GFNMS website, https://farallones.noaa.gov/manage/sac.html

**Calendar - Ongoing Public Programs** 

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Note: all public activities are subject to COVID-19 restrictions.

Sanctuary Exploration Series

Temporarily suspended: Year-round, the Greater Farallones Sanctuary Explorations Series provides monthly opportunities to connect with and experience the sanctuary and surrounding waters. Excursions include bioluminescence paddling, whale and wildlife cruises, coastal hikes and tide pooling. Join one of our seasonal programs! Visit http://farallones.noaa.gov/visit/explorationprogram.html

Greater Farallones Visitor Center

Closed Until Further Notice: The Visitor Center in the San Francisco Presidio offers special Weekend Family Workshops about sharks, squid, salmon, octopuses, plankton, ROVs, and sea otters! These programs can also be booked for your exclusive birthday parties or special event. To book programs for individuals, or special events, contact Justin.Holl@noaa.gov. Wednesdays through Sundays, 10 a.m. to 4 p.m., our VC naturalists can introduce you to our aquarium critters. Drop in!

Bolinas Lagoon/Kent Island Restoration Project

Rescheduled to September: From April through October volunteer teams work to remove invasive species to restore normal tidal flow in the lagoon. See details on joining this effort at

https://farallones.noaa.gov/eco/bolinas/kentis land.html

Sanctuary Soirées

Temporarily Suspended: Sanctuary soirées are held twice yearly, and are sophisticated evening celebrations of science, art, and culture. They feature top-of-the-line scientist presentations blended with arts, music, and crafts for an adult (16+ yrs.) audience. These events are held each spring and late fall. Keep posted through our website at <u>http://farallones.noaa.gov/</u> and our nonprofit association at <u>http://farallones.org.</u>

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## **GET INVOLVED, AND STAY INFORMED!**

Visit the Greater Farallones Association website for updates, details, to register for Upwelling, the association's newsletter; and registration for sanctuary expeditions: <u>www.farallones.org</u>. The Greater Farallones sanctuary Facebook is at <u>www.facebook.com/GFNMS</u>. Tweets are at <u>https://twitter.com/GFNMS</u>

To become involved in the sanctuary visit: <u>http://Farallones.noaa.gov;</u> <u>http://www.Farallones.org</u> Get to know (or join) our Sanctuary Advisory Council:

http://Farallones.noaa.gov/manage/Sanctuary Advisory Council.htm or contact Alayne Chappel at alayne.chappel@noaa.gov to subscribe to the SAC list serve.

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#### Greater Farallones NMS Superintendent's Quarterly Report

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