

GULF OF THE FARALLONES NATIONAL MARINE SANCTUARY

3rd Quarter FY2012
April through June, 2012

SUPERINTENDENT'S REPORT



Successful Salvage of S/V *Low Speed Chase*

On April 14th a 38-foot sailing yacht, the *Low Speed Chase*, was swamped by a large wave in Maintop Bay at the South Farallon Islands, and grounded partly in the sanctuary, and partly on Maintop Island in the Farallones National Wildlife Refuge. Tragically, five of the eight sailors aboard lost their lives. In addition, the accident disturbed several seal and sea lion species, including Steller sea lions which are on the Endangered Species List, and threatened the seabird rookeries in that area. The roughly 10,000 seabirds at that location were on the verge of commencing egg-laying.

The sanctuary, in conjunction with Office of National Marine Sanctuaries and U.S. Fish and Wildlife Service, determined the best course of action to prevent additional harm. Acting swiftly and decisively, the agencies worked with the vessel owner to successfully airlift the wreck in a single operation. They secured the necessary permits within days, and initiated a Temporary Flight Restriction through the Federal Aviation Administration, closing airspace around the wreck. Media coverage was extensive, and the sanctuary instituted aggressive outreach to the media to ensure that they maintained proper distance so as not to further disturb wildlife and hamper removal operations.

Had the vessel not been removed quickly, it could also have presented a continuing risk to human life as an attraction for the curious boating public. Further, if the vessel had broken up, fuel might have been spilled, and dangers to wildlife from entanglement and marine debris could have resulted.



Photo: US Fish & Wildlife Service



MANAGEMENT

Farallones Sanctuary Hosts International Visitors

The U.S. State Department, through the Institute of International Education (IIE) program, brought delegates from the Bahamas for an information exchange with Farallones marine sanctuary staff. The group met with education and communications staff to discuss challenges, solutions and opportunities in the areas of youth marine education, ecotourism, citizen science and conservation. Topics included volunteerism, and the different cultural and economic situations that affect, both positively and negatively, individual involvement in conservation efforts. The local IIE advances citizen diplomacy by providing professional, cultural and educational meetings between emerging foreign leaders and the San Francisco area community, primarily in partnership with the State Department's International Visitor Leadership Program (IVLP). Among alumni are more than 1,500 cabinet ministers and 200 current and former heads of state, including Margaret Thatcher, Anwar Sadat, Indira Gandhi and Tony Blair.

Environmental issues cross social and political boundaries. Different cultures approach the concepts of conservation, volunteerism and citizen stewardship differently, but collaborative programs can sometimes blur the boundaries and enable cooperative programs to move forward.

Farallones Hosts International Internship for Sister Sanctuary Project

As a follow-up action to the International Conference on Marine Mammal Protected Areas, Gulf of the Farallones National Marine Sanctuary has been hosting a summer intern from Carnegie-Mellon University to research Marine Mammal Protected Area (MMPA) networks in the Eastern Pacific. The project seeks to identify key marine protected areas (MPAs) in Mexico and Central America that share endangered whale populations with the west coast sanctuaries and determine their interest and suitability for a potential sister sanctuary. The focus is identifying locations where blue and humpback whales feed, breed, or calve. If time permits, the project will expand to identify potential MPAs in the Eastern Pacific that share other species of concern or issues, such as ecotourism, shipping traffic, sea-level rise, or white shark conservation. In order to better protect highly migratory species and deal with issues of global concern, sanctuaries must look beyond their boundaries and form partnerships with like-minded MPAs throughout the globe.

RESEARCH

Monitoring To Understand Long-Term Trends

SEAS – 'ACCESS' CRUISES

2012 Applied California Current Ecosystem Studies (ACCESS) Field Season Launched

In June science staff completed an Applied California Current Ecosystem Studies (ACCESS) survey in Cordell Bank and Gulf of the Farallones NMS aboard the R/V Fulmar. All offshore and nearshore priority transects were sampled for seabirds, marine mammals, zooplankton and oceanography. The team documented high abundances of humpback and blue whales in the region earlier than usual, with an aggregation of over 35 humpbacks feeding on the shelf break in CBNMS. Many humpbacks and blues were foraging uncharacteristically over the shelf and near shore in GFNMS. Trawl samples at the shelf break contained large

and small krill. Murres were the most abundant seabird seen, often carrying fish. Observations indicate upwelling has commenced and productivity is sustaining local populations and attracting migratory animals into the area.

ACCESS is an ecosystem monitoring partnership among PRBO Conservation Science, CBNMS and GFNMS. Integrated data collection assesses the health of the marine ecosystem and provides information to resource managers, such as the abundance and distribution of baleen whales in relation to shipping lanes to reduce potential vessel strikes to whales.

Agencies Produce Stunning 3-D View of Sanctuary Shelf and Slope

In the fall of 2011 a multibeam survey conducted by US Geological Survey revealed highly detailed images of several significant underwater features in the Farallones marine sanctuary. These features at Rittenburg Bank, an unnamed area west of Fanny Shoal, and along the Farallon Escarpment can now be viewed through an animated three-dimensional “flythrough.” The video was produced through NOAA’s National Centers for Coastal Ocean Science, National Marine Fisheries Service, Coral Reef Conservation Program, and the Farallones sanctuary. The video provides crucial information in planning our research cruise, planned for October 2012, to explore for deep-sea corals and sponges. To view the video, link to: http://farallones.noaa.gov/science/benthic_mapping.html.

BEACH WATCH COASTAL MONITORING

Shorebird “Peeps” as Canaries in the Coalmine for Changing Ocean Conditions

Farallones sanctuary science staff have been working with researchers from PRBO Conservation Science, and from the Our Coast Our Future project. Specifically, the Farallones sanctuary provided Beach Watch data – gathered over the past 19 years – on shorebird abundance and distribution. The study examined shorebird habitat use and patterns of the coastal and estuarine shorelines of the sanctuary, and the effects of sea level rise, severe storm impacts, habitat loss, erosion, etc. on shorebird abundance and distribution over nearly two decades.

Long-term Beach Watch data are used for myriad management inquiries, such as disturbance, oil pollution, wildlife mortality events, human uses, abundance, and distribution of coastal birds and mammals. Biological data from long-term data sets like Beach Watch are needed to understand status, trends, and resilience of wildlife to climate changes. For more information on Our Coast Our Future link to: <http://data.prbo.org/apps/ocof/>

Best Practices in Citizen Science Examined

Science, Education and Management staff participated in a three-day workshop with fifty experts from around the nation to share and discuss best practices in Citizen Science programs. The California Academy of Sciences is collaborating with the Gulf of the Farallones National Marine Sanctuary on a new pilot rocky shore citizen science program this year. To further develop this partnership program and an additional land based program the Academy facilitated the workshop with experts from multiple states, federal and non-governmental organizations. Topics included how to incorporate citizen science with research projects, informing management, instigating conservation programs and the best technologies available for data collection, management and dissemination.

Sharing information and lessons learned from our peers around the country will ensure efficient and effective citizen science programs for optimal resource protection.

CONSERVATION

Minimizing Risk from Oil Spills and Vessels

Vessel Grounding Prompts Swift Action at Farallones Marine Sanctuary

A 43 ft fishing vessel, the *Barbara Faye*, grounded in National Park Wilderness Area of the Point Reyes National Seashore (PRNS), adjacent to large seabird colonies and marine mammal haul-outs. There were no serious injuries to the captain on board. Due to the failure of the responsible party to remove the vessel, the U.S. Government had to act immediately to minimize the damage to sensitive wildlife within the GFNMS. In a true team effort, removal of the vessel was completed in record time before damage to the sanctuary's natural resources could occur.

The F/V *Barbara Faye* was comprised of chemical-laden wood and plastic, and contained commercial fishing gear and shipboard chemicals. Removal of the vessel prior to breaking up and releasing marine debris and chemical hazards was critical to protecting federal resources under the trusteeship of NOAA.

Cordell Bank, Farallones Sanctuaries Joint Working Group Advises on Oil Spills

A Joint Advisory Council Vessel Spills Working Group (VSWG) for Cordell Bank (CBNMS) and Gulf of the Farallones (GFNMS) national marine sanctuaries provided recommendations on the use of oil spill response technologies. The joint working group was comprised of a diverse set of stakeholders representing conservation, science, and the spill response community. In order to fully understand the complexity and dynamics of the fate of oil and oil dispersants, and the potential impacts of dispersed oil on the resources within the Sanctuaries, the VSWG conducted a series of meetings with presentations from regional experts in the areas of toxicology, oceanography and the biological resources of the Sanctuaries. The VSWG also invited technical experts who discussed inter-agency coordination and response, dispersant decision protocols, oil spill trajectory models, and response technologies

There is a continuing risk of vessel spills that could impact marine mammals, seabirds, other biota, and cultural resources in and around GFNMS and CBNMS. Historically, spills have occurred from transiting or sunken vessels with crude oil, bunker fuel, and/or other hazardous material onboard.

IMPACTS OF CLIMATE CHANGE

Farallones Scientists, Partners Meet on Selection Criteria, Tools for Climate Change Indicators

Gulf of the Farallones held a meeting to solicit the expertise of representatives from PRBO Conservation Science, Bodega Marine Lab, the US Geological Service, and the Bay Area Ecosystems Climate Change Consortium to refine the selection criteria for climate change indicators in the North-central California coastal region. A consensus was reached on the indicator selection process and criteria, which will soon be finalized. Next, sanctuary staff will begin to select and evaluate potential climate change indicators for the region through regional workshops and extensive data analysis. This first-of-its-kind project within the National Marine

Sanctuary System will provide the North-central California coastal region with a set of linked environmental and biological climate change indicators.

In addition, the group met to evaluate the early tool prototype to evaluate the preliminary user interface, data layers, community of practice, and overall functionality and applicability to real-time planning scenarios specific to the North-central California coastal region. Tool development will continue through Fall 2012.

Our Coast—Our Future Stakeholders Plan for Climate Change in SF Bay Area

Eighty planners and managers attended the May 23rd kickoff stakeholder meeting for Our Coast—Our Future's expansion into San Francisco Bay, as part of the workshop, "Planning for the Bay of the Future: Resources for Coastal Climate Change Adaptation." Through expert presentations and interactive afternoon sessions, attendees learned about sea level rise adaptation projects underway around the Bay; explored existing sea level rise adaptation tools and resources; and provided input on the development of the Our Coast—Our Future San Francisco Bay online decision support tool. The organizing team for this collaborative workshop included Gulf of the Farallones National Marine Sanctuary, US Geological Service, PRBO Conservation Science, Bay Conservation and Development Commission, NOAA Coastal Services Center, and the Ecosystem Based Management Tools Network, with additional sponsorship from San Francisco Bay National Estuarine Research Reserve, NOAA Office of Ocean and Coastal Resource Management, and US Fish and Wildlife Service.

This stakeholder-defined project provides regionally scaled models and online decision support tools to apply to proactive planning efforts throughout the nine county San Francisco Bay Area.

REDUCING WILDLIFE DISTURBANCE

Protecting Breeding Seabird Colonies

The Seabird Protection Network (SPN) is a program of the Gulf of the Farallones National Marine Sanctuary that reaches out to various groups who operate and recreate in areas near sensitive seabird habitats. It works to reduce human disturbance to seabird breeding colonies along the central California coast, and fosters an increase in local knowledge of sanctuary life and increased compliance with sanctuary over-flight and vessel approach restrictions that protect wildlife. These presentations encourage stakeholder dialogue, increase local knowledge of sanctuary wildlife and promote ocean stewardship.

Seabird Protection Network Collaborates with County, Public Works Department

Over the past six years, the Seabird Protection Network has forged valuable relationships with the managers of Half Moon Bay and San Carlos airports. Network staff and airport managers have collaborated on the San Mateo County's airport website to better inform pilots about flying seabird safe, sanctuary overflight restriction areas, and specifically requests pilots to avoid overflying Devil's Slide Rock just north of the Half Moon Bay Airport. This area includes a particularly sensitive seabird colony. Additionally, the county website encourages pilots to avoid flying below 2000' AGL within 1/4 mile of the coast, over offshore rocks and islands, or within all California national marine sanctuaries.

Seabird Protection Network Achieves 100% Compliance from Air Show

The Seabird Protection Network, working with regional airport managers, achieved 100% success in preventing seabird displacement during the Pacific Coast Dream Machine Show, April 28-29. The event draws pilots from around the country, including vintage "warbirds," 1940s and '50s classics and home-built experimental aircraft.

Media outreach and direct pilot mailings provided advance notice of potential penalties for wildlife disturbance. Staff advised tour operators at the event that the minimum altitude would be strictly enforced. Biologists stationed at a nearby seabird breeding site, observed no major disturbances related to the event. In past years, up to 30% of disturbances occurred during this one event. Additionally, staff spoke to local pilots to further discuss compliance with over-flight regulations and the sensitive seabird colony at Devil's Slide, eight kilometers north of the Half Moon Bay Airport. Developing strong partnerships with pilot associations and airport managers, combined with proactive outreach techniques, resulted in the most successful seabird protection effort at this major air show to date.

Seabird Network Informs Boaters About Marine Protected Areas And Seabirds

Seabird Protection Network staff sent its second annual mailing of outreach materials to 600 boaters, kayakers, marinas, harbors, shops and clubs. The mailing included a tide book, information on local seabirds and how boaters may impact them, as well as a map and details of California's marine protected areas (MPAs) on the North Central Coast. Some boaters are still unaware of the MPAs which went into effect in May 2010.

In addition, the Network partnered with NOAA National Weather Service and REI Outdoor Schools to provide similar information on at events, including the Strictly Sail Pacific and Pacific Power Boat show attended by thousands of visitors. Boaters, kayakers and coastal hikers received the "Boater and Kayaker Guide to Special Closures in California's Marine Protected Areas: Bodega Head to Año Nuevo" which highlights the no-entry zones aimed at protecting major seabird breeding colonies.

Private pilots received similar information, but emphasizing overflight restrictions and best flight practices near seabird colonies.

Protecting Whales, Other Marine Mammals

Partnering to Get "Share the Road With Whales" Message out to Boaters and Boarders

In May sanctuary communications staff worked with the California Coastal Commission's Department of Boating and Waterways to reach approximately 11,000 boat operators throughout the state through the agency's publication, "Changing Tides." The sanctuary provided information on the federal guidelines to follow should vessel operators encounter cetaceans. All classes of vessels – paddleboards, kayaks, parasails, sailboards and other size vessels – are governed by these guidelines. The annual appearance and persistence throughout spring of several gray whales in San Francisco Bay continued to draw the attention of boaters, kiteboarders, and kayakers, and resulted in several close-approaches to some of the whales, including a mother-calf pair.

Endangered Fin Whale Killed by Ship Strike Stranded in Farallones Sanctuary

On June 21 the Stranding Network responded to a report by scientists on a NOAA vessel during an ACCESS research cruise, involving PRBO Conservation Science and Cordell Bank and Gulf of the Farallones national marine sanctuaries, of a dead 47-foot male juvenile fin whale. Scientists from Point Reyes National Seashore and Marine Mammal Center veterinary staff conducted a full necropsy, concluding that the whale was killed by ship strike. Injuries to the spine, ribs and other skeletal elements and tissues were extensive. Shipstrike can

reduce a species' recovery. In 2010 several endangered whales were killed by shipstrike in the region. Enacting measures to reduce the threat from vessel strikes is a sanctuary priority.

Cordell Bank, Farallones Sanctuaries Working Group Advises on Whale Shipstrike, Noise Impacts

Joint Advisory Council Vessel Strike and Acoustic Impacts Working Group (JWG) for the Cordell Bank and Gulf of the Farallones national marine sanctuaries provided recommendations to sanctuaries on ways to reduce impacts from ship strike and vessel noise on whales. The JWG was comprised of a diverse set of stakeholders representing the shipping, conservation and science community. Staff from federal agencies, as well as members of the scientific community and environmental organizations served as technical experts to the JWG. In 2010 several endangered whales were killed by ship strike in the region. With over 7,300 transits of commercial vessels through the region, shipping activity can impact a range of sanctuary wildlife. Multiple agencies, scientists, environmental organizations, and the shipping industry worked together to form consensus recommendations to address the issue of ship strikes and acoustic impacts in the central California Sanctuaries.

Farallones Staff Stand By for Possible Whale Rescue

Farallones staff who are part of the North Pacific Large Whale Disentanglement Network stood by again, prepared to mobilize in the event that a gear-entangled gray whale, seen migrating north from Baja California breeding grounds, might make it as far as the Bay Area. This spring several whale entanglements were noted in the region. Staff coordinated with local cetacean researchers and two small plane owner/pilots to stand by for possible aerial surveys and coastal surveys. The network includes marine institutions, universities, rescue centers, individuals and governmental agencies. One young whale was successfully freed from the entangling gear while still in Southern California waters. Another was disentangled off Bodega Bay. Staff, who are trained in assessment, documentation and communication, have participated in past whale rescues. Large cetacean rescue requires concerted actions closely coordinated among various groups and agencies in order to maximize effectiveness and minimize risks to whales and rescuers.

EDUCATION & OUTREACH

Increasing Awareness of the Sanctuary

Promoting International Tourism in California's Marine Sanctuaries

In response to President Obama's Executive Order calling for a National Tourism Strategy Task Force, communications staff worked with the U.S. Fish and Wildlife Service and National Park Service to produce a brochure, "Visit Us – America's Great Outdoors" – to increase economic opportunities through a dynamic travel and tourism industry. This was distributed at Pow Wow, a major international marketplace and the largest generator of travel to the U.S. Over 1,000 U.S. travel organizations from throughout the country and nearly 1,200 international and domestic buyers attended the event.

The San Francisco area is one of only three locations chosen for this initiative. The brochure features Gulf of the Farallones and Monterey Bay national marine sanctuary sites that are not commonly known as travel destinations, but which offer some of the sanctuaries' most unique wildlife, exhibits and outdoor experiences. Encouraging international travelers to visit America's special wild habitats will revitalize an industry to create jobs and spur economic growth in the United States.

Professional Development Workshops

Teachers Gain Education in Current Ocean-based Climate Research

The Farallones Marine Sanctuary Association (FMSA), with sanctuary partners and collaborators, held the first in a three-part Climate Change Workshop series for teachers on Saturday, May 5th at the Romberg Tiburon's Bay Conference Center. A diverse group of 44 teachers came to ask questions of climate scientists, listened to lectures from both climate scientists and climate educators, and tested a variety of classroom activities for use in their classrooms. Initial responses from teachers revealed they gained new knowledge about specific topics related to climate change. Some teachers have already reporting using the information and resources with their students.

Climate change is a complex and controversial subject for teachers. With a grant from the National Marine Sanctuary Foundation, FMSA and partners are training educators about the impacts of climate change on the ocean and will prepare them to integrate this knowledge into existing classroom curricula. The series addresses climate change and ocean acidification, major issues for the national marine sanctuaries.

High School Students Participate in Marine Sanctuary Biodiversity Class

Sanctuary education staff taught five hands-on high school classes to 150 students about biodiversity and the importance of the community involvement in preserving it. Compelling imagery, an artifact lab and sanctuary science and conservation programs were the main components of the biodiversity class. Science, government and social studies teachers participated in the classes.

Students learned about the biological diversity and abundance found in their local national marine sanctuary, and furthermore were challenged by their teachers to develop strategies to help protect the marine life in their sanctuary and beyond. Student ideas included: Campaigns to teach their families about the marine life in the sanctuary, banning plastic bags in their community, and establishing partnerships with schools located near other sanctuaries.

Public Outreach, Public Programs

Shark Soirée – Once More, a Sophisticated, Sold-Out Success!

Gulf of the Farallones National Marine Sanctuary and University of San Francisco partnered to deliver an innovative, integrated evening of science and art to celebrate the shark – “the fish you loved to hate.” Over 120 people attended presentations by shark researchers Sal Jorgensen, Ph.D. of the Tagging of Pacific Predators/TOPP, and Brandon Brown, Ph.D. of the University of San Francisco, to learn about sharks: now viewed as important components of our marine ecosystems.

Dr. Jorgensen's group discovered that California white sharks belong to a small, isolated population but are highly migratory offshore, and that they regularly enter San Francisco Bay. Dr. Brown studies the ability of sharks, skates and rays to detect electrical signals to hunt, navigate and find potential mates. He uses computer modeling to study their "electric sight." The evening began with a reception with shark-related art activities and films.

The power of bringing a diverse group of people together directly activates our "mirror neurons" which on this evening used the enormous appeal of the shark to inspire involvement in preserving the complexity of our natural world.

Three Ocean Explorations Programs Bring Sanctuary Experiences to People

Gulf of the Farallones' Exploration Series provides monthly opportunities for people to participate in guided outdoor recreational activities along the coast of the sanctuary. To complement First Lady Michelle Obama's "Let's Move" campaign and the Office of National Marine Sanctuary's "Connecting People with Sanctuaries" initiative, the exploration series provides an outlet for active recreation and outdoor enjoyment along the sanctuaries' shores for the public.

In April, the sanctuary celebrated Earth Day with Waves and Wildflowers. Master Naturalist Ane Carla Rovetta led a program at Point Reyes National Seashore to enable people to experience the dramatic sanctuary seascape, wildflowers. The twenty hikers enjoyed a coastal ramble, listened to stories, learned to sketch, enjoyed a sighting of a migrating gray whale, and celebrated a special part of our planet for Earth Day.

In May sanctuary staff and Oceanic Society naturalists teamed up to offer a special excursion to see the great gray whale spring migration through sanctuary waters. Within the first fifteen minutes a whale cow-calf pair was in close view and stayed with the boat for quite a while. California sea lions, harbor seals, harbor porpoises and seabirds were plentiful, making for a great morning of marine life viewing and learning. Pedro Point's striking geological formations were outstanding.

The June Sanctuary Exploration was strictly for the birds: participants traveled to the Martin Griffin Preserve at Audubon Canyon Ranch to enjoy a naturalist-led walk among the heronries next to Bolinas Lagoon, part of Gulf of the Farallones Marine Sanctuary. The great egrets in over 75 active nests were seen, and the resident biologist Gwen Heistand addressed both recent and historic population dynamics of the colony.

Sanctuary Hosts Naturalist Briefing on Farallon National Wildlife Refuge

On Thursday April 19th, as part of a Farallones marine sanctuary initiative to educate shipboard naturalists on wildlife viewing trips to the Farallones region, sanctuary educators hosted a presentation by U.S. Fish & Wildlife Service educator Kimby Wells on the Farallon National Wildlife Refuge.

Nineteen 19 participants from four different tour operators learned about the islands as a refuge, and how the land element and surrounding sanctuary waters together represent a marine ecosystem of unique productivity and importance. Wells also distributed a new publication, a docent's manual on the Farallones, which was appreciated by naturalists and sanctuary staff in attendance.

The Farallones marine sanctuary works cooperatively with the US Fish & Wildlife Service/Farallon National Wildlife Refuge on joint projects in several ways, including outreach. The sanctuary's Naturalist Training Program ensures that correct and current information is available to those who interface with the public, and can exponentially increase the messages that promote ocean literacy and inspire citizen stewardship.

Visitor Center

The Farallones 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 stewardship. Drop-in visitors come from the Bay Area and all over the world. School programs include netting plankton 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.

Crissy Field Visitor Center Special Programs include – Plankton and Pastries: Visitor Center staff offer this hands-on public program to promote ocean literacy where participants net their own plankton for study in the tide station pier house. Participants collect their own samples and create their own slides of phytoplankton and zooplankton for a hands-on microscopic exploration of the weird and wonderful world of plankton. In Planktronica! participants enjoyed an evening exploring the prolific world of plankton amid a relaxed ambiance at the stunning sanctuary Pier Classroom perched above San Francisco Bay. They learned about diatoms, dinoflagellates and copepods, and discovered bizarre larvae from barnacles, crabs, and mussels. Attendees learned to use microscopes and do print-making with plankton.

The popular weekend program Creature Feature is presented to people of all ages. Fisherman in the Classroom reaches middle-school students and teachers at the visitor center. This program highlights the maritime heritage of the San Francisco and Pillar Point fishing communities. Local fishing folk participate in the development of curriculum, and deliver the programs.

Total Visitor Center Drop-in Visitors: 7,573

Creature Features: 43 people in three different programs (sea stars, elephant seals, pelicans)

Fisherman in The Classroom – 160 students served

Visitor Center on site K-6th grade programs - 1190 students served

Sanctuary Exploration Series: 66 participants

Planktronica! Public Programs: 51 participants

At-Your-School (AYS) Programs

AYS Sharkmobile, Seabird Shuttle and Crab Cab Hit the Road

The *At Your School (AYS)* programs served schools throughout the San Francisco Bay area. The AYS program has reached over 22,000 bay area students in the past seven years with programs such as the Crab Cab, Seabird Shuttle and Sharkmobile. AYS is an outreach program of the Gulf of the 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 grades.

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During the quarter, students and their teachers from several Bay Area schools participated in At Your School Programs (AYS). AYS staff travel throughout the San Francisco Bay area to bring ocean education to schools in Alameda, Contra Costa, San Mateo, Marin, Santa Clara and San Francisco counties. Programs include the Sharkmobile, Crab Cab, and Webs Under Waves with curricula tailored to various grade levels.

Total AYS Programs: 69 serving 2,053 students and teachers
Sharkmobile: 23 programs serving 736 students and teachers
Crab Cab: 33 programs serving 955 students and teachers
Seabird Shuttle: 13 programs serving 362 students and teachers

Oceans After School:

Using the endless appeal of our local marine wildlife and habitats, the Sanctuary Education Team offers 16 hours of fun, hands-on, lively marine science programs for after-school programs on topics such as sharks, salmon, seabirds, whales, squid, and plankton. These enrichment programs are dynamic, interactive, and integrated into state standards. Our marine science educators deliver the programs during an 8-12 week window. The curriculum is best-suited for grades 3rd through 5th.

Oceans After School: 4 programs, 8 hours of programming for 163 students.

Farallones Sanctuary Welcomes Golden Gate Bridge Anniversary Celebrants

In April, during the two-day celebration of the 75th Anniversary of the Golden Gate Bridge, the sanctuary opened its doors to welcome over 800 guests from around the world, and introduce them to the sanctuary's wildlife, habitats, and programs. Visitors crammed in to see the indoor exhibits, and an improvised outdoor "satellite" visitor center drew the interest of many passers-by. Of special interest were the life-sized elephant seal and white shark replicas: an impressive visual representation of two predator-prey components of the local marine food web. Intertidal creatures in visitor center tanks charmed onlookers, while naturalists identified the several different species represented, and explained different feeding and survival strategies.

The sanctuary also hosted tabling space for the Golden Gate Cetacean Research group, which uses the nearby Golden Gate Bridge as a platform of opportunity to document the presence and behaviors of harbor porpoises, which only recently reestablished themselves inside San Francisco Bay after many decades of staying in outer-coast sanctuary waters.

On the Hunt for Endangered and Threatened Species

In honor of Endangered Species Day May 18th education staff developed an "Endangered Species Treasure Hunt" to guide people through Gulf of the Farallones National Marine Sanctuary's visitor center to find images – two and three dimensional – of species found in the sanctuary that are designated as "threatened" or "endangered" on the U.S. Endangered Species List. A special mini-exhibit focused on the black abalone, the most recently added species to the sanctuary's T&E list. It is critically endangered, and may soon go extinct from previous impacts of overfishing, current poaching, and Withering Syndrome, a disease which impairs digestion and makes abalone susceptible to predation and starvation.

Many people are visual learners, and by searching throughout the visitor center for replicas of each species, can better envision the great diversity of our endangered and threatened species, from the giant blue whale to the tiny Western Snowy Plover, a threatened shorebird found on nearby Crissy Field Beach.

(Red) Hats-off Salute to Captain Cousteau at Farallones Visitor Center

Gulf of the Farallones National Marine Sanctuary hosted a special program to honor the 100th anniversary of ocean explorer and conservationist Jacques Cousteau's birth. On Sunday, June 24th families with young children came to the Visitor Center to celebrate. They received Cousteau's iconic red watchcap, and enjoyed a reading of "Manfish: A Story of Jacques Cousteau" by Jennifer Berne, presented by Visitor Center staff. Participants also joined in a beach exploration and clean-up. Teaching young children about ocean conservation

heroes and the opportunity we all have for protecting our ocean will inspire the next generation of ocean stewards.

Nine Hundred Students Learn of Farallones White Sharks, Conservation Efforts

On Monday April 22nd Farallones marine sanctuary educators visited Moreau Catholic School in Hayward, Alameda County, and delivered two assembly presentations to 900 high school students. The presentation focused on white sharks, and using a life size plywood model, and film of sharks at the Farallones, students learned about white shark biology and shark conservation policy in the Farallones marine sanctuary.

Bringing the Fishing Community and Culture Into Bay Area Schools

On April 3rd Berkeley fisherman Mike Hudson spoke to 50 ninth graders at Gateway High School San Francisco about fishing in the central CA Marine Sanctuaries as part of The GFNMS Fisherman in The Classroom Program. Using a real industrial crab pot, salmon fishing lures, a frozen salmon and a powerpoint, Mike gave an interactive presentation on the challenges and pleasures of making a living as a fisherman in our protected waters.

Exhibits

Exhibits to Highlight Farallones Facilities' Maritime Heritage

Education/Communications staff worked with Daniel Quan Design as content resource for maritime heritage exhibits at the Farallones marine sanctuary campus. Topics included the history of the site, from its start in 1890 as the original Fort Point Lifeboat Station/U.S. Lifesaving Service, precursor of the Coast Guard, and the lifeboatmen's heroic actions at the notoriously dangerous Golden Gate.

Farallones headquarters campus also houses the tide station that has provided an unbroken record of data since 1854, the longest in the hemisphere, and which was instrumental in measuring the average Pacific Ocean depth using 19th century technology, with a high degree of accuracy. Current instrumentation enables safe commerce through the gate for thousands of vessel transits annually. A surface current tracking CODAR array played a significant role in predicting oil trajectories following the 2007 Cosco Busan spill in San Francisco Bay. Bringing public awareness to NOAA's past and present activities in the conduct of commerce and concern for human safety will help build broader support for NOAA and sanctuary programs.

LiMPETS – Long-term Monitoring Program & Experiential Training for Students

LiMPETS Regional Programs

The Long-term Monitoring Program and Experiential Training for Students - LiMPETS - program trains middle school, high school, and other young groups to monitor the rocky intertidal and sandy shore along the California west coast national marine sanctuaries.

Student Citizen-Scientists Mobilized to Take the Pulse of the Rocky Intertidal

Everyone has a stake in the future of our planet, our ocean – even students. And this Earth Day, students from City College of San Francisco enthusiastically took the pulse of the rocky intertidal at Duxbury Reef by participating in LiMPETS (Long-term Monitoring and Experiential Training for Students). These students are trained, conduct the monitoring, and are responsible for entering their data into the LiMPETS online database.

The LiMPETS rocky intertidal survey data follow trends in 33 key invertebrate and algae species/taxa. Each of the 33 is surveyed for one or more of the following reasons: It is abundant, easily recognized, near the boundaries of its distribution limits and/or sensitive to trampling, harvesting and pollution.

The LiMPETS program, by its very nature, prioritizes the teaching of science literacy and ocean stewardship. The data collected by volunteers, however, is also scientifically meaningful and complements studies conducted by professional scientists.

Media Outreach Highlights

Managing Media Impacts in Emergency Response Situations

On April 14 five sailors perished when their yacht was swamped in the Gulf of the Farallones marine sanctuary. Farallones communications staff worked aggressively and swiftly to minimize impacts from media helicopters and vessels, and with the San Francisco Police Department and Mayor's office to resolve jurisdictional questions. The vessel, *Low Speed Chase*, washed up on Maintop Island, part of the South Farallon Group, and came to rest partly in the sanctuary below the mean high tide mark, and partly in the Farallon National Wildlife Refuge/U.S. Fish and Wildlife Service (USFWS) above that mark. Moreover, the island is part of the City and County of San Francisco. Staff collaborated closely with USFWS on several advisories, issued a press release, had direct contact with reporters, and effected saturation distribution to media, warning against encroachment on the accident site and consequent wildlife disturbance or impairment of recovery operations.

Because this was an extremely high-profile accident it was necessary to anticipate problematic media activities and attempt to forestall those that could impact wildlife, threaten human health, or impair the success of rescue or recovery operations.

Thank You Ocean, Thank You Whales!

Communications staff worked with the West Coast/Pacific Media Coordinator to produce two podcasts for the Thank You Ocean Report on the presence of whales in California waters this summer and fall, as well as the abundance, behaviors and seasonality and other species of whales known to frequent the waters of California. Whales are the quintessential "charismatic megafauna" and the podcasts support the partnership among the [State of California](#), the [NOAA Office of National Marine Sanctuaries](#) and the [Ocean Communicators Alliance](#) to raise awareness of exceptional marine life that lives in our marine sanctuaries. The podcasts also teach the importance of sustaining ocean marine life and habitat, and suggest ways to help protect the ocean in our everyday lives. The Thank You Ocean Report podcasts went live in June and July.

See separate Quarterly Media/News Report for Other Clippings and Story Links

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### ***FARALLONES SANCTUARY 2012 FUTURE EVENTS CALENDAR***

#### ***AUGUST***

- 8/1 & 2      LiMPETS Teacher Workshop, Santa Cruz
- 8/8          Seabird Protection Network Talk, Power Squadron Boaters
- 8/8          Seabird Protection Network talk, West Valley Flying Club, Palo Alto

Superintendent's 3<sup>rd</sup> Quarter FY2012 Report

- 8/17 Planktonica, GFNMS
- 8/18 Pt Bonita Lighthouse Exploration, Marin Headlands
- 8/23 SAC Meeting, San Francisco
- 8/25 & 28 Beach Watch Orientation for new recruitment

**SEPTEMBER**

- 9/13-18 ACCESS Research Cruises
- 9/18 Seabird Protection Network Talk, Napa Pilots Assn., Napa
- 9/20 Seabird Protection Network TAC meeting, GFNMS
- 9/22-11/3 Beach Watch Trainings, GFNMS
- 9/24 - 28 Ocean Acidification Workshop
- 9/24 - 30 BLUE Ocean Film Festival, Monterey

**OCTOBER**

- 9/22-11/3 Beach Watch Trainings, GFNMS
- 10/1 - 12 National Association of Environmental Educators Conference
- 10/1-10/12 Deep Sea Corals Research Cruise

**NOVEMBER**

- 9/22-11/3 Beach Watch Training, GFNMS



## ***GULF OF THE 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)  
Benet Duncan, Ocean Climate Fellow: [benet.duncan@noaa.gov](mailto:benet.duncan@noaa.gov)  
Carol Preston, Education & Outreach Coordinator: [carol.a.preston@noaa.gov](mailto:carol.a.preston@noaa.gov)  
Erica Warren, Visitor Center Instructor: [ewarren@gmail.com](mailto:ewarren@gmail.com)  
Jan Roletto, Research Coordinator: [jan.roletto@noaa.gov](mailto:jan.roletto@noaa.gov)  
Justin Holl, Visitor Center Manager: [justin.holl@noaa.gov](mailto:justin.holl@noaa.gov)  
Karen Carlson, Boater Outreach Specialist: [karen.carlson@noaa.gov](mailto:karen.carlson@noaa.gov)  
Karen Reyna, Resource Protection Coordinator: [karen.reyna@noaa.gov](mailto:karen.reyna@noaa.gov)  
Kate Bimrose, Bolinas Lagoon Project Specialist: [kate.bimrose@noaa.gov](mailto:kate.bimrose@noaa.gov)  
Kelley Higgason, Climate Initiative Coordinator: [kelley.higgason@noaa.gov](mailto:kelley.higgason@noaa.gov)  
Leslie Abrahamson, Advisory Council Coordinator: [leslie.abramson@noaa.gov](mailto:leslie.abramson@noaa.gov)  
Mai Maheigan, Seabird Protection Network Outreach Specialist: [mai.maheigan@noaa.gov](mailto:mai.maheigan@noaa.gov)  
Mary Jane Schramm, Media & Public Outreach Specialist: [maryjane.schramm@noaa.gov](mailto:maryjane.schramm@noaa.gov)  
Peter Winch, Visitor Center Naturalist: [pwinch@farallones.org](mailto:pwinch@farallones.org)  
Rietta Hohman, Visitor Center Instructor: [rietta.hohman@gmail.com](mailto:rietta.hohman@gmail.com)  
Sage Tezak, Seabird Protection Network Program Specialist: [sage.tezak@noaa.gov](mailto:sage.tezak@noaa.gov)  
Taylor Nairn, Administrative Assistant: [taylor.nairn@noaa.gov](mailto:taylor.nairn@noaa.gov)  
Tim Reed, GIS Specialist: [tim.reed@noaa.gov](mailto:tim.reed@noaa.gov)

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

Sign up for the GFNMS listserv to receive email notices about upcoming sanctuary events and public meetings.  
To learn how to get involved in the sanctuary visit: <http://farallones.noaa.gov>.  
To learn more about the Sanctuary Advisory Council visit: [http://farallones.noaa.gov/manage/Sanctuary Advisory Council.html](http://farallones.noaa.gov/manage/SanctuaryAdvisoryCouncil.html)

## ***CONTACT INFORMATION***

Gulf of the Farallones National Marine Sanctuary  
The Presidio, 991 Marine Drive  
San Francisco, CA 94129  
Phone: (415) 561-6622  
Fax: (415) 561-6616  
[www.farallones.noaa.gov](http://www.farallones.noaa.gov)