



GREATER FARALLONES NATIONAL MARINE SANCTUARY  
ADVISORY COUNCIL MEETING



Wednesday May 9, 2018

9:00AM – 4:00PM

Red Barn Classroom, Point Reyes National Seashore  
75 Bear Valley Road, Point Reyes Station, CA 94956

**KEY MEETING OUTCOMES**

Note: The following notes are an account of discussions at the Sanctuary Advisory Council meeting and do not necessarily reflect the opinion or position of the Greater Farallones National Marine Sanctuary or the National Oceanic and Atmospheric Administration.

**Sanctuary Advisory Council Members Present:** Kellyx Nelson, Dominique Richard, Cea Higgins, Richard Charter, Bruce Bowser, Elizabeth Babcock, Bibit Traut, Barbara Emley, Joshua Russo, Abby Mohan, John Largier, Jaime Jahncke, Sandra Chu, Summer Alinaeem, Sara Briley (for Jennifer Phillips), Cicely Muldoon, Sarah Allen, CDR Jason Brand, Dan Howard  
Quorum – 9 voting members

***Copies to:***

Bill Douros, ONMS West Coast Regional Office

**Call to Order 9:05am**

Volunteer Appreciation Awards

Sanctuary Advisory Council Volunteer of the Year 2017 – Cea Higgins

10-year volunteer – John Largier

15-year volunteer – Richard Charter, Barbara Emley

Swear-in new members

Youth Primary – Sandra Chu

Youth Alternate – Summer Alinaeem

**Greater Farallones National Marine Sanctuary Superintendent's Report**

Maria Brown, Superintendent

Permits

A research permit was issued to Kourtney Opshaug of Blue Ocean Gear LLC to renew a previously issued permit for the development and testing of a proprietary device called a Smart Crustacean Trap designed to help fisherman use more sustainable practices. Real-time data is collected through an electronic sensor inside the trap on catch volumes, exact trap location, percentage of by-catch species that are able to escape the trap. The smart trap aims to also help fisherman know when their traps are full to reduce soak time and to locate traps sooner which should reduce both entanglements of marine mammals and ocean debris. Amendment 1 has been issued to allow this research project to continue to work outside the window of the fishing season to test the success of the device.

A salvage and recovery permit was issued to Francis “Skip” Vilicich to remove a boat mooring anchor (tagged during the August 2015 Tomales Bay Vessel Mooring Program survey with Green Tag #G61), from Tomales Bay, in Marshall, Marin County. This mooring anchor consists of two fifty-gallon drums filled with concrete and buried in the seafloor. The anchor is located off the point between Marshall Boatworks and Reynolds Cove.

A research permit was issued to Janet Walker of UC Davis to amend a previously issued permit to place temporary cages and collect soil and plant samples in order to examine how burrowing crabs impact the interactions of two dominant salt marsh plants (cordgrass and pickleweed) at different latitudes on the California coast. Amendment 1 has been issued to extend the active permit date for an additional year, through October 31, 2019.

A research permit was issued to John Largier of Bodega Marine Lab (BML) University of California at Davis to continue to maintain a research mooring and buoy to collect meteorological and oceanographic data. The mooring and buoy collect data for a long-term monitoring project by BML to study circulation patterns and water quality conditions in Tomales Bay. Amendment 2 has been issued to extend the active permit date for an additional 2 years, through October 31, 2019.

A permit is under review for Dr. Richard Starr of Moss Landing Marine Labs to deploy a video lander on the sea floor, which is an underwater camera system, to assess the abundance of fishes and invertebrates in marine areas without conducting extractive sampling. Amendment 1 is being requested to include additional survey sites within CBNMS in 2018.

A permit is under review for Josh Russo of the Watermans’ Alliance to deploy two temporary moorings on the Sonoma Coast to allow a dive boat to anchor in order to assist the removal of purple sea urchins from nearshore waters.

A permit is under review for Jonathan Shore of the US Fish and Wildlife Service and Sage Tezak of the Greater Farallones National Marine Sanctuary to replace two existing moorings and buoys at Southeast Farallon Island.

A permit is under review for Jan Roletto of the Greater Farallones National Marine Sanctuary and a to-be-determined ROV contractor for an ROV cruise to confirm the presence and location of a sunken dry-dock and to investigate/characterize the surrounding habitat. The ROV survey will involve mapping and filming the seafloor and collecting coral specimens.

A permit is under review for Suzanne Olyarnik of Bodega Marine Reserve and Lab to conduct research activities as part of their long-term research program within the state-designated Bodega Marine Reserve.

A permit is under review for Graham Groneman of the Marin County Fire Department to use motorized personal watercraft (MPWC) for life-safety and search and rescue training within the sanctuary. The exact areas and seasonal windows in which trainings would be conducted are still being determined.

An education permit was appealed by Ms. Jane Reifert and Mr. Greg Barron of IA Worldwide Inc. (aka Incredible Adventures). The permit was issued in September 2017 to allow the permittee to attract white sharks at the Farallon Islands using decoys only for the purposes of conducting educational tours. The permittee appealed the permit decision denying their request to use chum and scent attractants during their tours. On April 19, the Assistant Administrator of the National Ocean Service (NOS) upheld the superintendent's decision and rejected the appeal. This is the seventh permit appeal to be filed by IA Worldwide Adventures and rejected by NOS since white shark regulations took effect in 2009.

### Conservation Science Update

Planning for the 15th field season of the Applied California Current Ecosystem Studies (ACCESS) project kicked off in January with an annual meeting of the principal investigators from Point Blue, Cordell Bank and Farallones sanctuaries. The team discussed funding, staffing, cruise dates, overall goals, special projects including ocean acidification and graduate student work, media outreach, education, data analysis, and products for management. The team is planning for three cruises; six days in May (our 51<sup>st</sup> cruise), 10 days in July on board the *Bell M Shimada*, and eight days in September of 2018. The Applied California Current Ecosystem Studies (ACCESS) monitors the nearshore and pelagic ocean ecosystem in CBNMS, GFNMS, and northern Monterey Bay National Marine Sanctuary. ACCESS project has provided seabird abundance and distribution data from GFNMS, CBNMS, and MBNMS to the Bureau of Ocean Energy Management (BOEM). BOEM is investigating at-sea distribution and habitat use of seabirds throughout the Pacific Outer Continental Shelf of the US West Coast to facilitate consultations in siting BOEM activities. The ACCESS data will be part of a 50-year review of seabird abundance, distribution and foraging areas, including mapping and modeling of at-sea seabird data to identify ecologically sensitive areas. At the August SAC meeting, we will offer a date for SAC members to ride along on an ACCESS day at sea.

Ocean acidification (OA) research results from Greater Farallones and Cordell Bank National Marine Sanctuaries were presented at the Ocean Sciences Meeting in Portland, OR in February 2018. Carina Fish from UC Davis, Bodega Marine Lab provided an overview of part of her PhD work done in collaboration with the sanctuaries. Carina has been working with data collected through the Applied California Current Ecosystem Studies (ACCESS) project, using water samples collected at the surface and at depth. This investigation also includes data collected by Cordell Bank sanctuary on deep-sea corals and effects of OA on corals at depth. This work aims to understand and investigate the correlation between inter-annual oceanographic variability in carbonate chemistry, oxygenation, and zooplankton abundance with changes in coral communities, including growth rates and skeletal geochemistry.

Conservation Science staff provided to our Resource Protection staff fish data collected during a 2012 research project and recently analyzed by Nancy Foster Scholar, Emily Aikens. The fish data updates information and maps used by the Pacific Fishery Management Council in deciding where to place various management zones to best protect groundfish. The fish data were collected during the 2012 benthic characterization of Rittenburg and Cochrane Banks and the shallow portion of the Farallon Escarpment. These data will be used to show the importance of designating these areas as Groundfish Essential Fish Habitat Conservation Areas, which could prohibit bottom trawling. This action will protect locations where there are concentrations of

fishes associated with a variety of benthic habitats, including biogenic species, such as deep-sea corals and sponges.

Conservation Science staff, along with partners from NOAA Restoration Center and Office of Response and Restoration completed establishment of new long-term monitoring stations to document the abundance and health of marine algae, seagrasses, and intertidal animals. The surveys are coordinated with ongoing monitoring on the West Coast, in collaboration with Bureau of Ocean Energy Management and Partnership for Interdisciplinary Studies of Coastal Oceans. Three new *Phyllospadix* (surf grass) transects, 10 new *Endocladia* (turf alga) photo plots, five new *Mytilus* (mussels) photo plots, two tide pool urchin counts, and one large owl limpet density plot were established. The new protocols and sampling plots were established to identify and catalog the shoreline resources for several purposes: establishing a current baseline of conditions at the Farallon Islands in case a future oil spill impacts the islands, impacts from sea level rise, trampling from pinnipeds, and ocean acidification.

Conservation Science staff judged middle and high school student's science projects at the 64th San Francisco Bay Area STEM Science Fair. The science fair allows 7th through 12th grade students from eight Bay Area counties to present their science projects. This regional fair is the third and final step towards the STEM International Science Fair. The Grand Prize winners in biology, physics and engineering represent the San Francisco Bay Area at this nationwide Science Fair.

Research results from the beached bird data collected through the Beach Watch project were published in the journal *Biological Conservation* (Volume 217, 2018, pages 407-418), by Ainley et al., titled Population dynamics of Brandt's cormorants in the central California Current: a victory for ecosystem-based management. This paper reviewed the status of Brandt's cormorants, how this species responds within an eastern boundary upwelling system, and their responses to "boom and bust" prey availability. Variations of the central California Brandt's cormorant population are driven naturally by forage fish availability. With management protection of breeding sites and a shift towards ecosystem-based fisheries management in the 1990s, this species is now increasing in our region and can sustain large mortality events when prey availability is low.

Conservation science staff participated in the 2018 Deep Sea Coral Research and Technology Program's West Coast Initiative Science Priorities Workshop at the University of California, Santa Barbara. The workshop was held to engage experts across the West Coast region to help identify research needs and data gaps related deep-sea coral and sponge ecosystems. Staff presented our science and resource protection priorities for the next several years, including analysis of ROV data sets, additional multibeam and backscatter mapping in many areas of GFNMS that may be slated to be opened under the Pacific Fisheries Management Council recommendations, as well as areas where we need additional data on substrate type and benthic characterization over the next decade. Data collection techniques also include sampling using remotely operated vessels to include collection of specimens for taxonomy and autonomous underwater vessels for long-term monitoring of impacted and recovering habitats.

Conservation science staff provided to the National Park Service, a summary of 12-years of banded bird data collected during Beach Watch surveys. Point Reyes National Seashore is preparing a document for the International Union of Concerned Scientists on federally listed species, in particular the Western Snowy Plover (*Charadrius nivosus nivosus*), which is currently listed as Threatened. The data will be used to assess seasonality and movements of the regional plover population.

#### Vessel Speed Reduction Update

The voluntary Vessel Speed Reduction (VSR) is now active to reduce the risk of lethal ship strikes. It is in place from May 1 - November 15, 2018 to bracket the period of peak whale abundance. Thanks to our partnership with the US Coast Guard, National Marine Fisheries Service and the Air Quality Management District, we have completed a detailed analysis of 2017 ship traffic. The team saw a significant difference in cooperation between when the 2017 VSR was active vs. not active. On average during the VSR cargo vessels slowed 1.4 knots, tankers slowed 1 knot, and passenger's vessels slowed 3.5 knots. Six companies made great strides slowing 3+ knots on average during the VSR season. The companies are; Princess Cruises, OSG Ship Management, Mediterranean Shipping Company, MOL Shipping Company, Yang Ming Transport Corporation, and Polar Tankers. The team also documented cooperation rates for 2017 San Francisco seasonal VSR are notably higher (\*) than they are for the dynamic Whale Advisory Zone in the Santa Barbara Channel. The slower ship transits during the VSR also had the secondary benefit of reducing thousands of tons of greenhouse gas emissions.

*A question was asked about if there are higher numbers of ship strikes in GFNMS/CBNMS or in Channel Islands. Northern California is more visible; GFNMS/CBNMS have sent out individual letters to shipping companies with report cards. Abby Mohan mentioned there has been visibility among the boating communities; the whales are called in over the radio and there has been more awareness and press coverage. Elizabeth Babcock noted that social norming practices are effective; how people are doing compared to one another. There was a question if there is a shipping seat on the Channel Islands Sanctuary Advisory Council – unsure but will find out. At the August meeting, the SAC will receive a more in-depth presentation about the vessel speed reduction program.*

#### Education Update

The April 28 Sanctuary Soiree spotlighted albatrosses - our planet's largest seabirds. North Pacific albatrosses soar across vast ocean basins from nesting grounds in the remote tropical Pacific to Greater Farallones waters where they feed. The evening was co-sponsored by Greater Farallones National Marine Sanctuary, the Greater Farallones Association, and the San Francisco Zoo. Biologist Breck Tyler, with the Institute of Marine Sciences at University of California at Santa Cruz, spent three decades living among these aerodynamic marvels. He shared his intimate knowledge of their lifestyles, lovestyles, biology and conservation. Artists, photographers and authors Caren Loebel-Fried and Susan Middleton exhibited and signed their works. The Science Station displayed a Wandering Albatross specimen from the Southern Ocean, dating back to 1887, courtesy of the California Academy of Sciences. Outreach staff focused on lethal plastics impacts. One hundred sixty attendees enjoyed art printmaking, and a son et lumière show featuring albatross imagery by the light of a rising full moon.

On April 18, communications staff delivered a talk to 75 members of the Sausalito Yacht Club (SYC). “Love among Leviathans” focused on the reproductive habits and physiology, socio-sexual behaviors, and adaptations of whales, dolphins and porpoises. Reproductive studies reveal how some species have recovered better than others from past human impacts such as whaling; illustrate how sustainability is linked to reproductive patterns; and help assess the severity of various current and emerging threats, enabling us to mitigate human impacts.

#### Climate Update

The final Coastal Regional Sediment Management Report was delivered to the state in early March. The report was based on the SAC's report to the Sanctuary. Since then, five new projects and proposals have grown out of the report. They include a coastal resilience and sediment action plan for the Sanctuary and northern management area with funding from the Ocean Protection Council (OPC). Three budding projects include Stinson Beach/southern side of Bolinas Lagoon with partners at the National Park Service, Marin County, and private community association at Seadrift. We are also continuing our engagement at Surfers Beach with two recent interagency meetings, one in February and one just last week, to develop monitoring plans for the project that emphasize Sanctuary resource protection during the pilot project. In addition a pre-proposal was submitted to USC Sea grant for OPC Prop 84 funds to fill knowledge gaps identified in the sediment management report, including using 25 years of Beach Watch photographs to analyze shoreline change, working with the Sonoma County Water Agency on watershed delivery of sediment to the coast, and conducting a sediment characterization of beaches and nearshore in Marin and Sonoma counties.

*Sanctuary staff will send out the final sediment management report with tracked changes. Maria will write a cover note outlining additional edits.*

*A question was asked about the different ways to put the recommendations in action. The sanctuary will take the recommendations to the community for input. The sanctuary can work with partners to implement the recommendations. The sanctuary is working with the Greater Farallones Association (GFA), Marin County, and the National Park Services on projects identified for the southern portion of Bolinas Lagoon and Stinson Beach. Elizabeth Babcock suggested looking into corporate sponsorship. Bruce Bowser gave a shout-out to GFA Board member Jeff Loomans for his outreach to the Seadrift and Stinson Beach communities.*

*Cea Higgins mentioned the sanctuary could investigate how to be involved with the Scotty Creek/Gleason Beach realignment as a restoration project. The project has been put on hold. Richard Charter added that with the sanctuary involved, it could set the stage for the project as a restoration project.*

#### Resource Protection – Seabird Protection Network Update

On Sunday, April 29, partners at the US Fish and Wildlife Service noted numerous overflight disturbances to nesting Common Murres at Devil's Slide Rock. Many of these were associated with the annual Pacific Coast Dream Machines air show at Half Moon Bay Airport. Fourteen total disturbances were observed consisting of twelve fixed-wing (small planes) and two military

helicopters. One plane made two passes under 200' before landing at the airport, resulting in the flushing of approximately 150 murrelets from Devil's Slide Rock. They did not return. Two more flushing incidents were recorded during the event, affecting a total of 40 birds.

Seabird Protection Network, a program of GFNMS, has partnered with airport management to educate pilots at Dream Machines about the importance of flying high over Devil's Slide Rock. Nevertheless, low overflights continue to be a source of disturbance to nesting Common Murrelets during the event, as well as throughout the year. Seabird Protection Network staff will continue to work with airport management as well as the general aviation community to reduce disturbances to the Devil's Slide colony and are looking for more comprehensive strategies, since current approaches have mixed results.

Education and outreach are key in this area, which is not protected by a NOAA Regulated Overflight Zone, nor indicated on aeronautical charts.

The Overflight Working Group suggested working with the Federal Aviation Administration (FAA) to demarcate the Devil's Slide area on the aeronautical chart. We will pursue that option, but the feasibility of this is not known, and the time frame for implementation is potentially long.

*The work on Devil's Slide came out of the Low Overflights report. This year has been one of the highest years of disturbances at the rock. Kellyx Nelson mentioned that County of San Mateo Resource Conservation District tables at the Dream Machines event and they could bring material to the event. It was noted that the sanctuary and Seabird Protection Network may need to expand their circle of education to other locations.*

*The sanctuary and Seabird Protection Network has been at Dream Machines for 11 years; outreach started with viewers and the last five years they have been talking with the pilots. They conduct a morning safety briefing and provide notice to airmen about the low overflights; however, they are still not reaching all the pilots. There is no low overflight restriction at Devil's Slide Rock as there was no murrelet population at the rock when the zones were established. The FAA issues the notice to airmen.*

## **Monterey Bay National Marine Sanctuary Superintendent's Report**

Dawn Hayes, Deputy Superintendent (provided via email)

### Monterey Bay NMS Management Plan Review Update

Currently, all of the topics from the original scoping process have been presented/discussed at MBNMS Advisory Council meetings over the past 18 months. This process took 6 months longer than anticipated, due to scheduling and the need for input from working groups and external groups. The outlines for action plans were drafted and presented to the MBNMS Advisory Council and recommendations made to the superintendent are being considered and incorporated as appropriate.

The full plans are now mostly drafted and are undergoing internal MBNMS review/revision. A regulatory package has been reviewed and revised and will need to be written up and prepared for submission with the draft management plan. The primary person who would naturally be

working on this, Scott Kathey, is on detail at Grays' Reef through August, so this will slow the process for the package.

In addition, MBNMS staff have been instructed to prepare the initial environmental documents in house, rather than bringing on a consultant, so this too will delay the anticipated delivery of the draft Management Plan, draft Regulatory Package and Draft Environmental Assessment bundle to ONMS HQ. We anticipate the draft package will now go to ONMS late Fall 2018.

### **Cordell Bank National Marine Sanctuary Superintendent's Report**

Dan Howard, Superintendent

We just received our 2018 budget. ONMS ended up with a reasonable budget this year, so we are hopeful that our budget will be close to last year's numbers.

At the April 2018, Pacific Fisheries Management Council meeting final decisions were made on EFH no-trawl areas in CBNMS. Decisions were also made for GFNMS and MBNMS that included areas they were hoping to protect. For CBNMS, the EFH closures are those that we have been supporting for the extent of the process. In addition, the state requested a slight increase to the no-trawl area just north of the Bank. This is great news and I think all the sanctuaries are happy with the outcome. The PFMC recognized sanctuaries contribution to the process in their summary statement.

CBNMS is in discussion with the Northwest Fisheries Science Center (NWFSC) on creating reference areas within the EFH no-trawl areas within CBNMS where NMFS would not sample as part of their west coast stock assessment. NMFS is also interested in studying the EFH area that is opening up to look at changes over time.

There was an article in the *Chronicle* on recreational fishing stating the recreational rockfish conservation area (RCA) was being opened, when in fact it was not. Dan is following up with the author Tom Stienstra. No fishing was observed in the RCAs, be aware that they are still in place.

Jenny Stock is putting together a Get Into Your Sanctuary Day event at the Point Arena Theater for the weekend of August 4-5 with selections from the International Ocean Film Festival.

### **Member Reports**

Cicely Muldoon – The Point Reyes National Seashore is about to engage in a general management plan amendment process. The amendment process will be about 12 months long and will include an environmental impact statement.

Sarah Allen – Ben Becker will be stepping up to the NPS alternate seat. There will be a table at the Bay Area Open Space Council event on the Golden Gate Biosphere Reserve. Sarah is on an unusual mortality working group; she will send out a document.

Ben Becker of Point Reyes National Seashore – The U.S. Fish and Wildlife has been monitoring seabirds. There have been three documented MPA fishing violations in the seashore. There are

snowy plovers on Limantour beach so there is a closure on the beach. This is the second year of Drakes Estero eelgrass monitoring, they are working with UVA and UCSB to use drones for monitoring. The USGS is installing acoustic song meters for ash storm petrel monitoring. The Bolinas Lagoon Advisory Committee formed a committee to plan a new state of the lagoon conference. They are looking at renovating the Bolinas Marine Lab, part of the College of Marin, and are working with UC Berkeley to establish a field station there.

Kellyx Nelson – San Mateo County released CEQA documents to dredge 7400 linear feet in Butano Creek; there is a fish passage blocked by sedimentation that will move 46,000 cubic yards of sediment. San Mateo Resource Conservation District received \$3 million in grants for Coho and Steelhead restoration. They are also focusing on carbon farm planning; they are working with farmers and ranchers to sequester carbon into the soil. They are tracking the healthy soils initiative in California. Three plans could potentially remove 728 metric tons of CO<sub>2</sub> annually for 4,000 acres of land, equal to 240 passenger vehicles for one year, or energy use of 120 homes. There is lots of potential for 53,000 acres.

Cea Higgins – Bodega Bay visitor center has a new sanctuary exhibit. June 9 is the Explore the Coast day at Point Arena and Stornetta Lands/California Coastal Monument. Cea will be there to represent. September 15 is California Coastal Cleanup Day, hopefully will be a “green” event.

Dominique Richard – Attended Tomales Bay Research Symposium. He volunteered for the Environmental Action Committee Nature and Bird Festival representing the sanctuary. The keynote speaker was Peter Pyle. Sanctuary marine debris program is ending soon due to funding.

Elizabeth Babcock – Cal Academy will have a new exhibit “Giants of Land and Sea” in mid-June, focused on redwoods and whales. Will be sending info out, Elizabeth extended invitation to visit. Would like to be able to publicize sanctuary events on museum floor, perhaps as a tabletop for their naturalist center. If any organization wants to get involved with Cal Academy to do public outreach, contact Elizabeth, the Academy will be focusing on California coastal ecosystems throughout the summer.

Richard Charter – Has been asked about the Executive Order reviews for the GFNMS. If anyone has new information let him know. The Northeast Canyons monument was being challenged by the fishermen in New England before the review of the sanctuary. Things are happening out in the northeast. Caltrans had requested that the county apply for a consolidated permit from the Coastal Commission. Caltrans withdrew the agenda item. The project would violate parts of the Coastal Act, the LCP for wetland habitats, environmental sensitivity, listed species, public access, and create the second largest artificial structure. Perceiving a shift towards restoration, may open opportunities for the sanctuary in the watershed.

Bruce Bowser – In January, helped lead tour of Bolinas Lagoon and restoration efforts for the SAC summit and Business Advisory Council representatives. Rocky shore work is ongoing, taking group from Tomales High to Duxbury Reef. Kent Island has started 6<sup>th</sup> season of restoration, funded through County of Marin. Served on SAC applications subcommittee. Letter today for Caltrans in support of the Bolinas Lagoon Advisory Council and the Locally Preferred Plan and how to deal with Highway 1 issues.

Barbara Emley (yielded her time to Sarah Bates) Sarah Bates – Salmon season has started, it was a short opener with 7 days in May and 12 days in June. There was sizeable amount of fish in Monterey Bay, many whales, little bycatch, sizable body of fish off Pigeon Point. Price is high. Fewer derelict pots/crab gear out there this year.

Bibit Traut – Appreciated the blob sculpin video. Was speaking to people that work on the ferries in the bay and suggested that the sanctuary can pass out information about the sanctuary to the deck hands to engage the public especially with the whales and cetaceans.

### **Greater Farallones Association (GFA) Report**

Bob Wilson, Executive Director

The administration proposed a 30% cut to the NOAA budget. Francesca Koe, also on GFA board, went to Washington and met with the National Marine Sanctuary Foundation and other representatives, including Nancy Pelosi. They got 92 members to sign. \$3 million was earmarked for research. There is a different philosophy between how Congress works and how the administration works. Bob spoke about the expansion and the sanctuary review; we are still not sure what will happen. Bob mentioned the Kelp Recovery Working Group and Francesca's blog. GFA is a member of the working group. Regarding writing to Congress, they like to hear from influential members of the community, including individual SAC members. In addition to signing petitions, encouraged to write personal letters. GFA is expanding their board, if anyone has any recommendations for board members let Bob know. The Association has 23 employees and 15 sub-contractors all working on Sanctuary programs. The GFA budget is \$1.7 million.

*Josh Russo added that aside from the sanctuary's kelp working group, there is an initiative to remove purple urchins. The Watermen's Alliance has raised \$75,000 to pay fishermen to remove the urchins. Are there any plans to raise funds to help with the kelp issue?*

*Maria clarified that it is the Advisory Council's working group and the sanctuary requested that the goal of the working group is to come up with recommendations for policy and management, education and outreach, and for research and monitoring.*

*Josh added that Sonoma has been hit hard with the urchin explosion. There is no kelp out there, and it is important to raise funds to help the project; it might be too late next year.*

*Maria noted that if writing to member of Congress, must write as an individual, not as the SAC body.*

### **NOAA General Counsel Enforcement Section**

John Han, NOAA

John Han, Chief of the NOAA General Counsel Enforcement Section gave a presentation on the structure of the Enforcement Section. NOAA's civil prosecutors enforce four main areas: Fishing violations/Magnuson Stevens Act, Marine Mammal Protection Act, Endangered Species Act,

and National Marine Sanctuaries Act. Discussed organizational structure of NOAA enforcement. There are 15 attorneys for 3.4 million square nautical miles.

Centralized system to know that all cases are treated similarly across regions. John shared the matrix of penalties for violations available on NOAA website: <https://www.gc.noaa.gov/enforce-office3.html>. There is a matrix for each Act.

They are in process of reviewing penalties. If they see recidivism, may consider bumping up the numbers; if they see good compliance, may keep the numbers the same.

*Elizabeth Babcock asked what evidence they have that the amount affects the recidivism. John said they look at it in terms of seeing if the same individual is repeating the same violations. Eighty percent of the cases they receive are fishing violations or about 180 cases over the last 2 years to gauge repeat players in recidivism. The NMSA violations are smaller. Less than 10 cases per year go up to OLE. There are more violations at the site level than they see at OLE.*

*Richard Charter asked about how they create a disincentive in the matrix to stop repeat occurrences of similar events. John answered that for specific recidivism, they have an increase in the penalties. Sometimes they will have pulse operations and send officers to have a presence for particular reasons, such as abalone season.*

*Kellyx Nelson asked what some typical non-fishing, non-discharge violations are. John answered that on the schedule are fishing violations in closed areas and overflight restrictions. Maria added that most of the violations in the sanctuary are discharge; however we also see disturbance to the seabed violations.*

*Abby Mohan asked if they are successful in getting penalties what determines which agency gets the money. John answered that for penalties for National Marine Sanctuary Act, goes into asset funds for sanctuaries. For fishing violations the Magnuson Stevens Act is cited and penalties go towards enforcement related proceedings. Maria added that if there is a violation in the sanctuary, the money comes back to the sanctuary to repair the damage.*

## **Law Enforcement Update from NOAA West Coast Enforcement Division**

Greg Busch, NOAA Assistant Director for NOAA Fisheries West Coast

Greg shared that this year will be difficult in terms of staffing issues. Brian Christy will be leaving to take a position in Hawaii and his position here will be vacant. They are working to get special enforcement agents and officers hired, approximately 4-5 for California. NOAA Office of Law Enforcement will still be partnering with California Department of Fish and Wildlife and other agencies as well. A reminder to keep using the enforcement hotline and email referral system. Incidents are checked in Long Beach and referred to the proper agent. Dayna Matthews is retiring at the end of September, hoping to replace him before then. There is a tentative officer for Monterey hopefully starting soon. Thank you to Brian Christy, good luck in Hawaii.

Jason Brand, US Coast Guard, connects with Greg and John on the Pacific Fishery Management Council, and Jason can pass on information from them to the SAC.

## Update on Groundfish Essential Fish Habitat Conservation Area Process

Karen Reyna, GFNMS Staff

[Presentation available here](#)

Karen shared an update on the Groundfish Essential Fish Habitat Conservation Area Process. She discussed characterizing and protecting benthic habitat in the GFNMS as a partnership between National Center for Coastal and Ocean Science (NCCOS), USGS, and GFNMS.

In 2009, the Pacific Fishery Management Council opened up their groundfish essential fish (EFH) habitat process and reviewed protections. In 2011, the sanctuary started mapping and habitat characterization with looking at biogenic habitat along the Farallon Escarpment, Cochrane Bank, West Fanny Shoal, and Rittenburg Bank. In 2013, the sanctuary put in a proposal, prior to expansion with specific protection zones focusing on no bottom trawling in those areas. The EFH process went on hold for some time. In April 2016 after the sanctuary expanded, a paper was published about the sanctuary's ROV cruise at the Football (27 miles west of the Russian River), new habitat and coral was discovered. The Football story map was developed: <https://farallones.noaa.gov/science/football.html>.

*Sarah Bates asked if there is data on how much trawling occurs now. Karen responded that there is data, but it is aggregated; must have at least 3 fishing vessels in an area to have data.*

*Barbara Emley asked what "protected" means. Karen clarified that "protected" means no bottom trawling; not aware when the fisheries council will address recreational or hook and line fishing. There is no process yet for looking at any other sector other than trawl sector yet. Maria added that some areas that are proposed for closure were thought to have been sand, but the sanctuary cruise recently found out the substrates are mixed.*

*Richard Charter noted that the more we learn about the sensitive habitat, the more it helps with decisions like this.*

*Maria clarified that in the expansion areas, we have very little data, and some areas have been opened based on little or no information; the sanctuary wants to understand what is happening in those areas. The SAC appreciates the process, and had concerns regarding decisions for opening/closure in areas that are data poor. There are concerns that we do not know enough about the areas. On the flipside, the areas could be closed without data. John Largier suggested supporting a motion that supports gathering more data.*

*Sarah Bates expressed support for building trust with the fishermen; this seems to be a more participatory regulatory process. Did they only interview trawlers, or crab fishermen as well? There are some gear conflict issues between the fisheries.*

*Cea Higgins noted that areas are not necessarily permanently open or closed.*

*The PFMC five-year review process began in 2009, a decision will be made 2019, about 10 years later.*

The SAC agreed that more data would be needed to make decisions regarding opening/closures and recommended that a letter be written with the SAC support for the sanctuary gathering more data on the Point Arena area where there is no data.

**MOTION: SAC proposes a letter of support for gathering more data in the Point Arena area in regards to the PFMC process.**

First: Richard Charter

Second: Dominique Richard

8 Aye

0 Nay

1 Abstain

**Motion approved**

A general letter of support from the SAC in support of gathering more data will be written.

**Update on Tomales Bay Mooring Program**

Karen Reyna, GFNMS Staff

[Presentation available here](#)

Karen shared an update on the state of moorings in Tomales Bay. The Bay has multiple protections – state, federal, international protections. The Bay was considered impaired by the Clean Water Act in 2003, one of the primary sources linked to vessels. The Tomales Bay Vessel Management Plan (TBVMP) and mooring program was then developed from recommendations from the Sanctuary Advisory Council. An initial survey in 2004 showed that a majority of vessels in Tomales Bay were not registered. Some moorings were installed in unsafe locations. The county and sanctuary has spent hundreds of thousands of dollars removing derelict and sunken vessels. The TBVMP was a multi-year, multi-agency endeavor between nine federal, state, local agencies coordinated efforts and informed by recommendations from the SAC. The outcome was a coordinated collaborative program, and the sanctuary has worked with the boating community every step of the way.

The program includes an affordable and streamlined lease and inspection process. There are 67 mooring applications either approved or in review. There were previously up to 150 moorings composed of a variety of materials in use or abandoned in the Bay.

Now there are actively maintained moorings built with appropriate materials and zero moorings in eelgrass. This has resulted in over 960 acres of eelgrass protection. Two floating docks removed from eelgrass, 42 abandoned mooring systems removed; 28 were in or adjacent to eelgrass.

*Annaliese Hettinger asked how the number of moorings was picked. Karen clarified they did pick a higher number based on available space; 167 was the highest number of all buoys reported of any survey in the bay over multiple years.*

## **LUNCH**

### **Public Comment**

Sue Buxton, Citizens Advocating Roblar Rural Quality (CARRQ)

Comment regarding Roblar Rock Quarry effects on Americano Creek and local wetlands with effect to downstream estuary. Proposed gravel mine is next to the county landfill, has not been characterized with water quality issues. The proposed project would have to move Americano Creek. The county will soon publish an Environmental Impact Report (EIR). There was an EIR done in 2010 that was narrowly approved then struck down. Now has come time for the study. Hoping that the sanctuary will weigh in on the study and write a letter to board of supervisors.

*Sue would like to send information to the SAC. Sue will send information to Jenn Gamurot, SAC Coordinator.*

Donna Stillman, Citizens Advocating Roblar Rural Quality

Roblar Road quarry project will relocate a section of Americano Creek and impact seasonal wetlands when road construction for quarry operations begin in 2018-2023. Current activities in the quarry – in 2016 the owner of the quarry applied for permit modifications to change conditions of approval for the project. Would widen Roblar Road by 1.5 miles near the entrance of the quarry road to build an alternative haul route across private property. Widening Roblar Road would require moving of Americano Creek channel. Has applied for permit from the US Army Corps (USACE) of Engineers under the Clean Water Act to discharge material into jurisdictional waters. The USACE put out a public notice that the project would impact 1.5 acres of wetlands, destroy section of Americano creek, and impact 7,000 roadside ditches with aquatic life. CARRQ requested that the permit not be granted at this time and that the public have more information. USACE did not think that another EIS was needed. CARRQ believes it does have an impact on the sanctuary in Estero Americano; CARRQ thinks that this application was premature, and believes that there is not enough information on this the project. The project will impact the Americano creek. Would like the sanctuary to read the EIR, write to board of supervisors with concerns and recommendations.

### **Tomales Bay Programs and Projects**

#### Science-Informed Eelgrass Management in an Uncertain Future

Melissa Ward and Annaliese Hettinger, UC Davis

Melissa Ward and Annaliese Hettinger shared information about eelgrass management in Tomales Bay. Melissa is a Ph.D. candidate at the UC Davis Bodega Marine Lab. She shared the importance of eelgrass as habitat for valuable species, their ecosystem services such as sediment stabilization, water quality, and carbon services. Submerged aquatic vegetation including seagrasses have the potential to buffer against ocean acidification and sequester carbon in their sediments. They are studying these topics further at Bodega Marine Lab; they are looking at

burial and metabolism of seagrasses across the state, specifically in Tomales Bay as well as water chemistry.

Annaliese Hettinger is a post-doc at UC Davis Bodega Marine Lab. Did her Ph. D. on native Olympia oyster in Tomales Bay and is now looking at science policy and science management. California has about 14,000 acres of eelgrass throughout the state. Eelgrass is protected under the California Eelgrass Mitigation Policy that recommends “no net loss of eelgrass habitat function”. It is an enormous challenge to meet this goal. This was aligned with the Clean Water Act guidelines; there is also new legislation in the state. There is a growing interest in exploring how submerged aquatic vegetation can contribute to mitigation strategies. There is an added challenge with addressing healthy ecosystems and human uses such as industry. There is currently no formal valuation for eelgrass in California. They are hoping to address this issue. There are economic, social, cultural, and ecological factors to eelgrass management in the Bay, making eelgrass management extremely challenging.

Multiple activities happen in Tomales Bay and the current policies relate to how we manage eelgrass. We do not know how eelgrass and shellfish interact specifically; there is lots of interest in this topic scientifically to better understand these interactions.

Another challenge is that we do not fully understand the temporal and spatial dynamics of eelgrass in California. Current estimates of eelgrass in California lack high resolution including seasonal dynamics, sensitive to climate change, range of quality in ecosystem services. There is an urgent need for comprehensive, systematic, geographically scalable method to document variation in the extent of eelgrass acreage across the state. There are ideas to address this but funding is needed to support this work.

#### Monitoring in Marine Sanctuaries

Amber Szoboszlai, Farallon Institute

Amber is a research scientist with the Farallon Institute. She shared that there are data opportunities for assessing eelgrass extent across Tomales Bay. Opportunities to take data to integrate into existing data and produce new methodologies. They are particularly interested in availability of satellite images. There is potential for looking at historical images; however, there is variability in resolution and issues with comparisons of different sources. They are interested in moving forward to build a monitoring program. Scaling up, they are forming working groups and collecting stakeholders to look at what is going on across the West Coast. Hoping to understand the long term changes and variability in eelgrass, to help document potential for eelgrass to evaluate some of the issues of Ocean Acidification. Multiple data sources can be compared; they are looking at techniques that will provide the best information moving forward. Amber and Annaliese are looking at a pilot study under development to evaluate use of satellite data starting from 2000.

*Elizabeth Babcock asked if there are any studies to show how much carbon is released with eelgrass disturbance. Melissa answered that it is a time scale question; it depends on how much of the sediment is disturbed. The rate of accumulation is slow but the stock is high. The juvenile*

*stages are more stressed out under environmental changes. Burial happens slowly over time; water chemistry happens day to day.*

*Sarah Allen asked if they were looking at infrared imagery. Satellite resolution is half a meter. There are several groups looking at drone footage and taking drone images to see how seagrass and aquaculture gear are interacting. There is some remote sensing work being done with kelp along the coast.*

*Jan Roletto asked how satellite imagery compares with sidescan. Amber: They are hoping to devise a way to ground-truth satellite data with best temporal resolution. The images are already collected with no cost. They are looking to layer all available data to combine together. The problem with monitoring is that it is sporadic. Eelgrass is dynamic, responds to all the different stressors and more monitoring would be needed.*

#### Strategies for Managing Invasive Plants

Jenn Gamurot, GFNMS/University of San Francisco graduate student

[Presentation available here](#)

Jenn Gamurot shared her master's project on strategies for managing non-native and invasive aquatic plants and the potential for implementing strategies in Tomales Bay. She studied the Japanese wireweed, which has been detected in Tomales Bay and the Asian kelp, which is not detected in Tomales Bay but is present in San Francisco Bay. She discussed their impacts and prevention and removal strategies, and provided recommendations to address prevention and removal.

#### Eelgrass Assessment and Restoration Plans

Karen Reyna, GFNMS staff

[Presentation available here](#)

Karen discussed habitat evaluation and eelgrass monitoring related to mooring removal. Mooring site identification first occurred in 2015 to identify moorings in relation to eelgrass. Identified 31 locations in or adjacent to eelgrass. In 2016, moorings in eelgrass were removed. In 2017, Merkel and Associates completed an eelgrass assessment to assess changes in eelgrass associated with individual moorings; to evaluate nature of the eelgrass changes with removal of each mooring; and to examine specific mooring scars from 2015 to determine how the scars have changed.

Karen showed the differences between eelgrass extent from 2015 data and eelgrass extent from 2017 data over three growing seasons. This goes back to dynamic nature of eelgrass. Nick's Cove showed most consolidated damage to eelgrass.

In 17 of 31 locations where mooring removal occurred, gains in eelgrass coverage were exhibited. There were several sites where gains or losses could not be assessed. None of the removal sites showed damage associated with the removals.

There is still more recovery to go; this is a passive restoration project. The bay-wide survey provides the full extent of eelgrass beds with percent cover in Tomales Bay from sidescan sonar mapping. This provides us a baseline data for conducting long term tracking of eelgrass expansion and contraction and monitoring. Previous mapping methodologies were not standardized which allowed floating docks to be installed in eelgrass.

*Elizabeth Babcock suggested potential of using citizen science projects for monitoring and that the Cal Academy has citizen science capabilities. Abby Mohan asked if they have gotten feedback on the mooring ball locations. Karen noted that there are tradeoffs; however the boating communities have generally been accepting. Kellyx Nelson asked about what happens if the eelgrass expands to new areas. Karen clarified that eelgrass is depth driven; mooring leases are 10 years. The eelgrass beds are periodically assessed with new information as it becomes available.*

*Annaliese added that eelgrass growing towards aquaculture gear could be a potential issue for aquaculture industry. There are larger questions such as the best way to maximize positive impacts and minimize negative impacts related to eelgrass and aquaculture interactions. It could depend on type of gear and methods used. Annaliese mentioned a meta-analysis of seagrass aquaculture interactions that a NOAA colleague (Bridget) is writing. Melissa added that Tomales Bay is in a good situation regarding eelgrass and aquaculture.*

*There was discussion of how the sanctuary can get involved with seagrass mapping and monitoring across the state, including potential for using Drakes Estero as a control site. Sarah Allen noted that CDFW was conducting monitoring in plots; looking at eelgrass through drone surveys; there is a lot of data collection going on.*

*Dominique Richard asked what the financial impact of doing the surveys each year was. Maria noted that that this is exactly our question, as we may not have funding to do side scan sonar every year. There are multiple ways to assess eelgrass and every management agency is using a different method and getting different results. In order for us to be effective in management and reaching NOAA and state goals of protecting eelgrass function, there is a need for a standardized method to assess the extent of eelgrass. This would be bigger than just the sanctuary; to be most effective everyone in the state should be using the same method to assess the extent of eelgrass in an area.*

*Dominique asked if Landsat data is sufficient to identify changes. Landsat is not fine enough resolution, but Amber said there is other data that is 0.5 meter resolution that goes back to 2010. Sara Briley from the Ocean Protection Council (OPC) shared that the state is looking at the issue of protecting eelgrass in the state, had a working group of the science advisory team, recommendations for how to advance this work; one of the recommendations is better mapping. They may potentially hold another science advisory meeting to address best management practices.*

*Discussion of potential resolution to request OPC to establish a working group to further determine standardized protocol for eelgrass monitoring statewide. Maria clarified that for*

*eelgrass it is not as necessary that the sanctuary participate in the state working group, but would use the information.*

*Kellyx asked if other protections in the state for eelgrass are consistent and coordinated, such as with local coastal plans. Karen responded that there are a lot of consistent plans and programs, but every entity runs from their own guidance.*

*Kellyx noted that one of the greatest barriers in restoration is when different jurisdictions have different protective measures. It is a great role for the sanctuary to build trust with the stakeholders. There needs to be good communication and trust between all user groups.*

*Annaliese added that it is difficult to understand big factors of eelgrass bed dynamics such as temperature, salinity, and turbidity.*

*Sarah Allen mentioned project of studying *Didemnum vexillum* interactions with eelgrass.*

**Motion for the SAC to write a resolution to request the state science advisory team to develop a standardized mapping protocol that recognizes the key ecological functions of seagrass.** “Noting the high value of sea grass habitat in Tomales Bay and other bays statewide, as well as a potentially important role in mitigating ocean acidification, there is a need for improved mapping that can be used to track interannual and seasonal variability. The Greater Farallones National Marine Sanctuary Advisory Council recommends that the Greater Farallones National Marine Sanctuary work with the State of California to develop and promote standardized mapping of seagrasses statewide, in a way that recognizes key ecological functions and services provided by seagrass.”

[Resolution available here](#)

First: Kellyx Nelson  
Second: Sarah Allen

John Largier will write resolution.

7 aye  
0 nay  
Unanimous approval

### **Motion Approved**

*Maria added that it is fitting that we have our guests from NOAA General Counsel and Law Enforcement. This whole project started with a NOAA General Counsel Enforcement settlement that provided funding to create the Tomales Bay Vessel Management Plan, and now the council made a motion to recommend monitoring the effectiveness of all this work.*

**BREAK**

## **SAC Business**

### Bolinas Lagoon Advisory Council Letter to Caltrans

Bruce Bowser shared a draft letter urging Caltrans to address issues of Highway 1 in Bolinas. The letter joins the Bolinas Lagoon Advisory Council in urging Caltrans to address chronic road safety and environmental issues along Highway 1 in Bolinas Lagoon.

The SAC provided minor edits to clarify language and voted on approval.

### **Motion to approve letter and send to Caltrans on behalf of the SAC.**

First: Josh Russo

Second: Elizabeth Babcock

7 aye

0 nay

One abstention – CA Natural Resources Agency

### **Motion approved**

### Update on Kelp Recovery Working Group

John Largier provided an update for Francesca Koe, working group chair, from the first meeting of the Kelp Recovery Working Group. There are almost no kelp and lots of urchins on the northern California coast. The meeting was a good introduction to the science and the multiple states of kelp and urchins. Guest speaker Tom Ford shared efforts down in Southern California. There is a webinar on June 6. The next meeting will be in August to identify sites and strategies. This group will be similar to the sediment group by looking at sites and strategies within the sites. The study region is along the north coast within the sanctuary and further north.

Barbara Emley and Josh Russo are on the working group. Josh added that the urchins have a life expectancy of 200 years; urchins are eating everything in sight; Sonoma was hit sooner than Mendocino. He is hosting recreational diver removal events and paying commercial urchin divers for removal and looking for grant support.

Summer Alinaeem asked if there are natural predators for the urchin. John Largier noted that there was the sea star, but the wasting disease removed some of them and when there are too many urchins, the predators can't keep up. Summer suggested working with dive teams at colleges. Josh is working with free diving, scuba, snorkeling, and kayak groups along the coast.

### Update from SAC Chairs Summit

The SAC Chairs summit was held January 16-19, 2018 at the Argonaut Hotel in San Francisco. John Largier and Dominique Richard attended. The Business Advisory Council came out on a field trip to Bolinas Lagoon with GFNMS staff and Bruce Bowser. The SAC chairs also went on a tour of the Cal Academy of Sciences led by Elizabeth Babcock. Dominique noted that there was a bond with the SAC chairs at the summit. Each of the sanctuaries is iconic and diverse, and we have a potential for a broader outreach of the importance of sanctuaries. Storytelling is one

way to share this and engage the public. Elizabeth Babcock noted that there might be some opportunities to integrate other sanctuaries' associations with Greater Farallones Association.

#### Charter Amendment

Dominique Richard proposed to change the name of the "Marin/Sonoma Community at large" to "Marin Community at large" due to the addition of the Sonoma/Mendocino seat and community affiliation.

Barbara Emley proposed to add a commercial fishing seat separate from Maritime Activities Commercial. This would allow for a separate fishing seat in addition to commercial or industry representative. There was discussion about changing the balance of interests and resources by adding a new seat. Maria's role as superintendent is to ensure seat representation is balanced. There would then be a Maritime Activities Commercial seat (primary and alternate), Maritime Recreation (primary and alternate), and Commercial Fishing (primary and alternate). The Maritime Recreation seat would ideally be one consumptive representative and one non-consumptive representative. It was brought up to consider how fine-grained all the seats should be in terms of representation.

**Motion to amend GFNMS SAC charter to change name of Marin/Sonoma Community at large seat and to add commercial fishing seat.**

**First: Josh Russo**

**Second: Barbara Emley**

8 aye

0 nay

Unanimous approval

**Motion approved**

#### Additional Member Reports

Summer Alinaeem and Sandra Chu, Youth seats: There will be a teen science night on August 17 available to all teens in San Francisco at the Cal Academy with the theme of upwelling. There will be a beach cleanup on May 26.

SAC Announcements

Jenn Gamurot

The fall SAC retreat will be held on Wednesday October 3<sup>rd</sup>, 2018 at Bodega Marine Lab with the theme of Marine Protected Areas.

**ADJOURN 4:15PM**