



# CORDELL BANK NATIONAL MARINE SANCTUARY

## SANCTUARY ADVISORY COUNCIL

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### MEETING MINUTES

August 26, 2021

9:10 AM

Held as a Virtual Meeting

Note: The following meeting notes are an account of discussions at the meeting of the Sanctuary Advisory Council for Cordell Bank National Marine Sanctuary (CBNMS). The council is an advisory body to the sanctuary superintendent. The opinions and findings of this publication do not necessarily reflect the position of CBNMS and the National Oceanic and Atmospheric Administration (NOAA).

#### **Call to Order/Welcome/Review Virtual Meeting Logistics/Roll Call (Kai Martin)**

Kai Martin, Advisory Council Chair, called the meeting to order at 9:11 AM and welcomed everyone. He went over some of the logistics for the virtual meeting platform, including that Jennifer Stock (providing technical support) will unmute members of the public during the public comment period so they may be able to make a comment, if they wish. Lilli Ferguson, advisory council coordinator, then called roll.

#### Nongovernmental Members Present:

Frank Borodic (Community-at-Large - Marin County)  
Rob Taboada (Community-at-Large - Marin County)  
Tom Anderson (Community-at-Large – Sonoma County)  
Steve Tubbs (Community-at-Large – Sonoma County)  
Scott Artis (Conservation)  
Morgan Patton (Conservation)  
Dick Ogg (Fishing)  
Noah Wagner (Fishing)  
Kai Martin (Chair; Maritime Activities)  
Jeff Dorman (Research)  
Christina Piotrowski (Research)

#### Governmental Members and Alternates Present:

LT Chris Bell (USCG)  
LT Lelea Lingo (USCG – Alt.)

#### Members of the CBNMS staff present:

Maria Brown (Superintendent, Greater Farallones and Cordell Bank National Marine Sanctuaries)  
Michael Carver (Deputy Superintendent and Resource Protection Coordinator)  
Lilli Ferguson (Resource Protection Specialist and advisory council coordinator)  
Danielle Lipski (Research Coordinator)  
Rachel Pound (Research Operational Specialist [NOAA Affiliate])  
Jennifer Stock (Education and Outreach Coordinator)

#### **Review and Approve Agenda (Kai)**

- The Cordell Bank National Marine Sanctuary Advisory Council (CBNMSAC) reviewed the agenda. On change was brought up – Danielle Lipski is present and will give the Conservation Science Report herself, rather than have Maria Brown do it on her behalf. With that change, the CBNMSAC unanimously approved the agenda.

## **Review and Approve April Meeting Minutes (Kai)**

- The advisory council reviewed the April 29, 2021 minutes and unanimously approved them.

## **Sanctuary Superintendent's Report (Maria Brown)**

- Maria said she was honored to be the new Superintendent at CBNMS and Greater Farallones National Marine Sanctuary (GFNMS). She sent a message out in June when Dan Howard retired announcing the Office of National Marine Sanctuaries (ONMS) leadership decided to merge the two staffs. There will continue to be two independent sanctuaries, but one staff. The leadership wants the staff to be a model of efficiency and effectiveness, with more work accomplished with less redundancy.
- There will be one sanctuary advisory council coordinator. Lilli will coordinate maritime heritage for both sanctuaries [and continue resource protection duties]. Someone else will come on to do advisory council coordination and engagement for both sites; she encouraged that, once the announcement for that position goes out, people distribute it widely to anyone they think would be a good fit. She thanked Lilli for helping her to understand this advisory council, and is looking forward to working with her in new ways moving forward. Maritime heritage is an important subject which both national marine sanctuaries have not had much capacity to address. Lilli will help train the new advisory council coordinator.
- Lilli noted it had been lovely working with the advisory council and would be helping implement the October retreat, the November meeting, and working with the new person, once hired, and that she will still be available after that.
- Maria mentioned the possibility of having a "coffee chat" with the new advisory council coordinator, when that person comes on. Maria is not making any big changes with this advisory council and is looking forward to getting to know everyone. People can reach out to her any time with questions.
- Brian Johnson, GFNMS Deputy Superintendent, spoke up and noted he and Maria were no longer serving as member and alternate on this advisory council, as that is not appropriate with Maria being the superintendent. He thanked the advisory council also and noted he had worked with them over the last 17 years. He will be coming to future advisory council meetings as a staff member, and will work on projects to support CBNMS, so the advisory council will hear from him from time to time.
- More staff changes are coming; staff members are revising performance plans for FY 22, which starts October 1, Maria noted. She also noted she was working with the staff on the budget for the next FY. Goals include looking at redundancies and redistributing work. She will be coming back to the CBNMSAC with the changes, and wants to be as transparent as possible with all the changes being made, with the goal to support the sanctuaries more and accomplish more with more people.
- On the budget, the Administration requested about a \$30 million increase; the House passed a budget of \$5 million, Maria said. It then goes to the Senate; if the Senate passes it, then it goes to reconciliation, and then we will know the budget. The budget has not significantly increased in ten years, but costs have been increasing. For example, the cost of living increased more than the sanctuaries' budget. She hoped Congress would approve more than a \$5 million budget to support new work and things like the CBNMS and GFNMS expansions. People can let Congress know if they support the budget request. Maria requested an increase of funds to deal with the merger of the staffs and the subsequent transition. She will keep the CBNMSAC posted.
- Other Presidential actions include the Executive Order [on Climate Change at Home and Abroad, 14008] and the America the Beautiful report, which was distributed to the advisory council. Maria hoped the advisory council has had a chance to look at that report. The plan is to have that report on as an agenda item at the November CBNMSAC meeting, to accept any comments from the advisory council. This was covered yesterday during the GFNMS Advisory Council (GFNMSAC) meeting; that advisory council drafted a letter regarding support for the report. We can share that with you, so you can see their reactions to that report. One of the comments was no fishing representatives attended that meeting (so their input was lacking), and to ensure their input is received. If this topic is to be on the November agenda, we can send out the report and that letter.
- Tiering off that topic, on the report, also known as the "30 x 30 report" because of the aim to increase protected lands and waters 30 % by 2030, are some ONMS updates. At the 2019 United Nations Climate

Change Conference, an outcome, announced by former Secretary John Kerry, was the formation of the International Partnership on Marine Protected Areas (MPAs), Biodiversity and Climate Change, which included the U.S, United Kingdom, Chile, France, and Costa Rica. ONMS has been participating for the U.S. In preparation for COP26, the Partnership will host an event to announce other countries that will be joining it. Most likely, we will host it, with France hosting an event on case studies, tools, and resources to support MPAs role in addressing climate change and conserving biodiversity and informing national commitments to reduce greenhouse gas emissions through ocean protection. Work will be taking place to work in the oceans into the commitment to address climate change.

- ONMS just published its climate resilience plan, organized by programmatic areas of operation. One big ONMS operational goal is to reduce greenhouse gas emissions at the sanctuaries' facilities and from ONMS boat use. On science, there are plans to do rapid vulnerability assessments for CBNMS and GFNMS in preparation for the next management plan review, after the CBNMS and GFNMS Condition Reports are finished. The previously produced vulnerability assessment will be reviewed to determine if it is on track or needs to be changed; the review is called "rapid" as it will not be as in-depth as for a sanctuary that has not done a vulnerability assessment before. On education, there is an upcoming webinar for advisory councils and volunteers on a regional profile about how climate change is affecting West Coast national marine sanctuaries. On resource protection, the revised CBNMS Management Plan will include climate change strategies and activities. The process to revise this is planned to begin next year and it will be one process that also includes revision of the GFNMS Management Plan. Reaching out to stakeholders will include, and will be done with, the advisory councils and there will be one scoping meeting and one hearing, looking at plan sections specific to each sanctuary, not necessarily combining actions to cover both sanctuaries.

- Also, on climate, ONMS released a new Conservation Science Series report, Blue Carbon Part in Marine Protected Areas: Part 1 A Guide to Understanding and Increasing Protection of Blue Carbon. It outlines strategies. Part 2: Blue Carbon in Greater Farallones National Marine Sanctuary: A Case Study, is in press. There is a tier two analysis looking at the sequestration potential within specified habitats (kelp, wetlands, ocean, etc.). The oceanic processes are the same for GFNMS and CBNMS. Eventually, there will be another case study for CBNMS. Offshore sites may have greater potential than coastal sites to store blue carbon.

- In response to a question, Maria confirmed the Management Plan review would start in FY 23, and advisory council input would be sought on the Condition Report and the Management Plan.

- To clarify the difference between a rapid vulnerability assessment and a full vulnerability assessment, Maria explained in a full one, the focal resources and ecosystem services would be identified, then assessed. For the first climate vulnerability assessment, the focal resources were identified in a two-day workshop, then evaluated by a panel of experts in another two-day workshop and validated by a literature review. While the exact process is not yet set for a rapid climate vulnerability assessment, the process can be sped up, in that an extensive literature review and expert review of resources would not be needed. Likely, this time they would look at results from the last ten years and do a quick literature review to see what is different or what resources are more or less vulnerable, then have an expert review of the assessment.

- There was an inquiry if there would be a public webinar about blue carbon, since there is a lack of public awareness about it. Maria noted that was a good question. Right now, they are doing webinars and briefings for Congress as a couple of bills on climate were introduced, and are also doing an internal NOAA briefing. She affirmed there could be a public webinar to which the CBNMSAC is invited to attend, or one at a CBNMSAC meeting, with a discussion. She is open to the recommendations and suggestions of the CBNMSAC.

- To explain what blue carbon is, Maria said it is a fairly new term. It is carbon that is sequestered, or taken out of the atmosphere, and stored for a significant period of time. Carbon can be out of the carbon cycle for hundreds to thousands of years before it is re-released into atmosphere. "Blue" refers to water, particularly oceanic water. Salt water is better at storing carbon than fresh water, which tends to release

carbon from decomposition of plants and animals. Carbon can be stored in ocean sediment; a whale fall; or plant matter (such as wetland plant roots) stored in anaerobically in mud, away from the atmosphere.

- Kai thanked Brian and Lilli for their work with the CBNMSAC over the years.

#### **Advisory Council Business (Kai and Lilli)**

- Lilli noted that the current round of applications started July 26, and closed the day of this meeting (August 26). She reviewed the seats for which applications were sought, and thanked everyone who helped get out the word and contact potential applicants.
- On Charter Amendment 1, Lilli noted that, with Maria becoming the Superintendent of GFNMS and CBNMS, it became necessary to request to the ONMS director to remove the wording from the CBNMSAC Charter regarding having a governmental seat for the GFNMS Superintendent (with an alternate), as Maria cannot advise herself. The request was sent earlier in the summer and is under review at ONMS headquarters.
- Kai went over a draft letter to the Superintendent on having future retreats meetings of the CBNMSAC in person, provided to the CBNMSAC in advance of the meeting. If allowed, the next CBNMSAC retreat could be part indoors and part outdoors. The advisory council reviewed the draft letter.
- What is NOAA's position on holding meeting indoors? Maria replied that it was a changing scenario, dependent on the status of COVID-19. With the Delta variant surge, right now indoors meetings cannot be held. The staff is able to maintain operations that are outside. If there is a decline in COVID-19 cases and more vaccinations, it may be possible to do an outdoor event in October.
- Kai added that the letter is to ask the staff to investigate the feasibility of holding indoor CBNMSAC meetings. If no action is taken now, the advisory council won't have a chance to act on it until the next meeting.
- A member stated support for meeting in person, as doing so it more engaging, and there is better discussion and another member agreed with that sentiment.
- There was a comment that some within the CBNMSAC may not be vaccinated or have a living situation that is not conducive to getting together, another member said.
- A couple of people said they hoped the staff would investigate having part-virtual meetings.
- Steve Tubbs suggested adding "or hybrid virtual/in-person" before "meetings" in the second paragraph; people felt this edit was a good addition.
- The motion to adopt the letter, as amended, on holding future CBNMSAC retreats and meetings in person was moved by Kai Martin and seconded by Steve Tubbs.

The motion passed unanimously. Below is the final body of the letter, dated August 21, 2021, from the Chair to the Superintendent, approved by the motion.

"The Cordell Bank National Marine Sanctuary Advisory Council (CBNMSAC) would like to request and express support for holding future retreats and meetings of the CBNMSAC in person. We feel that in-person gatherings would facilitate greater discussion of the topics and challenges facing the sanctuary and sharing information from our represented constituencies. Also, this would allow the council members, alternates, and staff members to refamiliarize themselves with each other or, in some cases, to meet for the first time since the COVID-19 pandemic started.

The Delta variant of this virus is expected to peak by early to mid-September and return to a baseline by mid-October. While we understand if COVID-19, government policies, or facility availability prevent this, we do request that the sanctuary staff investigate the feasibility of returning to in-person or hybrid virtual/in-person meetings, starting with the October 2021 retreat.

Thank you."

- Lilli noted the staff would follow all agency, local and facility guidance related to COVID-19 for holding meetings; she was not sure if technically, CBNMS could host a hybrid meeting. Maria affirmed that they look at county guidance for holding a meeting and would put in a request to NOAA for holding in-person meetings.
- Lilli will follow up with Kai on signing the final version of the letter.

### **Pacific Salmon and Steelhead, Climate Change, and CBNMS (Nate Mantua)**

- Nate Mantua introduced himself; he works for NOAA's Southwest Fisheries Science Center, and has been there since 2013. He also reviewed the variety of research connecting climate and natural resources, especially salmon, at the University of Washington. His undergraduate degree is in atmospheric science and his graduate studies were on understanding and predicting El Niño. He grew up in Bodega Bay. Nate leads his laboratory's climate ecology team and it focuses on salmon and steelhead in California. There were historically very abundant and occupied very diverse habitats.
- He showed a map with much of the central California habitat behind dams, with a loss of fish access to the habitats higher than the dams. He also discussed the loss of or degradation of habitat going back to the gold rush days and water use issues. These fish are extremely vulnerable to drought and climate change.
- Many populations have already been extirpated and most that are left listed as endangered. Some King/Chinook populations still have commercial and recreational fisheries; he explained where those were, and that in California, fishing is allowed during the fall run. The silver, or Coho Salmon is now scarce; it was historically abundant in the coastal California watershed. Steelhead, a rainbow trout that goes to the ocean and grows quickly are found in this region up into Northern California, anywhere water is connected to the ocean; many are listed, and some are doing well.
- He said climate kicks salmon and steelhead around everywhere with different impacts in different waters. The lifecycles of the California King and Chinook salmon have them spending different lengths of time in the ocean and fresh water. Steelhead have a wide range of fresh water rearing and ocean times.
- There are bottom up impacts at the base of the food web, from plankton to important forage items like krill, anchovies, and herring; their availability and their lipid content vary widely. Cold produces periods that usually support abundance of krill and forage fish, which support salmon. During warmer periods, the lipid content of the food web is lower, so there is less effective transfer to the higher trophic levels; that correlates with lower survival of salmon and steelhead and lower chick survival of seabirds. Seabirds are part of the food web when salmon go to sea; predators respond a lot to the changes in productivity in ways that can affect juvenile salmon.
- Seabirds have dramatically increased in the Gulf of the Farallones in the last 30 years. Studies have documented trends in trawl fishing, seabirds, whales, etc. When productivity is especially high, there tends to be a lot of juvenile rockfish distributed over a broad area out over the continental shelf, and seabirds forage over large area and eat a lot of rockfish. In less productive periods, they forage closer to shore and bring higher percentage of juvenile salmon back to their chicks. This can explain a lot of the variation in Central Valley fall run Chinook. Seabirds are probably a good indicator for other predators.
- They have seen variability with marine heatwaves, or high ocean temperatures that lingered. They have become a common feature in the Northeast Pacific. In the 2014 – 2016 period of warming, there were changes in species distribution and abundance, impacts on predators (such as a major die off of murrelets) and it was a rough time for salmon on much of the West Coast of the U.S. and Canada (though not uniformly). In California, the most productive waters were squeezed into smaller patches with narrow bands of cold water. Offshore, there was lots of blue water with less plankton in it, which was not the kind of water in which salmon and steelhead make a living. There was a boom of northern anchovy.
- This is connected to a new issue for California salmon. In January of 2020, people managing the hatchery system in the Central Valley noticed a lot of mortality of fry in the hatcheries, but could not find infectious agents affecting the fry. A thiamine bath helped them get swimming again; they had a thiamine or B1 deficiency which had not been documented before.
- Nate reached out to Dick Ogg and others to start getting a sense of this story. Salmon diet studies showed in 2020, 90% of what was in salmon stomachs was Northern anchovies; it had been a lot more

diverse in earlier years. Northern anchovies have an enzyme in their guts that destroys thiamine in predators that eat them. The scientists are also looking at the diet of the salmon, including lipid content and at the concentrations of things in salmon eggs. They do not yet have the answers.

- Upwelling plays a major role in CBNMS and in the Gulf of the Farallones. He referred to a recent study about future upwelling and the effect of that on temperature, oxygen levels, etc. Recent climate modeling study shows a range of possible futures for Sea Surface Temperatures, upwelling, nutrients, primary production, and dissolved oxygen. For the CBNMS region, outcomes depend on what happens with winds/upwelling. He is not sold that upwelling will increase in the future and thinks it be a mixed bag.

- Nate was recently part of a West Coast Climate Change Vulnerability Assessment for Salmon, focused on Endangered Species Act species that are threatened or endangered. Overall, the West Coast salmon stocks identified as most vulnerable to climate change/least able to adjust to differences, are: Chinook salmon in California's Central Valley, Coho salmon in California and southern Oregon, Snake River sockeye salmon, and spring-run Chinook salmon in the interior Columbia and Willamette River basins.

- These fish were already at risk without climate change as an added stress. There are recovery plans in place, but they mostly written before it was recognized how big a threat climate change is.

- He said we have a lot of options about how to make things better for salmon and steelhead in California, but climate change is coming fast and we are running out of time. Actions that promote resilience include protecting intact salmon habitat and viable populations and reducing existing stressors.

- Questions and answers ensued.

- One member asked if it was correct that Cordell Bank provided a food source for anadromous fish. Nate responded that the Bank is an incredible feature which rises up off shelf and is a productivity hot spot. It is one of the places salmon go to take advantage of the high productivity, especially in the spring and summer when cold water extends to the shelf break. He said there is not a lot of information about where steelhead spend their time in the ocean; the thinking is many do not stay in the California Current that long, that they make a trip up to British Columbia/Alaska and then spend a couple of years offshore before returning to their home rivers.

- Another member asked about diet shifts, with salmon not eating many shortbellies or krill and also noted there was a lack of juvenile crab floating on the surface on a regional basis. Nate said information about shortbelly rockfish and juvenile crab have been missing as the scientists have not gotten diet information for February and March, based on change in fishing, like they used to get in the 1950s. The herring stocks have been doing poorly. The ocean has changed a lot.

- Would upwelling be impacted by potential changes in wind in our area, if wind farms were installed? Nate said his laboratory had heard that the wind power industry wanted to connect with the fisheries industry, but had not gotten very far yet. His gut feeling was there would be a big effect on upwelling on a large scale, but it was something that could be addressed in the future.

- Does thiamine deficiency go away if anchovy is not a dominant part of the salmon diet? Nate answered that, in talking with people in the Great Lakes area who have studied captive salmon, even if salmon could get an alternate meal prior to spawning, that might be enough to boost thiamine content in their tissues and eggs, enough to make a difference. He said results from collecting forage fish in California this spring and summer should be released soon.

- There was a question about the thiamine study and effects on predators. Nate said he studied mostly the enzyme in the guts of the anchovy, the scrubbing of thiamine and how they use thiamine for their own needs. His hypothesis was it gives them a competitive advantage. He was not sure predator effects.

- Maria thanked Nate and asked if he had recommendations for how CBNMS could engage or support the protection or recovery of salmon. Nate hoped CBNMS could advocate beyond the sanctuary that this is a threat needs to be address and that we are running out of time. Very big impacts are ahead. One of the big failures of resource management is breaking up our resources in individual bins to manage and use them in isolation and we are facing some terrible consequences from that. Connectivity overall and between the pieces is important. We have a long way to go have since we have developed a society dependent on splitting them up; we have broken up the science that way too.

## **Public Comment**

- There was none.

## **Members' and Alternates' Reports** (advisory council)

Frank Borodic – noted tourism was booming, but there are variations in when restaurants and stores are open. Lots of people have been coming down because of the smoke.

Rob Taboada – in July, Marin County updated its Local Coastal Program, the land use plan that every local jurisdiction in the coastal zone has. The Board of Supervisors approved the update, but did not update the environmental hazards chapter. That will be debated and approved at a future board meeting. The Marin County website has the current documents and is good place to visit stay in tune on what will be coming up.

- Kai noted GFNMS touches the coast, and asked Maria if there were plans to send anything to the Board of Supervisors on that.

- Maria said there was nothing on the plate now for that, but if it is something the group wants her to bring back to the staff regarding hazards on the coast, to let her know.

- Rob said if she is not getting notifications on this, someone from GFNMS should let the County Planning Dept. know; Maria responded she would reach out to Jack Liebster.

Steve – has been involved with the Russian River Fly Fishers (RRFF) for many years and he is a fly casting instructor. This summer they met in person at a casting pond in Santa Rosa and they have been going instruction. RRFF is involved in Steelhead in the Classroom and a video to be used in that program in Sonoma County. He is on the review comm to give input and suggestions. He will share the video when complete. The Russian River Wild Steelhead Society has a new board and he is a part of it; not much has happened since the new board formed. They have funding with organizations that focus on steelhead, wild coho, and habitat enhancement. He is continuing to update the fly fishing club's Facebook page with postings from across the National Marine Sanctuary System, to keep people aware of the system as well as CBNMS. Many people have no idea CBNMS exists, he observed.

Scott Artis – said there has been quite a bit of recent news about blue carbon. He and his organization are particularly interested in hearing more about role of the sanctuary, climate change programs the staff works on, and future outreach on the topic. Salmon Protection and Watershed Network (SPAWN) floodplain restoration work has resumed on the former golf course in San Geronimo. Tractors are moving dirt through October. In the winter, they will plan things with their volunteers. He offered that, if people want to see both the old and new work, they can swing by.

Morgan Patton – the Environmental Action Committee ([EAC] of West Marin) staff is back in the office, wearing masks. Coming up, they hope to have live displays, including of Monarchs, as well as a movable CBNMS display in their office. EAC is also working on coastal issues with Marin County. They are working with the Friends of Fitzgerald Marine Reserve to get a docent program started at Duxbury Reef and have been working on training materials. Point Reyes National Seashore should be releasing a Record of Decision on their General Management Plan Amendment and will be co-managing lands with the Federated Indians of Graton Rancheria. She reviewed a couple of enforcement issues that had come up at the Seashore. On salmon, Marin Water is considering plans to reduce stream flows in Lagunitas Creek from November to March; EAC is promoting customers reducing their water usage. Kai suggested if Morgan sent the Marin Water information to Lilli, she could then send it to the CBNMSAC.

Dick – There was an assumption that fishermen would be able to harvest 60,000 - 90,000 salmon, but as of June, they doubled that; it is people that do the modeling, but salmon do what they want to do. He said they were assuming that the fish that should have gone up last year did not go up so there is a higher level of resource available to harvest/provide profit to commercial fisherman. Because of the way the seasons

have been modeled they have had short times in which they have been able to fish. They caught a lot at once which threw the markets into chaos and prices were lowered; he lost about \$10,000 in a few hours. Now they have an e-ticket opportunity to tell the California Department of Fish and Wildlife how much they caught, which could mean in-season management could be done. They have seen a huge volume of Coho salmon, many more than in the last few years. Crab season coming up. The recreational fishery will be impacted by the Risk Assessment and Mitigation Program (RAMP), with similar regulations as those imposed on the commercial fishery. He participates in working group calls on that and in the next few weeks, the opportunities will be clearer. Dick said he also does domoic acid testing for the state and that is happening in few weeks. He is still fishing until the end of September.

Noah Wagner – said they have certainly seen the increase in fishing at the marina, which has been 100% occupied everywhere.

Kai – he continues participating in the Joint GFNSMAC-CBNMSAC Working Group: Reducing Ship Strikes to Whales in Sanctuaries. Earlier the week of this meeting, the Pacific Merchant Shipping Association highlighted the three different options the Joint Working Group is reviewing and some slides depicting what that means. He shared that internally in his company to get some feedback on it. The global supply chain in serious sadness right now, so ships have slowed down, while still meeting their delivery windows. In future, if ship strikes are down, that could be a possible correlation.

Jeff Dorman – the Sixth Assessment of Intergovernmental Panel on Climate Change came out; it is a physical assessment of climate change. Separate reports will come out in subsequent months. This one has hard science about what is happening and why. The summary for policymakers was lengthy, and they may still need some science to interpret it. A takeaway is climate change is unequivocally happening because of humans and the change is climate has been 2° F. He provided some other points from the report, which also covered warming oceans and sea level rise. While we still continue to warm the atmosphere and Earth it is not too late; action is needed in very short time to affect that. He encouraged people to look at the summary for policymakers.

Christina Piotrowski – thanked Maria for her remarks earlier and was looking forward to getting to know her. She also thanked Lilli for providing her orientation to this advisory council. Gary Williams of the California Academy of Sciences was to go out in field, but that was postponed. They are hopeful about adding species collected in CBNMS or possibly GFNSMS to their collection and are working with an intern trying to build up the records in their system of Monterey Bay National Marine Sanctuary species. The staff, except for those involved with public visits to the Academy, are still working remotely.

LT Chris Bell – the U.S. Coast Guard's West Coast Port Access Route Study (PARS) is kicking off the week of this meeting. The study is being done to evaluate use of public waterways with tracking data and they want public comment about it. For example, are the existing waterways management measures adequate? The 30 x 30 plan has a lot of things changing off of California (like aquaculture, wind energy, and the military) but PARS spans the entire West Coast, including Los Angeles-Long Beach, Gray's Harbor and Puget Sound. He asked Lilli to send out the PARS information to the CBNMSAC.

- Kai noted if members and alternates had anything else they wanted to share, they could send it to Lilli so she could share it with the advisory council.

### **CBNMS Education, Resource Protection, and Outreach and Conservation Science Program Reports** (Jennifer Stock, Michael Carver, and Maria)

Education and Outreach: Jennifer talked about Get into Your Sanctuary Day; she participated in two virtual presentations for CBNMS, on August 4 and 5, "A Perfect Day for an Albatross" and "What's up down under? Discovering banks and seamounts in six national marine sanctuaries".



- She worked with GFNMS on a travel-tourism piece for the Marin & Sonoma Coast Guide, which is distributed up and down the coast; it highlighted ocean acidification, the Dungeness Crab toolkit infographic, and blue carbon work in Tomales Bay.
- On virtual classroom visits, she just had an intern start, Margaret Whitlock, a Nancy Foster Scholar Graduate Fellow. She went over what Margaret would be doing and said she would start with the Winged Ambassadors curriculum.
- Jenny is doing a webinar the evening of this advisory council meeting for the Sonoma Land Trust on the seafloor, for Trust members and the public. For the upcoming GFNMS online Sharktoberfest, there will be information about CBNMS and the sharks seen within the sanctuary.
- She said that there are some new education pages on the CBNMS website, a page to explore seabirds and a web scavenger hunt. The education pages have been overhauled as a whole and will go live soon.
- The Bay Area Underwater Explorers has a permit enabling them to dive in the sanctuary and they are interested in working with the staff on gaining 360 video footage. People from ONMS may come out, and there is potential for an creating an immersive narrated video, obtaining imagery, and having a lesson plan. This may or may not happen this year. The ONMS website has virtual reality experiences posted that the staff took in other national marine sanctuaries.
- Bear Valley Visitor Center exhibits on CBNMS and GFNMS are currently being fabricated; Jenny hopes to work with Point Reyes National Seashore staff to install them this fall.
- A replacement sanctuary sign, with new branding and logo, will be go in at the Spud Point Marina.

Resource Protection: Michael reminded the group of the vision for CBNMS resource protection, and that the staff uses regulatory and non-regulatory tools to protect sanctuary resources as well as uses that are compatible with ecosystem health.

- He said back in 2017, working with Lilli and the rest of the staff, he did a greenhouse gas emissions inventory for CBNMS, divided between stationary and mobile sources. We have done a lot in our offices to make them energy efficient. A lot of the CBNMS emissions are in the mobile category - ground transportation, vessel usage, commuting, etc. Due to COVID-19, we know there has been a reduction in CBNMS emissions, but those have not yet been assessed.
- Two enforcement coordination meetings, one in May and one in August, were held with all relevant enforcement agencies. The August one focused on Tomales Bay [in GFNMS]. Once enforcement patrol was done in Tomales Bay and another one is planned for next week.
- In 2020, the Vessel Speed Reduction (VSR) led to a reduction of emissions of 25 tons of greenhouse gases, and ocean noise by 4 decibels. This year, 2021 mid-season report cards go soon. He hoped there would be higher cooperation levels than last year, which was 64%. Fiscal Year 21 funds were allocated towards quantifying the risk reduction of additional VSR scenarios. An Economic Assessment of the VSR was completed August 22; it is undergoing internal review, with comments due back to National Ocean Service Chief Economist by September 10.
- On the CBNMS Condition Report, he highlighted a workshop that was held on the status and trends of human activities. He thanked Lilli and others who helped with the workshop. Some findings presented in the workshop were: the mean speed of vessel traffic in CBNMS decreased about 3 knots from 2009-2020; the size of commercial ships has increased as the number of ships stayed relatively constant; ship strikes and entanglements of whales continue to be a significant cause of human-induced mortality of whales; and Vessel Monitoring System and Automatic Identification System records show an increasing trend of vessel use in CBNMS (results in a bias based on carriage requirements).
- Lilli gave an overview of permits and Letters of Authorization (LOAs) issued and pending since the April CBNMSAC meeting; five permits were issues and 3 LOAs under the Superintendent's permit were issues. These allow activities that would otherwise be prohibited by the regulations for CBNMS. The permits were for continued long-term ecological research on cetaceans; Sea Education Association activities during an academic session at sea; continued surveys for the Integrated Ecosystem and Pacific Hake Acoustic-Trawl Survey; a new Superintendent's permit; and continuation of the Bay Area Underwater Explorers' Cordell Bank Exploration and Monitoring project. The LOAs were for continued

operation of oceanographic research buoys/moorings; continued operation of a Noise Reference Station for soundscape characterization; and for a seafloor characterization project, using a remotely operated vehicle (ROV).

Conservation Science: Dani Lipski provided an update on this year's field season.

- Starting with the Applied California Current Ecosystem Studies (ACCESS) project, she reviewed how it was a partnership among CBNMS, GFNMS and Point Blue. They completed the June and July cruises using the R/V Fulmar, getting in a lot of the planned work despite some weather. They worked with minimal crew on board due to COVID-19 restrictions. This year the sampling includes eDNA, done via a new partnership with Monterey Bay Aquarium Research Institute. They collected water samples at the surface and at depth. Scientists can look at the DNA in the samples to indirectly determine the diversity in the ocean. They also added another partnership with the National Marine Fisheries Service to look at acoustics, by deploying drifting acoustic buoys on ACCESS cruises, that are picked up later. So far, they are seeing fairly typical ocean conditions, decent productivity and prey availability, and good numbers of humpback whales and seabirds. The last cruise of 2021 is September 18-26 on R/V Fulmar

- There is an ongoing joint CBNMS-GFNMS ROV cruise now, which was supposed to have been conducted last year but was cancelled due to COVID-19. The funds, from various sources were able to be carried over to this year. The GFNMS leg was completed and the CBNMS leg started 8/25; they were able to get out with Gary Williams and Rachel Pound and the Marine Applied Research & Exploration team, but strong offshore winds prevented them going out this day. Priorities for the CBNMS leg, which goes through 8/30, is to continue to characterize and monitor sites on Cordell Bank, explore areas of the continental slope below 200 meters, and to survey areas on the shelf to compare different levels of trawl activities and protection. Gary is helping with collections and to identify corals.

- Last year, the hypoxia monitoring in CBNMS, of oxygen and other variables, was done by Bodega Marine Laboratory (BML) as the CBNMS staff could not get out into the field. Now, Dani and Rachel can go out on the BML vessel. Rachel helped to recover the mooring and replace it with a new mooring, and they also recovered a drifting acoustic buoy.

- This fall, the Noise Reference Station will be recovered; this group heard about that work at an earlier meeting from a presentation by Samara Haver. Plans are to swap it out (the fourth deployment) at the end of September or in early October. They will recover the low frequency sound data (like whale and ship sounds) that was recorded since the previous deployment.

- Dani also provided an update on the process to produce a new CBNMS Condition Report. The data indicator workshops were done last fall and nine status and trends workshops were conducted this spring. About one third of the data from CBNMS monitoring programs for the resource questions, and data also came from partners and reports. All of the CBNMS staff has been working on various parts of the report process. Currently, writeups from the workshops are being done. The report will also cover how the sanctuary has responded to pressures on it. Once ready, drafts will go out to experts who participated in the workshops. A draft will be provided to the CBNMSAC for review, likely at some point in the winter.

- A member asked about the use of the acoustic data from the drifting acoustic buoys. Dani said the data is used for a variety of programs; NMFS is working to understand the distribution of various species. NMFS also has cruises to observe animals; the data from the cruises can be used when the scientists are not out on those cruises. She said she is also interested in seeing, for CBNMS, data from outside the area covered by the Noise Reference Station.

#### **Update of the Joint GFNSMAC-CBNMSAC Working Group: Reducing Ship Strikes to Whales in Sanctuaries (Jeff)**

- Jeff said the overall goal from the sanctuaries is to reduce the risk to endangered and threatened blue, fin and humpback whales of lethal strikes by ships by 50% in GFNMS and CBNMS.

- There are three members in this group from the CBNMSAC: him (he is a co-chair of the working group), Dick, and Kai. From the GFNMSAC, the group members are Julian Rose (the other co-chair of the working group), Sarah Bates, Kathi George, and John Berge. He listed the constituency each person

represents. Jess Morton, who works for the Greater Farallones Association, is also part of the group. Part of their work has been to decide the size of group; it is small and nimble, and they are asking outside experts to join meetings as needed. They had the first group meeting about a month back and two more are planned. The group's goal is to produce a report by the end of the year.

- At the first meeting, Maria laid out the background to this point and three options for the group to consider. Michael gave a presentation similar to the one he gave to the CBNMSAC on the need to reduce lethal ship strikes of endangered whales. Jaime presented on who might measure the risks associated with various changes to vessel traffic schemes, etc. and how various schemes might impact whales. The group members left that meeting with the idea that the research, conservation, maritime activities and fishing members of the working group would contact their constituents to see what those folks thought about in achieving the goal. At their next meeting, they will talk about that, then move forward from there. He said he had a call with research folks talk about the topic.

Maria thanked the CBNMSAC and said having this group helps us do a better job of protecting CBNMS. She looked forward to getting to know everyone better.

Kai adjourned the meeting at 12:50 PM.