

# Welcome to the Feb 10th CBNMS-GFNMS Virtual SAC Meeting



**PLEASE MUTE  
yourself to reduce  
background noise.**

If you are using a  
phone for audio:  
Use \*6 to mute and  
unmute.

+1 314-474-2835  
PIN: 857 338 801#

The image shows a Zoom meeting control bar with several icons and callouts. The icons from left to right are: a meeting code 'a-z123', a microphone icon, a camera icon, a 'CC' icon, a hand icon, an up arrow icon, a vertical ellipsis icon, a red phone icon, an information icon, a people icon, a chat icon, and a share screen icon. Callouts with blue lines pointing to the icons are: 'Meeting code' (points to 'a-z123'), 'Turn mic on or off' (points to the microphone icon), 'Turn camera on or off' (points to the camera icon), 'Turn captions on or off' (points to the 'CC' icon), 'Raise your hand' (points to the hand icon), 'Share your screen or give presentations' (points to the up arrow icon), 'Leave meeting' (points to the red phone icon), and 'Change settings, background, layout, and more' (points to the vertical ellipsis icon).

# Roll Call: GFNMS Advisory Council



1. Barbara Emley, *Secretary* (Commercial Fishing/Primary)
2. Sarah Bates (Commercial Fishing/Alternate)
3. George Clyde (CAL Marin/Primary)
4. Richard James (CAL Marin/Alternate)
5. Cea Higgins (CAL Sonoma-Mendocino/Primary)
6. Michael Kleeman (CAL Sonoma-Mendocino/Alternate)
7. Kris Lannin Liang (CAL SF-SM/Alternate)
8. Francesca Koe (Conservation/Primary)
9. Kathi George (Conservation/Primary)
10. Dick Ogg (Conservation/Alternate)
11. Bibit Traut, *Vice Chair* (Education/Primary)
12. Mary Miller (Education/Alternate)
13. John Berge (Maritime Activities - Commercial/Primary)
14. Julian Rose (Maritime Activities - Commercial/Alternate)
15. Abby Mohan, *Chair* (Maritime Activities - Recreation/Primary)
16. Ezra Bergson-Michelson (Youth/Primary)
17. Owen Youngquist (Youth/Alternate)

## Governmental Members

18. Mark Gold (CA Natural Resources Agency/Primary)
19. Michael Esgro (CA Natural Resources Agency/Alternate)
20. Craig Kenkel (NPS/Primary)
21. Ben Becker (NPS/Alternate)
22. LT Chris Bell (USCG/Primary)
23. LT Lelea Lingo (USCG/Alternate)
24. Chris Barr (USFWS/Primary)
25. Gerry McChesney (USFWS/Alternate)
26. Jennifer Boyce (NMFS/Primary)

## Sanctuary Representatives

27. Chris Mobley (CINMS/Primary)
28. Mike Murray (CINMS/Alternate)
29. Lisa Wooninck (MBNMS/Primary)
30. Dawn Hayes (MBNMS/Alternate)

# Roll Call: CBNMS Advisory Council



1. Frank Borodic (CAL Marin County)
2. Rob Taboada (CAL Marin County)
3. Frank Capurro (CAL Sonoma County)
4. Steve Tubbs (CAL Sonoma County)
5. Scott Artis (Conservation)
6. Morgan Patton (Conservation)
7. Irma Cuevas, *Vice Chair* (Education)
8. Dick Ogg (Fishing)
9. Noah Wagner (Fishing)
10. Chris Hendry (Maritime Activities)
11. Kai Martin, *Chair* (Maritime Activities)
12. Jeff Dorman (Research)
13. Chrissy Piotrowski (Research)

## Governmental Members (Non-voting)

14. Lisa Wooninck (MBNMS/Primary)
15. Dawn Hayes (MBNMS/Alternate)
16. Kynan Barrios (NMFS OLE/Primary)
17. LT Chris Bell (USCG/Primary)
18. LT Lelea Lingo (USCG/Alternate)

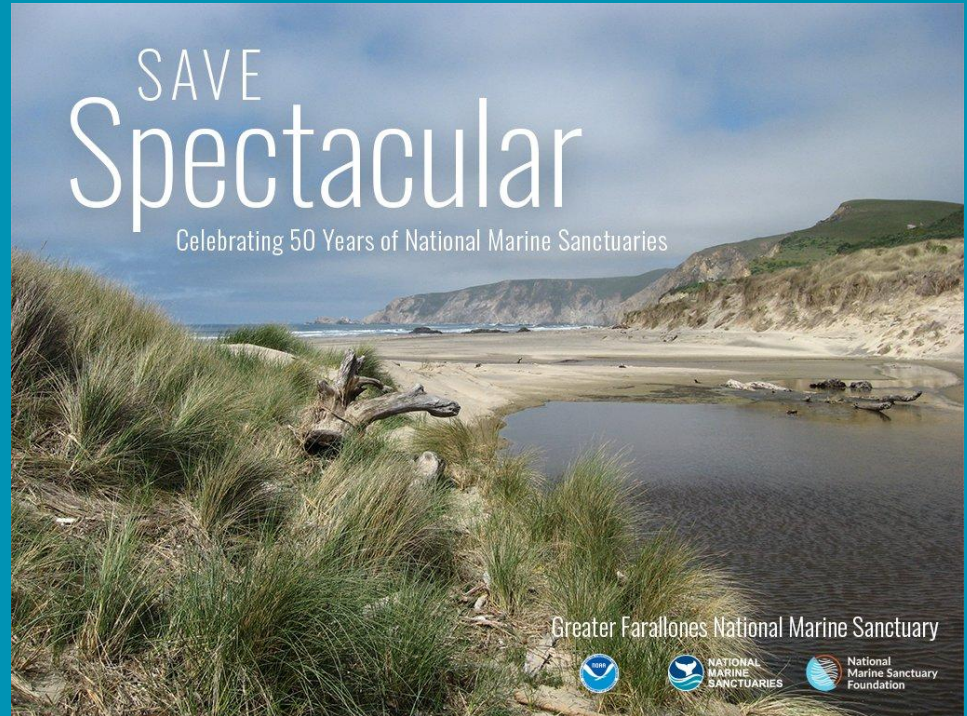
| <b>Time</b> | <b>Topic</b>   | <b>Lead</b>  |
|-------------|--|--|
| 9:00-9:10   | Welcome, Roll Call, Review Agenda  | Abby Mohan, GFNMSAC<br>Chair<br>Kai Martin, CBNMSAC<br>Chair               |
| 9:10-9:40   | GFNMS SAC Business <ul style="list-style-type: none"> <li>- Approve GFNMS Dec meeting highlights (<b>Action Item</b>)</li> <li>- Swear in new GFNMS members</li> <li>- Potential charter amendment (<b>Action Item</b>)</li> <li>- Brief update by GFNMS Abandoned and Derelict Vessel Subcommittee</li> </ul> | Abby Mohan, GFNMSAC<br>Chair<br>Jordan Gorostiza, SAC<br>Coordinator       |
| 9:40-10:00  | Greater Farallones and Cordell Bank National Marine Sanctuaries Superintendent's Report <ul style="list-style-type: none"> <li>- Covid-19 re-entry plans and field operations</li> <li>- Updates on sanctuary program activities</li> <li>- Permits</li> </ul>   | Maria Brown,<br>GFNMS/CBNMS<br>Superintendent                              |
| 10:00-10:10 | Sanctuary Enforcement and Response Update  | Max Delaney,<br>GFNMS/CBNMS<br>Kynan Barrios, NOAA OLE<br>Chris Bell, USCG |
| 10:10-10:20 | Monterey Bay National Marine Sanctuary Superintendent's Report   | Lisa Wooninck, MBNMS<br>Superintendent                                     |
| 10:20-10:30 | <b>PUBLIC COMMENT</b>  |  |
| 10:30-10:40 | <b>BREAK</b>   |  |
| 10:40-12:40 | Joint GFNMSAC-CBNMSAC Working Group on Reducing Ship Strikes to Whales in Sanctuaries: Recommendations, Discussion, and Action ( <b>Action Item</b> )  | Jeff Dorman, CBNMS<br>Julian Rose, GFNMS                                   |
| 12:40-1:00  | <b>BREAK</b>   |  |
| 1:00-1:30   | Presentation on Blue Carbon in Marine Protected Areas  | Sara Hutto, Ocean Climate<br>Program Coordinator                           |
| 1:30-2:00   | CBNMS SAC Business <ul style="list-style-type: none"> <li>- Approve CBNMS Nov meeting highlights (<b>Action Item</b>)</li> <li>- Charter Amendment 1 update</li> </ul>   | Kai Martin, CBNMSAC<br>Chair<br>Jordan Gorostiza, SAC<br>Coordinator       |
| 2:00        | <b>WRAP UP &amp; ADJOURN</b>   | Kai Martin, CBNMSAC<br>Chair   |

*The Advisory Council may take action on any of the above items on the agenda. Times of agenda items are subject to change. Public comment period will remain as advertised.*





- Approve December meeting highlights (**Action**)
- Introducing and swearing-in new GFNMS members
- Potential charter amendment (**Action**)
- Update from Vessel Incidents Subcommittee



# GFNMS SAC Oath



I, \_\_\_\_\_, as a duly appointed member of the Greater Farallones National Marine Sanctuary Advisory Council, established under the National Marine Sanctuaries Act, hereby promise to assist in achieving the sanctuary program mission to conserve, protect and enhance the biodiversity, ecological integrity and cultural legacy of this special underwater place.

I recognize my responsibility to serve as a knowledgeable trustee of the sanctuary's resources and will always be protective of the public interest in those resources. I commit myself to uphold the provisions and standards set forth in the council charter, and I shall conduct myself accordingly.

# Vessel Incidents in GFNMS Subcommittee

Members:

Chair: Cea Higgins

George Clyde

Kris Lannin Liang

..... (insert name  
here)

GFNMS Support:

Jordan Gorostiza

Max Delaney

Karen Reyna





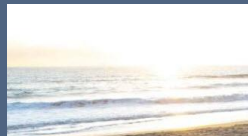
# Areas of Recommendations

- Sanctuary Regulations (Management Plan review)
  - Sanctuary Actions
- NOAA, OLE, OGC, & other enforcement partners
- Funding Vessel removal (dedicated source)
- Coordination with partner agencies, affected communities, private & public landowners
- Uninsured & underinsured vessels
  - Legal remedies for compensation



# Technical Experts

- Technical experts list:
  - NOAA/OLE/OGC
  - USCG
  - National/State/Regional Parks\*
  - OSPR\*
  - EPA
  - Division of Boating and Waterways
  - State Lands Commission
  - Counties (San Mateo, Marin, Sonoma; OES/Fire Depts. and Sheriff's Office; reps from Mendocino County [south of Point Arena])
  - SAC Members with expertise (such as USGC, Maritime, Commercial Fishing, NPS)
  - Other Sanctuary sites
- Coordination/Communication:
  - National/State/Regional Parks\*
  - OSPR\*
  - BLM
- *Asterisk (\*) means the entity could fall under both lists*



# Meeting Schedule & Next Steps

*Meeting 1: Review Subcommittee membership, develop goals and objectives, need for technical information, meeting topics, and schedule*

*Meeting 2: Review sanctuary and other pertinent agencies' regulations and programs to address vessel incidents/discuss and draft recommendations*

- Max Delaney/Karen Reyna (GFNMS/CBNMS) presentation
- 1. GFNMS & partners current response to ADV & grounded vessels
- 2. NOAA regulations/authority
- 3. Summary of NOAA enforcement cases
- 4. GFNMS response to SAC Resolution
- 5. Summary of Blue Ribbon & Pacific States Documents
- 6. Storymap (If ready)
- 7. Case study on Marion



*Meeting 3: Enforcement on vessel incidents in the sanctuary/discuss and draft recommendations*

*Meeting 4: Funding opportunities to address vessel incidents in the sanctuary/discuss and draft recommendations*

*Meeting 5: Agency and Community Coordination (Cost-sharing, Notification, Debris and Vessel Clean-up) on Vessel Incidents in the sanctuary/discuss and draft recommendations*

- Flag issues that may be regional in scope (West Coast Sanctuaries including CINMS, OCNMS, and MBNMS)
- Identify partners on the northern boundary of the sanctuary

*Meeting 6: Discuss and Finalize Package of Draft Recommendations for the SAC*



# GFNMS/CBNMS Superintendent's Report

Maria Brown, Superintendent



## Administration and Operations

- Maximum telework continuing
- Completed Facility Assessment for our Crissy Field campus
- Assessing GFNMS/CBNMS vessel needs





# GFNMS/CBNMS Superintendent's Report

Maria Brown, Superintendent



## Conservation Science

- Beyond the Golden Gate Research Symposium (<https://sfbaynerr.sfsu.edu/BGGR>)
- GFNMS publishes comprehensive Tomales Bay eelgrass inventory
- Planning ACCESS and hypoxia monitoring for 2022
- CB & GF Condition Report progress



Photo: R. Pound/CBNMS

University of California at Davis Bodega Marine Lab technician deploying the hypoxia mooring in CBNMS.

# GFNMS/CBNMS Superintendent's Report

Maria Brown, Superintendent



## Progress on CBNMS and GFNMS Condition Reports

- CBNMS draft condition report question narratives to undergo expert review in February
- Progress on resource protection and maritime heritage parts of the GFNMS condition report



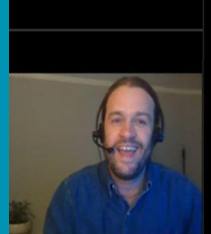
# GFNMS/CBNMS Superintendent's Report

Maria Brown, Superintendent



## Resource Protection

- GFNMS/CBNMS shared data on whale ship strikes with the US Coast Guard for the Pacific Port Access Route Study (PARS)
- GFNMS Seabird Protection Network Presents 'Secret' Sanctuary Sights to Aircraft Pilots
- CA Fish and Game Commission considering Tomales Bay aquaculture lease amendment



## 10 Secret Sights Only Pilots Can See

*and how to fly the California Coast like a pro*





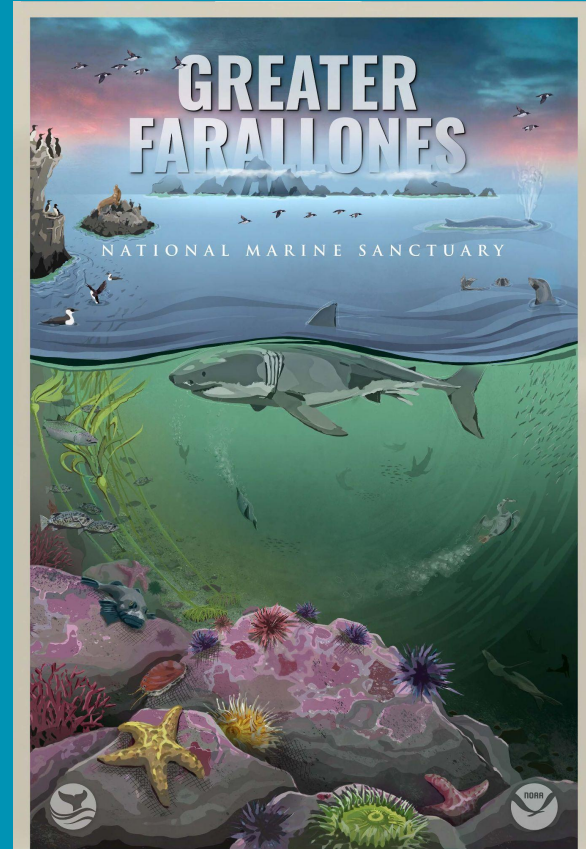
# GFNMS/CBNMS Superintendent's Report

Maria Brown, Superintendent



## Education and Outreach

- GFNMS Oceans After School program reaches 88 students in Fall 2021
- GFNMS Poster released
- CBNMS Poster in development
- CBNMS staff host NSF-funded fellow from San Francisco State University



# GFNMS/CBNMS Superintendent's Report

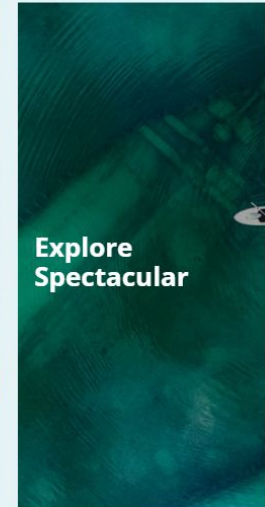
Maria Brown, Superintendent



## Office of National Marine Sanctuaries 50th Anniversary (<https://sanctuaries.noaa.gov/50/>)

### *Planned CBNMS/GFNMS 50th Anniversary Activities*

|                       |                                   |
|-----------------------|-----------------------------------|
| February - June 2022  | 50 Programs in 50 States          |
| February - June, 2022 | Sea the Future video series       |
| April 7-8, 2022       | International Ocean Film Festival |
| September 24, 2022    | Sharktoberfest                    |
| TBD                   | 50th Anniversary Celebration      |



| Permit Type            | Organization  | Project   | Effect. Date         |
|------------------------|---|---|----------------------|
| Research and Education | Jaclyn Schneider (Greater Farallones Association)               | Long-term Monitoring Program and Experiential Training for Students (LiMPETS)(within GFNMS and MBNMS, at multiple intertidal sites).  | Dec 2021 to Dec 2024 |
| Research               | Dr. Mark Baumgartner (Woods Hole Oceanographic Institution)     | Developing Near Real-time Passive Acoustic Whale Detection Capability for Mitigating Ship Strikes in the San Francisco Region (within GFNMS near the Farallon Islands).                                 | Dec 2021 to Dec 2024 |
| Research               | Dr. Piero Mazzini, Ph.D. (Virginia Institute of Marine Science) | Collaborative Research: River Plume-cape Interaction - Plume Separation from the Coastal Wall, Vorticity Generation and Fresh Water Retention (Within GFNMS, at two locations offshore of Point Reyes). | Jan 2022 to Mar 2022 |
| <b>Under Review</b>    |   |   |                      |
| Education              | Jane Reifert (IA Worldwide, Inc. [aka Incredible Adventures])   | The Adventures in White Shark Education and Research Continue (Within GFNMS, at Southeast Farallon Island (during the Fall months only).  | TBD                  |

# GFNMS/CBNMS Enforcement & Response

Max Delaney, CBNMS/GFNMS



## Update on *American Challenger*

- Date of Incident: 3/5/21
- Location: North of Dillon Beach in Marin County
- Description: 90-foot steel-hulled vessel grounded along the rocky shoreline
- Response Update:
  - A Unified Command between the U.S. Coast Guard, California Dept. of Fish and Wildlife OSPR, Marin County Sheriff's Office of Emergency Services, and GFNMS continues to work on response and salvage planning
  - US Coast Guard Commandant has approved Destruction Memo / Sector SF participation in response
  - EPA led drone overflight surveys conducted in December 2021
  - Marine Debris cleanup planned for February/March 2022
  - Vessel position has shifted; Salvage Plan to be revised after winter swells subside



# MBNMS Superintendent's Report



## Greater Farallones and Cordell Bank Advisory Council meeting February 10, 2022

Lisa Wooninck, Superintendent



# Anniversary Events



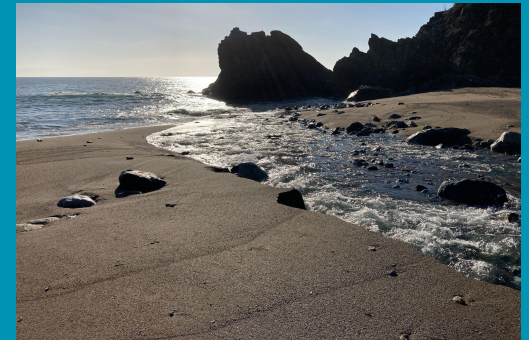
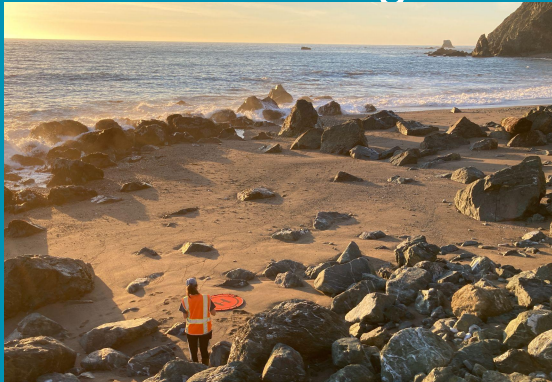
## Planning for MBNMS 30th (Sept 18)/ONMS 50th (Oct 23)

- Whalefest - Mar 19 and 20: Science symposium and family friendly exhibits on Monterey Wharf and Plaza
- **Shared Adventures - July 9: recreation for 'all abilities' with a focus on recreational fishing from the SC wharf**
- Stamp unveiling with USPS - Aug 5 at Sanctuary Exploration Center
- **Coastal Cleanup Day - Sept 17**
- Sanctuary Fest - Sept 18: family friendly exhibits on SEC Plaza and Santa Cruz Wharf

# MBNMS Research



- *Science informing resource management for Monterey Bay National Marine Sanctuary* by Dr. Andrew DeVogelaere on January 27, 2022 at the Moss Landing Marine Lab Seminar Series
  - Recording of the seminar is available at: [MLML.SJSU.edu](http://MLML.SJSU.edu)
- Black abalone survey completed on January 19, 2022 at Big Creek in Big Sur
  - Recent debris flows re-buried endangered black abalone
  - Drone flights to track sediment movement were completed



# MBNMS Education



## Communications

- Web story published on [Black Abalone Rescue and Recovery Project in Big Sur](#)
- 2021 MBNMS Accomplishment Report

## Signage

- Developing new signs in Pacific Grove, with addition of Whale Trail interpretive signage found along the West Coast

WELCOME TO THE WHALE TRAIL PACIFIC GROVE

**Watch for Whales**  
Monterey Bay National Marine Sanctuary offers some of the best wildlife viewing in the world, including at least 36 species of marine mammals! Search for heart-shaped blows of gray whales, tall dorsal fins of orcas, or feeding humpback and blue whales. You can see amazing marine life at the Whale Trail's shore-based sites at any time of the year. What will you discover?

**Gray Whale** Adult length: 35-50 feet  
Look for gray whales in winter and spring, as they migrate close to shore from their Arctic and northern feeding grounds to their Mexican and southern California calving areas.

**Blue Whale** Adult length: 65-100 feet  
Endangered blue whales, the largest animals ever to have lived on Earth, feed here in summer and fall on huge swarms of krill. Scan the horizon for their tall, slender blows rising to more than 25 feet.

**Risso's Dolphin** Adult length: 8.5-13 feet  
Risso's may be seen any time of year in pods ranging from 10 to 1,000 animals. These active dolphins are deep divers and mainly hunt at night for squid.

**Bottlenose Dolphin** Adult length: 8-12 feet  
Bottlenose dolphins are highly acrobatic and social, with a distinct bottle-like snout. You can often see this solid gray dolphin playing in the surf year round.

**Humpback Whale** Adult length: 45-50 feet  
Commonly seen in summer and fall, humpback whales feast here on shrimp-like krill and schools of anchovies and sardines. They are famous for leaping clear of the water and landing with a thunderous splash.

**Orca (Killer Whale)** Adult length: 26-32 feet  
Orcas, or killer whales, are the largest member of the dolphin family. Highly social and intelligent, these top predators live in tightly-bonded family groups called pods.

ILLUSTRATIONS COURTESY OF JERRY FORBES NOT TO SCALE

Report your whale sightings using the Whale Alert app



**Please unmute yourself  
when called upon to provide  
your verbal comment.**

**(Please note that written comment will be  
accepted until Friday, February 11th at 5pm PT)**



BREAK – We will return at 10:45 AM. Enjoy  
this photo of Cordell Bank!

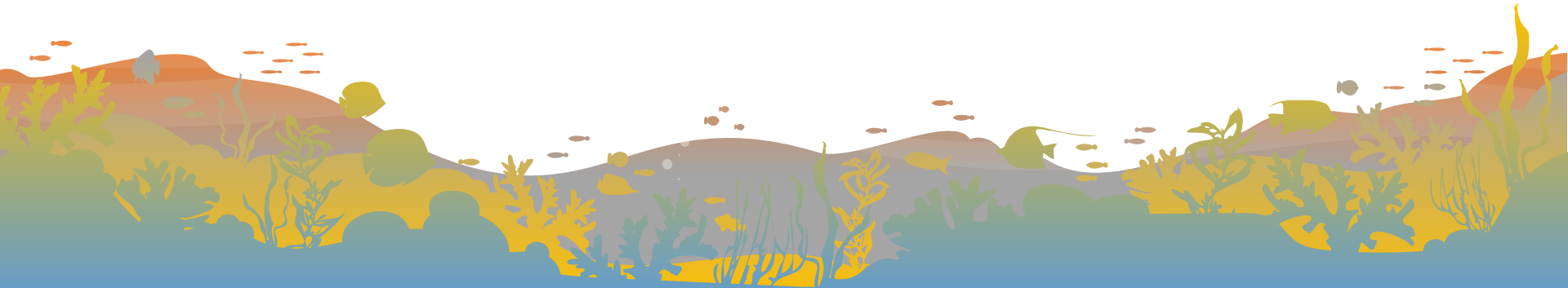


# SAVE Spectacular

Celebrating 50 Years of National Marine Sanctuaries

# 2021-22 Greater Farallones & Cordell Bank National Marine Sanctuaries Advisory Councils

## **Joint Ship Strike Working Group**





# Ship Strike Working Group Members

2021-22 Greater Farallones & Cordell Bank  
National Marine Sanctuaries Advisory Councils  
Joint Ship Strike Working Group

## Final Report

For Review by the Greater Farallones and Cordell Bank National Marine Sanctuaries Advisory Councils

*Prepared by the Joint Ship Strike Working Group Co-Chairs and Members*



*This working group is a subunit of the Advisory Councils of the Greater Farallones and Cordell Bank National Marine Sanctuaries. The opinions and findings of this publication do not necessarily reflect the position of the Advisory Councils, the Office of National Marine Sanctuaries, and the National Oceanic and Atmospheric Administration.*

## GFNMS Advisory Council Members

Sara Bates (Commercial Fishing)  
John Berge (Shipping/Maritime)  
Kathi George (Conservation)  
Jaime Jahncke (Research)  
Julian Rose (Shipping/Maritime)

## CBNMS Advisory Council Members

Jeff Dorman (Research)  
Kai Martin (Shipping/Maritime)  
Dick Ogg (Commercial Fishing)

## Non-Advisory Council Members

Jessica Morten (Conservation)

## GFNMS/CBNMS Staff Support

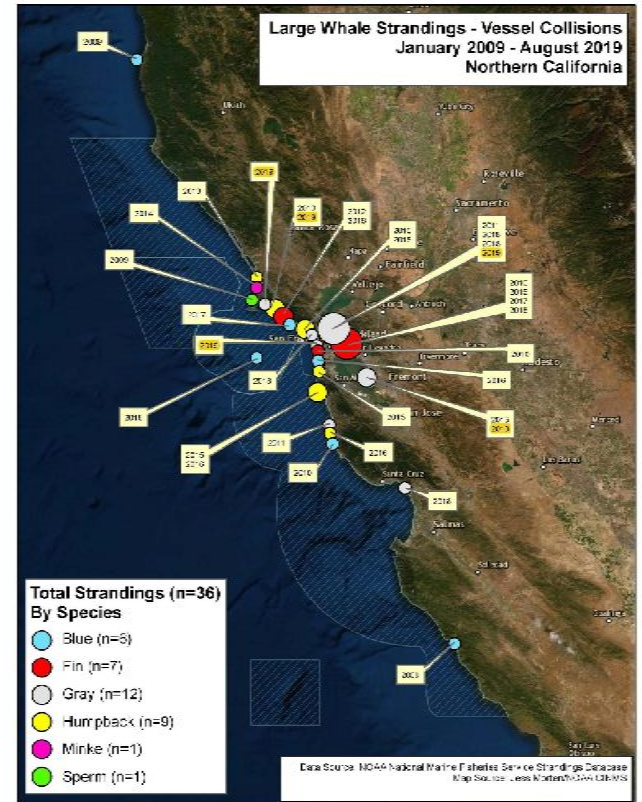
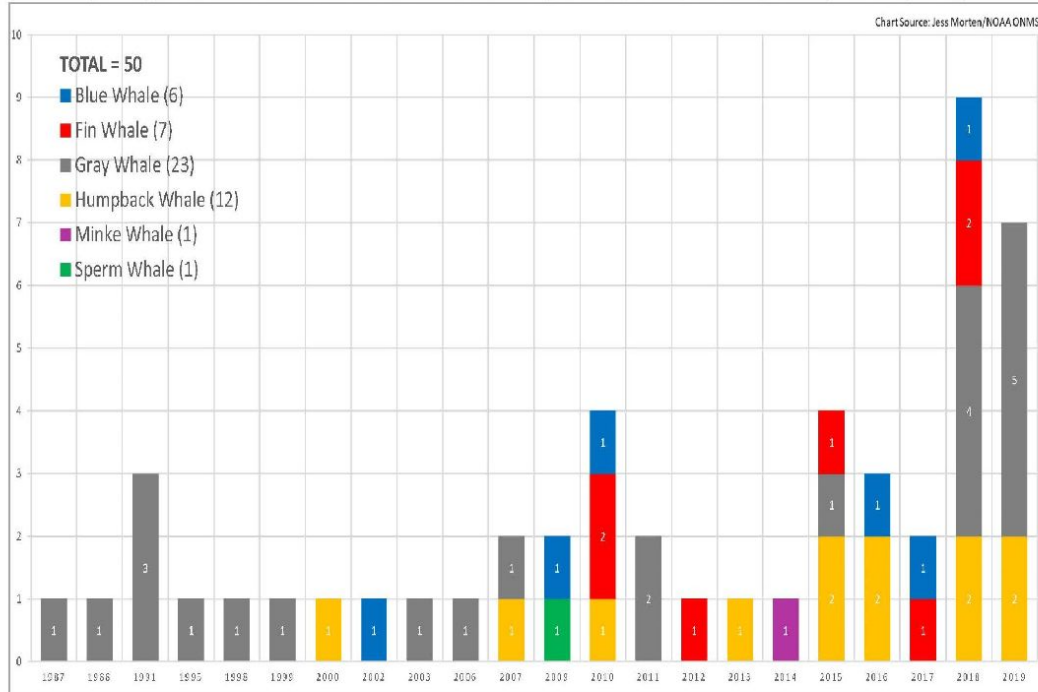
Michael Carver  
Alayne Chappell  
Jordan Gorostiza

# Ship Strikes in the SF Bay Area

## Recorded Fatal Ship Strikes on Large Whales in SF Bay Counties\* - 1986-2020 – By Species

Source: NOAA NMFS Strandings Database

(Note: only years with recorded data are shown – \*includes data for Sonoma, Marin, Contra Costa, Alameda, San Francisco, San Mateo, and Monterey Counties)



# Prior Ship Strike Reduction Efforts



## VESEL STRIKES AND ACOUSTIC IMPACTS



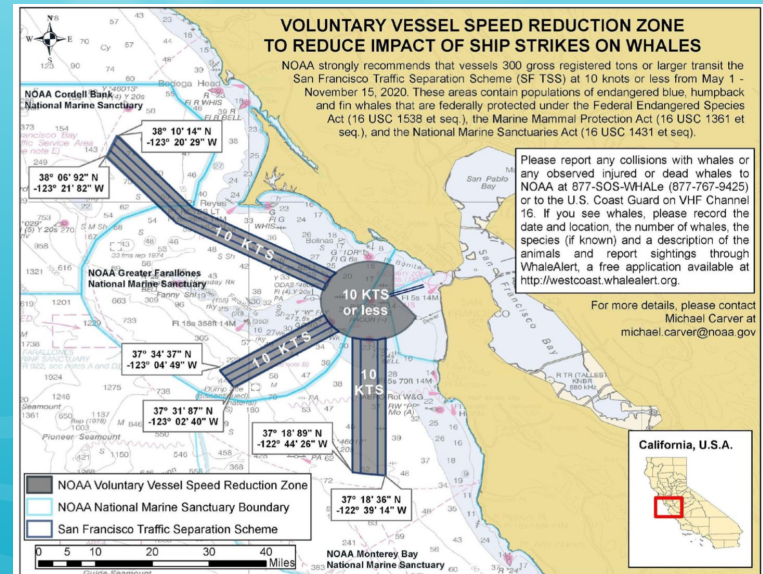
## GULF OF THE FARALLONES AND CORDELL BANK NATIONAL MARINE SANCTUARIES

*Sanctuary Advisory Council Report to the Gulf of the Farallones and Cordell Bank National Marine Sanctuaries*

June 2012

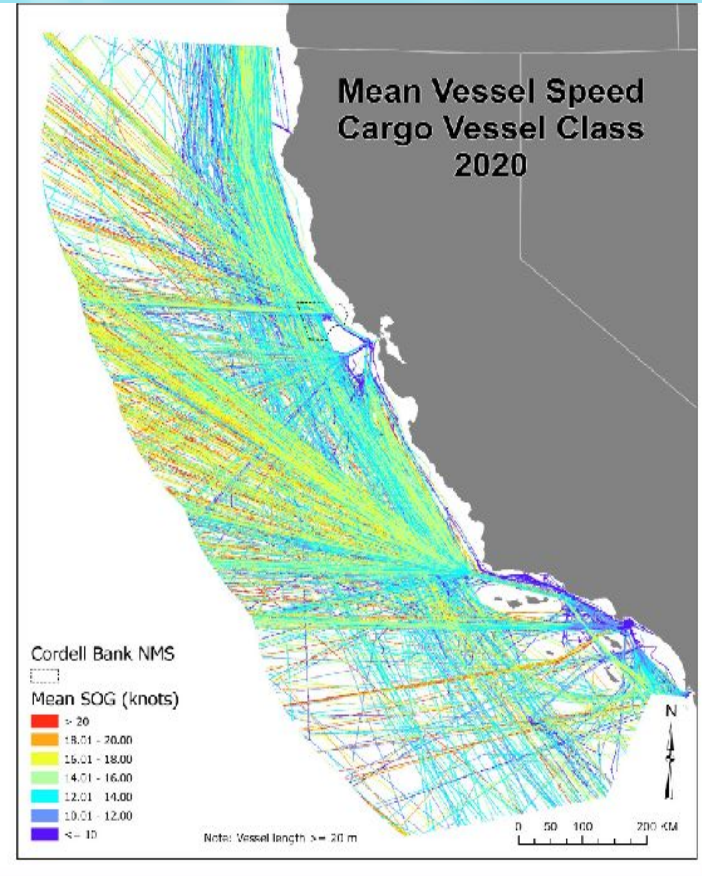
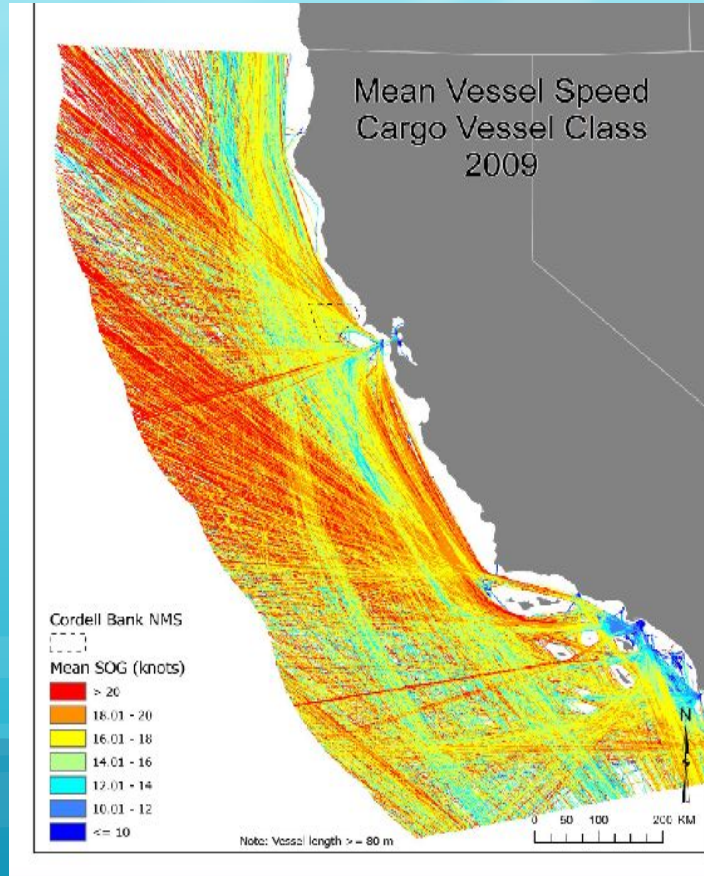
## 2012 Outcomes:

- Modified Shipping Lanes
- Dynamic Management (Seasonal VSR)
- Whale Sighting Network
- Incentives for Shipping Companies
- Acoustic Outcomes





# Vessel Speed Reduction Results




# Research on Ship Strikes

Vol. 43: 145–166, 2020  
<https://doi.org/10.3354/esr01056>

ENDANGERED SPECIES RESEARCH  
 Endang Species Res

Published September 24

OPEN ACCESS 

## Estimating effectiveness of speed reduction measures for decreasing whale-strike mortality in a high-risk region

R. Cotton Rockwood<sup>1,\*</sup>, Jeff Adams<sup>2</sup>, Greg Silber<sup>3</sup>, Jaime Jahncke<sup>1</sup>

<sup>1</sup>Point Blue Conservation Science, Petaluma, California 94954, USA  
<sup>2</sup>National Marine Fisheries Service, Office of Protected Resources, Silver Springs, Maryland 20910, USA  
<sup>3</sup>Smultea Environmental Sciences, Washington Grove, Maryland 20880, USA

| Species  | Minimum Population Estimate<br>From 2019 NMFS stock assesment  | Potential Biological Removal (PBR)<br>From 2019 NMFS stock assesment | ESA Protected Status   |
|----------|--|--|--|
| Blue     | <b>1,050</b> - E. North Pacific stock  | <b>1.2</b> – U.S. Waters   | Endangered   |
| Fin      | 8,127 - CA, OR, WA stock   | 81 – U.S. Waters   | Endangered   |
| Humpback | <b>2,784</b> - CA, OR, WA stock<br>* includes endangered and threatened distinct population segments | <b>16.7</b> – U.S. Waters  | Endangered - Central America DPS,<br>Threatened - Mexico DPS |

Table 7. Percent decrease in predicted mortality in the TSS relative to reference mortality for 10 kn cooperation scenarios ranging from 30 to 95% target cooperation. (–) No simulation possible

|  | — Blue whale — |      |      |      | – Humpback whale – |      |      |      |
|--|----------------|------|------|------|--------------------|------|------|------|
|  | 2014           | 2015 | 2016 | 2017 | 2014               | 2015 | 2016 | 2017 |
| Adherence to 10 kn speed (%)                         | 22.8           | 29.2 | 43.3 | 40.4 | 22.8               | 29.2 | 43.3 | 40.4 |
| Reference mortality                                  | 0.80           | 0.83 | 2.16 | 1.93 | 4.90               | 5.21 | 7.46 | 8.54 |
| <b>Predicted decrease in mortality (%) (pre-VSR)</b> |                |      |      |      |                    |      |      |      |
| 30 % cooperation                                     | 3.3            | –    | –    | –    | 3.3                | –    | –    | –    |
| 40 % cooperation                                     | 6.7            | 3.2  | –    | –    | 6.6                | 3.3  | –    | –    |
| 50 % cooperation                                     | 10.4           | 6.2  | 1.3  | 2.2  | 10.4               | 6.4  | 1.5  | 2.2  |
| 60 % cooperation                                     | 13.8           | 9.2  | 3.6  | 4.3  | 13.7               | 9.4  | 3.9  | 4.6  |
| 70 % cooperation                                     | 16.7           | 12.2 | 5.8  | 6.8  | 16.5               | 12.4 | 6.1  | 7.1  |
| 80 % cooperation                                     | 20.2           | 15.4 | 8.3  | 9.0  | 20.1               | 15.6 | 8.7  | 9.3  |
| 85 % cooperation                                     | 22.6           | 16.7 | 9.4  | 10.2 | 22.4               | 17.0 | 10.0 | 10.5 |
| 90 % cooperation                                     | 23.7           | 18.5 | 10.5 | 11.1 | 23.6               | 18.7 | 11.0 | 11.7 |
| 95 % cooperation                                     | 25.6           | 19.9 | 11.7 | 12.4 | 25.4               | 20.1 | 12.4 | 12.9 |

## Take Home Messages:

- A 95% cooperation in VSR within the TSS would lead to a 25% reduction in ship strike.

## To avoid inhibiting the optimal sustainability of blue and humpback whales:

- The number of blue whales that can be lost to human-caused mortality in the Eastern North Pacific is **1.2**. (Draft 2021 value is 4.1)
- The number of humpback whales that can be lost to human-caused mortality on the west coast is **16.7**. (Draft 2021 value is 28.7)

# SSWG Goals and Objectives

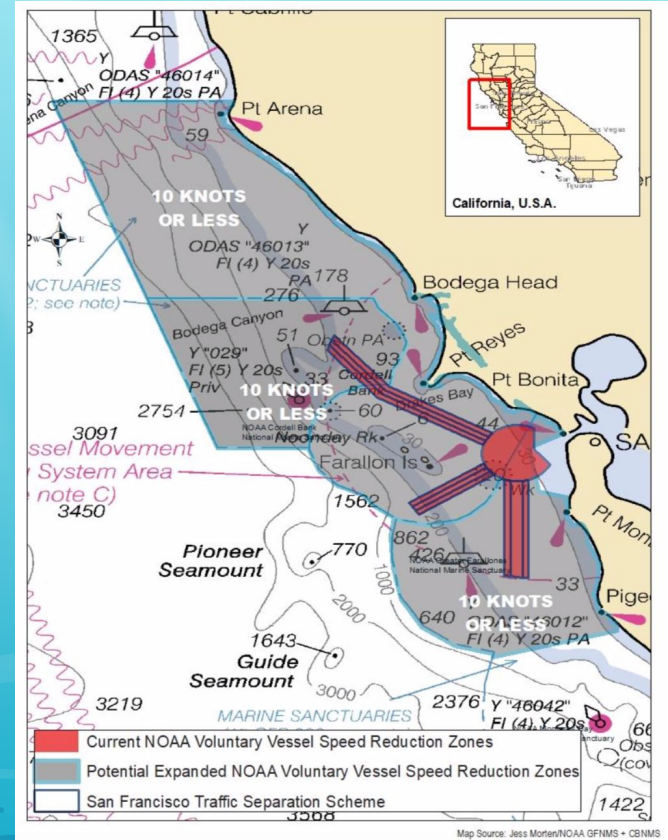
## Sanctuary Goal:

Reduce the risk of lethal ship strikes to endangered and threatened blue, humpback, and fin whales by 50% throughout CBNMS and GFNMS.

## Working Group Objectives

Provide input on three conceptual designs to reduce the risk of ship strikes in the San Francisco Bay region:

- 1) Implement a year-round voluntary VSR request to all vessels 300 GT or larger throughout GFNMS and CBNMS.
- 2) Alter the trajectory of the northern lane and extend the northern and western shipping lanes farther west, with a year-round voluntary VSR throughout GFNMS and CBNMS.
- 3) Extend the western traffic lane to the sanctuary boundary with a year-round voluntary VSR throughout GFNMS and CBNMS, and remove the northern traffic lane.



# What We Did

## **Educating the Working Group**

The SSWG received presentations regarding research on ship strikes on whales, regulatory tools available, the designation of shipping lanes, and heard from experts from other U.S. regions that have addressed ship strikes in the past. A complete list of presentations can be found in Appendix 1 of the final report, including the agendas of all SSWG meetings.

## **Reaching Out**

All members of the SSWG solicited feedback on the three conceptual designs. Feedback was solicited via email, phone, and in person (or virtual meetings). The members generally worked in coordinated groups (Shipping/Maritime, Fishing, Research/Conservation) to canvas as large of a population as possible. The results of those meetings, including summary write-ups of their efforts, are summarized in Appendices 2-4 of the final report.

## **Drafting the Final Report**

All SSWG members played a role in drafting the final report. The report was finalized by the SSWG and presented to a joint meeting of the CBNMS and GFNMS Advisory Councils for consideration of adoption.



# Subgroup Feedback

**Science / Conservation**



**Fishing**



**Maritime**



# Science & Research Recommendations

There was a high degree of agreement among the scientific community on the preferred habitat of blue, humpback, and fin whales (Figure 1). The exact location of whales from day to day, however, is variable within that habitat, making the assignment of “whale safe” shipping lanes into San Francisco Bay virtually impossible. Whales will at some point be in any shipping lane that crosses the continental shelf.

Thus, ships moving slowly in regions on and inshore of the continental shelf would reduce the risk of ship strikes and the incident mortality of such strikes.

Conversations with the scientific community generally resulted in a high level of uncertainty in ability to determine which of the three conceptual designs or if any of the three conceptual designs would meet the stated goal of a 50% reduction in the risk of whale strikes compared to 2014 levels. There was a high degree of consensus among the scientific community that running computer models, similar to those previously published, to simulate each of the three scenarios would be a prudent step to assess the potential benefit of each scenario.

**We recommend that CBNMS and GFNMS collaborate with research experts to model the three management scenarios considered by the SSWG. Additionally, we recommend that models are run that consider both seasonal and year-round VSR, and voluntary and mandatory VSR.**

# Management Recommendations

Of the three conceptual designs presented to the working group to evaluate and provide feedback on, only one of them (Conceptual Design 1) is truly within the purview of the Greater Farallones and Cordell Bank National Marine Sanctuaries and is able to be implemented without the involvement of other outside entities. The removal or amendment of any shipping lanes that are considered in Conceptual Designs 2 & 3 would require the involvement and agreement of the United States Coast Guard and other regulatory bodies. It is generally agreed that the process to remove or amend shipping lanes is a multi-year process. For that reason, we have broken up our management actions into short-term (months to year) and long-term (multiple years) actions that we recommend the sanctuaries consider.

# Recommendations

## Short-term management actions

**We recommend that GFNMS and CBNMS implement year-round voluntary VSR for all vessels greater than 300 GT transiting within the sanctuary boundaries of GFNMS, CBNMS, and the MBNMS northern management area.** Since discrepancies in transit time from the various approaches to each of the three shipping lanes may have an impact on usage of each of the lanes, sanctuary staff should continue to monitor and evaluate vessel traffic behavior and should assess the effectiveness of these management measures.

Though it was not included as a potential management strategy for the group to consider, depending on the efficacy of the proposed voluntary VSR actions, we think GFNMS and CBNMS should also explore and consider mandatory speed limits, similar to what is implemented by NOAA on the east coast, if deemed necessary to achieve the stated goal of 50% reduction in fatal ship strike risk.



# Recommendations

## Long-term management actions

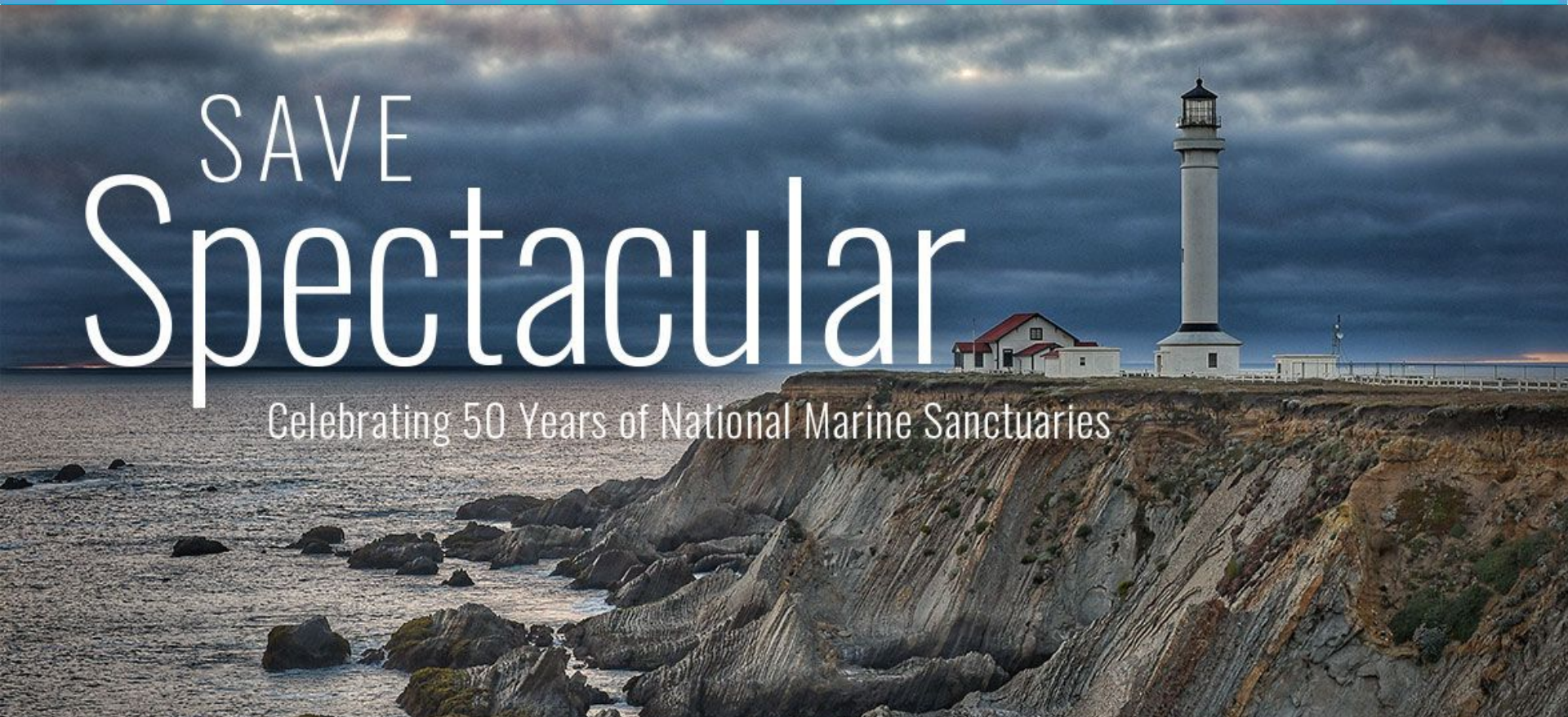
**We recommend that any changes to the shipping lanes be dependent on scientific studies evaluating the potential decrease in whale mortality by either removing the northern lane, altering the northern lane, or extending the western lane.** We recommend that CBNMS and GFNMS work with research experts to model the risk reduction associated with these spatial changes, share research findings with appropriate stakeholders, and work with the USCG and the U.S. West Coast Port Access Route Study (PARS) to change the lanes that would have the most desired impact.

BREAK – We will return at 12:50 PM. Enjoy this view of GFNMS from Point Arena!



# SAVE Spectacular

Celebrating 50 Years of National Marine Sanctuaries



# Blue Carbon in Marine Protected Areas



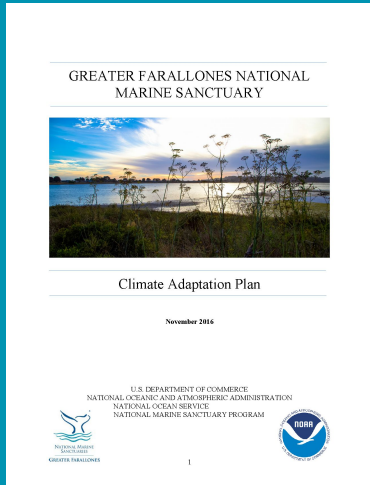
Greater Farallones/Cordell Bank  
National Marine Sanctuaries Joint  
Advisory Council Meeting

February 10, 2022

Sara Hutto, Climate Coordinator  
GFNMS/CBNMS



# Implementing our Climate Adaptation Plan





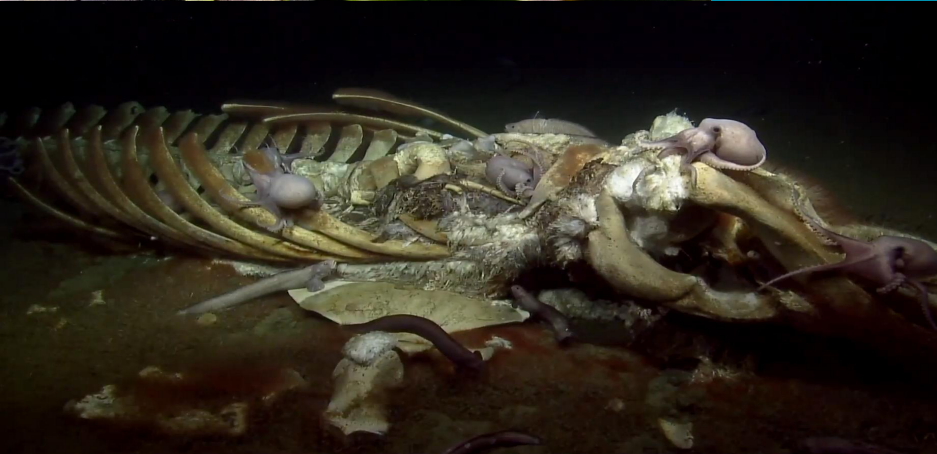
# Implementing our Climate Adaptation Plan



Improve sanctuary science  
and management of  
**blue carbon**



Habitats and processes that  
sequester carbon and help  
mitigation climate change!



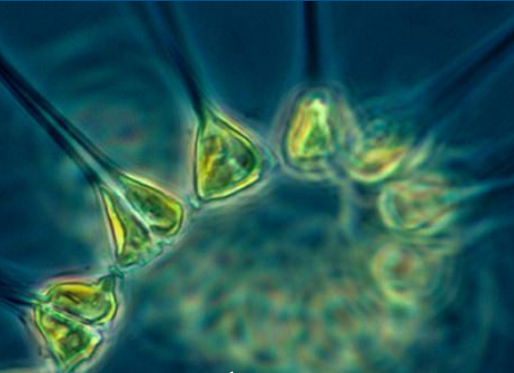




Coastal blue carbon







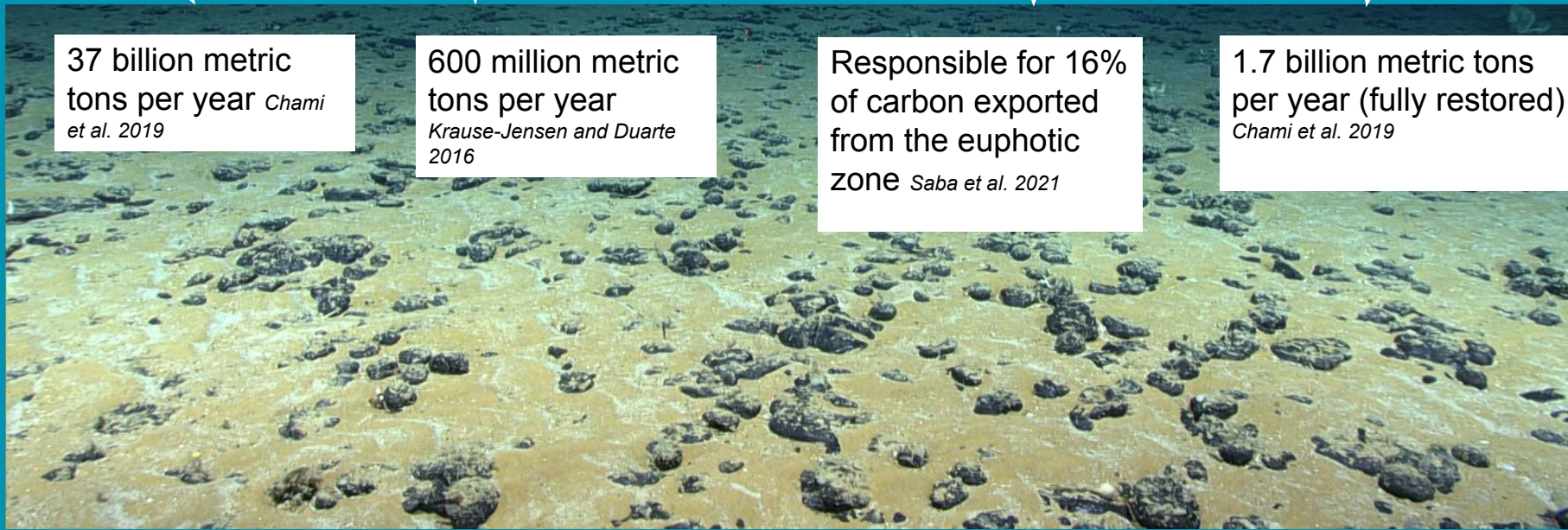
Marine blue carbon

37 billion metric tons per year *Chami et al. 2019*

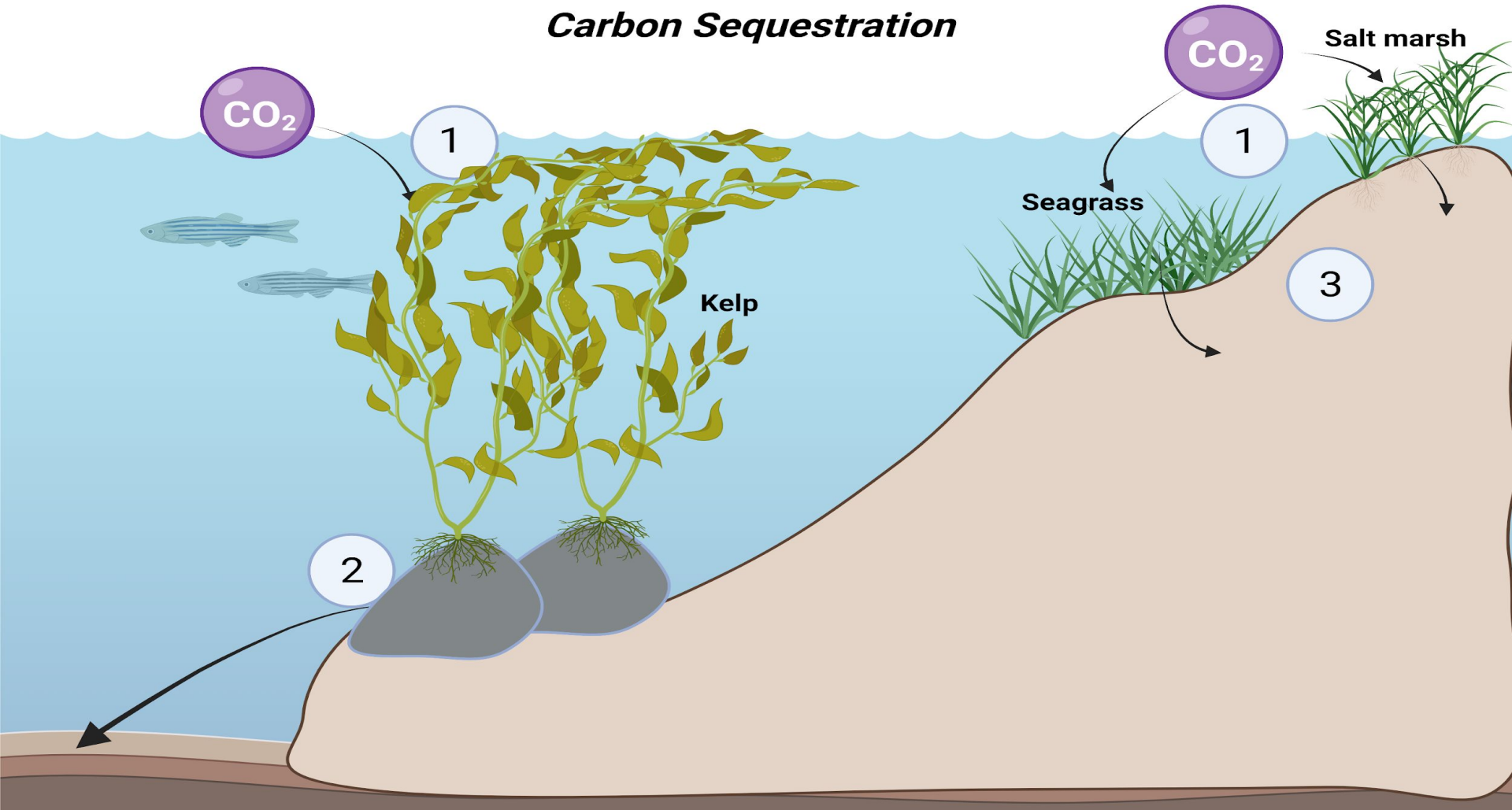
600 million metric tons per year *Krause-Jensen and Duarte 2016*

Responsible for 16% of carbon exported from the euphotic ZONE *Saba et al. 2021*

1.7 billion metric tons per year (fully restored) *Chami et al. 2019*



# Carbon Sequestration





# Blue Carbon in MPAs Project

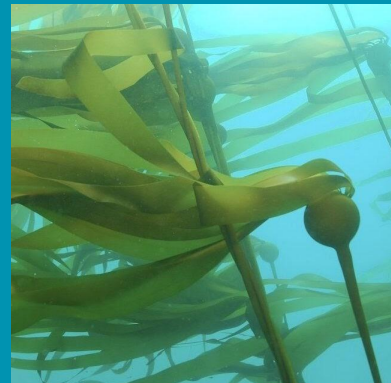


Communicate the importance of blue carbon to MPA managers to increase protection and enhancement of blue carbon in MPAs

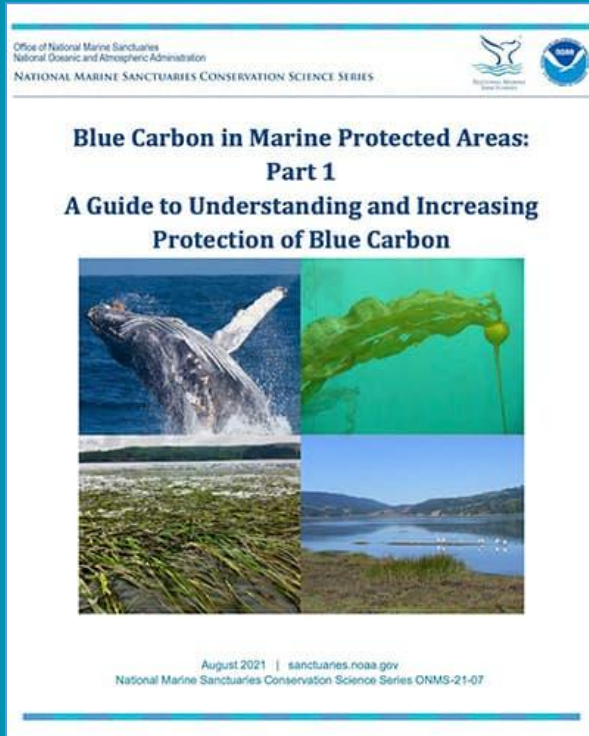


## Project Goals

Communicate the importance of MPAs in reaching global climate mitigation goals

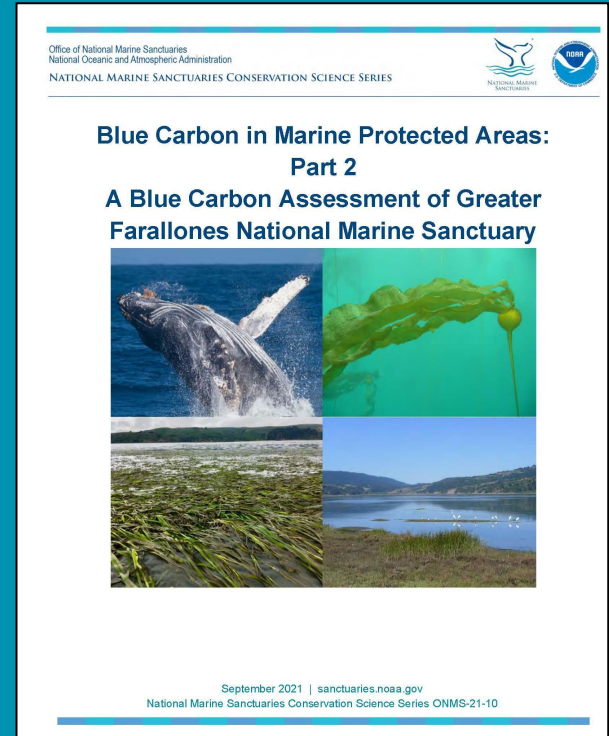


# Blue Carbon in MPAs Project



Literature review  
Guiding principles  
Path forward for ONMS



Case study assessment  
of Farallones Sanctuary




# Blue Carbon in MPAs Project

## Blue carbon in Marine Protected Areas Storymap!

Office of National Marine Sanctuaries  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE SANCTUARIES CONSERVATION SCIENCE SERIES



### Blue Carbon in Marine Protected Areas: Part 2 A Blue Carbon Assessment of Greater Farallones National Marine Sanctuary



September 2021 | sanctuaries.noaa.gov  
National Marine Sanctuaries Conservation Science Series ONMS-21-10




NATIONAL MARINE SANCTUARIES Blue Carbon in Marine Protected Areas

Coastal Blue Carbon Oceanic Blue Carbon Guiding Principles Case Study: Greater Farallones

### Salt Marsh

Salt marsh in GFNMS covers an area of 3.6 square kilometers (1.4 square miles) within [Tomales Bay](#), [Esteros Americano and de San Antonio](#), and [Bolinas Lagoon](#).

Dominant species include: saltgrass (*Distichlis spicata*), pickleweed (*Sarcocornia pacifica*), with Pacific cordgrass (*Spartina*



# Sanctuaries on the International Stage!



Engagement with over 800 people directly, and countless more via radio interviews and virtual presentations.





- Approve November meeting highlights **(Action)**
- Charter Amendment 1 approved



Photo: Black-footed Albatross soars through the sanctuary. Credit: NOAA/CBNMS/Jamie Hall