

Draft Letter of Support for Proposed Lake Ontario National Marine Sanctuary

February 24, 2023

Maria Brown,
Sanctuary Superintendent

Dear Superintendent Brown,

In 2019, National Oceanographic and Atmospheric Administration (NOAA) announced its intent to designate a new national marine sanctuary in New York's eastern Lake Ontario. The subsequent work by NOAA with the draft environmental impact statement (EIS) and engagement by public, stakeholder, state agencies, and federally-recognized nations and tribes resulted in a proposal to designate 1,724 square miles of eastern Lake Ontario waters and bottomlands adjacent to Jefferson, Oswego, Cayuga, and Wayne counties in the state of New York.

The Advisory Councils of the Greater Farallones and Cordell Bank National Marine Sanctuaries support the establishment of the Proposed Lake Ontario National Marine Sanctuary (LONMS) on the following grounds:

1. The proposed sanctuary would help to protect historical and culturally valuable areas and artifacts as well as promote heritage education and tourism, especially as the boundaries include portions of the original homelands of the Onondaga Nation, Cayuga Nation, Seneca Nation, and Oneida Nation tribes. The councils recognize the value of diversity in stakeholders and value diverse stakeholder representation, in particular with regard to maritime and Native American heritage. In light of dramatic climactic and cultural shifts occurring now, there is an urgent need for federal agencies to take an active role in protecting cultural and historical sites as well as promoting education and understanding of the American public.
2. The proposed sanctuary is designed to include 43 known shipwrecks, 20 potential shipwrecks, 1 known aircraft, 3 potential aircraft, and over 1,000 years of distinct cultural underwater archaeological sites that are located within the boundary areas of the proposed sanctuary.
3. By virtue of its designation as a sanctuary, the Proposed LONMS would protect the moving, removing, recovering, altering, destroying, possessing or otherwise injuring of sanctuary resources. This would include restrictions on grappling or anchoring on shipwreck sites as well as the deployment of underwater mobile systems without a permit. Taken together, this will benefit archaeological research, will help in protecting local fisheries, and will support the clean coast economy.

The Advisory Councils of the Greater Farallones and Cordell Bank National Marine Sanctuaries recommend that the Proposed LONMS site be designated a National Marine Sanctuary.

Sincerely,

Chairpersons of the Greater Farallones and Cordell Bank National Marine Sanctuaries Advisory Councils

Abby Mohan
Sanctuary Advisory Council Chair,
Greater Farallones National Marine
Sanctuary

Kai Martin
Sanctuary Advisory Council Chair,
Cordell Bank National Marine Sanctuary

The councils are an advisory body to the sanctuary superintendent. The opinions and findings of this letter/publication do not necessarily reflect the position of the sanctuaries and the National Oceanic and Atmospheric Administration.

**GFNMS Advisory Council Vessel Incident Subcommittee¹ Non-Regulatory
Recommendations For Improving Response To Vessel Incidents:**

Subcommittee members:

Cea Higgins: Chair

George Clyde: Vice-chair

Richard James

Richard Ogg

John Berge

Kris Lannin-Liang, Barbara Emley, Abby Mohan, & Michael Kleeman.

GFNMS staff support: Max Delaney, Karen Reyna, & Jordan Gorostiza

Technical Experts:

Paul Ortiz, NOAA Office of General Counsel Enforcement Section (Southwest)

Ron Kent, Division of Boating and Waterways

Andrew Kershen, State Lands Commission

Karen Grimmer, Monterey Bay National Marine Sanctuary

Vessel Incident Subcommittee, Monterey Bay National Marine Sanctuary Advisory Council

Sage Tezak, Greater Farallones National Marine Sanctuary

Proposed Recommendations:

Partner Agency Communication & Coordination:

1. Working with local stakeholders, partner agencies, all coastal land managers including land trusts, & first responders; the Sanctuary should solicit input, provide guidance, and develop strategies to coordinate & improve abandoned, derelict, or grounded vessel response within the Sanctuary and create the following unified response protocol via:
 - Develop GFNMS Vessel Desertion Checklist and Letter of Notification similar to MBNMS Checklist (See attached).
 - Work with Emergency services to develop a region wide (Sonoma, Marin, Mendocino, San Mateo Counties) Coastal Incident Response Plan (CIRP) for grounded vessel response and develop a VESSEL AGROUND Quick Response Card (see Monterey & Santa Cruz Counties QRC attached) ²
2. Through their representatives on the Regional Response Team(RRT) IX and Area Committee meetings, GFNMS should work to communicate their expectations for the handling and disposition of vessels suffering casualties in or near GFNMS boundaries including ensuring notification and preparedness for specific incidents and bring forward a request for Federal, State, and local agencies to develop a Regional Contingency Plan

¹ The advisory council is an advisory body to the sanctuary superintendent. The opinions and findings of this publication do not necessarily reflect the position of the Office of National Marine Sanctuaries and the National Oceanic and Atmospheric Administration.

² Current [Sonoma County Operational Area Coastal Incident Response Plan](#) does not mention GFNMS.

(RCP) or Area Contingency Plans (ACPs) to coordinate vessel removal with pollution abatement of grounded, abandoned, or derelict vessels within the Sanctuary.

3. Recommend that the USCG either track adrift vessels near/in the sanctuary and/or prioritize towing those vessels to a safe harbor to avoid grounding or sinking of those vessels in the sanctuary and increase chance of recovery if they do.
4. Sanctuary should assess all tow capacity within their jurisdiction and identify and make recommendations to ensure capability to address vessels adrift that may sink or run aground. Establish “On-call” tow contracts with existing experienced companies for responding to vessel incidents to prevent grounding disaster by putting vessels under tow quickly. These contracts would be triggered by harbor or sanctuary personnel who are contacted about a vessel in distress.
5. Sanctuary should work to improve communications within its expanded Northern boundaries on grounded vessel response by identifying partners and assessing current response capabilities in this area.

Policy:

Vessel Registration:

6. Working with the appropriate agencies, policymakers, boaters, and boating organizations the Sanctuary will provide guidance on policies to establish a California yearly vessel registration requirement for both commercial and recreational vessels including establishing a derelict vessel removal fund supported by registration fees dedicated for ADV removal programs and adequate enforcement of these requirements. The derelict vessel removal fund needs to be equally available for grounded vessels on the outer coast.

Vessel Insurance:

7. Working with the appropriate agencies, policymakers, boaters, and boating organizations to address under or uninsured vessels within the Sanctuary and the need for stricter vessel owner requirements, the Sanctuary will provide guidance on policies that could mandate insurance requirements for commercial and recreational vessels including wreck removal insurance and secondary liability coverage for older and larger vessels to ensure funding to cover response. Response includes containment and/or damages from contamination from fuel, oil, and hazardous materials, deconstruction of vessels, removal and disposal of the abandoned or grounded vessel, and site restoration.
8. Work with the vessel insurance industry to educate brokers and vessel owners on their liability and responsibility for wreck removal if they lose their vessel in the Sanctuary

Education & Outreach:

9. Meet with regional marinas and managers of boat launches to investigate the potential of establishing kiosks/signage or printed materials to educate mariners on safe boating

practices and local conditions to reduce small vessels operating beyond their seaworthiness as well as inform boaters of GFNMS regulations on prohibited activities.

10. GFNMS create a single web page including an interactive map with no anchor eelgrass zones as well as all jurisdictions identified with links to their regulations in the same map and also include on this webpage links for boater safety, marine forecast and current conditions, as well as clearly identifying Sanctuary prohibited activities.³
 - The Sanctuary should also maintain a clear focus on publicizing, on this webpage and through other communication outlets, enforcement efforts and successes, including compensation awards, noting where appropriate the lack of liability insurance meant that the individual responsible party was required to make the payment from their personal assets.

Enforcement:

11. Sanctuary should prioritize vessel incidents working through the Enforcement Coordination Committee process or by establishment of a new working group which consists of U.S. Coast Guard, County Sheriff Departments (e.g., Marin, Sonoma, Mendocino), County Offices of Emergency Services (OES), the California Department of Fish and Wildlife, and National, State, and County Parks that meet regularly on addressing enforcement challenges such as permit compliance and natural resource injuries from vessel incidents in the Sanctuary. The group should meet at least quarterly and when there are important incidents.⁴
12. Work with NOAA's Office of Law Enforcement (OLE) to amend the existing operations plans with applicable Joint Enforcement Agreement (JEA) partners to prioritize working on vessel incidents together and to ensure that all future and JEA operations plans include enforcement of Sanctuary regulations.
13. Request that the General Council on Enforcement and Litigation for NOAA (GCEL) establish a summary settlement authority and schedule for GFNMS so that JEA partners would be more inclined to pursue Sanctuary violations because issuing tickets for low level violations with minimal natural resource impact offer an immediate sanction which, coupled with public outreach, could assist to deter future violations and encourage boaters to purchase liability insurance.⁵
14. Provide guidance on policies to establish a mechanism for law enforcement agencies to be funded or compensated for time and equipment needed to enforce Sanctuary regulations and to issue civil penalties. JEA partners should be required to provide regular reports to OLE, the Sanctuary Superintendent, and the committee pursuant to

³ Current information is on static [PDF maps](#) or difficult to find on GFNMS website

⁴ [U.S. Department of Commerce Office of Inspector General report](#)

⁵ NOVA (notice of violation and assessment) process can take months or years and should be reserved for larger more serious violations.

Recommendation #11 on the enforcement work they do specifically in the Sanctuary (e.g., number of man hours spent patrolling sanctuary, citations issued...).

15. Work with OLE and GCES to explore options during vessel incident response and investigations to improve responsible parties' promptly taking on the removal and restoration actions for their vessels and compensating others for their costs in doing so (whether insured or not).
16. Given the limitations that affect "bottoms up" efforts by the Subcommittee, the SAC, the Sanctuary or even the West Coast Region to obtain information on enforcement and to influence enforcement efforts, seek a further review of the problems of enforcement in the Sanctuary or the West Coast Region.

The U.S Office of Dept. of Commerce Office of the Inspector General found in 2008:

*"Enforcement of sanctuary regulations needs to be strengthened. Enforcement challenges in the sanctuaries range from permit compliance to offshore vessel traffic to a range of natural resource injuries, including oil spills, vessel groundings, and plane crashes. Most sanctuary and enforcement officials and other stakeholders we spoke to believe that enforcement of sanctuary regulations remains a challenge and could be improved."*⁶

The Sanctuary Superintendent of West Coast Regional Office should seek from the OIG, NOAA, the Office of National Marine Sanctuaries or another appropriate entity a new review of local enforcement efforts with further recommendations.

Dead Ship Tow:

17. GFNMS should establish with the U.S. Coast Guard protocols and/or regulations requiring "dead tow" operators to notify GFNMS when dead vessels of over an established tonnage enter and are towed through their jurisdictions and consider requiring "dead tow" operators to obtain a permit to enter and navigate through the National Marine Sanctuary. The permit should require the dead tow operator to show proof of insurance and 3rd party inspection/approval of the vessel transport.

⁶ [U.S. Department of Commerce Office of Inspector General Report](#)

ATTACHMENTS

Draft MBNMS Vessel Desertion Checklist and Letter of Notification November 2021

Background

Monterey Bay National Marine Sanctuary (MBNMS or sanctuary) is a federally protected ocean area that spans over 6,000 square miles of ocean off the central California coast. MBNMS was designated in 1992 by the U.S. Congress, and is managed by the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. National Marine Sanctuaries protect nationally significant underwater environments, much like National Parks protect special terrestrial environments.

MBNMS's natural resources are protected by the National Marine Sanctuaries Act (NMSA) of 1972, as amended (16 U.S.C. §§ 1431 *et seq.*), and its implementing regulations. Pursuant to MBNMS regulations (15 C.F.R. part 922, subpart M), specific activities are prohibited in the sanctuary, with certain enumerated exceptions, and are thus unlawful. These prohibited activities include discharging or depositing from within or into the sanctuary any material; constructing, placing, or abandoning any structure, material, or other matter on or in the submerged lands of the sanctuary; deserting a vessel aground, at anchor, or adrift in the sanctuary; and leaving harmful matter aboard a grounded or deserted vessel in the sanctuary (15 C.F.R. § 922.132(a)).

The MBNMS Vessel Desertion Checklist (attachment A) and the Letter of Notification template (attachment B) are intended to serve as proactive tools to avoid a potential vessel desertion, at anchor or adrift (§ 922.132(a)(9)), from occurring in a sensitive area of the sanctuary. The checklist is a tool for use by law enforcement to assess the need to post the Letter of Notification or the need for more immediate action to avoid a more serious vessel incident from occurring (e.g. vessel aground) in the sanctuary.

Draft MBNMS Vessel Desertion Checklist

Vessel/Owner Information

Name of Vessel
Name of Vessel Owner (if known)
Vessel CF Number
Type/Color/Size of Vessel
Location of Vessel (lat/long & general location description)
Other items to note?

Incident Information

Name of Reporting Party
Affiliation (if any)
Time of Report
Mariners Aboard Vessel, if any
Any Contact with Mariners?
Current Status of Vessel (vessel in disrepair, vessel taking on water, location/quality of anchorage?)
At Anchor or Adrift?

Proximity to Rocky or Other Sensitive Habitat?
Weather/Sea State Conditions

Law Enforcement Report Verification & Next Steps

(Law Enforcement agencies include, yet are not limited to US Coast Guard, Harbor Patrols, CA Fish and Wildlife, CA State Parks, City Police Dept,)

Law Enforcement (LE) Agency and Name of LE Officer
Date and Time of Inspection of Vessel
Vessel is abandoned/derelict and no persons aboard (Yes/No) If no, no further action required. If yes, continue with Checklist
Time of physically posting Notification on vessel (see attachment A)
Time of attempting to contact Owner (if information is known)
Per Notification, has owner contacted LE within the required 12-hour timeframe? (Yes/No)
If yes, request Owner move vessel to a safe location (action complete). Owner needs to move vessel immediately, if close to rocky and sensitive habitat. If Owner is NOT able to move vessel, please refer the incident immediately to MBNMS and NOAA OLE for follow up.

Monterey Bay National Marine Sanctuary
UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
99 Pacific Street, Bldg 455a Monterey, CA 93940

Dear Responsible Party/Vessel Owner:

Monterey Bay National Marine Sanctuary (MBNMS or sanctuary) is a federally protected ocean area that spans over 6,000 square miles of ocean off the central California coast. MBNMS was designated in 1992 by the U.S. Congress, and is managed by the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. National Marine Sanctuaries protect nationally significant underwater environments, much like National Parks protect special terrestrial environments.

MBNMS's natural resources are protected by the National Marine Sanctuaries Act (NMSA) of 1972, as amended (16 U.S.C. §§ 1431 *et seq.*), and its implementing regulations. Pursuant to MBNMS regulations (15 C.F.R. part 922, subpart M), specific activities are prohibited in the sanctuary, with certain enumerated exceptions, and are thus unlawful. These prohibited activities include discharging or depositing from within or into the sanctuary any material; constructing, placing, or abandoning any structure, material, or other matter on or in the submerged lands of the sanctuary; deserting a vessel aground, at anchor, or adrift in the sanctuary; and leaving harmful matter aboard a grounded or deserted vessel in the sanctuary (15 C.F.R. § 922.132(a)). A violation of the NMSA or MBNMS regulations may be subject to the assessment of a penalty (15 C.F.R. § 922.45).

Date _____ at (time PDT) _____ CF# _____

Location _____

Desertion _____

Responsible Party/Vessel Owner _____

Because this incident occurred within MBNMS, we request that the Responsible Party notify my office within 12 hours of receipt of the notification on how the vessel will be moved to a safer location (i.e., a nearby harbor). Action to salvage the vessel or remove wreckage and debris from the sanctuary should be coordinated with my office in advance.

Please contact Karen Grimmer, MBNMS Resource Protection Coordinator, at (831) 236- 6535 to discuss receipt of this notification and next steps.

Thank you,
Lisa Wooninck
Sanctuary Superintendent

VESSEL AGROUND

Quick Response Card

Monterey & Santa Cruz Counties

Priority – Life Safety

- Initiate & utilize the Coastal Incident Response Plan (CIRP) with responding agencies
- Confirm if vessel is occupied / number of victims accounted for or missing
- Request specialized resources early, as needed: shallow draft Rescue Watercraft (RWC) / Coast Guard Helicopter / drone for search
- Evacuate the vessel if safe to do so
- Request additional resources as needed: medical
- Secure the area from the public

Immediate Notifications

(Hazardous Materials spills and potential releases)

National Response Center (800) 424-8802

Cal OES Warning Center (800) 852-7550

Priority – Property

- Soft aground: consider requesting on scene water rescue personnel assist with anchoring / [kedging](#) the vessel if safe to do so
- Write down critical info: CF number, HIN, make model, size / type of boat, is visible sheen present or any oiled wildlife?
- If Responsible Party is on scene get name / contact info, determine if they have insurance and have them contact the following salvage companies to start recovery.
- Notify marine salvage companies:
 - Tow Boat U.S. Monte Ash – Santa Cruz (831) 359-0702
 - Parker Diving / Redwood Shore Diving (415) 331-0328, cell (415) 740-1279
 - Monterey Bay Diving (831) 642-9966
 - Earth Works Rick Straus – Capitola (831) 475-1223 for heavy equipment on the beach
 - Community Tree Service, South Santa Cruz County (831) 345-1935
 - Global Diving and Salvage – Sacramento (707) 561-6810
- If Responsible Party is not on scene, have County Sheriff or local law enforcement identify and contact owner.
- Request County Sheriff respond to safeguard property [per Harbors & Navigation Code Section 510](#)
- Identify optimal timeframe for removal: tide, wind and predicted ocean conditions

Priority – Environment

- Notify National Oceanic & Atmospheric Association (NOAA) – Monterey Bay National Marine Sanctuary: (831) 236-6797 Duty Phone
- California Department of Fish and Wildlife - Office of Spill Prevention and Response (OSPR)
(916) 826-1110 - Spill Desk (business hours)
(916) 358-0333 - NORCOM (after hours)

Additional Contacts

- US Coast Guard Sector San Francisco Incident Management Division: (510) 928-9939 Duty Phone

Notes:



Briefing on Deep Sea Habitat in GFNMS and CBNMS¹

State of the Resource

- Condition Report Data
 - CBNMS (in publication) -In general, conditions appear to be good. Major declines in benthic species have not been observed. However, 1) only a small portion of the sanctuary has been visually surveyed, 2) although we do have some monitoring sites, the time series is not yet long enough to evaluate trends, and the sample size is small, and 3) this habitat is vulnerable to impacts from fishing and climate change. CBNMS-led science activities in benthic habitat were critical for the CR assessment and should continue. However, information on known impacts to habitat was lacking. Data presented was based on the level of human activity, but not actual impacts. This is an area to explore further.
 - GFNMS (in preparation) - Less than 1% of deep-sea habitat has been visually surveyed. Of the areas visually surveyed, most appear to have diverse geological and biological composition. Marine debris, primarily fishing gear, has been observed at all locations. One location within the National Marine Fisheries Service's Point Arena South Biogenic no-trawl Essential Fish Habitat Conservation Area showed an abundance of large and dead glass sponges. As in CBNMS, the habitat is vulnerable to impacts from fishing and climate change. Since the previous condition report, more areas of the sanctuary are open to bottom contact fishing gear. More data is needed to fully establish a baseline characterization of the habitat and species present in the offshore environment of GFNMS, especially in the northern area of the sanctuary, which was added in 2015.
- Other science information: Recent exploration of deep-sea habitat has led to discoveries of new species and new observations for the sanctuaries. Many areas of the sanctuaries remain to be explored, particularly in the deeper offshore areas.
- Climate Vulnerability Assessment Findings. Vulnerability is calculated from exposure to climate and non-climate stressors, sensitivity to those same stressors, and the resource's ability to adapt to the impacts. Ratings presented are from the original 2015 report and from 2023 revisions of some indicators.

¹ Deep Sea Habitat is defined by NOAA as habitat deeper than 50 meters below sea level.

- Offshore rocky reefs (e.g. Rittenburg Bank in GFNMS, Cordell Bank) have a **moderate vulnerability** score based on low-moderate exposure to climate change stressors, namely altered currents/mixing and water temperature, low-moderate sensitivity to stressors such as water temperature and fishing impacts, and moderate adaptive capacity. The vulnerability of offshore reefs increased since the original assessment, due to documented and projected increases in bottom water temp.
- Representative corals and sponges (CA hydrocoral and white lobed sponge) for these offshore reefs have a **moderate vulnerability** based on moderate exposure to stressors such as Ocean Acidification and increased water temperatures, moderate sensitivity to changing ocean conditions, and moderate adaptive capacity.
- The sanctuaries, in partnership with NOAA’s Office of Coastal Management and Greater Farallones Association, are working on calculating carbon content of sanctuary open ocean sediments to identify carbon hotspots and the value of sanctuary benthic habitats to carbon sequestration.
- Pressures on deep sea habitat include:
 - Climate change
 - Fishing activities
 - Marine debris

Summary of Relevant Regulations

See full text, definition, and exemptions on the regulations page of the [GFNMS](#) and [CBNMS](#) websites.

The following GFNMS and CBNMS prohibitions can prevent impacts to deep sea habitat from listed prohibited activities:

1. Exploring for, developing, or producing oil, gas or minerals.
2. Constructing, placing or abandoning any structure, drilling into, dredging, or otherwise altering the submerged lands of the Sanctuary (*Note: lawful fishing is exempt from GFNMS and CBNMS regulations and the regulation of fishing and therefore protecting habitat from fishing, is not authorized by both sanctuaries’ terms of designation*).

The following CBNMS regulation can prevent additional impacts to deep sea habitat:

1. On or within the line representing the 50-fathom isobath surrounding Cordell Bank, removing, taking, or injuring or attempting to remove, take, or injure benthic invertebrates or algae located on Cordell Bank. This prohibition does not apply to use of bottom contact gear used during fishing activities, which is prohibited pursuant to 50 CFR part 660.

Summary of Relevant Sanctuary Projects

Conservation Science:

- The Sanctuaries conduct exploration, characterization, and monitoring through mapping, visual surveys, and analysis. This work is used to understand the status of sanctuary resources, gain basic science information about these little known areas, and to evaluate and inform management efforts such as implementation of fishery management areas.
- The science team works with the resource protection team to identify issues and areas to study and restore and with the education team to share findings.

Resource Protection:

- The sanctuaries review project proposals, including proposed actions from other agencies that could potentially violate sanctuary regulations or are likely to destroy, cause the loss of, or injure deep sea habitat.
- Through permitting actions the sanctuaries manage, reduce, or eliminate injury to benthic habitat from activities other than lawful fishing.
- The sanctuaries work with NOAA's Office of Law Enforcement and the U.S. Coast Guard to document and enforce sanctuary regulations that protect the seabed and work with NOAA's General Council to issue fines and to work with responsible parties to restore deep sea habitat.
- GFNMS and CBNMS current terms of designation do not provide these sanctuaries the authority to regulate fishing impacts to deep sea habitat. GFNMS and CBNMS provide data about important, unique, and sensitive deep-sea habitats and make recommendations on how to best protect these habitats to fisheries managers when there are potential fishery management actions that can impact deep sea sanctuary resources.
- To the extent feasible, under the mandates of the National Marine Sanctuaries Act (NMSA), GFNMS and CBNMS work to restore deep sea benthic habitat. The success of deep-sea benthic habitat restoration activities, such as the proposed coral restoration project in GFNMS described in the draft YFD-70 Dry Dock Restoration Plan, are contingent in part on NOAA taking action to protect deep sea habitat from fishing impacts.

Education and Outreach:

- The sanctuaries educate kindergarten through university students, sanctuary volunteers, and community members about sanctuary deep-sea habitats through virtual classroom programs and curricula, summer camp programs, public lectures, teacher workshops, web stories, and print and social media that incorporate content on deep sea habitats. The education and outreach projects are designed to increase awareness of deep-sea habitats in the sanctuaries.

- Through high resolution video, virtual reality experiences, and exhibits the sanctuaries strive to increase appreciation and awe of deep-sea habitats and highlight the value of sanctuaries.

Infrastructure and Vessels:

Sanctuary infrastructure that supports research on, protection of, and education about deep sea habitat include office infrastructure, at sea assets, and specialized tools.

- Research, GIS, Resource Protection, and Education and Outreach staff collaborate on benthic habitat projects and meet with project partners at the sanctuary offices.
- The Crissy Field Visitor Center delivers deep sea habitat education programs utilizing the pier classroom to 2nd grade - high school students and GFNMS and CBNMS partner with the Oakland Museum of California and Point Reyes National Seashore on deep sea habitat exhibits.
- GFNMS and CBNMS conduct single and multi-day missions on the regional research vessel *Fulmar* and longer missions on larger NOAA “White Ships” and the exploration vessel *Nautilus*.
- GFNMS and CBNMS use remotely operated vessels (ROVs), multibeam, and side scan sonar to map and characterize deep sea benthic habitats. ROVs suitable for deep sea conditions are used to survey and monitor deep sea benthic habitats.

Summary and Staff Recommendations

Summary

Information about deep sea habitat in GFNMS and CBNMS indicates conditions are fairly good where assessed, but very little of the habitat has been surveyed, and there are known threats to this habitat. Protecting and restoring deep sea benthic habitat is contingent on working with the Pacific Fishery Management Council and NOAA’s National Marine Fisheries Service. The sanctuaries’ education and outreach team deliver education programs to kindergarten - university students, sanctuary volunteers, and community members about deep sea benthic habitats as well as the vulnerability of these habitats to ocean acidification. The sanctuaries’ work is supported by office infrastructure, vessels, multibeam, side scan sonar, and ROV technology.

Staff Recommendations:

Conservation Science: Expand efforts to explore and characterize as well as continue and add additional areas to monitor deep sea benthic habitat to understand 1) the sanctuaries’ natural resources, 2) status and trends of those resources, and 3) the amount of carbon storage to inform management and protection efforts.

Resource Protection: Increase protection of representative deep sea habitat types as reference sites with a focus on areas at highest risk of damage, that are sensitive and unique, and that do not easily recover from damage. Restore, where feasible, deep sea benthic habitat (e.g. deep-sea coral).

Education and Outreach: Increase student, stakeholder, and community awareness about the importance of deep-sea habitat to the sanctuaries', the ocean's, and our communities' health and how students, stakeholders, and communities can become involved in its protection.

Infrastructure: Maintain facility infrastructure as a collaborative meeting space, increase visitor center education programming space to reach more students, and update exhibits as needed to support protecting and restoring deep sea habitat. Secure, at a minimum, vessel time and technical support to survey a statistically significant sample size to assess the health of the sanctuaries' deep sea benthic habitat.



Briefing on Marine Mammals in GFNMS and CBNMS

State of the Resource

- Condition Report Data
 - CBNMS and GFNMS: Blue and humpback whales were considered as focal species for CBNMS and humpback whales were considered a focal species in GFNMS. Overall, blue and humpback whale populations along the west coast are at low population levels and are showing signs of growth but are still endangered or threatened. CBNMS and GFNMS contain foraging habitat “hotspots” along the shelf and shelf break. Whales are seasonally abundant in CBNMS and GFNMS and in recent years have been arriving earlier and staying later. Acoustic data shows that some whales are present year-round, particularly humpback whales. Whale distribution and abundance is driven by prey availability and humpback whales in particular are vulnerable to habitat compression when oceanographic conditions concentrate suitable habitat and forage species nearshore, making them more vulnerable to human activities such as entanglement in fishing gear. Ship strikes have also been identified as a pressure to whales in the sanctuaries.
 - GFNMS: Disturbance to harbor seals was evaluated as an indicator of human activities that may affect living resources. Although disturbance from vessels and humans occurs regularly, it does not appear to be greatly impacting population levels or habitat use within GFNMS.
- Climate Vulnerability Assessment (CVA) Preliminary Findings. Vulnerability is calculated from exposure to climate and non-climate stressors, sensitivity to those same stressors, and the resource’s ability to adapt to the impacts. Ratings presented are from the original 2015 report and from 2023 revisions of some indicators.
 - Blue whales have a **moderate-high** vulnerability, based on high exposure to climate stressors, especially indirectly through their prey, and moderate-high sensitivity and adaptive capacity. Blue whale prey (krill) is affected by changing ocean conditions such as upwelling, temperature, and ocean acidification. In addition to climate vulnerability, the CVA notes the high vulnerability to non-climate stressors such as ship strikes.
- Other science information:
 - Many marine mammal species are abundant in the sanctuaries and are important parts of the ecosystem. For example, dolphins are observed

feeding and traveling in the sanctuaries in large numbers. Pinnipeds (seals and sea lions) breed and pup in GFNMS primarily at the Southeast Farallon Islands (SEFI) and Point Reyes National Seashore (PORE) and travel and forage in GFNMS and CBNMS. Sanctuary-wide trends for some pinniped species have increased (e.g., California sea lions and elephant seals). Monitoring programs on SEFI and at PORE provide long-term data at these locations.

- Point Blue Conservation Science has modeled reduction of risk of lethal ship strikes to endangered and threatened blue, humpback, and fin whales in the sanctuaries from slowing ships to 10 knots. A 60% cooperation rate by ships 300 gross registered tons or larger results in approximately a 23% reduction in risk of a lethal ship strike.
- A new study reports that humpback whale habitat is expected to decline in the California Current Ecosystem, including in GFNMS and CBNMS, based on species distribution models and climate projections of ocean conditions (prey data not yet included) from 1985-2015 to 2070-2100. However, the proportion of humpback whale habitat in both GFNMS and CBNMS relative to total habitat in the California Current Ecosystem is expected to increase. This indicates that the sanctuaries will have a more important role in their relative contribution to core humpback whale habitat in the future (Brodie et al. unpublished data).
- Marine mammals have been and will continue to be affected by changes in forage species distribution, resulting in changes in their distribution and abundance in the sanctuaries.
- Pressures on marine mammals in GFNMS and CBNMS:
 - Vessels (ship strikes, noise)
 - Human disturbance
 - Fishing gear (entanglements)
 - Climate change (forage species shifts, habitat compression)

Summary of Relevant Regulations

See full text, definition, and exemptions on the regulations page of the [GFNMS](#) and [CBNMS](#) websites.

The following GFNMS and CBNMS prohibitions can prevent impacts to marine mammals¹:

1. Taking any marine mammal, sea turtle, or bird within or above the Sanctuary.
2. Possessing within the Sanctuary (regardless of where taken, moved or removed from), any marine mammal, sea turtle or bird taken.

¹ See full regulatory language for exceptions.

3. Disturbing marine mammals or seabirds by flying motorized aircraft at less than 1,000 feet over the waters within any of the seven designated Special Wildlife Protection Zones. Failure to maintain a minimum altitude of 1,000 feet above ground level over such waters is presumed to disturb marine mammals or seabirds. (GFNMS only)

Summary of Relevant Sanctuary Projects

Conservation Science:

- The sanctuaries' science projects study: distribution and abundance of marine mammals at-sea in the context of ocean conditions and prey (ACCESS) in partnership with Point Blue Conservation Science and others; record live observations from the shore as well as dead and stranded animals on beaches (Beach Watch); partner with the National Marine Fisheries Service and Oregon State University to monitor sounds from marine mammals and vessels through drifting and stationary buoys.
- The sanctuaries work with Point Blue Conservation Science to model ship strikes and with NOAA's Office of Protected Resources, Greater Farallones Association, and the California Marine Sanctuary Foundation to assess vessel speeds to inform ship strike reduction efforts.

Resource Protection:

- The sanctuaries review project proposals, including proposed actions from other agencies, that could potentially violate sanctuary regulations and injure marine mammals.
- Through permitting actions the sanctuaries manage, reduce, or eliminate injury to marine mammals.
- The sanctuaries work with NOAA's Office of Law Enforcement to document and enforce sanctuary regulations that protect marine mammals and work with NOAA's General Council to issue fines and to work with responsible parties to restore marine mammals.
- GFNMS and CBNMS staff work in coordination with the Monterey Bay National Marine Sanctuary (MBNMS) to reduce the injury and mortality of whales from entanglement in fishing gear and with MBNMS and Channel Island National Marine Sanctuary to reduce lethal ship strikes to whales through a seasonal voluntary and a California regional air district incentive-based vessel speed reduction program for ships 300 gross registered tons (grt) and larger. The sanctuaries' vessel speed reduction efforts are supported by the Greater Farallones Association and the California Marine Sanctuary Foundation.

Education and Outreach:

- GFNMS and CBNMS educate kindergarten through university students, sanctuary volunteers, community members, and stakeholders about the importance of marine mammals to the sanctuary ecosystem and strive to inspire community members and stakeholders to be stewards of marine mammals through classroom, wildlife watching, summer camp, public lecture, and teacher workshop projects in addition to web stories, print, TV and social media that incorporate marine mammal content. Messages include marine mammal conservation, climate literacy, and ocean stewardship and are delivered through exhibits and outdoor interpretive signs as well as education programs to increase appreciation and awareness of marine mammals and highlight the value of sanctuaries.

Infrastructure and Vessels: Sanctuary infrastructure that supports research on, protection of, and education about marine mammals include office infrastructure and vessels.

- Research, GIS, Resource Protection, and Education and Outreach staff collaborate on marine mammal projects and meet with project partners at the sanctuaries' offices. The Research and Education programs train volunteers in marine mammal monitoring and natural history at the sanctuaries' Crissy Field Campus.
- The Crissy Field Visitor Center delivers marine mammal education programs and GFNMS and CBNMS partner with Point Reyes National Seashore on marine mammal exhibits.
- GFNMS and CBNMS conduct multi-day marine mammal surveys three times a year on the regional research vessel *Fulmar* and occasionally on larger NOAA "White Ships".

Summary and Staff Recommendations

Summary

Marine mammals are abundant in the sanctuaries and the populations of many species are stable or increasing; however, the future impacts of a warming ocean are unknown. Endangered and threatened blue, humpback and fin whales are impacted by vessel strikes and endangered and threatened humpback whales are impacted by entanglement in fishing gear in the sanctuaries. The sanctuaries work to reduce lethal ship strikes to endangered and threatened blue, humpback, and fin whales through a seasonal voluntary and incentive-based vessel speed reduction for ships 300 gross registered tons and larger. GFNMS and CBNMS, through MBNMS, are involved in the California Department of Fish and Wildlife's efforts to reduce entanglement of endangered and threatened humpback whales in fishing gear. The sanctuaries' educate

kindergarten through university students, sanctuary volunteers, and community members about the importance of marine mammals to the sanctuary ecosystem and the vulnerability of marine mammals to human-caused threats and works directly with the shipping industry to encourage large vessels to travel at 10 knots or less.

Staff Recommendations:

Conservation Science: Continue at-sea ACCESS and Beach Watch marine mammal surveys on distribution and abundance, human impacts, and management effectiveness to understand the health of marine mammal populations in the sanctuaries. Assess the effectiveness of GFNMS and CBNMS vessel speed reduction efforts to reduce lethal ship strikes to endangered and threatened blue, humpback, and fin whales to guide future management efforts. Further investigate the contribution of whales to supporting biodiversity and carbon sequestration. Continue acoustic monitoring to understand the presence of vocalizing whales in the sanctuaries and to characterize potential acoustic impacts to marine mammals.

Resource Protection: Implement management measures to reduce the threat of lethal ship strikes by a minimum of 50% to endangered and threatened blue, humpback, and fin whales.

Education and Outreach: Continue to educate and engage students, stakeholders, and local communities about the importance of marine mammals to the sanctuaries', the ocean's, and our communities' health and how students, stakeholders, and communities can become involved in marine mammal conservation. Focus messages and programming on vessel strikes, entanglement, and climate change impacts to whales, conservation actions, and the economic benefits of wildlife viewing.

Infrastructure: To support conserving marine mammals, maintain facility infrastructure as a collaborative meeting space, increase visitor center education programming space to reach more students, and update exhibits and wayside signs as needed. Maintain vessel access for marine mammal surveys and acoustic instrument deployments three times to four times a year.



Briefing on Seabirds and Shorebirds

State of the Resource

- Condition Report Data
 - CBNMS (in publication) - Cassin's auklets, black-footed albatross, sooty shearwaters, and pink-footed shearwaters were examined as focal species. Abundances were variable, there were no discernible trends, and no major cause for concern. Seabird biodiversity was investigated with no significant concerns or patterns identified.
 - GFNMS (in preparation) - Brandt's cormorants, Cassin's auklets, common murre, snowy plovers, willets, and brants were examined as focal species.
 - Seabirds: Brandt's cormorants, Cassin's auklets, and common murre (all breed and roost on Southeast Farallon Islands) are numerous in the sanctuary and are increasing. Distribution of Cassin's auklets at-sea shifted during the 2014-2015 marine heat wave from the shelf break to across the shelf. No shift observed for Brandt's cormorants and common murre.
 - Shorebirds: Snowy plovers are federally listed as threatened and their numbers in the sanctuary are very low, but are stable and increasing. Willet numbers in the sanctuary are low and declining. Willet populations overall are stable or increasing but foraging in the sanctuary is shifting, resulting in a decline in the sanctuary. Brants have shown a long-term increase but since 2014 have declined within the sanctuary. Overall, shoreline surveys recorded a decrease in abundance of all shorebird species and an increase in bird species richness during the time frame assessed, with a notable decrease in 2020 (which may be effort-related as a result of COVID).
- Climate Vulnerability Assessment Preliminary Findings. Vulnerability is calculated from exposure to stressors, sensitivity, and adaptive capacity. Ratings presented are from the original 2015 report and from 2023 revisions of some indicators.
 - **4 seabirds with Moderate vulnerability:** Brandt's cormorant, common murre, pigeon guillemot, and tufted puffin vulnerability is largely due to the impact of non-climate stressors such as disturbance during breeding season from human activity and predation from introduced species; Cassin's auklet vulnerability is driven by documented impacts

from the Marine Heat Wave (mass mortality event). All of these seabirds are mostly impacted by climate change via prey availability and impacts to breeding habitat.

- **1 seabird and 2 shorebird species with Moderate-high vulnerability, and all 3 are in the top 10 most vulnerable species in the GFNMS-CBNMS management area:** Ashy storm petrel vulnerability is higher than the other seabirds because of its markedly lower adaptive capacity due to limited geographic extent, threatened status, and recent population declines. Oyster catcher is the most vulnerable species in our assessment, due to high sensitivity and exposure to both climate (e.g. sea level rise and inundation) and non-climate stressors (e.g. land use change and recreation). Snowy plover vulnerability is driven by climate impacts (i.e. erosion, precipitation) to nesting habitat and disturbance from human activities.
- Other science information:
 - Seabirds are sensitive to changes in environment (e.g., forage availability) and are known to be indicator species of environmental changes.
 - Of the 78 reports of disturbances GFNMS received from 2012–2021, 53 were associated with low flying aircraft. Most of the wildlife disturbance events are medium or large incidents, impacting 10–1,000 individuals. This was documented by US Fish and Wildlife Service as an ongoing, chronic issue at significant seabird colonies in the sanctuary.¹
- Pressures on seabirds and shorebirds:
 - Climate change (seabirds: declines in prey availability due to oceanographic changes; shorebirds: sea level rise, erosion, increased wave action)
 - Marine debris
 - Human disturbance
 - Invasive predators

Summary of Relevant Regulations

See full text, definition, and exemptions on the regulations page of the [GFNMS](#) and [CBNMS](#) websites. The following GFNMS and CBNMS prohibitions can prevent impacts to seabirds and shorebirds²:

¹ Scopel, L. C., C. M. Bednar, G. J. McChesney, M. A. Baran, N. J. Swanson, M. V. Balitbit, M. Birch, A. S. Mang, and R. T. Golightly. 2021. Restoration of Common Murre colonies in central California: annual report 2021. ,U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge Complex, Fremont, California and Humboldt State University, Department of Wildlife, Arcata, California. 76 pages.

² See full regulatory language for exceptions.

1. Taking any marine mammal, sea turtle, or bird within or above the Sanctuary.
2. Possessing within the Sanctuary (regardless of where taken, moved or removed from), any marine mammal, sea turtle or bird taken.
3. Disturbing marine mammals or seabirds by flying motorized aircraft at less than 1,000 feet over the waters within any of the seven designated Special Wildlife Protection Zones. Failure to maintain a minimum altitude of 1,000 feet above ground level over such waters is presumed to disturb marine mammals or seabirds. (GFNMS only)

Summary of Relevant Sanctuary Projects

Conservation Science:

- The sanctuaries' science projects study: distribution and abundance of seabirds offshore in the context of ocean conditions and prey (ACCESS), in partnership with Point Blue Conservation Science and in collaboration with others; record live observations of seabirds and shorebirds from shore and dead and stranded animals on beaches (Beach Watch), in partnership with Greater Farallones Association;
- The science staff analyze scientific data to assess the status and trends of seabirds and shorebirds in the sanctuaries and provide data and analysis to support seabird and shorebird protection in the sanctuaries.

Resource Protection:

- The sanctuaries review project proposals, including proposed actions from other agencies, that could potentially violate sanctuary regulations and injure seabirds and shorebirds.
- Through permitting actions the sanctuaries manage, reduce, or eliminate injury to seabirds and shorebirds.
- The sanctuaries work with NOAA's Office of Law Enforcement to document and enforce regulations that protect seabirds and shorebirds and work with NOAA's General Council to issue fines and to work with responsible parties to restore seabird and shorebirds.
- GFNMS: 1) provides educational materials and presentations to boaters, kayakers, pilots, coastal visitors and seabird biologists to address the most frequent and impactful human-caused disturbance; 2) trains docents, researchers and citizen scientists to identify and document observed human activities that harm wildlife in order to address problem areas and target outreach to the appropriate audiences; and 3) in partnership with shares educational methods and materials with two California Marine Protected Area Community-based Collaboratives (Golden Gate and San Mateo) about "special closures", state regulated no-access zones designed to protect seabirds. The sanctuaries' efforts

are coordinated with US Fish and Wildlife Service and supported by the Greater Farallones Association.

- GFNMS reduces human disturbances to seabirds through working with enforcement agencies to address the most frequent and impactful human-caused disturbances.

Education and Outreach: GFNMS and CBNMS educate kindergarten through university students, sanctuary volunteers, community members, and stakeholders about the importance of seabirds and shorebirds to the sanctuary ecosystem and strive to inspire community members and stakeholders to be stewards of seabirds and shorebirds through classroom, wildlife watching, summer camp, public lecture, and teacher workshop projects in addition to web stories, print, TV and social media that incorporate seabird and shorebird content. Messages are also delivered through exhibits and outdoor interpretive signs to increase appreciation and awareness of seabirds and shorebirds and highlight the value of sanctuaries. Current demand for sanctuary school-based education and outreach projects that incorporate seabird and shorebird content exceeds the capacity of site education and outreach staff.

Infrastructure and Vessels: Sanctuary infrastructure that supports research on, protection of, and education about seabirds and shorebirds include office infrastructure and vessels.

- Research, GIS, Resource Protection, and Education and Outreach staff collaborate on seabird and shorebird projects and meet with project partners at the sanctuary offices. The Research and Education programs train volunteers in seabird and shorebird monitoring and natural history at the sanctuaries' Crissy Field Campus.
- The Crissy Field Visitor Center delivers seabird and shorebird education programs and GFNMS and CBNMS partner with Point Reyes National Seashore on seabird and shorebird exhibits.
- GFNMS and CBNMS conduct multi-day seabird and shorebird surveys three times a year on the regional research vessel *Fulmar* and occasionally on larger NOAA "White Ships".

Summary and Staff Recommendations

Summary

Although seabirds and shorebirds are facing threats globally, in general, seabird species in GFNMS and CBNMS appear to be stable with some variability in the trend. Some shorebird species abundances in the sanctuary are low but increasing (e.g., western snowy plover) or declining (e.g., willets). Seabird species are good indicators of ecosystem health and should continue to be monitored. Existing projects focus on

reducing human disturbance through promulgating regulations, promoting compliance by the main sources (pilots, boaters and coastal visitors) through the Seabird Protection Network and partner docent programs, and ensuring adequate reporting of disturbance incidents observed by researchers, community science volunteers and docents. The sanctuaries' education efforts focus on kindergarten through university students, sanctuary volunteers, and community members about the global and local impacts to the health of seabirds and shorebirds as well as the importance of seabirds and shorebirds to the sanctuary ecosystem. All of this work is supported by office infrastructure and vessels.

Staff Recommendations:

Conservation Science: Continue to monitor seabird and shorebird abundance, distribution and health in the sanctuaries to track status and trends, identify issues, and inform management.

Resource Protection: Continue to support community reporting of seabird disturbance to law enforcement. Continue to work with target audiences causing seabird disturbances to prevent human-caused disturbances and reduce disturbance-causing behaviors.

Education and Outreach: Continue to deliver interpretation, education, and outreach programs to kindergarten through university students, sanctuary volunteers, and community members about the importance of seabirds to the sanctuary ecosystem and strive to inspire our communities to be stewards of seabirds and shorebirds through classroom, wildlife viewing, summer camp, public lectures, teacher workshops, web stories, print and social media, and other education projects that incorporate seabird and shorebird content. Increase the number of seabird and shorebird classroom education programs to meet community demand.

Infrastructure and Vessels: To support conserving seabirds and shorebirds, maintain facility infrastructure as a collaborative meeting space, increase visitor center education programming space to allow more programs that reach more students, and update exhibits and wayside signs as needed. Maintain vessel access at a minimum of three times a year for offshore seabird surveys.