

Greater Farallones Association
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Heading: New Report Shows Greater Farallones National Marine Sanctuary and Other Marine Protected Areas Help Combat Climate Change with Blue Carbon

Subheading: San Francisco's National Marine Sanctuary is leading the way on emerging international effort to study and protect blue carbon

SAN FRANCISCO, October 4, 2021 — Marine protected areas (MPAs), including national marine sanctuaries, safeguard important ecosystems for marine species. A new report, published by the National Oceanographic and Atmospheric Administration's (NOAA) Office of National Marine Sanctuaries (ONMS), "[Blue Carbon in Marine Protected Areas](#)," indicates that they can also help fight climate change.

[Greater Farallones Association](#) (the Association) climate lead Sara Hutto, who also coordinates the [Greater Farallones National Marine Sanctuary's](#) (the Sanctuary) Climate Program, was the lead researcher and author on the joint report, which found that protected coastal and ocean habitats play a significant role in removing carbon from the atmosphere and storing it indefinitely beneath the sea, helping to reduce the impacts from climate change.

"These exciting new findings confirm that the Sanctuary protects habitats that act as carbon sinks, locking away carbon while maintaining a healthy and productive food web," says Hutto. The Sanctuary includes 3,295 square miles of federally-protected ocean along California's northern and central coast.

[Blue carbon](#) refers to carbon captured by the world's ocean and coastal ecosystems. *Blue carbon habitats and processes* like salt marshes, seagrass beds, mangroves, kelp forests, plankton, and whale falls, mitigate climate change by removing carbon dioxide from the atmosphere or surface waters and transporting it into sediments or deep waters, where it can be stored

indefinitely, as long as it's not disturbed. MPAs protect blue carbon ecosystems that are essential for achieving global carbon mitigation and emission reduction goals.

The “Blue Carbon in Marine Protected Areas” report, published as part of the [ONMS' Conservation Series](#), includes two parts: “Part 1: A Guide to Understanding and Increasing Protection of Blue Carbon,” released in August 2021, provides a roadmap for ONMS and MPA managers around the world to incorporate blue carbon processes into management decisions; and “Part 2: A Blue Carbon Assessment of Greater Farallones National Marine Sanctuary,” released September 27, 2021, quantifies for the first time select blue carbon habitats and processes for the Sanctuary, and can serve as a model assessment for other sites in the National Marine Sanctuary System and in other coastal habitats around the world.

Maria Brown, Superintendent of the Greater Farallones and Cordell Bank National Marine Sanctuaries, leads an international effort to better understand and protect blue carbon. “We are committed to ensuring blue carbon habitats and processes are protected; that we understand them and restore them,” says Superintendent Brown. The two sanctuaries protect more than 4,500 square miles of ocean off the shores of San Francisco.

On behalf of the Sanctuary, Hutto will present the findings of the “Blue Carbon in Marine Protected Areas” report at the International Blue Carbon Conference, November 11-12, 2021, in Edinburgh, Scotland, coinciding with the 2021 United Nations Climate Change Conference (COP26).

The Sanctuary and Association are working to better understand the amount of carbon currently stored in the Sanctuary's habitats and sediments, and the amount of carbon that is annually sequestered through various processes including through kelp growth and export to the deep sea, whale deadfalls, and plant growth and burial in coastal habitats.

The “Blue Carbon in Marine Protected Areas” report was supported by Greater Farallones National Marine Sanctuary and Tomberg Family Philanthropies.

View the Report:

[Farallones.org/climate/blue-carbon/
Sanctuaries.noaa.gov/science/conservation/conservation_reports.html](https://farallones.org/climate/blue-carbon/Sanctuaries.noaa.gov/science/conservation/conservation_reports.html)

Learn more about the Greater Farallones Ocean Climate Program:

[Farallones.org/climate/
Farallones.noaa.gov/manage/climate/](https://farallones.org/climate/)

Support the Ocean Climate Program: [Farallones.org/donate/](https://farallones.org/donate/)

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Greater Farallones Association (GFA) is a 501(c)(3) nonprofit that helps conserve, research, and protect the Greater Farallones National Marine Sanctuary, a federally-designated region encompassing 3,295 square miles of coastal waters and open ocean off the California coast. Our **mission** is to help preserve, monitor, research, educate about, and enhance Greater Farallones National Marine Sanctuary. Our organization is unique in that every program incorporates local communities in achieving its goals. We engage nearly 14,000 adults and youth per year in our educational programs, and empower communities to take a hands-on role in monitoring and conserving Sanctuary waters, wildlife, and coastlines. We are committed to high-impact programs rooted in science that provide educational opportunities for our community and protect the environment around us.

[Farallones.org](https://www.farallones.org)

Greater Farallones National Marine Sanctuary

Designated in 1981, Greater Farallones National Marine Sanctuary protects the wildlife and habitats of one of the most diverse and bountiful marine regions in the world, covering 3,295 square miles off the north-central California coast. This extraordinarily rich, diverse, internationally significant ecosystem encompasses marine habitats including open ocean and estuaries, rocky shores, wetlands and sandy beaches. The sanctuary supports major populations of endangered blue and humpback whales, sea lions, and dolphins. It sustains the largest breeding seabird rookery in the contiguous United States, an important population of white sharks, valuable fisheries, marine invertebrates and hundreds of shipwrecks. Through research, education, conservation and stewardship Greater Farallones sanctuary helps ensure these are preserved for future generations.

<https://farallones.noaa.gov/>

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Attachment Descriptions and Credit:

(2 PDFs, 1 figure, 6 photos)

PDF 1: Conservation Series: Blue Carbon in Marine Protected Areas - Part 1

PDF 2: Conservation Series: Blue Carbon in Marine Protected Areas - Part 2

Figure 1: Diagram indicating pathways for carbon sequestration by kelp, seagrass, and salt marsh. (1) Carbon capture is the absorption of dissolved inorganic CO₂ and fixation of carbon into the tissues of kelp, seagrasses, and salt marsh. (2) Carbon storage occurs when kelp material is exported from the subtidal rocky reefs to deep-sea environments, where it may be

buried in sediments. (3) Carbon storage occurs when dead seagrass and salt marsh plants get trapped in situ in the oxygen-free sediment stabilized by roots and rhizomes. For both (2) and (3), carbon can remain captured indefinitely if undisturbed. Figure: created using biorender.com. Credit: Hutto et al. 2021.

Image 1: Photo description: Seagrass beds are important blue carbon habitats. Photo Credit: Claire Fackler, NOAA [JPG]

Image 2: Photo description: Bolinas Lagoon within Greater Farallones National Marine Sanctuary is a locally important blue carbon salt marsh habitat. Photo Credit: Bob Lewis [JPG]

Image 3: Photo description: Giant Kelp forest in Monterey Bay National Marine Sanctuary is an important blue carbon habitat. Photo Credit: NOAA [JPG]

Image 4: Photo description: Bull kelp forest in Greater Farallones National Marine Sanctuary is an important blue carbon habitat. Photo Credit: Keith Johnson [JPG]

Image 5: Photo description: Phytoplankton contributes to blue carbon sequestration through photosynthesis. Photo Credit: NOAA [JPG]

Image 6: Photo description: Whale fall in Monterey Bay National Marine Sanctuary. Whales store carbon throughout their lifetimes, ultimately contributing to carbon sequestration through whale falls. Photo Credit: NOAA [JPG]

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