



2020 Accomplishments

NOAA Coastal Blue Carbon

Coastal salt marshes, mangrove forests, and seagrass beds are incredibly efficient at capturing and storing large quantities of carbon – referred to as “[coastal blue carbon](#).” NOAA’s coastal blue carbon activities are a collaborative effort across NOAA, including the National Marine Fisheries Service (NMFS/Fisheries), National Ocean Service (NOS), and Oceanic and Atmospheric Research (OAR/Research) offices.

Increased Awareness of Progress and Opportunities

- The NMFS/NOS/OAR collaborative effort sustained a NOAA Coastal Blue Carbon Community of Practice, including an email distribution list for information sharing across agency programs. In July, a virtual meeting was held for this community of practice which featured presentations from recent Sea Grant-supported research projects in [Washington](#), [Louisiana](#), and the [Delmarva region](#).
- NOAA Fisheries Office of Habitat Conservation continued to support Restore America’s Estuaries [Blue Carbon Buzz](#) and other blue carbon community of practice efforts.
- NOAA Sea Grant published a new topical [webpage](#) to highlight Sea Grant network activity in the blue carbon space.



Strengthened Policy and Research Partnerships

- The NOAA Research Climate Program Office signed an interagency agreement with the Department of State to support Transparency through Emissions Accounting and Reporting for Wetlands. Through this agreement, NOAA will work closely with other agencies, international organizations and partner countries to advance the integration of coastal wetlands in [National Greenhouse Gas Inventories](#).
- NOAA Fisheries Office of Habitat Conservation supported Restore America’s Estuaries and The Nature Conservancy with carbon offset project documentation and validation at a seagrass restoration site at the Virginia Coastal Reserve.
- The National Sea Grant College Program continued to support blue carbon-focused scientific and policy research. One such effort resulted in [Carbon Market Opportunities in Virginia](#), a report from the Virginia Coastal Policy Center in partnership with Virginia Sea Grant.

Enhanced Incorporation Into Science and Policy

- Through support from the NOAA Research Climate Program Office, the NOAA NOS Office for Coastal Management (OCM) worked with Silvestrum Climate Associates to update the wetlands section of the [U.S. Greenhouse Gas Inventory](#) reporting. The information included within the inventory for coastal wetlands is derived using information from NOAA’s Coastal Change Analysis Program (C-CAP). OCM [Coastal Change Analysis Program \(C-CAP\) data](#) are essential to this process. This year’s reporting included an update, adding a 2016 date of wetland changes to the previously included data. This increased the time-series of information included by an additional five years.
- NOAA Fisheries Office of Habitat Conservation continued to support carbon storage and sequestration monitoring at the [Southern Flow Corridor Project](#), a hydrologic restoration project in Tillamook Oregon. The ongoing research at this location resulted in two publications in 2020: one [determining controls on blue carbon burial and sediment accretion](#) and a second [quantifying ecosystem carbon stock data for Pacific Northwest habitats](#).
- NOAA Research’s Pacific Marine Environmental Laboratory Carbon Group finalized its report on a [five-year project using kelp](#) to ameliorate local acidification conditions that it participated in with Puget Sound Restoration Fund, the University of Washington, and other partners with funding from Paul Allen Family Foundation.
- The NOS Office for Coastal Management-funded NERRS Science Collaborative awarded a three-year study titled “[Land Use and Environmental Effects on Greenhouse Gas Emissions and Carbon Sequestration in Pacific Northwest Tidal Wetlands](#).” The work will add regional greenhouse gas emission and carbon sequestration data to inform coastal restoration efforts, including evaluating carbon finance opportunities for tidal wetland restoration initiatives.



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Enhanced Incorporation Into Science and Policy (*cont.*)

- NOAA NOS National Centers for Coastal Ocean Science (NCCOS) scientists worked with Duke University scientists (supported by the North Carolina Natural and Working Lands effort) to model current and future carbon storage and sequestration rates in coastal habitats. This effort is being expanded to seven additional states participating in the US Climate Alliance goals to reduce greenhouse gases, and will include assessment of marsh migration and its potential for increasing blue carbon.
- NOAA's Marine Protected Areas Center is working with the Commission for Environmental Cooperation, a tri-national organization that supports environmental cooperation projects across the U.S., Canada and Mexico, to engage in blue carbon activities as part of the Commission's 2019-2021 project on marine conservation and climate adaptation. Project deliverables (to be completed by Spring 2021) include an updated map of coastal blue carbon habitats for North America and a report of the tri-national workshop on opportunities for collaboration on blue carbon science and management across the three countries. In October 2020, NOAA held a virtual U.S. blue carbon workshop to convene U.S. blue carbon science, management and policy experts and provide input to tri-national discussions. The steering committee is developing a concept note to continue work on blue carbon and climate adaptation in 2021-23.
- Greater Farallones National Marine Sanctuary (GNFMS) initiated the "Advancing Blue Carbon Understanding and Management in Marine Protected Areas" project, which will be the first assessment of multiple blue carbon sequestration habitats and processes in a national marine sanctuary, with the primary purpose of informing a large-scale MPA in its management decision-making. This assessment will quantify the carbon sequestration of two coastal habitats (saltmarsh and seagrass) and two ocean-based sequestration processes (whale deadfalls and bull kelp) within GNFMS.



Goals for 2021

- ❑ NOAA will launch its Blue Carbon Inventory (BCI) Project, harnessing the expertise of multiple U.S. agencies and partners to advance the development of tools, approaches and capacity for integrating coastal blue carbon in the preparation of Greenhouse Gas (GHG) inventories in select developing countries. The effort will focus primarily on mangroves, with opportunities to consider other coastal blue carbon ecosystems depending on the interest of partner countries.
- ❑ In support of the new NOAA Blue Carbon Inventory (BCI) Project, NOAA/OAR/CPO will initiate a partnership with the Smithsonian Environmental Research Center (SERC) to enhance the accessibility and utility of their Coastal Carbon Data Clearinghouse, an open-source data portal associated with the Coastal Carbon Research Coordination Network (CCRCN).
- ❑ Incorporate Blue Carbon function into an assessment of the ecosystem services associated with the use of natural and nature-based approaches for coastal resiliency. Salt marshes and seagrasses are incorporated into living shorelines and beneficial use of dredged material projects designed to reduce erosion and reduce storm impacts to coastal communities. An NOS NCCOS-funded project "Keep it in the System" will assess impacts of thin-layer placement of dredged material on low-lying salt marshes.
- ❑ As part of its "Advancing Blue Carbon Understanding and Management in Marine Protected Areas" project, Greater Farallones National Marine Sanctuary plans to publish results in an online storymap and a peer-reviewed report in fall/winter 2021. This will include an extensive literature review and recommendations for managers, and will be shared via multiple international and national venues and platforms.
- ❑ In 2021, NOAA plans to incorporate a 2019 update for all CONUS geographies, and review opportunities for including Hawaii as well as Pacific and Caribbean territories, into the next (2022) U.S. Greenhouse Gas Inventory reporting.
- ❑ NOAA's Air Resources Laboratory Atmospheric Turbulence and Diffusion Division and its partners will publish a description of it atmospheric flux study at the Delaware National Estuarine Research Reserve.