



NOAA Coastal Blue Carbon

2018 Accomplishments

Coastal salt marshes, mangroves, 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), National Ocean Service (NOS), and Oceanic and Atmospheric Research (OAR) offices.

Increased Awareness of Progress and Opportunities

- Moderated a coastal blue carbon panel ‘Blue Carbon: Taking the Next Steps from Science to Application’, including a [NOAA projects presentation](#) at the National Summit on Coastal and Estuarine Restoration and Management meeting in Long Beach, California.
- Continued the collaborative NOAA Coastal Blue Carbon Community of Practice, a cross-line office effort to connect and share coastal blue carbon information across NOAA through email updates, meetings, and an invited speaker series. The Community of Practice was a platform for connecting and coordinating with the recently launched [Coastal Carbon Research Coordination Network](#).
- Supported Restore America’s Estuaries [Blue Carbon Buzz](#) and other blue carbon community of practice efforts.
- Coordinated the new [Coastal Carbon Research Coordination Network](#). The Network’s purpose is to accelerate scientific discovery, advance science-informed policy, and improve coastal ecosystem management by: (1) developing a community dedicated to coastal wetland carbon science for basic research, policy development, and management; (2) exploring the ecological links between coastal wetlands, estuaries, and the atmosphere; and (3) sharing data and analysis tools that support the diverse needs of scientists, policy makers and managers.



Strengthened Policy and Research Partnerships



- Developed feasibility planning for [Pacific Northwest blue carbon finance projects](#), supported by the National Estuarine Research System’s Science Collaborative and 15 other partners.
- Leveraged interagency relationships to advance coastal blue carbon efforts and represent NOAA’s work internationally, through U.S. participation in the [International Partnership for Blue Carbon](#) and informing blue carbon-related agenda items in other international fora.
- Supported the completion of carbon feasibility assessments with Restore America’s Estuaries for a mangrove restoration project (Rookery Bay, Florida) and a project assessing dredge placement options that could help restore marshes (Port Fourchon, Louisiana).
- Continued to advance coastal blue carbon research through NOAA’s National Estuarine Research Reserves, multiple Hollings Scholars, and involvement with interagency research projects including NASA’s coastal wetland carbon project and Department of Defense’s [Coastal/Estuarine Research Program](#).
- Supported the second meeting of the Restore America’s Estuaries-led Blue Carbon National Working Group on October 16-17, 2018. This meeting was hosted by the Chesapeake Bay Foundation and the [Smithsonian Environmental Research Center](#). The collective knowledge of this group will continue to benefit the national blue carbon community and NOAA by increasing understanding of blue carbon ecosystem services, how this service can support fisheries habitats, and how stakeholders are using this information to enhance management and support restoration and conservation efforts.



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Enhanced Incorporation Into Science and Policy

- Supported the report on Southern Flow Corridor effectiveness monitoring, 2015-2017: Blue carbon and sediment accretion. This monitoring work spanned the period of restoration (earthmoving) activities at the **Southern Flow Corridor** site, a tidal wetland restoration and flood mitigation project in the Tillamook Bay Estuary of Oregon, and nearby least-disturbed tidal wetland reference sites. Data include both pre-construction (pre-restoration) and post-construction (post-restoration) measurements. This report quantifies precisely how much carbon is stored in Oregon's tidal wetlands, using radiometric analysis of deep cores. The data in this report provide strong evidence of high carbon sequestration functions and high climate change resilience at the Southern Flow Corridor site and in the project's reference wetlands.
- Continued to lead, in close partnership with EPA, the inclusion of coastal wetlands in the annual **U.S. Greenhouse Gas Inventory**, providing estimates of carbon stock change and methane emissions. The U.S. is one of the first countries in the world to release detailed country-specific data on carbon stocks, stock change, nitrous oxide and methane emissions associated with the management of tidal wetlands for the conterminous states. This effort has resulted in numerous publications and significant international interest. NOAA's **NOS Coastal Change Analysis Program (C-CAP)** data are essential to this process.
- Supported, with EPA, the coastal blue carbon component of the National Academy of Sciences study, '**Negative Emissions Technologies and Reliable Sequestration: A Research Agenda**'. Although their potential for removing carbon is lower than other negative emissions technologies (NET), the 2018 Consensus Study Report states that coastal blue carbon approaches warrant continued exploration and support. Priorities for future research include advancing understanding of how sea-level rise, coastal management, and other climate impacts will affect future uptake rates.
- Funded competitive awards through multiple Sea Grant programs on research topics ranging from the effect of pond management on carbon storage in Massachusetts salt marsh, to the blue carbon capacity of restoration over time at a beneficial use project in Mississippi.
- Initiated research on carbon burial associated with **thin-layer application of dredged sediment in North Carolina**. Research addresses two questions: (1) What is the fate of marsh carbon buried by sediment application? and (2) How does sediment application impact blue carbon production? Preliminary results presented at AGU 2018 by Hollings Scholar N. Mushegian, '**Assessing implications of thin-layer sediment deposition on belowground carbon balances in coastal salt marshes**'.



Goals for 2019

- Continue to support the inclusion of coastal wetlands in the U.S. Greenhouse Gas Inventory.
- Expand and strengthen the NOAA Coastal Blue Carbon Community of Practice.
- Advance research on blue carbon with respect to natural infrastructure and living shorelines, sea-level rise, and climate resilience, and continue to examine factors driving carbon sequestration and burial rates.
- Leverage existing place-based networks.
- Participate in adding data to the Blue Carbon Atlas, hosted by the Smithsonian Environmental Research Center.