



NOAA Coastal Blue Carbon

2023 ACCOMPLISHMENTS

Salt marshes, mangroves, and seagrass beds are incredibly efficient at capturing and storing carbon – known as “[coastal blue carbon](#).” NOAA’s coastal blue carbon (CBC) activities are a collaborative effort across NOAA, including the National Environmental Satellite, Data and Information Service (NESDIS), National Marine Fisheries Services (NMFS), National Ocean Service (NOS), and Oceanic and Atmospheric Research (OAR) offices.

Promoting Understanding and Awareness of Progress

- National Centers for Coastal Ocean Science (NCCOS) researchers presented their Blue Carbon research on restored wetlands at the biennial [CERF](#) conference in Portland, Oregon.
- NCCOS scientists, through collaborations with the US Army Corps of Engineers Engineering with Nature program, visited marine installations to consult on ideas to improve coastal resilience and blue carbon sequestration.
- NCCOS Scientists participated in many workshops to promote awareness of the CBC research being done at the federal level (NROC Blue Carbon workshop, National Blue Carbon Working Group, NC Blue Carbon Coalition, among others)
- An NCCOS scientist was requested to present at the Patuxent River Conference on their work assessing CBC in Nature Based Infrastructure.
- 1st [Blue Carbon Law Symposium](#), by the South Carolina Sea Grant Consortium and Georgia Sea Grant (funded by the National Sea Grant Office) convened multiple sectors to discuss CBC investment and identify issues on the evolving legal/policy context of carbon markets. Speakers included NOAA Chief Scientist, Dr. Sarah Kapnick.
- Greater Farallones Association, NOAA Greater Farallones, Cordell Bank NMS, and Office for Coastal Management (OCM) published the [first evaluation of marine sedimentary carbon stocks in north-central California](#).
- NOAA Office of National Marine Sanctuaries (ONMS) released a new [Climate Resilience Plan](#) for FY24–26 highlighting the Sanctuary System’s commitment to assessing, conserving, and restoring CBC habitats.
- Greater Farallones and Cordell Bank National Marine Sanctuaries (NMS) presented their Blue Carbon in MPAs project at the International MPAs Conference (IMPAC5), to highlight the importance of MPAs in protecting blue carbon processes and stores.
- Greater Farallones and Cordell Bank National Marine Sanctuaries (NMS) presented their Blue Carbon in MPAs project at the International MPAs Conference (IMPAC5), to highlight the importance of MPAs in protecting blue carbon processes and stores; presented “[The Ocean Is a Climate Sponge: Why Blue Carbon Matters](#)” webinar to 450 people as part of the ONMS Climate Change Webinar Series, which targets educators to support ocean and climate literacy.
- NESDIS presented at the NOAA Blue Carbon Community of Practice seminar on leveraging satellite capabilities to map blue carbon ecosystems and quantifying storage.
- [NOAA Blue Carbon Inventory Project](#) – a multi-agency, State Department-funded project partnering with countries to inventory and manage CBC ecosystems - hosted a well-attended presentation on the project’s model for international collaboration and capacity building at the Mangrove Macrobenthos and Management Meeting 6 (MMM6) in Cartagena, Colombia.
- At COP28, NOAA Administrator, Dr. Rick Spinrad, Dr. Sarah Kapnick and other NOAA staff participated in several events highlighting blue carbon ecosystems ([Watch](#); [Watch](#)).



Enabling Action through Partnerships and Research

- An [NCCOS supported team](#) is evaluating the relative costs and benefits of green vs gray infrastructure and wetland restoration scenarios for two Pacific NW estuaries. This work considers flood protection and blue carbon storage resulting from restoration activities.
- In partnership with Audubon and USACE, NCCOS researchers assessed CBC storage at marshes restored through [placement of dredged sediment](#) in new and historic sites along the Gulf coast of Texas, the coast of Maryland, and in the Chesapeake Bay.
- NCCOS Scientists measured greenhouse gas fluxes monthly in restored saltmarshes of varying ages to determine how restoration age impacted fluxes.
- Across all five New England NERR reserves, a [project team](#) was funded by the NERRS Science Collaborative to deploy a novel sensor package to measure greenhouse gasses and develop a salt marsh greenhouse gas monitoring protocol for reserves and other practitioners to enhance understanding of salt marsh carbon cycling.
- NESDIS CoastWatch *et al* [published research](#) highlighting satellite imagery as a powerful, cost-effective tool to assess CBC shoreline dynamics; developed satellite-based Habitat Suitability Index for SAVs in Virginia; leveraged

high spatial resolution commercially available satellite imagery to differentiate marsh species in the Chesapeake Bay; engaged with the Philippine Space Agency and university partners to establish methods for satellite mapping of SAV CBC in the Philippines.



- MIT Sea Grant was among the contributors to an EPA Region 1 report on [“The Blue Carbon Reservoirs from Maine to Long Island, NY.”](#)
- Members of the NOAA CBC team joined the [Blue Carbon National Working Group](#) organized by Restore America’s Estuaries and Pew Charitable Trusts to increase the application of CBC ecosystem values and enhance management of coastal wetlands.
- International collaboration under the NOAA Blue Carbon Inventory Project expanded through new partnerships with the governments of Ghana, Indonesia, and Senegal, which included delivering two capacity-building workshops in Ghana, participating in a workshop on Blue Carbon Ecosystems in Indonesia, and leading a two-day convening to scope the Government of Senegal’s CBC technical assistance and capacity sharing needs.



Integrating Science in Policy

- The NOAA CBC team highlighted the relevance of CBC ecosystems or marine Carbon Dioxide Removal (mCDR) activities in the CDR Task Force. ONMS released [Guidance for the Potential Application of mCDR in U.S. National Marine Sanctuaries](#).
- Support from the NOAA Research Climate Program Office Adaptation Sciences Program helped OCM and Silvestrum Climate Associates provide states who include coastal wetlands in GHG reporting with an updated wetlands section of the U.S. Greenhouse Gas Inventory using data from NOAA’s Coastal Change Analysis Program.

Goals for 2024

- Explore options and communicate with leadership for formalizing the NOAA CBC team while maintaining the team’s flexible, inclusive and responsive approach.
- Update and expand NOAA’s web presence on blue carbon issues, including on NOAA’s role in blue carbon science, resource management and adaptation, and stewardship.
- Support other countries in restoring and managing blue carbon ecosystems, while including them in national greenhouse gas inventories.
- Publish and provide guidance for CBC management in historically restored salt marshes.
- Widely distribute, and track use of, the new [Blue Carbon Education and Communication Toolkit](#), recently published by ONMS.
- Complete an educational kiosk video series on blue carbon.



FOR ADDITIONAL INFORMATION, VISIT
oceanservice.noaa.gov/ecosystems/coastal-blue-carbon

Images from top to bottom: Alyssa LeClaire and Molly Bost, Paula Whitfield, Eric Sparks