

## Louisiana Wetland Restoration: Opportunities and Challenges of Blue Carbon Markets in North America - Brendan Player

Blue carbon ecosystems (BCEs) occupy only ~5% of global land area (Crooks et al., 2019) yet they store more than 30% of global soil carbon (Nahlik & Fennessy, 2016). The global voluntary carbon market (VCM) traded over 1 billion US Dollars in credits in 2021, with many of these projects including natural or nature-based climate solutions dominated by upland forest conservation and restoration (Forest Trends' Ecosystem Marketplace, 2022). However, BCEs have been comparatively absent from the market with only 35 projects listed or registered and much of these outside of North America. This is due to several factors, including but not limited to, critical scientific uncertainties, the historic value of carbon credits, the cost of restoration, risk of non-permanence, etc. Despite these challenges, and through careful planning and prioritization, blue carbon could be used to drive investment into coastal restoration within North America. For example, within Louisiana the long-term program of planning, design, construction, monitoring, and maintenance for coastal protection requires significant investments and can range in activities from sediment diversion and marsh restoration to shoreline protection. These expenses could be mitigated through blue carbon markets. By calculating site-specific screening-level assessments of credit potential, comparing these to implementation costs, and grouping small projects together, practitioners can identify which opportunities have good market potential. The goal of this presentation is to highlight the current state of the market and use Louisiana as a case study to examine the challenges and opportunities of a blue economy in North America.

## The State of Louisiana's Investigation of the Feasibility of a Coastal Carbon Crediting Program - James Pahl

Louisiana's Coastal Protection and Restoration Authority (CPRA's) mandate is to develop, implement and enforce a comprehensive Coastal Master Plan (CMP), which aims in part to protect, conserve, restore and enhance its coastal emergent wetlands, estuaries, barrier shorelines and reefs, including the state's coastal freshwater swamps and marshes. These habitats together encompass Louisiana's coastal carbon opportunity.

In 2022, the state's Climate Initiatives Task Force developed a Climate Action Plan that recommended implementing CMP projects, quantifying and monitoring coastal carbon in Louisiana habitats, and developing a crediting mechanism and market specific to coastal carbon. In response, the Water Institute (TWI) developed a carbon benefits estimator for CPRA based on habitat distributions projected for different CMP scenarios. CPRA, TWI, Stantec, and Plauché & Carr also began investigating the feasibility of a tradeable coastal carbon credit program oriented to agency restoration and risk reduction projects. Current activities include:

- Revising carbon sequestration benefits estimates from CMP project implementation,
- Estimating the carbon emissions burden associated with CMP marsh creation project implementation,

- Determining whether the programs funding CPRA's projects allow carbon credits to be developed from program-funded projects,
- Reviewing which, if any, of the current carbon crediting frameworks are suitable for CPRA's projects, or if developing new methodologies and/or a new framework is necessary.

Results from these efforts are expected in late summer 2024. This presentation will highlight key results from preliminary investigations as they inform CPRA's ongoing evaluation of the options and feasibility of an agency project-relevant carbon accreditation framework.

Considering Blue Carbon in Maryland's GHG Inventory and Planning - Elliott Campbell

The State of Maryland has made recent advancements in integrating blue carbon greenhouse gas (GHG) sinks from coastal wetlands and SAV into its GHG inventory and mitigation planning. These initiatives were furthered through a partnership with The Nature Conservancy and Environmental Science Associates (ESA) to conduct a blue carbon and resilience credit feasibility for five projects in Maryland. This study was completed in December of 2023 and this presentation will focus on how Maryland is integrating the results into our GHG planning, coastal resilience easement program, and coastal wetland restoration efforts. The study found that carbon storage and sequestration in coastal wetlands is significant. However, long term loss due to sea level rise even considering the effect of the implemented restoration action, the relatively low price for carbon offsets, and emissions associated with project construction indicates that carbon offsets from wetland restoration projects in Maryland are not likely to be financially feasible in terms of offsetting project costs. Moreover, the price of carbon would have to rise significantly (by approximately an order of magnitude) for the sale of credits to offset the costs associated with credit measurement, reporting and verification. The results of Sea Level Affecting Marshes model run were used to inform Maryland's 2031/2045 GHG mitigation plan, with the blue carbon sink projected to increase by 14% from 2020 levels by 2045. Blue carbon is an important piece of the overall suite of benefits conveyed by coastal systems, necessary to consider when planning for long term climate resilience in these systems.