

# BLUE CARBON IN MARYLAND

A fact sheet about water related ecosystems sequestering carbon  
by Maryland Department of Natural Resources

Maryland's coastal systems are being dramatically impacted by climate change and are predicted to face challenges to their health and success in the next 70 years. Here we hope to explain what blue carbon is, the status of blue carbon in Maryland, and what the future may hold for some of our most prized and valuable habitats.



**50** rare, threatened or endangered animal species use marshes

**68%** of our marshes are in high salinity (>15 ppt) regions of state waters

**58,762** household's yearly electricity expenditure held in these marshes<sup>2</sup>

**90%** of all fish and shellfish recreationally harvested depend on marshes<sup>3</sup>

**75%** of all fish and shellfish commercially harvested depend on marshes<sup>3</sup>

## What is Blue carbon?

Blue carbon is the carbon captured and stored by Maryland's ocean and coastal systems, such as marshlands, wetlands, and submerged aquatic vegetation.

## Where is blue carbon stored in Maryland marshes? <sup>1</sup>

Land cover type in lower Dorchester County

- Developed Dry Land
- Dry Land
- Forested Wetland
- Tidal Cypress Swamp
- Inland Fresh Marsh
- Tidal Fresh Marsh
- Transitional Salt Marsh
- Regularly-flooded Marsh
- Tidal Flat
- Inland Open Water
- Riverine Tidal
- Estuarine Open Water
- Irregularly-flooded Marsh
- Tidal Forested Wetland
- Flooded Cypress Swamp



## How are those habitats predicted to change over the next 75 years?

Land cover type in lower Dorchester County

- Developed Dry Land
- Dry Land
- Forested Wetland
- Tidal Cypress Swamp
- Inland Fresh Marsh
- Tidal Fresh Marsh
- Transitional Salt Marsh
- Regularly-flooded Marsh
- Tidal Flat
- Inland Open Water
- Riverine Tidal
- Estuarine Open Water
- Irregularly-flooded Marsh
- Marsh
- Tidal Forested Wetland
- Flooded Cypress Swamp



Figure 1: Much of Maryland lower lying areas are vulnerable to sea level change in the next 75 years. Much of our regularly-flooded marsh ■ is predicted to convert to open water ■ and irregularly-flooded marsh ■ predicted to convert to regularly flooded marsh ■ or open water ■.

## What is blue carbon crediting?

Blue carbon crediting is a way to incentivize and support activities that protect the valuable habitats that our communities cherish. Projects that create or protect marshlands, which sequester carbon, can generate credits that are then sold on the carbon market to offset or cover the cost of a project. Credits sold to private companies or individuals allow them to offset their carbon emissions, and the price of carbon is set by the voluntary market<sup>4</sup>.



## Is blue carbon crediting feasible in Maryland?

Findings from a recent report published by Environmental Science Associates, in partnership with The Nature Conservancy and Maryland Department of Natural Resources, suggest that the current price of carbon is not enough to fund marsh restoration related projects on its own. The full report can be read [here](#)<sup>4</sup>, with detailed analysis of future conditions and estimated carbon storage provided by various projects throughout Maryland.

## What other benefits do marshes provide, besides the storage of carbon?



## Types of projects that can increase resiliency and protect our coasts into the future



**Beneficial use** is the use of dredged sediment to restore or create new habitat, through restoration projects that require significant investment and planning.

**Thin layer placement** involves the application of dredged or other material overtop of existing habitats, reducing the vulnerability to sea level change.



**Living shoreline** creation is the use of natural and nature based solutions to soften our shorelines, providing many benefits like protection and habitat.



**Conservation easements** are land protection tools used to allow for the successful protection and migration of marshes without development pressures. They implement a management plan to help achieve goals set for a parcel.

## References

1. Warren Pinnacle, 2019 'Application of the Sea-Level Affecting Marshes Model to Coastal Maryland'.
2. Campbell et al., 2023. 'MD Blue Carbon Flux Methodology'.
3. Chesapeake Bay foundation, 'Wetlands Protection' web page. Accessed electronically.
4. Sheehan et al., 2024. 'TNC Maryland Blue Carbon Resilience Credit Feasibility Study'.

Wes Moore, Governor | Josh Kurtz, Secretary  
Chesapeake and Coastal Service, dnr.maryland.gov  
MD DNR 580 Taylor Ave Annapolis MD, 21401  
Dylan Taillie, dylan.taillie@maryland.gov 410-260-8791  
Toll free in Maryland: 877-620-8367

The facilities and services of the Maryland Department of Natural Resources are available to all without regard to race, color, religion, sex, sexual orientation, age, national origin, or physical or mental disability. This document is available in alternative format upon request.



Publication #: DNR 14-052824-1  
Published on 06/20/2024