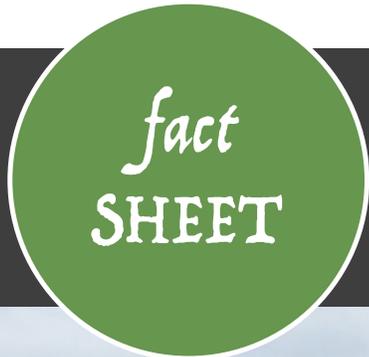


Using the Carbon Market to Provide Financial Support for Coastal Restoration and Protection

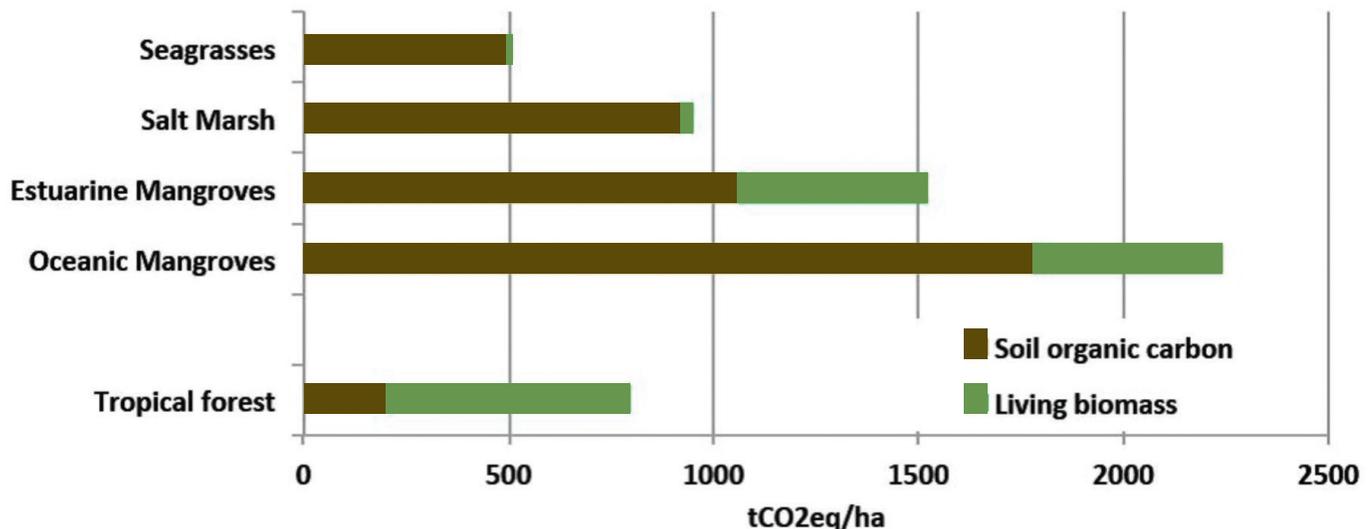


Using the Carbon Market to Provide Financial Support for Coastal Restoration and Protection



Coastal wetlands are among the most productive ecosystems in the world, providing key habitat for many fish species, storm and flood protection, shoreline stabilization, improved water quality, and climate mitigation. In addition to these well-known benefits, coastal habitats also sequester and store carbon – referred to as “coastal blue carbon”. The ability of these coastal wetlands to store large amounts of carbon (i.e. act as a sink for carbon) provides a climate change mitigation benefit. This newly recognized ecosystem service can provide a new incentive to prioritize the restoration and conservation of coastal ecosystems. Key facts about coastal blue carbon include:

- Carbon is primarily stored in wetland soils, where it can remain for centuries or more;
- Coastal wetlands can remove up to 10 times or more carbon dioxide (CO₂) per hectare from the atmosphere compared to forests;
- Drained and degraded coastal wetlands can release this stored carbon back into the atmosphere, creating significant sources of greenhouse gas (GHG) emissions – *an average of half a billion tons is released every year due to coastal degradation.*



*Data is per unit area, where tCO₂eq/ha is tons of carbon dioxide equivalents per hectare

Source: Murrya, Brian, Linwood Pendleton, W. Aaron Jenkins, and Samantha Sifleet. 2011. Green Payments for Blue Carbon: Economic Incentives for Protecting Threatened Coastal Habitats. Nicholas Institute Report. NI R 11-04

Coastal wetlands ability to play a role in helping to mitigate climate change can also be leveraged to:

- Elevate ecosystem valuation of coastal wetlands;
- Increase prioritization of wetland conservation and restoration;
- Increase public appreciation of the value of these important ecosystems; and
- Increase public and private funding to support restoration activities – **one method is by incorporating coastal wetlands into the carbon market.**

What are Carbon Markets and How Do they Work?

There are two types of carbon markets:

- Compliance market – requires private sector involvement. A governing entity sets a cap on the level of GHG emissions allowed.
- Voluntary market – allows for the buying and selling of carbon offsets outside of a regulatory market. Private sector involvement is voluntary.

Companies or individuals purchase carbon credits to offset their emissions. The purchase of carbon credits/offsets supports projects that either prevent emissions (e.g. renewable resources like wind power) or remove emissions from the atmosphere (e.g. natural habitats sequestering and storing CO₂).

Carbon Markets – Buying and selling carbon offsets occurs directly between buyers and seller, through several exchanges or through many intermediaries active in the carbon market.

A carbon offset/credit represents a one metric ton reduction in emissions of CO₂ or its equivalent in other GHGs, such as methane or nitrous oxide, both of which have a greater global warming potential than CO₂. An offset is used to balance the emissions an individual or company cannot otherwise reduce. An individual, organization or company can purchase carbon credits to offset their carbon emissions.

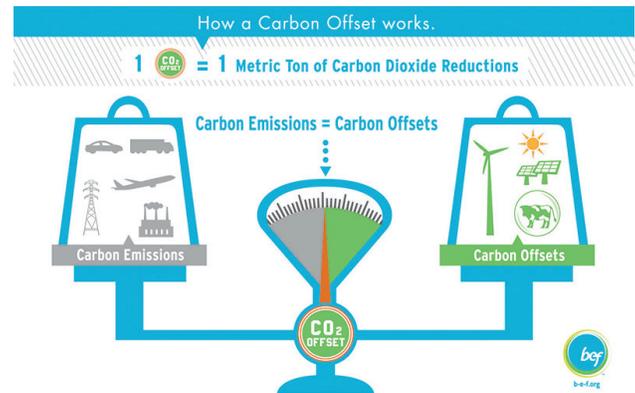
Carbon standards ensure quality and integrity of carbon credits by setting requirements and guidance on GHG accounting and providing procedures for project validation and verification. Top standards include the Verified Carbon Standard (VCS), American Carbon Registry (ACR), and Climate Action Reserve (CAR).

Registries are used to track credits to prevent double-counting. (e.g. APX and Markit)

Methodologies/Protocols are step-by-step project procedures for quantifying GHG benefits. Carbon project developers must use an approved methodology to participate in verified carbon markets. Each carbon standard has approved many methodologies.

Projects that receive carbon finance from the carbon market could use the funds to support long-term maintenance and monitoring or pay for a portion of construction costs. Carbon finance is generally available 5-10 years into the project. There are three project activity types for coastal wetlands to enter the carbon market:

1. **Restoration** of tidal wetlands and seagrass beds (e.g. restoring tidal flow and native plants by removing tidal restrictions)
2. **Creation of tidal wetlands** (e.g. beneficial use of dredged material)
3. **Conservation or avoided loss** of existing tidal wetlands and seagrass beds



In 2013, the top reasons for companies investing in emission reductions were to meet climate change mitigation and corporate social responsibility goals. The voluntary carbon market for 2013 had \$379 million of carbon credits purchased to lock 76 million tons of greenhouse gases out of the atmosphere.

How Does a Project Qualify for Carbon Finance from the Carbon Market?

To qualify, projects must demonstrate that they meet the following criteria:

- Offsets must be **REAL** – representing an actual reduction of emissions (e.g. using field measurements or verified proxies).
- Offsets must be **ADDITIONAL** – go beyond business-as-usual.(e.g. regulated mitigation project is not additional).
- Offsets must be **PERMANENT**, taking sea level rise into account and mitigating for risk of emission reversals (e.g. set aside credits for a buffer).
- Project methods must be **VERIFIED** by an independent 3rd party to ensure proper methods of accounting are followed.

To evaluate if the project meets the above criteria and to quantify the carbon offsets achieved by the project, a project developer would take the following steps:

- 1 Identify appropriate methodology for your project activity
- 2 Conduct a feasibility study to determine if the project will result in a net GHG benefit and meets other methodology requirements
- 3 Create project development document outlining project approach and methods in line with the identified methodology
- 4 Contract with a standard approved 3rd party validator (recommended by the Carbon Standard) to review and approve project methods and accounting
- 5 Open an account with a registry and register the project with a standard

Current methodologies for coastal wetlands that are approved/ pending/ or underdevelopment:

- **Global Tidal Wetland and Seagrass Restoration** – VCS methodology developed by Restore America’s Estuaries (currently in the approval process) – First of its kind, globally applicable methodology for project developers in coastal regions world wide that includes a wide range of restoration activities for salt marsh, seagrass, mangrove and other tidal wetland habitats. Expected approval 2015. Access a copy at <http://www.v-c-s.org/>
- **Coastal Wetland Creation** – VCS methodology developed by the Louisiana Coastal Protection and Restoration Authority
- **Restoration of Degraded Wetlands of the Mississippi Delta** – ACR methodology developed by Tierra Resources
- **Global Tidal Wetland and Seagrass Conservation** – VCS methodology being developed by Restore America’s Estuaries (in progress)

Learn More

Using the Carbon Market to Provide Financial Support for Coastal Restoration and Protection is part of a series of informational resources developed under the Bringing Wetlands to Market Project (BWM), which was led by the Waquoit Bay National Estuarine Research Reserve (WBNERR). The BWM Project examined the relationship between salt marshes, climate change, and nitrogen pollution and provided cutting edge science and tools to help coastal managers and policy makers leverage blue carbon to achieve broader wetlands management, restoration, and conservation goals through verified carbon markets and climate and conservation policy avenues. Learn more about the project and other available resources at:

- Bringing Wetlands to Market – Project Webpage: <https://www.waquoitbayreserve.org/research-monitoring/salt-marsh-carbon-project/>
- Coastal Blue Carbon as an Incentive for Coastal Conservation, Restoration and Management: A Template for Understanding Options: https://www.estuaries.org/images/Blue_Carbon/bluecarbontemplate_final.pdf
- Restore America’s Estuaries – Blue Carbon Webpages: www.estuaries.org/bluecarbon
- International Blue Carbon Initiative: www.thebluecarboninitiative.org



WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE

