



Living Shorelines

KEY REFERENCES
MARYLAND 2024



Using the Key References Guide

This reference guide is intended as a companion to the CBLP-Shorelines Certificate Program. It provides a collection of resources including guidance documents, manuals, websites, digital tools, videos, and regulations used to develop and deliver the course.

This course also utilizes a companion webpage <https://certified.cblpro.org/maryland-cblp-shorelines-workshop-materials/> that includes the required key references, course materials, video links, and assignments.

Other optional resources that practitioners may find useful are also included. Many of the linked resources are not under the control of CBLP and may change or become unavailable. This guide was developed for Maryland and includes state and local laws, regulations, and permitting information that may not apply to practitioners in other states. Consult your state's regulatory authorities for regions outside of Maryland.

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Introduction

Within the Chesapeake Bay Region, living shorelines are considered a shoreline best management practice eligible for nitrogen, phosphorus, and sediment total maximum daily load reductions to meet the Chesapeake Bay Watershed Restoration goals.

The Maryland Department of Natural Resources defines a Living Shoreline as erosion control measures that incorporate a suite of techniques and materials such as fiber coir logs, sills and groins combined with sand, natural materials and marsh plantings. These techniques can be used to create, protect, restore and enhance natural shoreline habitat, with the goal of minimizing coastal erosion while maintaining coastal processes.

The Maryland Living Shorelines Protection Act of 2008 identifies a living shoreline as the preferred method of shore protection and requires that improvements to protect a property against erosion consist of nonstructural shoreline stabilization measures that preserve the natural environment. Exceptions to the Living Shorelines Protection Act may be granted through a waiver process if it can be demonstrated that such measures are not feasible.

As implementation of living shorelines increases, the demand for consistently trained, experienced living shoreline professionals and a means to connect those professionals with employers and property owners is also increasing. Recognizing the need for more qualified professionals to fill demand, the Maryland Department of Natural Resources funded the Chesapeake Bay Landscape Professional (CBLP) program to develop a Living Shorelines training program for Maryland. CBLP-Shorelines was initially developed in 2022-23 by the Living Shorelines Collaborative in Virginia with funding from the National Fish and Wildlife Foundation. In Maryland, an advisory committee was convened to guide the development of the CBLP-Shorelines program, including staff from the Maryland Department of Natural Resources, the Maryland Department of the Environment, the Maryland Critical Area Commission, the Virginia Institute of Marine Science, and local experts including practitioners working in Maryland. The goal of the Maryland CBLP-Shorelines effort is to grow a network of skilled practitioners to support living shoreline programs and project implementation, connect clients with trusted service providers, and improve capacity of existing shoreline businesses to implement more living shorelines.

CBLP-Shorelines is designed to provide a hands-on, interactive professional development experience covering topics from site evaluation to designs and permitting, construction, maintenance and monitoring and concluding with a “learn as you do” living shoreline installation led by experienced living shoreline professionals. The focus of all work will be on living shoreline projects that fall under the Maryland State Programmatic General Permits Category A for Living Shorelines / Beach Nourishment. Participants will be exposed to professional best practices and will interact with experienced practitioners, regulators, advisors, and contractors as instructors. Participants will also understand the limitations of their own knowledge and experience and learn when to call an expert or partner with others to ensure the living shorelines they work on are correctly designed, permitted, installed, maintained and monitored according to state and federal regulations and to meet the goals and objectives of the client.

Learning Objectives

CBLP-Shorelines Maryland Learning Objectives

- Understand benefits of living shorelines and the basic ecological and biological processes that underpin healthy, resilient shorelines
- Provide field and classroom introduction to Terminology, Tools and Methodology for living shoreline project site assessments to inform design and suitability of living shorelines
- Introduce and practice performing online desktop analyses including tools and methodology of existing conditions, erosion rates, future predictions with sea level rise, and other digital data available for use
- Participate in a guided field evaluation of potential living shoreline sites using checklist. Introduce tools used in site assessment
- Become familiar with interpreting site assessment data to inform living shoreline feasibility, design, and construction
- Understand the permitting scenario and requirements for living shorelines in Maryland
- Be aware of design considerations and requirements relevant to the Critical Area
- Know how to develop a “whole property” design plan which incorporates the buffer, stormwater BMPs, and shoreline restoration
- Be familiar with living shoreline design options including various types of sills and appropriate conditions and materials for each
- Become familiar with planting zones and suitable plants for each zone, including the buffer
- Understand construction sequencing and be familiar with common materials and tools used during construction
- Understand the short- and longer-term maintenance requirements for living shorelines
- Learn about funding resources, incentive programs, and advisory services for living shorelines in Maryland

General Information on Living Shorelines

Resource: [Understanding Living Shorelines](#)

Type: Website

Source: NOAA



Resource: [Living Shorelines 101](#)

Type: Video

Source: Virginia Institute of Marine Science



Resource: [Guidance for Considering the Use of Living Shorelines](#)

Type: Guidance document

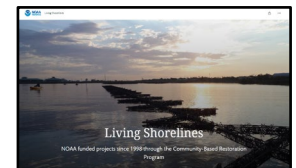
Source: NOAA



Resource: [National Map of Living Shoreline Projects](#)

Type: Storymap

Source: NOAA



Resource: [Shoreline Management BMPs](#)

Type: Guidance Document

Source: Chesapeake Stormwater Network



Resource: [Sediment Exchange Between the Created Saltmarshes of Living Shorelines and Adjacent Submersed Aquatic Vegetation in the Chesapeake Bay, Vona et al](#)

Type : Journal Article

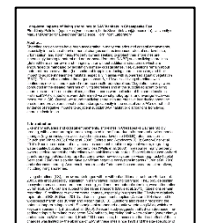
Source: *Frontiers in Marine Science* 2021



Resource: [Long-term performance and impacts of living shorelines in mesohaline Chesapeake Bay, Palinkas et al](#)

Type: Journal Article

Source: *Ecological Engineering* 2023



Resource: [Effects of Shoreline Alteration and Other Stressors on Submerged Aquatic Vegetation in Subestuaries of Chesapeake Bay and the Mid-Atlantic Coastal Bays, Patrick et al](#)

Type: Journal Article

Source: *Estuaries and Coasts*, 2014



Resource: [Living on the Edge](#)

Type: Video

Source: *Chesapeake Bay Foundation, 1991*



LIVING SHORELINES SUPPORT RESILIENT COMMUNITIES

Living shorelines use plants or other natural elements—sometimes in combination with harder shoreline structures—to stabilize estuarine coasts, bays, and tributaries.

- One square mile** of salt marsh stores the carbon equivalent of **76,000 gal of gas** annually.
- Marshes trap sediments from tidal waters, allowing them to **grow in elevation** as sea level rises.
- Living shorelines improve **water quality**, provide **fisheries habitat**, increase **biodiversity**, and promote **recreation**.
- Marshes and oyster reefs act as natural **barriers** to waves. **15 ft** of marsh can **absorb 50%** of incoming wave energy.
- Living shorelines are **more resilient** against storms than bulkheads.
- 33%** of shorelines in the U.S. will be **hardened by 2100**, decreasing fisheries habitat and biodiversity.
- Hard shoreline structures like **bulkheads** prevent natural marsh migration and may create seaward **erosion**.

The National Centers for Coastal Ocean Science | coastalscience.noaa.gov
Some graphics courtesy of the Integration and Application Network, University of Maryland Center for Environmental Science (ian.umces.edu/symbols/)

Site Evaluation

Resource: [Desktop Analysis Instruction Guide](#)

Type: Document

Source: Chesapeake Bay Landscape Professional Program

Description: Collection of tools and step-by-step instructions for completing the desktop analysis assignment.

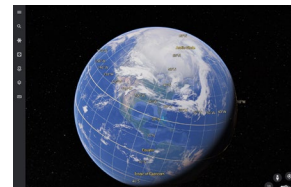


Resource: [Google Earth](#)

Type: Digital/Desktop Tool

Source: Google

Description: Downloadable software with a suite of tools for conducting desktop analysis.



Resource: [Maryland Shoreline Stabilization Mapper \(MSSM\)](#)

Type: Digital Tool

Source: Virginia institute of Marine Science & Maryland Department of the Environment

Description: An interactive mapping tool that displays the recommended shoreline practices from the Shoreline Stabilization Model.

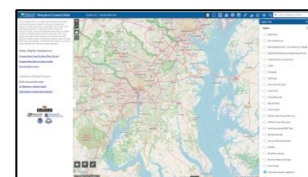


Resource: [Maryland Coastal Atlas](#)

Type: Digital Tool

Source: Maryland Department of Natural Resources

Description: An interactive mapping tool used to better understand Maryland's marine resources. Includes shoreline erosion rates and sea level vulnerability.

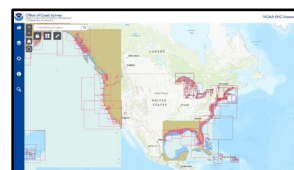


Resource: [Nautical Chart Viewer](#)

Type: Digital Tool

Source: NOAA

Description: Interactive map viewer used in desktop analysis; gives offshore depths, information on navigation channels, and submarine pipelines.

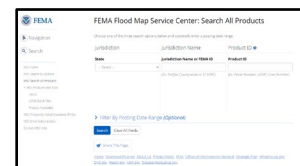


Resource: [Flood Insurance Studies](#)

Type: Report

Source: Federal Emergency Management Agency (FEMA)

Description: Jurisdiction reports provide storm surge stillwater elevations relative to NAVD88.



Resource: [Sea Level Rise Viewer](#)

Type: Digital Tool

Source: NOAA

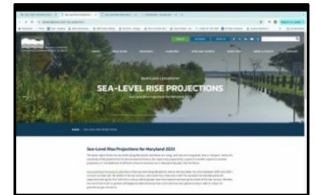
Description: Interactive map viewer shows the impact of sea level rise and marsh migration based on inputted scenarios.



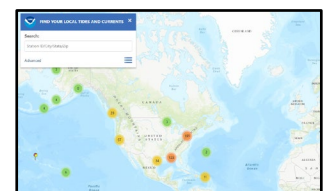
Resource: [Sea Level Curves](#)
Type: Digital Tool
Source: U.S Army Corp. of Engineers
Description: Select from various models to find sea level rise prediction curves for a specific area.



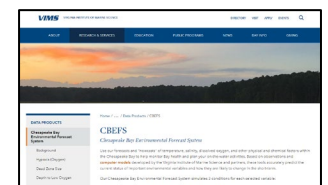
Resource: [Sea Level Rise Projections for Maryland 2023](#)
Type: Website & PDF
Source: University of Maryland Center for Environmental Science
Description: UMCES 2023 report that provides an explanation of the research methodology used along with updated projections of sea level rise in Maryland.



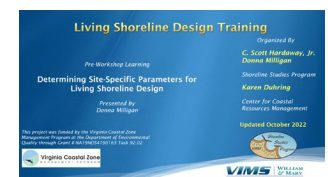
Resource: [Tidal Range & Current Conditions](#)
Type: Digital Tool
Source: NOAA
Description: Provides information from NOAA Stations, including wind speed and direction, and water currents.



Resource: [Chesapeake Bay Environmental Forecast System](#)
Type: Website
Source: Virginia Institute of Marine Science
Description: Environmental forecasts, including salinity, temperature, and acidification, that can assist in evaluating a site for marsh plant and oyster suitability.



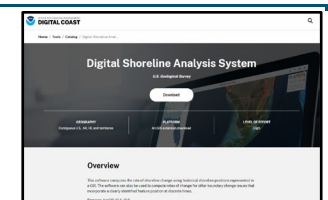
Resource: [Site Assessment Tools](#)
Type: PowerPoint
Source: Virginia Institute of Marine Science
Description: Presentation of tools for completing a desktop analysis and site evaluation. The presentation references VA specific websites, but the material presented regarding desktop analysis and site evaluation is very good.



Resource: [NOAA Shoreline Website](#)
Type: Website/Digital Tools
Source: NOAA
Description: Collection of tools for shoreline change analysis and boundary determination.



Resource: [Digital Shoreline Analysis System](#)
Type: Digital Tool (ArcGIS extension download)
Source: NOAA
Description: Requires ArcGIS 10.4-10.6; computes rate of shoreline change

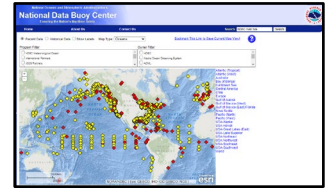


Resource: [National Data Buoy Center](#)

Type: Digital Tool

Source: NOAA

Description: Provides current and historical data including storm surge, wave frequency and magnitude.

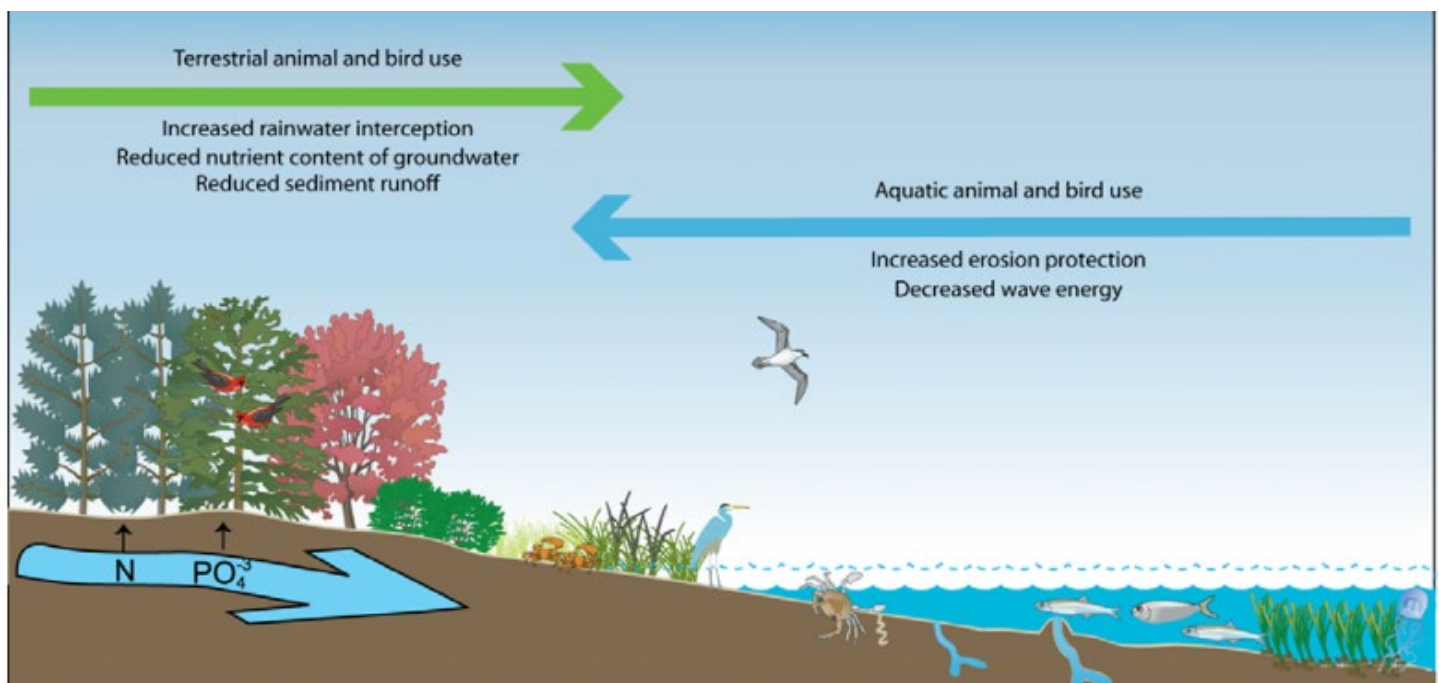
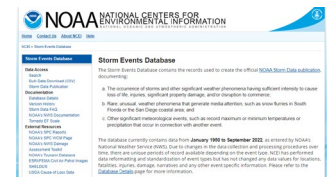


Resource: [Storm Events Database](#)

Type: Website

Source: NOAA

Description: Historical record of storm and significant weather phenomena data from January 1950 to October 2022.



Source: Virginia Institute of Marine Science Center for Coastal Resource Management

Design & Construction

Resource: [Designing for Sea Level Rise Case History](#)

Type: Video

Source: Tim Stromberg, Stromberg, Garrigan & Associates

Description: Details regulatory factors and design decisions in re-developing the Ryan Resilience Lab's living shoreline site design to adapt to sea level rise.



Resource: [Shore Erosion Control Guidelines for Waterfront Property Owners](#)

Type: Guidance Document

Source: <https://dnr.maryland.gov/ccs/Publication/Shoreerostext.pdf>

Description: A guidance document for understanding shore erosion and managing shore erosion by designing and installing a marsh (living shoreline)

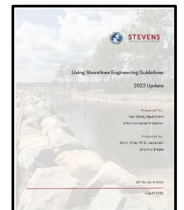


Resource: [Living Shoreline Engineering Guidelines \(2022 Update\)](#)

Type: Guidance Document

Source: Stevens Institute of Technology

Description: Updated engineering guidelines for living shorelines

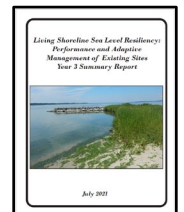


Resource: [Living Shoreline Sea-Level Resiliency](#)

Type: Report

Source: Virginia Institute of Marine Science

Description: Evaluation of sand, rock, and plant-based living shorelines to determine resiliency to sea level rise, informs resilient design methods.



Resource: [Living Shoreline Design Alternatives](#)

Type: Website

Source: Virginia Institute of Marine Science

Description: Overview of three categories of design approaches to living shorelines: non-structural, sills & breakwaters, and shellfish reefs

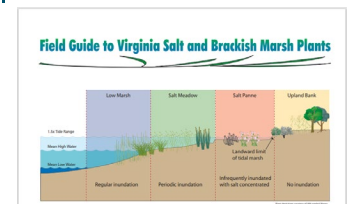


Plants

Resource: [Planting Considerations for Living Shorelines](#)
Type: Video
Source: Florida Sea Grant
Description: Information for installing marsh vegetation. **Note: this video contains information on planting both marshes and mangroves, however, mangroves are not relevant to Maryland.



Resource: [Field Guide to Virginia Salt and Brackish Marsh Plants](#)
Type: Guidance Document
Source: Virginia Institute of Marine Science
Description: Printable, illustrated field guide that includes color photographs for identification, marsh planting zone, plant height, and bloom period



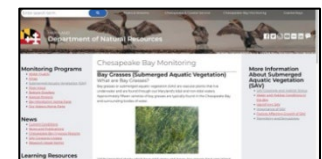
Resource: [Plants for Freshwater Marsh](#)
Type: Website
Source: Virginia Institute of Marine Science
Description: Lists common plants found in Virginia's tidal freshwater marshes and includes color photos and descriptions.



Resource: [Maryland Invasive Plant Species List](#)
Type: PDF
Source: Maryland Department of Agriculture
Description: Current list of invasive species identified by the Maryland Department of Agriculture as posing a threat to Maryland's forests, marshes, wetlands, and waterways.



Resource: [Submerged Aquatic Vegetation](#)
Type: Website
Source: Maryland Department of Natural Resources
Description: Information regarding SAV in Maryland, including the importance of SAV, Identification, Coverage, Permits and Regulations.



Resource: [Submerged Aquatic Vegetation Identification Guide](#)
Type: PDF
Source: Maryland Department of Natural Resources
Description: Identification guide with species listed alphabetically by common name. Color photos of each plant. Dichotomous key included.



Resource: [Submerged Aquatic Vegetation Pocket Guide](#)

Type: PDF

Source: Chesapeake Bay Trust

Description: A good pocket guide for SAV identification.



Resource: [Plants of Maryland's Salt Marshes](#)

Type: PDF

Source: Maryland Native Plant Society

Description: A brief overview of common plants that can be found in Maryland Salt Marshes.

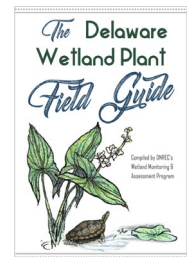


Resource: [Delaware Wetland Plant Field Guide](#)

Type: PDF

Source: Delaware Department of Natural Resources and Environmental Control

Description: Downloadable field guide with color photos, includes native and some non-native plants. *Note: Species listed as native for Delaware may not also be native to Maryland*



Resource: [Wetland Plant Catalog](#)

Type: PDF

Source: Environmental Concern

Description: Wholesale plant catalog, includes plant size, water & salinity tolerance, and notes

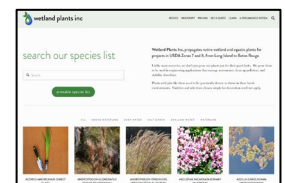


Resource: [Wetland Species List](#)

Type: Website

Source: Wetland Plants Inc

Description: Searchable plant list with growing conditions



Resource: [Herbaceous Tidal Wetland Communities of Maryland's Eastern Shore](#)

Type: PDF

Source: Maryland Department of Natural Resources

Description: Describes 14 different tidal wetland communities within the herbaceous tidal wetlands of Maryland's Eastern Shore. Includes reference sites for each community.

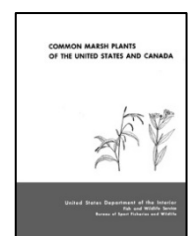


Resource: [Common Marsh Plants of the United States and Canada](#)

Type: PDF

Source: United States Geological Survey

Description: Identification guide with good illustrations. Plants group by growth characteristics.



Resource: [Planting Guidance](#)

Type: PDF

Source: North Carolina Coastal Federation

Description: Information on plants, planting techniques, tools, and timing.



RETAINING WALL

Steep dropoff from land to water

Almost no wildlife along water's edge

Erosion can occur behind the bulkhead

'Hard' infrastructure like retaining walls abruptly severs the ecological connection between the coast and water.

LIVING SHORELINE

Gentle slope from land to water

Much more wildlife along water's edge

Wildlife has easy access to water from land

Not only do Living Shorelines defend land against destructive waves, but they also provide crucial habitat for fish and wildlife.

©2012. Artwork by Frank McShane

Structural Solution

- Strongest day in the ground is the day after construction

Nature-based Solution

- Weakest day in the ground is the first day construction - becomes **stronger over time**

Image: Frank McShane, delewarelivingshorelines.org

Depiction contrasting living shorelines. Courtesy of Frank McShane in collaboration with Partnership for the Delaware Estuary Inc.

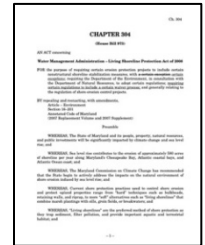
Permitting

Resource: [Maryland Living Shoreline Protection Act](#)

Type: PDF

Source: Maryland Department of Natural Resources

Description: 2008 Maryland law which specifically requires shoreline property owners to utilize living shorelines as the preferred method to prevent erosion, unless they can prove that these methods won't work on their property.

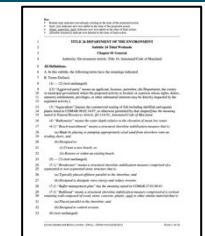


Resource: [Annotated Code of Maryland's Living Shorelines Regulations](#)

Type: PDF

Source: Maryland Department of the Environment

Description: Maryland tidal wetland regulations for living shorelines (2013)



Resource: [Maryland State Programmatic General Permit - 6](#)

Type: PDF

Source: U.S. Army Corp. of Engineers

Description: U.S. Army Corp. of Engineers regulations regarding activities in jurisdictional waters of Maryland (Living Shorelines, page 57)



Resource: [Joint Permit Application for the Alteration of any Tidal Wetland and / or Tidal Waters in Maryland](#)

Type: PDF

Source: Maryland Department of the Environment

Description: Downloadable, fillable permit application

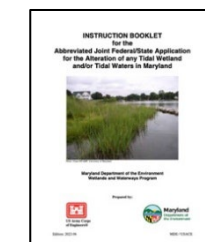


Resource: [Instruction Booklet for the Joint Permit Application for the Alteration of any Tidal Wetland and / or Tidal Waters in Maryland](#)

Type: PDF

Source: Maryland Department of the Environment

Description: Line by line instructions for the Joint Permit Application including sample activity guidelines and drawings.

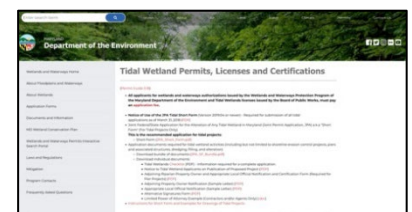


Resource: [Tidal Wetland Permits, Licenses and Certifications](#)

Type: Website

Source: Maryland Department of the Environment

Description: Website portal with links to all of the forms required as part of a Joint Permit Application. Includes Living Shoreline Waiver form, Buffer Notification Form, and Buffer Management Plans.

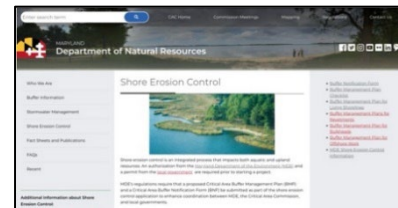


Resource: [Critical Area Commission Shore Erosion Control](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: Links to Buffer Notification Form, Buffer Management Plan Checklist, and the Critical Area Information Sheet and Mitigation Calculator

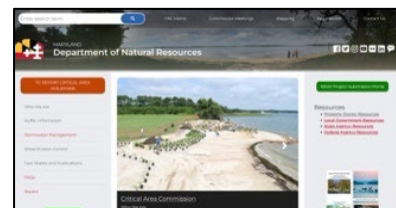


Resource: [Critical Area Commission](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: Information about the Critical Area Commission with links to fact sheets and publications.



Resource: [The Green Book for the Buffer](#)

Type: PDF

Source: Maryland Department of Natural Resources

Description: An overview of Maryland's Critical Area Program with information about the Critical Area Buffer regulations and creating a Buffer Management Plan. Includes a section on buffer maintenance.

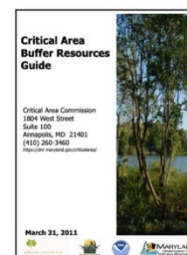


Resource: [Critical Area Buffer Resources Guide](#)

Type: PDF

Source: Maryland Department of Natural Resources

Description: A step by step guide to the MD Critical Area buffer regulations and creating a Buffer Management Plan. Includes many clarification slides and sample Buffer Management Plans,



Resource: [3.18 Tidal Wetland Licenses and Permits](#)

Type: PDF

Source: Maryland Department of the Environment

Description: A document that explains what triggers the need for a permit, why a permit is required, what laws that apply to the permitting process.



Resource: [Supplemental Living Shoreline Checklist](#)

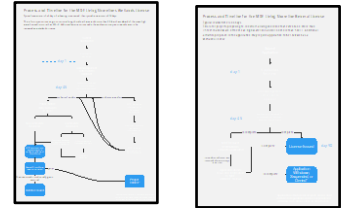
Type: PDF

Source: Maryland Department of the Environment

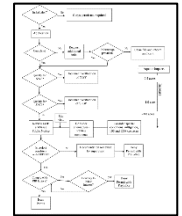
Description: Checklists that outline additional information that may be required based on the project or project site.



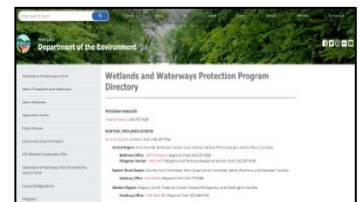
Resource: [General Permit Flowchart](#)
Type: PDF
Source: Chesapeake Bay Landscape Professional Program
Description: A flowchart outlining the review processes associated with Maryland permitting for living shorelines.



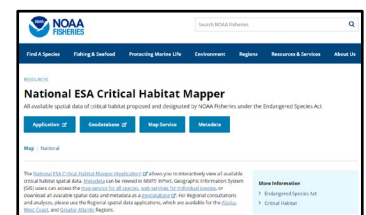
Resource: [Corps of Engineers MD Permit Process Flowchart](#)
Type: PDF
Source: Chesapeake Bay Landscape Professional Program
Description: A flowchart outlining the review processes associated with the Corps of Engineers in Maryland



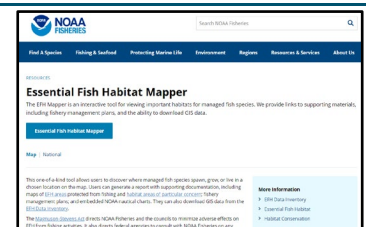
Resource: [Wetlands and Waterways Protection Program Directory](#)
Type: Website
Source: Maryland Department of the Environment
Description: Provides contact information for MDE staff, including county regulators.



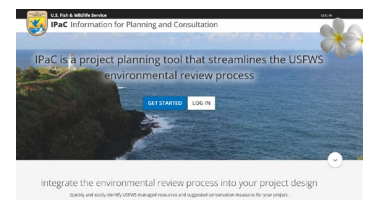
Resource: [National ESA Critical Habitat Mapper](#)
Type: Website/Digital Tool
Source: NOAA
Description: Interactive mapping to identify critical habitat and endangered species information, as well as associated regulatory rules



Resource: [Essential Fish Habitat Mapper](#)
Type: Website/Digital Tool
Source: NOAA
Description: Mapping tool to identify geographic information on managed fish species and habitat areas of particular concern



Resource: [USFWS Information for Planning and Consultation](#)
Type: Website/Digital Tool
Source: NOAA
Description: Project planning tool, videos and FAQ for the environmental review process



Resource: [Section 7 Consultations in the Greater Atlantic Region](#)
Type: Website
Source: NOAA
Description: Information on federal agency consultations relating to the Endangered Species Act

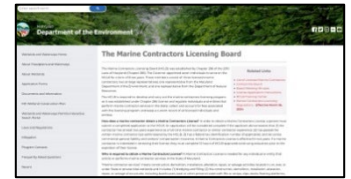


Resource: [Marine Contractors Licensing Board](#)

Type: Website

Source: Maryland Department of the Environment

Description: Information about obtaining a Marine Contractors License and renewal requirements

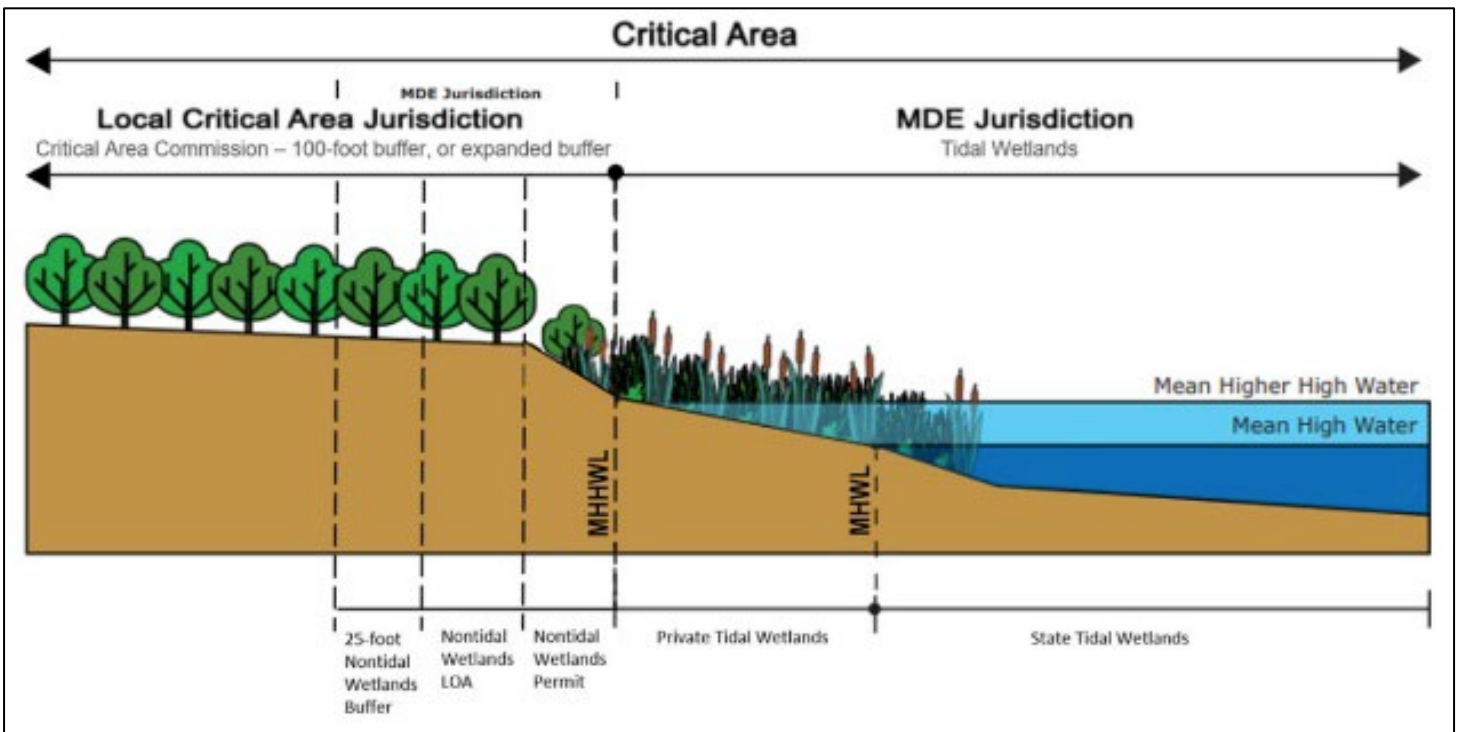


Resource: [Marine Contractors License Application](#)

Type: Website

Source: Maryland Department of the Environment

Description: Information regarding licensing categories, application form, instructions, and guide.



All tidal wetlands which are subject to regular or periodic tidal actions and support aquatic growth (i.e., wetland vegetation) occurring landward of the MHWL are considered private tidal wetlands. Private tidal wetlands are privately-owned but are still regulated by MDE. State and private tidal wetlands are regulated similarly; however they require different types of authorizations for proposed impacts. Additionally, nontidal wetlands that may exist landward of the MHHWL that are regularly or periodically influenced by tidal waters can by definition be classified as significant plant or wildlife value and any impacts would need to be authorized by a nontidal wetlands permit.

Maintenance & Monitoring

Resource: [Maintaining Your Shoreline Stabilization Practice](#)

Type: Guidance Document

Source: Maryland Department of Environment

Description: Provides information on maintaining different types of shoreline stabilization projects including non-structural (e.g., beach nourishment, slope grading and terracing, marsh creation) and structural (e.g., revetment, bulkheads, jetties and groins).

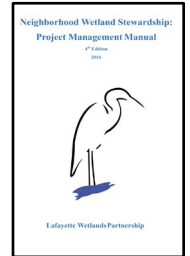


Resource: [Neighborhood Wetland Stewardship: Project Management Manual](#)

Type: Guidance Document

Source: The Lafayette Wetlands Partnership

Description: Provides information on available resources, project planning, site plan development, permitting, material acquisition, volunteer recruitment, and monitoring.



Resource: [Six Steps to Create Your Living Shoreline](#)

Type: Website/PDF

Source: Chesapeake Bay Foundation

Description: List breaking down steps for a homeowner to design, permit, install, and maintain a living shoreline



Resource: [Living Shoreline Maintenance and Troubleshooting](#)

Type: Website

Source: Delaware Living Shoreline Committee

Description: Provides a list of common problems that could occur after installation of living shoreline and solutions to those problems.

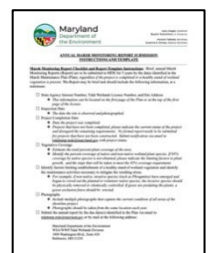


Resource: [Fillable Marsh Maintenance Report Form](#)

Type: PDF

Source: Maryland Department of the Environment

Description: The annual Marsh Monitoring Report as a fillable PDF document.



Funding

Resource: [Living Shorelines Funding & Incentives](#)

Type: Website

Source: Maryland Department of the Environment

Description: A hyperlinked list of direct funding opportunities or incentive programs available to property owners in Maryland.

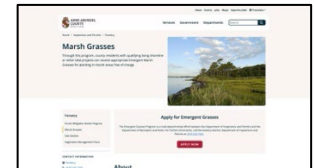


Resource: [Anne Arundel County Marsh Grasses Program](#)

Type: Website

Source: Anne Arundel County Government

Description: Information and application link for Anne Arundel County residents to receive appropriate emergent marsh grasses.



Resource: [MDNR Shoreline Erosion Loan Program](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: Information about the MDDNR Shoreline Erosion Loan Program with a link to the loan application portal.



Resource: [MDNR Grants Gateway](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: A single point of entry through the Grants Gateway for organizations seeking technical and financial assistance.



Resource: [Watershed Assistance Grant Program](#)

Type: Website

Source: Chesapeake Bay Trust

Description: Access portal for the Watershed Assistance Grant Program which provides approved applicants support for watershed restoration project designs and permitting.

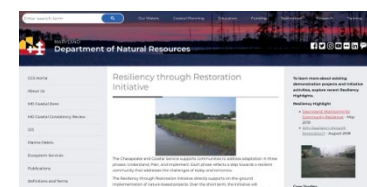


Resource: [Resiliency through Restoration Initiative](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: Information regarding financial assistance through the Grants Gateway to fund nature-based solutions (Outcome 3).



Resource: [Nature Based Solutions Funding Database](#)

Type: Website

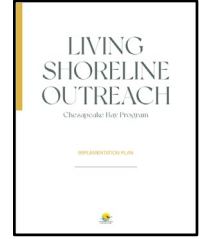
Source: National Wildlife Federation

Description: The National Wildlife Federation's interactive database of programs for communities interested in federal funding and/or technical assistance.

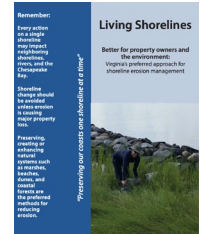


Resources for Homeowners & Clients

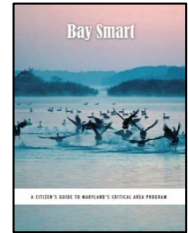
Resource: [Living Shoreline Outreach Implementation Plan](#)
Type: PDF
Source: Chesapeake Bay Program
Description: Bay-wide resource that includes talking points and strategies for discussing living shorelines.



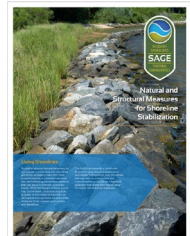
Resource: [Living Shorelines: Better for Property Owners and the Environment](#)
Type: PDF
Source: Virginia Institute of Marine Science
Description: Brochure that provides information on living shorelines and benefits to property owners.



Resource: [Baysmart – A Citizen’s Guide to Maryland’s Critical Area Program](#)
Type: PDF
Source: Maryland Department of Natural Resources
Description: A comprehensive overview of the MD Critical Area program.



Resource: [Natural & Structural Measures for Shoreline Stabilization](#)
Type: PDF
Source: SAGE
Description: Brochure providing an overview of various shoreline stabilization methods.



Resource: [Tidal Wetland Restoration](#)
Type: PDF
Source: Lynnhaven River NOW
Description: Brochure for homeowners with information on tidal wetlands and living shorelines.



Resource: [Waterfront Homeowners Fight Erosion with Living Shorelines](#)
Type: Video
Source: Chesapeake Bay Foundation
Description: Testimonial video from homeowners throughout Hampton Roads.



Resource: [Living Shoreline Success on the Eastern Branch of the Elizabeth River](#)
Type: Video
Source: Elizabeth River Project / Wetlands Watch
Description: Testimonial video from a Norfolk homeowner



Resource: [Living Shoreline Poster](#)

Type: PDF

Source: New York Sea Grant

Description: Visual overview of a residential property, showing a whole-property approach to maximizing ecological and runoff reduction benefits.

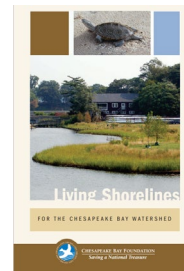


Resource: [Living Shorelines for the Chesapeake Bay Watershed](#)

Type: PDF

Source: Chesapeake Bay Foundation

Description: 12-page brochure for homeowners explaining the benefits of living shorelines.



Resource: [Living Shorelines](#)

Type: Website

Source: Maryland Department of Natural Resources

Description: General informational website with links to request technical assistance, Living Shorelines laws, funding options, and frequently asked questions.

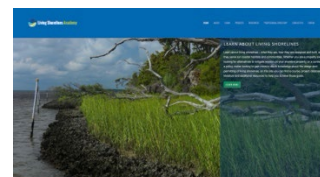


Resource: [Living Shorelines Academy](#)

Type: Website

Source: Restore America's Estuaries & North Carolina Coastal Federation

Description: Learning modules for property owners and professionals.



Acknowledgements

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