

# **Stein Testimony HB 655.pdf**

Uploaded by: Dana Stein

Position: FAV

DANA M. STEIN  
*Legislative District 11B*  
Baltimore County

—  
SPEAKER PRO TEM  
—

Environment and Transportation  
Committee

*Subcommittees*

Chair, Environment

Natural Resources,  
Agriculture and Open Space



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*The Maryland House of Delegates*  
ANNAPOLIS, MARYLAND 21401

**Testimony of Delegate Dana Stein in Support of  
HB 655 - Environment - State Wetlands - Shoreline Stabilization Measures**

HB 655 clarifies the law regarding living shorelines, which prevent erosion and are more resilient to severe weather and sea level rise than structural shorelines.

State tidal wetlands law authorizes riparian (waterfront) property owners to make improvements to protect the shoreline against erosion. The preference is to use living, or nonstructural, stabilization methods, as opposed to structural alternatives, such as rip rap and bulkheads. Living shorelines, which include vegetation and natural structures, provide habitat for fish and marine wildlife and filter runoff before it enters the Bay. Their maintenance costs are less than armored alternatives.

In two circumstances, living shorelines are not required. One is when a property is in an area that MDE has mapped as being inappropriate for a living shoreline; and the other is when a property owner can demonstrate that their property is not appropriate for a living shoreline. Reasons include excessive erosion and the presence of heavy tides.

Currently, when there's an application to replace structural shoreline measures with similar or identical structural stabilization measures, MDE provides an automatic waiver, no matter how long it's been since the original waiver was granted. This bill says that future waivers cannot be granted automatically; the rationale is that for decades, structural shoreline stabilization was the default and there was not really any study of whether nonstructural stabilization measures were feasible. So not only is it probable the shoreline conditions have changed over time, but if it is a project built before the 2000s there was likely no consideration given to any stabilization method other than a bulkhead or other armoring.

With an amendment from MDE, which we view as friendly, an automatic waiver could still be given if the property is in an area that MDE has said is inappropriate for a living shoreline.

HB 655 also specifically permits Tidal Wetlands Compensation Fund (TWCF) money to be used to provide funding for the conversion of existing structural, hardened, shorelines with living shorelines. This change is enabling and does not restrict any money in the Fund for that purpose. While living shorelines are a better economic and ecological choice over their lifetime, some

property owners are reluctant to install a living shoreline because they occasionally have a higher upfront cost. Adding conversion of hardened shoreline to living shoreline as an enumerated use of TWCF money is consistent with the purpose of that fund, and with MDE's ongoing efforts to provide additional tools and resources for property owners and contractors to make living shorelines an even better economic choice.

For these reasons, I request a favorable report on HB 655.

**HB 655 - CBF - FAV.pdf**

Uploaded by: Doug Myers

Position: FAV



# CHESAPEAKE BAY FOUNDATION

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*Environmental Protection and Restoration  
Environmental Education*

## House Bill 655

Environment - State Wetlands - Shoreline Stabilization Measures

Date: February 21, 2024

To: House Environment & Transportation Committee

Position: **Favorable**

From: Matt Stegman  
MD Staff Attorney

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Chesapeake Bay Foundation (CBF) **SUPPORTS** House Bill 655, which clarifies existing state law preferencing living shorelines for shoreline stabilization by making explicit that the Maryland Department of the Environment (MDE) may not issue a waiver from the living shoreline mandate based solely on the presence of an existing structural shoreline feature. The bill further adds provision of grants for the replacement of existing hardened shorelines with living shorelines to the allowable uses of the Tidal Wetlands Compensation Fund.

HB 655 *does not* change or expand the existing state preference for nonstructural living shorelines. Under current law, MDE may issue a waiver from the nonstructural erosion control mandate in two instances: (1) in areas where departmental mapping has identified conditions where living shorelines are not appropriate, and (2) in other areas, where a review of the subject property shows conditions where a living shoreline would not be feasible. HB 655 does not create any additional burden for waiver applicants, nor does it create any additional review requirements for MDE. Amendments to be offered by MDE would more precisely state the intended clarification contained in the bill, and CBF considers those amendments to be friendly.

The Tidal Wetlands Compensation Fund consists of money paid by applicants for a tidal wetlands license when mitigation to replace the values and functions associated with the wetlands to be impacted is not feasible. These funds are intended for use in the creation, restoration, or enhancement of tidal wetlands. HB 655 does not restrict or encumber money in the Tidal Wetlands Compensation Fund, but rather adds grants for the replacement of hardened shorelines with nonstructural living shoreline elements as one of the specifically enumerated allowable uses of the fund. Given hardened shorelines already exceed threshold levels that would cause negative impacts to Bay water quality and living resources in many areas, replacement of hardened shorelines with living shorelines is critical.

In sum, HB 655 is a modest clarification of existing state law that will advance the state's policy goal of developing living shorelines in the areas that support them.

For these reasons, **CBF urges the Committee's FAVORABLE report on HB 655.**

Maryland Office • Philip Merrill Environmental Center • 6 Herndon Avenue • Annapolis • Maryland • 21403

The Chesapeake Bay Foundation (CBF) is a non-profit environmental education and advocacy organization dedicated to the restoration and protection of the Chesapeake Bay. With over 200,000 members and e-subscribers, including 71,000 in Maryland alone, CBF works to educate the public and to protect the interest of the Chesapeake and its resources.

### Living Shorelines Better Protect Land from Sea Level Rise and Severe Weather:

The National Oceanic and Atmospheric Administration (NOAA) defines living shoreline as “a broad term that encompasses a range of shoreline stabilization techniques along estuarine coasts, bays, sheltered coastlines, and tributaries. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with a shoreline or shore-adjacent structure (e.g. oyster reefs or rock sills) for added stability. Living shorelines maintain continuity of the natural land–water interface and reduce erosion while providing habitat value and enhancing coastal resilience.”<sup>1</sup> This contrasts with structural or armored shoreline stabilizations, which include bulkheads, rip rap, stone or seawalls.

Maryland is at the forefront among eastern states when it comes to both the amount and proportion of armored shoreline.<sup>2</sup>

State	Hardened (km)	Total (km)	% Hardened	State	Hardened (km)	Total (km)	% Hardened
1 Pennsylvania	179.03	333.74	53.65	12 Virginia	2,247.45	20,586.57	10.92
2 New Jersey	615.71	1,688.21	36.47	13 Oregon	425.51	3,916.65	10.86
3 New York	1,880.37	6,280.84	29.94	14 Delaware	334.32	3,671.88	9.10
4 <b>Maryland</b>	<b>3,170.61</b>	<b>12,607.28</b>	<b>25.15</b>	15 North Carolina	1,810.48	21,363.73	8.47
5 Rhode Island	321.73	1,458.45	22.06	16 New Hampshire	53.10	634.48	8.37
6 California	1,286.50	6,234.01	20.64	17 Maine	372.85	10,352.57	3.60
7 Texas	1,916.67	9,947.36	19.27	18 Louisiana	2,078.77	85,495.88	2.43
8 Washington	1,136.41	6,984.99	16.27	19 South Carolina	339.26	14,196.13	2.39
9 Alabama	357.92	2,617.68	13.67	20 Georgia	150.50	9,900.29	1.52
10 Massachusetts	807.89	6,308.51	12.81	21 Connecticut	657.38	3,483.53	0.19
11 Mississippi	366.64	3,032.78	12.09	22 Florida	7,848.13	46,537.48	0.17

<sup>1</sup> National Oceanic and Atmospheric Administration (NOAA), *Guidance for Considering the Use of Living Shorelines*. 2015. Available at [https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines\\_2015.pdf](https://www.habitatblueprint.noaa.gov/wp-content/uploads/2018/01/NOAA-Guidance-for-Considering-the-Use-of-Living-Shorelines_2015.pdf). Accessed Feb. 15, 2024.

<sup>2</sup> Correll-Brown R, Wellman EH, Eulie DO, Scyphers SB, Smith CS, Polk MA and Gittman RK (2022) *Shifting Baselines May Undermine Shoreline Management Efforts in the United States*. *Front. Clim.* 4:719109.doi: 10.3389/fclim.2022.71910

Throughout Maryland, armored shorelines such as rip rap and bulkheads remain a primary approach to protect properties from erosion. The table below shows the prevalence of armored shorelines, particularly in urban and suburban areas<sup>3</sup>:

	hardened shoreline (Miles)	total shoreline (Miles)	%
Anne Arundel	235.03	537.49	44%
Baltimore	97.13	256.50	38%
Calvert	49.74	288.87	17%
Caroline	5.87	151.82	4%
Cecil	59.00	302.85	19%
Charles	31.76	302.97	10%
Baltimore City	47.34	63.18	75%
Dorchester	101.34	1651.00	6%
Harford	25.81	311.27	8%
Kent	36.22	360.35	10%
Prince George's	9.09	126.58	7%
Queen Anne's	101.79	433.34	23%
Somerset	31.36	1285.02	2%
St. Mary's	108.85	485.35	22%
Talbot	195.52	758.34	26%
Wicomico	19.41	393.11	5%
Worcester	104.56	582.58	18%

Scientific models predict sea levels in coastal areas like Annapolis will rise 1.5 feet by 2050 and 3 feet by 2100, which would overwhelm our current infrastructure. If we continue armoring our shorelines in the face of this reality, we'll displace floodwaters to communities that can't afford to build ever-higher sea walls.

While armored shoreline elements degrade over time and may cause negative downstream effects, living shorelines can protect land from erosion and become more stable over time as plants, roots, and oyster reefs grow. While adjustments to hard materials within the living shoreline might be needed, the actual living elements of a living shoreline - like oyster reefs and grasses - are expected to maintain elevation relative to predicted sea level rise through 2100.<sup>4</sup> Living shorelines further protect land from erosion by dampening wave energy. By contrast, bulkheads amplify and reflect wave energy.<sup>5</sup>

Living shorelines can be a vital component to protect waterfront land from severe weather events, which are becoming ever-more common as a result of climate change.<sup>6</sup> Studies suggest that living shorelines not

<sup>3</sup> Summarized from the Chesapeake Bay Program Percent Hardened Shoreline in Maryland dataset <https://data-chesbay.opendata.arcgis.com/datasets/percent-hardened-shoreline-in-maryland/explore>. Accessed February 15, 2024.

<sup>4</sup> National Oceanic and Atmospheric Administration (NOAA), *Guidance for Considering the Use of Living Shorelines*.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* "On sheltered coasts along the North Carolina outer banks, marshes (with and without sills) outperformed bulkheads during Category 1 Hurricane Irene in 2011. Those marsh and sill designs accreted sediment, while 75 percent of regional bulkheads surveyed were damaged (Gittman et al. 2014)."

only hold up better to severe weather than armored alternatives, they also produce a significant atmospheric carbon sequestration benefit.<sup>7</sup>

**Living Shorelines Have Tremendous Ecological and Economic Benefits:**

Living shorelines have a documented positive impact on the natural wildlife of Chesapeake Bay, including economically important species of fish and crabs. Conversely, a proportional negative impact on these same species can be noticed in areas with increased hardened shoreline. Living shorelines provide vital habitat for benthic organisms (clams, worms, and other bottom-dwelling creatures) that in turn are key food sources for fish and crabs.

Experts from the Virginia Institute of Marine Science and William & Mary University have determined that threshold declines in key bay species occur at levels of between 10 and 30% of shoreline hardening. Notably, there was a 4% decrease in crab abundance for every 10% of additional shoreline hardening. Additionally, healthy crab and fish populations have impacts up the food chain supporting healthy communities of birds, terrapins, and other vertebrates.

**There is a Need for Additional Incentives to Convert Hardened Shorelines to Living Shorelines:**

HB 655 specifically permits tidal wetlands compensation funds to be used to provide grants for the replacement of structural shoreline stabilization measures with nonstructural shoreline stabilization measures. It is CBF's hope that this funding can be used, along with other sources of public and private funding, to expand the extent of living shoreline along Maryland waterways. As demonstrated above, the benefits of living shorelines are cumulative. As adjoining property owners employ living shoreline techniques, their neighbors may notice some of the same benefits of decreased wave energy and erosion. Similarly, the deleterious impacts of excessive armoring are also cumulative.

In areas where property owners may have the option to pursue a waiver or install a living shoreline, they may often choose shoreline armoring because of a perceived lower cost. While hardened shorelines can occasionally be less expensive up front, living shorelines are less expensive to maintain over the life of the project. Incentives that better balance the cost-benefit calculation between hardened and living shorelines will spur additional development of living shoreline.

Funding partnerships can be one solution to this issue. Maryland has a relatively recent model for a successful funding partnership model in the Living Shorelines Grant Program, which brought together MDE, DNR, the Chesapeake Bay Trust, and other stakeholders to provide financial assistance for living shoreline installations.<sup>8</sup> This partnership leveraged MDE and DNR's subject matter expertise and regulatory capacity and the Trust's experience in grant administration to install thousands of feet of living shorelines. We strongly encourage a return to these types of innovative partnerships in the future.

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<sup>7</sup> Davis JL, Currin CA, O'Brien C, Raffenburg C, Davis A (2015) *Living Shorelines: Coastal Resilience with a Blue Carbon Benefit*. PLoS ONE 10(11): e0142595. <https://doi.org/10.1371/journal.pone.0142595>

<sup>8</sup> Kearney, Virginia. *MDE Partners with Chesapeake Bay Trust to Create "Living Shorelines"*. E-MDE, March 2009. <https://mde.maryland.gov/programs/ResearchCenter/eMDE/Pages/vol3no9/livingshorelines.aspx>. Accessed Feb. 16, 2024.



**HB0655\_DNR\_SUP\_ENT\_2-21-24.pdf**

Uploaded by: Dylan Behler

Position: FAV



Wes Moore, Governor  
Aruna Miller, Lt. Governor  
Josh Kurtz, Secretary  
David Goshorn, Deputy Secretary

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February 21, 2024

**BILL NUMBER: House Bill 655 – First Reader**

**SHORT TITLE: State Wetlands - Shoreline Stabilization Measures**

**DEPARTMENT’S POSITION: SUPPORT**

**EXPLANATION OF DEPARTMENT’S POSITION**

DNR supports this legislation with the proposed MDE amendments. This bill would assist in closing a loophole for nonstructural/living shoreline exemptions that a lot of waterfront property owners are being given with little justification. Many waterfront property owners install structural designs over nonstructural/living shoreline approaches, and even though the default within the law is to construct a nonstructural/living shoreline, almost all are given exemptions for structural installation. Replacement of structure with structure is an unintended consequence and was never the intent of the law.

DNR is supportive of living shoreline designs as an erosion control measure that include a suite of techniques which can be used to minimize coastal erosion and maintain coastal process. Techniques may include the use of fiber coir logs, sills, groins, breakwaters or other natural components used in combination with sand, other natural materials and/or marsh plantings. These techniques are used to protect, restore, enhance or create natural shoreline habitat. The department supports living shoreline designs through a loan program and within its grant programs that finance nature-based features.

**BACKGROUND INFORMATION**

When feasible, nonstructural shoreline stabilization methods are required to be constructed on a person’s property. However, current law provides a waiver process that exempts a property owner from constructing a nonstructural shoreline stabilization project when the property owner already has a bulkhead, revetment or other structural shoreline stabilization present on site. These waterfront property owners with structural projects are essentially ‘grandfathered in’ and have no barriers obtaining a non structural waiver and replacing structural projects in-kind.

**BILL EXPLANATION**

The bill would prohibit MDE from exempting a property owner from constructing a nonstructural/living shoreline stabilization measure when the sole basis for the exemption is to replace an existing structural shoreline stabilization design. Additionally, grant funding within the Tidal Wetlands Compensation Fund would be expanded to finance properties that will replace structural shoreline stabilization measures with nonstructural (ex - living shoreline) shoreline stabilization projects.

Contact: Dylan Behler, Director, Legislative and Constituent Services  
dylan.behler@maryland.gov ♦ 410-260-8113 (office) ♦ 443-924-0891 (cell)

**BaltimoreCounty\_FAV\_HB0655.pdf**

Uploaded by: Elisabeth Sachs

Position: FAV

JOHN A. OLSZEWSKI, JR.  
*County Executive*



JENNIFER AIOSA  
*Director of Government Affairs*

AMANDA KONTZ CARR  
*Legislative Officer*

WILLIAM J. THORNE  
*Legislative Associate*

**BILL NO.: HB 655**

**TITLE:** Environment – State Wetlands – Shoreline Stabilization Measures

**SPONSOR:** Delegate Stein

**COMMITTEE:** Environment and Transportation

**POSITION:** **SUPPORT**

**DATE:** February 21, 2024

Baltimore County **SUPPORTS** House Bill 655 – Environment – State Wetlands – Shoreline Stabilization Measures, which bars the Maryland Department of the Environment (MDE) from exempting a person from the requirement of incorporation non-structural shoreline stabilization practice, if the exemption would be solely on the basis of replacing structural shoreline stabilizations with the same or similar type of structural measure.

HB 655 aims to move shoreline stabilization measures to be increasing non-structural. Baltimore County notes that sometimes structural stabilizations are appropriate. For example, Baltimore County has many narrow waterfront parcels. It is not always feasible for residential waterfront property owners with narrow lots to replace a bulkhead barrier with a non-structural shoreline without impacting the adjacent property owners' barrier negatively. The piecemeal replacement, that this bill is intended to incentivize, could result in flank erosion of adjacent properties, flooding, standing water, and potentially compromise wells, septic systems, and the foundation of homes in low elevation areas. The resulting erosion alone might end up being a net-negative impact on water quality. Baltimore County would like to request an amendment requiring the MDE to issue regulations and technical guidance on when like-for-like structural shoreline practices may be appropriate or not. This will reduce the burden of proof laid on individual property owners and allow for a more uniform application of the proposed rule

Accordingly, Baltimore County urges a **FAVORABLE WITH AMENDMENTS** report on HB 655 from the House Environment and Transportation committee. For more information, please contact Jenn Aiosa, Director of Government Affairs at [jaiosa@baltimorecountymd.gov](mailto:jaiosa@baltimorecountymd.gov).

# **Arundel Rivers Testimony FAV for HB655.pdf**

Uploaded by: Elle Bassett

Position: FAV



PO Box 760 Edgewater, MD 21037  
410-224-3802 [www.arundelrivers.org](http://www.arundelrivers.org)

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**Testimony encouraging a FAVORABLE report on House Bill 655 – Environment – Wetlands –  
Shoreline Stabilization Measures**

Environment and Transportation  
February 21, 2024

Dear Chair Korman and Members of the Committee,

Thank you for the opportunity to submit testimony in **FAVOR** of HB655, on behalf of Arundel Rivers Federation. Arundel Rivers is a non-profit organization dedicated to the protection, preservation, and restoration of the South, West and Rhode Rivers with over 3,500 supporters. Our mission is to work with local communities to achieve clean, fishable, and swimmable waterways for present and future generations.

HB655 will prohibit exemptions of the requirement for certain shoreline stabilization measures such as living shorelines projects solely on the basis of replacing a structural shoreline with the same or similar type of structural shoreline stabilization measure. The bill will also dedicate grant funding for the replacement of armored structural shorelines with nonstructural shorelines. This funding will assist property owners in converting deteriorating hardened shorelines that provide little to no habitat and are susceptible to rising tides to living shorelines that are more resilient to rising tides and provide the much-needed beneficial aquatic and terrestrial habitat along our tidal waters. These are crucial next steps to building resilient, natural shorelines across Anne Arundel County.

Oftentimes, the best opportunity to replace a shoreline structure is when an old structure has failed. However, the long permitting process, lack of funding for quick replacements and existing law and practices incentivizes replacing such structures with similar, “in-kind” hardened structures. This is exactly what happened across Anne Arundel County following a high tide flooding event in October of 2021. Many property owners reported severe damage to their shoreline structures to the County and State and sought immediate assistance to replace their structures and protect their property. Unfortunately, the processes and funding were not in place to offer these property owners with the option of replacing their failed structures with living shorelines in a cost-efficient and expeditious manner. This bill will take a step towards reassessing those properties for non-structural opportunities and may provide funding assistance to help implement those projects.

Arundel Rivers Federation encourages the replacement of hardened shorelines with resilient living shorelines when possible, and respectfully requests a **FAVORABLE REPORT on HB655**.

Sincerely,

A handwritten signature in cursive script that reads "Elle Bassett".

Elle Bassett

South, West and Rhode Riverkeeper  
Arundel Rivers Federation

# **HB 655 Environment – State Wetlands – Shoreline St**

Uploaded by: Humna Sharif

Position: FAV

**Wednesday, February 21, 2024**

**TO:** Marc Korman, Chair, Environment and Transportation Committee, and Committee Members  
**FROM:** Humna Sharif, The Nature Conservancy, Climate Adaptation Manager; Cait Kerr, The Nature Conservancy, State Policy Manager  
**POSITION:** Support HB 655 Environment – State Wetlands – Shoreline Stabilization Measures

The Nature Conservancy (TNC) supports HB 655 offered by Delegate Stein. TNC is a global conservation organization working to conserve the lands and waters on which all life depends. In Maryland, our work focuses on delivering science-based, on-the-ground solutions that secure clean water and healthy living environments for our communities, reducing greenhouse gas emissions and increasing resilience in the face of a changing climate. We are dedicated to a future where people and nature thrive together.

HB 655 prioritizes non-structural or nature-based shoreline stabilization measures by curbing the widespread use of armored shorelines. This bill clarifies existing law as it pertains to waivers for building new armored shorelines and creates a future potential funding source for implementing nature-based solutions to protect our shores. Maryland's meandering coastline touches the Chesapeake Bay and the Atlantic Ocean and spans over 7790 miles. This vibrant coastline is linked to Marylanders' lives and livelihoods. The Maryland coastline is home to 70% of the state's residents, about 4.3 million people based on 2020 census data, who live in 16 coastal counties and Baltimore City. In addition to its ties to a rich cultural history, the Chesapeake Bay and adjoining tidal wetlands' productive estuarine ecosystems are vital habitats for thousands of species of plants and birds combined.

Our state's rich and diverse coastline is under increasing threat from climate change. The 2023 Maryland Sea Level Rise Projections, prepared by the University of Maryland Center for Environmental Sciences finds that by 2050, Maryland will experience one to one and a half feet of sea level rise measured from a 2000 baseline, which is twice the amount of sea level rise experienced in the previous century. By 2100, the state is expected to experience three feet of sea level rise. Structured shorelines can offer short term protection from flooding, but these structures are expensive and do not offer sustained and long-term protection. It's important for the state to consider multiple approaches and co-benefits of each approach in designing flood mitigation strategies.

Nature-based solutions offer the best path forward in Maryland as our state prepares to tackle intensifying climate challenges head-on. Nature-based solutions such as vegetated buffers, wetlands, dunes, and reefs offer tremendous benefits that go beyond shoreline protection. Nature-based solutions can not only stabilize shorelines, but they are also cheaper to implement than traditional armored solutions. These natural features preserve diverse coastal ecosystems, improve water quality, provide aesthetic and recreational value, and restore waterfront communities' connection to their coastlines. These positive impacts combined contribute to the coastal communities' overall vibrancy and create more resilient coastlines.

Planning for climate change's various and often uncertain impacts is a highly localized and place-based process that is necessary to identify solutions that can meet each community's the unique needs. We cannot continue to build ever-higher sea walls to combat climate change, and it is important to safeguard the well-being of communities unable to afford armored shorelines' high cost. For communities living at the water's edge, nature-based solutions and addressing environmental justice concerns go hand-in-hand. By removing permitting exceptions for armored shorelines, HB 655 will mitigate the harm these structures can cause adjacent low-lying areas that are unarmored and may face increased flooding due to displaced water from armored shoreline areas.



We commend Delegate Stein for introducing this legislation. HB 655 is a step in the right direction and continues to build upon Maryland's legacy of taking bold and proactive action for creating equitable climate solutions for its residents and natural resources.

**For these reasons, we urge a favorable report on HB 655.**

**SB546 HB655 environmental community sign-on.pdf**

Uploaded by: Matt Stegman

Position: FAV

**Favorable Testimony on SB 546 / HB 655**  
**Environment - State Wetlands - Shoreline Stabilization Measures**

**The organizations listed below respectfully urge a favorable report on SB 546 and HB 655**, which curbs the continued widespread use of armored shorelines and clarifies existing law by clarifying existing state law concerning waivers to build new armored shorelines and creates a future potential funding source for the conversion of existing armored shorelines into living shorelines.

Throughout Maryland, armored shorelines such as rip rap and bulkheads remain a primary approach to protect properties from erosion instead of living shorelines composed of sand, grasses, and other natural elements. Living shorelines provide more environmental benefits and flooding protection than armored alternatives. Constructing more living shorelines and expanding wetlands are our best ways to prepare Maryland's coastline as sea levels rise due to climate change.

Scientific models predict sea levels in coastal areas like Annapolis will rise 1.5 feet by 2050 and 3 feet by 2100, which would overwhelm our current infrastructure. If we continue armoring our shorelines in the face of this reality, we'll displace floodwaters to communities that can't afford to build ever-higher sea walls. Continuing to prioritize living shorelines now will ensure more impactful solutions are in place as threats to Maryland's coastal communities continue to grow.

In 2008, Maryland showed national leadership by adopting a requirement to install living shorelines where they are supported. Now, we can build on that success by clarifying the existing law and providing resources to recognize the cumulative environmental benefits of living shorelines.

**For these reasons, we request a Favorable report on SB 546 and HB 655.**

Sincerely,

Chesapeake Bay Foundation

Potomac Conservancy

Audubon Mid-Atlantic

Sierra Club Maryland Chapter

Severn River Association

The Nature Conservancy MD/DC Chapter

Maryland Legislative Coalition Climate Justice

Anne Arundel Bird Club

Maryland Ornithological Society

Safe Skies Maryland

Southern Maryland Audubon Society



**Seitz Comments SB546 & HB655\_01-31-24.pdf**

Uploaded by: Matt Stegman

Position: FAV

January 31, 2024

Dear Maryland Legislators,

I am writing to provide information relevant to Maryland House Bill 655 and Senate Bill 546. I am a Virginia resident, a faculty member at The College of William & Mary's Virginia Institute of Marine Science, and I have been working on effects of living shorelines on natural resources for many years. I believe I can provide important information on the benefits that living shorelines can provide for both the benthic (bottom-dwelling) food resources (e.g., clams and worms living in seafloor sediments) in Chesapeake Bay, as well as the fish and crabs (e.g., croaker fish, blue crabs) feeding in these coastal systems. I hope this will help Maryland legislators understand the ecological and economic reasons that living shorelines are important to Chesapeake Bay, prior to legislators rendering their decisions on House Bill 655 and Senate Bill 546.

First, I, along with my students, have tracked the effects of living shoreline construction on benthic (bottom-dwelling) invertebrate animal communities in Chesapeake Bay. Coastal erosion and sea level rise have led to increased interest and demand for living shorelines, which incorporate plants and natural materials to stabilize marsh land, over traditional shoreline armoring, such as bulkheads. One of our studies evaluated the ecosystem services provided by living shoreline projects. In a study funded by the National Oceanic and Atmospheric Administration, Center for Sponsored Coastal and Ocean Research, our results suggested that where living shorelines replaced a bulkhead, the resulting benthic community closely resembled that in adjacent marshes with no bulkhead, notably increasing the density and biomass of clams by the second year of study. Bivalves, such as clams, can be a strong indicator of a healthy ecosystem, further suggesting the benefits of living shorelines. The density and biomass of polychaete worms declined at first, but appeared to begin increasing again by the end of the three-year study. Overall, these results highlight the benefit to benthic communities that occur when preventing erosion using living shorelines instead of traditional shoreline hardening techniques. Benthic animals are key food resources for Chesapeake Bay fish and crabs, and benthic organism declines may have ramifications for animals higher in the food chain. More information can be found in the peer-reviewed scientific publication, Davenport et al. 2018, here: <https://rdcu.be/c5xXk>

Second, in two studies, my colleagues and I demonstrated negative impacts of shoreline hardening on fish and crabs in Chesapeake Bay. In one study, we compiled databases from fish net surveys for a large review study using 587 sites in 39 subestuaries in Chesapeake Bay (through meta-analysis: peer-reviewed publication Kornis et al. 2017: <https://link.springer.com/article/10.1007/s12237-017-0213-6>), and found that shoreline hardening had mostly negative effects on estuarine fauna both directly adjacent to the hardened shoreline, and, at a larger scale, as cumulative hardened shoreline increased in the subestuary. In another study (funded by the Chesapeake Bay Trust) to examine threshold effects of hardened shorelines on forage species (e.g., croaker fish, silversides, blue crabs) in Chesapeake Bay, we used a graphical approach to examine patterns in fish and crab abundances in comparison to shoreline development in Chesapeake Bay tributaries by using curves fit to the data, and looking for evidence of threshold declines beyond a certain level of tributary shoreline development. Using piecewise regression curves, we determined that there were threshold declines in seven key fish and crab species when shorelines were developed, and declines in fauna occurred at levels between 10% and 30% of tributary shoreline

hardening. Furthermore, juvenile blue crab density generally declined with shoreline development, whereby for every 10% increase in shoreline hardening, there was a 4% decrease in crabs. This suggests that animals that are economically and ecologically important are negatively impacted by shoreline development, which could be related to a loss of food resources. In addition, developing legislation on a threshold for shoreline hardening may be appropriate, especially for tributaries in highly developed subestuaries. These results have been presented to the Chesapeake Bay Fisheries Goal Implementation Team and at national conferences, but have not yet been published in the peer-reviewed literature.

In summary, multiple studies show negative impacts of shoreline development and positive effects of living shorelines on living resources. **Benthic organisms and the economically and ecologically important fish and crabs that feed on them can all benefit from reductions in shoreline hardening and increased use of living shorelines.**

Please do not hesitate to contact me if you would like further information at 804-684-7698 or seitz@vims.edu. I hope this information will assist you as you prepare your decision on Maryland Senate Bill 417 and House Bill 602.

Sincerely,



Rochelle D. Seitz, Ph.D.

**HB655\_RMC\_SupportTestimony.pdf**

Uploaded by: Molli Cole

Position: FAV





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Website: [www.rural.maryland.gov](http://www.rural.maryland.gov)

*Susan O'Neill, Chair*

*Charlotte Davis, Executive Director*

Testimony in Support of  
House Bill 655 - Environment - State Wetlands - Shoreline Stabilization Measures  
House Environment and Transportation Committee  
February 21, 2024

**The Rural Maryland Council supports House Bill 655 – Environment – State Wetlands – Shoreline Stabilization Measures.** This bill prohibits the Maryland Department of the Environment (MDE) from exempting a person from the general requirement to use nonstructural shoreline stabilization methods when protecting property from erosion solely on the basis that the person is replacing an existing structural shoreline stabilization measure with the same or similar type of structural shoreline stabilization measure. The bill also explicitly authorizes the Tidal Wetlands Compensation Fund to be used to provide grant funding for the replacement of structural shoreline stabilization measures with nonstructural shoreline stabilization measures.

A living shoreline is a protected and stabilized coastal edge made of natural materials such as plants, sand, or rock. Unlike concrete seawalls or other hard structures, living shorelines promote the growth of plants and animals, making them a sustainable choice. These shorelines provide natural resilience to communities near the waterfront and serve as habitat for wildlife. They are also known as nature-based, green, or soft shorelines and are an innovative and cost-effective technique for coastal management.

With a portion of Rural Maryland being located along the coastline, it is important to not bring any hinderance or hardships to those trying to protect their properties along the shorelines. The bill goes further to create a fund that can provide grant funding for what can be an expensive cost to the average Marylander. It would give ability to the property owner to turn what could be a decaying structural shoreline into a living shoreline, which would also the properties around it as well as the natural habitats and ecosystem nearby.

The Rural Maryland Council respectfully asks for your favorable support of House Bill 655.

The Rural Maryland Council (RMC) is an independent state agency governed by a nonpartisan, 40-member board that consists of inclusive representation from the federal, state, regional, county, and municipal governments, as well as the for-profit and nonprofit sectors. We bring together federal, state, county, and municipal government officials as well as representatives of the for-profit and nonprofit sectors to identify challenges unique to rural communities and to craft public policy, programmatic, or regulatory solutions.

**ShoreRivers Testimony\_HB655\_FAVORABLE.pdf**

Uploaded by: Zack Kelleher

Position: FAV



**Testimony in Support of House Bill 655 –  
Environment – State Wetlands – Shoreline Stabilization**

February 21, 2024

Dear Chairman Korman and Members of the Committee,

Thank you for the opportunity to submit testimony **in support of HB 655**, on behalf of ShoreRivers. ShoreRivers is a river protection group on Maryland’s Eastern Shore with more than 2,500 members. Our mission is to protect and restore our Eastern Shore waterways through science-based advocacy, restoration, and education.

At ShoreRivers, shoreline erosion is one of the most common reasons a community member reaches out for consultation from a Riverkeeper. In many cases, living shorelines can be a beneficial solution, both for the homeowner, and for the health of the waterway. However, the cost of implementation is prohibitively high due to fuel and supply costs, and also the intensive permitting process. As a result, many homeowners seek waivers to implement armored shorelines or do nothing at all. Homeowners can also currently be granted a waiver to replace a failing bulkhead with a new bulkhead, rather than implement a more environmentally-friendly practice.

**HB 655 seeks to curb the widespread issuance of waivers that allow homeowners to replace existing hardened shoreline practices like bulkheads with the same practice, and creates a fund for grants to convert degraded hardened shorelines into living shorelines or other nonstructural shoreline stabilization measures.**

Armored shorelines provide no beneficial habitat for local fish populations. In fact, a recent NOAA study identifies that within a 1,000ft shoreline, if 30% or greater of that shoreline is armored, it will negatively impact fish reproduction— a detriment to the biodiversity of the Chesapeake and to our local fishing economies. Also, the lifespan of an armored shoreline is significantly less than a living shoreline. As impacts of climate change increase, rising tides will spill over bulkheads and riprap, causing them to degrade and collapse. On the low-lying Eastern Shore, an area of Maryland that will likely be impacted first and hardest by sea level rise, it is imperative that we implement the most resilient and dynamic shorelines to protect our communities.

Living shorelines provide important habitat to estuarian life found in the Chesapeake, as well as protection from flooding and runoff— these benefits far outweigh anything provided by armored alternatives. For these reasons we urge the committee **to adopt a favorable report for HB 655.**

Sincerely,

**Zack Kelleher, Sassafras Riverkeeper** on behalf of ShoreRivers

**ShoreRivers**

Isabel Hardesty, Executive Director  
Annie Richards, Chester Riverkeeper | Matt Pluta, Choptank Riverkeeper  
Ben Ford, Miles Wye Riverkeeper | Zack Kelleher, Sassafras Riverkeeper

[shorerivers.org](http://shorerivers.org) | 443.385.0511 | [info@shorerivers.org](mailto:info@shorerivers.org)

**2-17-24 HB655 Position Letter (M.M.C.A. - Written**

Uploaded by: Brandon Weems

Position: FWA

*"Protecting & Promoting the Marine Construction Industry Through Unity & Leadership."*



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410-822-0510

February 17, 2024

Maryland House of Delegates  
Environment & Transportation Committee  
Room 251  
House Office Building  
Annapolis, Maryland 21401

Re: HB655 & SB546 *Environment – State Wetlands – Shoreline Stabilization Measures*

Dear Committee Chair Korman & Committee Members:

The Maryland Marine Contractors Association (M.M.C.A.) supports HB655 & SB546 with amendment.

The M.M.C.A., established in 2008, is a tireless advocate for the protection and promotion of the marine construction industry in Maryland. It was our organization that championed the marine contractor licensure legislation back in 2010 with the goal of raising the professional bar within the industry and establishing a mutually beneficial working relationship with Federal, State, and Local regulators. We currently represent 91 contractors, tradesmen, engineers, and other industry professionals.

Understanding the intent of the proposed bills, via discussions with members of the Maryland Department of the Environment (MDE) and Chesapeake Bay Foundation (CBF) staff, our position is that HB655 & SB546, as currently proposed, would be harmful to the marine construction industry and the customers we represent and therefore propose amendments to bolster the intended purpose.

The proposed bills state, simply, that the presence of an existing shoreline structure is not enough justification, by itself, to constitute the issuance of a living shoreline waiver. The problem with this is multi-faceted, including: 1) it yields too much of the decision power to a faulty waiver evaluation process, 2) it negates the significant cost differential between a living shoreline and a replacement structure, and 3) licensed marine contractors, responsible for the significant majority of living shoreline construction, are afforded no say or credibility in the process.

There is simply a big difference between constructing a living shoreline on a private property at the owner's sole expense and constructing one in a setting, such as County or State owned lands, where grant or governmental funding, volunteer labor, etc. may be available. While HB655 & SB546 does note that Wetland Compensation Funds may be used to help offset these costs, we would need some specific information about how these funds would be distributed, if at all, before we could say whether this proposal would help.

To bolster the bill in a way that the intention remains, but homeowners are better protected, we would propose the following language be added:

*If a licensed marine contractor deems a living shoreline waiver is appropriate for a given site and the Department (MDE) denies the waiver request, then wetland compensation funds must cover 'X' (% of Total, \$ Amount, \$ per Linear Foot - TBD)."*

One major concern licensed marine contractors have is that we are held solely responsible for the success of these projects, and when we are handcuffed at the onset by high costs, site constraints, and customer expectations, we are destined to fail. Further, as this cost differential continues to increase, the process further incentivizes homeowners to hire a non-licensed contractor that will avoid the permitting process and associated scrutiny altogether.

The benefit to this discussion is that we are all here for the same purpose – to design and build successful projects that protect upland properties while also protecting and enhancing the Bay for years to come. All we are asking for is some flexibility in the process correlated specifically with licensed expertise as a means to better promote high-quality projects and improve project outcomes.

Thank you for consideration of our position. If you have any questions or if we can be of any assistance to the proponents of the Bill, please do not hesitate to contact us.

Sincerely,

**Maryland Marine Contractors Association, Inc.**

A handwritten signature in black ink that reads "Brandon S. Weems" with a long horizontal flourish extending to the right.

Brandon S. Weems  
M.M.C.A. President

BSW/ksw

# **HB 655 MDE SWA.pdf**

Uploaded by: Les Knapp

Position: FWA



**The Maryland Department of the Environment**  
**Secretary Serena McIlwain**  
*House Bill 655*  
*Environment - State Wetlands - Shoreline Stabilization Measures*

**Position:** Support with Amendments  
**Committee:** Environment and Transportation  
**Date:** February 21, 2024  
**From:** Jeremy D. Baker

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The Maryland Department of the Environment (MDE) **SUPPORTS HB 655 WITH AMENDMENTS**. MDE is supportive of living shorelines and appreciates the intent of the legislation to bring clarification on if/when a waiver shall be granted.

House Bill 655 would create a preference for the use of “nonstructural shoreline stabilization measures” such as living shorelines and marsh creation versus structural improvements like bulkheads or revetments. Additionally, the bill would amend § 16-201(c)(2)(ii) of the Environment Article to prohibit MDE from issuing a waiver to the nonstructural shoreline stabilization requirements under § 16-201(c)(2) to an applicant “solely on the basis of replacing a structural shoreline stabilization measure with the same or similar type of structural shoreline stabilization measure.” However, MDE believes as written HB 655 would create some additional burden on MDE through the need for additional detailed review of applications currently receiving an “automatic” waiver based on the presence of an existing functional structure.

MDE maintains a tool, the Maryland Shoreline Stabilization Mapper, which models and delineates areas where living shorelines are a suitable treatment option for erosion control, and where waivers for traditional erosion control structures should be permissible given current shoreline conditions and energy regimes. MDE is required under COMAR 26.24.04.01-1 to grant an automatic waiver for shorelines that are mapped as structural shoreline stabilization measures. The bill as currently written does not reference the adopted maps or override MDE statutory obligation to create such maps.

Finally, HB 655 would also amend § 16-205(f) to allow the Tidal Wetlands Compensation Fund to provide grants for the replacement of structural shoreline stabilization measures with nonstructural shoreline stabilization measures. Under the existing statute, MDE has the ability to provide funding to existing grant programs and to appropriate funds for the creation, restoration, or enhancement of tidal wetlands. As drafted, there is the potential that a grant program focused solely on replacing shoreline stabilization structures with nonstructural measures may reduce funding for other tidal mitigation projects which would result in higher wetland acreages and functional increases.

### **Amendments**

MDE is supportive of the following amendments to HB 655, which would minimize the additional operational impacts to MDE, additional burden on applicants, and align decision-making for living shoreline locations with existing MDE mapping based on the best available data:

- Addition of language to § 16-201(c)(2)(ii)2 clarifying that MDE may not issue a waiver solely on the basis of replacing an existing structural stabilization measure “in areas that are not designated by Department mapping as appropriate for structural shoreline stabilization measures”; and
- Amending the reference to “grant funding” under § 16-205(f) to “Programs that incentivize”, to allow for continued flexibility in allocation of Tidal Wetlands Compensation Funds.

For the reasons detailed above, MDE urges a **FAVORABLE WITH AMENDMENTS** report for HB 655.

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**Contact:** Les Knapp, Government Relations Director  
Cell: 410-453-2611 (cell), Email: [les.knapp@maryland.gov](mailto:les.knapp@maryland.gov)



# **Chesapeake Bay Trust Testimony - HB 655.pdf**

Uploaded by: Jana Davis

Position: INFO



## House Bill 655 (Delegate Stein) – Environment – State Wetlands – Shoreline Stabilization Measures Written Testimony

**Date: February 21, 2024**

**Position: INFORMATIONAL**

Submitted to: Environment and Transportation Committee

Submitted by: Sadie Drescher, Vice President for Restoration and Jana Davis, Ph.D., President, Chesapeake Bay Trust,

The Chesapeake Bay Trust (the Trust) is honored to provide information on the value of living shorelines as an erosion control method to the Committee as it considers House Bill 655.

The Trust was established by the General Assembly in 1985 to increase stewardship through grant programs, special initiatives, and partnerships, focusing on on-the-ground watershed restoration, community engagement, environmental education, capacity-building, and science.

Living shorelines is one of the key watershed restoration practices the Trust funds. Living shorelines are defined as projects that use as many natural habitat elements (wetland vegetation, oyster reef, etc.) as possible to protect shorelines from erosion rather than hard shoreline armor (bulkheads, stone revetments, seawalls). Their purpose: to provide equal or better protection against erosion than armor while serving as better wildlife habitat for species like juvenile striped bass, blue crabs, birds, and more.

The Trust has funded living shoreline projects for decades, before the practice became common globally and close to the origin of the term “living shorelines,” which was coined here in Maryland on the Eastern Shore. To help promote the idea, the Trust administered a Living Shoreline Grant Program from 2005-2015 supported by pooled funds from the Trust (e.g., bay vehicle license plate funds), DNR, MDE, the National Oceanic and Atmospheric Association (NOAA), and several private funders. Over \$5 million was awarded to 114 living shoreline design and/or implementation projects that installed 50,589 linear feet of living shoreline and many high-profile, visible, signature projects the community still points to and learns from today (see photos). The Trust still funds and provides technical assistance on living shoreline projects through its other programs.

As these projects demonstrated to landowners and decision-makers alike the value and performance efficacy of living shorelines, Maryland, many other states, and other nations began to adopt



South River watershed, 2003



St. Johns College, Annapolis, 2006

policies and laws that encouraged living shorelines. Maryland passed the Living Shoreline Protection Act in 2008 to encourage living shorelines instead of shoreline armor where appropriate. Now, every coastal U.S. state on the Atlantic, Pacific, and Great Lakes has some form of living shoreline program or initiative (Table 1.)

We have learned a lot about the practice of living shorelines in the past 20 years, including its effectiveness at reducing/protecting against erosion and its habitat value. We know from multiple studies around the world that fish, crabs, shrimp, small species that live in the sediment (“infauna”), and plants are more abundant in natural shoreline habitats than at artificial, armored shorelines. We know from before and after studies that fish, crabs, shrimp and other species become more abundant after armored sites are replaced with living shorelines. While no shoreline type, including and perhaps especially armor, is 100% impenetrable in the face of, for example, hurricanes, we also know that living shorelines not only reduce erosion, but often lead to the opposite, sediment accretion.

Living shorelines may not be the right solution everywhere. The “higher energy” the site (the more open water in front of it, the higher the waves reaching the shoreline), the more stone needed in the design and the more expensive it will be. However, the Living Shoreline Grant Program supported installation of living shorelines in all energy regimes, from small creeks to open Bay sites, and at sites in which other shoreline uses were desired (boat slips, kayak launches, etc.)



### About the Chesapeake Bay Trust

The Trust was created by the Maryland General Assembly in 1985 as a non-profit grant-making organization with a goal to increase stewardship and engagement in the restoration of the state’s local rivers, streams, parks, and other natural resources in diverse communities across the state, from the mountains of Western Maryland and the Youghiogheny watershed to the marshes of the Coastal Bays and everywhere in between. The goal was to create an entity that could complement state agency work with groups on the ground: schools, nonprofit organizations, faith-based and reach large institutions, homeowners associations, community and civic associations, and other types of groups.

The Trust invests in local communities and watersheds through grant programs and special initiatives and is known for its efficiency, putting on average 90 cents of every dollar into programs. The Trust has awarded over \$180 million through about 12,500 grants and projects in every county in Maryland since 1985. The Trust makes about 400 grants and other awards a year and have about 1,000 active grantees at any one time.

The Trust's grant making is supported through revenue from the Chesapeake Bay vehicle license plate; half of the Chesapeake and Endangered Species Fund checkoff on the state income tax form; two new donation options through Maryland's online boating, fishing, hunting license system, one that focuses on veterans' rehabilitation; partnerships with federal, state, local agencies, family foundations, and corporate foundations; and individual donors.

Thank you very much for the opportunity to present to the Committee. If you should have any questions regarding the Trust's testimony, please contact us at 410-974-2941 x105 ([sdrescher@cbtrust.org](mailto:sdrescher@cbtrust.org)) or x 100 ([jdavis@cbtrust.org](mailto:jdavis@cbtrust.org))

Table 1: U.S. Living Shoreline Programs/Initiatives

Alabama:

- <https://extension.msstate.edu/publications/living-shorelines-permitting-guide-for-alabama-homeowners>  
<https://restorethegulf.gov/sites/default/files/Alabama%20Living%20Shorelines%20Program.pdf>

California:

- <https://scc.ca.gov/webmaster/ftp/pdf/restore-shoreline/sfbay-living-shorline-project-052412.pdf>
- <https://www.coastkeeper.org/restoration/living-shorelines/>
- <https://scwrp.databasin.org/pages/living-shorelines/>

Delaware:

- <https://www.inlandbays.org/projects-and-issues/all/living-shorelines/>
- <https://estuaries.org/the-importance-of-living-shorelines/>

Georgia:

- <https://gacoast.uga.edu/research/major-projects/living-shoreline/>
- 

Illinois

- <https://www.illinois.gov/news/press-release.25902.html>

Oregon:

- [https://www.oregon.gov/lcd/Publications/guidebook\\_erosion\\_control\\_practices.pdf](https://www.oregon.gov/lcd/Publications/guidebook_erosion_control_practices.pdf)

Maine:

- <https://www.gulfofmaine.org/public/climate-network/living-shorelines/>

Massachusetts:

- <https://climateactiontool.org/content/restore-and-protect-natural-shorelines-use-living-shoreline-techniques>

Michigan

- <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/Coastal-Management/Green-Infrastructure-presentation-Natural-Shorelines.pdf?rev=d4598248a7ae439d9edbc1de45929f33>

Mississippi

- <https://masgc.org/living-shorelines>

New England broadly:

- [http://www.conservationgateway.org/ConservationPractices/Marine/crr/Documents/Final\\_StateofthePractice\\_7.2017.pdf](http://www.conservationgateway.org/ConservationPractices/Marine/crr/Documents/Final_StateofthePractice_7.2017.pdf)

New Hampshire:

- <https://www.des.nh.gov/water/coastal-waters/living-shorelines>

New Jersey:

- <https://dep.nj.gov/njfw/fishing/marine/living-shorelines/>

New York:

- <https://bnwaterkeeper.org/living-shorelines/>

North Carolina

- <https://www.nccoast.org/living-shorelines/>
- <https://www.deq.virginia.gov/our-programs/water/clean-water-financing-and-assistance/virginia-clean-water-revolving-loan-fund-vcwrlf/living-shoreline>

Rhode Island:

- <http://www.crmc.ri.gov/habitatrestoration/roselarisapark.html>

South Carolina:

- <https://governor.sc.gov/sc-floodwater-commission-living-shoreline-task-force>

Virginia

- [https://www.vims.edu/ccrm/outreach/living\\_shorelines/](https://www.vims.edu/ccrm/outreach/living_shorelines/)
- <https://mrc.virginia.gov/regulations/fr1300.shtm>
- <https://vaswcd.org/living-shorelines/>

Washington State

- <https://livingshorelines.be.uw.edu/#:~:text=LIVING%20SHORELINES%20PUGET%20SOUND&text=These%20habitats%20provided%20critical%20feeding,orcas%20of%20the%20Salish%20Sea>