LANDOWNER LIVING SHORELINE GUIDE

Interested in a living shoreline for your residential property? Our guide below will give you an idea of how your project would proceed, and our knowledgeable staff will ensure that your specific needs and goals are met.

NATIVE SHORELINES
a DAVEY company

Step 1. Determine Your Goals

The first step in creating the most resilient shoreline for your coastal property is determining your goals. What issues are you trying to address and what benefits do you want a living shoreline to add to your property? It is important to remember that a living shoreline can help you meet multiple objectives but may be only one part of your overall plan. Some questions to ask yourself might include:

- Am I experiencing erosion? If so, when? Every day or mainly during storms? Is the erosion coming from waves and boat wakes coming onto my shoreline or from rainwater flowing off of my property?
- Do I have an existing bulkhead or other structure that needs to be repaired or replaced?
- Am I having more sunny day flooding due to sea level rise/king tides?
- Do I want to want to plant more native plants for habitat and/or erosion protection?
- Do I want to add or improve fish and oyster habitat along my shoreline?

Step 2. Get a FREE Professional Site Evaluation

Once you know your goals and objectives, the next step is a site evaluation. These evaluations will help us determine what type of living shoreline you need, where it should go, what goals of yours it can meet, and what it should be constructed from. During our first call with you, we'll discuss your needs, ask for your property address, and do a desktop evaluation of your property. If we feel like a living shoreline is a likely a good option for your property, we'll set up a site visit. During this visit, our scientists will walk your shoreline, take measurements, and get to know you and your shoreline better. Some things our team will assess include:

- Current shoreline condition of your property and neighboring properties;
- Direction your property faces & fetch (the distance across open water from your shoreline to other land, i.e., how much wave energy can build up before it hits your shoreline);
- Slope of the land both landward and seaward of your shoreline, mean high and low (or normal high and low) water levels, and water depth within 30 feet of your shoreline;
- Current use of your shoreline (e.g., fishing, kayak/sailboat launching, etc)and how we can continue to accommodate those uses in your living shoreline design;
- Vegetation on your property and neighboring properties; and
- Installation logistics – how can we access your shoreline for delivery and installation of material






Step 3. Review Your Custom Living Shoreline Design

Developing the most appropriate living shoreline design for each site is our specialty! After our evaluations are complete, we will prepare one or more design options for you to consider. We will provide you with permitting timeline estimates, cost estimates, and information on any cost-share funds you are likely eligible for to reduce your out-of-pocket costs. Living shoreline costs can vary significantly based on materials, structure heights, and installation logistics. Most QuickReef® and oyster shell bag projects typically run $150 to $350 per linear foot for design, permitting, materials, and installation, but can be more or less. Marsh planting typically ranges from $3 to $4 per square foot.

Several fantastic cost-share options are available depending on where you live. Examples of cost-share sources include NC Coastal Federation (NC), Soil & Water District Conservation Assistance Programs (NC: CCAP, VA: VCAP), Friends of the Rappahannock (VA), Middle Peninsula Planning District Fight the Flood Program (VA), James River Association (VA), and Pensacola and Perdido Bays Estuary Program (FL). If your project is eligible for cost-share funds, we will coordinate with the appropriate entities on your behalf to start the process for you. ***Depending on the program, cost-share assistance may be able to provide from 15% to 100% of your total project cost.*** Review time for these programs varies from weeks to months, so early communication with the appropriate entities is key.

The design options we present to you may include different materials, heights, distances off shore, gap placements, and/or installation methods (land based or water based (barges). They may use in-stock materials, or we may custom design materials to fit your site-specific needs. ***Every shoreline is unique.*** That's why we employ a variety of living shoreline materials and designs to address the specific goals of each landowner.

Step 4. Permit Your Living Shoreline

Once you decide on a design, we'll get you a contract out for signature and start the permitting process. Efficient and successful permitting relies on knowledge, experience, and a foundation of trust between landowners, permitting agents, and the regulatory and resource agencies. Native Shorelines staff have been involved in environmental permitting since the 1990s. We have built a respected reputation with the agencies and our clients. In NC and VA, we can handle all of your permitting in house. In other states, depending on your permitting needs, we may handle everything in house or work with one of our established partners, whichever we think we will provide you with the most cost-effective and efficient result.






Step 5. Install Your Living Shoreline
Now that you have your permit, it's time for installation!

Prior to installation, our team will place stakes out along your living shoreline structure alignment and do a final logistics review. We'll make sure that you are happy with the proposed alignment of any structures and our staging and delivery areas. The day(s) of installation, we will have our staff and often one or more subcontractors on-site to ensure installation is as efficient and low-impact as possible. Most installations take less than one week from material delivery to completion. We will treat your property as if it is our own, and do our best to tread as lightly as possible. Our crew will repair any lawn scuffing and apply temporary seed if needed before we leave. If matting is required to access your shoreline, vegetation pressed down by the matting and travel over it should spring back up over several weeks. Marsh planting can only take place during a short window in the spring and summer (typically May & June but potentially earlier or later depending on weather). If marsh planting is part of your living shoreline, we may need to return many weeks or months after your structure installation to complete this portion of the project.

Step 6. Monitor, Maintain, & Enjoy Your Shoreline
Living shorelines are highly resilient and typically require little maintenance. Always check on your shoreline after a storm event for damage. Be sure to remove any trash or excessive vegetative debris (wrack) from marshes as soon as possible to prevent die-off. If you should observe any parts of your living shoreline moved out of place, re-align any parts you can or call us for assistance. Living shorelines begin providing benefits to your property immediately, but it will likely take several seasons for the shoreline to mature and grow into its full potential. Living shorelines are most vulnerable to damage in their first year, and we are happy to come back out during this period for any needed maintenance.

Some common questions we receive after installation are:

- ***How quickly will my QuickReef® living shoreline grow oysters?***
  - If installed during warm weather, oyster babies (spat) may attach to your shoreline within days or weeks of installation. In areas with plentiful oyster spat in the water, full oyster coverage of our QuickReef® living shoreline system is typically achieved within 12 months.
- ***Can I eat the oysters that grow on my shoreline?***
  - Always check to make sure the waters along your shoreline are open for shellfish harvesting. If they are, then the oysters you grow are likely perfectly safe for human consumption.
- ***When should I plant my shoreline?***
  - Many living shorelines with offshore sills accrete sediment landward of the new sill. This may happen gradually or suddenly due to a storm event. We are happy to advise you on whether planting is recommended for these areas or, if given additional time, adjacent marsh is likely to colonize the restored areas on its own. We only recommend planting behind a new sill at installation when fill is added at the same time as installation (VA) or in areas that are not likely to accrete sediment. For all other areas, we recommend giving your new living shoreline time to "settle in" before planting. Marsh restoration occurs slowly and may require planting in successive years to achieve the desired level of success.

CONTACT NATIVE SHORELINES TODAY, FOR YOUR *FREE, NO-OBLIGATION* LIVING SHORELINE ASSESSMENT! A

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