

## Shoreline Types

Methods to protect property from erosion have varied costs and benefits. On-site conditions may not always support a simple living shoreline, but all stabilization projects can be designed to maximize their benefit to the shoreline and local ecology.

### Natural

Natural shorelines include seagrasses and oysters that stabilize submerged sediments and reduce wave energy on the shoreline. At the water's edge, smooth cord grass and mangrove trees support a gradual slope. These living shorelines can be a cost-effective alternative to seawalls and rip rap when properly designed and located. Even existing seawalls can have a living shoreline component. Permitting for coastal protection may be easier if the proposed project allows a living shoreline to persist.

### Rip Rap

Rip rap is a sloped barrier of rocks that absorbs wave action where moderate/high wave energy causes erosion. Natural limestone (coquina) is generally recommended because it supports native plant and animal species, slowly breaks down into sand/shell, and provides surfaces for oysters to live.

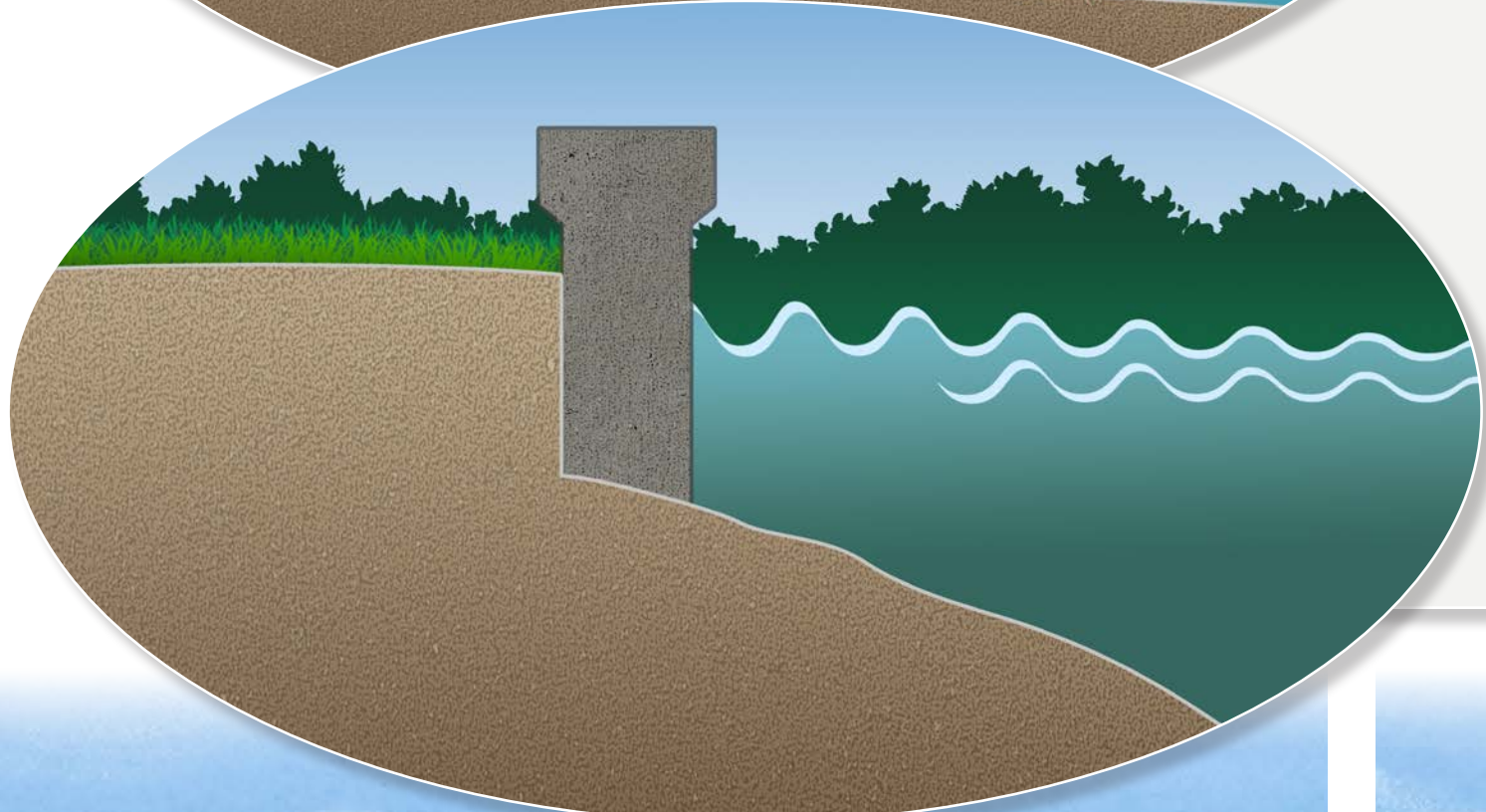
### Seawalls

Seawalls are hardened structures of concrete, wood, or vinyl designed to reduce erosion of sediment exposed to moderate/high wave energy. Although upland soil is retained, sediment on the water side of the wall can be lost. These structures are expensive to build and maintain.

# Living Shorelines

in our estuaries

Living shorelines have been shown to reduce the erosive effects of waves on land and safeguard coastal property from erosion when properly designed and constructed in suitable locations. This coastal protection method preserves important natural resources that enhance recreational and commercial activities such as fishing and ecotourism. Living shorelines improve water quality, provide habitat for hundreds of important animal species, and naturally grow and adapt to rising sea levels.



### No Living Shoreline

Because seawalls are a fixed height, waves can crash over them during storms leading to erosion, damage, or collapse. Seawalls can fail when waves erode their bases, and provide minimal habitat for fish and wildlife. Wave action causes rough water and low visibility.



### Partial Living Shoreline

Rip rap dissipates wave action and provides some habitat for marine organisms that live on the rocks or in the crevices between them. Native aquatic plants added to the design can provide stability to the structure while providing habitat for fish and wildlife.



### Living Shoreline!

An economically and environmentally good choice. Natural shorelines provide the stabilization that protects property, while providing much-needed habitat for the wildlife we enjoy, and support our community economy.

## Living Shorelines...

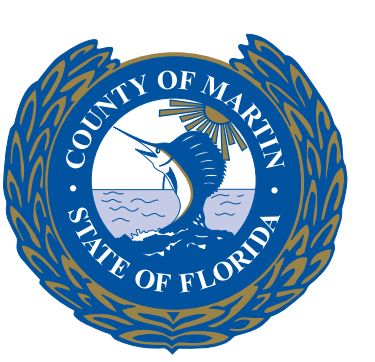
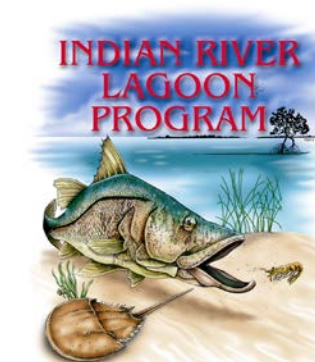


- Protect shorelines by improving stability and reducing erosion.
- Offer a less expensive, sustainable option to traditional seawalls if they are designed so components establish and thrive.
- Provide essential habitat for fish and other animals which promotes better fishing and ecotourism.
- Improve water clarity while filtering stormwater run off.
- Create feeding areas for wading birds.
- Encourage seagrass growth and reduce sediments in the water.

## You Can Help



- Add living shoreline elements to your waterfront property.
- Volunteer to recruit or install living shorelines (mangrove propagule collection, oyster bags or shell collection, planting mangroves or marsh grasses) in your community.
- Trim mangroves responsibly and reduce oyster harvesting. Permits are required to trim or remove mangroves or oysters.
- Refrain from using fertilizers near the water or putting yard waste in the water.



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For more information about living shorelines visit:  
[www.floridalivingshorelines.com](http://www.floridalivingshorelines.com)