

Cedar Key Shoreline Management Master Plan

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1930s - 1950s

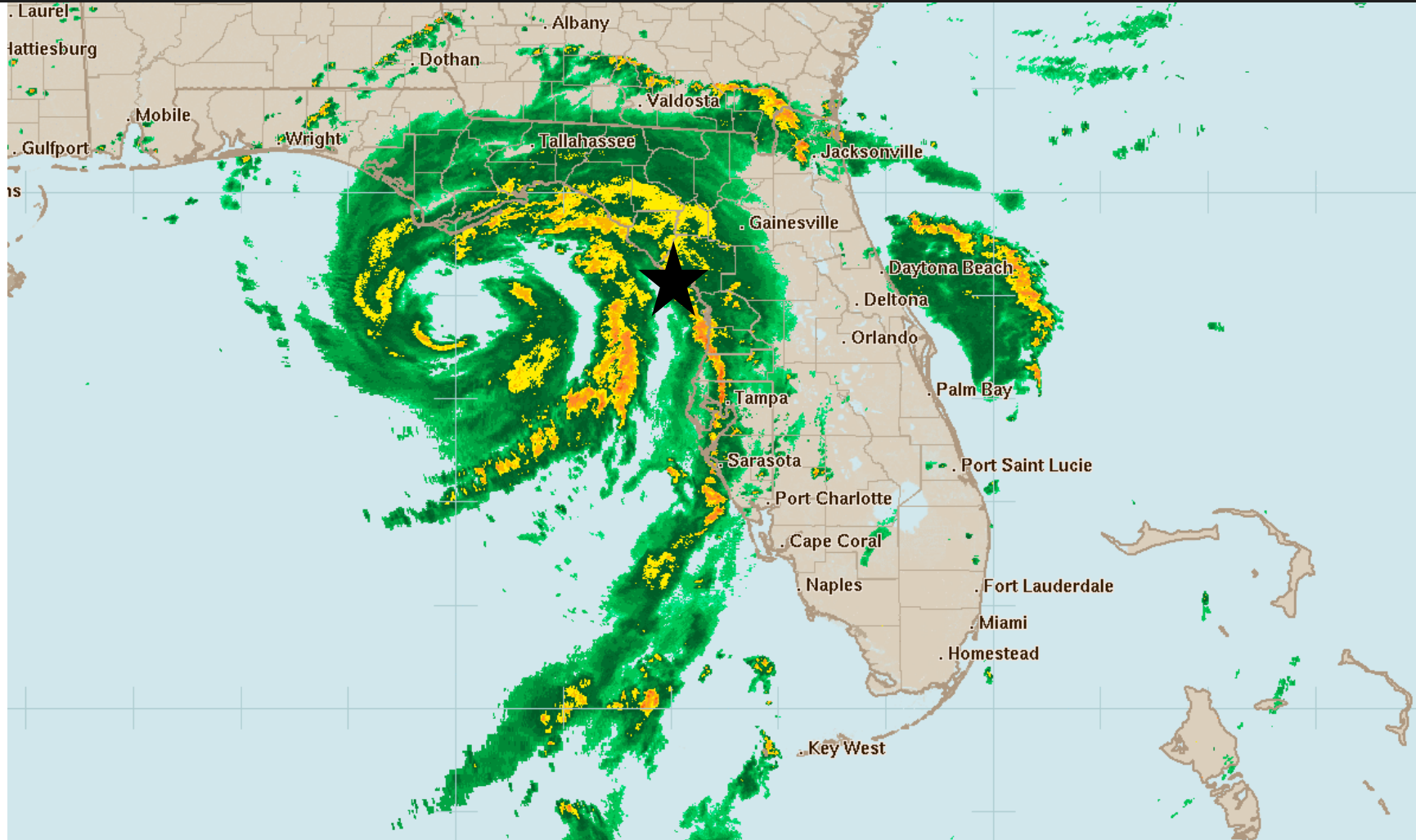



Coastal Erosion in Cedar Key

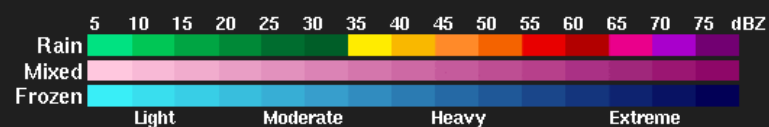
2016



Hurricane Hermine – catalyst for action



 **U.S. Regional Radar**
06:35 PM EDT Thu Sep 01, 2016 (GMT -0400)
Source: NEXRAD



 **WEATHER UNDERGROUND**

Exposed shorelines are vulnerable shorelines





Joe Rains Living Shoreline Weathers Hurricane Michael

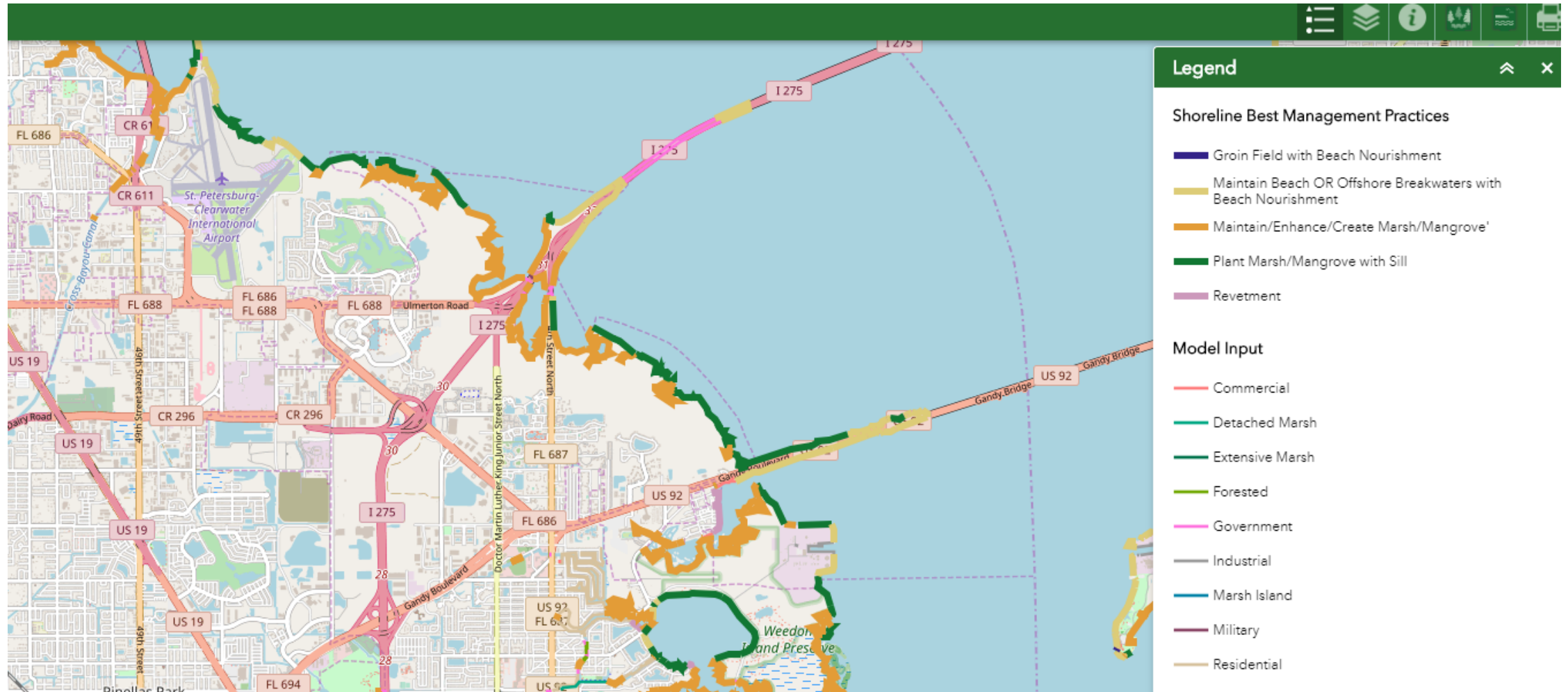


Shoreline Master Plan: Need in Cedar Key

- Progressive ordinance against seawalls
- Desire for increased climate change adaptation
- Little ability to suggest suitable seawall alternatives to residents
- Joe Rains Beach living shoreline project built relationship and trust



Inspiration: Tampa Bay Living Shoreline Story Map



<http://myfwc.maps.arcgis.com/apps/webappviewer/index.html?id=e4d76fa267dc4bac97d407d20566ae42>

Cedar Key Master Plan Project

Environmental (Living Shoreline) Layer



Legal (Permitting) Layer

| | |
|--|---|
| Please identify the exemption you are requesting to use: | |
| <input type="checkbox"/> | Subsection/Paragraph 62-330.____ (____), F.A.C. |
| <input type="checkbox"/> | Section 373.406(6), F.S. (known as the "de minimis" exemption — see section 3.4.3.7(c) of Applicant's Handbook Volume I for additional information) |
| <input type="checkbox"/> | Section 373.4145(6) (____), F.S. (for certain "grandfathered" activities) |
| <input type="checkbox"/> | Section 403.813(1)(____), F.S. (generally, "dredge and fill" exemptions) |
| <input type="checkbox"/> | I do not know the exemption number |
| Please provide numbers for additional Exemptions if you are requesting to use more than one: | |



SHORELINE BEST MANAGEMENT PRACTICES

Shoreline Management
Model

Self-Guided Decision
Tools

[Home](#) > [CCRM](#) > [Comprehensive Coastal Resource Management Portals](#) > [Shoreline Management Practices](#) > [Self-Guided Decision Tools](#)

Self-Guided Decision Tools

A series of decision trees that leads users through questions about shoreline conditions to produce a best practice recommendation

Undefended Shorelines & Failed Defense Structures

- [Undefended Shoreline Decision Tool User Manual - 2010](#)
- [Undefended Shoreline Decision Tool Diagram](#)

Currently Defended Shorelines

- [Currently Defended Shoreline Definitions](#)
- [Structural Integrity Guidance](#)



Existing Bulkheads



Existing Revetments

VIMS Self-Guided Decision Tools

http://www.vims.edu/ccrm/ccrmp/bmp/decision_tools/index.php

Legal Basis: FDEP and USACE Permitting Rules

- <http://edis.ifas.ufl.edu/sg155>

Streamlining Resiliency: Regulatory Considerations in Permitting Small-Scale Living Shorelines in Florida ¹

Thomas T. Ankersen, Alexandra Barshel, and Valerie Chesnut²

Introduction to Living Shorelines Permitting

“Living shoreline” is a catch-all phrase that describes a riparian area managed with restoration techniques that use natural material such as oyster reef, mangroves, and marsh grasses to stabilize the area and prevent erosion. Living shorelines offer a valuable and environmentally friendly means of stabilizing the shore while restoring and enhancing estuarine habitats (Bilkovic, Mitchell, La Peyre, and Toft 2017). Techniques for maintaining living shorelines are being widely touted as “greener” sea-level rise adaptation strategies than traditional shoreline hardening techniques, such as seawalls (Bilkovic et al. 2017). In addition to shoreline stabilization and estuarine habitat protection, materials used in living shoreline projects also improve water quality by filtering upland stormwater runoff (Gedan, Kirwan, Wolanski, Barbier, and Silliman 2011).

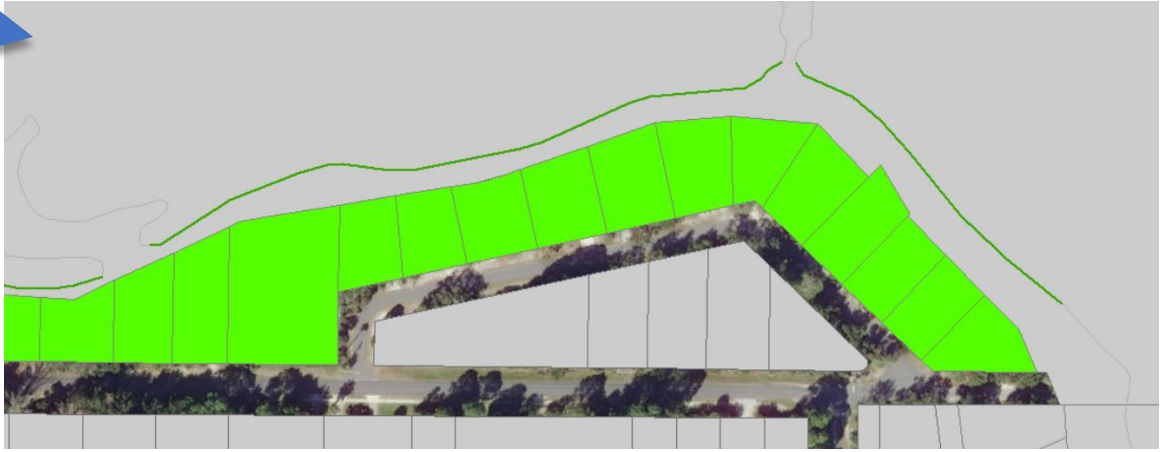
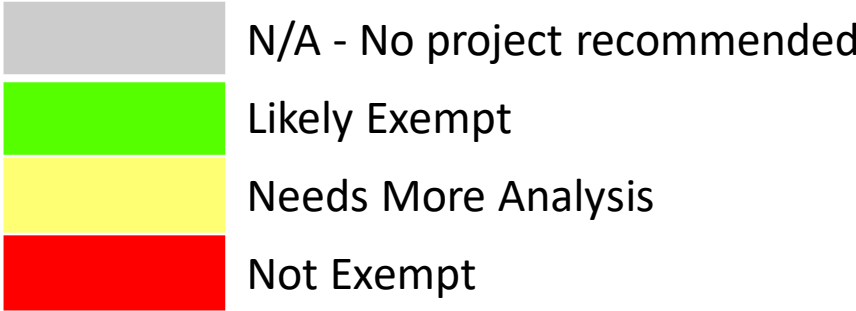
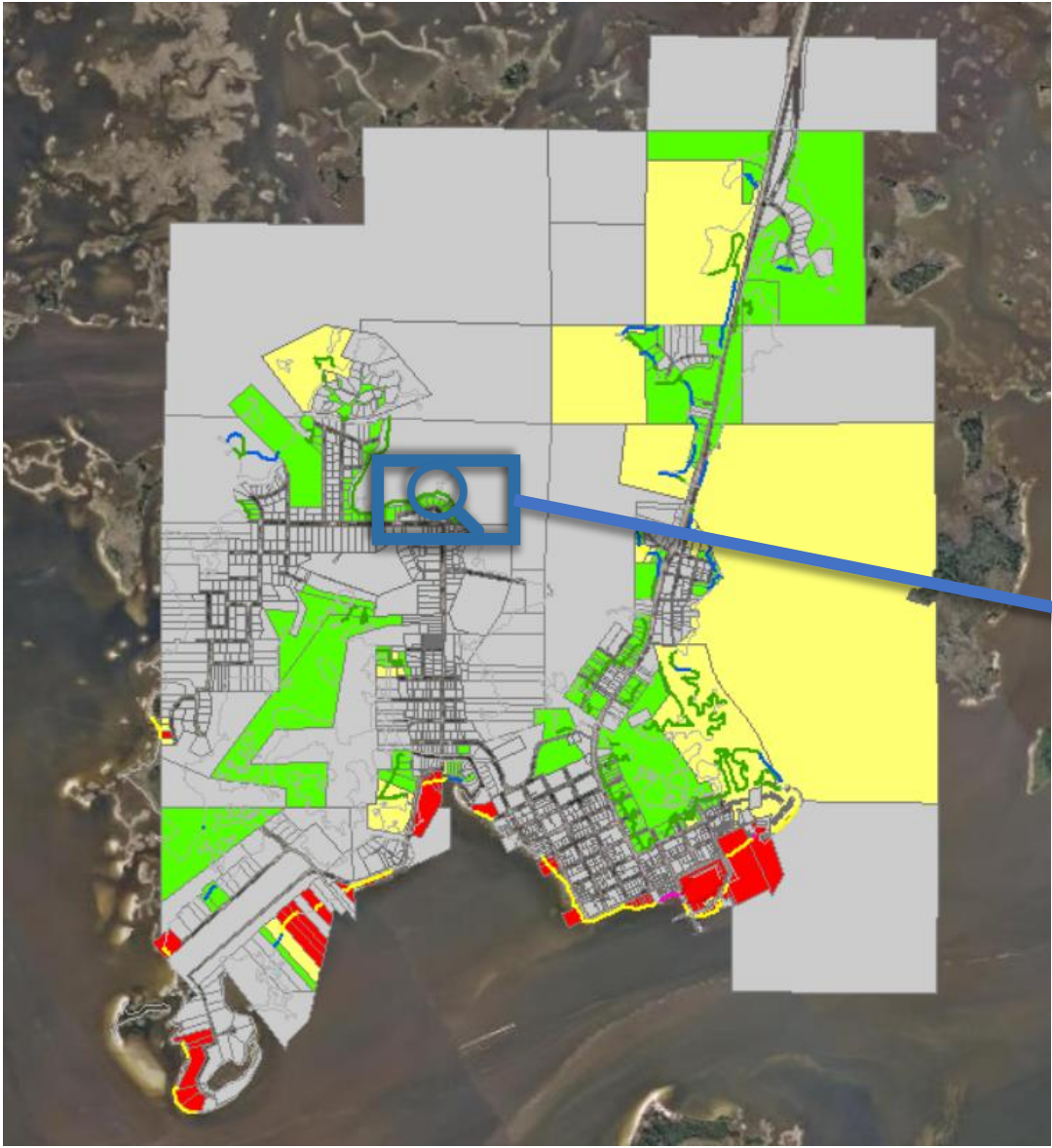
particularly when they are relatively small-scale and involve individual shoreline property owners.



Living Shoreline Suitability Model Results – Shoreline BMPs

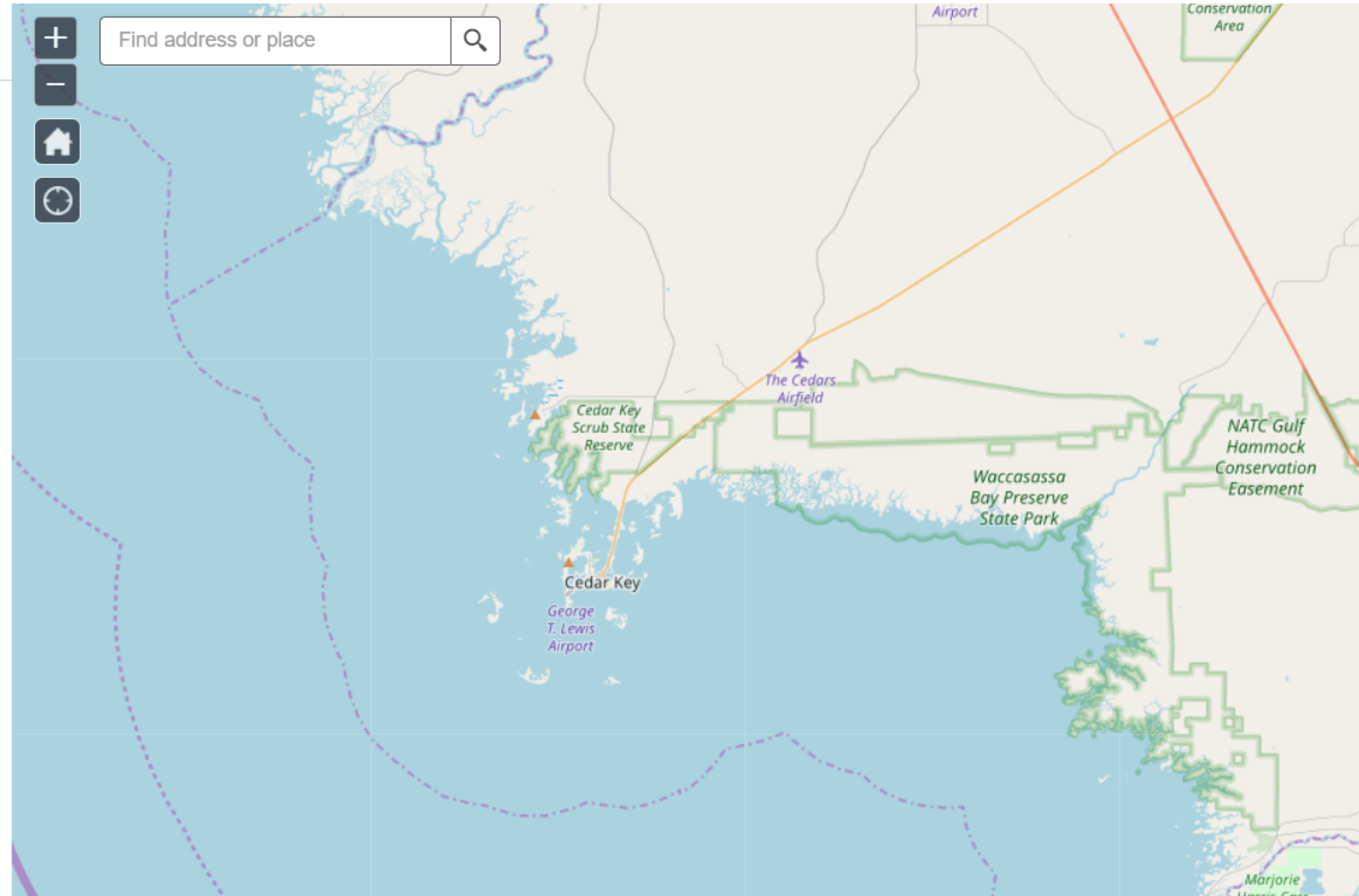


Living Shoreline Suitability Model Results – Permitting Layer



Outcomes

- The output from the model is available as a story map <https://arcg.is/1TG99j>



Living Shoreline - Cedar Key


The Gulf of Mexico Climate and Resilience Community of Practice, funded the City of Cedar Key and the University of Florida to apply the Living Shoreline Suitability Model (LSSM) to the coastal areas of Cedar Key, FL.

The LSSM was developed by the Virginia Institute of Marine Science (VIMS) and it has been successfully applied to other coastal areas in the United States, including Tampa Bay, FL, the Chesapeake Bay region of VA, and Mobile Bay, AL.

The LSSM was developed to recommend best practices for shoreline management in both upland and waterward zones.

Outcomes

- Permitting guidance documents



PERMITTING LIVING SHORELINES IN FLORIDA

Savanna C. Barry¹, Sara E. Martin², Eric L. Sparks²

RECENT ADVANCES IN PERMITTING RULES MAKE IT EASIER FOR FLORIDA HOMEOWNERS TO INSTALL RESILIENT AND COST-EFFECTIVE LIVING SHORELINES

Why living shorelines?

- Natural bank stabilization
- Alternative to hardened structures (i.e., seawalls, bulkheads)
- Provide habitat for aquatic and terrestrial species
- Improve water quality
- Cost-effective compared to hardened structures
- More resilient than hardened structures

Living shoreline permitting

Most small living shoreline projects in Florida qualify for a permit exemption. To see if your project qualifies refer to <http://edis.ifas.ufl.edu/sg155> and then go to [www.fdpeportal.com](http://fdpeportal.com) to apply to build your living shoreline or use the "Request for Verification of ERP Exemption" pdf form (<http://bit.ly/ERP-1-Stform>). See the links below for step-by-step guides for how to apply.

Permit exemption guides

Part 1 <http://edis.ifas.ufl.edu/sg187>
Part 2 <http://edis.ifas.ufl.edu/sg189>

Within 30 days of exemption form submittal, you will be informed either of exemption approval or of need for more project details.

Required Permit Exemption Documents

- cross-section project drawing
- project drawing
- site plan
- site plan of current site
- site plan of proposed activities

Recommended Permit Documents

- Land deed
- Aerial photo of project site

Important Contacts

University of Florida IFAS Extension
Florida Sea Grant
Blög 803 McCarty Drive
PO Box 110400
Gainesville, FL 32611
(352) 392-5870
www.ifseagrant.org

Florida Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000
(850) 245-2118
FloridaDep.gov/districts

U.S. Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, FL 32207
(904) 232-1177
www.saj.usace.army.mil

To learn more about living shorelines, visit the following sites:

- Floridalivingshoreslines.com
- FloridaSeaGrant.org/florida-living-shorelines
- ifseagrant.org/living-shorelines
- masgc.org/living-shorelines
- Livingshorelinesacademy.org



A Homeowner's Guide to the Living Shoreline Permit Exemption Part 1: Florida Department of Environmental Protection¹

Savanna Barry, Sara Martin, and Eric Sparks²

Background

"Living shoreline" is a catch-all phrase that describes a riparian area managed with restoration techniques that use natural material such as oyster reef, mangroves, and marsh grasses to stabilize the area, prevent erosion, and protect property. The construction or placement of material typically occurs within state waters, which includes public lands located waterward of the mean high-water line. Therefore, the Florida Department of Environmental Protection (DEP), among other entities, regulates the placement of living shorelines through a permitting and submerged-land-authorization process. This process ensures that project activities do not conflict with the public interest, defines actions that must be taken when a project is expected to have negative impacts, and grants permission for the project to be constructed on state-owned submerged lands.

If you are a homeowner who is considering installing a living shoreline on your property and you believe your project is exempt, this guide will assist you in submitting a complete Request for Verification of Exemption form to DEP. If approved, this request will result in an official Verification of Exemption and State Land Authorization letter from DEP.

While not required, filling out the form and obtaining the Verification of Exemption is highly encouraged because it will help you ensure that you are meeting regulatory requirements. It will help you avoid penalties and fines and obtain a Submerged Lands Authorization from DEP. Remember, DEP staff at your regional regulatory office are willing to meet with you or talk with you over the phone.

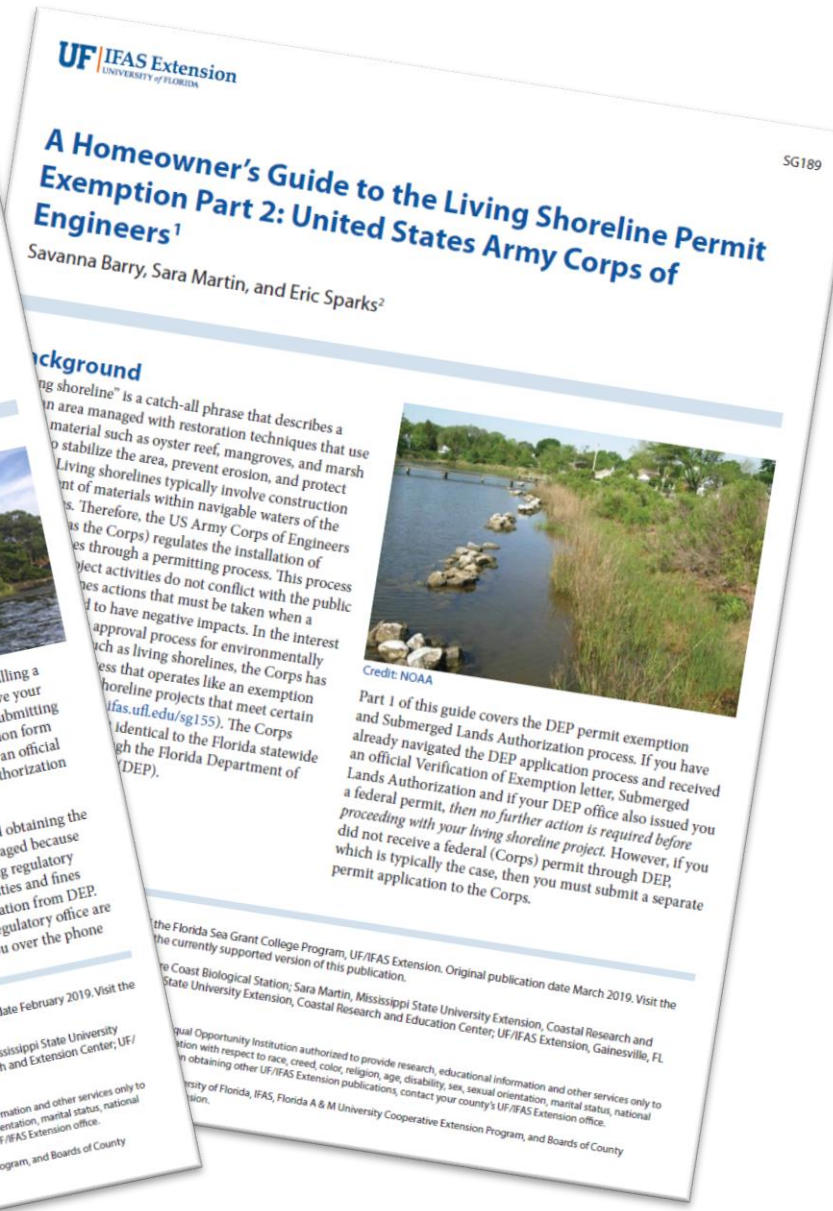
In the interest of streamlining the approval process for environmentally beneficial projects such as living shorelines, the DEP has defined an exemption for small-scale living shoreline projects that meet certain criteria (see more on exemption criteria: <http://edis.ifas.ufl.edu/sg155>). A permit exemption allows qualified projects to move ahead without a permit, greatly simplifying the process for homeowners.

1. This document is SG187, one of a series of the Florida Sea Grant College Program, UF/IFAS Extension. Original publication date February 2019. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.

2. Savanna Barry, F. IFAS Extension Florida Sea Grant Agent with the UF/IFAS Nature Coast Biological Station; Sara Martin, Mississippi State University Extension Coastal Research and Extension Center; and Eric Sparks, Mississippi State University Extension Coastal Research and Extension Center; UF/IFAS Extension, Gainesville, FL 32611.

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A Homeowner's Guide to the Living Shoreline Permit Exemption Part 2: United States Army Corps of Engineers¹

Savanna Barry, Sara Martin, and Eric Sparks²

Background

"Living shoreline" is a catch-all phrase that describes a riparian area managed with restoration techniques that use natural material such as oyster reef, mangroves, and marsh grasses to stabilize the area, prevent erosion, and protect property. The construction or placement of material typically occurs within navigable waters of the state. Therefore, the US Army Corps of Engineers (the Corps) regulates the installation of living shorelines through a permitting process. This process ensures that project activities do not conflict with the public interest, defines actions that must be taken when a project is expected to have negative impacts. In the interest of streamlining the approval process for environmentally beneficial projects such as living shorelines, the Corps has defined an exemption for small-scale living shoreline projects that meet certain criteria (see more on exemption criteria: <http://edis.ifas.ufl.edu/sg155>). The Corps' exemption process is identical to the Florida statewide exemption process through the Florida Department of Environmental Protection (DEP).

Part 1 of this guide covers the DEP permit exemption and Submerged Lands Authorization process. If you have already navigated the DEP application process and received an official Verification of Exemption letter, Submerged Lands Authorization and if your DEP office also issued you a federal permit, then no further action is required before proceeding with your living shoreline project. However, if you did not receive a federal (Corps) permit through DEP, which is typically the case, then you must submit a separate permit application to the Corps.



Credit: NOAA

the Florida Sea Grant College Program, UF/IFAS Extension. Original publication date March 2019. Visit the EDIS website at <https://edis.ifas.ufl.edu> for the currently supported version of this publication.

1. Savanna Barry, F. IFAS Extension Florida Sea Grant Agent with the UF/IFAS Nature Coast Biological Station; Sara Martin, Mississippi State University Extension Coastal Research and Extension Center; and Eric Sparks, Mississippi State University Extension Coastal Research and Extension Center; UF/IFAS Extension, Gainesville, FL 32611.

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U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.

Outcomes

- City comprehensive plan amendment
- Sharing the message



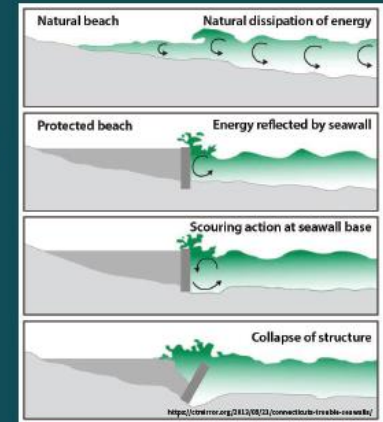
Living Shoreline Master Plan for Cedar Key

Savanna Barry, Corina Guevara,
Tom Ankersen, Mark Clark, Byron Flagg

Living Shoreline Guidance at a Local Scale

In recent years, sea-level rise, erosion, and loss of habitat around Cedar Key have become increasing concerns. Homeowners and land managers should critically evaluate how “gray” a shoreline erosion solution really needs to be, given the increased cost and potential for negative effects to other properties caused by shoreline hardening.

While “gray” solutions might be necessary at some sites, softer solutions called “living shorelines” are great options for many lower energy sites.



HOW GREEN OR GRAY SHOULD YOUR SHORELINE SOLUTION BE?

GREEN - SOFTER TECHNIQUES

GRAY - HARDER TECHNIQUES

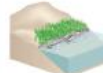
Living Shorelines



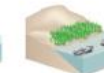
VEGETATION ONLY - Provides a buffer to upland areas and breaks small waves. Suitable for low wave energy environments.



EDGING - Added structure holds the toe of existing or vegetated slope in place. Suitable for most areas except high wave energy environments.



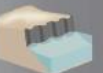
SILLS - Parallel to vegetated shoreline, reduces wave energy, and prevents erosion. Suitable for most areas except high wave energy environments.



BREAKWATER - (vegetation optional) - Offshore structures intended to break waves, reducing the force of wave action, and encourage sediment accretion. Suitable for most areas.



REVETMENT - Lays over the slope of the shoreline and protects it from erosion and waves. Suitable for sites with existing hardened shoreline structures.



BULKHEAD - Vertical wall parallel to the shoreline intended to hold soil in place. Suitable for high energy settings and sites with existing hard shoreline structures.

NOAA Habitat Blueprint/Shoreline Livable Continuum