



2020

## Adopt-A-Mangrove Program Guide



City of Cape Canaveral

*A comprehensive resident  
guide to acquiring, planting  
& maintaining mangroves.*

# Overview

The City of Cape Canaveral has established the Adopt-A-Mangrove Program to provide interested property owners with the opportunity to “adopt” mangroves. This is a voluntary program that will assist with the planting and care of these important plants, which serve a critical role in the health and wellbeing of the Indian and Banana River Lagoon systems. Rules and guidelines must be met and followed by interested mangrove “Adopters” who wish to partake in this volunteer community outreach initiative before planting on one’s property can begin. These guidelines are meant to ensure resident safety, City code and state compliance and local environmental wellbeing. Not meeting any one of the following can result in the refusal of participation by City staff.

Information presented in this guide comes from the Florida Department of Environmental Protection (FDEP), the Marine Resources Council, The Nature Conservancy and UF/IFAS; links to which can be found below:

- FDEP: <https://floridadep.gov/>
- Marine Resources Council: <https://savetheirl.org/>
- The Nature Conservancy: <https://www.nature.org/en-us/>
- UF/IFAS: <https://ifas.ufl.edu/>

Questions can be directed to Zachary Eichholz, City Sustainability Programs Manager.

Phone Number: (321) 868-1220 Ext. 219

Email: [z.eichholz@cityofcapecanaveral.org](mailto:z.eichholz@cityofcapecanaveral.org)

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# What are Mangroves?

The 1996 Mangrove Trimming and Preservation Act defines a mangrove as any specimen of the species *Laguncularia racemosa* (white mangrove), *Rhizophora mangle* (red mangrove), or *Avicennia germinans* (black mangrove). Although there are over 50 species of mangrove<sup>1</sup>, these three species are native to Florida and are therefore the focus of this voluntary resident program.

Mangroves and the forest they came from, which are found across the state of Florida, are identifiable by their often dense web of roots rising above shallow salt, fresh or brackish water environments. Red mangroves can grow between 20 and 75 feet tall, black mangroves between 40 and 60 feet and white mangroves between 30 to 40 feet tall.

Mangrove forest in Florida are most prevalent along the state's southwest coast where the Everglades and the Big Cypress Swamp drain into the Gulf of Mexico but are also found in the Tampa Bay area, southeast Florida and across portions of the 156-mile-long Indian River and Banana River Lagoon system, which parallels the City of Cape Canaveral's western border.

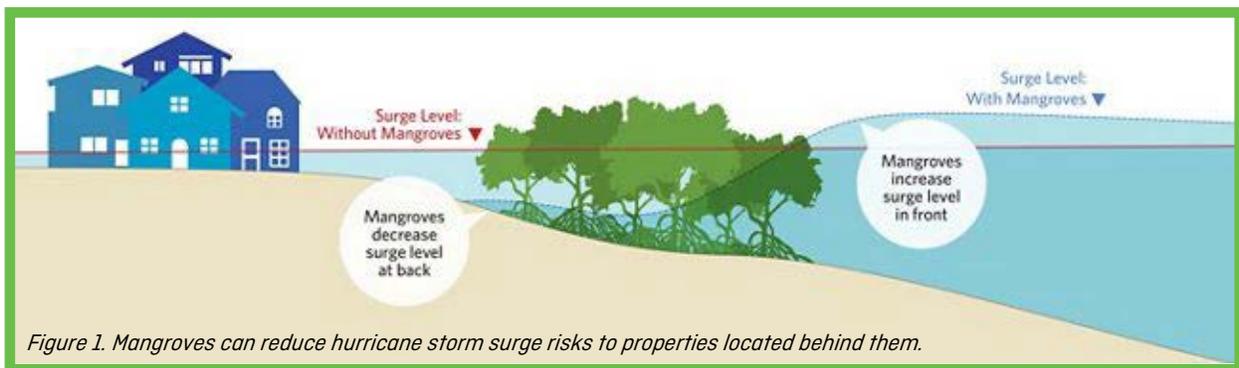
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<sup>1</sup> Source: <https://ocean.si.edu/ocean-life/plants-algae/mangroves>

# Why are Mangroves Important?

Mangroves are a critical aspect of Florida’s marine ecosystems. Sometimes called the “kidneys of the coast,” mangroves filter water they are situated in and can maintain water quality that helps coral reefs and near shore seagrasses grow. Due to their dense root structures, mangroves also help to stabilize coastlines by reducing shoreline erosion, decreasing incoming wave energy, minimizing storm surge heights and potentially providing a wind break.<sup>2</sup>

A 2019 study by The Nature Conservancy, RMS (a risk modeling company) and the University of California Santa Cruz concluded that Florida mangroves prevented \$1.5 billion in direct flood damages and protected over half a million people during 2017’s Hurricane Irma Collier County landfall. Overall damages were reduced by nearly 25% in Florida counties with mangroves. Further analysis of Collier County’s historical hurricane landfalls conducted by the study’s research team found that annual flood damages would increase by 25% should the county lose its protective mangrove forests.<sup>3</sup> This research shows that one of the easiest and most cost effective storm mitigation techniques that can protect and preserve taxpayer life and property is planting and maintaining mangroves. These unique trees also serve as a home for over 200 documented species of fish, over 150 species of birds, two dozen reptile and amphibian species and more than a dozen mammal species.<sup>4</sup>



<sup>2</sup> Source: <http://gardeningolutions.ifas.ufl.edu/plants/trees-and-shrubs/trees/mangroves.html>

<sup>3</sup> Source: [https://www.nature.org/en-us/newsroom/mangroves-reduce-florida-flood-damages/?src=s\\_fbo.ch\\_fl.x.x.6sf11483038=16fbclid=IwAR2E3IERw9G\\_EBRmlGezJGGuPw6xf5KC1fTp1azrWF2MdzUQHq3\\_mRB88](https://www.nature.org/en-us/newsroom/mangroves-reduce-florida-flood-damages/?src=s_fbo.ch_fl.x.x.6sf11483038=16fbclid=IwAR2E3IERw9G_EBRmlGezJGGuPw6xf5KC1fTp1azrWF2MdzUQHq3_mRB88)

<sup>4</sup> <https://soils.ifas.ufl.edu/wetlandextension/types/mangroves.htm>

# Helping the Community

The City of Cape Canaveral would like to thank you for your interest and participation in its Adopt-A-Mangrove Program. Mangroves are essential environmental assets that allow for ecosystem stability across the strained Indian River Lagoon. According to the 2016 *Indian River Lagoon Economic Valuation Update*—prepared by the Treasure Coast Regional Planning Council and the East Central Florida Regional Planning Council—the Lagoon has an estimated economic value of \$7.6 billion. It also helps to employ nearly 72,000 people with their annual wages representing over \$1 billion.<sup>5</sup> By 2025 it is estimated that 11 million people will visit the waterway annually. Protection of this waterway is critical for our local economy to flourish and our environment to remain safe.

According to the City's 2019 Vulnerability Assessment, Cape Canaveral can also expect increased hurricane activity and higher rates of flooding due to sea level rise as we head further into the 21<sup>st</sup> century.<sup>6</sup> By planting more mangroves, you can not only be an environmental steward but also help the City to be better prepared for these future challenges by stabilizing and fortifying its coastline through the installation of "green" infrastructure. A 2017 National Institute of Building Sciences report found that for every \$1 invested in disaster mitigation by communities and government, \$6 is saved in disaster response and rebuilding.<sup>7</sup>

Planting one mangrove may not seem like a lot, but each mangrove planted helps further ensure the City of Cape Canaveral is a more sustainable and resilient community both now and for generations to come.

If you have any questions or seek additional information, please contact the City's Sustainability Programs Manager: Zachary Eichholz at [z.eichholz@cityofcapecanaveral.org](mailto:z.eichholz@cityofcapecanaveral.org) or (321) 614-1193.

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<sup>5</sup> Source: <https://www.tcpalm.com/story/specialty-publications/progress-and-innovation/2016/11/14/new-study-shows-how-valuable-indian-river-lagoon-treasure-coast/92665478/>

<sup>6</sup> Source: [https://www.cityofcapecanaveral.org/document\\_center/Documents/Community%20Development/cocc\\_resilient\\_cape\\_canaveral\\_20190730.pdf](https://www.cityofcapecanaveral.org/document_center/Documents/Community%20Development/cocc_resilient_cape_canaveral_20190730.pdf)

<sup>7</sup> Source: [https://www.pewtrusts.org/en/research-and-analysis/articles/2018/01/11/every-\\$1-invested-in-disaster-mitigation-saves-\\$6](https://www.pewtrusts.org/en/research-and-analysis/articles/2018/01/11/every-$1-invested-in-disaster-mitigation-saves-$6)

# The Adopt-A-Mangrove Program

The City of Cape Canaveral has begun the Adopt-A-Mangrove Program in an effort to mitigate future storm related damages, protect life and property, and increase environmental stewardship through community outreach. This program is available to eligible City residents and homeowners associations (HOA). The official provider of participant's mangroves is the Marine Resources Council (MRC), a Brevard County-based 501 c (3) nonprofit "devoted entirely to protecting and restoring the Indian River Lagoon through sound science".<sup>8</sup> MRC is a Florida Department of Agriculture and Consumer Services licensed and permitted aquaculture facility in Palm Bay that maintains approximately 4,000 native mangroves grown for lagoon restoration efforts. In 2018, the MRC planted almost a thousand mangroves along the lagoon system.<sup>9</sup>

The Adopt-A-Mangrove Program will assist the City in accomplishing the goal of increasing mangrove habitats along the lagoon by at least 300 trees over the next five years (2020-2025). All mangroves used in the program will be red mangroves. In order to achieve this goal, the program works as follows:

## **Step 1: Registration**

Through its official social media pages, the Weekly Update and website, the City will advertise the Adopt-A-Mangrove Program to residents in order to build awareness about the importance of mangroves and to promote restoring mangroves forests to help achieve sustainable development goals. In furtherance of this promotion, the City will conduct a mangrove adoption program during each calendar quarter. In order to participate in the program, interested persons or associations must register to become a mangrove "Adopter". However, registration for each calendar quarter shall be limited to 10 registrants. Each quarterly registration period shall commence at the beginning of each calendar quarter in January, March, June and September and the registration period shall remain open until 10 registrants have been approved. The registration period will again open at the start of the next calendar quarter.

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<sup>8</sup> Source: <https://savetheir.org/about-us/our-mission/>

<sup>9</sup> Source: <https://savetheir.org/restoration/mangrove-restoration/>

## **Step 2: Mangrove Procurement**

Once all 10 participant spots are approved by the City and filled, or once the three-month registration period has ended, the necessary number of mangroves will be procured from the MRC.

## **Step 3: Planting**

Program participants will then pick up their mangrove from Public Works Services (601 Thurm Blvd.). After pick up, each participant will plant their mangrove in the City approved spot they have designated via their registration form. In order to maintain the health and planting viability of the mangroves, mangroves provided by the City shall be planted no later than 72 hours after the City has provided the mangrove unless otherwise approved by the City.

## **Step 4: Maintenance**

Participants are expected to maintain and preserve their mangroves throughout the trees lifetime. Upon planting of their mangrove, participants must take a picture of the tree. Another photo should be taken of the mangrove 6 months after planting and 1 year after planting. At least one photo of the mangrove should be taken each successive year after as well. All photos can be directed to the City's Sustainability Programs Manager ([z.eichholz@cityofcapecanaveral.org](mailto:z.eichholz@cityofcapecanaveral.org)). If there is any tropical event (a tropical storm or hurricane) that affects the City, participants should also take a photo of their mangrove after the storm has passed, only if it is safe to do so. These photos will help the City to determine whether or not the program's mangroves are staying healthy and rooting so that program success can be adequately determined. Should a participant's mangrove be lost or die for any reason the City should be contacted immediately.

# Mangrove Planting Rules and Guidelines

Due to their importance in coastal management and wetland preservation, mangroves are protected by state law. Program participants must acknowledge they have read and are aware of these laws and that they will adhere to them. Further details about mangrove trimming specifically can be found in the following section.

Carefully read through the following rules and guidelines before registering as a program participant. All mangroves distributed through the program will be three-year-old red mangroves in three or seven gallon pots. Program participation is free.

## Program Rules

1. In order to be an eligible participant in the Adopt-A-Mangrove Program you must be a full time City of Cape Canaveral resident, at least 18 years old, or a condominium or homeowner's association with private real property interests that border the Banana River Lagoon or a waterway that directly links to the lagoon. If you are a resident that resides within the jurisdiction of a condo or homeowner's association ("Association"), and you are proposing to plant the mangrove on Association common property, you must receive and provide written permission from the Association's president or board that the planting and maintenance of a mangrove within the common property has been authorized by the Association.
2. Participants are limited to one mangrove procurement per calendar quarter registration cycle. No more than 10 mangroves will be provided by the City per calendar quarter. In addition, only one mangrove per property, per calendar quarter shall be permitted unless multiple individual registrants are accepted by the City for a particular common area of an Association.
3. Existing native species should not be removed to make way for the planting of a mangrove.
4. Existing mangroves cannot be removed to make way for a new mangrove.
5. Red mangroves can only be planted on the shoreline of your property where the plant's root system can interact and grow within approximately 4 feet of mean high water. Do not plant mangroves anywhere else on your property. The plant will die without continual access to water.

6. There are no limitations on the number of times a registrant can apply to participate in the program, except that registration is limited to one per calendar quarter.
7. In order to be eligible to participate in the Program, participants must submit a written registration form, sign the Adopt-A-Mangrove Participation Agreement and provide a picture of the exact location they intend to plant their mangrove. Location is subject to City approval. You will be contacted by the City Staff when a final decision is made regarding your registration. Both of these forms and City Staff contact information can be found at the end of the packet.

### **Planting Guidelines**

1. Each mangrove should be planted between two and four feet upland of the mean high water mark. This will ensure the plant's extensive root system has room to grow as red mangrove roots grow horizontally. Red mangroves can grow up to between 20 and 30 feet wide at maturity.
2. Each mangrove should be placed in an excavated hole roughly the size of the plants pot.
3. Red mangroves require full sun, so be sure to consider this when scoping a suitable location for planting.
4. Once planted within a marine environment mangroves do not require watering.
5. For further information regarding red mangroves please visit the following link provided by UF/IFAS: <https://edis.ifas.ufl.edu/fp502>

# Mangrove Trimming

The following mangrove trimming guidelines are provided by the Florida Department of Environmental Protection, the state agency to which the City of Cape Canaveral must conform to with policies regarding mangroves and their maintenance. A printable PDF with additional information from the FDEP can be found here:

<https://floridadep.gov/sites/default/files/mangrove-trimming-2-08-16.pdf>

## Guidelines

- Homeowners may trim mangroves when the mangrove height exceeds 6 feet, provided the height of the mangrove does not exceed 10 feet. Mangroves below 6 feet in height cannot be trimmed.
- Mangroves over 10 feet in height may be trimmed provided the trimming is performed by a professional mangrove trimmer.
- When mangroves reach over 16 feet in height, mangrove trimming must be performed in stages with no more than 25% removed annually.
- Trimming mangroves over 24 feet tall requires DEP authorization.
- When the property shoreline is greater than 150 feet in length, a maximum of 65% of the mangrove trees can be trimmed. All other mangrove trimming or alteration activities require a permit.

## Activities to Avoid

- Defoliation (removing all or most of the leaves)
- Trimming mangrove roots
- Trimming mangroves below 6 feet in height
- Removing mangroves

## Penalties for Illegal Mangrove Trimming

- For a first violation, property owners may be required to restore the area. For subsequent violations, property owners and the person performing illegal trimming can be fined:
  - Up to \$100 for each mangrove illegally trimmed; and

- Up to \$250 for each mangrove illegally altered.

For a list of frequently asked questions regarding the maintenance of mangroves please visit the following link provided by the Florida Department of Environmental Protection:

- <https://floridadep.gov/water/submerged-lands-environmental-resources-coordination/content/mangrove-frequently-asked>

## Adopt-A-Mangrove Program Registration Form

Participant Name (First and Last): \_\_\_\_\_

Participant Address: \_\_\_\_\_

Participant Phone Number: \_\_\_\_\_

Participant Email Address: \_\_\_\_\_

Description of intended planting area: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Please submit a photo showing the exact location of where you intend to plant your mangrove via email to [z.eichholz@cityofcapecanaveral.org](mailto:z.eichholz@cityofcapecanaveral.org).

Participant Signature: \_\_\_\_\_

Written permission from Association president or board representative if planting within

Association property: \_\_\_\_\_

Association president or board representative signature if planting within Association property:

\_\_\_\_\_

## **ADOPT-A-MANGROVE**

### **PARTICIPATION AGREEMENT**

I, \_\_\_\_\_, knowingly and voluntarily agree to participate in the Adopt-A-Mangrove Program at the City of Cape Canaveral ("Program"). I acknowledge that I have received the Adopt-A-Mangrove Program Guidelines provided by the City and that I agree to abide by all of the Program rules and requirements. I expressly agree to assume the entire risk of accidents, illness, personal injury, property damage or death which is suffered by me as a result of participation in the Program, whether or not such damage results from product liability or negligence or gross negligence (except intentional misconduct) on the part of the City. I understand that the City is not providing any tools and safety measures of any kind for the Program. I acknowledge and agree that I am solely responsible for the transportation, planting and maintenance of the Mangrove provided to me by the City, and that I am solely responsible for my and my designee's, assign's and helper's safety including, but not limited to, when I or any of my designees, assigns or helpers are participating in the Program. The City assumes no responsibility for the actions and omissions of any participant in the Program. I (individually and on the behalf of any designee, assigns, helpers and all persons or entities which may derive a claim through me), for and in consideration of the opportunity to participate in the Program, hereby enter into this Release with the City, and agree to the fullest extent permitted by law and without limitation, to indemnify and hold harmless the City, from and against all claims, losses, damages, personal injuries (including but not limited to death), or liability (including reasonable attorney's fees), which directly or indirectly arises out of, or results from, my or my designee's, assigns or helper's participation in the Program. I hereby remise, release and forever discharge the City from any all claims, accidents, damages, demands, rights, actions and causes of action of any kind whatsoever, in law or in equity, resulting from my participation in the Program, which includes and extends to any and all claims I have or may have against the City with respect to the Program and the conditions, qualifications, instructions, rules or procedures thereof, and, from any other cause whatsoever relating to the Program or occurring during or after or as a result of the Program. I further agree to accept full responsibility, financial or otherwise, for any injury that I and/or my designee, assignee or helper may cause either to ourselves or to any other participants due to my/our acts or omissions while participating in the Program. It is my intention hereby, fully and finally and forever, to settle and to release any and all matters, disputes and differences, known or unknown, suspected or unsuspected, that do now exist, may exist or heretofore have existed with respect to those matters described herein. I further agree that this Release is to be broadly construed, and that if any portion of same is held invalid, that the balance of the Release shall continue in full legal force and effect. It shall have no legal effect on interpretation of this Release that the City has prepared this Release. I have read, understand, and voluntarily sign this Release and further agree that no oral representations, statements or inducements apart from the contents of this Release have been made which in anyway alters, amends, or changes this Release. Florida law applies to this Release. I certify that I am eighteen years or older.

I KNOWINGLY, WILLFULLY, FULLY AND COMPLETELY ASSUME ANY AND ALL RISKS AND LIABILITY ASSOCIATED WITH MY OR MY DESIGNEE'S, ASSIGNEE'S OR HELPER'S PARTICIPATION IN THE PROGRAM WHETHER OR NOT SAID RISKS ARE EXPRESSLY OR IMPLIEDLY STATED HEREIN. THE CITY OF CAPE CANAVERAL AND ITS EMPLOYEES, PROGRAM INSTRUCTORS AND AGENTS ARE NOT RESPONSIBLE FOR ANY INJURIES OR DEATH WHICH MAY OCCUR TO ME OR MY DESIGNEE OR HELPER BEFORE, DURING, OR AFTER MY PARTICIPATION IN THE PROGRAM.

I have fully read and fully understand the foregoing and in consideration of being allowed to participate in the Program, I fully agree to the foregoing terms and conditions set forth herein.

If the Participant is an Association, the below mentioned signatory is the \_\_\_\_\_ of the \_\_\_\_\_ Association, and I am authorized to and hereby execute this Agreement on behalf of the Association. Any above reference to the word "I," "Me," or "My" shall also mean the Association.

\_\_\_\_\_  
Participant's Name (Please Print)  
If Association, Please Print Title: \_\_\_\_\_

\_\_\_\_\_  
Participant's Signature

\_\_\_\_\_  
Date