



FLORIDA DEPARTMENT OF Environmental Protection

Southeast District Branch Office
2796 Overseas Highway, Suite 221
Marathon, FL 33050
305-289-7070

Ron DeSantis
Governor

Jeanette Nuñez
Lt. Governor

Shawn Hamilton
Secretary

December 27, 2023

Daniel and Vladimir Marrero
Maymar Services, Inc.
100 SW 38th Ter.
Miami, FL 33165
danny@proacp.com

Re: Maymar Services, Inc.
Site Number: ERP_406316
Monroe County

Dear Mr. Marrero:

Enclosed is the executed Consent Order to resolve the above referenced case. This copy is for your records. Please be mindful of all required deadlines within the Order to ensure compliance.

Should you have any questions or comments, please contact Alicia Cedeño Salgado by phone at 305-289-7082 or by e-mail at Alicia.CedenoSalgado@FloridaDEP.gov

Your cooperation in this matter will be appreciated.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sirena Davila", with a horizontal line underneath.

Sirena Davila
Director, Southeast District
Florida Department of Environmental Protection
Enclosure: Consent Order, Restoration Plan, 2019 Florida Keys Invasive Plants

ec:

Lea Crandall, FDEP-OGC, lea.crandall@dep.state.fl.us
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Alicia Cedeño Salgado, FDEP-SED, Alicia.CedenoSalgado@FloridaDEP.gov

BEFORE THE STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE OF FLORIDA DEPARTMENT)	IN THE OFFICE OF THE
OF ENVIRONMENTAL PROTECTION)	SOUTHEAST DISTRICT
)	
)	
Complainant,)	
)	OGC FILE NO. 23-1813
vs.)	
)	
Maymar Services Inc)	
)	
Respondent.)	
_____)	

CONSENT ORDER

This Consent Order is entered into between the State of Florida Department of Environmental Protection ("Department"), and Maymar Services Inc ("Respondent") to reach settlement of certain matters at issue between the Department and Respondent.

The Department finds and the Respondent admits the following:

1. The Department is the administrative agency of the State of Florida having the power and duty to protect Florida's air and water resources and to administer and enforce Chapter 373, Part IV, and Chapter 403, Florida Statutes, and the rules promulgated and authorized thereunder, Title 62, Florida Administrative Code. The Department has jurisdiction over the matters addressed in this Consent Order.
2. Respondent is a person within the meaning of Section 373.019(15), Florida Statutes.
3. Respondent is the owner of property located at 542 Sombrero Beach Road, Marathon, FL 33050, 33050 (Section 14, Township 66 South, Range 32 East), in Monroe County (Parcel: 00354950-000000), approximately at 24°41'54.0"N 81°04'48.5"W ("Property").

4. The Department finds that the Respondent altered mangroves on the property without obtaining a valid permit from the Department, in violation of Section 403.9328 Florida Statutes and 62-330.020(2), Florida Administrative Code. An inspection conducted by Department personnel on May 1, 2023, documented approximately 1,297 sq. ft. of unauthorized mangrove removal and 171 sq. ft. of unauthorized fill was placed within other surface waters (OSW). The activity was conducted on the above-described Property within the landward extent of a residential canal adjacent to the Atlantic Ocean, waters of the State, as defined by Florida Law.

Having reached a resolution of the matter Respondent and the Department mutually agree and it is,

ORDERED:

5. Within 30 days of the effective date of this Consent Order, Respondent shall pay the Department \$6,800.00 in settlement of the matters addressed in this Consent Order. This amount includes \$500.00 for costs and expenses incurred by the Department during the investigation of this matter and the preparation and tracking of this Consent Order. The penalties are apportioned as follows: \$1,500.00 for violation of Rule 62-330.020(2), Florida Administrative Code; and \$4,800.00 for violation of section 403.9328, Florida Statutes.

6. The Respondent shall make all payments required by this Order by cashier's check, money order or on-line payment. Cashier's check or money order shall be made payable to the "Department of Environmental Protection" and shall include both the OGC number assigned to this Order and the notation "Water Quality Assurance Trust Fund." Online payments by e-check can be made by going to the DEP Business Portal at <http://www.fldepportal.com/go/pay/> It will take a number of days after this order becomes final, effective and filed with the Clerk of the Department before ability to make online payment is available.

7. Within 30 day the Respondent shall implement the Restoration Actions attached hereto and incorporated herein as "Attachment I" in the manner and within the time frames specified therein.

8. With the exception of the activities described in the Restoration Actions, effective immediately and henceforth, Respondent shall not conduct any dredging, filling, or construction activities on or within the landward extent of waters of the state without first obtaining a valid Department permit or written notification from the Department that the activities appear to be exempt as proposed from Department permitting requirements; nor shall Respondent conduct any activities on state-owned lands below the ordinary or mean high water lines without first obtaining a lease, easement, or other consent of use from the Department.

9. Once the Restoration Actions have been completed, the Respondent shall implement the Maintenance and Monitoring Actions attached hereto and incorporated herein as "Attachment II" in the manner and within the time frames specified therein.

10. Respondent agrees to pay the Department stipulated penalties in the amount of \$100.00 per day for each and every day Respondent fails to timely comply with any of the requirements of paragraphs 7 and 9 of this Consent Order. A separate stipulated penalty shall be assessed for each violation of this Order. Within 30 days of written demand from the Department, Respondent shall make payment of the appropriate stipulated penalties to the "The Department of Environmental Protection" by cashier's check or money order and shall include thereon the OGC number assigned to this Consent Order and the notation "Water Quality Assurance Trust Fund." The Department may make demands for payment at any time after violations occur. Nothing in this paragraph shall prevent the Department from filing suit to specifically enforce any of the terms of this Consent Order. Any penalties assessed under this paragraph shall be in addition to the settlement sum agreed to in paragraph __ of this Consent Order. If the Department is required to file a lawsuit to recover stipulated penalties under this paragraph, the Department will not be foreclosed from seeking civil penalties for violations of this Consent Order in an amount greater than the

stipulated penalties due under this paragraph.

11. If any event, including administrative or judicial challenges by third parties unrelated to the Respondent, occurs which causes delay or the reasonable likelihood of delay, in complying with the requirements of this Consent Order, Respondent shall have the burden of proving the delay was or will be caused by circumstances beyond the reasonable control of the Respondent and could not have been or cannot be overcome by Respondent's due diligence. Economic circumstances shall not be considered circumstances beyond the control of Respondent, nor shall the failure of a contractor, subcontractor, materialman or other agent (collectively referred to as "contractor") to whom responsibility for performance is delegated to meet contractually imposed deadlines be a cause beyond the control of Respondent, unless the cause of the contractor's late performance was also beyond the contractor's control. Upon occurrence of an event causing delay, or upon becoming aware of a potential for delay, Respondent shall notify the Department orally within 24 hours or by the next working day and shall, within seven calendar days of oral notification to the Department, notify the Department in writing of the anticipated length and cause of the delay, the measures taken or to be taken to prevent or minimize the delay and the timetable by which Respondent intends to implement these measures. If the parties can agree that the delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of Respondent, the time for performance hereunder shall be extended for a period equal to the agreed delay resulting from such circumstances. Such agreement shall adopt all reasonable measures necessary to avoid or minimize delay. Failure of Respondent to comply with the notice requirements of this Paragraph in a timely manner shall constitute a waiver of Respondent's right to request an extension of time for compliance with the requirements of this Consent Order.

12. Respondent shall allow all authorized representatives of the Department access to the property at reasonable times for the purpose of determining compliance with the terms of this Consent Order and the rules and statutes of the Department.

13. Entry of this Consent Order does not relieve Respondent of the need to comply with applicable federal, state or local laws, regulations or ordinances.

14. The terms and conditions set forth in this Consent Order may be enforced in a court of competent jurisdiction pursuant to Sections 120.69 and 373.129, Florida Statutes. Failure to comply with the terms of this Consent Order shall constitute a violation of Section 373.430, Florida Statutes.

15. Respondent is fully aware that a violation of the terms of this Consent Order may subject Respondent to judicial imposition of damages, civil penalties of up to \$15,000 per day per violation [and administrative fines of up to \$10,000 per day per violation and criminal penalties.

16. Persons who are not parties to this Consent Order but whose substantial interests are affected by this Consent Order have a right, pursuant to Sections 120.569 and 120.57, Florida Statutes, to petition for an administrative hearing on it. The Petition must contain the information set forth below and must be filed (received) at the Department's Office of General Counsel, 3900 Commonwealth Boulevard, MS-35, Tallahassee, Florida 32399-3000, or received via electronic correspondence at Agency_Clerk@floridadep.gov, within 21 days of receipt of this notice. A copy of the Petition must also be mailed at the time of filing to the District Office named above at the address indicated. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes.

The petition shall contain the following information:

- a) The name and address of each agency affected and each agency's file or identification number, if known;
- b) The name, address, any e-mail address, any facsimile number, and telephone number of the petitioner, if the petitioner is not represented by an attorney or a qualified representative; the name, address, and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination;

- c) A statement of when and how the petitioner received notice of the agency decision;
- d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action;
- f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action, including an explanation of how the alleged facts relate to the specific rules or statutes; and
- g) A statement of the relief sought by the petitioner, stating precisely the action petitioner wishes the agency to take with respect to the agency's proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject Consent Order have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Sections 120.569 and 120.57, Florida Statutes, and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-106.205, Florida Administrative Code.

A person whose substantial interests are affected by the Consent Order may file a timely petition for an administrative hearing under Sections 120.569 and 120.57, Florida

Statutes, or may choose to pursue mediation as an alternative remedy under Section 120.573, Florida Statutes, before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for pursuing mediation are set forth below.

Mediation may only take place if the Department and all the parties to the proceeding agree that mediation is appropriate. A person may pursue mediation by reaching a mediation agreement with all parties to the proceeding (which include the Respondent, the Department, and any person who has filed a timely and sufficient petition for a hearing) and by showing how the substantial interests of each mediating party are affected by the Consent Order. The agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, or received via electronic correspondence at Agency_Clerk@floridadep.gov, within 10 days after the deadline as set forth above for the filing of a petition.

The agreement to mediate must include the following:

- (a) The names, addresses, and telephone numbers of any persons who may attend the mediation;
- (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;
- (c) The agreed allocation of the costs and fees associated with the mediation;
- (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;
- (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;
- (f) The name of each party's representative who shall have authority to settle or recommend settlement; and
- (g) Either an explanation of how the substantial interests of each mediating party will be affected by the action or proposed action addressed in this notice of intent

or a statement clearly identifying the petition for hearing that each party has already filed, and incorporating it by reference.

(h) The signatures of all parties or their authorized representatives.

As provided in Section 120.573, Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above, and must therefore file their petitions within 21 days of receipt of this notice. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, Florida Statutes, remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

17. The Department hereby expressly reserves the right to initiate appropriate legal action to prevent or prohibit any violations of applicable statutes, or the rules promulgated thereunder that are not specifically addressed by the terms of this Consent Order.

18. The Department, for and in consideration of the complete and timely performance by Respondent of the obligations agreed to in this Consent Order, hereby waives its right to seek judicial imposition of damages or civil penalties for alleged violations addressed in this Consent Order.

19. Respondent acknowledges and waives its right to an administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, on the terms of this

Consent Order. Respondent acknowledges its right to appeal the terms of this Consent Order pursuant to Section 120.68, Florida Statutes, and waives that right upon signing this Consent Order.

20. Electronic signatures or other versions of the parties' signatures, such as .pdf or facsimile, shall be valid and have the same force and effect as originals. No modifications of the terms of this Consent Order shall be effective until reduced to writing and executed by both Respondent and the Department.

21. All submittals and payments required by this Consent Order to be submitted to the Department shall be sent to the Florida Department of Environmental Protection, attn. Alicia Cedeño Salgado, 2796 Overseas Highway, Suite 221 Marathon, Florida 330506 or by email at SED_Compliance@FloridaDEP.gov.

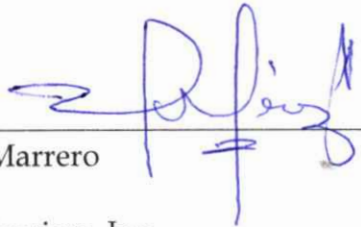
22. In the event of a sale or conveyance of the property, if all of the requirements of this Consent Order have not been fully satisfied, Respondent shall, at least 30 days prior to the sale or conveyance of the property, (1) notify the Department of such sale or conveyance and (2) provide a copy of this Consent Order with all attachments to the new owner. The sale or conveyance of the property shall not relieve the Respondent of the obligations imposed in this Consent Order.

23. This Consent Order is a settlement of the Department's civil and administrative authority arising under Florida law to resolve the matters addressed herein. This Consent Order is not a settlement of any criminal liabilities which may arise under Florida law, nor is it a settlement of any violation which may be prosecuted criminally or civilly under federal law.

24. This Consent Order is a final order of the Department pursuant to Section 120.52(7), Florida Statutes, and it is final and effective on the date filed with the Clerk of the Department unless a Petition for Administrative Hearing is filed in accordance with Chapter 120, Florida Statutes. Upon the timely filing of a petition this Consent Order will not be effective until further order of the Department.

FOR THE RESPONDENT:

12/19/2023
DATE



Vladimir Marrero
President
Maymar Services Inc

FOR DEPARTMENT USE ONLY

DONE AND ORDERED this 27th day of December, 2023,
in Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Sirena Davila
Director, Southeast District

Filed, on this date, pursuant to Section 120.52, F.S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Vanessa Osborne

Clerk

12/27/2023

Date

cc: Lea Crandall, Agency Clerk
Mail Station 35

Attachment I
RESTORATION ACTIONS
OGC NO. 23-1813
FDEP vs Maymar Services Inc

1. Within 30 days of the date of the effective date of this Order, Respondent shall complete the following Restoration Actions within the timeframes specified below:
 - a. Respondent shall notify the Department at least 48 hours prior to the commencement of work under these Restoration Actions.
 - b. Respondent shall stake the boundaries of the Restoration Area for approval by the Department, prior to undertaking any restoration work required in these Restoration Actions. This staked line shall remain in place during all phases of restoration and no wetlands or waters of the state shall be disturbed or affected by restoration activities.
 - c. Any re-grading or planting of the restoration area shall be conducted so as not to affect wetland areas outside the restoration area.
 - d. Prior to planting but after any required re-grading, Respondent shall remove all exotic and nuisance vegetation listed on the Florida Keys Invasive Exotic Task Force List of Invasive Plants of The Florida Keys-2019 (Exhibit B).
 - e. All exotic vegetation shall be removed from the restoration area using hand-held equipment in a manner that will minimize impacts to the existing wetland plants and will not cause ruts in the wetland soils which will impede or divert the flow of surface waters.
 - f. The stumps of exotic plants previously removed shall be treated annually or as necessary to prevent regrowth, with an appropriate systemic herbicide approved by the Department in advance.
 - g. Prior to planting, debris from earlier trimming and cutting shall be removed from the restoration area and placed in an upland location.

h. Within 30 days of the effective date of this Order, Respondents shall complete the approved restoration plan attached hereto and incorporated herein as "Exhibit A".

- i. Any re-planting shall be completed within the schedule approved through the Restoration Plan.
- ii. The mangroves shall be at least one to three-gallon, well-rooted, and of nursery-grown stock, planted on 5-foot centers.
- iii. The mangroves shall be planted throughout the restoration area as indicated in the restoration plan attached hereto and incorporated herein as "Exhibit A."

3. Within 30 days of completion of these Restoration Actions, Respondent shall submit a "Time-Zero" report with the following information to the Department:

- a. Date that the Restoration Actions were completed (also referred to as "Time-Zero").
- b. Enough color photographs to show the entire completed restoration area taken from fixed reference points shown on a plan-view drawing.
- c. Nursery receipts for all plants used in the Restoration Actions.
- d. Number and spacing of each species planted.
- e. A sketch that clearly depicts the locations of the plantings.
- f. Measurement, in square feet, of the total canopy that is being provided by the new plantings.

Attachment II
MAINTENANCE AND MONITORING ACTIONS
OGC NO. 23-1813
FDEP vs Maymar Services Inc.

Within 30 days of the completion of the Restoration Actions, Respondent shall implement the following Maintenance and Monitoring Actions:

1. For five years following completion of the Restoration Actions and the Time Zero Report, Respondent shall inspect the restoration area quarterly for the first year and annually for years two through five. The purpose of the monitoring shall be to determine the success of the restoration.

2. "Success of the restoration" means that at the end of the monitoring schedule the following success criteria are met in each restoration area required in the Restoration Actions. At each inspection in the Monitoring Schedule, Respondent shall replace enough dead plants to ensure that at least 80 percent of the original number of each species planted in the restoration areas is alive.

a. At least 80 percent of the planted mangroves have survived and the survivors have achieved at least a 30 percent mean annual growth rate as measured by the statistically valid methods found in Daubenmire, R. (1968), Oosting (1956), or Mueller-Dombois and Ellenberg (1974).

b. The total contribution to percent cover by the nuisance and exotic vegetation listed on the Florida Keys Invasive Exotic Task Force List of Invasive Plants of The Florida Keys-2019 (Exhibit B) is less than 10 percent.

c. The restoration areas have been inspected by the Department and the Department has informed the Respondent in writing that all the restoration areas are within the landward extent of waters of the state as defined in Florida Administrative Code Rule 62-340.

3. During each inspection, Respondent shall remove all nuisance and exotic vegetation listed in the Florida Keys Invasive Exotic Task Force List of Invasive Plants of The Florida Keys-2019 (Exhibit B) without disturbing the other existing vegetation in the restoration area.

4. Within 30 days after the completion of each inspection in the monitoring schedule, Respondent shall complete a monitoring report and submit it to the Department. The monitoring reports shall include the following information:

- a. Date of the inspection.
- b. Color photographs taken from the same locations as the pictures taken in the Restoration Actions.
- c. Either an actual count or a statistically valid estimate* of the percentage of each species planted in the Restoration Actions that has survived compared to the total number of plants in the restoration areas.
- d. The number of each species replanted to reach the 80 percent survival rate.
- e. Description of any nuisance or exotic species removal.
- f. A plan view noting the locations of all re-plantings.
- g. Growth data for a statistically valid subsample* of trees including height, diameter at breast height, and mean annual growth rate.

* Statistically valid estimating methods include those found in Daubenmire, R. (1968), Oosting (1956), or Mueller-Dombois and Ellenberg (1974), or other method approved by the Department. More information on these methods will be provided by the Department upon request.

5. If after a period of two years of the five-year monitoring period from the original planting, the Restoration Area is not clearly trending towards meeting the success criteria, the Respondents shall submit an Alternative Restoration Plan to the

Department for approval and implementation, which shall be prepared by a professional qualified in mangrove restoration.

6. If after a period of three years, the Restoration Area is clearly meeting the success criteria, the Respondents may request, in writing, to the Department, to end the Maintenance and Monitoring Actions early. The Department expressly reserves the right to determine if the Maintenance and Monitoring Actions may be ended early.

7. If the restoration area is not deemed successful after the fifth yearly monitoring event, Respondents must continue to perform the Maintenance and Monitoring actions until the Department has informed the Respondents that the success criteria have been met, including the submittal and implementation of alternate planting plans if deemed necessary.

8. Any mangrove trimming performed during the monitoring period shall be done in accordance with the 1996 Mangrove Trimming and Preservation Act, be limited to the established exemption criteria, be performed by a Professional Mangrove Trimmer as applicable pursuant to the 1996 Mangrove Trimming and Preservation Act, and not include any area inside of the restoration area or include any of the restoration plantings.

Restoration Plan

Project

Fill Removal and Mangrove Restoration
FDEP ERP Site Number 406316

Legal Description

Block 2, Lot 1, Sombrero Beach Village Subdivision

Address

542 Sombrero Beach Road
Marathon

Real Estate Number

00354950-000000

November 4, 2023

Background

This report was completed to create a restoration plan for unauthorized removal of mangroves and unauthorized placement of fill in wetlands. See Attachment A for a location Map. Per the September 21, 2023, warning letter issued by the Florida Department of Environmental Protection and the attached ERP Inspection Report, 1,297 sf of unauthorized mangrove removal occurred, and 171 sf of unauthorized fill (riprap) was placed in the jurisdictional wetland area. A copy of the map from the ERP Inspection Report is attached (Attachment B).

A review of aerial photos and a site photo (Attachment D) show that the mangrove fringe suffered severe damage to hurricane Irma. The photos show that the area was still severely impacted in 2023, prior to removal. A photo in the ERP inspection report shows a full, mature, healthy mangrove fringe. The photo is attributed to Redfin.com but is not dated. The dated aerial and photographic imagery provided in this restoration plan indicate that the healthy mangrove fringe shown in the Redfin.com was taken prior to the damage that occurred to hurricane Irma. The quality and functionality of the mangrove fringe appears to have been significantly reduced, at the time of removal. The property owner erroneously believed that the dead mangroves could be removed without the benefit of a permit. The owner now understands that this was not the case and is prepared to restore the mangrove fringe and remove the fill.

Site Description

The approximately 9,315 sf foot property is currently under construction and includes a single-family residence and a T-dock. The property is located on the dead end of a canal with a small culvert. As shown in the ERP Inspection Report, the majority of mangroves, the greater part of which were dead, have been removed or cut to the roots. Riprap was also placed along the shoreline fringe as shown in the ERP report. A patch of red mangroves remain in the northeast corner of the property.

The shoreline fringe is located on a dredged canal which leaves a narrow shelf for planting. The planting area width will be increased when the fill is removed, but it will still be relatively narrow to an average width of eight feet.

Proposed Restoration

1. Riprap & Fill

A review of the proposed dock installation plans prepared by Glenn Boe and Associates and submitted to the US Army Corps of Engineers (ACE) shows that the jurisdictional wetland line was located approximately five feet west of its current location. Unauthorized fill and riprap was installed in this five foot area. Per the FDEP ERP Inspection Report 171 sf of fill and riprap was placed in jurisdictional wetlands.

Riprap and fill is to be removed and relocated five feet landward of its current location. The substrate landward of the riprap must be secured prior to removal of the riprap to ensure that existing fill is not allowed to migrate waterward. This can be achieved with filter fabric that is substantially backed/supported or other method approved in writing by the FDEP.

2. Mangrove Installation

Three areas have been designated for mangrove plantings. Each area is detailed below.

Area A

As shown in Attachment B, mangroves, were removed in this area between the new dock and shoreline. As previously discussed, the majority of mangroves in this area were dead. While the area of plant material removed extended from the shoreline to the dock, the available replanting area is smaller due to the significant drop-off at the canal edge. When the unauthorized fill is removed there will be an approximately 8' wide x 32' long strip available for planting. See Attachment C.

To adequately restore this area mangroves, commensurate in size with 3-gallon pot nursery stock, should be installed on 5-foot centers. This equates to 12 plantings. While this number of plantings will achieve compliance, planting 24 mangroves is recommended to ensure compliance through the monitoring period. Should the high tide line (HTL) extend into the proposed mangrove restoration area, plantings shall be planted landward of the HTL, where practical, to increase the likelihood of successful establishment, while allowing for natural recruitment into tidal waters as they mature. Required plantings shall be adjusted, as approved by FDEP, should the HTL encroach on the impacted area. Plantings shall be installed to a secure depth that will prevent uprooting during tidal activity but not so deep that any portion off the main stems are installed bellow grade. The depth will vary based on the location of the plant in relation to the water's edge.

Area B

As shown in Attachment B, red mangroves were removed in this area between the new dock and shoreline. As previously discussed, the majority of the mangroves were dead. While the area of plant material removed extended from the shoreline to the dock, the available replanting area is smaller due to the significant drop-off at the canal edge. When the unauthorized fill is removed there will be an approximately 8' wide x 25' long strip available for planting. See Attachment C.

To adequately restore this area mangroves, commensurate in size with 3-gallon pot nursery stock, shall be installed on 5-foot centers. This equates to 10 plantings. While this number of plantings will achieve compliance, planting 20 mangroves is

recommended to ensure compliance during the monitoring period. Should the high tide line (HTL) extend into the proposed mangrove restoration area, plantings shall be planted landward of the HTL, where practical, to increase the likelihood of successful establishment, while allowing for natural recruitment into tidal waters as they mature. Required plantings shall be adjusted, as approved by FDEP, should the HTL encroach on the impacted area. Plantings shall be installed to a secure depth that will prevent uprooting during tidal activity but not so deep that any portion off the main stems are installed below grade. The depth will vary based on the location of the plant in relation to the water's edge.

Area C

This area is unique in that there is significant dead mangrove material remaining (See Attachment D). The disturbance to this area appears to have occurred prior to any work being completed on the subject parcel. This observation is made due to the petrification observed of the remaining plant material and disturbance to the area shown on the 2017 aerial photography (See Attachment C). While it does not appear that this disturbance was due to any activity related to the construction of the dock or residence the property owners are opting to restore the area. Regeneration and recruitment has occurred with 19 saplings observed (Attachment D). Due to the significant amount of remaining root structure, mangroves, and reduced substrate depth, mangroves commensurate with 1-gallon pot size will be placed among the remaining mangrove roots. Mangroves will be installed in all available areas as indicated with the placement of red flags as shown in Attachment D. Nine mangroves are proposed to be installed.

Monitoring and Success Criteria

1. A "Baseline" Monitoring Report shall be submitted within 120 days of the effective date of the final Consent Order and shall include the following:
 - a. The "OGC Case No and name of Respondent exactly as it appears on the first page of the Consent Order;
 - b. Dates of all work completed;
 - c. Color photographs to provide an accurate representation of the Wetland Damage Area. The photographs shall be taken from fixed reference points and directions which are shown on a scaled plan-view of the Property; and
 - d. A table depicting numbers, spacing, and sizes (including tree height) of each species planted.

2. Until the success criteria are achieved as described in paragraph 4, the Respondent shall inspect the Wetland Damage Area annually. The purpose of the monitoring shall be to determine the success of the site restoration. During each inspection, Respondent shall remove all exotic and nuisance vegetation without disturbing the other existing vegetation in the Wetland Damage Area, Exotic and

nuisance vegetation shall include vegetation which is listed in the most recent published list of invasive species by the Florida Exotic Pest Plant Council (FLEPPC). Internet website for FLEPPC is <http://www.fleppc.org/list/list.htm>. Exotic and nuisance vegetation shall include, but not be limited to, vines, Brazilian Pepper, Punk Tree and Australian Pine.

3. Within 30 days after the completion of each inspection in the monitoring schedule, Respondent shall complete a monitoring report and submit it to the Department. The monitoring reports shall include the following information:
 - a. The "OGC Case No.' and name of Respondent exactly as it appears on the first page of the Consent Order;
 - b. Dates of inspection;
 - c. Color photographs to provide an accurate representation of the Wetland Damage Area. The photographs shall be taken from the same fixed reference points and directions used for the Baseline Monitoring Report shown on a scaled plan-view of the Property;
 - d. Plant species composition with estimates of the contribution of each species to percent cover; and
 - e. Plan view depicting the locations of any specimens replanted (indicate numbers of each species replanted).

4. Restoration of the Wetland Damage Area shall be deemed successful when the following criteria has been continuously met for a period of at least one (1) year, without intervention in the form of irrigation, removal of undesirable vegetation, or replanting of desirable vegetation:
 - a. Planted species have achieved a minimum 80% survival;
 - b. Planted species and naturally recruited native wetland species have achieved a minimum 80% cover;
 - c. Total contribution to percent cover by exotic, non-native wetland species, and species not listed in 62-340, F.A.C. shall be maintained below 5%;
 - d. The planted mangrove species have achieved an average height of at least 6 feet and all are exhibiting natural, vigorous growth consistent with the species and target plant community;
 - e. The Wetland Damage Area has been inspected by the Department and the Department has informed the Respondents in writing that the Wetland Damage Area has achieved the described success criteria.

5. If it is determined by the Department, based on visual inspection and/or review of the monitoring reports, that the Wetland Damage Area is not meeting the success criteria (described in paragraph 4 above) after three years, the

Respondent shall submit an alternative Restoration Plan to the Department for review and approval, which shall meet the following requirements:

- a. Respondents shall submit the plan within 30 days of notification by the Department of failure to meet the performance criteria;
- b. The Revised Restoration Plan shall include a plan, including time schedule for planting the Restoration Area with enough plants representative of the naturally occurring habitat.

Attachment A – Location Aerial

Subject Parcel



Monroe County Property Appraiser Aerial Photography - 2023

Attachment B – Impact Areas (As Documented in FDEP ERP Inspection Report)




UNAUTHORIZED MANGROVE ALTERATION

MAYMAR SERVICES INC

Site No.: 406316



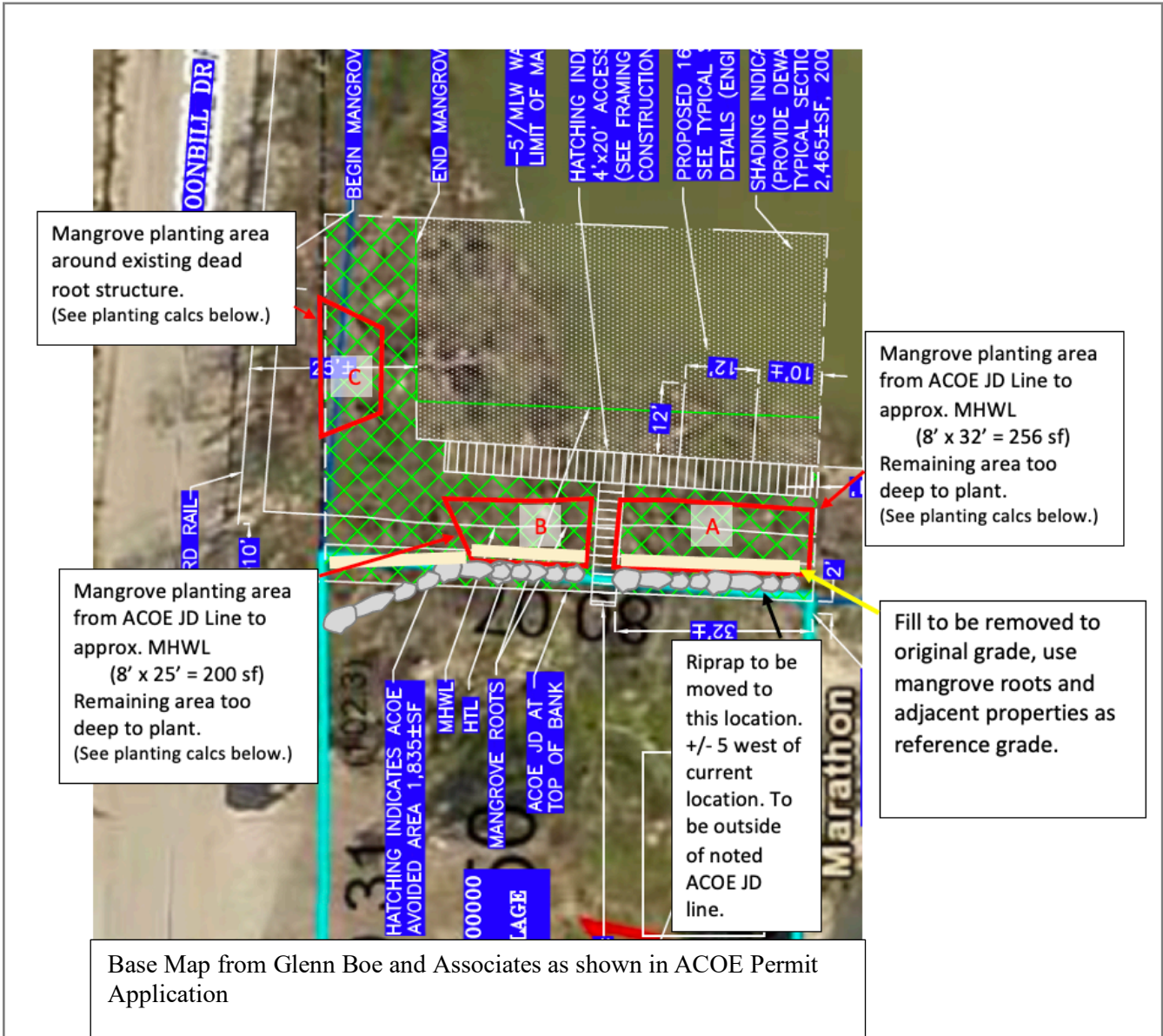
Cadastral 2020 (Property Appraiser Parcels) - Public View

	Mangrove Impact Area (~1,297 sq. feet)
	Authorized Impact Area (380 sq. feet)
	Riprap Impact Area (~171 sq. feet)

0 15 30 Feet N

Created by FDEP
06/14/2023
Updated 8/24/2023

Attachment C – Restoration Plan



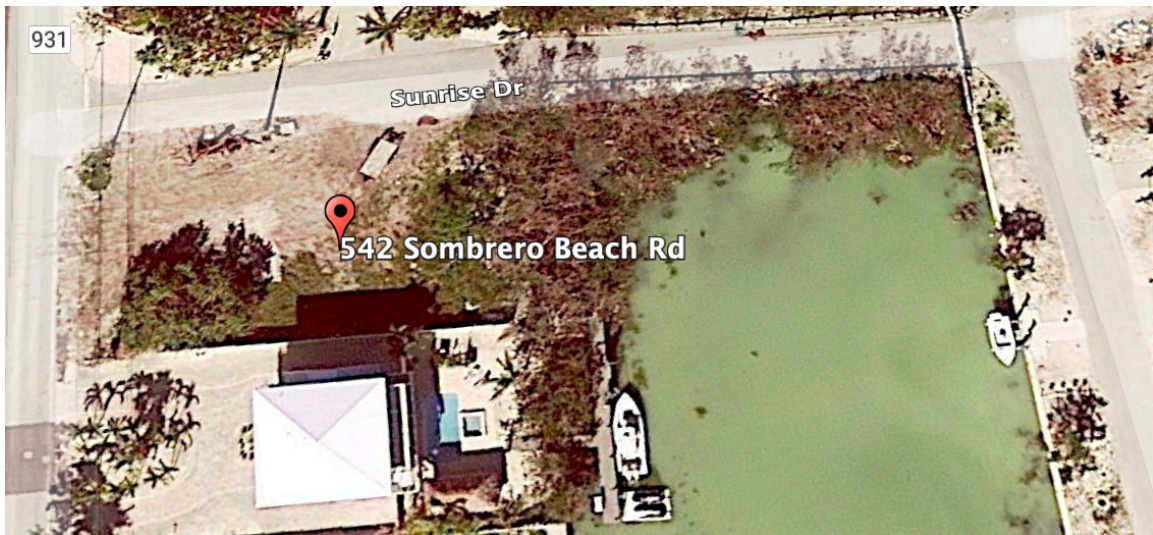
Planting Calculations					
Planting Area	SF	Plant Material Size (gallon Pot)	# Plants		
			Required	(5' centers)	# Plants Recommended*
A	256	3	12		24
B	200	3	10		20
C	N/A	1	9		9
TOTALS			31		53

*Additional plantings recommended to mitigate for potential loss during compliance period.

Attachment D – Historic Aerial Imagery (Page 1 of 3)

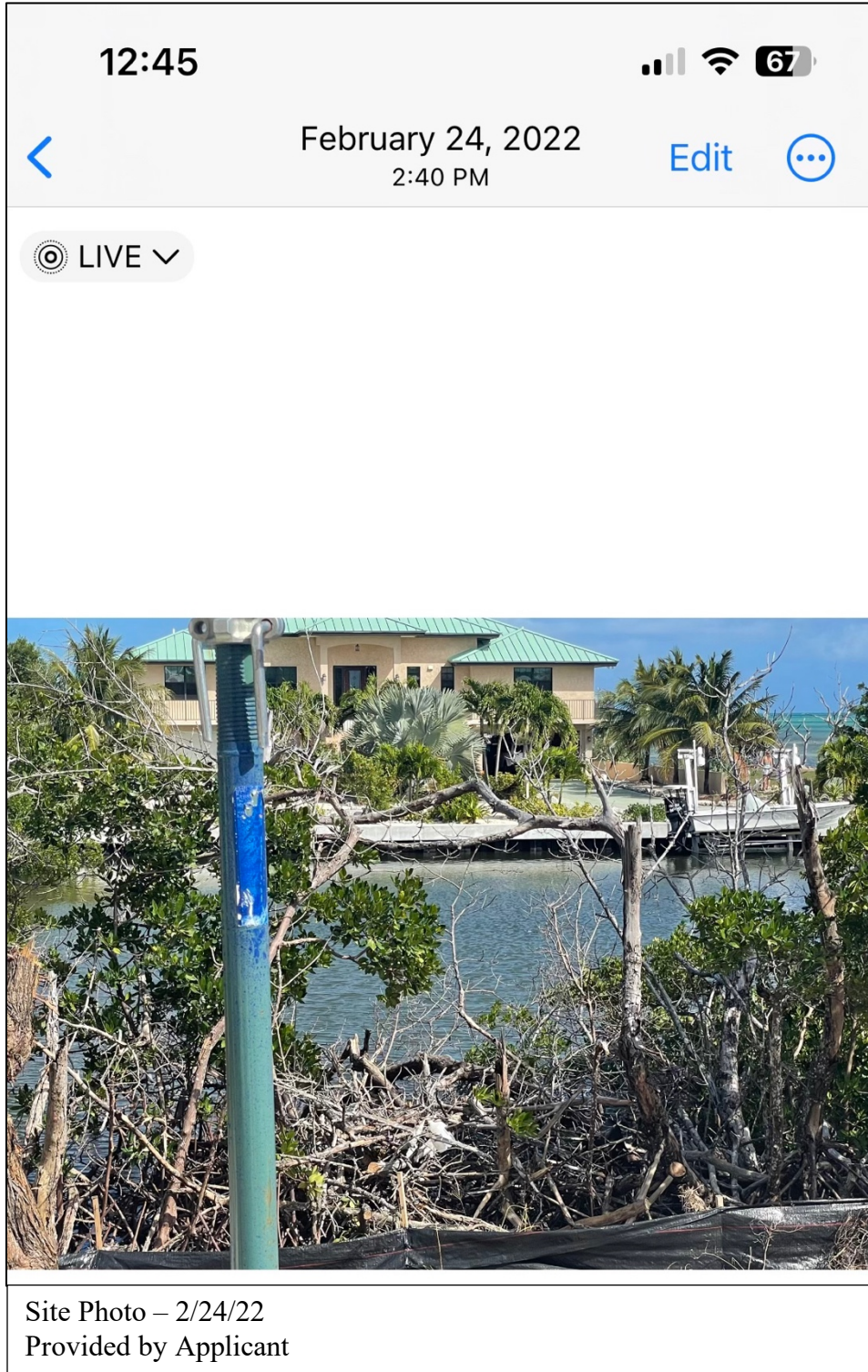


Aerial Imagery – 2/12/2017 – Pre Hurricane Irma.
Credit: Google Earth



Aerial Imagery – 12/30/2017 – Showing Impacts Post Hurricane Irma.
Credit: Google Earth

Attachment D – Historic Aerial Imagery (Page 2 of 3)



Attachment D – Historic Aerial Imagery (Page 2 of 3)



Aerial Imagery – 2023 – Showing Residual Impacts from Hurricane Irma
Credit: Monroe County Property Appraiser

Attachment E– Site Photos (Page 1 of 2)



Restoration Area A



Restoration Area B



Restoration Area C

Attachment C – Site Photos (Page 2 of 2)



Area C – Regeneration and Recruitment Example



Flags Showing Proposed Planting Locations – Area C

Exhibit B

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019					
FLEPPC = CATEGORY CLASSIFICATION ON FLORIDA EXOTIC PEST PLAN COUNCIL'S 2017 LIST OF FLORIDA'S MOST INVASIVE SPECIES. (N:north, C:central, S:south, All: Florida wide)					
SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
FKIETF CATEGORY I: INVASIVE EXOTICS THAT ARE ALTERING FLORIDA KEYS NATIVE PLANT COMMUNITIES BY DISPLACING NATIVE SPECIES, CHANGING COMMUNITY STRUCTURES OR ECOLOGICAL FUNCTIONS, OR HYBRIDIZING WITH NATIVES					
Casuarina spp.	Australian pine	1: All	Invasive in wetlands and uplands. Listed as noxious weed.	wind blown, year round	Basal with 10%-30% G4 or cut stump with 50% G3A. Listed as a prohibited plant and a noxious weed by FDACS
Colubrina asiatica	Latherleaf	1: S	Woody vine. Invasive on beaches, coastal rock barren, ditches, and swales; any place that is tidally influenced.	seeds float, year round	Foliar with 3% G4, cut stump with 50% G3A or Basal with 10%-20% G4. Listed as noxious weed by FDACS
Leucaena leucocephala	Lead tree	2: All	Forms thick monoculture in disturbed areas. Seeds persist for many years in seedbank	nearly year round	Basal with G4 30% or basal and cut stump with 30% G4. Listed as noxious weed by FDACS
Manilkara zapota	Sapodilla	1: S	Pervasive in homesteaded hammocks. Key Deer eat seedlings. Form dense canopy as well as dense sapling recruitment	fruit year round	Basal with 10%-25% G4, or cut stump with 50% G3A
Panicum maximum	Guinea grass	2: All	Spreading quickly along US1 and areas of Big Pine. Common secondary invader.	wind dispersed during summer growing season	Foliar with 2% Glyphosate
Sansevieria hyacinthoides	Bowstring hemp	2: C,S	Large infestations have occurred in hammocks. Spreads where dumped.	spreads vegetatively and by seed. Roots can grow from leaves	Cut stump with 10% G3A, or foliar with 10% G4. Must be bagged and removed from site
Scaevolea taccada	Beach naupaka	1: C,S	Seeds float and are easily dispersed to mangrove and coastal rock barren habitats.	tides/birds/animals, nearly year round	Basal with 10% G4 or cut stump with 50% G3A. Listed as noxious weed by FDACS
Schinus terebinthifolius	Brazilian pepper	1: All	Invasive in wetlands and uplands. Likes solution holes in hammock.	animals, late winter into spring	Basal with 10%-15% G4 or cut stump with 50% G3A. Listed as noxious weed by FDACS
Thespesia populnea	Portia/Seaside mahoe	1: C,S	Floating seeds invade pristine coastal transition areas. Also invades uplands. Still sold in Florida stores.	seeds float, year round	Cut stump with 50% G3A or Basal with 10%-25% G4. Girdle large trees. Don't leave cut branches on ground, stems will reroot.
FKIETF CATEGORY II: INVASIVE EXOTICS THAT HAVE INCREASED IN ABUNDANCE OR FREQUENCY BUT HAVE NOT YET ALTERED FLORIDA KEYS PLANT COMMUNITIES TO THE EXTENT SHOWN BY CATEGORY I SPECIES (CONTINUED)					
Adenantha pavonina	Red sandalwood	2: S	Fast growing & seeding from where planted, esp. hammocks	birds/animals	Cut stump with 50% G3A or Basal with G4 10%
Agave sisalana	Sisal hemp	2: C,S	Establishes where dumped and spreads from landscapes	tall reproductive stalks produce pups which are spread when stalk falls to the ground, summer-late fall	Manual removal or apply 3% G4 or 15% G3A on center bud
Albizia lebeck	Woman's tongue	1: C,S	Legume, difficult to kill.	wind blown	Cut stump with 50% G3A or basal with 20% G4
Antigonon leptopus	Coral Vine	2: All	Isolated populations but spreads rapidly. Has become popular in landscapes	vegetative and by seed	Manual removal, Basal with 20% G4 or Foliar with 2% Glyphosate
Asparagus aethiopicus	Asparagus fern	1: All	Spreads from landscapes and establishes where dumped	dumping/birds/animals	Foliar with 2% Glyphosate or manual removal
Asparagus setaceus	Common asparagus fern	n/a	Becoming increasingly more abundant in upper Keys	vegetative/dumping	Foliar with 2% Glyphosate or manual removal
Catharanthus roseus	Madagascar periwinkle	n/a	disturbed sites, beaches	wind blown and vegetative	Manual removal
Cenchrus purpureum	Napier grass	1: All	Planted for landscaping but is limited to roadsides	wind dispersed seeds	Foliar with 5% Glyphosate or cut stem with 10% G4

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

FLEPPC = CATEGORY CLASSIFICATION ON FLORIDA EXOTIC PEST PLAN COUNCIL'S 2017 LIST OF FLORIDA'S MOST INVASIVE SPECIES. (N:north, C:central, S:south, All: Florida wide)

SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
<i>Cenchrus setaceum</i>	Fountain grass	2: S	Planted for landscaping and is currently spreading on roadsides, medians and disturbed sites; seeds after mowing	wind dispersed seeds	Foliar with 5% Glyphosate or cut stem with 10% G4
<i>Cocos nucifera</i>	Coconut palm	2: S	Invading into beach dune at Bahia Honda and in hammock at Lignumvitae Key	seeds float	Manual removal
<i>Cryptostegia madagascariensis</i>	Madagascar rubber vine	2:C,S	Viney shrub; Occurs in transitional wetlands and hammocks. Spreads from old homesteads in Upper Keys	summer, wind blown	Basal with 10% G4
<i>Dactyloctenium aegyptium</i>	Crowfoot grass	2: All	So far seems to be limited to disturbed sites or as an early colonizer only at natural sites. Also found invading into beach and dune at Bahia Honda	wind blown, rhizomes and mowing	Foliar with 2% Glyphosate
<i>Dioscorea bulbifera</i> **	Air Potato	1: All	Vine; Invades variety of habitats: 23 FL counties, Big Pine, Key Largo, & Cudjoe. Spreads from landscapes and where dumped. Killed by storm surge in some locations on Big Pine.	vegetative and tubers which float	Manual removal, bag tubers and remove from site. Listed as a noxious weed by FDACS
<i>Epipremnum pinnatum cv. aureum</i>	Golden Pothos	2: C,S	Large leafed vine. Spreads from landscapes and establishes where dumped.	vegetative, dumping	Foliar with 3% Glyphosate, cut stump with 25% G3A, or Basal with 10% G4
<i>Eulophia graminea</i> **	ground orchid	2	Major problem on mainland. Spreading throughout Keys, found in Key Largo, Windley Key, Long Key, Duck Key, and Big Pine Key. Original infestation from contaminated mulch	wind dispersed and spreads from contaminated mulch or equipment	Manual removal including bulb and all root structures. Bag and remove from site.
<i>Eugenia uniflora</i>	Surinam cherry	1: C,S	escaping from landscapes	birds/animals	Basal with 10% G4 or cut stump with 50% G3A
<i>Ficus microcarpa</i>	Laurel fig	1: C,S	Invasive in uplands in Upper Keys, epi- and litho-phytic	birds	Basal with 10% G4
<i>Flacourtia indica</i>	Governor's plum	2: S	observed naturalizing on Key Largo, Key West, Ramrod	animals	Cut stump with 50% G3A or basal with 20% G4
<i>Hylocereus undatus</i>	Night-blooming cereus	n/a	climbing cactus; Spreads from landscapes and dump sites but is increasing in abundance and has been observed in the interior of several upper Keys hammocks. May be candidate for Cat. I during next review. This species has become popular due to its edible fruit; many cultivars are being produced.	vegetative, animals	Manual removal, bag and remove from site.
<i>Indigofera suffruticosa</i>	Indigofera	n/a	becoming increasingly more abundant along DOT ROW, Port B. in Dagny Johnson KLHBS, Big Pine Key, Fort Zachary Taylor. Legume, often times needs multiple treatments	Numerous seed pods	Basal or cut stump with 30% Garlon 4
<i>Jasminum fluminense</i>	Brazilian jasmine	1: C, S	Vine; Large infestation found at MM 102, Key West and Ft. Taylor	vegetative and seeds	Manual removal, cut stump with 50% G3A, or Basal with 10% G4
<i>Kalanchoe spp.</i>	Life plant	2:C,S	Spreads from landscapes and where dumped; localized	vegetative	Manual removal, bag and remove from site.

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

FLEPPC = CATEGORY CLASSIFICATION ON FLORIDA EXOTIC PEST PLAN COUNCIL'S 2017 LIST OF FLORIDA'S MOST INVASIVE SPECIES. (N:north, C:central, S:south, All: Florida wide)

SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
<i>Lantana strigocamara</i>	Lantana	1: All	Spreads from landscapes to hammock/pineland margins. Hybridizes with mainland lantana spp.	bird and animal dispersed, year round	Basal with 10% G4 or cut stump with 50% G3A
<i>Macroptilium lathyroides</i>	Jumbie bean	2	disturbed edges but also in coastal berms and dunes	wind dispersed seeds	Manual removal
<i>Melinis repens</i>	Natal grass	1: All	Occurs roadside over the entire Keys; potential problem	summer growing season, wind dispersed	Foliar with 2% Glyphosate
<i>Muntingia calabura</i>	Strawberry tree	n/a	Invasive on Big Pine Key	birds/animals	Manual removal or cut stump with 50% G3A or 20% G4
<i>Neyraudia reynaudiana</i>	Burma reed	1: S	Prefers disturbed sites but moves into undisturbed hammocks; occurs on all roadsides in Upper Keys; one fairly large patch treated on Big Pine Key	wind dispersed seeds	Foliar with 5% Glyphosate or cut stem with 10% G4. Listed as a noxious weed by FDACS
<i>Phoenix dactylifera</i>	Senegal Date Palm	2: C,S	Localized problem at Marquesas Keys and Cape Florida	fruits dispersed by animals	Manual removal, cut stump with 50% G3A, or apply 10% G4 to apical bud
<i>Phoenix reclinata</i>	Date palm	n/a	Found in many homestead areas, can move into coastal habitats	fruits dispersed by animals	Manual removal, cut stump with 50% G3A, or apply 10% G4 to apical bud
<i>Pluchea carolinensis</i>	Cure-for-all	n/a	Becoming more abundant in ruderal areas, particularly post Hurricane Irma in 2017. Problematic in pine rocklands on Big Pine where it outcompetes native shrubs and groundcover and may alter fire ecology. No longer considered native to mainland Florida. Often secondary invader in Lower Keys.	abundant, wind dispersed seeds. Quickly recruits into disturbed areas	Manual removal or cut stump with 30% G3A
<i>Ricinus communis</i>	castor bean	2: All	Becoming increasingly more abundant.	Seeds	Manual removal, cut stump with 50% G3A or Basal with 10% G4
<i>Schefflera actinophylla</i>	Queensland umbrella tree	1: C,S	Hammock and mangrove margins, disturbed sites and spoil islands in the Upper Keys	birds, summer	Basal with 10% G4 or cut stump with 50% G3A
<i>Sophora tomentosa var. occidentalis</i>	Texas Necklace pod	n/a	Beach/dune, coastal rock barren. Hybridizes with native <i>Sophora tomentosa var. truncata</i>	bird/animal	Cut stump 25% G3A
<i>Sphagneticola trilobata</i>	Wedelia	2: All	viney groundcover; disturbed sites, beaches	year round	Foliar with 2% Glyphosate, Foliar with 1% G3A, or Foliar with 1% G4
<i>Stachytarpheta cayennensis</i>	Nettle-leaf Porterweed	2	Disturbed sites and beach/dune habitat. Hybridizes with native porterweed.	wind dispersed seeds	Manual removal
<i>Stenotaphrum secundatum</i>	St. Augustine grass	TBW	Landscape but invading into hammocks from roadsides.	rhizomes, growing summer season	Foliar with 2% Glyphosate
<i>Syngonium podophyllum</i>	Arrowhead vine	1: All	Invading from landscape plantings	vegetative	Manual removal, cut stump with 25% G3A, Basal with 10% G4, or Foliar with 3% G4
<i>Tabebuia heterophylla</i>	Pink shower tree	n/a	increasingly more abundant. Has been found to spread far from seed source.	wind dispersed seeds	Basal or cut stump with 30% G4
<i>Talipariti tiliaceum</i>	Mahoe/sea hibiscus	2: C,S	Limited to disturbed sites	seeds float	Cut stump with 50% G3A or Basal with 10% - 20% G4. Girdle large trees. Remove cut stems or they will reroot
<i>Tamarindus indica</i>	Tamarind	TBW	Naturalizing throughout Keys	animals	Basal with 30% G4
<i>Tecoma stans</i>	Yellow elder	n/a	moving into hammocks from disturbed edges	wind dispersed seeds	Basal with 20% G4

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

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SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
<i>Terminalia catappa</i>	Tropical almond	2: C,S	occasional problem on Keys coastlines and near plantings. Seeds persist for many years in seed bank.	animals/seeds float	Basal with 10% G4 or cut stump with 50% G3A
<i>Tradescantia spathacea</i>	Oyster plant	2: S	Spreads from landscaping and establishes where dumped. Sap can be irritating on skin.	vegetative and seeds are wind dispersed	Manual removal, bag and remove from site or Foliar with 10% G4 and apply to bud
<i>Tribulus cistoides</i>	Puncture weed	2: All	Along roadsides, disturbed areas and on beaches	animals, year round	Manual removal, foliar with 2% Glyphosate
<i>Turnera ulmifolia</i>	Yellow alder, RamGoat	TBW	Disturbed areas and beach dunes	vegetative and by seed	Manual removal or basal with 5% G4
<i>Urena lobata</i> **	Caesar's weed	1: All	Found along ROW on Big Pine, Bahia Honda, and Port B. in Dagny Johnson KLHSP	Seed capsule is sticky	Handpull
<i>Vitex trifolia</i> **	Chastetree	2	Key Largo Hammocks, Key Largo, Long Key, Summerland and Big Pine Key as a landscape tree. Becoming increasingly more abundant in the landscape. Difficult to kill	seed capsule splits to eject seeds	Basal with 30% G4
<i>Washingtonia robusta</i>	Washingtonia Palm	2: C,S	Spreads from landscapes	birds	Cut growing bud on small trees, manual removal, or apply 10% - 20% G4 to apical bud
<i>Zamia furfuracea</i>	cardboard palm	TBW	spreads from landscape; becoming more common in pine rocklands of Lower Keys	rhizomes	Manual removal or foliar with 2% Glyphosate
<i>Zoysia matrella</i> var. <i>pacifica</i>	Zoysia grass	n/a	spreads from landscape. Particular problem at residence at N end of Bahia Honda where spreading into coastal berm	rhizomes	Foliar with 2% Roundup Pro
SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION
KIETF CATEGORY III: INVASIVE EXOTICS THAT HAVE NOT YET BECOME A SERIOUS PROBLEM IN THE FLORIDA KEYS BUT ARE TO BE WATCHED (TBW).					
<i>Acacia auriculiformis</i>	Earleaf acacia	1: C,S	Local problem in Upper Keys; has appeared in Lower Keys	wind dispersed	Cut stump with 50% G3A or Basal with 10% G4
<i>Anredera vesicaria</i> **	Madeira vine	TBW	Local problem in Upper Keys particularly in Tavernier. Difficult to kill	animals	Check with Monroe County Land Conservation program
<i>Ardisia elliptica</i>	Shoebuttan ardisia	1: All	Moving south on Card Sound Road but not yet in Keys	birds, year round	Basal with 10% G4 or cut stump with 50% G3A. Listed as a noxious weed by FDACS
<i>Arundo donax</i>	Pampas grass	TBW	Marathon and Little Torch Key	wind dispersed	Cut stump with 50% G3A
<i>Asystasia gangetica</i>	Ganges primrose	2: C,S	Spreads from disturbed sites and climbs forest edges	vegetative and seed dispersed	Foliar with 2% Glyphosate
<i>Bauhinia variegata</i>	Orchid tree	1: C,S	Landscape plant but not yet invading in Keys	animals	Basal with 10% G4 or cut stump with 50% G3A
<i>Broussonetia papyrifera</i>	Paper mulberry	2: All	One escape in Key Largo, serious problem in Dade	animals	Basal with 10% - 30% G4
<i>Bucida buceras</i>	Black Olive	n/a	Copious seeder, invades canopy gaps near parent	birds/animals	Cut stump with 50% G3A
<i>Bucida spinosa</i>	Ming Tree	n/a	Formerly in north Key Largo	birds/animals	Cut stump with 50% G3A
<i>Cupaniopsis anacardioides</i>	Carrotwood	1: C,S	Recent introduction; has spread from planting in Key West; invades uplands to buttonwood zone	birds/small mammals	Basal with 10% - 20% G4 or cut stump with 50% G3A. Listed as a noxious weed by FDACS
<i>Delonix regia</i>	Royal Poinciana	TBW	Naturalizing in Key Largo; eaten by Key deer on Big Pine	animals	Basal with 20% G4 or cut stump with 50% G3A

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

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SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
<i>Dichrostachys cinerea subsp. africana</i> **	Sickle bush, Marabu	TBW	Dense thickets in Cuba, Pacific Islands. Plantation Key and Long Key transfer station	vegetative and seed dispersed	Check with Monroe County Land Conservation program
<i>Distimake tuberosus</i>	Spanish arborvine	2: S	It's planted in Keys; is a problem in Dade	vegetative and seed dispersed	Basal with 10% G4 or cut stump with 50% G3A
<i>Euphorbia tirucalli</i>	Pencil cactus, Pencil tree	n/a	Occasionally found surviving along woods edge. Recently found on Lower Matecumbe Key in disturbed hammock	dumping	Manual removal - bag and remove from site or cut stump woody sections with 20% G3A
<i>Ficus altissima</i>	False banyan	2: S	Planted here but no escape observed yet	birds	Basal with 10% G4
<i>Furcraea foetida</i>	Central American sisal	TBW	Spreads from landscapes and dump sites; localized. Recent population found at MM 106 in Pennekamp	vegetative and reproductive stalks which release pups when fallen	Manual removal, 15% G3A or 3% G4 on center bud
<i>Hamelia patens var. glabra</i>	African Fire Bush	n/a	Popular landscape plant, has yellow flowers and smooth leaves. Hybridizes with native Hamelia	birds/animals	Cut stump with 50% G3A
<i>Hyparrhenia rufa</i>	Jaragua	2: All	grass; becoming increasingly more abundant	wind dispersed seeds	Foliar with 5% Glyphosate or cut stem with 10% G4
<i>Indigofera spicata</i>	Indigofera	n/a	Found along roadsides keywide. Lawn weed	vegetative and seed dispersed	Manual removal
<i>Jacquinia arborea</i> **	Bracelet Wood	TBW	Disturbed sites, Key Largo, Geiger Key, KWGC & Crane Point Hammock. Popular landscape plant	birds/animals	Cut stump with 50% G3A or Basal with 30% G4
<i>Jasminum dichotomum</i>	jasminum	1:C,S	Becoming increasingly more abundant in upper Keys	vegetative	Manual removal, cut stump 30% Garlon 3A, or Basal with 10% G4
<i>Jasminum sambac</i>	Arabian jasmine	TBW	spreading into hammock at Windley Key	vegetative	Manual removal, cut stump with 30% Garlon 3A, or Foliar with 20% G4
<i>Lumnitzera racemosa</i>	white flowered mangrove	1: S	Planted at Fairchild Tropical Garden and invading into adjacent Matheson Hammock mangroves	propagules float	Manual removal
<i>Lysiloma sabicu</i>	mahogany horseflesh	TBW	Landscape tree that is naturalizing in upper Keys		Basal and/or cut stump 30% Garlon 4
<i>Melaleuca quinquenervia</i>	Melaleuca	1: C, S	Localized invasion in N. Key Largo, Stock I. and Boca Chica	wind blown, Aug - Dec	Hack and squirt with 50% G3A and 1% Arsenal. Listed as a prohibited plant, and as a noxious weed by FDACS and USDA
<i>Melia azedarach</i>	Chinaberry	2: All	Planted as ornamental and has potential to spread	animals	Basal with 10% G4 or cut stump with 50% G3A
<i>Mikania micrantha</i>	mile-a-minute vine	2: S	invasive vine in Dade County. Difficult to identify from native Mikania	vegetative and seed dispersed	Manual removal. Listed as a noxious weed by FDACS and USDA
<i>Murraya paniculata</i>	Orange-jessamine	2: S	Planted here but no escape observed yet	birds/animals	Basal with 10% G4 or cut stump with 50% G3A
<i>Nephrolepis brownii</i>	Asian sword fern	1: C,S	Invades hammocks	vegetative	Foliar with 2% Glyphosate
<i>Ochrosia elliptica</i>	Kopsia	TBW	Planted and has escaped on lower Sugarloaf, Grassy Key, Bahia Honda, Big Pine, Summerland and north Key Largo	animals	Basal with 20% G4 or cut stump with 50% G3A
<i>Panicum repens</i>	Torpedograss	1: All	Present in Keys, but extent of invasion unknown; typically found in freshwater wetlands	vegetative and wind dispersed	Foliar with 1.5% Glyphosate

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

FLEPPC = CATEGORY CLASSIFICATION ON FLORIDA EXOTIC PEST PLAN COUNCIL'S 2017 LIST OF FLORIDA'S MOST INVASIVE SPECIES. (N:north, C:central, S:south, All: Florida wide)

SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION <i>Handpulling always recommended when possible</i>
<i>Phymatosorus scolopendria</i>	serpent fern, wart fern	1: S	Two sightings on Big Pine Key	wind dispersed	Manual removal
<i>Pongamia pinnata</i>	pongamia	n/a	Aggressive in Dade. BPK-100's of seedlings near adult	animals	Basal with 18% G4
<i>Psidium guajava</i>	Guava	1:C,S	Spreads from mainland fruit trees into uplands	animals/humans	Basal with 10% G4
<i>Psidium cattleianum</i>	Strawberry guava	1:C,S	Spreads from mainland fruit trees into uplands	animals/humans	Basal with 10% G4
<i>Rotboellia cochinchinensis</i>	Itch grass	TBW	becoming increasingly more abundant in Key Largo Hammock	wind dispersed	Manual removal, bag, and remove from site. Use gloves
<i>Selenicereus pteranthus</i>	Snake Cactus	TBW	Spreads vegetatively from dumping, Key Largo Hammock, Windley Key, Marathon, Dove creek	dumping, vegetative	Manual removal, bag, and remove from site
<i>Senna alata</i>	Candlestick plant	TBW	becoming increasingly more abundant	animals	Cut stump with 50% G3A
<i>Senna pendula</i>	Christmas senna	1: C,S	Crocodile Lake, and private property on ramrod	animals	Cut stump with 50% G3A
<i>Solanum torvum</i>	Turkey berry	2: All	removed from Cudjoe transfer station in 2011	animals	Cut stump with 3% Glyphosate. Listed as a noxious weed by FDACS and USDA
<i>Solanum viarum</i> **	Tropical soda apple	1: All	Has been quickly removed when spread from sod plantings	sod plantings	Cut stump with 3% Glyphosate. Listed as a prohibited plant and as a noxious weed by FDACS
<i>Syzygium cumini</i>	Java Plum	1: C,S	One site on Ramrod key, waiting to see	birds/small mammals	Cut stump with 3% Glyphosate
Native species that are of special concern due to regional impacts in natural areas outside of their historic range in the Florida Keys					
<i>Cissus verticillata</i>	possum grape	n/a	Vine; Cultivar and problematic on Big Pine Key	vegetative and seed dispersed	Manual removal
<i>Clusia rosea</i>	Pitch apple/autograph tree	n/a	Native to small area on Big Pine Key. Spreading in Key Largo/Dade/Broward, epiphytic, lithophytic. Considered an extirpated/reestablished plant for lower keys.	birds, spring-summer	Basal with 10% G4
<i>Sesbania herbacea</i>	Danglepod, Sesbania	n/a	Native to mainland of Fl. but not to Keys. Becoming increasingly more abundant in disturbed areas	birds/animals	manual removal or cut stump with 30% G3A
<i>Swietenia mahogani</i>	West Indian mahogany	n/a	Native to upper Keys but invasive in middle and lower Keys especially on Big Pine Key in pinelands	seeds are wind dispersed	
** = Early Detection Rapid Response species. EDRR species are those that are a threat on the mainland but have not yet become widespread in the Keys					
The FKETF has kept a formal list of exotic species that its members find to be invasive since 1999.					
Listings are based primarily from on-the-ground, local knowledge of individual species and their behavior in natural areas.					

FLORIDA KEYS INVASIVE EXOTICS TASK FORCE LIST OF INVASIVE PLANTS OF THE FLORIDA KEYS - 2019

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SCIENTIFIC NAME	COMMON NAME	FLEPPC	KEYS INVASION PATTERN AND COMMENTS	SEEDING DISPERSAL & SEASON	ERADICATION RECOMMENDATION
			The list is updated every two years.		<i>Handpulling always recommended when possible</i>
			For more info, please visit: http://www.dep.state.fl.us/lands/invaspec/4thlevpgs/WGFloridakeys.htm		