

APPENDIX "D" TO SPECIAL PROVISIONS  
ENVIRONMENTAL CERTIFICATION



## MEMORANDUM

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**TO:** Sybille Bayard, P.E Project Manager, CONSOR Engineers, LLC

**FROM:** Justin Freedman, Project Manager, RES Florida Consulting, LLC d/b/a E Sciences

**SUBJECT:** Matheson Hammock Park Bridge Rehabilitation Permitting

**DATE:** March 11, 2022

**PROJECT NUMBER:** 7-0710-001

The Miami-Dade County Department of Transportation and Public Works proposes to rehabilitate the bridge on Matheson Park Road in Matheson Hammock County Park. On August 27, 2021, E Sciences, as a subconsultant to CONSOR Engineers, LLC, was tasked with permitting the bridge rehabilitation based on the 60% plans. This memorandum summarizes the Federal, State and County permitting requirements for the bridge rehabilitation.

### Federal Permitting

Upon discussion with Mr. Alberto Gonzalez of the U.S. Army Corps of Engineers (USACE), permitting for bridges over navigable waters falls under the jurisdiction of the U.S. Coast Guard (USCG) per Section 9 of the Rivers and Harbors Act of 1899. Based on the Coast Guard Bridge Permitting guidance document, “repairs to a bridge which do not alter the clearances, type of structure, or any integral part of the substructure or superstructure or navigation conditions, but which consist only of the replacement of worn or obsolete parts, may, if the bridge is a legally approved structure, be made as routine maintenance without approval of the U.S. Coast Guard.” Therefore, neither USACE nor USCG permits are required for the bridge rehabilitation project (**Attachment 1**).

### State Permitting

Upon discussion with Ms. Caroline Hanes of the South Florida Water Management District (SFWMD), the proposed bridge rehabilitation qualifies for the 62-330.051(4)(a) exemption. An exemption letter was issued by SFWMD on February 28, 2022 (**Attachment 2**).

### County Permitting

Coastal Construction Permits, called Class I Permits, are issued by the Miami-Dade County Department of Regulatory and Economic Resources (RER). Based on Section 24-48(1)(b) of the Miami-Dade County Code, “Sealing of cracks and spall repair on a bridge, seawall or bulkhead cap or face” is exempt from requiring a Class I Permit. Based on a meeting held on May 25, 2021, Ms. Rockell Alhale, the Environmental Resources Project Supervisor for RER, stated that the project could be coordinated without a permit as long as no material is staged in surface waters or wetlands. Because there is no work proposed below the Mean High Water Line, the proposed bridge repairs do not require a permit from RER. Per email sent by Ms. Alhale on January 26, 2022, it was confirmed that the pile jacket repair is on piles on uplands and, therefore, will not require a permit. Therefore, a County Class I Permit is not required to conduct the bridge rehabilitation project (**Attachment 3**).

### Environmental Resources

Environmental resources were assessed on site, please see Environmental Summary Report (**Attachment 4**).

#### Attachments:

1. Email communication with USACE
2. SFWMD Exemption Letter
3. Email communication with RER
4. Environmental Summary Report

**Attachment 1**  
**Communication with USACE**

**From:** [Gayle Stone](#)  
**To:** [Emily Rodriguez](#)  
**Cc:** [Justin Freedman](#)  
**Subject:** Fw: Bridge Rehabilitation - Nationwide Permits  
**Date:** Wednesday, January 12, 2022 11:17:00 AM

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**From:** Gonzalez, Alberto CIV USARMY CESAJ (USA) <Albert.Gonzalez@usace.army.mil>  
**Sent:** Wednesday, January 12, 2022 10:04 AM  
**To:** Gayle Stone <gstone@esciencesinc.com>; Burns, Samantha L CIV USARMY CESAJ (USA) <Samantha.L.Burns@usace.army.mil>  
**Subject:** RE: Bridge Rehabilitation - Nationwide Permits

Gayle,

Bridge repairs are under the jurisdiction of the US Coast Guard under Section 9 of the River and Harbor Act. Based on the limited information, it does not sound like this would be a regulated activity by our agency.

Please find the link below for the notice in the Federal Register. It appears that there should be a seamless transition to the new version.

<https://www.federalregister.gov/documents/2021/12/27/2021-27441/reissuance-and-modification-of-nationwide-permits>.

Thanks,  
Albert

---

**From:** Gayle Stone <gstone@esciencesinc.com>  
**Sent:** Wednesday, January 12, 2022 8:59 AM  
**To:** Gonzalez, Alberto CIV USARMY CESAJ (USA) <Albert.Gonzalez@usace.army.mil>; Burns, Samantha L CIV USARMY CESAJ (USA) <Samantha.L.Burns@usace.army.mil>  
**Subject:** [URL Verdict: Neutral][Non-DoD Source] Bridge Rehabilitation - Nationwide Permits

Good morning, Albert and Samantha,

We have a proposed project that involves repair of an existing bridge. No work is proposed below MHW although barges will be used for some of the work. Is an Army Corps permit required for this work?

Also, will the 2017 Nationwide Permits be re-issued to provide a seamless transition in March 2022?

Thank you for your assistance.

Gayle L. Stone

**Attachment 2**  
**SFWMD Exemption Letter**



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT

February 28, 2022

*\* Delivered via email*

Gabriel Delgado \*  
Miami-Dade County Department Of Transportation and Public Works  
701 NW 1st Court  
Suite 1500  
Miami, FL 33136

**Subject: Exemption for Matheson Hammock Park Bridge Rehabilitation**  
**Application No. 220210-33160**  
**Exemption No. 13-106644-P**  
**Miami-Dade County**

Dear Gabriel Delgado:

The South Florida Water Management District (District) reviewed the information submitted for the proposed Matheson Hammock Park bridge rehabilitation and has determined that the proposed project is exempt from the requirement to obtain an Environmental Resource Permit, pursuant to rule 62-330.051(4)(a), Florida Administrative Code.

For additional details, please refer to the attached Location Map (Exhibit No. 1.0) and Bridge Plans (Exhibit No.2.0).

Activities that qualify for this exemption must be conducted and operated using appropriate best management practices and in a manner which does not cause or contribute to a water quality violation. Pursuant to Chapters 62-302 or 62-4, Florida Administrative Code.

This letter does not relieve you from the responsibility of obtaining other permits (federal, state or local) which may be required for the project.

The determination that this project qualifies as an exempt activity may be revoked if the installation is substantially modified, if the basis of the exemption is determined to be materially incorrect, or if the installation results in violation to state water quality standards. Any changes made in the construction plans or location of the project may necessitate a permit from the District. Therefore you are advised to contact the District before beginning any work in wetlands which is not specifically described in the submittal.

The notice of determination that the project qualifies as an exempt activity constitutes final agency action by the District unless a petition for administrative hearing is filed. Upon timely filing of a petition, this Notice will not be effective until further Order of the District. If you have any questions concerning this matter, please contact Andrea Sanchez, Environmental Analyst 1 at 561-682-2891 or [asanchez@sfwmd.gov](mailto:asanchez@sfwmd.gov), and Ellis Benoit, Engineering Specialist IV at 561-682-2504 or [ebenoit@sfwmd.gov](mailto:ebenoit@sfwmd.gov).

Miami-Dade County Department Of Transportation and Public Works  
Matheson Hammock Park Bridge Rehabilitation, Application No. 220210-33160  
February 28, 2022  
Page 2

Sincerely,

A handwritten signature in blue ink, appearing to read 'G. Priest', with a stylized flourish at the end.

Gary R. Priest, P.E.  
Engineering Section Administrator, Environmental Resource Bureau

c: Justin Freedman, E Sciences \*



## **Exhibits**

The following exhibits to this permit are incorporated by reference. The exhibits can be viewed by clicking on the links below or by visiting the District's ePermitting website (<http://my.sfwmd.gov/ePermitting>) and searching under this application number 220210-33160 .

[Exhibit No. 1.0 Location Map](#)

[Exhibit No. 2.0 Bridge Plans](#)

## **NOTICE OF RIGHTS**

As required by Chapter 120, Florida Statutes, the following provides notice of the opportunities which may be available for administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, or judicial review pursuant to Section 120.68, Florida Statutes, when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Some of the legal proceedings detailed below may not be applicable or appropriate for your situation. You may wish to consult an attorney regarding your legal rights.

### **RIGHT TO REQUEST ADMINISTRATIVE HEARING**

A person whose substantial interests are or may be affected by the South Florida Water Management District's (District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Florida Statutes. Persons seeking a hearing on a District decision which affects or may affect their substantial interests shall file a petition for hearing in accordance with the filing instructions set forth herein within 21 days of receipt of written notice of the decision unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Florida Statutes; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Florida Statutes. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, posting, or publication that the District has taken or intends to take final agency action. Any person who receives written notice of a District decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action that materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional point of entry pursuant to Rule 28-106.111, Florida Administrative Code.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Florida Statutes, shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The District may grant the request for good cause. Requests for extension of time must be filed with the District prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and whether the District and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

### **FILING INSTRUCTIONS**

A petition for administrative hearing must be filed with the Office of the District Clerk. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at the District's headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day.

Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the District's security desk does not constitute filing. It will be necessary to request that the District's security officer contact the Office of the District Clerk. An employee of the District's Clerk's office will receive and process the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at [clerk@sfwmd.gov](mailto:clerk@sfwmd.gov). The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document.

### **INITIATION OF ADMINISTRATIVE HEARING**

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Rules 28-106.201 and 28-106.301, Florida Administrative Code, initiation of an administrative hearing shall be made by written petition to the District in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other District identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner, petitioner's attorney or qualified representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the District's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the District's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the District's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the District to take with respect to the District's proposed action.

### **MEDIATION**

The procedures for pursuing mediation are set forth in Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401–405, Florida Administrative Code. The District is not proposing mediation for this agency action under Section 120.573, Florida Statutes, at this time.

### **RIGHT TO SEEK JUDICIAL REVIEW**

Pursuant to Section 120.68, Florida Statutes, and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final District action may seek judicial review of the District's final decision by filing a notice of appeal with the Office of the District Clerk in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the appropriate district court of appeals via the Florida Courts E-Filing Portal.

**Attachment 3**  
**Communication with RER**

**From:** [Alhale, Rockell \(RER\)](#)  
**To:** [Emily Rodriguez](#)  
**Cc:** [Justin Freedman](#); [Gayle Stone](#)  
**Subject:** RE: Matheson Hammock Bridge  
**Date:** Wednesday, January 26, 2022 3:02:30 PM  
**Attachments:** [image002.png](#)

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Hello,

Sorry that this wasn't clear to me until I saw the picture below, but if the bridge piles are only on the uplands then we don't need to permit the pile jackets and the rest of the spall and crack of the bridge itself would be exempt.

Thanks,

**Rockell Alhale, MS**

**Environmental Resources Project Supervisor**

Coastal Resources Section

Department of Regulatory and Economic Resources

*Environmental Resources Management*

701 NW 1<sup>st</sup> Court, 6<sup>th</sup> Floor, Miami, Florida 33136

T 305-372-6566

[alhale@miamidade.gov](mailto:alhale@miamidade.gov)

---

**From:** Emily Rodriguez <ERodriguez@esciencesinc.com>  
**Sent:** Tuesday, January 25, 2022 9:09 AM  
**To:** Alhale, Rockell (RER) <Rockell.Alhale@miamidade.gov>  
**Cc:** Justin Freedman <jfreedman@esciencesinc.com>; Gayle Stone <gstone@esciencesinc.com>  
**Subject:** RE: Matheson Hammock Bridge

EMAIL RECEIVED FROM EXTERNAL SOURCE

Good Morning Rockell,

I am following up on the email below to continue coordination with the county. Please confirm the need for the exemption and the details for the appropriate form of authorization.

Thank you!

Emily Rodriguez  
Project Scientist



200 East Dania Beach Blvd, Ste. #106  
Dania Beach, FL 33004  
954/484-8500 Telephone  
954/484-5146 Fax  
[erodriguez@esciencesinc.com](mailto:erodriguez@esciencesinc.com)  
<http://www.esciencesinc.com>  
Orlando – Fort Lauderdale – Miami – DeLand – Clearwater

---

**From:** Emily Rodriguez  
**Sent:** Thursday, January 20, 2022 3:15 PM  
**To:** Alhale, Rockell (RER) <[Rockell.Alhale@miamidade.gov](mailto:Rockell.Alhale@miamidade.gov)>  
**Cc:** Justin Freedman <[jfreedman@esciencesinc.com](mailto:jfreedman@esciencesinc.com)>; Gayle Stone <[gstone@esciencesinc.com](mailto:gstone@esciencesinc.com)>  
**Subject:** RE: Matheson Hammock Bridge

Rockell,

We have been coordinating with PROS and the county. The representative from the county, had some follow up questions:

Before they finalize their authorization memo they would like to know the following:

\*Why is the need (or exemption) for permitting being considered, when the bridge columns are on land and not in water? (see picture below)



\*If the permitting is required and authorization is still needed, what exact type of documentation would be considered valid for an authorization? They are needing some clarity on the document type (Memo or email), originating person (DTPW Director? Deputy Director? PM?), and the recipient (who in PROS?).

Thank you for your continued coordination!

Regards,

**Emily Rodriguez**  
Project Scientist



ENGINEERING  
ENVIRONMENTAL  
ECOLOGICAL

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---

**From:** Alhale, Rockell (RER) <[Rockell.Alhale@miamidade.gov](mailto:Rockell.Alhale@miamidade.gov)>  
**Sent:** Wednesday, January 19, 2022 1:09 PM  
**To:** Emily Rodriguez <[ERodriguez@esciencesinc.com](mailto:ERodriguez@esciencesinc.com)>  
**Cc:** Justin Freedman <[jfreedman@esciencesinc.com](mailto:jfreedman@esciencesinc.com)>  
**Subject:** RE: Matheson Hammock Bridge

Hello,

It would need to be some sort of authorization or permit from Public Works. I don't necessarily have a specific format for that.

Thanks,

**Rockell Alhale, MS**

**Environmental Resources Project Supervisor**

Coastal Resources Section

Department of Regulatory and Economic Resources

*Environmental Resources Management*

701 NW 1<sup>st</sup> Court, 6<sup>th</sup> Floor, Miami, Florida 33136

T 305-372-6566

[alhale@miamidade.gov](mailto:alhale@miamidade.gov)

---

**From:** Emily Rodriguez <[ERodriguez@esciencesinc.com](mailto:ERodriguez@esciencesinc.com)>  
**Sent:** Tuesday, January 18, 2022 10:35 AM  
**To:** Alhale, Rockell (RER) <[Rockell.Alhale@miamidade.gov](mailto:Rockell.Alhale@miamidade.gov)>  
**Cc:** Justin Freedman <[jfreedman@esciencesinc.com](mailto:jfreedman@esciencesinc.com)>  
**Subject:** RE: Matheson Hammock Bridge

EMAIL RECEIVED FROM EXTERNAL SOURCE

Good Morning Rockell,

Can you please specify what type of documentation/ authorization PROS would need from MDC public works to suffice the exemption qualification, so we can work with the client to see if they can provide that.

Thank you!

Emily Rodriguez  
Project Scientist



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Dania Beach, FL 33004  
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954/484-5146 Fax  
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<http://www.esciencesinc.com>  
Orlando – Fort Lauderdale – Miami – DeLand – Clearwater

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**From:** Alhale, Rockell (RER) <[Rockell.Alhale@miamidade.gov](mailto:Rockell.Alhale@miamidade.gov)>  
**Sent:** Thursday, January 13, 2022 1:27 PM  
**To:** Emily Rodriguez <[ERodriguez@esciencesinc.com](mailto:ERodriguez@esciencesinc.com)>  
**Cc:** Justin Freedman <[jfreedman@esciencesinc.com](mailto:jfreedman@esciencesinc.com)>  
**Subject:** FW: Matheson Hammock Bridge

Hello,

It appears that most of the work being proposed is exempt. While the spall and crack repairs are considered exempt, pile jackets on bridge piles are not considered exempt. However, if PROS has authorization from MDC Public Works Department to correct safety deficiencies by putting jackets on the bridge supports, then that part of the work would also be exempt pursuant to the below section of Code.

**24-48 (3)(i)-** (i) Roadway maintenance activities which are performed or authorized by the Miami-Dade County Public Works Department to correct safety deficiencies or are undertaken to maintain the continuity of existing use for an established road or road right-of-way. This provision shall not apply to any work involving expansion in the width or length of roads or work involving the filling of roads to higher elevations when said roads occur at elevations which are less than the elevations set forth by Miami-Dade County flood criteria.

Let me know if that is something you have, otherwise we would need to permit that aspect of the work.

Thanks,

**Rockell Alhale, MS**  
**Environmental Resources Project Supervisor**



**Attachment 4**  
**Environmental Summary Report**

# Environmental Summary Report Matheson Hammock Park Bridge Rehabilitation and Replacement

Coral Gables, Miami-Dade County, Florida

E Sciences Project No. 7-0710-001

March 2022



Prepared for:

CONSOR Engineers, LLC  
7875 SW 104<sup>th</sup> Street, Suite 202-D  
Miami, Florida 33156



March 11, 2022

Ms. Sybille Bayard, P.E., Project Manager  
CONSOR Engineers, LLC  
7875 SW 104<sup>th</sup> Street, Suite 202-D  
Miami, FL 33156

**Subject: Environmental Summary Report  
Matheson Hammock Park Bridge Rehabilitation and Replacement  
9610 Old Cutler Road  
Coral Gables, Miami-Dade County, Florida  
E Sciences Project Number 7-0710-001**


Dear Ms. Bayard:


RES Florida Consulting, LLC d/b/a E Sciences (E Sciences) is pleased to submit this Environmental Summary Report in support of the development of design concepts for the above-referenced project. This report outlines existing environmental conditions at the site based on a desktop review, a benthic resources survey, and wetland delineation. The benthic resources survey was conducted on September 21, 2021, and the wetland delineation was conducted on November 22, 2021 and January 13, 2022. Services provided were performed in general accordance with Proposal Number 7-0710-P01, dated August 13, 2021.

We appreciate the opportunity to perform these services for you. Please contact us at (954) 484-8500 if you have questions regarding this information.

Sincerely,

**RES FLORIDA CONSULTING, LLC d/b/a E SCIENCES**

  
Emily Rodriguez, M.S.  
Project Scientist

  
Gayle L. Stone  
Senior Scientist

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### APPENDICES

- A. Warranty Deed and Submerged State Land Title Determination
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- C. FNAI Biodiversity Matrix
- D. Effect Determination Key for the Florida Bonneted Bat
- E. Effect Determination Key for the Manatee in Florida
- F. Photo Documentation Log
- G. Wetland Data Forms

## **1.0 INTRODUCTION AND SITE LOCATION**

The Miami-Dade County Department of Transportation and Public Works (DTPW) proposes to rehabilitate and ultimately replace an existing vehicular bridge in Matheson Hammock County Park. The Park is located at 9610 Old Cutler Road, (Miami-Dade County Property Appraiser Folio No. 0351050000010) Coral Gables, Miami-Dade County, Florida. The bridge is located about 0.7 miles east of the entrance of the park (Site). A location map and aerial photograph are provided in **Figures 1** and **2**. The property is within Section 5, Township 50 South, Range 42 East. (Latitude 25° 40' 44.3248" N, Longitude 80° 15' 43.886" W). The Site is located over Biscayne Bay Aquatic Preserve, an Outstanding Florida Water.

The existing bridge is a two-lane vehicular bridge over Matheson Hammock Canal. The purpose of the proposed bridge improvements is to ensure the stability and safety of the bridge for the public using the park. Rehabilitation is required immediately in preparation of an upcoming sea level rise project in the park. The proposed bridge rehabilitation will include repairing spalls, delaminations and cracks in the underside of the sonovoid slab units, repairing spalls, delamination and cracks at the bent cap and columns, installing carbon fiber-reinforced polymer (CFRP) wraps at the underside of sonovoid slab units 2-8 and 2-9, installing a structural jacket around column 2-2, and removing existing transverse post-tensioning (PT) wires and installing new PT bars. The proposed bridge replacement will include complete replacement of the bridge at a higher elevation, including reconstruction of the roadway approaches to tie into the new bridge.

The purpose of this report is to identify existing environmental conditions at the project Site. This report was prepared in support of environmental permit applications for the rehabilitation and eventual replacement of the bridge. The rehabilitation is exempt from permitting; however, verification of an exemption will be obtained from the South Florida Water Management District (SFWMD) and other regulatory agencies. The information contained in this report will be used for permitting the replacement of the bridge once detailed project plans have been completed. A separate report will be prepared that details anticipated impacts to natural resources.

## 2.0 DESKTOP REVIEW

E Sciences performed a desktop review of existing environmental conditions, existing environmental permits, sovereign submerged lands, wetlands classifications, historic resources, protected species and critical habitats that may be in the project area.

### 2.1 Existing Environmental Permits and Sovereign Submerged Land (SSL) Information

No existing Florida Department of Environmental Protection (FDEP), SFWMD, U.S. Army Corps of Engineers (USACE), Miami-Dade County Department of Regulatory and Economic Resources (RER) permits were identified for the existing bridge.

In regard to sovereignty submerged lands (SSL) review, it has been determined that the lands at the project site were conveyed in Quitclaim Deed No. 18337 to the Royal Citrus Grove Company. Submerged lands at the project site are privately owned and within the Biscayne Bay Aquatic Preserve. A copy of the Deed is provided in **Appendix A**.

### 2.2 Wetlands and Special Designations

The site is located in Biscayne Bay Aquatic Preserve, an Outstanding Florida Water according to review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool (**Appendix B**).

Review of the National Wetlands Inventory (NWI) GIS data indicated that an Estuarine and Marine Deepwater, Estuarine and Marine Wetland, and Riverine are present within the survey area (see **Table 1** below and **Figure 3**).

Table 1: NWI Features		
NWI Classification	Feature	Type
Estuarine and Marine Deepwater	Biscayne Bay	Other Surface Water
Estuarine and Marine Wetland	Wetlands	Freshwater and Saltwater Wetlands
Riverine	Surface Water	Surface Water

### 2.3 Protected Species and Habitat

E Sciences performed a desktop review of protected species potentially present in the project area. A protected species list was compiled based on the following protected species lists:

- USFWS Environmental Conservation Online System (ECOS) Information for Planning and Consultation (IPaC) - (<https://ecos.fws.gov/ipac/location/index>).

- Florida Natural Areas Inventory (FNAI) Biodiversity Matrix - (<https://www.fnai.org/BiodiversityMatrix/index.html>) (Appendix C).
- Florida Fish and Wildlife Conservation Commission (FWC) Florida’s Official Endangered and Threatened Species List updated June 2021 – (<https://myfwc.com/media/1945/threatened-endangered-species.pdf>).
- National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) Threatened and Endangered Species (<https://www.fisheries.noaa.gov/species-directory/threatened-endangered>).

The list was further refined based on the habitat types present and the probability of a protected species being present in the project area. The list is presented in **Table 2**.

<b>Table 2. Federal and State Protected Species Potentially Present in the Project Area.</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>Federal Status</b>	<b>State Status</b>	<b>Effects Determination</b>
Florida Bonneted Bat	<i>Eumops floridanus</i>	E	E	MANLAA
West Indian Manatee	<i>Trichechus manatus</i>	T	T	MANLAA
		CH	CH	MANLAA
Wood Stork	<i>Mycteria americana</i>	T	T	MANLAA
Smalltooth Sawfish	<i>Pristis pectinata</i>	E	E	MANLAA
American Alligator	<i>Alligator mississippiensis</i>	SAT	T(S/A)	MANLAA
American Crocodile	<i>Crocodylus acutus</i>	T	T	MANLAA
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	E	E	MANLAA
E = Endangered, T = Threatened, CH = Critical Habitat, SAT, T(S/A) = Threatened due to Similarity of Appearance, MANLAA = May Affect, Not Likely to Adversely Affect				

### Florida Bonneted Bat

The project corridor is located within the USFWS Consultation Area for the Florida bonneted bat (*Eumops floridanus*), an endangered species listed by the USFWS and FWC. The Florida bonneted bat (also known as the Florida mastiff bat) is the largest species of bat in Florida, with a body length of up to 6.5 inches and a wingspan up to 20 inches. The hair color varies from black, to brown, to grayish, or cinnamon brown. It is endemic to southern Florida and has the smallest geographical range of any bat in the United States. Florida bonneted bats are known to roost in both natural and artificial structures. Potential roosting structures include mature or large live or dead trees, tree snags, and trees with cavities, hollows, or crevices. Roosting structures may also include rock crevices, buildings, bridges, and bat houses.

Potential roosting trees include those that are greater than 33 feet tall, have a Diameter at Breast Height (DBH) greater than eight inches, and have cavities located higher than 16 feet from the ground. Florida bonneted bat foraging habitat is characterized by relatively open areas with prey sources and water. Examples of Florida bonneted bat foraging habitats include open fresh water, wetlands and upland forests, wetland and upland shrubs, agricultural lands, golf courses, parking lots, parks and relatively small patches of natural habitat.

Based on the Florida Bonneted Bat Consultation Guidelines and incorporated Florida Bonneted Bat Consultation Key (Key) (**Appendix D**), a limited roost survey may be needed prior to the bridge replacement to accurately determine the effect of the proposed project on the Florida bonneted bat. Since roosting habitat was observed onsite, the proposed project “*may affect, but is not likely to adversely affect*” the Florida bonneted bat.

#### West Indian Manatee

Biscayne Bay is Critical Habitat for the West Indian manatee and is also a Manatee Protection Area under the FWC rules. Per review of the USACE Manatee Effects Determination Key (April 2013), a determination of “*may affect, not likely to adversely affect*” is made through the A, B, C, G, N, O, P path as highlighted in the Manatee Key in **Appendix E**. This effect determination was reached because the project elects to follow the *Standard Manatee Conditions for In-Water Work* (2011) and does not involve new or increased access for watercraft. The project also “*may affect but is not likely to adversely affect*” critical habitat because foraging habitat will not be substantially affected and there is no new or increased access for watercraft with the proposed project.

#### Wood Stork

The wood stork is both federally and state listed as threatened. The wood stork prefers habitats comprised of mixed hardwood swamps, sloughs, mangroves, and cypress domes/strands in Florida. They forage in a variety of wetlands including both freshwater and estuarine marshes. A review of the FWS database showed that the project area is located within the 18.6 miles Core Foraging Area (CFA) of three active wood stork colonies (Tamiami Trail East 1, Tamiami Trail East 2, and Tamiami Trail West). Changes to wood stork foraging habitat will be evaluated during the replacement phase of the project. Because the project is within Core Foraging Habitat, a “*may affect, not likely to adversely affect*” determination was assigned for the wood stork.

#### Smalltooth Sawfish

The smalltooth sawfish is both listed as endangered by both the NMFS and FWC. The smalltooth sawfish inhabits coastal areas such as estuaries, river mouths and bays year round. The smalltooth sawfish prefers mangrove habitat such as that present in this project area. Due to the location of the project and the potential for a small tooth sawfish to be present in the project vicinity, therefore a “*may affect, not likely to adversely affect*” determination was assigned for the smalltooth sawfish. The project will follow the Protected Species Construction Conditions (NOAA NMFS, 2021).



American Crocodile and American Alligator

The American crocodile is listed as threatened by both the FWS and FWC. They inhabit the coastal waters of south Florida where they are at the northern limit of their range. The project is not located in Critical Habitat for the American crocodile, however, there is potential for them to swim to this area of Biscayne Bay. Due to the location of the project and the potential for an American crocodile to be present in the project vicinity, a “*may affect, not likely to adversely affect*” determination was assigned for the American crocodile.

The American alligator is both state and federally listed as threatened due to similarity of appearance to the American crocodile. The alligator prefers freshwater lakes and slow-moving rivers and their associated wetlands, but they also can be found in brackish water habitats and rarely in salt water. Due to the project location and the potential for an American alligator to be present in the project vicinity, a “*may affect, not likely to adversely affect*” determination was assigned.

Sea Turtles

The only sea turtle likely to be in the estuarine waters of Biscayne Bay is the hawksbill sea turtle, as the other species of sea turtle are mainly marine. The project will follow the *Protected Species Construction Conditions* (NOAA NMFS, 2021) during construction. Therefore, a determination of “*may affect, not likely to adversely affect*” was assigned to the sea turtle species.

**2.4 Essential Fish Habitat (EFH)**

A desktop review of the NOAA Inland EFH Mapper was performed to identify EFH within the survey area. Following the desktop analysis, a field review was conducted to identify and document EFH and the benthic habitats within the survey area.

Based on the results of the NOAA Inland EFH Mapper and the benthic survey, the survey area has the potential to provide EFH for species listed in **Table 3**, below. EFH observed in the survey area included submerged aquatic vegetation (SAV), water column, soft bottom and sand/shell. Habitat Areas of Particular Concern (HAPC) of each management group is also provided in **Table 3**. HAPC included SAV and seagrass.

<b>Table 3. Species with EFH and HAPC in the Project Area</b>				
<b>Common Name</b>	<b>Species Name</b>	<b>Life Stage</b>	<b>EFH</b>	<b>HAPC*</b>
Pink Shrimp	<i>Farfantepenaeus duorarum</i>	Juveniles	Submerged aquatic vegetation (SAV); soft bottom; sand/shell;	<b>Penaeid Shrimp HAPC:</b> State Designated Nursery Habitats: Biscayne Bay

Table 3. Species with EFH and HAPC in the Project Area				
Common Name	Species Name	Life Stage	EFH	HAPC*
			mangroves; oyster reef	
		Subadults	SAV; soft bottom; sand/shell; mangroves	
White shrimp	<i>Litopenaeus setiferus</i>	Postlarve	Water column associated	
		Juveniles	Emergent marsh; SAV; oyster reef; soft bottom; mangroves	
		Subadults	Soft bottom; sand/shell	
		Adults	Soft bottom	
		Spawning adults	Soft bottom; sand/shell	
Spiny lobster	<i>Panulirus argus</i>	Puerulus postlarva	Water column associated; submerged aquatic vegetation	<b>Spiny Lobster HAPC:</b> Biscayne Bay
		Juveniles	SAV; reefs; hard bottom	
		Adults	Hard bottom; SAV; Reefs	
Red drum	<i>Sciaenops ocellatus</i>	Larvae	SAV; soft bottom; water column	None in project area
		Postlarvae	SAV; emergent marsh; soft bottom	
		Early juveniles	SAV; soft bottom; hard bottom; sand/shell	
		Late juveniles	SAV; emergent marsh; soft bottom; sand/shell	
		Adults	SAV; emergent marsh; soft bottom; hard bottom; sand/shell	

**Table 3. Species with EFH and HAPC in the Project Area**

Common Name	Species Name	Life Stage	EFH	HAPC*
Spanish mackerel	<i>Scomberomorus maculatus</i>	Early juveniles	Estuarine; water column	None in project area
		Late juveniles	Estuarine; water column	
		Adults	Estuarine; Mainly oceanic; water column	
Cobia	<i>Rachycentron canadum</i>	eggs	Water column	None in project area
		larvae	Water column	
Gag grouper	<i>Mycteroperca microlepis</i>	Early juveniles	SAV; emergent marsh; oyster reef	<b>Snapper-Grouper Management Unit HAPC:</b> Seagrass State Designated Nursery Habitats: Biscayne Bay
Goliath grouper	<i>Epinephelus itajara</i>	Juveniles	Soft bottom; oyster reef; mangrove	
Gray snapper	<i>Lutjanus griseus</i>	postlarvae	SAV	
		juveniles	SAV; soft bottom; mangrove	
		adults	Hard bottom; soft bottom; reef; sand/shell; banks/shoals; emergent marsh	
Mutton snapper	<i>Lutjanus analis</i>	Early juveniles	SAV	
		Late juveniles	SAV	
		Adult	SAV	
Cubera snapper	<i>Lutjanus cyanopterus</i>	Early juveniles	SAV; mangrove; emergent marsh	
		Late juveniles	SAV; mangrove; emergent marsh	
		adults	Mangrove; reef	
Lane snapper	<i>Lutjanus synagris</i>	Larvae	Water column; SAV	
		Postlarvae	Water column	
		juveniles	SAV; sand/shell; soft bottom; banks/shoal; mangrove	
Yellowtail snapper	<i>Ocyurus chrysurus</i>	juveniles	SAV; mangrove; reefs; hard bottom	
Red grouper	<i>Epinephelus morio</i>	juveniles	SAV; hardbottom	
Black grouper	<i>Mycteroperca bonaci</i>	juveniles	SAV; reefs hardbottom; mangrove	

<b>Table 3. Species with EFH and HAPC in the Project Area</b>				
<b>Common Name</b>	<b>Species Name</b>	<b>Life Stage</b>	<b>EFH</b>	<b>HAPC*</b>
Yellowmouth grouper	<i>Mycteroperca interstitialis</i>	juveniles	mangrove	
Yellowfin grouper	<i>Mycteroperca venenosa</i>	Juveniles	SAV; hard bottom	
Hogfish	<i>Lachnolaimus maximus</i>	Juveniles	SAV	

\*This table only lists HAPC found within the project area.

Implementation of Best Management Practices (BMPs) will reduce and minimize project effects to EFH and HAPC to the greatest extent practicable. Impacts to EFH are anticipated to be minimal. Informal consultation with the NMFS through the permitting process will be conducted for EFH and HAPC.

## 2.5 Historic Resources

Per review of the Florida Master Site File databases from the State Historic Preservation Office, no historic structures, bridges, cemeteries or resource groups (linear resources) were found within the project area. Matheson Hammock County Park is registered as a Historic Landscape and is eligible for the *National Register of Historic Places* (NRHP) (**Figure 4**).

### **3.0 BENTHIC RESOURCES**

#### **3.1 Benthic Resources Survey Methods**

Two E Sciences marine biologists conducted a benthic resources survey on September 21, 2021. The survey was conducted in general accordance with the Florida Fish and Wildlife Conservation Commission (FWC) *Recommended Survey Protocols for Estuarine and Marine Submerged Aquatic Vegetation (SAV) related to Permitting Applications* (12/14/2011 Draft) and within the growing season cited in the NOAA, NMFS paper entitled *A Science-based Seagrass Survey Window for Coastal Construction Project Planning in Florida* (Karazsia, 2010) and recommended by the regulatory permitting agencies. The optimal growing season for seagrass occurs annually from June 1 through September 30. Per the FWC protocol, seagrass habitat is defined as a physical space that contains seagrasses in sufficient quantity and pattern to support organisms typical of seagrass communities. A seagrass bed is typically defined as an area of seagrass growth greater than one square meter in size with greater than one percent aerial coverage by seagrass; however, some patches of seagrass smaller than this typical minimum size were recorded during this survey.

The survey was performed by two divers utilizing SCUBA equipment on September 21, 2021. Weather conditions were cloudy, with temperatures in the mid-80s. The tide was predominantly outgoing during the time of the survey with high tide at 9:58am ([www.tidesandcurrents.noaa.gov](http://www.tidesandcurrents.noaa.gov), 8723214 Virginia Key, Biscayne Bay, FL). Water clarity was relatively low, with visibility ranging from three to five feet. The benthic survey included the area underneath the bridge and the area extending 95 feet northeast and 115 feet southeast from the bridge (**Figure 5**). The total area surveyed was approximately 0.31 acres. The survey was performed by swimming parallel to the shoreline along meandering transects spaced approximately 30 feet apart (**Figure 5**). Notes on seagrass bed size/density, coral observations (species, sizes), incidental species observed, and habitat descriptions were recorded by a biologist on land. Upon identification of any seagrass bed or corals, the edges of these features were mapped with a decimeter-grade differential global positioning system (GPS) unit (Trimble Geo 7X). All notes were recorded on Rite in the Rain Waterproof paper. Photographs and video were recorded using a GoPro Hero 8 video camera.

#### **3.2 Benthic Habitat Description**

The site is located in Biscayne Bay, an Aquatic Preserve, an Outstanding Florida Water. It is not within or adjacent to a Coastal Barrier Resources System Unit. Water depths ranged from approximately two feet by the shore to 13 feet in the center of the channel. The substrate consisted of coarse sand, rubble and shell fragments.

### **3.3 Benthic Resource Observations**

Representative photographs of the survey results are shown in **Appendix F**. No protected benthic resources were observed within the survey area. *Caulerpa spp.* were observed in patches on the substrate and oyster growth was observed on the bridge pilings.

### **3.4 Incidental Observations**

Incidental observations of fish species included bluestriped grunt (*Haemulon sciurus*), white grunt, (*Haemulon plumieri*), and mangrove snapper (*Lutjanus griseus*).

### **3.5 Benthic Survey Summary**

A benthic resource survey was conducted during the growing season and no protected benthic resources (i.e. seagrass or coral) were located in the survey area.

## 4.0 WETLAND RESOURCES

### 4.1 Wetland Survey Methods

Two E Sciences biologists conducted a mangrove resource survey on November 22, 2021 and a wetland delineation on January 13, 2022. The wetland delineation and mapping was performed in general accordance with Chapter 62-340, Florida Administrative Code (F.A.C. ), *Delineation of the Landward Extent of Wetlands and Surface Waters*. Wetland delineation data was documented using *Chapter 62-340, F.A.C. Data Form Guide Wetland and Other Surface Water Delineation Version 2019*. The location of each delineation survey point was recorded using a Trimble GPS unit. Mangrove species, wetland vegetation and other vegetation present were recorded. Wetland limits were marked with ground stakes and flagging tape. Photographs and video were recorded using a GoPro Hero 8 video camera and an Olympus Tough TG-6 Waterproof Digital Camera.

### 4.2 Wetland Habitat Description

Two types of wetlands were identified onsite, as shown in **Figure 6**. Saltwater mangrove wetlands (1.15 acres), and freshwater herbaceous wetlands (0.35 acres) with occasional saltwater inundation were observed (**Appendix F**). The saltwater mangrove wetland consisted of white mangrove (*Laguncularia racemosa*), red mangrove (*Rhizophora mangle*) and black mangrove (*Avicennia germinans*). Several non-mangrove upland trees were also observed within the saltwater wetland area, including seaside mahoe (*Thespesia populnea*), green buttonwood (*Conocarpus erectus*), seagrape (*Coccoloba uvifera*), cocoplum (*Chrysobalanus icaco*), tropical almond (*Terminalia catappa*), sabal palm (*Sabal palmetto*), and Australian pine (*Casuarina equisetifolia*). Representative photographs of the survey results are shown in **Appendix F**.

The freshwater herbaceous wetlands consisted of mainly obligate and facultative-wet vegetation such as saltwort (*Batis maritima*), water-hyssop (*Bacopa spp.*), common rush (*Juncus effusus*), white-top sedge (*Dichromena colorata*), smooth button-plant (*Spermacoce glabra*), torpedo grass (*Panicum repens*), and pennywort (*Hydrocotyle verticillata*). Less than 20% upland vegetation was observed, including Florida pusley (*Richardia scabra*). The freshwater wetlands appeared to be occasionally inundated by saltwater by king tides or storm events.

### 4.3 Soils

Based on USDA-Natural Resources Conservation Service (NRCS) soils GIS data, two mapped soil types are present within the project limits and are described below (**Figure 7**):

- Udorthents – Water-Urban land complex, 0 to 60 percent slopes
  - Hydric soil rating listed as non-ranked
  - Gravelly loamy human-transported material

- Terra Ceia muck, tidal, 0 to 1 percent slopes
  - Listed as a hydric soil
  - Deep, level, very poorly drained soil and is located in saltwater swamps and marshes and is subject to tidal flooding
  - Described as muck to a depth of 80 inches or more. The upper 8 inches is very dark brown, and the lower 72 inches or more is black

The mixed saltwater mangrove wetlands were mapped as Terra Ceia muck (hydric) soil type. The soils observed onsite had many hydric characteristics such as high organic content and muck presence. The roadside freshwater wetlands were mapped as Udorthents-water-urban land complex (non-hydric) however, soils observed onsite displayed hydric characteristics including high organic content and mucky mineral, muck presence, and dark surface. Although several upland areas adjacent to the roadway fall within areas mapped as Udorthent-Water-Urban land as well, the soils in these areas did not display hydric characteristics, possibly due to previous disturbance (i.e. filling) associated with road construction. Soil analysis was conducted onsite as shown on the data forms in **Attachment G**.

#### **4.4 Hydrology**

Hydrologic conditions within both the saltwater mangrove wetland and freshwater roadside wetlands ranged from saturation at the soil surface to minor inundation above the ground surface (less than six inches based on visual estimates). The saltwater wetlands contained a distinct erosion line and wrack line from high tide events. The freshwater wetlands contained some standing water, some soil pits filled with water, and there was presence of algal matting. Neither primary nor secondary indicators of wetland hydrology were observed with the upland portions of the project limits.

#### **4.5 Wetland Survey Summary**

Both saltwater mangrove wetlands and freshwater swale herbaceous wetlands were observed within the survey area. Impacts to these wetlands are not anticipated from the bridge rehabilitation project. Impacts to wetlands will be re-evaluated during design of the replacement of the bridge.



## **5.0 PERMITS REQUIRED**

Potential impacts may occur from the future bridge replacement project. Once project plans are developed, impacts to natural resources will be assessed. Impacts to wetlands would be subject to additional permitting and require mitigation from the regulatory agencies. The following permits will be required:

For the rehabilitation of the bridge:

- Exempt from requiring a US Coast Guard Permit
- Exemption (13-106644-P) was issued from SFWMD on February 28, 2022
- Exempt from requiring a RER Class 1 Coastal Construction Permit

For replacement of the bridge:

- US Coast Guard Bridge Permit
- USACE Section 10/404 Permit (if there are impacts to mangroves)
- SFWMD Individual Environmental Resource Permit
- RER Class 1 Coastal Construction Permit

## **6.0 SUMMARY**

The purpose of this report was to identify existing environmental conditions in support of environmental permit applications for the rehabilitation and replacement of the Matheson Hammock Park Bridge. A desktop review of existing environmental conditions was performed. The site is located within Biscayne Bay Aquatic Preserve, an Outstanding Florida Water. Review of the NWI data indicated that an Estuarine and Marine Deepwater wetland is present within the survey area. Coordination will continue with the regulatory agencies for the bridge replacement portion of the project.

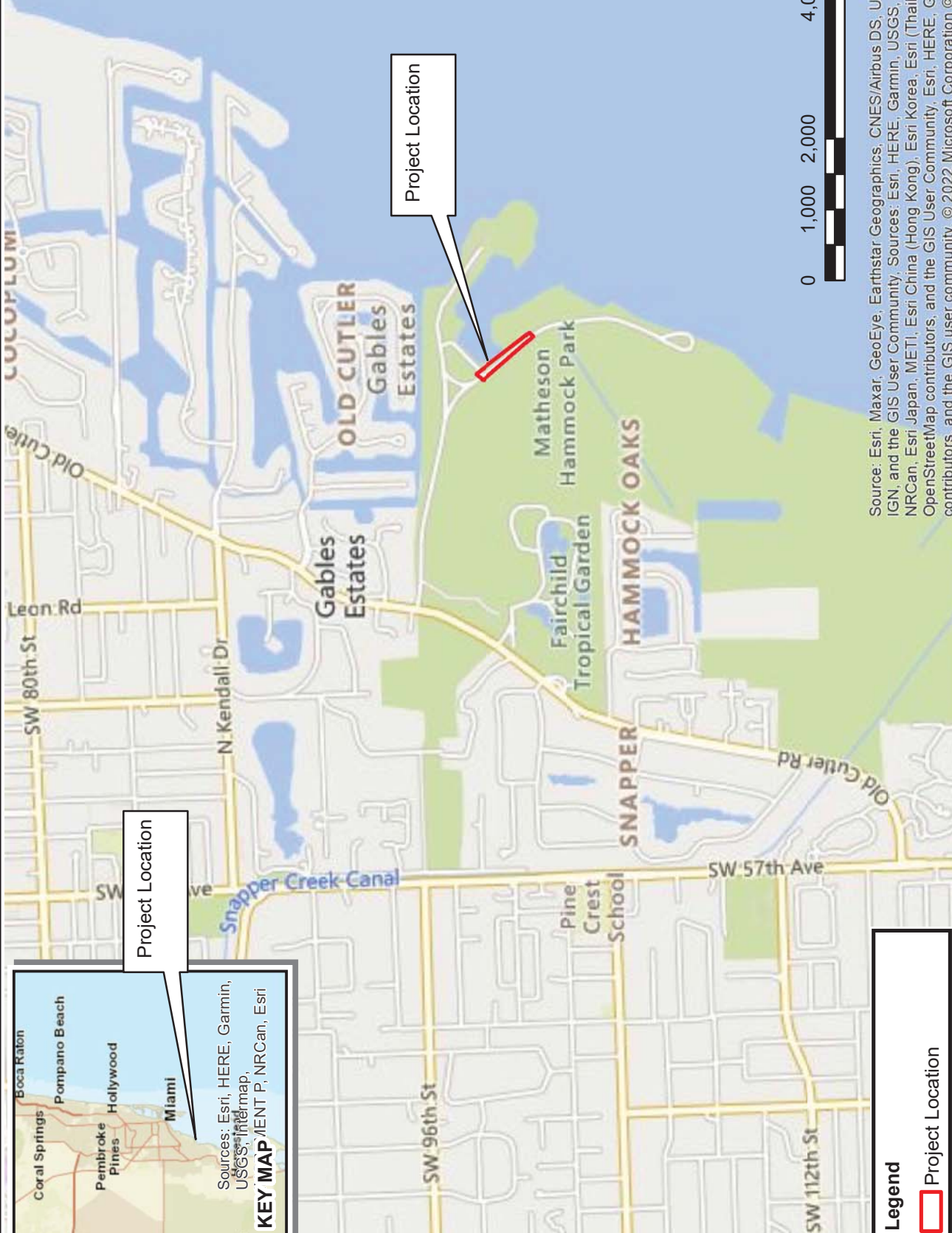
A protected species and habitat evaluation was conducted for the project. It was determined that the project *may affect but is not likely to adversely affect* the Florida bonneted bat, West Indian manatee, wood stork, smalltooth sawfish, American crocodile, American alligator, and hawksbill sea turtle. Additionally, it has been determined that the project *“May affect, is not likely to adversely affect”* the critical habitat for the West Indian manatee. Based on the results of the NOAA Inland EFH Mapper and the benthic survey, the survey area has the potential to provide EFH for 18 different species. The site is registered as a historic landscape, but no historic resources were found within a 500-foot buffer of the project site.

An onsite seagrass survey was conducted on September 21, 2021, during the optimal growing season. Seagrass was not located within the project area. An onsite mangrove and wetland delineation were conducted on November 22, 2021 and January 13, 2022. Saltwater wetlands and freshwater wetlands were found within the survey area. No impacts to resources are proposed for the bridge rehabilitation portion of the project. Detailed project plans will be needed to determine if impacts to resources are proposed for the bridge replacement portion of the project.

## **7.0 REFERENCES**

Karazsia, J. 2010. A Science-based Seagrass Survey Window for Coastal Construction Project Planning in Florida, NOAA NMFS Southeast Region, Habitat Conservation Division, West Palm Beach, FL. 14 pages

# FIGURES



**Legend**

Project Location

**KEY MAP**

Sources: Esri, HERE, Garmin, USGS, Intermap, NRCAN, Esri

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, © 2022 Microsoft Corporation © 2022 TomTom

	<h2 style="margin: 0;">Matheson Hammock Park Bridge Rehabilitation and Replacement</h2> <p style="margin: 0;">9610 Old Cutler Road, Coral Gables, Miami-Dade County, Florida Section 5, Township 50 South, Range 42 East</p>	FIGURE <h1 style="font-size: 48px; margin: 0;">1</h1>
<h3 style="margin: 0;">Location Map</h3>		
SCALE: 1" = 2,000' DATE: 3/9/2022		
PROJECT NUMBER: 7-0710-001		



**LEGEND**  
 Project Limits (Approximate)



PROJECT NUMBER: 7-0710-001

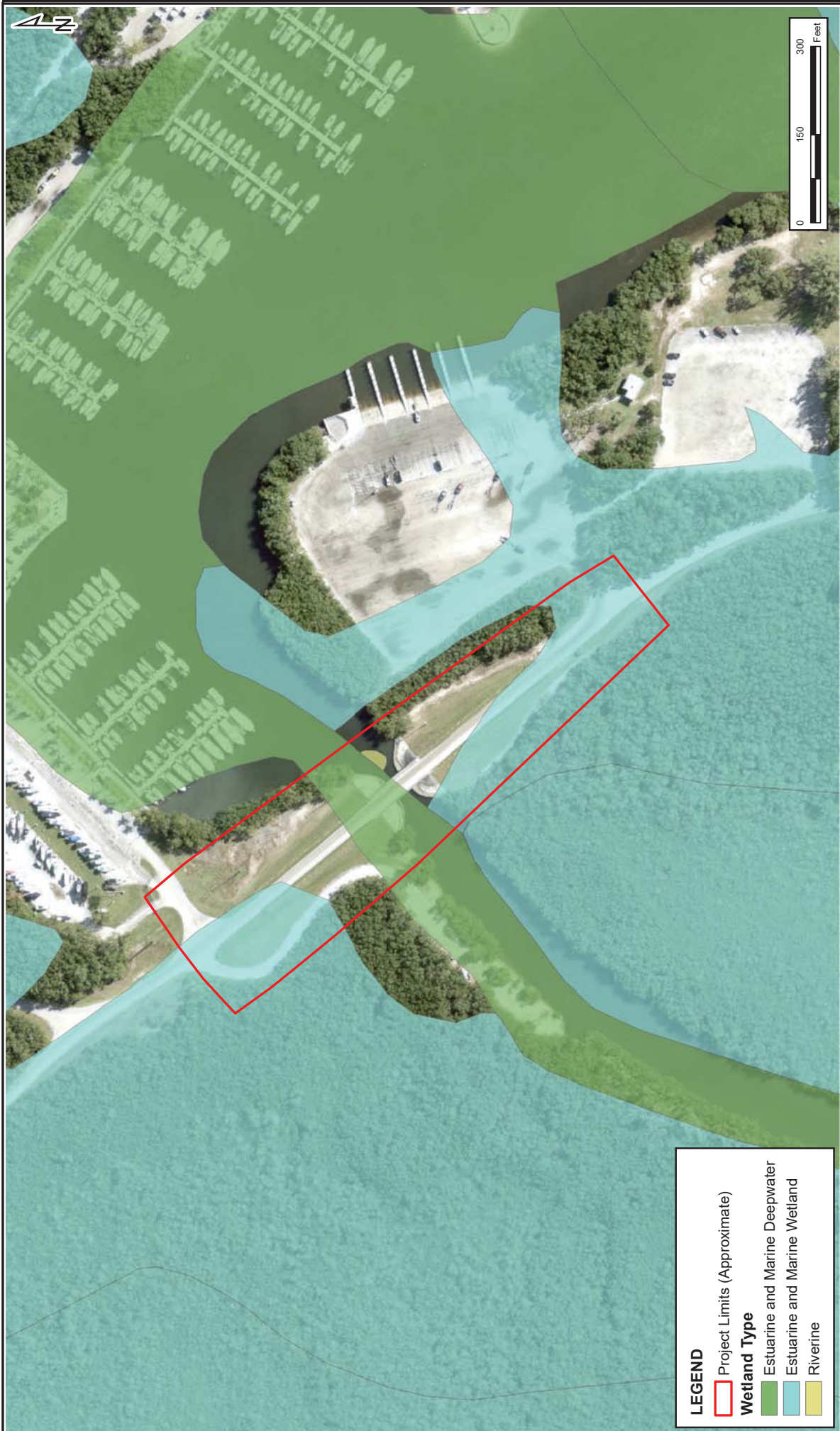
**Matheson Hammock Park**  
**Bridge Rehabilitation and Replacement**  
 Coral Gables, Miami-Dade County, Florida

**Aerial Map**

SCALE: 1"=200'  
 DATE: 3/8/2022

FIGURE

**2**



**LEGEND**

- Project Limits (Approximate)

**Wetland Type**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Riverine



PROJECT NUMBER: 7-0719-001

**Matheson Hammock Park  
Bridge Rehabilitation and Replacement**  
Coral Gables, Miami-Dade County, Florida

National Wetlands  
Inventory Map

SCALE: 1"=150'      DATE: 3/8/2022

FIGURE

3



Source: Esri, Maxar GeoEye, Earthstar Geographics, CNR AeroGis, DigitalGlobe, GeoEye, IGN, AerGIS, GeoEye, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

**LEGEND**  
 Project Limits (Approximate)  
 Historic Landscape; Matheson Hammock Park (DA14019) - NRHP Eligible



PROJECT NUMBER: 7-0710-001

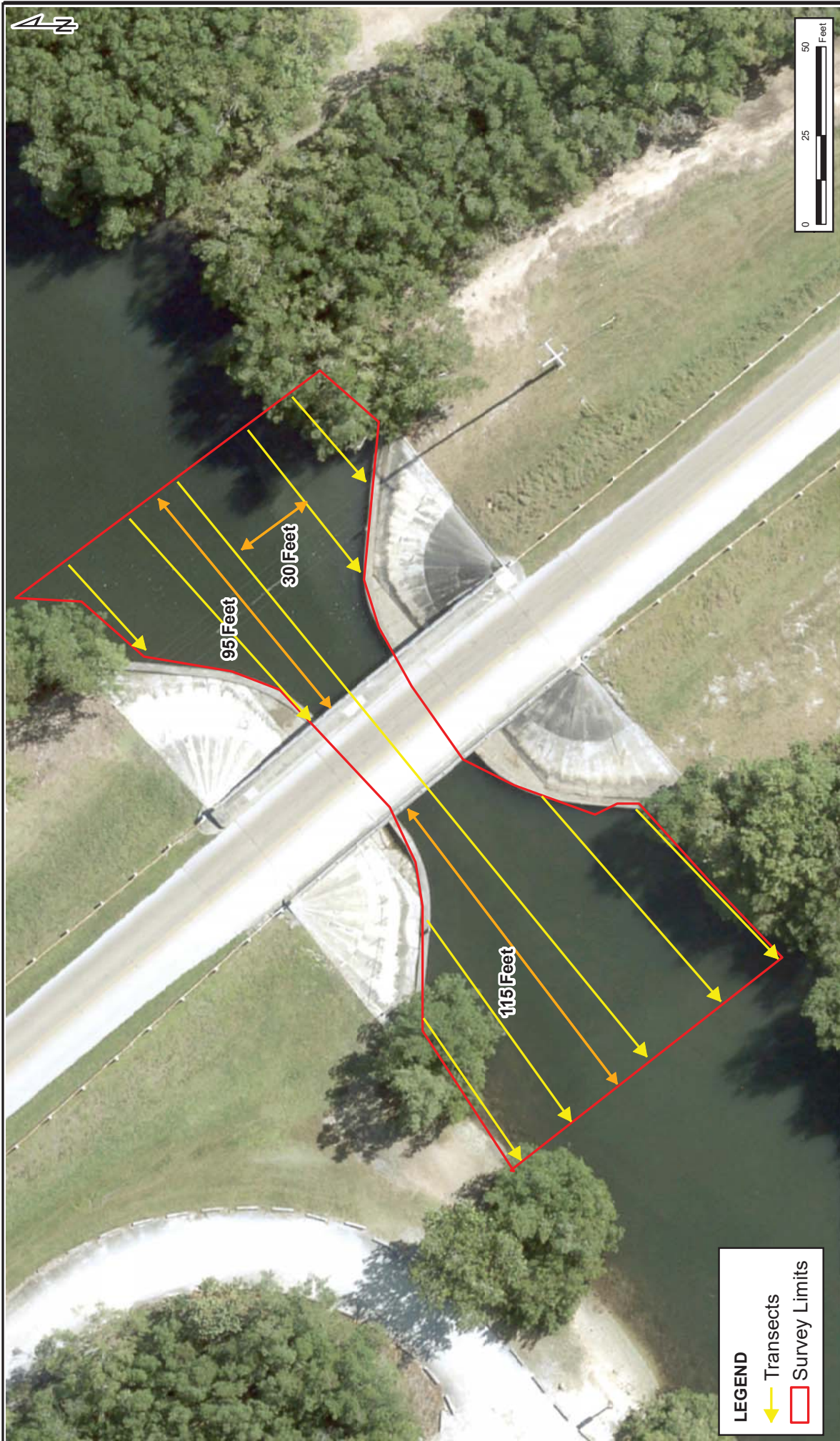
**Matheson Hammock Park**  
**Bridge Rehabilitation and Replacement**  
 Coral Gables, Miami-Dade County, Florida

Historic Resources

SCALE: 1"=200'	DATE: 3/8/2022
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FIGURE **4**





**LEGEND**

-  Transects
-  Survey Limits



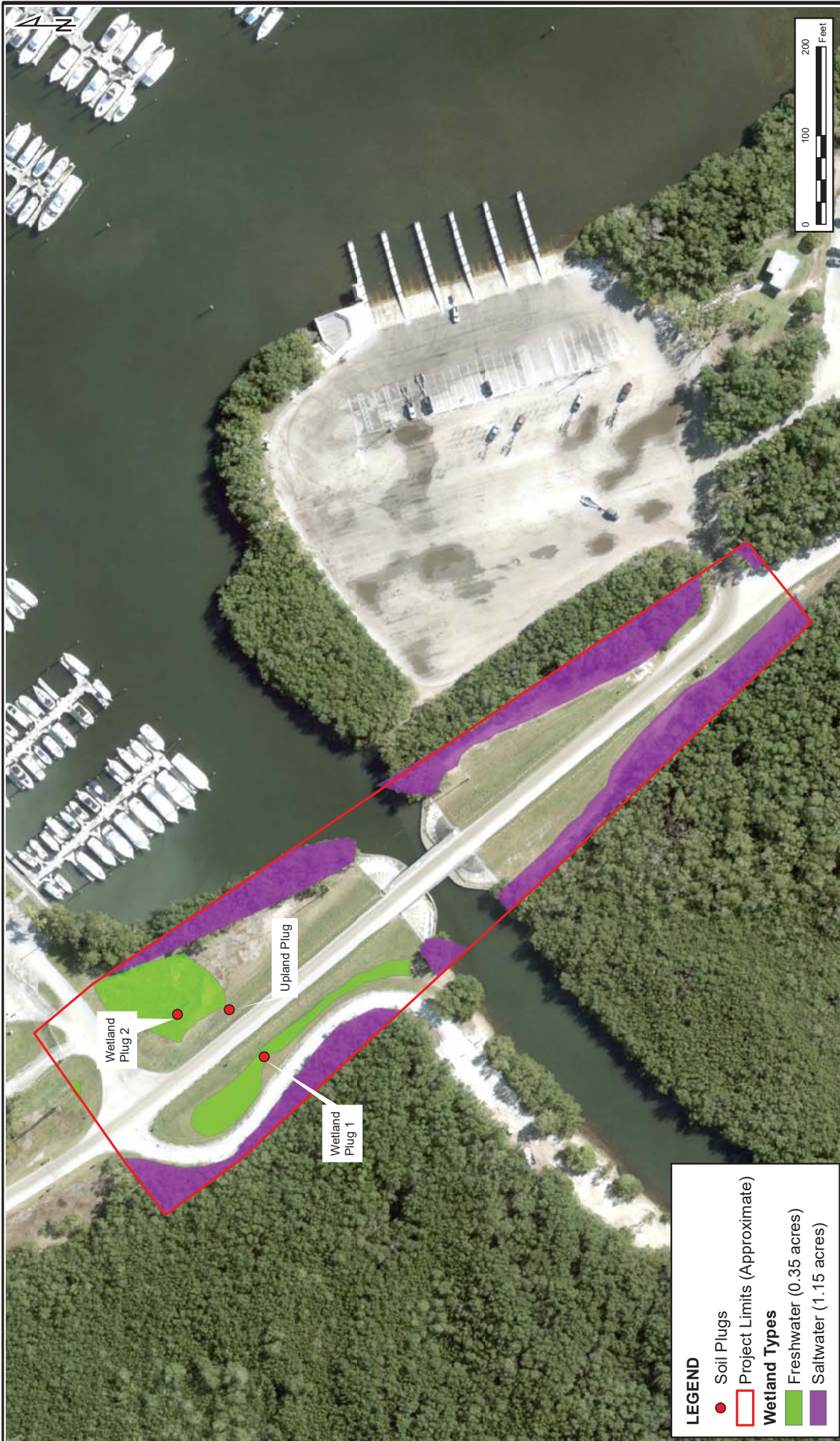
PROJECT NUMBER: 7-0710-001

**Matheson Hammock Park Bridge  
Rehabilitation and Replacement**  
Coral Gables, Miami-Dade County, Florida

Benthic Resources  
Survey Map

SCALE: 1"=25'  
DATE: 3/30/2022

FIGURE  
**5**



**LEGEND**

- Soil Plugs
- ▭ Project Limits (Approximate)

**Wetland Types**

- Freshwater (0.35 acres)
- Saltwater (1.15 acres)



PROJECT NUMBER: 7-0716-001

**Matheson Hammock Park**  
**Bridge Rehabilitation and Replacement**  
 Coral Gables, Miami-Dade County, Florida

Wetland Resources  
 Survey Map

SCALE: 1"=100'  
 DATE: 3/30/2022



**Matheson Hammock Park  
 Bridge Rehabilitation and Replacement**  
 Coral Gables, Miami-Dade County, Florida

Soils Map  
 SCALE: 1"=150'  
 DATE: 3/30/2022

**E Sciences**  
 PROJECT NUMBER: 7-0710-001

FIGURE  
**7**

# **APPENDIX A**

## **Submerged State Lands Title Determination and Warranty Deed**



# FLORIDA DEPARTMENT OF Environmental Protection

Marjory Stoneman Douglas Building  
3900 Commonwealth Boulevard  
Tallahassee, FL 32399

**Ron DeSantis**  
Governor

**Jeanette Nuñez**  
Lt. Governor

**Shawn Hamilton**  
Secretary

December 17, 2021

Emily Rodriguez  
ESciences  
200 East Dania Beach Blvd, Ste. #106  
Dania Beach, FL 33004

Re: Matheson Hammock Park Bridge, Miami-Dade County, Florida

Dear Ms. Rodriguez,

This letter is in response to your recent inquiry requesting a state lands title determination for the submerged lands lying in the vicinity of the Matheson Hammock Park bridge in Miami-Dade County, Florida.

Records on file within the Title and Land Records Section indicate that lands at the subject site were conveyed in Quitclaim Deed No. 18337 to the Royal Citrus Grove Company, dated January 6, 1936. Submerged lands at the project site are within the Biscayne Bay Aquatic Preserve.

The conclusions stated herein are based on a review of records currently available within the Department of Environmental Protection as supplemented, in some cases, by information furnished by the requesting party and do not constitute a legal opinion of title. A permit from the Department of Environmental Protection and other federal, state and local agencies may be required prior to conducting activities.

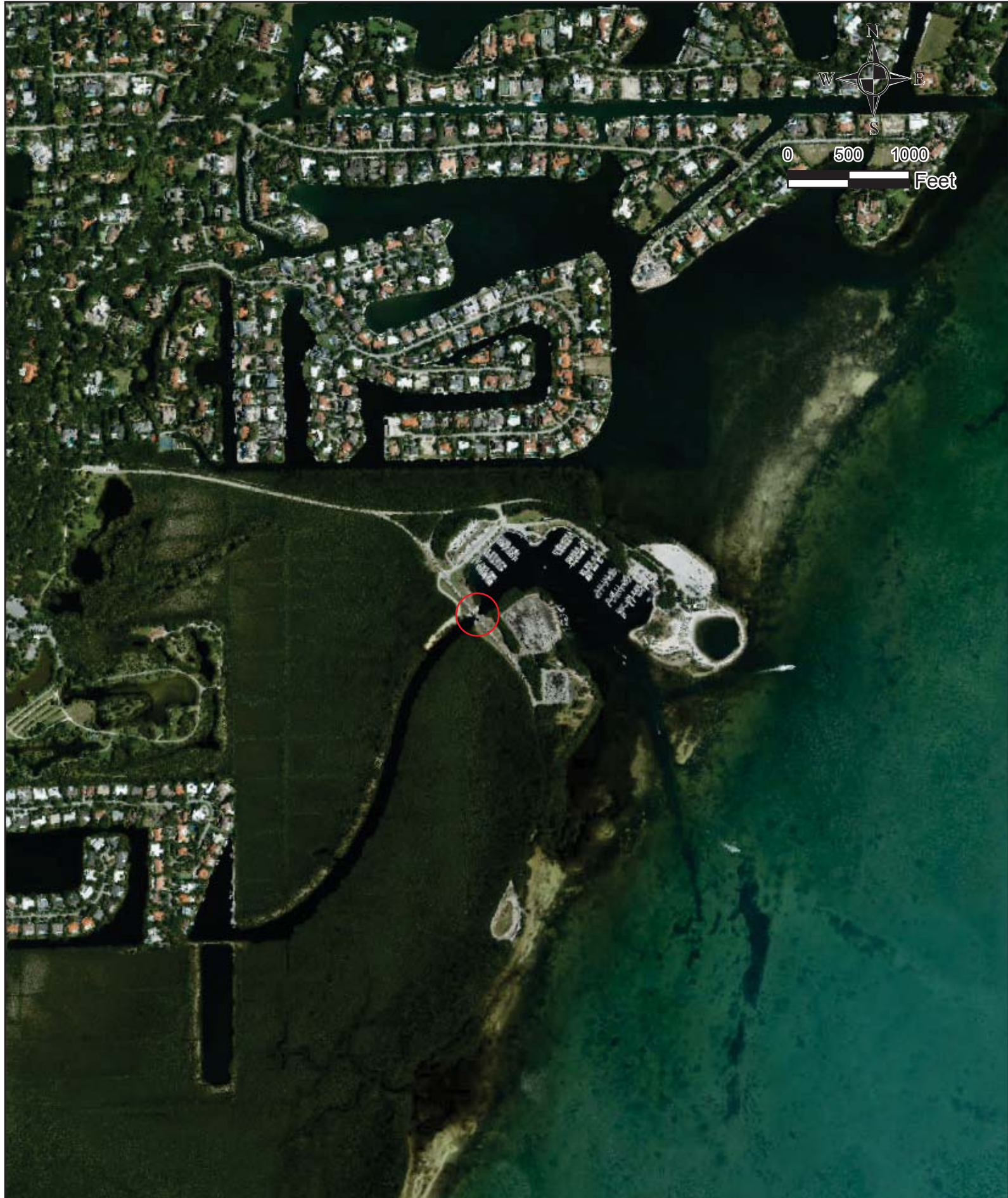
If this office can be of any further assistance regarding this determination, please address your questions to Eric Sellers, PSM, Professional Land Surveyor II, mail station No. 108 at the above letterhead address, by telephone at (850) 245-2607, or by e-mail at [Eric.Sellers@FloridaDEP.gov](mailto:Eric.Sellers@FloridaDEP.gov).

Sincerely,

*Karen McMillan, for*

Scott Woolam, PSM, Bureau Chief  
Division of State Lands  
Bureau of Survey and Mapping  
SW/es

F:\Eric\Matheson\_Hammock\_Bridge



# Legend

 Project\_Site

## 2017 AERIAL MATHESON HAMMOCK BRIDGE DADE COUNTY

FOR ILLUSTRATIVE AND INFORMATIONAL PURPOSES ONLY



INTERNAL IMPROVEMENT FUND, STATE OF FLORIDA  
QUITCLAIM DEED.

No. 18,337.

KNOW ALL MEN BY THESE PRESENTS: That the Trustees of the Internal Improvement Fund of the State of Florida, for and in consideration of the sum of Three Thousand and 00/100 Dollars (\$3,000.00), to them in hand paid by Royal Citrus Groves Company, a corporation existing under the Laws of the State of Florida, having its principal place of business in Dade County, Florida, have remised, released and quitclaimed unto the said Royal Citrus Groves Company, and their successors and assigns, forever, all of their right, title, interest, claim and demand in and to the following described land:

Beginning at the NE corner of the Southwest Quarter of the Northeast Quarter of Section 5, Township 55 South, Range 41 East; Thence run S. to the Southeast corner of the Southwest Quarter of the Southeast Quarter of said Sec. 5;

Thence West on the South line of said Sec. 5, 660 feet; Thence in a southwesterly direction through Sec. 8, T. 55 S., R. 41 E., to the SE corner of the West Half of the Southeast Quarter of the Northwest Quarter of said Sec. 8;

Thence West along the East and West Half Section line of said Section 8 and Section 7, same township and range, to the Government Meander or boundary line established in 1847; Thence northerly along said Government Meander or boundary line through said Sections 5, 7 and 8, to where said meander or boundary line intersects the North line of the South Half of the North Half of said Section 5; Thence East along the North line of the South Half of the North Half of said Sec. 5 to the NE corner of the Southwest Quarter of the Northeast Quarter of said Sec. 5, the point of beginning herein first above mentioned, containing 409.45 acres, more or less.

ALSO,

Beginning at the NE corner of the West Half of the Northwest Quarter of the Southwest Quarter of Sec. 17, in Township 55 South, Range 41 East; Thence running in a southwesterly direction, on a straight line, to the Southwest corner of said Sec. 17; Thence running in a southwesterly direction on a straight line through Sec. 19 into Sec. 30, same township and range, to the SE corner of the Northwest Quarter of the Northwest Quarter of said Sec. 30;

Thence West along the South line of the said Northwest Quarter of the Northwest Quarter of said Sec. 30 to the West line of said section; Thence North along the West line of said Sec. 30 and said Sec. 19 to the point where the West line of said Sec. 19, intersects the meander or boundary line established by the United States Government in 1847;

Thence northeasterly through Secs. 18 and 19, same township and range, along the said Government Meander or boundary line to the point where said meander or boundary line intersects the North line of the Southeast Quarter of said Sec. 18;

Thence East along the Half Section line of said Section 18 and Section 17 to the NE corner of the West Half of the Northwest Quarter of the Southwest Quarter of said Section 17, Township 55 South, Range 41 East, point of beginning, containing 662.32 acres, more or less;

Save and except Lots 4 and 6 of Section 8, in Township 55 South, Range 41 East, as said Lots 4 and 6 of said Section 8 are shown upon the supplemental plat of survey of a portion of said township and range, approved January 18, 1924, by the Commissioner of the General Land Office, said Lot 4 containing 0.07 acres, and said Lot 6 containing 0.08 acres, which have heretofore been released to the Miami Corporation.

TO HAVE AND TO HOLD the said above mentioned and described land and premises, and all the title and interest of the Trustees therein as granted to them by Section 1061 of the Revised General Statutes of Florida, unto the said Royal Citrus Groves Company

and its successors  
~~here~~ and assigns, forever.

SAVING AND RESERVING unto the Trustees of the Internal Improvement Fund of Florida, and their successors, an undivided three-fourths interest in and title in and to an undivided three-fourths interest in all the phosphate, minerals and metals that are or may be in, on or under the said above described lands, and an undivided one-half interest in and title in and to an undivided one-half interest in all the petroleum that is or may be in or under the said above described land, with the privilege to mine and develop the same.

IN WITNESS WHEREOF, The Trustees of the Internal Improvement Fund of the State of Florida have hereunto subscribed their names and affixed their seals, and have caused the seal of the DEPARTMENT OF AGRICULTURE OF THE STATE OF FLORIDA, to be hereunto affixed, at the Capitol, in the City

of Tallahassee, on this the 6th, day of January, A. D. Nineteen  
Hundred and Thirty-Six.

(SEAL)

Handed State Treasurer  
with draft attached.  
1/7/1936.

DAVID SHOLTZ (SEAL)  
Governor.

J. M. LEE (SEAL)  
Comptroller.

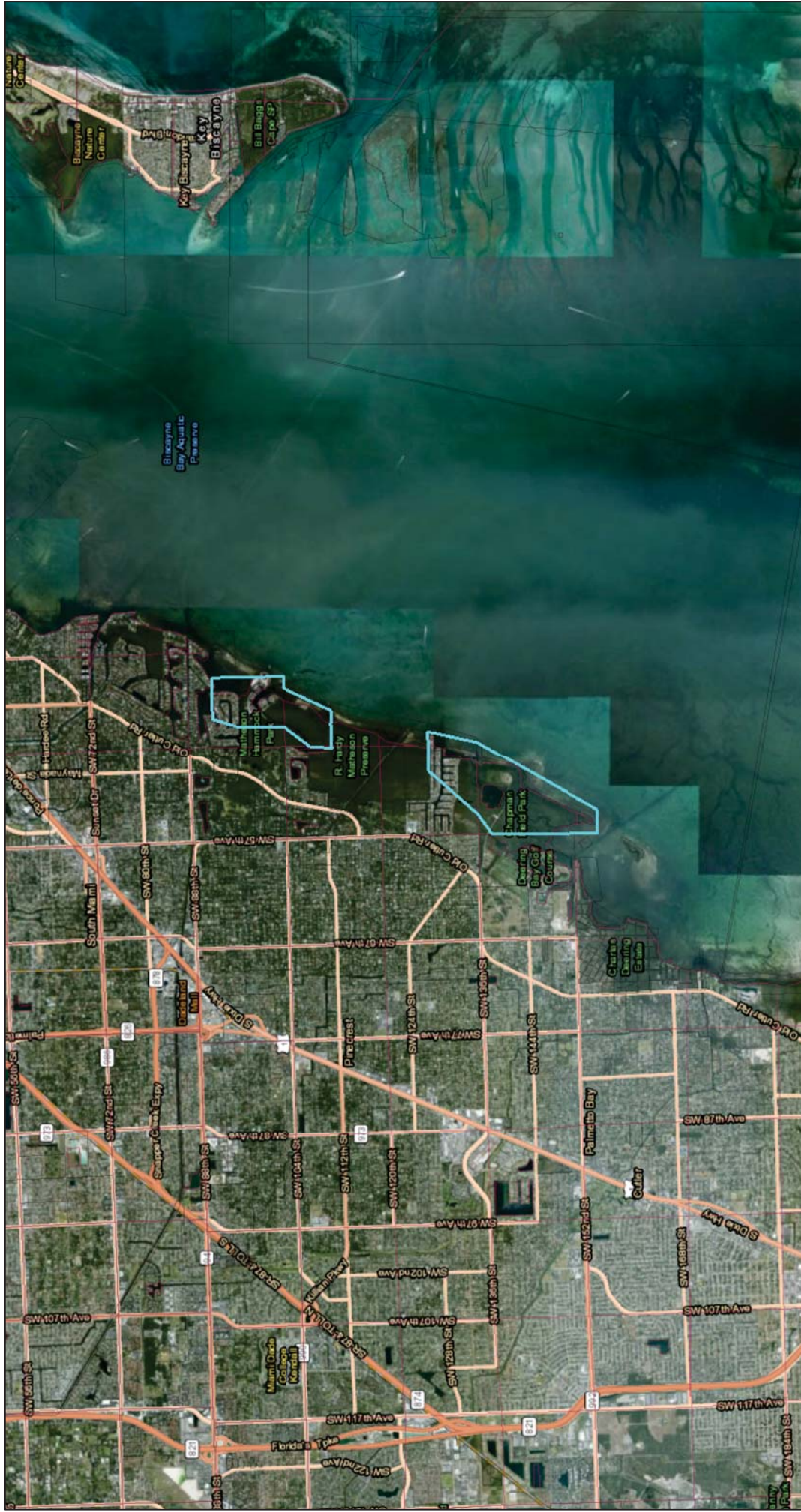
W. V. KNOTT (SEAL)  
Treasurer.

CARY D. LANDIS (SEAL)  
Attorney-General.

NATHAN MAYO (SEAL)  
Commissioner of Agriculture.



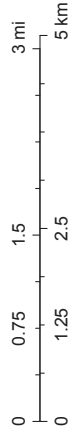
# QUITCLAIM DEED NO. 18337 (DMID 144558)



July 26, 2019

- State Land Records (BTLDSR)
- Public Land Survey System 2006

1:72,224



Esri, HERE, Garmin, (c) OpenStreetMap contributors, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus D.S., USDA, USGS, AeroGRID, IGN, and the GIS User Community, FDEP

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# **APPENDIX B**

## **USFWS IPac Tool Results**

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Miami-Dade County, Florida



## Local office

South Florida Ecological Services Field Office

☎ (772) 562-3909

📠 (772) 562-4288

1339 20th Street

Vero Beach, FL 32960-3559

<http://fws.gov/verobeach>

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

NAME

STATUS

Florida Bonneted Bat *Eumops floridanus* Endangered

Wherever found

There is **proposed** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/8630>

Florida Panther *Puma (=Felis) concolor coryi* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/1763>

Puma (=mountain Lion) *Puma (=Felis) concolor* (all subsp. except *coryi*) SAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6049>

West Indian Manatee *Trichechus manatus* Threatened

Wherever found

There is **final** critical habitat for this species. Your location overlaps the critical habitat.

<https://ecos.fws.gov/ecp/species/4469>

Marine mammal

## Birds

NAME

STATUS

Bachman's Warbler (=wood) *Vermivora bachmanii* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/3232>

Wood Stork *Mycteria americana* Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8477>

## Reptiles

NAME

STATUS

American Alligator *Alligator mississippiensis* SAT

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/776>

American Crocodile *Crocodylus acutus* Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/6604>

Eastern Indigo Snake *Drymarchon corais couperi* Threatened

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/646>

Hawksbill Sea Turtle *Eretmochelys imbricata* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/3656>

Leatherback Sea Turtle *Dermochelys coriacea* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/1493>

Loggerhead Sea Turtle *Caretta caretta* Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/1110>

## Fishes

NAME

STATUS

Gulf Sturgeon *Acipenser oxyrinchus (=oxyrhyinchus) desotoi* Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/651>

## Insects

NAME

STATUS

Bartram's Hairstreak Butterfly *Strymon acis bartrami* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/4837>

Florida Leafwing Butterfly *Anaea troglodyta floralialis* Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/6652>

Miami Blue Butterfly *Cyclargus (=Hemiargus) thomasi* Endangered  
 bethunebakeri  
 Wherever found  
 No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/3797>

## Flowering Plants

NAME	STATUS
Beach Jacquemontia <i>Jacquemontia reclinata</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/1277">https://ecos.fws.gov/ecp/species/1277</a>	Endangered
Blodgett's Silverbush <i>Argythamnia blodgettii</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6823">https://ecos.fws.gov/ecp/species/6823</a>	Threatened
Cape Sable Thoroughwort <i>Chromolaena frustrata</i> Wherever found There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. <a href="https://ecos.fws.gov/ecp/species/4733">https://ecos.fws.gov/ecp/species/4733</a>	Endangered
Carter's Mustard <i>Warea carteri</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/5583">https://ecos.fws.gov/ecp/species/5583</a>	Endangered
Carter's Small-flowered Flax <i>Linum carteri carteri</i> Wherever found There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. <a href="https://ecos.fws.gov/ecp/species/7208">https://ecos.fws.gov/ecp/species/7208</a>	Endangered
Crenulate Lead-plant <i>Amorpha crenulata</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/6470">https://ecos.fws.gov/ecp/species/6470</a>	Endangered
Deltoid Spurge <i>Chamaesyce deltoidea ssp. deltoidea</i> Wherever found No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/199">https://ecos.fws.gov/ecp/species/199</a>	Endangered

Everglades Bully	<i>Sideroxylon reclinatum</i> ssp. <i>austrofloridense</i>	Threatened
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/4735">https://ecos.fws.gov/ecp/species/4735</a>		
Florida Brickell-bush	<i>Brickellia mosieri</i>	Endangered
Wherever found		
There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available.		
<a href="https://ecos.fws.gov/ecp/species/956">https://ecos.fws.gov/ecp/species/956</a>		
Florida Pineland Crabgrass	<i>Digitaria pauciflora</i>	Threatened
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/3728">https://ecos.fws.gov/ecp/species/3728</a>		
Florida Prairie-clover	<i>Dalea carthagenensis floridana</i>	Endangered
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/2300">https://ecos.fws.gov/ecp/species/2300</a>		
Florida Semaphore Cactus	<i>Consolea corallicola</i>	Endangered
Wherever found		
There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available.		
<a href="https://ecos.fws.gov/ecp/species/4356">https://ecos.fws.gov/ecp/species/4356</a>		
Garber's Spurge	<i>Chamaesyce garberi</i>	Threatened
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/8229">https://ecos.fws.gov/ecp/species/8229</a>		
Pineland Sandmat	<i>Chamaesyce deltoidea pinetorum</i>	Threatened
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/1914">https://ecos.fws.gov/ecp/species/1914</a>		
Sand Flax	<i>Linum arenicola</i>	Endangered
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/4313">https://ecos.fws.gov/ecp/species/4313</a>		
Small's Milkpea	<i>Galactia smallii</i>	Endangered
Wherever found		
No critical habitat has been designated for this species.		
<a href="https://ecos.fws.gov/ecp/species/3360">https://ecos.fws.gov/ecp/species/3360</a>		



Tiny Polygala *Polygala smallii*

Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/996>

## Ferns and Allies

NAME

STATUS

Florida Bristle Fern *Trichomanes punctatum* ssp. *floridanum*

Endangered

Wherever found

There is **proposed** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/8739>

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME

TYPE

West Indian Manatee *Trichechus manatus*

Final

<https://ecos.fws.gov/ecp/species/4469#crithab>

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

**American Kestrel** *Falco sparverius paulus*

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

<https://ecos.fws.gov/ecp/species/9587>

Breeds Apr 1 to Aug 31

**Bald Eagle** *Haliaeetus leucocephalus*

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1626>

Breeds Sep 1 to Jul 31

**Black Skimmer** *Rynchops niger*

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/5234>

Breeds May 20 to Sep 15

Great Blue Heron <i>Ardea herodias occidentalis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Jan 1 to Dec 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
Magnificent Frigatebird <i>Fregata magnificens</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Oct 1 to Apr 30
Mangrove Cuckoo <i>Coccyzus minor</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Reddish Egret <i>Egretta rufescens</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/7617">https://ecos.fws.gov/ecp/species/7617</a>	Breeds Mar 1 to Sep 15
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9480">https://ecos.fws.gov/ecp/species/9480</a>	Breeds elsewhere
Swallow-tailed Kite <i>Elanoides forficatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8938">https://ecos.fws.gov/ecp/species/8938</a>	Breeds Mar 10 to Jun 30

**White-crowned Pigeon** *Patagioenas leucocephala* Breeds May 1 to Sep 30  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  
<https://ecos.fws.gov/ecp/species/4047>

**Willet** *Tringa semipalmata* Breeds Apr 20 to Aug 5  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Wilson's Plover** *Charadrius wilsonia* Breeds Apr 1 to Aug 20  
 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

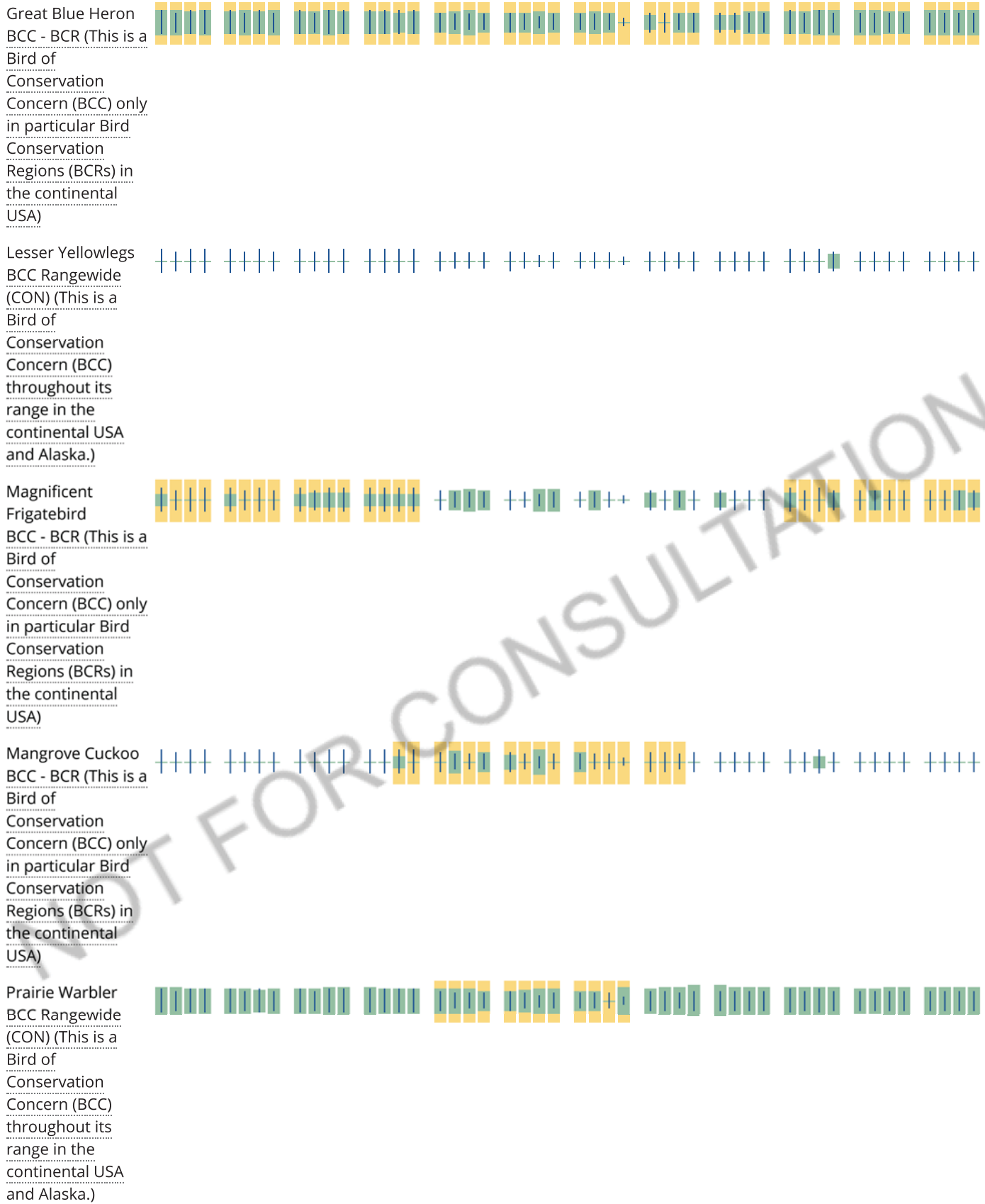
### No Data (-)

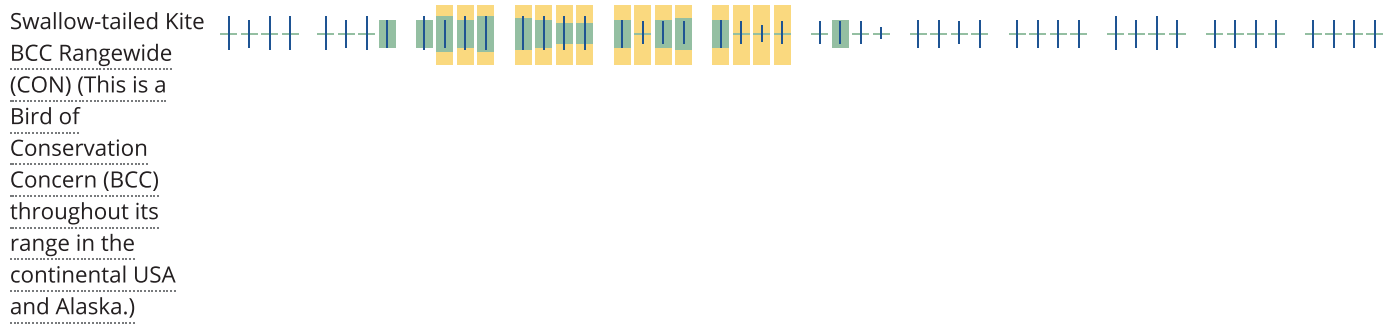
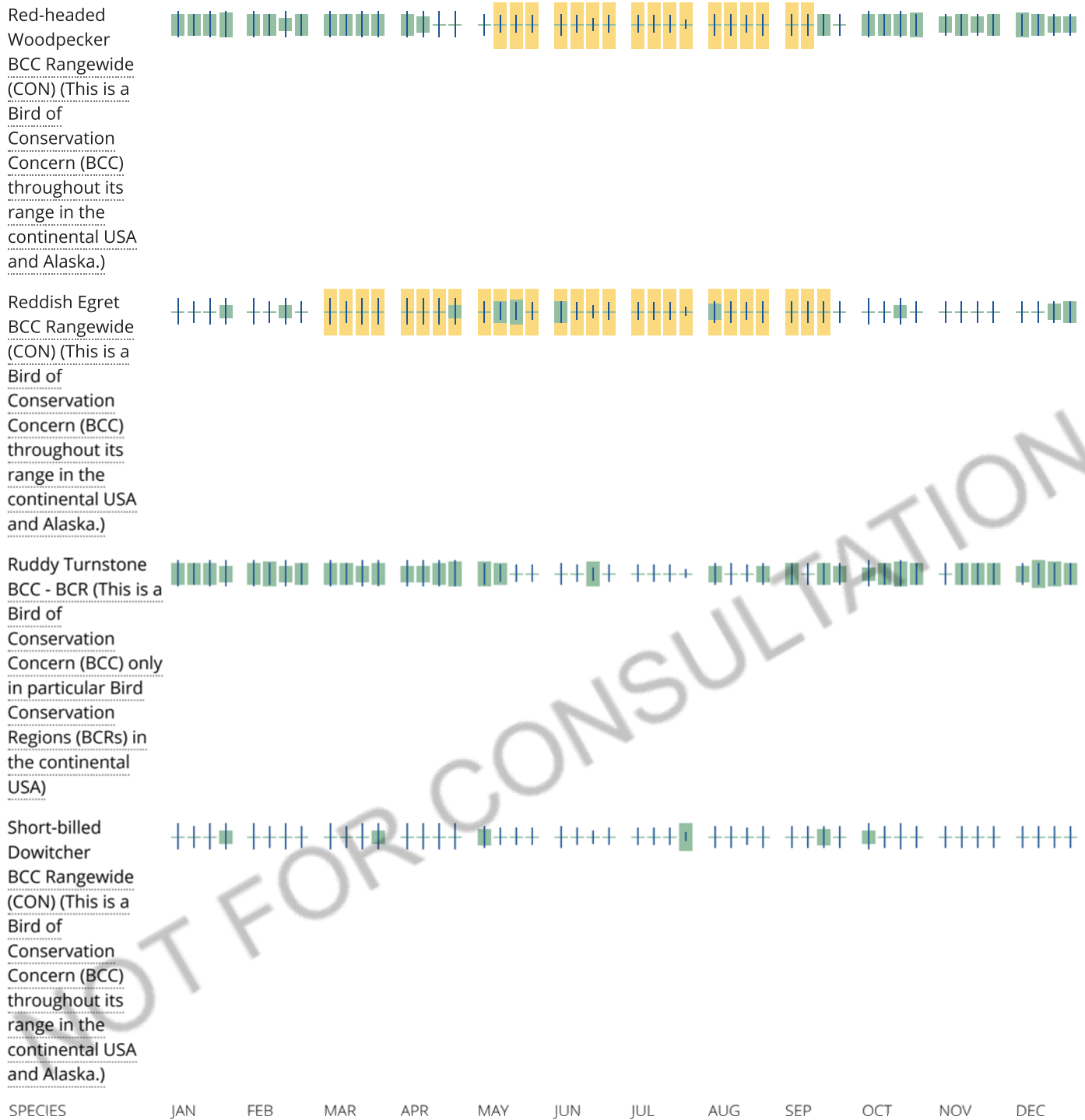
A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



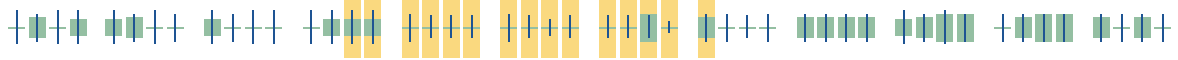




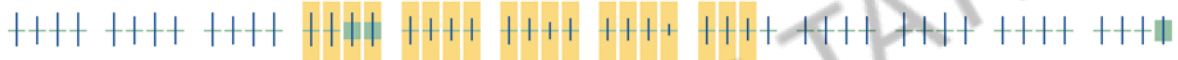
White-crowned  
Pigeon  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Willet  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



Wilson's Plover  
BCC Rangewide  
(CON) (This is a  
Bird of  
Conservation  
Concern (BCC)  
throughout its  
range in the  
continental USA  
and Alaska.)



**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).



## What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

## How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

## What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

## Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

## What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

## Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

# Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act<sup>1</sup> and the Convention on International Trade in Endangered Species of Wild Fauna and Flora<sup>2</sup>.

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries<sup>3</sup> [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

West Indian Manatee *Trichechus manatus*  
<https://ecos.fws.gov/ecp/species/4469>

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

# Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

ESTUARINE AND MARINE DEEPWATER

[E1UBLx](#)

ESTUARINE AND MARINE WETLAND

[E2SS3Nd](#)

[E2FO3N](#)

[E2FO3Pd](#)

[E2FO3P](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

# **APPENDIX C**

## **FNAI Biodiversity Matrix**



1018 Thomasville Road  
 Suite 200-C  
 Tallahassee, FL 32303  
 850-224-8207  
 850-681-9364 fax  
 www.fnai.org

FLORIDA  
**Natural Areas**  
 INVENTORY

# Florida Natural Areas Inventory

## Biodiversity Matrix Query Results

### UNOFFICIAL REPORT

Created 8/23/2021

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

### Report for 1 Matrix Unit: 67697

	<p><b>Descriptions</b></p> <p><b>DOCUMENTED</b> - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.</p> <p><b>DOCUMENTED-HISTORIC</b> - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.</p> <p><b>LIKELY</b> - The species or community is <i>known</i> to occur in this vicinity, and is considered likely within this Matrix Unit because:</p> <div style="border: 1px solid black; padding: 5px;"> <ol style="list-style-type: none"> <li>1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; <i>or</i></li> <li>2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.</li> </ol> </div> <p><b>POTENTIAL</b> - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.</p>
--	--

### Matrix Unit ID: 67697

#### 2 Documented Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Aphrissa neleis</i> Pink-spot Sulphur	GU	S2	N	N
<i>Polites baracoa</i> Baracoa Skipper	G4	S3	N	N

#### 0 Documented-Historic Elements Found

#### 6 Likely Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
<i>Aphrissa statira</i> Statira	G5	S2S3	N	N

<i>Eumaeus atala</i> Atala	G4	S2	N	N
<i>Lomariopsis kunzeana</i> Holly Vine Fern	G2G4	S1	N	E
<i>Rockland hammock</i>	G2	S2	N	N
<i>Strymon martialis</i> Martial Scrub-Hairstreak	G3G5	S2S3	N	N
<a href="#">Trichechus manatus</a> West Indian Manatee	G2	S2	LE	FE

**Matrix Unit ID: 67697**55 **Potential** Elements for Matrix Unit 67697

<b>Scientific and Common Names</b>	<b>Global Rank</b>	<b>State Rank</b>	<b>Federal Status</b>	<b>State Listing</b>
<i>Adiantum tenerum</i> Brittle Maidenhair Fern	G5	S3	N	E
<i>Amyris balsamifera</i> Balsam Torchwood	G4	SX	N	N
<i>Anomala robinsoni</i> Robinson's Anomala Scarab Beetle	G1?	S1?	N	N
<i>Ardea herodias occidentalis</i> Great White Heron	G5T2	S2	N	N
<a href="#">Asplenium serratum</a> American Bird's Nest Fern	G4	S1	N	E
<a href="#">Athene cunicularia floridana</a> Florida Burrowing Owl	G4T3	S3	N	SSC
<a href="#">Bourreria cassinifolia</a> Smooth Strongbark	G3?	S1	N	E
<a href="#">Caretta caretta</a> Loggerhead Sea Turtle	G3	S3	T	FT
<a href="#">Chamaesyce deltoidea ssp. adhaerens</a> Hairy Deltoid Spurge	G2T1	S1	LE	E
<a href="#">Chamaesyce deltoidea ssp. deltoidea</a> Deltoid Spurge	G2T1	S1	LE	E
<a href="#">Chamaesyce garberi</a> Garber's Spurge	G1	S1	LT	E
<a href="#">Chamaesyce porteri</a> Porter's Broad-leaved Spurge	G2	S2	N	E
<a href="#">Chelonia mydas</a> Green Sea Turtle	G3	S2S3	LE	FE
<i>Coccothrinax argentata</i> Silver Palm	G4	S3	N	T
<i>Cochlodinella poeyana</i> Truncate Urocoptid	G1G2	S1S2	N	N
<i>Conradina grandiflora</i> Large-flowered Rosemary	G3	S3	N	T
<a href="#">Crocodylus acutus</a> American Crocodile	G2	S2	LT	FT
<i>Crossopetalum ilicifolium</i> Christmas Berry	G3	S3	N	T
<i>Ctenitis sloanei</i> Florida Tree Fern	G5	S2	N	E
<i>Ctenogobius stigmaturus</i> Spottail Goby	G2	S2	N	N
<i>Cyclocephala miamiensis</i> Miami Chafer Beetle	G1?	S1?	N	N
<a href="#">Dalea carthagenensis var. floridana</a> Florida Prairie Clover	G5T1	S1	C	E
<a href="#">Drymarchon couperi</a> Eastern Indigo Snake	G3	S3	LT	FT
<i>Eburia stroheckeri</i> Strohecker's Ivory-Spotted Long-Horned Beetle	G1G2	S1S2	N	N
<i>Elytraria caroliniensis var. angustifolia</i>	G4T2	S2	N	N



Narrow-leaved Carolina Scalystem				
<a href="#">Encyclia cochleata var. triandra</a>	G4G5T2	S2	N	E
Clamshell Orchid				
<a href="#">Eretmochelys imbricata</a>	G3	S1	LE	FE
Hawksbill Sea Turtle				
<a href="#">Eugenia confusa</a>	G4G5	S2S3	N	E
Tropical Ironwood				
<a href="#">Eumops floridanus</a>	G1	S1	LE	FE
Florida bonneted bat				
<i>Forestiera segregata var. pinetorum</i>	G4T2	S2	N	N
Florida Pinewood Privet				
<a href="#">Galactia pinetorum</a>	G2Q	S2	N	N
Pineland Milkpea				
<i>Gambusia rhizophorae</i>	G3	S3	N	N
Mangrove Gambusia				
<a href="#">Glandularia maritima</a>	G3	S3	N	E
Coastal Vervain				
<a href="#">Gopherus polyphemus</a>	G3	S3	C	ST
Gopher Tortoise				
<a href="#">Halophila johnsonii</a>	G2	S2	LT	E
Johnson's Seagrass				
<a href="#">Jacquemontia curtissii</a>	G2	S2	N	T
Pineland Jacquemontia				
<a href="#">Lantana depressa var. depressa</a>	G2T1	S1	N	E
Florida Lantana				
<a href="#">Linum carteri var. smallii</a>	G2T2	S2	N	E
Small's Flax				
<a href="#">Patagioenas leucocephala</a>	G3	S3	N	ST
White-crowned Pigeon				
<i>Phyllanthus pentaphyllus var. floridanus</i>	G4T2	S2	N	N
Florida Five-petaled Leaf-flower				
<a href="#">Polygala smallii</a>	G1	S1	LE	E
Tiny Polygala				
<i>Prunus myrtifolia</i>	G4	S2	N	T
West Indian Cherry				
<i>Pteris bahamensis</i>	G4	S3	N	T
Bahama Brake				
<i>Rallus longirostris scottii</i>	G5T3?	S3?	N	N
Florida Clapper Rail				
<i>Rivulus marmoratus</i>	G4G5	S3	SC	SSC
Mangrove Rivulus				
<i>Roystonea elata</i>	G2G3	S2	N	E
Florida Royal Palm				
<i>Sachsia polycephala</i>	G2	S2	N	T
Bahama Sachsia				
<i>Selaginella eatonii</i>	G2G3	S2	N	E
Eaton's Spike Moss				
<i>Setophaga discolor paludicola</i>	G5T3	S3	N	N
Florida Prairie Warbler				
<i>Swietenia mahagoni</i>	G3G4	S3	N	T
West Indies Mahogany				
<a href="#">Tantilla oolitica</a>	G1G2	S1S2	N	ST
Rim Rock Crowned Snake				
<a href="#">Tephrosia angustissima var. corallicola</a>	G1T1	S1	N	E
Rockland Hoary-pea				
<i>Tragia saxicola</i>	G2	S2	N	T
Pineland Noseburn				
<i>Trichomanes punctatum ssp. floridanum</i>	G4G5T1	S1	E	E
Florida Filmy Fern				
<i>Tripsacum floridanum</i>	G2	S2	N	T
Florida Gama Grass				

**Disclaimer**

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

**Unofficial Report**

These results are considered unofficial. FNAI offers a [Standard Data Request](#) option for those needing certifiable data.

# **APPENDIX D**

## **Effect Determination Key for the Florida Bonneted Bat**



## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
South Florida Ecological Services Office  
1339 20<sup>th</sup> Street  
Vero Beach, Florida 32960  
October 22, 2019

Shawn Zinszer  
U.S. Army Corps of Engineers  
Post Office Box 4970  
Jacksonville, Florida 32232-0019

Subject: Consultation Key for the Florida bonneted bat; 04EF2000-2014-I-0320-R001

Dear Mr. Zinszer:

This letter replaces the December 2013, Florida bonneted bat guidelines provided to the U.S. Army Corps of Engineers (Corps) to assist your agency with effect determinations within the range of the Florida bonneted bat (*Eumops floridanus*). This October 2019 revision supersedes all prior versions. The enclosed *Florida Bonneted Bat Consultation Guidelines* and incorporated *Florida Bonneted Bat Consultation Key* (Key) are provided pursuant to the U.S. Fish and Wildlife Service's (Service) authorities under the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C.1531 *et seq.*). This letter, guidelines, and Key have been assigned Service Consultation Code: 41420- 04EF2000-2014-I-0320-R001.

The purpose of the guidelines and Key is to aid the Corps (or other Federal action agency) in making appropriate effect determinations for the Florida bonneted bat under section 7 of the Act, and streamline informal consultation with the Service for the Florida bonneted bat when the proposed action is consistent with the Key. There is no requirement to use the Key. There will be cases when the use of the Key is not appropriate. These include, but are not limited to: where project specific information is outside of the scope of the Key, applicants do not wish to implement the identified survey or best management practices, or if there is new biological information about the species. In these cases, we recommend the Corps (or other Federal action agency) initiate traditional consultation pursuant to section 7 of the Act, and identify that consultation is being requested outside of the Key.

This Key uses type of habitat (*i.e.*, roosting or foraging), survey results, and project size as the basis for making determinations of "may affect, but is not likely to adversely affect" (MANLAA) and "may affect, and is likely to adversely affect" (LAA). The Key is structured to focus on the type(s) of habitat that will be affected by a project. When proposed project areas provide features that could support roosting of Florida bonneted bats, it is considered roosting habitat. If evaluation of roosting habitat determines that roosting is not likely, then the area is subsequently evaluated for its value to the species as foraging habitat.

### Roosting habitat

The guidelines describe the features of roosting habitat. When a project is proposed in roosting habitat, the likelihood that roosting is occurring is evaluated through surveys (*i.e.*, full acoustic or limited roost). When a roost is expected and the proposed activity will affect that roost, formal consultation is required. This is because the proposed activity is expected to take individuals through the destruction of the roost and the appropriate determination is that the project may affect, and is likely to adversely affect (LAA) the species. When roosting is expected, but all impacts to the roost can be avoided, and only foraging habitat (without roost structure) will be affected, the Service finds that it is reasonable to conclude that the proposed action is not likely to impair feeding, breeding, or sheltering. Thus, the proposed project may affect, but is not likely to affect the Florida bonneted bat (MANLAA).

The exception to this logic path is if the proposed action will affect more than 50 acres of foraging habitat in proximity to the roost. Under this scenario, we anticipate that the loss of the larger amount of foraging habitat near the roost could significantly impair feeding of young and overall breeding (*i.e.*, LAA). Consequently, these projects would require formal consultation to analyze the effect of the incidental take.

If the roost surveys demonstrate that roosting is not likely, the project is then evaluated for its effects to foraging habitat. Our evaluation of these actions is described below. The exception is for projects less than or equal to 5 acres if a limited roost survey is conducted. Limited roost surveys rely on peeping and visual surveys to determine whether roosting is likely. On these small projects, this survey strategy is believed to be more economical and is considered a reasonable effort to evaluate the potential for roosting. The Service acknowledges that this approach is less reliable in evaluating the likelihood of roosting when it is not combined with acoustic surveys. Therefore, when limited roost surveys are conducted for projects that are less than or equal to 5 acres in size and the determination is that roosting is not likely, we conclude that the proposed project may affect, but is not likely to adversely affect the species (MANLAA).

### Foraging habitat

The guidelines describe the features of foraging habitat. Data informing the home range size of the Florida bonneted bats is limited. Global Positioning System (GPS) and radio-telemetry data for Florida bonneted bats documents that they move large distances and likely have large home ranges. Data from recovered GPS satellite tags on Florida bonneted bats tagged at Babcock-Webb Wildlife Management Area (BWWMA) found the maximum distance detected from a capture site was 24.2 mi (38.9 km); the greatest path length travelled in a single night was 56.3 mi (90.6 km) (Ober 2016; Webb 2018a-b). At BWWMA, researchers found that most individual locations were within one mile of the roost (point of capture) (Ober 2015). Additional data collected during the month of December documented the mean maximum distance Florida bonneted bats (n=8) with tags traveled from the roost was 9.5 mi (Webb 2018b).

The Service recognizes that the movement information comes from only one site (BWWMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in

habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Regardless, we use these studies as our best available information to evaluate when changes to foraging habitat may have an effect on the species ability to feed, breed, and shelter and subsequently result in incidental take. When considering where most of the nightly activity was observed, we calculate a foraging area centered on a roost with a 1 mile radius would include approximately 2,000 acres, and a foraging area centered on a 9.5 mile radius would encompass approximately 181,000 acres, on any given night.

Given the Service's limited understanding of how the Florida bonneted bat moves throughout its home range and selects foraging areas, we choose to use 50 acres of habitat as a conservative estimate to when loss of foraging habitat may affect the fitness of an individual to the extent that it would impair feeding and breeding. Projects that would remove, destroy or convert less than 50 acres of Florida bonneted bat foraging habitat are expected to result in a loss of foraging opportunities; however, this decrease is not expected to significantly impair the ability of the individual to feed and breed. Consequently, projects impacting less than 50 acres of foraging habitat that implement the identified best management practices in the Key would be expected to avoid take, and the appropriate determination is that the project may affect, but is not likely to adversely affect the species (MANLAA).

Next, the Service incorporated the level of bat activity into our Key to evaluate when a foraging area may have greater value to the species. When surveys document high bat activity, we deduce that this area has increased value and importance to the species. Thus, when high bat activity is detected in parcels with greater than 50 acres of foraging habitat, we anticipate that the loss, destruction, or conversion of this habitat could significantly impair the ability of an individual to feed and breed (*i.e.*, LAA); thus formal consultation is warranted.

If surveys do not indicate high bat activity, we anticipate that loss of this additional foraging habitat may affect, but is not likely to adversely affect the species (MANLAA). This is because although the acreage is large, the area does not appear to be important at the landscape scale of nightly foraging. Therefore, its loss is not anticipated to significantly impair the ability of an individual to feed or breed.

The exception to this approach is for projects greater than 50 acres when they occur in potential roosting habitat that is not found to support roosting or high bat activity. Under this scenario, the Service concludes that the loss of the large acreage of suitable roosting habitat has the potential to significantly impair the ability of an individual to breed or shelter (*i.e.*, LAA) because the species' roosting cavities are expected to be limited range wide and the project will impair these limited opportunities for roosting.

### Determinations

The Corps (or other Federal action agency) may reach one of several determinations when using this Key. Regardless of the determination, when acoustic bat surveys have been conducted, the Service requests that these survey results are provided to our office to increase our knowledge of

the species and improve our consultation process. Survey results and reports should be transmitted to the Service at [FBBsurveyreport@fws.gov](mailto:FBBsurveyreport@fws.gov) or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20th Street, Vero Beach, Florida 32960. When formal consultation is requested, survey results and reports should be submitted with the consultation request to [verobeach@fws.gov](mailto:verobeach@fws.gov).

**No effect:** If the use of the Key results in a determination of “no effect,” no further consultation is necessary with the Service. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.

**May Affect, Not Likely to Adversely Affect (MANLAA):** In this Key we have identified two ways that consultation can conclude informally, MANLAA-P and MANLAA-C.

**MANLAA-P:** If the use of the Key results in a determination of “MANLAA- P,” the Service concurs with this determination based on the rationale provide above, and no further consultation is necessary for the effects of the proposed action on the Florida bonneted bat. The Service recommends that the Corps (or other Federal action agency) documents the pathway used to reach the determination in the project record and proceeds with other species analyses as warranted.

**MANLAA-C:** If the use of the Key results in a determination of MANLAA-C, further consultation with the Service is required to confirm that the Key has been used properly, and the Service concurs with the evaluation of the survey results. Survey results should be submitted with the consultation request.

**May Affect, Likely to Adversely Affect (LAA) -** When the determination in the Key is “LAA” technical assistance with the Service and modifications to the proposed action may enable the project to be reevaluated and conclude with a MANLAA-C determination. Under other circumstance, “LAA” determinations will require formal consultation.

Working with the Fish and Wildlife Foundation of Florida, the Service has established a fund to support conservation and recovery for the Florida bonneted bat. Any project that has the potential to affect the Florida bonneted bat and/or its habitat is encouraged to make a voluntary contribution to this fund. If you would like additional information about how to make a contribution and how these monies are used to support Florida bonneted bat recovery please contact Ashleigh Blackford, Connie Cassler, or José Rivera at 772-562-3909.

This revised Key is effective immediately upon receipt by the Corps. Should circumstances change or new information become available regarding the Florida bonneted bat and/or implementation of the Key, the determinations herein may be reconsidered and this Key further revised or amended. We have established an email address to collect comments on the Key and the survey protocols at: [FBBguidelines@fws.gov](mailto:FBBguidelines@fws.gov).

Thank you for your continued cooperation in the effort to conserve fish and wildlife resources. If you have any questions regarding this Key, please contact the South Florida Ecological Services Office at 772-562-3909.

Sincerely,



Roxanna Hinzman  
Field Supervisor  
South Florida Ecological Services

Enclosure

Cc: electronic only

Corps, Jacksonville, Florida (Dale Beter, Muriel Blaisdell, Ingrid Gilbert, Alisa Zarbo, Melinda Charles-Hogan, Susan Kaynor, Krista Sabin, John Fellows)

#### **LITERATURE CITED**

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**U.S. Fish and Wildlife Service  
South Florida Ecological Services Office**

**FLORIDA BONNETED BAT CONSULTATION GUIDELINES**

*October - 2019*

The U.S. Fish and Wildlife Service’s South Florida Ecological Services Field Office (Service) developed the Florida Bonneted Bat Consultation Guidelines (Guidelines) to assist in avoiding and minimizing potential negative effects to roosting and foraging habitat, and assessing effects to the Florida bonneted bat (*Eumops floridanus*) from proposed projects. The Consultation Key within the Guidelines assists applicants in evaluating their proposed projects and identifying the appropriate consultation paths under sections 7 and 10 of the Endangered Species Act of 1973 (Act), as amended (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). These Guidelines are primarily for use in evaluating regulatory projects where development and land conversions are anticipated. These Guidelines focus on conserving roosting structures in natural and semi-natural environments. The following Consultation Area map (Figure 1 and Figure 2, Appendix A), Consultation Flowchart (Figure 3), Consultation Key, Survey Framework (Appendices B-C), and **Best Management Practices (BMPs)** (Appendix D) are based upon the best available scientific information. As more information is obtained, these Guidelines will be revised as appropriate. If you have comments, or suggestions on these Guidelines or the Survey Protocols (Appendix B and C), please email your comments to [FBBguidelines@fws.gov](mailto:FBBguidelines@fws.gov). These comments will be reviewed and incorporated in an annual review.

Terms in <b>bold</b> are further defined in the Glossary.
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Wherever possible, proposed development projects within the Consultation Area should be designed to avoid and minimize take of Florida bonneted bats and to retain their habitat. Applicants are encouraged to enter into early technical assistance/consultation with the Service so we may provide recommendations for avoiding and minimizing adverse effects. Although these Guidelines focus on the effects of a proposed action (*e.g.*, development) on natural habitat, (*i.e.*, non-urban), Appendix E also provides Best Management Practices for Land Management Projects.

If you are renovating an existing artificial structure (*e.g.*, building) within the urban environment with or without additional ground disturbing activities, these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance.

The final listing rule for the Florida bonneted bat (Service 2013) describes threats identified for the species. Habitat loss and degradation, as well as habitat modification, have historically affected the species. Florida bonneted bats are different from most other Florida bat species because they are reproductively active through most of the year, and their large size makes them capable of foraging long distances from their roost (Ober *et al.* 2016). Consequently, this species is vulnerable to disturbances around the roost during a greater portion of the year and considerations about foraging habitat extend further than the localized roost.

### **Use of Consultation Area, Flowchart, and Key**

Figure 1 shows the Consultation Area for the Florida bonneted bat where this consultation guidance applies. For information on how the Consultation Area was delineated see Appendix A. The Consultation Flowchart (Figure 3) and Consultation Key direct project proponents through a series of couplets that will provide a conclusion or determination for potential effects to the Florida bonneted bat. *Please Note: If additional listed species, or candidate or proposed species, or designated or proposed critical habitat may be affected, a separate evaluation will be needed for these species/critical habitats.*

Currently, the Consultation Flowchart (Figure 3) and Consultation Key cannot be used for actions proposed within the urban development boundary in Miami-Dade and Broward County. The urban development boundary is part of the Consultation Area, but it is excluded from these Guidelines because Florida bonneted bats use this area differently (roosting largely in artificial structures), and small natural foraging areas are expected to be important. Applicants with projects in this area should contact the Service for further guidance and individual consultation.

Determinations may be either “no effect,” “may affect, but is not likely to adversely affect” (**MANLAA**), or “may affect, and is likely to adversely affect” (**LAA**). An applicant’s willingness and ability to alter project designs could sufficiently minimize effects to Florida bonneted bats and allow for a **MANLAA** determination for this species (informal consultation). The Service is available for early technical assistance/consultation to offer recommendations to assist in project design that will minimize effects. When take cannot be avoided, applicants and action agencies are encouraged to incorporate compensation to offset adverse effects. The Service can assist with identifying compensation options (*e.g.*, conservation on site, conservation off-site, contributions to the Service’s Florida bonneted bat conservation fund, *etc.*).

### **Using the Key and Consultation Flowchart**

- “No effect” determinations do not need Service concurrence.
- “May affect, but is not likely to adversely affect” **MANLAA**. Applicants will be expected to incorporate the appropriate BMPs to reach a **MANLAA** determination.
  - **MANLAA-P** (in blue in Consultation Flowchart) have programmatic concurrence through the transmittal letter of these Guidelines, and therefore no further consultation with the Service is necessary unless assistance is needed in interpreting survey results.
  - **MANLAA-C** (in black in Consultation Flowchart) determinations require further consultation with the Service.
- “May affect, and is likely to adversely affect” (**LAA**) determinations require consultation with the Service. Project modifications could change the **LAA** determinations in numbers 5, 8, 9, 11, 12, and 17 to **MANLAA**. When take cannot be avoided, **LAA** determinations will require a biological opinion.
- The Service requests copies of surveys used to support all determinations. If a survey is required by the Consultation Key and the final determination is “no effect” or “MANLAA-P”, send the survey to [FBBsurveyreport@fws.gov](mailto:FBBsurveyreport@fws.gov), or mail electronic file to U.S. Fish and Wildlife Service, Attention Florida bonneted bat surveys, 1339 20<sup>th</sup> Street, Vero Beach, Florida 32960. If a survey is required by the Consultation Key and the determination is “MANLAA-C” or “LAA”, submit the survey in the consultation request.

For the purpose of making a decision at Couplet 2: If any potential roosting structure is present, then the habitat is classified as **potential roosting habitat**, and the left half of the flowchart should be followed (see Figure 3). We recognize that roosting habitat may also be used by Florida bonneted bats for foraging. If the project site only consists of **foraging habitat** (*i.e.*, no suitable roosting structures), then the right side of the flowchart should be followed beginning at step 13.

For couplets 11 and 12: **Potential roosting habitat** is considered **Florida bonneted bat foraging habitat** when a determination is made that roosting is not likely.

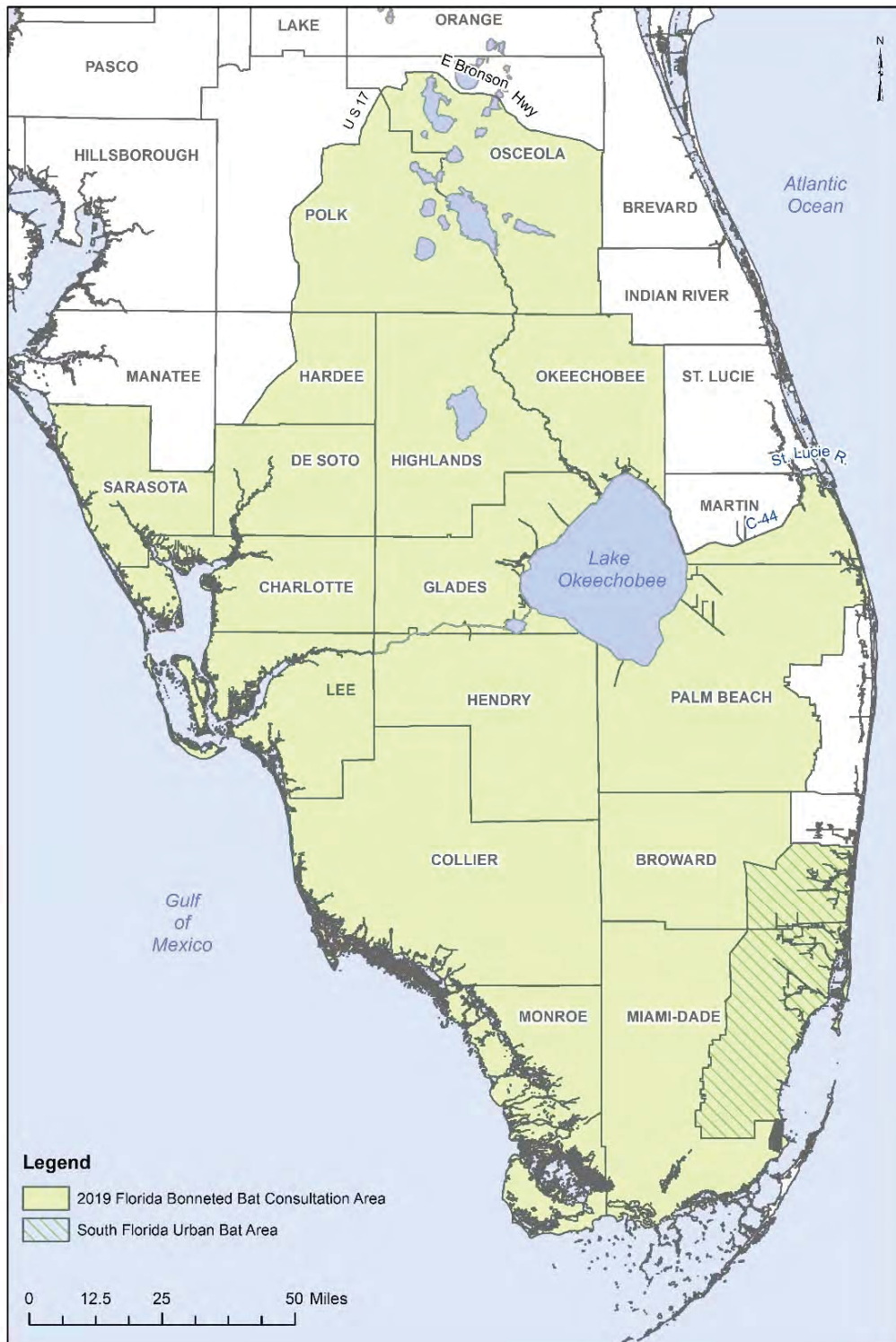


Figure 1. Florida Bonneted Bat Consultation Area. Hatched area (Figure 2) identifies the urban development boundary in Miami-Dade and Broward County. Applicants with projects in this area should contact the Service for specific guidance addressing this area and individual consultation. The Consultation Key should not be used for projects in this area.

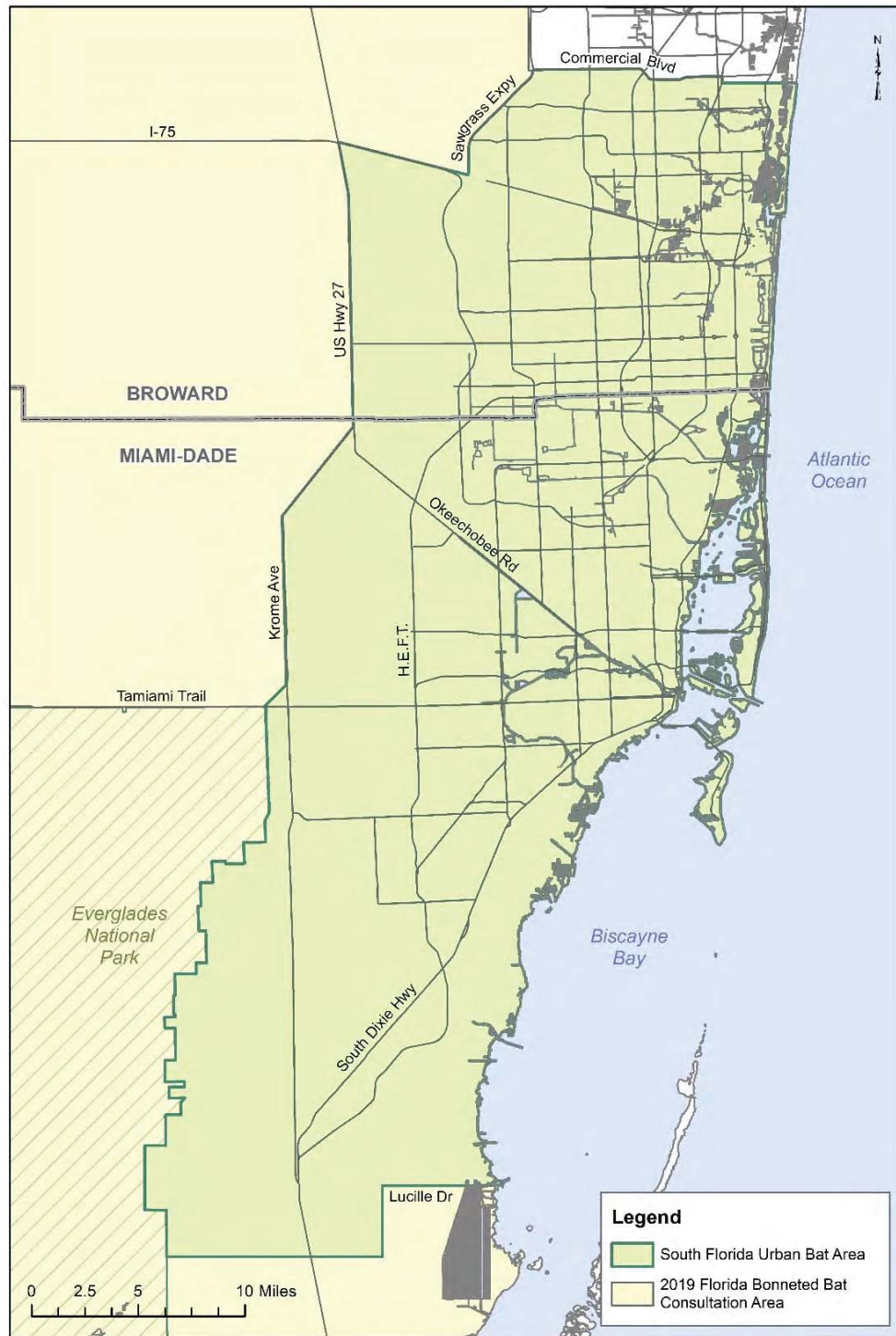


Figure 2. Urban development boundary in Miami-Dade and Broward County. The Consultation Key should not be used for projects in this area. Applicants with projects in this South Florida Urban Bat Area should contact the Service for specific guidance addressing this area and individual consultation.

## Florida Bonneted Bat Consultation Key<sup>#</sup>

Use the following key to evaluate potential effects to the Florida bonneted bat (FBB) from the proposed project. Refer to the Glossary as needed.

- 1a. Proposed project or land use change is partially or wholly within the Consultation Area (Figure 1).....**Go to 2**
- 1b. Proposed project or land use change is wholly outside of the Consultation Area (Figure 1).....**No Effect**
  
- 2a. Potential FBB roosting habitat exists within the project area.....**Go to 3**
- 2b. No potential FBB roosting habitat exists within the project area.....**Go to 13**
  
- 3a. Project size/footprint\*  $\leq$  5 acres (2 hectares)..... **Conduct Limited Roost Survey (Appendix C)**  
then **Go to 4**
- 3b. Project size/footprint\*  $>$  5 acres (2 hectares).....**Conduct Full Acoustic/Roost Surveys (Appendix B)** then  
**Go to 6**
  
- 4a. Results show FBB roosting is likely .....**Go to 5**
- 4b. Results do not show FBB roosting is likely.....**MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**
  
- 5a. Project will affect roosting habitat.....**LAA<sup>+</sup> Further consultation with the Service required.**
- 5b. Project will not affect roosting habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**
  
- 6a. Results show some FBB activity.....**Go to 7**
- 6b. Results show no FBB activity.....**No Effect**
  
- 7a. Results show FBB roosting is likely.....**Go to 8**
- 7b. Results do not show FBB roosting is likely.....**Go to 10**
  
- 8a. Project will not affect roosting habitat.....**Go to 9**
- 8b. Project will affect roosting habitat.....**LAA<sup>+</sup> Further consultation with the Service required.**
  
- 9a. Project will affect\*  $>$  50 acres (20 hectares) (wetlands and uplands) of foraging habitat.....**LAA<sup>+</sup> Further consultation with the Service required.**
- 9b. Project will affect\*  $\leq$  50 acres (20 hectares) (wetlands and uplands) of foraging habitat..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**
  
- 10a. Results show high FBB activity/use.....**Go to 11**
- 10b. Results do not show high FBB activity/use.....**Go to 12**
  
- 11a. Project will affect\*  $>$  50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)..... **LAA<sup>+</sup> Further consultation with the Service required.**
- 11b. Project will affect\*  $\leq$  50 acres (20 hectares) (wetlands and uplands) of FBB habitat (roosting and/or foraging)..... **MANLAA-C with required BMPs (Appendix D). Further consultation with the Service required.**
  
- 12a. Project will affect\*  $>$  50 acres (20 hectares) (wetlands and uplands) of FBB habitat..... **LAA<sup>+</sup> Further consultation with the Service required.**
- 12b. Project will affect\*  $\leq$  50 acres (20 hectares) (wetlands and uplands) of FBB habitat..... **MANLAA-P if BMPs (Appendix D) used and survey reports are submitted. Programmatic concurrence.**

- 13a. FBB foraging habitat exists within the project area and foraging habitat will be affected.....**Go to 14**
- 13b. FBB foraging habitat exists within the project area and foraging habitat will not be affected **OR** no FBB foraging habitat exists within the project area.....**No Effect**
- 14a. Project size\* > 50 acres (20 hectares) (wetlands and uplands) .....**Go to 15**
- 14b. Project size\* ≤ 50 acres (20 hectares) (wetlands and uplands) ..... **MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**
- 15a. Project is within 8 miles (12.9 kilometers) of high quality potential roosting areas^.....**Conduct Full Acoustic Survey (Appendix B) and Go to 16**
- 15b. Project is not within 8 miles (12.9 kilometers) of high quality potential roosting area^.....**MANLAA-P if BMPs (Appendix D) used. Programmatic concurrence.**
- 16a. Results show some FBB activity.....**Go to 17**
- 16b. Results show no FBB activity.....**No Effect**
- 17a. Results show high FBB activity/use.....**LAA+ Further consultation with the Service required.**
- 17b. Results do not show high FBB activity/use..... **MANLAA-P if BMPs (Appendix D) used and survey reports submitted. Programmatic concurrence.**

# If you are within the urban environment and you are renovating an existing artificial structure (with or without additional ground disturbing activities), these Guidelines do not apply. The Service is developing separate guidelines for consultation in these situations. Until the urban guidelines are complete, please contact the Service for additional guidance

\*Includes wetlands and uplands that are going to be altered along with a 250- foot (76.2- meter) buffer around these areas if the parcel is larger than the altered area.

+Project modifications could change the LAA determinations in numbers 5, 8, 9, 11, 12, and 17 to MANLAA determinations.

^Determining if **high quality potential roosting areas** are within 8 mi (12.9 km) of a project is intended to be a desk-top exercise looking at most recent aerial imagery, not a field exercise.





## GLOSSARY

**BMPs** – Best Management Practices. Recommendations for actions to conserve roosting and foraging habitat to be implemented before, during, and after proposed development, land use changes, and land management activities.

**FBB Activity** – Florida bonneted bat (FBB) activity is when any Florida bonneted bat calls are recorded during an acoustic survey or human observers see or hear Florida bonneted bats on a site.

**FORAGING HABITAT** - Comprised of relatively open (*i.e.*, uncluttered or reduced numbers of obstacles, such as fewer tree branches and leaves, in the flight environment) areas to find and catch prey, and sources of drinking water. In order to find and catch prey, Florida bonneted bats forage in areas with a reduced number of obstacles. This includes: open fresh water, permanent or seasonal freshwater wetlands, within and above wetland and upland forests, wetland and upland shrub, and agricultural lands (Bailey *et al.* 2017). In urban and residential areas drinking water, prey base, and suitable foraging can be found at golf courses, parking lots, and parks in addition to relatively small patches of natural habitat.

**FULL ACOUSTIC/ROOST SURVEY** - This is a comprehensive survey that will involve systematic acoustic surveys (*i.e.*, surveys conducted 30 minutes prior to sunset to 30 minutes after sunrise, over multiple consecutive nights). Depending upon acoustic results and habitat type, targeted roost searches through thorough visual inspection using a tree-top camera system or observations at emergence (*e.g.*, looking and listening for bats to come out of tree cavities around sunset) or more acoustic surveys may be necessary. See Appendix B for a full description.

**HIGH FBB ACTIVITY/USE** - High Florida bonneted bat (FBB) activity/use or importance of an area can be defined using several parameters (*e.g.*, types of calls, numbers of calls). An area will be considered to have high FBB activity/use if **ANY** of the following are found: (a) multiple FBB feeding buzzes are detected; (b) FBB social calls are recorded; (c) large numbers of Florida bonneted bat calls (9 or more) are recorded throughout one night. Each of these parameters is considered to indicate that an area is actively used and important to FBBs, however, the Service will further evaluate the activity/use of the area within the context of the site (*i.e.*, spatial distribution of calls, site acreage, habitat on site, as well as adjacent habitat) and provide additional guidance.

**HIGH QUALITY POTENTIAL ROOSTING AREAS** - Sizable areas (>50 acres) [20 hectares] that contain large amounts of high-quality, natural roosting structure – (*e.g.*, predominantly native, mature trees; especially pine flatwoods or other areas with a large number of cavity trees, tree hollows, or high woodpecker activity).

**LAA** - May Affect, and is Likely to Adversely Affect. The appropriate conclusion if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not: discountable, insignificant, or

beneficial [see definition of “may affect, but is not likely to adversely affect” (**MANLAA**)]. In the event the overall effect of the proposed action is beneficial to the listed species, but also is likely to cause some adverse effects, then the proposed action is “likely to adversely affect” the listed species. If incidental take is anticipated to occur as a result of the proposed action, an “is likely to adversely affect” (**LAA**) determination should be made. An “is likely to adversely affect” determination requires the initiation of formal section 7 consultation.

**LIMITED ROOST SURVEY** - This is a reduced survey that may include the following methods: acoustics, observations at emergence (*e.g.*, looking and listening for bats to come out of tree cavities around sunset), and visual inspection of trees with cavities or loose bark using tree-top cameras (or combination of these methods). Methods are fairly flexible and dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting structures on site. See also Appendix C for a full description.

**MANLAA** - May Affect, but is Not Likely to Adversely Affect. The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur. To use these Guidelines and Consultation Key applicants must incorporate the appropriate **BMPs** (Appendix D) to reach a **MANLAA** determination.

In this Consultation Key we have identified two ways that consultation can conclude informally, **MANLAA-P** and **MANLAA-C**:

**MANLAA-P**: programmatic concurrence is provided through the transmittal letter of these Guidelines, no additional consultation is required with the Service for Florida bonneted bats. All survey results must be submitted to Service.

**MANLAA-C**: further consultation with the Service is required to confirm that the Consultation Key has been used properly, and the Service concurs with the evaluation of the survey results. Request for consultation must include survey results.

**NO EFFECT** - The appropriate conclusion when the action agency determines its proposed action will not affect listed species or designated critical habitat.

**POTENTIAL ROOSTING HABITAT** - Includes forest and other areas with tall, mature trees or other areas with suitable roost structures (*e.g.*, utility poles, artificial structures). Forest is defined as all types including: pine flatwoods, scrubby flatwoods, pine rocklands, royal palm hammocks, mixed or hardwood hammocks, cypress, sand pine scrub, or other forest types. (Forrest types currently include exotic forests such as melaleuca, please contact the Service for additional guidance as needed). More specifically, this includes habitat in which suitable structural features for breeding and sheltering are present. In general, roosting habitat contains one or more of the following structures: tree snags, and trees with cavities, hollows, deformities, decay, crevices, or loose bark. Structural characteristics are of primary importance.

Florida bonneted bats have been found roosting in habitat with the following structural features, but may also occur outside of these parameters:

- trees greater than 33 feet (10 meters) in height, greater than 8 inches (20 centimeters) in diameter at breast height (DBH), with cavity elevations higher than 16 feet (5 meters) above ground level (Braun de Torrez 2019);
- areas with a high incidence of large or mature live trees with various deformities (*e.g.*, large cavities, hollows, broken tops, loose bark, and other evidence of decay) (*e.g.*, pine flatwoods);
- rock crevices (*e.g.*, limestone in Miami-Dade County); and/or
- artificial structures, mimicking natural roosting conditions (*e.g.*, bat houses, utility poles, buildings), situated in natural or semi-natural habitats.

In order for a building to be considered a roosting structure, it should be a minimum of 15 feet high and contain one or more of the following features: chimneys, gaps in soffits, gaps along gutters, or other structural gaps or crevices (outward entrance approximately 1 inch (2.5 centimeters) in size or greater. Structures similar to the above (*e.g.*, bridges, culverts, minimum of 15 feet high) are expected to also provide roosting habitat, based upon the species' morphology and behavior (Keeley and Tuttle 1999). Florida bonneted bat roosts will be situated in areas with sufficient open space for these bats to fly (*e.g.*, open or semi-open canopy, canopy gaps, above the canopy, and edges which provide relatively uncluttered conditions [*i.e.*, reduced numbers of obstacles, such as fewer tree branches and leaves, in the flight environment]).

***For the purpose of this Consultation Key:** Roosting habitat refers to habitat with structures that can be used for daytime and maternity roosting. Roosting at night between periods of foraging can occur in a broader range of structure types. For the purposes of this guidance we are focusing on day roosting habitat.*

**ROOSTING IS LIKELY**– Determining likelihood of roosting is challenging. The Service has provided the following definition for the express purpose of these Guidelines. Researchers use additional cues to assist in locating roosts. As additional indicators are identified and described we expect our Guidelines will be improved.

**In this Consultation Key** the Service will consider the following evidence indicative that roosting is likely nearby (*i.e.*, reasonably certain to occur) if **ANY** of the following are documented: (a) Florida bonneted bat calls are recorded within 30 minutes before sunset to 1½ hours following sunset or within 1½ hours before sunrise; (b) emergence calls are recorded; (c) human observers see (or hear) Florida bonneted bats flying from or to potential roosts; (d) human observers see and identify Florida bonneted bats within a natural roost or artificial roost; and/or (e) other bat sign (*e.g.*, guano, staining, etc.) is found that is identified to be Florida bonneted bat through additional follow-up.

In addition to the aforementioned events, researchers consider roosting likely in an area when (1) large numbers of Florida bonneted bat calls are recorded throughout the night (*e.g.*,  $\geq 25$  files per night at a single acoustic station when 5 second file lengths are recorded); (2) large numbers of FBB calls are recorded over multiple nights (*e.g.*, an average of  $\geq 20$  files per night from a single detector when 5 second file lengths are recorded); or (3) social calls are recorded. Because social calls and large numbers of calls recorded over one or more nights can be indicative of high

FBB activity/use or when roosting is likely, the Service is choosing not to use these as indicators to make the determination that roosting is likely. Instead we are relying on the indicators that are only expected to occur at or very close to a roost location [(a)-(e) above].

**TAKE** - to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. [ESA §3(19)] Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. [50 CFR §17.3].

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## Appendix A. Delineation and Justification for Consultation Area

The Consultation Area (Figure 1) represents the general range of the species. The Consultation Area represents the area within which consideration should be given to potential effects to Florida bonneted bats from proposed projects or actions. Coordination and consultation with the Service helps to determine whether proposed actions and activities may affect listed species. This Consultation Area defines the area where proposed actions and activities may affect the Florida bonneted bat.

This area was delineated using confirmed presence data, key habitat features, reasonable flight distances and home range sizes. Where data were lacking, we used available occupancy models that predict probability of occurrence (Bailey *et al.* 2017). Below we describe how each one of these data sources was used to determine the overall Consultation Area.

Presence data: Presence data included locations for: (1) confirmed Florida bonneted bat acoustic detections; (2) known roost sites (occupied or formerly occupied; includes natural roosts, bat houses, and utility poles); (3) live Florida bonneted bats observed or found injured; (4) live Florida bonneted bats captured during research activities; and (5) Florida bonneted bats reported as dead. The Geographic Information Systems (GIS) dataset incorporates information from January 2003 to May 2019.

The vast majority of the presence data came from acoustic surveys. The species' audible, low frequency, distinct, echolocation calls are conducive for acoustic surveys. However, there are limitations in the range of detection from ultrasonic devices, and the fast, high-flying habits of this species can confound this. Overall, detection probabilities for Florida bonneted bats are generally considered to be low. For example, in one study designed to investigate the distribution and environmental associations of Florida bonneted bat, Bailey *et al.* 2017 found overall nightly detection probability was 0.29. Based on the estimated detection probabilities in that study, it would take 9 survey nights (1 detector per night) to determine with 95% certainty whether Florida bonneted bat are present at a sampling point. Positive acoustic detection data are extremely valuable. However, it is important to recognize that there are issues with false negatives due to limitations of equipment, low detection probabilities, difference in detection due to prey availability and seasonal movement over the landscape, and in some circumstances improperly conducted surveys (*i.e.*, short duration or in unsuitable weather conditions).

Key habitat features: We considered important physical and biological features with a focus on potential roosting habitat and applied key concepts of bat conservation (*i.e.*, need to conserve roosting habitat, foraging habitat, and prey base). To date, all known natural Florida bonneted bat roosts (n=19) have been found in live trees and snags of the following types: slash pine, longleaf pine, royal palm, and cypress (Braun de Torrez 2018). Several of the recent roost discoveries are located in fire-maintained vegetation communities, and it appears that Florida bonneted bats are fire-adapted and can benefit from prescribed burn regimes that closely mimic historical fire patterns (Ober *et al.* 2018).

From a landscape and roosting perspective, we consider key habitat features to include forested areas and other areas with mature trees, wetlands, areas used by red-cockaded woodpeckers

(*Picoides borealis*; RCW), and fire-managed and other conservation areas. However, recent work suggests that Florida bonneted bats do not use pinelands more than other land cover types (Bailey *et al.* 2017). In fact, Bailey *et al.* 2017 detected Florida bonneted bats in all land cover types investigated in their study (e.g., agricultural, developed, upland, and wetland). For the purposes of these consultation guidelines, we are focusing on the conservation of potential roosting habitats across the species' range. However, we also recognize the need for comprehensive consideration of foraging habitats, habitat connectivity, and long-term suitability.

Flight distances and home range sizes: Like most bats, Florida bonneted bats are colonial central-place foragers that exploit distant and scattered resources (Rainho and Palmeirim 2011). Morphological characteristics (narrow wings, high wing-aspect ratio) make *Eumops* spp. well-adapted for efficient, low-cost, swift, and prolonged flight in open areas (Findley *et al.* 1972, Norberg and Rayner 1987). Other *Eumops* including Underwood's mastiff bat (*Eumops underwoodi*), and Greater mastiff bat or Western mastiff bat (*Eumops perotis*) are known to forage and/or travel distances ranging from 6.2 miles to 62 miles from the roost with multiple studies documenting flight distances approximately 15- 18 miles from the roost (Tibbitts *et al.* 2002, Vaughn 1959 as cited in Best *et al.* 1996, Siders *et al.* 1999, Siders 2005, Vaughan 1959 as cited in Siders 2005.)

Like other *Eumops*, Florida bonneted bats are strong fliers, capable of travelling long distances (Belwood 1992). Recent Global Positioning System (GPS) and radio-telemetry data for Florida bonneted bats documents that they also move large distances and likely have large home ranges. Data from recovered GPS satellite tags on Florida bonneted bats tagged at Babcock-Webb Wildlife Management Area (WMA), found the maximum distance detected from a capture site was 24.2 mi (38.9 km); the greatest path length travelled in a single night was 56.3 mi (90.6 km) (Ober 2016; Webb 2018a-b). Additional data collected during the month of December documented the mean maximum distance of Florida bonneted bats (n=8) with tags traveled from the roost was 9.5 mi (Webb 2018b). The Service recognizes that the movement information comes from only one site (Babcock-Webb WMA and vicinity), and data are from small numbers (n=20) of tagged individuals for only short periods of time (Webb 2018a-b). We expect that across the Florida bonneted bat's range differences in habitat quality, prey availability, and other factors will result in variable habitat use and home range sizes between locations. Foraging distances and home range sizes in high quality habitats are expected to be smaller while foraging distances and home range sizes in low quality habitat would be expected to be larger. Consequently, because Babcock-Webb WMA provides high quality roosting habitat, this movement data could represent the low end of individual flight distances from a roost.

Given the species' morphology and habits (e.g., central-place forager) and considering available movement data from other *Eumops* and Florida bonneted bats discussed above, we opted to use 15 miles (24 km) as a reasonable estimate of the distance Florida bonneted bats would be expected to travel from a roost on any given night. For the purposes of delineating a majority of the Consultation Area, we used available confirmed presence point location data and extended out 15 miles (24 km), with modifications for habitat features (as described above). As more movement data are obtained and made available, this distance estimate may change in the future.

Occupancy model – Research by Bailey *et al.* (2017) indicates the species' range is larger than previously known. Their model performed well across a large portion of the previously known

range when considering confirmed Florida bonneted bat locations; thus it is anticipated to be useful where limited information is available for the species.

We used the model output from Bailey *et al.* (2017) to more closely examine areas where we are data-deficient (*i.e.*, areas where survey information is particularly lacking). We considered 0.27 probability of occurrence a filter for high likelihood of occurrence because 0.27 was the model output for Babcock-Webb WMA, an area where Florida bonneted bats are known to occupy and heavily use. Large portions of Sarasota, Martin, and Palm Beach counties were identified as having probability of occurrence of 0.27. The consultation area should include areas where the species has a high likelihood of occurring. Based on this reasoned approach, all of Sarasota County, portions of Martin County, and greater parts of Palm Beach County were included in the Consultation Area.

We recognize that there are areas in the northern portion of the range where the model is less successful predicting occurrence based on the known Florida bonneted bat locations (*i.e.*, the model predicts low likelihood of occurrence on Avon Park Air Force range, where the species is known to roost). Consequently, the Service is proactively working with partners to conduct surveys in the areas added based on the model to confirm that inclusion of these portions of the aforementioned counties is appropriate. The Consultation Area may be adjusted based on changes in this information.



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## Appendix B: Full Acoustic / Roost Survey Framework

*Purpose:* The purpose of this survey is to: (1) determine if Florida bonneted bats are likely to be actively roosting or using the site; (2) locate active roost(s) and avoid the loss of the structure, if possible; and, (3) avoid or minimize the take of individuals. In some cases, changes in project designs or activities can help avoid and minimize take. For example, project proponents may be able to retain suspected roosts or conserve roosting and foraging habitats. Changing the timing or nature of activities can also help reduce the losses of non-volant young or effects to pregnant or lactating females. If properly conducted, acoustic surveys are the most effective way to determine presence and assess habitat use. If the applicant is unable to follow or does not want to follow the Full Acoustic/Roost Survey framework when recommended according to the Key, the Corps (or other Action Agency) will not be able to use these Guidelines and will need to provide a biologically supported rationale using the best available information for their determination in their request for consultation.

*General Description:* This is a *comprehensive survey effort*, and robust acoustic surveys (*i.e.*, surveys conducted 30 minutes prior to sunset to 30 minutes after sunrise, over multiple nights) are a fundamental component of the approach. Depending upon acoustic results and habitat type, it may also include: observations at emergence (*e.g.*, emergence surveys during which observers look and listen for bats to come out of roost structures around sunset), visual inspection of trees/snags (*i.e.*, those with cavities, hollows, and loose bark) and other roost structures with tree-top cameras, or follow-up targeted acoustic surveys. Methods are dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting and foraging habitats on site.

### General Survey Protocol:

*[Note: The Service will provide more information in separate detailed survey protocols in the near future. This will include specific information on: detector types, placement, orientation, verification of proper functioning, analysis, reporting requirements, etc.]*

- Approach is intended for project sites > 5 acres (2 hectares).
- For sites containing roosting habitat, acoustic surveys should primarily focus on assessing roosting habitat within the project site that will be lost or modified (*i.e.*, areas that will not be conserved), and locations on the property within 250 feet (76.2 meters) of areas that will not be conserved. This will help avoid or minimize the loss of an active roost and individuals. Secondly, since part of the purpose is to determine if Florida bonneted bats are using the site, acoustic devices should also be placed near open water and wetlands to maximize chances of detection and aid in assessing foraging habitat that may be lost.
- For sites that do not contain ANY roosting habitat, but do contain foraging habitat (see Figure 3 - Consultation Flowchart and Key, Step 2 [no], Step 13 [yes]), efforts should focus on assessing foraging habitat within the project site that will be lost or modified (*i.e.*, areas that will not be conserved).
- Acoustic surveys should be performed by those who are trained and experienced in setting up, operating, and maintaining acoustic equipment; and retrieving, saving,

analyzing, and interpreting data. Surveyors should have completed one or more of the available bat acoustic courses/workshops, or be able to show similar on-the-job or academic experience (Service 2018).

- Due to the variation in the quality of recordings, the influence of clutter, the changing performances of software packages over time, and other factors, manual verification is recommended (Loeb *et al.* 2015). Files that are identified to species from auto-ID programs must be visually reviewed and manually verified by experienced personnel.
- Acoustic devices should be set up to record from 30 minutes prior to sunset to 30 minutes after sunrise for multiple nights, under suitable weather conditions.
- Acoustic surveys can be conducted any time of year as long as weather conditions meet the criteria. If any of the following weather conditions exist at a survey site during acoustic sampling, note the time and duration of such conditions, and repeat the acoustic sampling effort for that night: (a) temperatures fall below 65°F (18.3°C) during the first 5 hours of survey period; (b) precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey period; and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the first 5 hours of the survey period (Service 2018). At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports. Although not required at this time, it has been demonstrated that conducting surveys on warm nights late in the spring can help maximize detection probabilities (Ober *et al.* 2016; Bailey *et al.* 2017).
- Acoustic devices should be calibrated and properly placed. Microphones should be directed away from surrounding vegetation, not beneath tree canopy, away from electrical wires and transmission lines, away from echo-producing surfaces, and away from external noises. Directional microphones should be aimed to sample the majority of the flight path/zone. Omnidirectional microphones should be deployed on a pole in the center of the flight path/zone and oriented horizontally. For monitoring possible roost sites, microphones should be directed to maximize likelihood of detection.
- To standardize recordings, acoustic device recordings should have a 2-second trigger window and a maximum file length of 15 seconds.
- The number of acoustic survey sites and nights needed for the assessment is dependent upon the overall acreage of suitable habitat proposed to be impacted by the action.
  - For non-linear projects, a minimum of 16 detector nights per 20 acres of suitable habitat expected to be impacted is recommended.
  - For linear projects (*e.g.*, roadways, transmission lines), a minimum of five detector nights per 0.6 mi (0.97 km) is recommended. Detectors can be moved to multiple locations within each kilometer surveyed, but must remain in a single location throughout any given night.
  - For any site, and in particular for sites > 250 acres, please contact the Service to assist in designing an appropriate approach.
- If results of acoustic surveys show **high Florida bonneted bat activity** or **Florida bonneted bat roosting likely** (*e.g.*, high activity early in the evening) (see definitions in Glossary), follow-up methods such as emergence surveys, visual inspection of the roosting structures, or follow-up acoustic surveys are recommended to locate potential roosts. Using a combination of methods may be helpful.

- For bat emergence surveys, multiple observers should be stationed at potential roosts if weather conditions (as above) are suitable. Surveyors should be quietly stationed 30 minutes before sunset so they are ready to look and listen for emerging FBBs from sunset to 1½ hours after sunset. When conducting emergence surveys it is best to orient observers so that the roost is silhouetted in the remaining daylight; facing west can help maximize the ability to notice movement of animals out of a roost structure.
- Visual inspection of trees with cavities and loose bark during the day may be helpful. Active RCW trees should not be visually inspected during the RCW breeding season (April 15 through June 15).
- Visual inspection alone is not recommended due to the potential for roosts to be too high for cameras to reach, too small for cameras to fit, or shaped in a way that contents are out of view (Braun de Torrez *et al.* 2016).
- If roosting is suspected on site, use tree-top cameras during the day to search those trees/snags or other structures that have potential roost features (*i.e.*, cavities, hollows, crevices, or other structure for permanent shelter). If unsuccessful (*e.g.*, cannot see entire contents within a given cavity, cannot reach cavity, cannot see full extent of cavity) OR occupied roosts are found with the tree-top camera within the area in which high Florida bonneted bat activity/likely Florida bonneted bats roosting were identified, we recommend emergence surveys and/or acoustics to verify occupancy and/or identify bat species.
- Provide report showing effort, methods, weather conditions, findings, and summary of acoustic data relating to Florida bonneted bats (*e.g.*, # of calls, time of calls, and station number) organized by the date on which the data were collected. Sonograms of all calls with signatures at or below 20kHz shall be included in the report. The report shall be provided to the Corps project manager assigned to the project for which the survey was conducted and to the Service via the email address [verobeach@fws.gov](mailto:verobeach@fws.gov). **Raw acoustic data should be provided to the Service for all surveys. Raw acoustic data should be provided as “all raw data” and “all raw data with signatures at or below 20kHz”. Data can be submitted to the Service via flash drive, memory stick, or hard drive. Data can be submitted digitally to [verobeach@fws.gov](mailto:verobeach@fws.gov) or via mail to U.S. Fish and Wildlife Service, Attn: Florida bonneted bat data manager, 1339 20<sup>th</sup> Street, Vero Beach, Florida 32960.**
- Negative surveys are valid for 1 year after completion of the survey.

If you have comments, or suggestions on this survey protocols, please email your comments to [FBBguidelines@fws.gov](mailto:FBBguidelines@fws.gov). These comments will be reviewed and incorporated in an annual review.

## Literature Cited – Appendix B

- Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. *Journal of Mammalogy*. 98:1586-1593.
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## Appendix C: Limited Roost Survey Framework

*Purpose:* The purpose of this survey is to: (1) determine if Florida bonneted bats are likely to be actively roosting within suitable structures on-site; (2) locate active roost(s) and avoid the loss of the structure, if possible; and, (3) avoid or minimize the take of individuals. In some cases, changes in project designs or activities can help avoid and minimize take. For example, applicants and partners may be able to retain the suspected roosts or conserve roosting and foraging habitats. Changing the timing of activities can also help reduce the losses of non-volant young or effects to pregnant or lactating females.

*General Description:* This is a *reduced survey effort* that may include the following methods: visual inspection of trees/snags (*i.e.*, those with cavities, hollows, and loose bark) and other roost structures with tree-top cameras, observations at emergence (*e.g.*, emergence surveys during which observers look and listen for bats to come out of roost structures around sunset), acoustic surveys, or a combination of these methods. Methods are fairly flexible and dependent upon composition and configuration of project site and willingness and ability of applicant and partners to conserve roosting habitat on site.

### General Survey Protocol:

*[Note: The Service will provide more information in separate, detailed survey protocols in the near future. This will include specific information on: detector types, placement, orientation, verification of proper functioning, analysis, reporting requirements, etc.]*

- Approach is **intended only for small project sites** (*i.e.*, sites  $\leq 5$  acres [2 hectares]).
- Efforts should focus on assessing potential roosting structures within the project site that will be lost or modified (*i.e.*, areas that will not be conserved), or are located on the property within 250 feet (76.2 meters) of areas that will not be conserved.

### **Identification of potential roost structures**

- This step is necessary prior to any of the methods that follow.
- Run line transects through roosting habitat close enough that all trees and snags are easily inspected. Transect spacing will vary with habitat structure and season from a maximum of 91 m (300 ft) between transects in very open pine stands to 46 m (150 ft) or less in areas with dense mid-story. Transects should be oriented north to south, to optimize cavity detectability because many RCW cavity entrances are oriented in a westerly direction (Service 2004).
- Visually inspect all trees and snags or other structures for evidence of cavities, hollows, crevices that can be used for permanent shelter. Using binoculars, examine structures for cavities, loose bark, hollows, or other crevices that are large enough for Florida bonneted bats (diameter of opening  $>$  or  $=$  to 1 inch (2.5 cm) (Braun de Torrez *et al.* 2016).
- When potential roosting structures are found, record their location in the field using a Global Positioning System (GPS) unit.

### **Visual Inspection of trees and snags with tree-top cameras**

- Visually inspect all cavities using a video probe (peeper) and assess the cavity contents.

Active RCW trees should not be visually inspected during the RCW breeding season (April 15 through June 15).

- Visual inspection alone is valid only when the entire cavity is observed and the contents can be identified. Typically, acoustics at emergence will also be needed to definitively identify bat species, if bats are present or suspected.
- If bats are suspected, or if contents cannot be determined, or if the entire cavity cannot be observed with the video probe; follow methods for an Acoustic Survey or an Emergence Survey (below). If the Corps (or other action agency) or applicant does not wish to conduct acoustic or emergence surveys, the Corps (or other action agency) cannot use the key and must request formal consultation with the Service.
- Record tree species or type of cavity structure, tree diameter and height, cavity height, cavity orientation and cavity contents.

### **Emergence Surveys**

- For bat emergence surveys, multiple observers should be stationed at potential roosts if weather conditions (as described below in Acoustic Surveys) are suitable.
- Surveyors should be quietly stationed 30 minutes prior to sunset so they are ready to look and listen for emerging Florida bonneted bats from sunset to 1½ hours after sunset.
- When conducting emergence surveys it is best to orient observers so that the roost is silhouetted in the remaining daylight; facing west can help maximize the ability to notice movement of animals out of a roost structure.
- Record number of bats that emerged, the time of emergence, and if bat calls were heard.

### **Acoustic surveys**

- Acoustic surveys should be performed by those who are trained and experienced in setting up, operating, and maintaining acoustic equipment; and retrieving, saving, analyzing, and interpreting data. Surveyors should have completed one or more of the available bat acoustic courses/workshops, or be able to show similar on-the-job or academic experience (Service 2018).
- Due to the variation in the quality of recordings, the influence of clutter, and the changing performances of software packages over time, and other factors, manual verification is recommended (Loeb *et al.* 2015). Files that are identified to species from auto-ID programs must be visually reviewed and manually verified by experienced personnel.
- Acoustic devices should be set up to record from 30 minutes prior to sunset to 30 minutes after sunrise for multiple nights, under suitable weather conditions.
- Acoustic surveys can be conducted any time of year as long as weather conditions meet the criteria. If any of the following weather conditions exist at a survey site during acoustic sampling, note the time and duration of such conditions, and repeat the acoustic sampling effort for that night: (a) temperatures fall below 65°F (18.3°C) during the first 5 hours of survey period; (b) precipitation, including rain and/or fog, that exceeds 30 minutes or continues intermittently during the first 5 hours of the survey period; and (c) sustained wind speeds greater than 9 miles/hour (4 meters/second; 3 on Beaufort scale) for 30 minutes or more during the first 5 hours of the survey period (Service 2018). At a minimum, nightly weather conditions for survey sites should be checked using the nearest NOAA National Weather Service station and summarized in the survey reports. Although not required at this time, it has been demonstrated that conducting surveys on



warm nights late in the spring can help maximize detection probabilities (Ober *et al.* 2016; Bailey *et al.* 2017).

- Acoustic devices should be calibrated and properly placed. Microphones should be directed away from surrounding vegetation, not beneath tree canopy, away from electrical wires and transmission lines, away from echo-producing surfaces, and away from external noises. Directional microphones should be aimed to sample the majority of the flight path/zone. Omnidirectional microphones should be deployed on a pole in the center of the flight path/zone and oriented horizontally. For monitoring possible roost sites, microphones should be directed to maximize likelihood of detection.
- To standardize recordings, acoustic device recordings should have a 2-second trigger window and a maximum file length of 15 seconds.
- Acoustic surveys should be conducted over a minimum of four nights.
- If acoustic devices cannot be left in place for the entire night for multiple nights as above, then a combination of short acoustic surveys (from sunset and extending for 1½ hours), stationed observers for emergence surveys or visual inspection of trees/snags with tree-top cameras may be acceptable. Contact the Service for guidance under this circumstance.

### Reporting

- Provide report showing effort, methods, weather conditions, findings, and summary of acoustic data relating to Florida bonneted bat by date (*e.g.*, # of calls, time of calls). Sonograms of all calls with signatures at or below 20kHz shall be included in the report. The report shall be provided to the Corps project manager assigned to the project for which the survey was conducted and to the Service via the email address **verobeach@fws.gov**. **Raw acoustic data should be provided to the Service for all surveys. Raw acoustic data should be provided as “all raw data” and “all raw data with signatures at or below 20kHz”. Data can be submitted to the Service via flash drive, memory stick, or hard drive. Data can be submitted digitally to verobeach@fws.gov or via mail to U.S. Fish and Wildlife Service, Attn: Florida bonneted bat data manager, 1339 20<sup>th</sup> Street, Vero Beach, Florida 32960.**
- Negative surveys are valid for 1 year after completion of the survey

If you have comments, or suggestions on this survey protocols, please email your comments to [FBBguidelines@fws.gov](mailto:FBBguidelines@fws.gov). These comments will be reviewed and incorporated in an annual review.

## Literature Cited – Appendix C

- Bailey, A.M., H.K. Ober, A.R. Sovie, and R.A. McCleery. 2017. Impact of land use and climate on the distribution of the endangered Florida bonneted bat. *Journal of Mammalogy*. 98:1586-1593.
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## Appendix D: Best Management Practices (BMPs) for Development Projects

Ongoing research and monitoring will continue to increase the understanding of the Florida bonneted bat and its habitat needs and will continue to inform habitat and species management recommendations. These BMPs incorporate what is known about the species and also include recommendations that are beneficial to all bat species in Florida. These BMPs are intended to provide recommendations for improving conditions for use by Florida bonneted bats, and to help conserve Florida bonneted bats that may be foraging or roosting in an area.

The BMPs required to reach a “may affect, but is not likely to adversely affect” (MANLAA) determination vary depending on the couplet from the Consultation Key used to reach that particular MANLAA. The requirements for each couplet are provided below followed by the list of BMPs. If the applicant is unable or does not want to do the required BMPs, then the Corps (or other Action Agency) will not be able to use this Guidance and formal consultation with the Service is required.

Couplet Number for MANLAA from Consultation Key	Required BMPs
4b	BMP number 1 if more than 3 months has occurred between the survey and start of the project, and any 3 BMPs out of BMPs 4 through 13
5b	BMP number 2, and any 3 BMPs out of BMPs 3 through 13
9b	BMPs number 2 and 3, and any 4 BMPs out of BMPs 5 through 13
11b	BMPs number 1 and 4, and any 4 BMPs out of BMPs 5 through 13
12b	BMP number 1, and any 3 BMPs out of BMPs 3 through 13
14b	Any 2 BMPs out of BMPs 3 through 13
15b	Any 3 BMPs out of BMPs 3 through 13
17b	Any 4 BMPs out of BMPs 3 through 13

### BMPs for development, construction, and other general activities:

1. If potential roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (*e.g.*, January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.
2. When using heavy equipment, establish a 250 foot (76 m) buffer around known or suspected roosts to limit disturbance to roosting bats.
3. For every 5 acres of impact, retain a minimum of 1.0 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained.
4. For every 5 acres of impact, retain a minimum of 0.25 acre of native vegetation. If upland habitat is impacted, then upland habitat with native vegetation should be retained..
5. Conserve open freshwater and wetland habitats to promote foraging opportunities and avoid impacting water quality. Created/restored habitat should be designed to replace the function of native habitat.

6. Conserve and/or enhance riparian habitat. A 50-ft (15.2 m) buffer is recommended around water bodies and stream edges. In cases where artificial water bodies (*i.e.*, stormwater ponds) are created, enhance edges with native plantings especially in cases in which wetland habitat was affected.
7. Avoid or limit widespread application of insecticides (*e.g.*, mosquito control, agricultural pest control) in areas where Florida bonneted bats are known or expected to forage or roost.
8. Conserve natural vegetation to promote insect diversity, availability, and abundance. For example, retain or restore 25% of the parcel in native contiguous vegetation.
9. Retain mature trees and snags that could provide roosting habitat. These may include live trees of various sizes and dead or dying trees with cavities, hollows, crevices, and loose bark. See “Roosting Habitat” in “Background” above.
10. Protect known Florida bonneted bat roost trees, snags or structures and trees or snags that have been historically used by Florida bonneted bats for roosting, even if not currently occupied, by retaining a 250 foot (76 m) disturbance buffer around the roost tree, snag, or structure to ensure that roost sites remain suitable for use in the future.
11. Avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting (*i.e.*, downward facing and lowest lumens possible). Avoid permanent night-time lighting to the greatest extent practicable.
12. Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.
13. Use or allow prescribed fire to promote foraging habitat.

## **Appendix E: Additional Best Management Practices (BMPs) for Land Management Projects**

### **Ecological Land Management**

The Service reviews and develops Ecological Land Management projects that use land management activities to restore and maintain native, natural communities that are beneficial to bats. These activities include prescribed fire, mechanical treatments to reduce vegetation densities, timber thinning to promote forest health, trail maintenance, and the treatment of exotic vegetation. The following BMPs provide recommendations for conserving Florida bonneted bat roosting and foraging habitat during ecological land management activities. The Service recommends incorporating these BMP into ecological land management plans.

If potential roost trees need to be removed, check cavities for bats prior to removal of trees or snags. If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.

#### **Ecological Land Management BMPs:**

- Protect potential roosting habitat during ecological land management activities, if feasible. Avoid removing trees or snags with cavities.
- Rake and/or manually clear vegetation around the base of known or suspected roost trees to remove fuel prior to prescribed burning.
- If possible, use ignition techniques such as spot fires or backing fire to limit the intensity of fire around the base of the tree or snag containing the roost. The purpose of this action is to prevent the known or suspected roost tree or snag from catching fire and also to attempt to limit the exposure of the roosting bats to heat and smoke. A 250-ft (76 m) buffer is recommended.
- If prescribed fire is being implemented to benefit Florida bonneted bats, Braun de Torrez et al. (2018) noted that fire in the dry/spring season could be most beneficial.
- When creating firebreaks or conducting fire-related mechanical treatment, mark and avoid any known or suspected bat roosts.
- When using heavy equipment, establish a buffer of 250 feet (76 m) around known roosts to limit disturbance to roosting bats.
- Establish forest management efforts to maintain tree species and size class diversity to ensure long-term supply of potential roost sites.
- For every 5 acres (2 hectares) of timber that is harvested, retain a clump of trees 1-2 acres (0.4 - 0.8 hectare) in size containing potential roost trees, especially pines and royal palms (live or dead). Additionally, large snags in open canopy should be preserved.

#### **Literature Cited – Appendix E**

Braun de Torrez, E.C., H.K. Ober, and R.A. McCleery. 2018. Activity of an Endangered Bat Increases Immediately Following Prescribed Fire. *The Journal of Wildlife Management*.

# **APPENDIX E**

## **Effects Determination Key for the Manatee in Florida**

**THE CORPS OF ENGINEERS, JACKSONVILLE DISTRICT, AND THE STATE OF  
FLORIDA EFFECT DETERMINATION KEY FOR THE MANATEE IN FLORIDA  
April 2013**

**Purpose and background of the key**

The purpose of this document is to provide guidance to improve the review of permit applications by U.S. Army Corps of Engineers' (Corps) Project Managers in the Regulatory Division regarding the potential effects of proposed projects on the endangered West Indian manatee (*Trichechus manatus*) in Florida, and by the Florida Department of Environmental Protection or its authorized designee or Water Management District, for evaluating projects under the State Programmatic General Permit (SPGP) or any other Programmatic General Permits that the Corps may issue for administration by the above agencies. Such guidance is contained in the following dichotomous key. The key applies to permit applications for in-water activities such as, but not limited to: (1) dredging [new or maintenance dredging of not more than 50,000 cubic yards], placement of fill material for shoreline stabilization, and construction/placement of other in-water structures as well as (2) construction of docks, marinas, boat ramps and associated trailer parking spaces, boat slips, dry storage or any other watercraft access structures or facilities.

At a certain step in the key, the user is referred to graphics depicting important manatee areas or areas with inadequate protection. The maps can be downloaded from the Corps' web page at <http://www.saj.usace.army.mil/Missions/Regulatory/SourceBook.aspx>. We intend to utilize the most recent depiction of these areas, so should these areas be modified by statute, rule, ordinance and/or other legal mandate or authorization, we will modify the graphical depictions accordingly. These areas may be shaded or otherwise differentiated for identification on the maps.

***Explanatory footnotes are provided in the key and must be closely followed whenever encountered.***

**Scope of the key**

This key should only be used in the review of permit applications for effect determinations on manatees and should not be used for other listed species or for other aquatic resources such as Essential Fish Habitat (EFH). Corps Project Managers should ensure that consideration of the project's effects on any other listed species and/or on EFH is performed independently. This key may be used to evaluate applications for all types of State of Florida (State Programmatic General Permits, noticed general permits, standard general permits, submerged lands leases, conceptual and individual permits) and Department of the Army (standard permits, letters of permission, nationwide permits, and regional general permits) permits and authorizations. The final effect determination will be based on the project location and description; the potential effects to manatees, manatee habitat, and/or manatee critical habitat; and any measures (such as project components, standard construction precautions, or special conditions included in the authorization) to avoid or minimize effects to manatees or manatee critical habitat. Projects that key to a "may affect" determination equate to "likely to adversely affect" situations, and those projects should not be processed under the SPGP or any other programmatic general permit. For

all “may affect” determinations, Corps Project Managers shall refer to the Manatee Programmatic Biological Opinion, dated March 21, 2011, for guidance on eliminating or minimizing potential adverse effects resulting from the proposed project. If unable to resolve the adverse effects, the Corps may refer the applicant to the U.S. Fish and Wildlife Service (Service) for further assistance in attempting to revise the proposed project to a “may affect, not likely to adversely affect” level. The Service will coordinate with the Florida Fish and Wildlife Conservation Commission (FWC) and the counties, as appropriate. Projects that provide new access for watercraft and key to “may affect, not likely to adversely affect” may or may not need to be reviewed individually by the Service.



**MANATEE KEY**  
**Florida<sup>1</sup>**  
**April 2013**

**The key is not designed to be used by the Corps' Regulatory Division for making their effect determinations for dredging projects greater than 50,000 cubic yards, the Corps' Planning Division in making their effect determinations for civil works projects or by the Corps' Regulatory Division for making their effect determinations for projects of the same relative scope as civil works projects. These types of activities must be evaluated by the Corps independently of the key.**

A. Project is not located in waters accessible to manatees and does not directly or indirectly affect manatees (see Glossary).....*No effect*

**Project is located in waters accessible to manatees or directly or indirectly affects manatees ..... B**

B. Project consists of one or more of the following activities, all of which are *May affect*:

1. blasting or other detonation activity for channel deepening and/or widening, geotechnical surveys or exploration, bridge removal, movies, military shows, special events, etc.;
2. installation of structures which could restrict or act as a barrier to manatees;
3. new or changes to existing warm or fresh water discharges from industrial sites, power plants, or natural springs or artesian wells (but only if the new or proposed change in discharge requires a Corps permit to accomplish the work);
4. installation of new culverts and/or maintenance or modification of existing culverts (where the culverts are 8 inches to 8 feet in diameter, ungrated and in waters accessible, or potentially accessible, to manatees)<sup>2</sup>;
5. mechanical dredging from a floating platform, barge or structure<sup>3</sup> that restricts manatee access to less than half the width of the waterway;
6. creation of new slips or change in use of existing slips, even those located in a county with a State-approved Manatee Protection Plan (MPP) in place and the number of slips is less than the MPP threshold, to accommodate docking for repeat use vessels, (e.g., water taxis, tour boats, gambling boats, etc; or slips or structures that are not civil works projects, but are frequently used to moor large vessels (>100') for shipping and/or freight purposes; does not include slips used for docking at boat sales or repair facilities or loading/unloading at dry stack storage facilities and boat ramps); [Note: For projects within Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the reviewer should proceed to Couplet C.]
7. any type of in-water activity in a Warm Water Aggregation Area (WWAA) or No Entry Area (see Glossary and accompanying Maps<sup>4</sup>); [Note: For residential docking facilities in a Warm Water Aggregation Area that is not a Federal manatee sanctuary or No Entry Area, the reviewer should proceed to couplet C.]
8. creation or expansion of canals, basins or other artificial shoreline and/or the connection of such features to navigable waters of the U.S.; [Note: For projects proposing a single residential dock, the reviewer should proceed to couplet C; otherwise, project is a *May Affect*.]

- 9. installation of temporary structures (docks, buoys, etc.) utilized for special events such as boat races, boat shows, military shows, etc., but only when consultation with the U.S. Coast Guard and FWS has not occurred; [Note: See programmatic consultation with the U.S. Coast Guard on manatees dated May 10, 2010.].

Project is other than the activities listed above..... C

- C. Project is located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps<sup>4</sup>) ..... D

Project is not located in an Important Manatee Area (IMA) (see Glossary and accompanying Maps<sup>4</sup>) ..... G

- D. Project includes dredging of less than 50,000 cubic yards ..... E

Project does not include dredging ..... G

- E. Project is for dredging a residential dock facility or is a land-based dredging operation ..... N

Project not as above..... F

- F. Project proponent **does not elect** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... *May affect*

Project proponent **elects** to follow all dredging protocols described on the maps for the respective IMA in which the project is proposed ..... G

- G. Project provides new<sup>5</sup> access for watercraft, *e.g.*, docks or piers, marinas, boat ramps and associated trailer parking spaces, new dredging, boat lifts, pilings, floats, floating docks, floating vessel platforms, boat slips, dry storage, mooring buoys, or other watercraft access (residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access) or improvements allowing increased watercraft usage..... H

Project does not provide new<sup>5</sup> access for watercraft, *e.g.*, bulkheads, seawalls, riprap, maintenance dredging, boardwalks and/or the maintenance (repair or rehabilitation) of currently serviceable watercraft access structures provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements do not allow increased watercraft usage..... N

- H. Project is located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map<sup>4</sup>) ..... *May affect*

Project is not located in the Braden River Area of Inadequate Protection (Manatee County) (see Glossary and accompanying AIP Map<sup>4</sup>)..... I

- I. Project is for a multi-slip facility (see Glossary) ..... J

Project is for a residential dock facility or is for dredging (see Glossary)..... N

- J. Project is located in a county that currently has a State-approved MPP in place (BREVARD, BROWARD, CITRUS, CLAY, COLLIER, DUVAL, INDIAN RIVER, LEE, MARTIN, MIAMI-DADE, PALM BEACH, ST. LUCIE, SARASOTA, VOLUSIA) or shares contiguous waters with a county having a State-approved MPP in place (LAKE, MARION, SEMINOLE)<sup>6</sup> ..... K

Project is located in a county not required to have a State-approved MPP ..... L

- K. Project has been developed or modified to be consistent with the county’s State-approved MPP **and** has been verified by a FWC review (or FWS review if project is exempt from State permitting) **or** the number of slips is below the MPP threshold ..... N
- Project has not been reviewed by the FWC or FWS **or** has been reviewed by the FWC or FWS **and** determined that the project is not consistent with the county’s State-approved MPP ..... *May affect*
- L. Project is located in one of the following counties: CHARLOTTE, DESOTO<sup>7</sup>, FLAGLER, GLADES, HENDRY, HILLSBOROUGH, LEVY, MANATEE, MONROE<sup>7</sup>, PASCO<sup>7</sup>, PINELLAS ..... M
- Project is located in one of the following counties: BAY, DIXIE, ESCAMBIA, FRANKLIN, GILCHRIST, GULF, HERNANDO, JEFFERSON, LAFAYETTE, MONROE (south of Craig Key), NASSAU, OKALOOSA, OKEECHOBEE, PUTNAM, SANTA ROSA, ST. JOHNS, SUWANNEE, TAYLOR, WAKULLA, WALTON ..... N
- M. The number of slips does not exceed the residential dock density threshold (see Glossary) ..... N
- The number of slips exceeds the residential dock density threshold (see Glossary) ..... *May affect*
- N. Project impacts to submerged aquatic vegetation<sup>8</sup>, emergent vegetation or mangrove will have beneficial, insignificant, discountable<sup>9</sup> or no effects on the manatee<sup>10</sup> ..... O
- Project impacts to submerged aquatic vegetation<sup>8</sup>, emergent vegetation or mangrove may adversely affect the manatee<sup>10</sup> ..... *May affect*
- O. Project proponent **elects** to follow standard manatee conditions for in-water work<sup>11</sup> and requirements, as appropriate for the proposed activity, prescribed on the maps<sup>4</sup> ..... P
- Project proponent **does not elect** to follow standard manatee conditions for in-water work<sup>11</sup> and appropriate requirements prescribed on the maps<sup>4</sup> ..... *May affect*
- P. If project is for a new or expanding<sup>5</sup> multi-slip facility and is located in a county with a State-approved MPP in place **or** in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Putnam, St. Johns, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County, the determination of “*May affect, not likely to adversely affect*” is appropriate<sup>12</sup> and no further consultation with the Service is necessary.
- If project is for a new or expanding<sup>5</sup> multi-slip facility and is located in Charlotte, Desoto, Flagler, Glades, Hendry, Hillsborough, Levy, Manatee, Monroe (north of Craig Key), Pasco, or Pinellas County, further consultation with the Service is necessary for “*May affect, not likely to adversely affect*” determinations.
- If project is for repair or rehabilitation of a multi-slip facility and is located in an Important Manatee Area, further consultation with the Service is necessary for “*May affect, not likely to adversely affect*” determinations. If project is for repair or rehabilitation of a multi-slip facility and: (1) is **not** located in an Important Manatee Area; (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage, the determination of “*May affect, not likely to adversely affect*” is appropriate<sup>12</sup> and no further consultation with the Service is necessary.
- If project is a residential dock facility, shoreline stabilization, or dredging, the determination of “*May affect, not likely to adversely affect*” is appropriate<sup>12</sup> and no further consultation with the Service is necessary. **Note:** For residential dock facilities located in a Warm Water Aggregation Area or in a No Entry area, seasonal restrictions may apply. See footnote 4 below for maps showing restrictions.
- If project is other than repair or rehabilitation of a multi-slip facility, a new<sup>5</sup> multi-slip facility, residential dock facility, shoreline stabilization, or dredging, and does not provide new<sup>5</sup> access for watercraft or

improve an existing access to allow increased watercraft usage, the determination of “*May affect, not likely to adversely affect*” is appropriate<sup>12</sup> and no further consultation with the Service is necessary.

<sup>1</sup> On the St. Mary’s River, this key is only applicable to those areas that are within the geographical limits of the State of Florida.

<sup>2</sup> All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. To effectively prevent manatee access, grates must be permanently fixed, spaced a maximum of 8 inches apart (may be less for culverts smaller than 16 inches in diameter) and may be installed diagonally, horizontally or vertically. For new culverts, grates must be attached prior to installation of the culverts. Culverts less than 8 inches or greater than 8 feet in diameter are exempt from this requirement. If new culverts and/or the maintenance or modification of existing culverts are grated as described above, the determination of “*May affect, not likely to adversely affect*” is appropriate<sup>11</sup> and no further consultation with the Service is necessary.

<sup>3</sup> If the project proponent agrees to follow the standard manatee conditions for in-water work as well as any special conditions appropriate for the proposed activity, further consultation with the Service is necessary for “*May affect, not likely to adversely affect*” determinations. These special conditions may include, but are not limited to, the use of dedicated observers (see Glossary for definition of dedicated observers), dredging during specific months (warm weather months vs cold weather months), dredging during daylight hours only, adjusting the number of dredging days, does not preclude or discourage manatee egress/ingress with turbidity curtains or other barriers that span the width of the waterway, etc.

<sup>4</sup> Areas of Inadequate Protection (AIPs), Important Manatee Areas (IMAs), Warm Water Aggregation Areas (WWAAs) and No Entry Areas are identified on these maps and defined in the Glossary for the purposes of this key. These maps can be viewed on the [Corps’ web page](#). If projects are located in a No Entry Area, special permits may be required from FWC in order to access these areas (please refer to Chapter 68C-22 F.A.C. for boundaries; maps are also available at [FWC’s web page](#)).

<sup>5</sup> New access for watercraft is the addition or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (maintenance dredging, residential boat lifts, pilings, floating docks, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, new dredging, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees. The repair or rehabilitation of any type of currently serviceable watercraft access structure is not considered new access provided all of the following are met: (1) the number of slips is not increased; (2) the number of existing slips is not in question; and (3) the improvements to the existing watercraft access structures do not result in increased watercraft usage.

<sup>6</sup> Projects proposed within the St. Johns River portion of Lake, Marion, and Seminole counties and contiguous with Volusia County shall be evaluated using the Volusia County MPP.

<sup>7</sup> For projects proposed within the following areas: the Peace River in DeSoto County; all areas north of Craig Key in Monroe County, and the Anclote and Pithlachascotee Rivers in Pasco County, proceed to Couplet M. For all other locations in DeSoto, Monroe (south of Craig Key) and Pasco Counties, proceed to couplet N.

<sup>8</sup> Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat, proceed to couplet O.

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, the applicant can elect to avoid/minimize impacts to that vegetation. In that instance, where impacts are unavoidable and the applicant elects to abide by or employ construction techniques that exceed the criteria in the following documents, the reviewer should conclude that the impacts to SAV, marsh or mangroves would not adversely affect the manatee or its critical habitat and proceed to couplet O.

- “Construction Guidelines in Florida for Minor Piling-Supported Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh or Mangrove Habitat,” prepared jointly by the U.S. Army Corps of Engineers and the National Marine Fisheries Service (August 2001) [refer to the [Corps’ web page](#)], and
- “Key for Construction Conditions for Docks or Other Minor Structures Constructed in or over Johnson’s seagrass (*Halophila johnsonii*),” prepared jointly by the National Marine Fisheries Service and U.S. Army Corps of Engineers (October 2002), for those projects within the known range of Johnson’s seagrass occurrence (Sebastian Inlet to central Biscayne Bay in the lagoon systems on the east coast of Florida) [refer to the [Corps’ web page](#)],

Where the presence of the referenced vegetation is confirmed within the area affected by docks and other piling-supported minor structures and the reviewer has concluded that the impacts to SAV, marsh or mangroves would adversely affect the manatee or its critical habitat, and the applicant does not elect to follow the above Guidelines, the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

For activities other than docks and other piling-supported minor structures proposed in SAV, marsh, or mangroves (*e.g.*, new dredging, placement of riprap, bulkheads, etc.), if the reviewer determines the impacts to the SAV, marsh or mangroves will not adversely affect the manatee or its critical habitat, proceed to couplet O, otherwise the Corps will need to request formal consultation on the manatee with the Service as *May affect*.

<sup>9</sup> See Glossary, under “is not likely to adversely affect.”

<sup>10</sup> Federal reviewers, when making your effects determination, consider effects to manatee designated critical habitat pursuant to section 7(a)(2) of the Endangered Species Act. State reviewers, when making your effects determination, consider effects to manatee habitat within the entire State of Florida, pursuant to Chapter 370.12(2)(b) Florida Statutes.

<sup>11</sup> See the [Corps' web page](#) for manatee construction conditions. At this time, manatee construction precautions c and f are not required in the following Florida counties: Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee, and Walton.

<sup>12</sup> By letter dated April 25, 2013, the Corps received the Service’s concurrence with “*May affect, not likely to adversely affect*” determinations made pursuant to this key for the following activities: (1) selected non-watercraft access projects; (2) watercraft-access projects that are residential dock facilities, excluding those located in the Braden River AIP; (3) launching facilities solely for kayaks and canoes, and (4) new or expanding multi-slip facilities located in Bay, Dixie, Escambia, Franklin, Gilchrist, Gulf, Hernando, Jefferson, Lafayette, Monroe (south of Craig Key), Nassau, Okaloosa, Okeechobee, Santa Rosa, Suwannee, Taylor, Wakulla or Walton County.

Additionally, in the same letter dated April 25, 2013, the Corps received the Service’s concurrence for “*May affect, not likely to adversely affect*” determinations specifically made pursuant to Couplet G of the key for the repair or rehabilitation of currently serviceable multi-slip watercraft access structures provided all of the following are met: (1) the project is not located in an IMA, (2) the number of slips is not increased; (3) the number of existing slips is not in question; and (4) the improvements to the existing watercraft access structures do not allow increased watercraft usage. Upon receipt of such a programmatic concurrence, no further consultation with the Service for these projects is required.

## GLOSSARY

**Areas of inadequate protection (AIP)** – Areas within counties as shown on the maps where the Service has determined that measures intended to protect manatees from the reasonable certainty of watercraft-related take are inadequate. Inadequate protection may be the result of the absence of manatee or other watercraft speed zones, insufficiency of existing speed zones, deficient speed zone signage, or the absence or insufficiency of speed zone enforcement.

**Boat slip** – A space on land or in or over the water, other than on residential land, that is intended and/or actively used to hold a stationary watercraft or its trailer, and for which intention and/or use is confirmed by legal authorization or other documentary evidence. Examples of boat slips include, but are not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

**Critical habitat** – For listed species, this consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Endangered Species Act (ESA), on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the ESA, upon a determination by the Secretary that such areas are essential for the conservation of the species. Designated critical habitats are described in 50 CFR 17 and 50 CFR 226.

**Currently serviceable** – Currently, serviceable means usable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

**Direct effects** – The direct or immediate effects of the project on the species or its habitat.

**Dredging** – For the purposes of this key, the term dredging refers to all in-water work associated with dredging operations, including mobilization and demobilization activities that occur in water or require vessels.

**Emergent vegetation** – Rooted emergent vascular macrophytes such as, but not limited to, cordgrass (*Spartina alterniflora* and *S. patens*), needle rush (*Juncus roemerianus*), swamp sawgrass (*Cladium mariscoides*), saltwort (*Batis maritima*), saltgrass (*Distichlis spicata*), and glasswort (*Salicornia virginica*) found in coastal salt marsh-related habitats (tidal marsh, salt marsh, brackish marsh, coastal marsh, coastal wetlands, tidal wetlands).

**Formal consultation** – A process between the Services and a Federal agency or applicant that: (1) determines whether a proposed Federal action is likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat; (2) begins with a Federal agency's written request and submittal of a complete initiation package; and (3) concludes with the issuance of a biological opinion and incidental take statement by either of the Services. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed

action “is not likely to adversely affect” listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.14]

**Important manatee areas (IMA)** – Areas within certain counties where increased densities of manatees occur due to the proximity of warm water discharges, freshwater discharges, natural springs and other habitat features that are attractive to manatees. These areas are heavily utilized for feeding, transiting, mating, calving, nursing or resting as indicated by aerial survey data, mortality data and telemetry data. Some of these areas may be federally-designated sanctuaries or state-designated “seasonal no entry” zones. Maps depicting important manatee areas and any accompanying text may contain a reference to these areas and their special requirements. Projects proposed within these areas must address their special requirements.

**Indirect effects** – Those effects that are caused by or will result from the proposed action and are later in time, but are still reasonably certain to occur. Examples of indirect effects include, but are not limited to, changes in water flow, water temperature, water quality (*e.g.*, salinity, pH, turbidity, nutrients, chemistry), prop dredging of seagrasses, and manatee watercraft injury and mortality. Indirect effects also include watercraft access developments in waters not currently accessible to manatees, but watercraft access can, is, or may be planned to waters accessible to manatees by the addition of a boat lift or the removal of a dike or plug.

**Informal consultation** – A process that includes all discussions and correspondence between the Services and a Federal agency or designated non-Federal representative, prior to formal consultation, to determine whether a proposed Federal action may affect listed species or critical habitat. This process allows the Federal agency to utilize the Services’ expertise to evaluate the agency’s assessment of potential effects or to suggest possible modifications to the proposed action which could avoid potentially adverse effects. If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required (except when the Services concur, in writing, that a proposed action “is not likely to adversely affect” listed species or designated critical habitat). [50 CFR 402.02, 50 CFR 402.13]

**In-water activity** – Any type of activity used to construct/repair/replace any type of in-water structure or fill; the act of dredging.

**In-water structures – watercraft access structures** – Docks or piers, marinas, boat ramps, boat slips, boat lifts, floats, floating docks, pilings (depending on use), boat davits, etc.

**In-water structures – other than watercraft access structures** – Bulkheads, seawalls, riprap, groins, boardwalks, pilings (depending on use), etc.

**Is likely to adversely affect** – The appropriate finding in a biological assessment (or conclusion during informal consultation) if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions and the effect is not: discountable, insignificant, or beneficial (see definition of “is not likely to adversely affect”). An “is likely to adversely affect” determination requires the initiation of formal consultation under section 7 of the ESA.

**Is not likely to adversely affect** – The appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. **Discountable effects** are those extremely unlikely to occur. **Insignificant effects** relate to the size of the impact and should never reach the scale where take occurs. **Beneficial effects** are contemporaneous positive effects without any adverse effects to the species. Based on best judgment, a person would not (1) be able to meaningfully measure, detect, or evaluate insignificant effects or (2) expect discountable effects to occur.

**Manatee Protection Plan (MPP)** – A manatee protection plan (MPP) is a comprehensive planning document that addresses the long-term protection of the Florida manatee through law enforcement, education, boat facility siting, and habitat protection initiatives. Although MPPs are primarily developed by the counties, the plans are the product of extensive coordination and cooperation between the local governments, the FWC, the Service, and other interested parties.

**Manatee Protection Plan thresholds** – The smallest size of a multi-slip facility addressed under the purview of a Manatee Protection Plan (MPP). For most MPPs, this threshold is five slips or more. For Brevard, Clay, Citrus, and Volusia County MPPs, this threshold is three slips or more.

**Mangroves** – Rooted emergent trees along a shoreline that, for the purposes of this key, include red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*) and white mangrove (*Laguncularia racemosa*).

**May affect** – The appropriate conclusion when a proposed action may pose any effects on listed species or designated critical habitat. When the Federal agency proposing the action determines that a “may affect” situation exists, then they must either request the Services to initiate formal consultation or seek written concurrence from the Services that the action “is not likely to adversely affect” listed species. For the purpose of this key, all “may affect” determinations equate to “likely to adversely affect” and Corps Project Managers should request the Service to initiate formal consultation on the manatee or designated critical habitat. **No effect** – the appropriate conclusion when the action agency determines its proposed action will not affect a listed species or designated critical habitat.

**Multi-slip facility** – Multi-slip facilities include commercial marinas, private multi-family docks, boat ramps and associated trailer parking spaces, dry storage facilities and any other similar structures or activities that provide access to the water for multiple (five slips or more, except in Brevard, Clay, Citrus, and Volusia counties where it is three slips or more) watercraft. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

**New access for watercraft** – New dredging and the addition, expansion or improvement of structures such as, but not limited to, docks or piers, marinas, boat ramps and associated trailer parking spaces, boat lifts, pilings, floats, floating docks, floating vessel platforms, (residential boat lifts, pilings, floats, and floating vessel platforms installed in existing slips are not considered new access), boat slips, dry storage, mooring buoys, etc., that facilitates the addition of watercraft to, and/or increases watercraft usage in, waters accessible to manatees.



**Observers** – During dredging and other in-water operations within manatee accessible waters, the standard manatee construction conditions require all on-site project personnel to watch for manatees to ensure that those standard manatee construction conditions are met. Within important manatee areas (IMA) and under special circumstances, heightened observation is needed. **Dedicated Observers** are those having some prior experience in manatee observation, are dedicated only for this task, and must be someone other than the dredge and equipment operators/mechanics. **Approved Observers** are dedicated observers who also must be approved by the Service (if Federal permits are involved) and the FWC (if state permits are involved), prior to work commencement. Approved observers typically have significant and often project-specific observational experience. Documentation on prior experience must be submitted to these agencies for approval and must be submitted a minimum of 30 days prior to work commencement. When dedicated or approved observers are required, observers must be on site during all in-water activities, and be equipped with polarized sunglasses to aid in manatee observation. For prolonged in-water operations, multiple observers may be needed to perform observation in shifts to reduce fatigue (recommended shift length is no longer than six hours). Additional information concerning observer approval can be found at [FWC's web page](#).

**Residential boat lift** – A boat lift installed on a residential dock facility.

**Residential dock density ratio threshold** – The residential dock density ratio threshold is used in the evaluation of multi-slip projects in some counties without a State-approved Manatee Protection Plan and is consistent with 1 boat slip per 100 linear feet of shoreline (1:100) owned by the applicant.

**Residential dock facility** – A residential dock facility means a private residential dock which is used for private, recreational or leisure purposes for single-family or multi-family residences designed to moor no more than four vessels (except in Brevard, Clay, Citrus, and Volusia counties which allow only two vessels). This also includes normal appurtenances such as residential boat lifts, boat shelters with open sides, stairways, walkways, mooring pilings, dolphins, etc. In some instances, the Corps and the Service may elect to review multiple residential dock facilities as a multi-slip facility.

**Submerged aquatic vegetation (SAV)** – Rooted, submerged, aquatic plants such as, but not limited to, shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), Johnson's seagrass (*Halophila johnsonii*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testudinum*), tapegrass (*Vallisneria americana*), and horned pondweed (*Zannichellia palustris*).

**Warm Water Aggregation Areas (WWAAs) and No Entry Areas** – Areas within certain counties where increased densities of manatees occur due to the proximity of artificial or natural warm water discharges or springs and are considered necessary for survival. Some of these areas may be federally-designated manatee sanctuaries or state-designated seasonal “no entry” manatee protection zones. Projects proposed within these areas may require consultation in order to offset expected adverse impacts. In addition, special permits may be required from the FWC in order to access these areas.

**Watercraft access structures** – Docks or piers, marinas, boat ramps and associated trailer parking spaces, boat slips, boat lifts, floats, floating docks, pilings, boat davits, dry storage, etc.

**Waters accessible to manatees** – Although most waters of the State of Florida are accessible to the manatee, there are some areas such as landlocked lakes that are not. There are also some weirs, salinity control structures and locks that may preclude manatees from accessing water bodies. If there is any question about accessibility, contact the Service or the FWC.

# **APPENDIX F**

## **Photo Documentation Log**

PHOTO DOCUMENTATION LOG



**Photo 1**  
View of the existing bridge, facing northeast.



**Photo 2**  
View of typical benthic community.  
Note the presence of coarse sand and *Caulerpa* sp.

PHOTO DOCUMENTATION LOG



**Photo 3**  
Typical view of oyster growth on existing bridge.



**Photo 4**  
View of mangroves and upland trees adjacent to the bridge on east side, north of the bridge, facing west. Species include red mangrove (*Rhizophora mangle*) and seaside mahoe (*Thespesia populnea*).

PHOTO DOCUMENTATION LOG



**Photo 5**  
View of mangroves and upland trees adjacent to the bridge, from east side, south of bridge, facing northwest.



**Photo 6**  
View of mangroves and upland trees on the east side of the bridge, facing north. Species included white mangrove (*Laguncularia racemosa*), black mangrove (*Avicenniagerminans*), red mangroves, green buttonwood (*Conocarpus erectus*), seaside mahoe and scaevola (*Scaevola taccada*).

PHOTO DOCUMENTATION LOG



**Photo 7**

View of freshwater wetlands on the side of the road northwest of the bridge. Facing northwest.



**Photo 8**

View of roadside freshwater wetlands on southwest side of bridge. Facing east.

PHOTO DOCUMENTATION LOG



**Photo 9**

View of soil plug #2 on the northwest side of the bridge. Plug filled with water after 1 minute.



**Photo 10**

View of algal matting at edge of freshwater wetland.



# **APPENDIX G**

## **Wetland Data Forms**



§ denotes the Rule, subsection, paragraph, or subparagraph referenced from Ch. 62-340, F.A.C.

# Chapter 62-340, F.A.C. Data Form

1. Date: Jan 13, 2022 2. Staff Present: Emily Rodriguez, Jen Savaro 3. Form recorder(s): ER  
 4. County: Miami-Dade (13) 5. Site Name: Matheson Hammock Bridge Tracking #: \_\_\_\_\_  
 6. Point ID: Upland plug 1 and 2 GPS Coordinates: \_\_\_\_\_  
 7. Distances and bearings from fixed objects (if no GPS): \_\_\_\_\_  
 8. Current condition of described point:  Authorized or legal condition  Unauthorized or illegal condition  
 9. Work type:  Identification  Delineation  
 Point status:  Wetland  Non-Wetland Surface Water  Upland

**10. Vegetative Stratum §62-340.400:** Using §62-340.400, F.A.C. with reasonable scientific judgment, select the appropriate vegetative stratum. (Do not include FAC species when determining 10% minimum areal extent.)  
 Canopy (Min. 10% areal extent)  Subcanopy (Min. 10% areal extent)  Groundcover (No min. areal extent)  
 Vegetation Absent (*skip to #14*)  Evaluation Impossible (*skip to #14*) **Why?** \_\_\_\_\_

**11. Plant List §62-340.200(2),(6),(16), §62-340.400, §62-340.450, F.A.C.:** Areal extent estimator: ER  
***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

Select and identify plants in an area just large enough to represent and classify the plant community at the described point. Do not extend into different communities or hydrologic conditions.

- |   |  |  |
|---|--|--|
| 1. Record the scientific name (binomial) and status of <u>each</u> plant species necessary to identify/delineate and classify the plant community in the selected area. | 2. Record the percent areal extent in the canopy, subcanopy, and groundcover columns for each species. | 3. For each species present in the <b>stratum selected in #10</b> , transfer the numbers from <u>only that stratum's column</u> into the appropriate status columns. |
|---|--|--|

#	Binomial of Observed Species	Status	Canopy	Subcanopy	Groundcover	Upland	Facultative	Fac. Wet	Obligate
1.	Digitaria serotina	U			80	80			
2.	Bidens bipimata	U			20	20			
3.	Richardia scabra	U			15	15			
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									

Percent areal extent totals for the stratum selected in question 10      115      0      0      0

12. In the stratum selected in #10: What is the % areal extent of Obligate plants? 0  
 What is the % areal extent of Upland plants? 115  
 Is the areal extent of Obligate plants greater than that of Upland plants?  Yes  No

13. In the stratum selected in #10: What is the total % areal extent of Obligate & Facultative Wet plants combined? 0  
 What is the total % areal extent of Obligate, Facultative Wet, & Upland plants combined? 115  
 What is the percentage of OBL + FACW in relation to all plants, excluding FAC? (  $\frac{OBL+FACW}{OBL+FACW+UPL}$  ) 0.0%

Point ID/Location: Upland plug 1 and 2 Soil describer: ER

14. LRR/MLRA U Textures: Peat, Mucky Peat, Muck, Mucky Mineral (S or F), Sand, Fine, Marl

15. Is a soil profile evaluation possible?  Yes  No If no, why? (If No, skip to #18)

16. Soil Description: As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations  
Soil surface, or 0 inch depth for purposes of Chapter 62-340, F.A.C. is the muck or mineral surface (whether natural or fill)

Horizon	beginning to ending Depth (inches)	Matrix Texture	moist condition Matrix Hue Value/ Chroma	for sandy matrix horizons w/ value ≤ 3: % Organic Coating	- Describe soil features: DA (areas darker than matrix), LA (areas lighter than matrix), RC (redox concentrations): Record in moist condition hue value/chroma; % volume in horizon; boundaries (sharp/clear/diffuse); shape (rounded/linear/angular). - OB (organic bodies): Record texture (muck or mucky mineral), % volume in horizon. - H <sub>2</sub> S (hydrogen sulfide odor): Indicate shallowest depth where detected - Note if horizon is Physically Mixed (PM), Nonsoil (any material not listed in "Textures" above), or Fill and describe.
1	0-6	S	10YR 3/2	40	shell/limestone refusal after 6 inches
2					
3					
4					
5					
6					

17. Hydric Soil Field Indicators: If present, check all Hydric Soil Field Indicators satisfied and specify their beginning and ending depths

<input checked="" type="checkbox"/> All Texture	<input checked="" type="checkbox"/> Sandy Texture	<input checked="" type="checkbox"/> Fine Texture	Indicator Present	Begin Depth	End Depth
<input type="checkbox"/> (A1) Histosol*	<input type="checkbox"/> (S4) Sandy Gleyed Matrix*	<input type="checkbox"/> (F2) Loamy Gleyed Matrix*	1.		
<input type="checkbox"/> (A2) Histic Epipedon*	<input type="checkbox"/> (S5) Sandy Redox	<input type="checkbox"/> (F3) Depleted Matrix	2.		
<input type="checkbox"/> (A3) Black Histic*	<input type="checkbox"/> (S6) Stripped Matrix	<input type="checkbox"/> (F6) Redox Dark Surface	3.		
<input type="checkbox"/> (A4) Hydrogen Sulfide*	<input type="checkbox"/> (S7) Dark Surface	<input type="checkbox"/> (F7) Depleted Dark Surface	4.		
<input type="checkbox"/> (A5) Stratified Layers*	<input type="checkbox"/> (S8) Polyvalue Below Surface	<input type="checkbox"/> (F8) Redox Depression	5.		
<input type="checkbox"/> (A6) Organic Bodies	<input type="checkbox"/> (S9) Thin Dark Surface	<input type="checkbox"/> (F10) Marl	6.		
<input type="checkbox"/> (A7) 5cm Mucky Mineral*	<input type="checkbox"/> (S12) Barrier Islands 1cm Muck	<input type="checkbox"/> (F12) Iron-Manganese Masses			
<input type="checkbox"/> (A8) Muck Presence*		<input type="checkbox"/> (F13) Umbric Surface			
<input type="checkbox"/> (A9) 1cm Muck*		<input type="checkbox"/> (F22) Very Shallow Dark Surface			

(A11) Depleted Below Dark Surface  (A12) Thick Dark Surface  
\* = Stand-alone D Test - both hydric soil and hydrologic indicator  
To combine layers/indicators to meet thickness requirements, see NRCS Hydric Soils Technical Note 4.

18. Excluding organic horizons, is any nonsoil horizon present at or within the uppermost 12 inches of the ground surface?  
 Yes (e.g. bedrock, rock outcrop, limestone fill, gravel, etc)  No  Soil profile or site inaccessible

19. Is one or more hydric soil field indicators present?  Yes  No  Inconclusive (e.g., evaluation to 12+ inches impeded by disturbance, water, nonsoil, no site access, etc.)  
If no or inconclusive, is the soil hydric as determined by other NRCS methods?  
 Yes ← Which method(s)?  No  Inconclusive ← Why?

(e.g., hydric soil definition, HSTS<sup>2</sup>, indicator present at drier elevation, indicator would be present but for disturbance)

20. Is the depth of the soil profile 20 inches or greater from the soil surface?  Yes  No  
If no, depth of soil profile is: 6 inches Why? Shell and limestone refusal  
(e.g., root refusal, nonsoil, water table, loose sand, heavy texture, compaction, weather conditions, inspection interrupted)

21. Observed height or depth of standing water from soil surface: \_\_\_\_\_ inches  Above  Below  Not Observed

**22. Hydrologic Indicators: *As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations***

Hydrologic Indicators per §62-340.500, F.A.C. (and as applied to §62-340.600, F.A.C.)	Present at or near point	Predicted during normal high water or wet season♦	Within 100 ft waterward of point (not for upland points)	1. Describe the type of all checked indicators. 2. Approximate the distance and compass direction of indicators within 100 ft of the point. 3. For water level indicators (potential indicators denoted by *) <b>note the height from ground surface</b> at the point as well as waterward (with distance from point). ♦ Only for indicators not present due to dry season/drought
(1) Algal mats*				
(2) Aquatic mosses or liverworts*				
(3) Aquatic plants*				
(4) Aufwuchs				
(5) Drift lines and rafted debris*				
(6) Elevated lichen lines*				
(7) Evidence of aquatic fauna				
(8) Hydrologic data*				
(9) Morphological plant adaptations*				
(10) Secondary flow channels				
(11) Sediment deposition*				
(12) Tussocks or hummocks*				
(13) Water marks*				

Highest water level indicator height at point: \_\_\_\_\_ inches  Above Ground Surface  No Water Level Indicators  
 Above Soil Surface  N/A (described point is Upland)

**23.** Is one or more hydrologic indicator(s) listed in §62-340.500, F.A.C. present or predicted with normal high water or wet season conditions at the described point?  Yes  No  Evaluation Impossible ← Why? \_\_\_\_\_

**24. Delineation by Wetland Definition §62-340.300(1), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Has a wetland boundary been delineated at the described point?  Yes  No (*If No, skip to #25*)
- b) If yes to 24a, can the boundary be easily delineated using the definition of wetlands?  Yes  No

**25. A & B Test Wetland Criteria §62-340.300(2)(a),(b), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Is the areal extent of Obligate plants in the stratum selected in #10 greater than the areal extent of all Upland plants in that stratum? (See #12)  Yes  No  Vegetation Absent (*skip to #25f*)  Evaluation Impossible (*skip to #26a*)
- b) Is the areal extent of Obligate and/or Facultative Wet plants in the stratum selected in #10 equal to or greater than 80% of all the plants in that stratum, excluding Facultative plants? (See #13)  Yes  No
- c) Is the soil hydric as identified using standard NRCS definitions and practices? (see #19)  
 Yes  No  Indeterminable with current conditions ← Why? \_\_\_\_\_
- d) Is the substrate composed of riverwash, nonsoil (see #18), rock outcrop-soil complex, or is the substrate located within an artificially created wetland area?  Yes  No If yes, which condition is present? \_\_\_\_\_
- e) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No
- f) Are the A Test criteria met per §62-340.300(2)(a), F.A.C. at the described point?  Yes  No  
(*Note: If yes to 25a and yes to either 25c, 25d, or 25e, A Test criteria are met*)
- g) Are the B Test criteria met per §62-340.300(2)(b), F.A.C. at the described point?  Yes  No  
(*Note: If yes to 25b and yes to either 25c, 25d, or 25e, B Test criteria are met*)
- h) Are there any **alterations or conditions** affecting reliable application of the A or B Test such that the Altered Sites Test is more appropriate?  Yes  No

Point ID/Location: Upland plug 1 and 2

**26. C Test Wetland Criteria §62-340.300(2)(c), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Per §62-340.300(2)(c), F.A.C. is the described point Pine Flatwoods or Improved Pasture, or does it have drained soils?  Yes  No **If yes, select which of the following are met, then skip to #26d**

Pine Flatwoods  Improved Pasture  Drained Soils

**Pine Flatwoods** must have flat terrain, a monotypic or mixed canopy of long leaf pine or slash pine, and a ground cover dominated by saw palmetto with other species that are **NOT** obligate or facultative wet. **Improved Pasture** means areas where the dominant native plant community has been replaced with planted or natural recruitment of herbaceous species which are **NOT** obligate or facultative wet species and which have been actively maintained for livestock through mechanical means or grazing.

**Drained Soils** are those in which permanent alterations, excluding mechanical pumping, preclude the formation of hydric soils.

b) Are the soils at the described point saline sands (salt flats-tidal flats), **or** have they been **field verified** by NRCS's Keys to Soil Taxonomy (4th ed. 1990) as Umbraqualfs, Sulfaquents, Hydraquents, Humaquepts, Histosols (except Folists), Argiaquolls, or Umbraquults?  Yes  No

c) Do the soils at the described point have a NRCS hydric soil field indicator (see #17), **and** is the point located within a map unit named or designated by the NRCS as frequently flooded, depressional, or water?

Map Unit: Udorthent  Yes  No  Inconclusive ← Why? \_\_\_\_\_ (skip to #27a)

d) Are the C Test criteria met per §62-340.300(2)(c), F.A.C. at the described point?  Yes  No  
(Note: If no to 26a and yes to either 26b or 26c, C Test criteria are met)

e) Are there any **alterations or conditions** affecting reliable application of the C Test such that the Altered Sites Test is more appropriate?  Yes  No

**27. D Test Wetland Criteria §62-340.300(2)(d), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Is the soil hydric as verified by a NRCS hydric soil field indicator? (See #17)

Yes  No (skip to #27d)  Inconclusive ← Why? \_\_\_\_\_ (skip to #28)

b) Does any NRCS hydric soil field indicator begin **at the soil surface or** are any of the following indicators present: A1, A2, A3, A4, A5, A7, A8, A9, S4, F2?  Yes  No (If yes, then hydrologic indicator §62-340.500(8) or (11) is met)

c) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No

d) Are the D Test criteria met per §62-340.300(2)(d), F.A.C. at the described point?  Yes  No  
(Note: If yes to 27a and yes to either 27b or 27c, D Test criteria may be met)

e) Are there any **alterations or conditions** affecting reliable application of the D Test such that the Altered Sites Test is more appropriate?  Yes  No

**28. Altered Sites Tests §62-340.300(3), F.A.C. (Legal/Authorized or Illegal/Unauthorized)**

For purposes of Chapter 62-340, F.A.C. **altered** refers to any natural or man-induced condition(s) which **masks or eliminates reliable expression** of wetland indicators (i.e. hydrophytic vegetation, hydric soils, and hydrologic indicators). **Unaltered or normal does not require a natural condition**, only an expression of wetland indicators that is sufficient to **reliably** identify or delineate the wetland using the criteria in §62-340.300, F.A.C.

Are alterations affecting normal wetland condition?  Yes  No (skip to #32)  Evaluation Impossible (skip to #32)

**29. Authorized or Legally Altered Vegetation and Soils Test Criteria §62-340.300(3)(a), F.A.C.**

a) Are there **authorized or legal** alterations affecting reliable expression of vegetation at the described point?  Yes  No If yes, how? \_\_\_\_\_

b) Are there **authorized or legal** alterations affecting reliable soil evaluation at the described point?  Yes  No If yes, how? \_\_\_\_\_ (If no to both 29a and 29b, skip to #30)

c) If yes to 29a or 29b, which criteria tests are affected by the legal alterations?

A Test  B Test  C Test  D Test

d) Using the most reliable available information and reasonable scientific judgment, would the types of evidence and characteristics contemplated in §62-340.300, F.A.C. identify or delineate the described point as a wetland with cessation of the legal altering activities?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #30)

e) If yes to 29d, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of legal altering activities?  Plants  Soils  Hydrologic indicators

f) If yes to 29d, which tests would be passed with cessation of legal altering activities?

Wetland Definition  A Test  B Test  C Test  D Test

**Why?** \_\_\_\_\_

**Point ID/Location:** Upland plug 1 and 2

**30. Authorized or Legally Altered Hydrology Test Criteria §62-340.300(3)(b), F.A.C.**

- a) Has wetland hydrology of the area been **legally** drained or lowered?  Yes  No (If no, skip to #31)  
If yes, how? \_\_\_\_\_
- b) Has wetland hydrology been **legally** eliminated at the described point?  Yes  No (If no, skip to #31)
- c) If yes to 30b, using reasonable scientific judgment or §62-340.550, F.A.C., have dredging or filling activities authorized by **Part IV** of Chapter 373, F.S. **permanently eliminated** wetland hydrology at the described point such that the wetland definition cannot be met?  Yes (point is upland)  No (If yes, skip to #31)  
*Chapter 373, F.S. Part II activities (e.g., water use permits) or other temporary hydrologic alterations (e.g., surface water pumps, drought) do **not** apply to this or any other Ch. 62-340, F.A.C. determinations.*
- d) If no to 30c, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of temporary hydrologic drainage?  Plants  Soils  Hydrologic indicators
- e) If no to 30c, Which tests would be passed with cessation of temporary hydrologic alterations?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**31. Unauthorized or Illegally Altered Sites Test Criteria §62-340.300(3)(c), F.A.C.**

*If the altering activity is a violation of regulatory requirements, then application of §62-340.300(3)(c), F.A.C. and all provisions of Chapter 62-340, F.A.C. are utilized to identify or delineate the wetland in a forensic manner.  
**This identification or delineation reflects the condition immediately prior to the unauthorized alteration.***

- a) Have any **unauthorized** alterations affected the normal wetland condition at the described point?  Yes  No  
If yes, how? \_\_\_\_\_ (If no, skip to #32)
- b) If yes to 31a, which criteria tests are affected by the unauthorized alterations?  
 A Test  B Test  C Test  D Test
- c) With reasonable scientific judgment is the described point a wetland, or would it have been a wetland immediately prior to the unauthorized alteration?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #32)
- d) If yes to 31c, what §62-340.300, F.A.C. evidence is present now and/or was present immediately prior to the unauthorized alteration?  Plants  Soils  Hydrologic indicators
- e) If yes to 31c, which tests would be passed immediately prior to the unauthorized alteration?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**32. Wetland and Other Surface Water Summary §62-340.600(2)(a-e), F.A.C.:**

Given **normal** expression, **cessation** of **authorized** alterations, or **immediately prior** to any **unauthorized** alterations:

- a) With **reasonable scientific judgment** is the described point a wetland as defined in §62-340.200(19), F.A.C. and located by Ch. 62-340, F.A.C.?  Yes  No If yes, which criteria identified or delineated the wetland?  
 Wetland Definition  A Test  B Test  C Test  D Test  
If summary answers differ from answers in 25f, 25g, 26d, or 27d, why? \_\_\_\_\_
- b) Is the described point located at or within the Mean High Water Line of a tidal water body?  
 Yes  No  MHWL Unknown
- c) Is the described point located at or within the Ordinary High Water Line of a non-tidal natural water body or natural watercourse?  Yes  No
- d) Is the described point located at or within the top of the bank of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes of 1 foot vertical to 4 feet horizontal or **steeper**, excluding spoil banks when the canals and ditches have resulted from excavation into the ground?  Yes  No
- e) Is the described point located at or within the Seasonal High Water Line of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes **flatter** than 1 foot vertical to 4 feet horizontal or an artificial water body created by diking or impoundment above the ground?  Yes  No

**33. Connection or Isolation of Wetland per Applicant's Handbook Vol.1 Section 2.0**

If the described point is a wetland, does it have a connection via wetlands or other surface waters, or is it wholly surrounded by uplands and therefore isolated?  Connected  Isolated  N/A (Point is not wetland)

**Point ID/Location:** Upland plug 1 and 2

**34. Photographs and/or videos:** Soil profile with Data Form, Soil profile close-up, Cross section(s) at 6" depth for sandy textures and/or critical depths for fine textures, Hydric soil indicators, Water table or inundation depth, Four cardinal directions of plant strata present, Hydrologic indicators (with scale as necessary), Critical plant ID (optional)

#	Memory Card # / Metadata	Description, compass direction (if applicable)	Taken By
1.			
2.			
3.			
4.			
5.			
6.			
7.			
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**Notes:** On northeast and south east side of bridge.

**Helpful Definitions for Applying Ch 62-340, F.A.C.**

<sup>1</sup>**RSJ** stands for Reasonable Scientific Judgment where used throughout this Data Form (See *The Florida Wetlands Delineation Manual* pg. 2 & 12)

<sup>2</sup>**HSTS** stands for Hydric Soils Technical Standard (See NRCS Hydric Soils Technical Note 11)

*Definition from §62.340.200(19) Florida Administrative Code*

**"Wetlands,"** as defined in subsection 373.019(17), F.S., means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

*Definition from §373.019(19) Florida Statutes*

**"Surface water"** means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

*Definition from §373.019(14) Florida Statutes*

**"Other watercourse"** means any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted.

*Definition from §62.340.200(15) Florida Administrative Code*

**"Seasonal High Water"** means the elevation to which the ground and surface water can be expected to rise due to a normal wet season.

*From The Florida Wetlands Delineation Manual pg. 37*

**Ordinary high water** is that point on the slope or bank where the surface water from the water body ceases to exert a dominant influence on the character of the surrounding vegetation and soils. The OHWL frequently encompasses areas dominated by non-listed vegetation and non-hydric soils. When the OHWL is not at a wetland edge, the general view of the area may present an "upland" appearance.

*Definition from §403.803(14) Florida Statutes*

**"Swale"** means a manmade trench which:

- (a) Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical;
- (b) Contains contiguous areas of standing or flowing water only following a rainfall event;
- (c) Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and
- (d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.



§ denotes the Rule, subsection, paragraph, or subparagraph referenced from Ch. 62-340, F.A.C.

# Chapter 62-340, F.A.C. Data Form

1. Date: Jan 13, 2022 2. Staff Present: Emily Rodriguez, Jen Savaro 3. Form recorder(s): ER  
 4. County: Miami-Dade (13) 5. Site Name: Matheson Hammock Bridge Tracking #: \_\_\_\_\_  
 6. Point ID: wetland plug 1 GPS Coordinates: \_\_\_\_\_  
 7. Distances and bearings from fixed objects (if no GPS): \_\_\_\_\_  
 8. Current condition of described point:  Authorized or legal condition  Unauthorized or illegal condition  
 9. Work type:  Identification  Delineation  
 Point status:  Wetland  Non-Wetland Surface Water  Upland

**10. Vegetative Stratum §62-340.400:** Using §62-340.400, F.A.C. with reasonable scientific judgment, select the appropriate vegetative stratum. (Do not include FAC species when determining 10% minimum areal extent.)  
 Canopy (Min. 10% areal extent)  Subcanopy (Min. 10% areal extent)  Groundcover (No min. areal extent)  
 Vegetation Absent (*skip to #14*)  Evaluation Impossible (*skip to #14*) **Why?** \_\_\_\_\_

**11. Plant List §62-340.200(2),(6),(16), §62-340.400, §62-340.450, F.A.C.:** Areal extent estimator: ER  
***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

Select and identify plants in an area just large enough to represent and classify the plant community at the described point. Do not extend into different communities or hydrologic conditions.

- |   |  |  |
|---|--|--|
| 1. Record the scientific name (binomial) and status of <u>each</u> plant species necessary to identify/delineate and classify the plant community in the selected area. | 2. Record the percent areal extent in the canopy, subcanopy, and groundcover columns for each species. | 3. For each species present in the <b>stratum selected in #10</b> , transfer the numbers from <u>only that stratum's column</u> into the appropriate status columns. |
|---|--|--|

#	Binomial of Observed Species	Status	Canopy	Subcanopy	Groundcover	Upland	Facultative	Fac. Wet	Obligate
1.	Dichromena colorata	FW			10			10	
2.	Spermacoce glabra	FW			5			5	
3.	Bacopa spp.	O			30				30
4.	Hydrocotyle Spp.	FW			20			20	
5.	Juncus effusus	O			15				15
6.									
7.									
8.									
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17.									
18.									
19.									
20.									

Percent areal extent totals for the stratum selected in question 10      0      0      35      45

12. In the stratum selected in #10: What is the % areal extent of Obligate plants? 45  
 What is the % areal extent of Upland plants? 0  
 Is the areal extent of Obligate plants greater than that of Upland plants?  Yes  No

13. In the stratum selected in #10: What is the total % areal extent of Obligate & Facultative Wet plants combined? 80  
 What is the total % areal extent of Obligate, Facultative Wet, & Upland plants combined? 80  
 What is the percentage of OBL + FACW in relation to all plants, excluding FAC? (  $\frac{OBL+FACW}{OBL+FACW+UPL}$  ) 100.0%



Point ID/Location: wetland plug 1 Soil describer: ER

14. LRR/MLRA U Textures: Peat, Mucky Peat, Muck, Mucky Mineral (S or F), Sand, Fine, Marl

15. Is a soil profile evaluation possible?  Yes  No If no, why? (If No, skip to #18)

16. Soil Description: As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations  
Soil surface, or 0 inch depth for purposes of Chapter 62-340, F.A.C. is the muck or mineral surface (whether natural or fill)

Horizon	beginning to ending Depth (inches)	Matrix Texture	moist condition Matrix Hue Value/ Chroma	for sandy matrix horizons w/ value ≤ 3: % Organic Coating	- Describe soil features: DA (areas darker than matrix), LA (areas lighter than matrix), RC (redox concentrations): Record in moist condition hue value/chroma; % volume in horizon; boundaries (sharp/clear/diffuse); shape (rounded/linear/angular). - OB (organic bodies): Record texture (muck or mucky mineral), % volume in horizon. - H <sub>2</sub> S (hydrogen sulfide odor): Indicate shallowest depth where detected - Note if horizon is Physically Mixed (PM), Nonsoil (any material not listed in "Textures" above), or Fill and describe.
1	0-4	SMM	10YR 3/1		
2	4-6	S	10 YR 3/1	65	shell/limestone refusal after 6 inches
3					
4					
5					
6					

17. Hydric Soil Field Indicators: If present, check all Hydric Soil Field Indicators satisfied and specify their beginning and ending depths

<input checked="" type="checkbox"/> All Texture	<input checked="" type="checkbox"/> Sandy Texture	<input checked="" type="checkbox"/> Fine Texture	Indicator Present	Begin Depth	End Depth
<input type="checkbox"/> (A1) Histosol*	<input type="checkbox"/> (S4) Sandy Gleyed Matrix*	<input type="checkbox"/> (F2) Loamy Gleyed Matrix*	1. A7	0	4
<input type="checkbox"/> (A2) Histic Epipedon*	<input type="checkbox"/> (S5) Sandy Redox	<input type="checkbox"/> (F3) Depleted Matrix	2. _____	_____	_____
<input type="checkbox"/> (A3) Black Histic*	<input type="checkbox"/> (S6) Stripped Matrix	<input type="checkbox"/> (F6) Redox Dark Surface	3. _____	_____	_____
<input type="checkbox"/> (A4) Hydrogen Sulfide*	<input type="checkbox"/> (S7) Dark Surface	<input type="checkbox"/> (F7) Depleted Dark Surface	4. _____	_____	_____
<input type="checkbox"/> (A5) Stratified Layers*	<input type="checkbox"/> (S8) Polyvalue Below Surface	<input type="checkbox"/> (F8) Redox Depression	5. _____	_____	_____
<input type="checkbox"/> (A6) Organic Bodies	<input type="checkbox"/> (S9) Thin Dark Surface	<input type="checkbox"/> (F10) Marl	6. _____	_____	_____
<input checked="" type="checkbox"/> (A7) 5cm Mucky Mineral*	<input type="checkbox"/> (S12) Barrier Islands 1cm Muck	<input type="checkbox"/> (F12) Iron-Manganese Masses			
<input type="checkbox"/> (A8) Muck Presence*		<input type="checkbox"/> (F13) Umbric Surface			
<input type="checkbox"/> (A9) 1cm Muck*		<input type="checkbox"/> (F22) Very Shallow Dark Surface			
<input type="checkbox"/> (A11) Depleted Below Dark Surface	* = Stand-alone D Test - both hydric soil and hydrologic indicator		To combine layers/indicators to meet thickness requirements, see NRCS Hydric Soils Technical Note 4.		
<input type="checkbox"/> (A12) Thick Dark Surface					

18. Excluding organic horizons, is any nonsoil horizon present at or within the uppermost 12 inches of the ground surface?  
 Yes (e.g. bedrock, rock outcrop, limestone fill, gravel, etc)  No  Soil profile or site inaccessible

19. Is one or more hydric soil field indicators present?  Yes  No  Inconclusive (e.g., evaluation to 12+ inches impeded by disturbance, water, nonsoil, no site access, etc.)  
If no or inconclusive, is the soil hydric as determined by other NRCS methods?  
 Yes ← Which method(s)? \_\_\_\_\_  No  Inconclusive ← Why? \_\_\_\_\_  
(e.g., hydric soil definition, HSTS<sup>2</sup>, indicator present at drier elevation, indicator would be present but for disturbance)

20. Is the depth of the soil profile 20 inches or greater from the soil surface?  Yes  No  
If no, depth of soil profile is: 6 inches Why? Shell and limestone refusal  
(e.g., root refusal, nonsoil, water table, loose sand, heavy texture, compaction, weather conditions, inspection interrupted)

21. Observed height or depth of standing water from soil surface: \_\_\_\_\_ inches  Above  Below  Not Observed

**22. Hydrologic Indicators: *As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations***

Hydrologic Indicators per §62-340.500, F.A.C. (and as applied to §62-340.600, F.A.C.)	Present at or near point	Predicted during normal high water or wet season♦	Within 100 ft waterward of point (not for upland points)	1. Describe the type of all checked indicators. 2. Approximate the distance and compass direction of indicators within 100 ft of the point. 3. For water level indicators (potential indicators denoted by *) <b>note the height from ground surface</b> at the point as well as waterward (with distance from point). ♦ Only for indicators not present due to dry season/drought
(1) Algal mats*				
(2) Aquatic mosses or liverworts*				
(3) Aquatic plants*				
(4) Aufwuchs				
(5) Drift lines and rafted debris*				
(6) Elevated lichen lines*				
(7) Evidence of aquatic fauna				
(8) Hydrologic data*	✓			A7
(9) Morphological plant adaptations*				
(10) Secondary flow channels				
(11) Sediment deposition*				
(12) Tussocks or hummocks*				
(13) Water marks*				

Highest water level indicator height at point: \_\_\_\_\_ inches  Above Ground Surface  No Water Level Indicators  
 Above Soil Surface  N/A (described point is Upland)

**23.** Is one or more hydrologic indicator(s) listed in §62-340.500, F.A.C. present or predicted with normal high water or wet season conditions at the described point?  Yes  No  Evaluation Impossible ← Why? \_\_\_\_\_

**24. Delineation by Wetland Definition §62-340.300(1), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Has a wetland boundary been delineated at the described point?  Yes  No (If No, skip to #25)  
 b) If yes to 24a, can the boundary be easily delineated using the definition of wetlands?  Yes  No

**25. A & B Test Wetland Criteria §62-340.300(2)(a),(b), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Is the areal extent of Obligate plants in the stratum selected in #10 greater than the areal extent of all Upland plants in that stratum? (See #12)  Yes  No  Vegetation Absent (skip to #25f)  Evaluation Impossible (skip to #26a)  
 b) Is the areal extent of Obligate and/or Facultative Wet plants in the stratum selected in #10 equal to or greater than 80% of all the plants in that stratum, excluding Facultative plants? (See #13)  Yes  No  
 c) Is the soil hydric as identified using standard NRCS definitions and practices? (see #19)  
 Yes  No  Indeterminable with current conditions ← Why? \_\_\_\_\_  
 d) Is the substrate composed of riverwash, nonsoil (see #18), rock outcrop-soil complex, or is the substrate located within an artificially created wetland area?  Yes  No If yes, which condition is present? \_\_\_\_\_  
 e) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No  
 f) Are the A Test criteria met per §62-340.300(2)(a), F.A.C. at the described point?  Yes  No  
 (Note: If yes to 25a and yes to either 25c, 25d, or 25e, A Test criteria are met)  
 g) Are the B Test criteria met per §62-340.300(2)(b), F.A.C. at the described point?  Yes  No  
 (Note: If yes to 25b and yes to either 25c, 25d, or 25e, B Test criteria are met)  
 h) Are there any alterations or conditions affecting reliable application of the A or B Test such that the Altered Sites Test is more appropriate?  Yes  No

Point ID/Location: wetland plug 1

**26. C Test Wetland Criteria §62-340.300(2)(c), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Per §62-340.300(2)(c), F.A.C. is the described point Pine Flatwoods or Improved Pasture, or does it have drained soils?  Yes  No **If yes, select which of the following are met, then skip to #26d**

Pine Flatwoods  Improved Pasture  Drained Soils

**Pine Flatwoods** must have flat terrain, a monotypic or mixed canopy of long leaf pine or slash pine, and a ground cover dominated by saw palmetto with other species that are NOT obligate or facultative wet. **Improved Pasture** means areas where the dominant native plant community has been replaced with planted or natural recruitment of herbaceous species which are NOT obligate or facultative wet species and which have been actively maintained for livestock through mechanical means or grazing.

**Drained Soils** are those in which permanent alterations, excluding mechanical pumping, preclude the formation of hydric soils.

b) Are the soils at the described point saline sands (salt flats-tidal flats), **or** have they been **field verified** by NRCS's Keys to Soil Taxonomy (4th ed. 1990) as Umbraqualfs, Sulfaquents, Hydraquents, Humaquepts, Histosols (except Folists), Argiaquolls, or Umbraquults?  Yes  No

c) Do the soils at the described point have a NRCS hydric soil field indicator (see #17), **and** is the point located within a map unit named or designated by the NRCS as frequently flooded, depressional, or water?

Map Unit: Udorthent  Yes  No  Inconclusive ← Why? \_\_\_\_\_ (skip to #27a)

d) Are the C Test criteria met per §62-340.300(2)(c), F.A.C. at the described point?  Yes  No  
(Note: If no to 26a and yes to either 26b or 26c, C Test criteria are met)

e) Are there any **alterations or conditions** affecting reliable application of the C Test such that the Altered Sites Test is more appropriate?  Yes  No

**27. D Test Wetland Criteria §62-340.300(2)(d), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Is the soil hydric as verified by a NRCS hydric soil field indicator? (See #17)

Yes  No (skip to #27d)  Inconclusive ← Why? \_\_\_\_\_ (skip to #28)

b) Does any NRCS hydric soil field indicator begin **at the soil surface or** are any of the following indicators present: A1, A2, A3, A4, A5, A7, A8, A9, S4, F2?  Yes  No (If yes, then hydrologic indicator §62-340.500(8) or (11) is met)

c) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No

d) Are the D Test criteria met per §62-340.300(2)(d), F.A.C. at the described point?  Yes  No  
(Note: If yes to 27a and yes to either 27b or 27c, D Test criteria may be met)

e) Are there any **alterations or conditions** affecting reliable application of the D Test such that the Altered Sites Test is more appropriate?  Yes  No

**28. Altered Sites Tests §62-340.300(3), F.A.C. (Legal/Authorized or Illegal/Unauthorized)**

For purposes of Chapter 62-340, F.A.C. **altered** refers to any natural or man-induced condition(s) which **masks or eliminates reliable expression** of wetland indicators (i.e. hydrophytic vegetation, hydric soils, and hydrologic indicators). **Unaltered or normal does not require a natural condition**, only an expression of wetland indicators that is sufficient to **reliably** identify or delineate the wetland using the criteria in §62-340.300, F.A.C.

Are alterations affecting normal wetland condition?  Yes  No (skip to #32)  Evaluation Impossible (skip to #32)

**29. Authorized or Legally Altered Vegetation and Soils Test Criteria §62-340.300(3)(a), F.A.C.**

a) Are there **authorized or legal** alterations affecting reliable expression of vegetation at the described point?  Yes  No If yes, how? \_\_\_\_\_

b) Are there **authorized or legal** alterations affecting reliable soil evaluation at the described point?  Yes  No If yes, how? \_\_\_\_\_ (If no to both 29a and 29b, skip to #30)

c) If yes to 29a or 29b, which criteria tests are affected by the legal alterations?

A Test  B Test  C Test  D Test

d) Using the most reliable available information and reasonable scientific judgment, would the types of evidence and characteristics contemplated in §62-340.300, F.A.C. identify or delineate the described point as a wetland with cessation of the legal altering activities?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #30)

e) If yes to 29d, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of legal altering activities?  Plants  Soils  Hydrologic indicators

f) If yes to 29d, which tests would be passed with cessation of legal altering activities?

Wetland Definition  A Test  B Test  C Test  D Test

**Why?** \_\_\_\_\_

Point ID/Location: wetland plug 1

**30. Authorized or Legally Altered Hydrology Test Criteria §62-340.300(3)(b), F.A.C.**

- a) Has wetland hydrology of the area been **legally** drained or lowered?  Yes  No (If no, skip to #31)  
If yes, how? \_\_\_\_\_
- b) Has wetland hydrology been **legally** eliminated at the described point?  Yes  No (If no, skip to #31)
- c) If yes to 30b, using reasonable scientific judgment or §62-340.550, F.A.C., have dredging or filling activities authorized by **Part IV** of Chapter 373, F.S. **permanently eliminated** wetland hydrology at the described point such that the wetland definition cannot be met?  Yes (point is upland)  No (If yes, skip to #31)  
*Chapter 373, F.S. Part II activities (e.g., water use permits) or other temporary hydrologic alterations (e.g., surface water pumps, drought) do **not** apply to this or any other Ch. 62-340, F.A.C. determinations.*
- d) If no to 30c, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of temporary hydrologic drainage?  Plants  Soils  Hydrologic indicators
- e) If no to 30c, Which tests would be passed with cessation of temporary hydrologic alterations?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**31. Unauthorized or Illegally Altered Sites Test Criteria §62-340.300(3)(c), F.A.C.**

*If the altering activity is a violation of regulatory requirements, then application of §62-340.300(3)(c), F.A.C. and all provisions of Chapter 62-340, F.A.C. are utilized to identify or delineate the wetland in a forensic manner.*

***This identification or delineation reflects the condition immediately prior to the unauthorized alteration.***

- a) Have any **unauthorized** alterations affected the normal wetland condition at the described point?  Yes  No  
If yes, how? \_\_\_\_\_ (If no, skip to #32)
- b) If yes to 31a, which criteria tests are affected by the unauthorized alterations?  
 A Test  B Test  C Test  D Test
- c) With reasonable scientific judgment is the described point a wetland, or would it have been a wetland immediately prior to the unauthorized alteration?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #32)
- d) If yes to 31c, what §62-340.300, F.A.C. evidence is present now and/or was present immediately prior to the unauthorized alteration?  Plants  Soils  Hydrologic indicators
- e) If yes to 31c, which tests would be passed immediately prior to the unauthorized alteration?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**32. Wetland and Other Surface Water Summary §62-340.600(2)(a-e), F.A.C.:**

Given **normal** expression, **cessation** of **authorized** alterations, or **immediately prior** to any **unauthorized** alterations:

- a) With **reasonable scientific judgment** is the described point a wetland as defined in §62-340.200(19), F.A.C. and located by Ch. 62-340, F.A.C.?  Yes  No If yes, which criteria identified or delineated the wetland?  
 Wetland Definition  A Test  B Test  C Test  D Test  
If summary answers differ from answers in 25f, 25g, 26d, or 27d, why? \_\_\_\_\_
- b) Is the described point located at or within the Mean High Water Line of a tidal water body?  
 Yes  No  MHWL Unknown
- c) Is the described point located at or within the Ordinary High Water Line of a non-tidal natural water body or natural watercourse?  Yes  No
- d) Is the described point located at or within the top of the bank of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes of 1 foot vertical to 4 feet horizontal or **steeper**, excluding spoil banks when the canals and ditches have resulted from excavation into the ground?  Yes  No
- e) Is the described point located at or within the Seasonal High Water Line of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes **flatter** than 1 foot vertical to 4 feet horizontal or an artificial water body created by diking or impoundment above the ground?  Yes  No

**33. Connection or Isolation of Wetland per Applicant's Handbook Vol.1 Section 2.0**

If the described point is a wetland, does it have a connection via wetlands or other surface waters, or is it wholly surrounded by uplands and therefore isolated?  Connected  Isolated  N/A (Point is not wetland)

**Point ID/Location:** wetland plug 1

**34. Photographs and/or videos:** Soil profile with Data Form, Soil profile close-up, Cross section(s) at 6" depth for sandy textures and/or critical depths for fine textures, Hydric soil indicators, Water table or inundation depth, Four cardinal directions of plant strata present, Hydrologic indicators (with scale as necessary), Critical plant ID (optional)

#	Memory Card # / Metadata	Description, compass direction (if applicable)	Taken By
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
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13.			
14.			

**Notes:** On southeast side of bridge. Freshwater wetland but can get inundated by saltwater during king tides or storm events.

**Helpful Definitions for Applying Ch 62-340, F.A.C.**

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<sup>2</sup>**HSTS** stands for Hydric Soils Technical Standard (See NRCS Hydric Soils Technical Note 11)

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*From The Florida Wetlands Delineation Manual pg. 37*

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*Definition from §403.803(14) Florida Statutes*

**"Swale"** means a manmade trench which:

- (a) Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical;
- (b) Contains contiguous areas of standing or flowing water only following a rainfall event;
- (c) Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and
- (d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.



§ denotes the Rule, subsection, paragraph, or subparagraph referenced from Ch. 62-340, F.A.C.

# Chapter 62-340, F.A.C. Data Form

1. Date: Jan 13, 2022 2. Staff Present: Emily Rodriguez, Jen Savaro 3. Form recorder(s): ER  
 4. County: Miami-Dade (13) 5. Site Name: Matheson Hammock Bridge Tracking #: \_\_\_\_\_  
 6. Point ID: wetland plug 2 GPS Coordinates: \_\_\_\_\_  
 7. Distances and bearings from fixed objects (if no GPS): \_\_\_\_\_  
 8. Current condition of described point:  Authorized or legal condition  Unauthorized or illegal condition  
 9. Work type:  Identification  Delineation  
 Point status:  Wetland  Non-Wetland Surface Water  Upland

**10. Vegetative Stratum §62-340.400:** Using §62-340.400, F.A.C. with reasonable scientific judgment, select the appropriate vegetative stratum. (Do not include FAC species when determining 10% minimum areal extent.)  
 Canopy (Min. 10% areal extent)  Subcanopy (Min. 10% areal extent)  Groundcover (No min. areal extent)  
 Vegetation Absent (*skip to #14*)  Evaluation Impossible (*skip to #14*) **Why?** \_\_\_\_\_

**11. Plant List §62-340.200(2),(6),(16), §62-340.400, §62-340.450, F.A.C.:** Areal extent estimator: ER  
***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

Select and identify plants in an area just large enough to represent and classify the plant community at the described point. Do not extend into different communities or hydrologic conditions.

- |   |  |  |
|---|--|--|
| 1. Record the scientific name (binomial) and status of <u>each</u> plant species necessary to identify/delineate and classify the plant community in the selected area. | 2. Record the percent areal extent in the canopy, subcanopy, and groundcover columns for each species. | 3. For each species present in the <b>stratum selected in #10</b> , transfer the numbers from <u>only that stratum's column</u> into the appropriate status columns. |
|---|--|--|

#	Binomial of Observed Species	Status	Canopy	Subcanopy	Groundcover	Upland	Facultative	Fac. Wet	Obligate
1.	Panicum repens	FW			80			80	
2.	Bacopa spp.	O			40				40
3.	Batis maritima	O			30				30
4.									
5.									
6.									
7.									
8.									
9.									
10.									
11.									
12.									
13.									
14.									
15.									
16.									
17.									
18.									
19.									
20.									

Percent areal extent totals for the stratum selected in question 10      0      0      80      70

12. In the stratum selected in #10: What is the % areal extent of Obligate plants? 70  
 What is the % areal extent of Upland plants? 0  
 Is the areal extent of Obligate plants greater than that of Upland plants?  Yes  No

13. In the stratum selected in #10: What is the total % areal extent of Obligate & Facultative Wet plants combined? 150  
 What is the total % areal extent of Obligate, Facultative Wet, & Upland plants combined? 150  
 What is the percentage of OBL + FACW in relation to all plants, excluding FAC? (  $\frac{OBL+FACW}{OBL+FACW+UPL}$  ) 100.0%

Point ID/Location: wetland plug 2 Soil describer: ER

14. LRR/MLRA U Textures: Peat, Mucky Peat, Muck, Mucky Mineral (S or F), Sand, Fine, Marl

15. Is a soil profile evaluation possible?  Yes  No If no, why? (If No, skip to #18)

16. Soil Description: As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations  
Soil surface, or 0 inch depth for purposes of Chapter 62-340, F.A.C. is the muck or mineral surface (whether natural or fill)

Horizon	beginning to ending Depth (inches)	Matrix Texture	moist condition Matrix Hue Value/ Chroma	for sandy matrix horizons w/ value ≤ 3: % Organic Coating	- Describe soil features: DA (areas darker than matrix), LA (areas lighter than matrix), RC (redox concentrations): Record in moist condition hue value/chroma; % volume in horizon; boundaries (sharp/clear/diffuse); shape (rounded/linear/angular). - OB (organic bodies): Record texture (muck or mucky mineral), % volume in horizon. - H <sub>2</sub> S (hydrogen sulfide odor): Indicate shallowest depth where detected - Note if horizon is Physically Mixed (PM), Nonsoil (any material not listed in "Textures" above), or Fill and describe.
1	0-6	SMM	10YR 3/1	70	shell/limestone refusal after 6 inches, plug filled with water after 1min
2					
3					
4					
5					
6					

17. Hydric Soil Field Indicators: If present, check all Hydric Soil Field Indicators satisfied and specify their beginning and ending depths

<input checked="" type="checkbox"/> All Texture	<input checked="" type="checkbox"/> Sandy Texture	<input checked="" type="checkbox"/> Fine Texture	Indicator Present	Begin Depth	End Depth
<input type="checkbox"/> (A1) Histosol*	<input type="checkbox"/> (S4) Sandy Gleyed Matrix*	<input type="checkbox"/> (F2) Loamy Gleyed Matrix*	1. A7	0	6
<input type="checkbox"/> (A2) Histic Epipedon*	<input type="checkbox"/> (S5) Sandy Redox	<input type="checkbox"/> (F3) Depleted Matrix	2. S7	0	6
<input type="checkbox"/> (A3) Black Histic*	<input type="checkbox"/> (S6) Stripped Matrix	<input type="checkbox"/> (F6) Redox Dark Surface	3. _____	_____	_____
<input type="checkbox"/> (A4) Hydrogen Sulfide*	<input checked="" type="checkbox"/> (S7) Dark Surface	<input type="checkbox"/> (F7) Depleted Dark Surface	4. _____	_____	_____
<input type="checkbox"/> (A5) Stratified Layers*	<input type="checkbox"/> (S8) Polyvalue Below Surface	<input type="checkbox"/> (F8) Redox Depression	5. _____	_____	_____
<input type="checkbox"/> (A6) Organic Bodies	<input type="checkbox"/> (S9) Thin Dark Surface	<input type="checkbox"/> (F10) Marl	6. _____	_____	_____
<input checked="" type="checkbox"/> (A7) 5cm Mucky Mineral*	<input type="checkbox"/> (S12) Barrier Islands 1cm Muck	<input type="checkbox"/> (F12) Iron-Manganese Masses			
<input type="checkbox"/> (A8) Muck Presence*		<input type="checkbox"/> (F13) Umbric Surface			
<input type="checkbox"/> (A9) 1cm Muck*		<input type="checkbox"/> (F22) Very Shallow Dark Surface			
<input type="checkbox"/> (A11) Depleted Below Dark Surface	* = Stand-alone D Test - both hydric soil and hydrologic indicator		To combine layers/indicators to meet thickness requirements, see NRCS Hydric Soils Technical Note 4.		
<input type="checkbox"/> (A12) Thick Dark Surface					

18. Excluding organic horizons, is any nonsoil horizon present at or within the uppermost 12 inches of the ground surface?  
 Yes (e.g. bedrock, rock outcrop, limestone fill, gravel, etc)  No  Soil profile or site inaccessible

19. Is one or more hydric soil field indicators present?  Yes  No  Inconclusive (e.g., evaluation to 12+ inches impeded by disturbance, water, nonsoil, no site access, etc.)  
If no or inconclusive, is the soil hydric as determined by other NRCS methods?  
 Yes ← Which method(s)? \_\_\_\_\_  No  Inconclusive ← Why? \_\_\_\_\_  
(e.g., hydric soil definition, HSTS<sup>2</sup>, indicator present at drier elevation, indicator would be present but for disturbance)

20. Is the depth of the soil profile 20 inches or greater from the soil surface?  Yes  No  
If no, depth of soil profile is: 6 inches Why? Shell and limestone refusal  
(e.g., root refusal, nonsoil, water table, loose sand, heavy texture, compaction, weather conditions, inspection interrupted)

21. Observed height or depth of standing water from soil surface: 3 inches  Above  Below  Not Observed

**22. Hydrologic Indicators: *As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations***

Hydrologic Indicators per §62-340.500, F.A.C. (and as applied to §62-340.600, F.A.C.)	Present at or near point	Predicted during normal high water or wet season♦	Within 100 ft waterward of point (not for upland points)	1. Describe the type of all checked indicators. 2. Approximate the distance and compass direction of indicators within 100 ft of the point. 3. For water level indicators (potential indicators denoted by *) <b>note the height from ground surface</b> at the point as well as waterward (with distance from point). ♦ Only for indicators not present due to dry season/drought
(1) Algal mats*	✓			
(2) Aquatic mosses or liverworts*				
(3) Aquatic plants*				
(4) Aufwuchs				
(5) Drift lines and rafted debris*				
(6) Elevated lichen lines*				
(7) Evidence of aquatic fauna				
(8) Hydrologic data*	✓			A7, S7, standing water and water in plug
(9) Morphological plant adaptations*				
(10) Secondary flow channels				
(11) Sediment deposition*				
(12) Tussocks or hummocks*				
(13) Water marks*				

Highest water level indicator height at point: 3 inches  Above Ground Surface  No Water Level Indicators  
 Above Soil Surface  N/A (described point is Upland)

**23.** Is one or more hydrologic indicator(s) listed in §62-340.500, F.A.C. present or predicted with normal high water or wet season conditions at the described point?  Yes  No  Evaluation Impossible ← Why? \_\_\_\_\_

**24. Delineation by Wetland Definition §62-340.300(1), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Has a wetland boundary been delineated at the described point?  Yes  No (If No, skip to #25)  
 b) If yes to 24a, can the boundary be easily delineated using the definition of wetlands?  Yes  No

**25. A & B Test Wetland Criteria §62-340.300(2)(a),(b), F.A.C.**

***As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:***

- a) Is the areal extent of Obligate plants in the stratum selected in #10 greater than the areal extent of all Upland plants in that stratum? (See #12)  Yes  No  Vegetation Absent (skip to #25f)  Evaluation Impossible (skip to #26a)  
 b) Is the areal extent of Obligate and/or Facultative Wet plants in the stratum selected in #10 equal to or greater than 80% of all the plants in that stratum, excluding Facultative plants? (See #13)  Yes  No  
 c) Is the soil hydric as identified using standard NRCS definitions and practices? (see #19)  
 Yes  No  Indeterminable with current conditions ← Why? \_\_\_\_\_  
 d) Is the substrate composed of riverwash, nonsoil (see #18), rock outcrop-soil complex, or is the substrate located within an artificially created wetland area?  Yes  No If yes, which condition is present? \_\_\_\_\_  
 e) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No  
 f) Are the A Test criteria met per §62-340.300(2)(a), F.A.C. at the described point?  Yes  No  
 (Note: If yes to 25a and yes to either 25c, 25d, or 25e, A Test criteria are met)  
 g) Are the B Test criteria met per §62-340.300(2)(b), F.A.C. at the described point?  Yes  No  
 (Note: If yes to 25b and yes to either 25c, 25d, or 25e, B Test criteria are met)  
 h) Are there any alterations or conditions affecting reliable application of the A or B Test such that the Altered Sites Test is more appropriate?  Yes  No



Point ID/Location: wetland plug 2

**26. C Test Wetland Criteria §62-340.300(2)(c), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Per §62-340.300(2)(c), F.A.C. is the described point Pine Flatwoods or Improved Pasture, or does it have drained soils?  Yes  No **If yes, select which of the following are met, then skip to #26d**

Pine Flatwoods  Improved Pasture  Drained Soils

**Pine Flatwoods** must have flat terrain, a monotypic or mixed canopy of long leaf pine or slash pine, and a ground cover dominated by saw palmetto with other species that are NOT obligate or facultative wet. **Improved Pasture** means areas where the dominant native plant community has been replaced with planted or natural recruitment of herbaceous species which are NOT obligate or facultative wet species and which have been actively maintained for livestock through mechanical means or grazing.

**Drained Soils** are those in which permanent alterations, excluding mechanical pumping, preclude the formation of hydric soils.

b) Are the soils at the described point saline sands (salt flats-tidal flats), **or** have they been **field verified** by NRCS's Keys to Soil Taxonomy (4th ed. 1990) as Umbraqualfs, Sulfaquents, Hydraquents, Humaquepts, Histosols (except Folists), Argiaquolls, or Umbraquults?  Yes  No

c) Do the soils at the described point have a NRCS hydric soil field indicator (see #17), **and** is the point located within a map unit named or designated by the NRCS as frequently flooded, depressional, or water?

Map Unit: Udorthent  Yes  No  Inconclusive ← Why? \_\_\_\_\_ (skip to #27a)

d) Are the C Test criteria met per §62-340.300(2)(c), F.A.C. at the described point?  Yes  No  
(Note: If no to 26a and yes to either 26b or 26c, C Test criteria are met)

e) Are there any **alterations or conditions** affecting reliable application of the C Test such that the Altered Sites Test is more appropriate?  Yes  No

**27. D Test Wetland Criteria §62-340.300(2)(d), F.A.C.**

**As is under current conditions, without considering RSJ<sup>1</sup> or the legality of any alterations:**

a) Is the soil hydric as verified by a NRCS hydric soil field indicator? (See #17)

Yes  No (skip to #27d)  Inconclusive ← Why? \_\_\_\_\_ (skip to #28)

b) Does any NRCS hydric soil field indicator begin **at the soil surface or** are any of the following indicators present: A1, A2, A3, A4, A5, A7, A8, A9, S4, F2?  Yes  No (If yes, then hydrologic indicator §62-340.500(8) or (11) is met)

c) Is one or more of the hydrologic indicators in §62-340.500, F.A.C. present at the described point? (See #23)  Yes  No

d) Are the D Test criteria met per §62-340.300(2)(d), F.A.C. at the described point?  Yes  No  
(Note: If yes to 27a and yes to either 27b or 27c, D Test criteria may be met)

e) Are there any **alterations or conditions** affecting reliable application of the D Test such that the Altered Sites Test is more appropriate?  Yes  No

**28. Altered Sites Tests §62-340.300(3), F.A.C. (Legal/Authorized or Illegal/Unauthorized)**

For purposes of Chapter 62-340, F.A.C. **altered** refers to any natural or man-induced condition(s) which **masks or eliminates reliable expression** of wetland indicators (i.e. hydrophytic vegetation, hydric soils, and hydrologic indicators). **Unaltered or normal does not require a natural condition**, only an expression of wetland indicators that is sufficient to **reliably** identify or delineate the wetland using the criteria in §62-340.300, F.A.C.

Are alterations affecting normal wetland condition?  Yes  No (skip to #32)  Evaluation Impossible (skip to #32)

**29. Authorized or Legally Altered Vegetation and Soils Test Criteria §62-340.300(3)(a), F.A.C.**

a) Are there **authorized or legal** alterations affecting reliable expression of vegetation at the described point?  Yes  No If yes, how? \_\_\_\_\_

b) Are there **authorized or legal** alterations affecting reliable soil evaluation at the described point?  Yes  No If yes, how? \_\_\_\_\_ (If no to both 29a and 29b, skip to #30)

c) If yes to 29a or 29b, which criteria tests are affected by the legal alterations?

A Test  B Test  C Test  D Test

d) Using the most reliable available information and reasonable scientific judgment, would the types of evidence and characteristics contemplated in §62-340.300, F.A.C. identify or delineate the described point as a wetland with cessation of the legal altering activities?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #30)

e) If yes to 29d, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of legal altering activities?  Plants  Soils  Hydrologic indicators

f) If yes to 29d, which tests would be passed with cessation of legal altering activities?

Wetland Definition  A Test  B Test  C Test  D Test

**Why?** \_\_\_\_\_

Point ID/Location: wetland plug 2

**30. Authorized or Legally Altered Hydrology Test Criteria §62-340.300(3)(b), F.A.C.**

- a) Has wetland hydrology of the area been **legally** drained or lowered?  Yes  No (If no, skip to #31)  
If yes, how? \_\_\_\_\_
- b) Has wetland hydrology been **legally** eliminated at the described point?  Yes  No (If no, skip to #31)
- c) If yes to 30b, using reasonable scientific judgment or §62-340.550, F.A.C., have dredging or filling activities authorized by **Part IV** of Chapter 373, F.S. **permanently eliminated** wetland hydrology at the described point such that the wetland definition cannot be met?  Yes (point is upland)  No (If yes, skip to #31)  
*Chapter 373, F.S. Part II activities (e.g., water use permits) or other temporary hydrologic alterations (e.g., surface water pumps, drought) do **not** apply to this or any other Ch. 62-340, F.A.C. determinations.*
- d) If no to 30c, what §62-340.300, F.A.C. evidence is present now and/or will be present in the future with cessation of temporary hydrologic drainage?  Plants  Soils  Hydrologic indicators
- e) If no to 30c, Which tests would be passed with cessation of temporary hydrologic alterations?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**31. Unauthorized or Illegally Altered Sites Test Criteria §62-340.300(3)(c), F.A.C.**

*If the altering activity is a violation of regulatory requirements, then application of §62-340.300(3)(c), F.A.C. and all provisions of Chapter 62-340, F.A.C. are utilized to identify or delineate the wetland in a forensic manner.  
**This identification or delineation reflects the condition immediately prior to the unauthorized alteration.***

- a) Have any **unauthorized** alterations affected the normal wetland condition at the described point?  Yes  No  
If yes, how? \_\_\_\_\_ (If no, skip to #32)
- b) If yes to 31a, which criteria tests are affected by the unauthorized alterations?  
 A Test  B Test  C Test  D Test
- c) With reasonable scientific judgment is the described point a wetland, or would it have been a wetland immediately prior to the unauthorized alteration?  Yes  No If no, why? \_\_\_\_\_ (If no, skip to #32)
- d) If yes to 31c, what §62-340.300, F.A.C. evidence is present now and/or was present immediately prior to the unauthorized alteration?  Plants  Soils  Hydrologic indicators
- e) If yes to 31c, which tests would be passed immediately prior to the unauthorized alteration?  
 Wetland Definition  A Test  B Test  C Test  D Test  
**Why?** \_\_\_\_\_

**32. Wetland and Other Surface Water Summary §62-340.600(2)(a-e), F.A.C.:**

Given **normal** expression, **cessation** of **authorized** alterations, or **immediately prior** to any **unauthorized** alterations:

- a) With **reasonable scientific judgment** is the described point a wetland as defined in §62-340.200(19), F.A.C. and located by Ch. 62-340, F.A.C.?  Yes  No If yes, which criteria identified or delineated the wetland?  
 Wetland Definition  A Test  B Test  C Test  D Test  
If summary answers differ from answers in 25f, 25g, 26d, or 27d, why? \_\_\_\_\_
- b) Is the described point located at or within the Mean High Water Line of a tidal water body?  
 Yes  No  MHWL Unknown
- c) Is the described point located at or within the Ordinary High Water Line of a non-tidal natural water body or natural watercourse?  Yes  No
- d) Is the described point located at or within the top of the bank of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes of 1 foot vertical to 4 feet horizontal or **steeper**, excluding spoil banks when the canals and ditches have resulted from excavation into the ground?  Yes  No
- e) Is the described point located at or within the Seasonal High Water Line of an artificial lake, borrow pit, canal, ditch, or other type of artificial water body or watercourse with side slopes **flatter** than 1 foot vertical to 4 feet horizontal or an artificial water body created by diking or impoundment above the ground?  Yes  No

**33. Connection or Isolation of Wetland per Applicant's Handbook Vol.1 Section 2.0**

If the described point is a wetland, does it have a connection via wetlands or other surface waters, or is it wholly surrounded by uplands and therefore isolated?  Connected  Isolated  N/A (Point is not wetland)

**Point ID/Location:** wetland plug 2

**34. Photographs and/or videos:** Soil profile with Data Form, Soil profile close-up, Cross section(s) at 6" depth for sandy textures and/or critical depths for fine textures, Hydric soil indicators, Water table or inundation depth, Four cardinal directions of plant strata present, Hydrologic indicators (with scale as necessary), Critical plant ID (optional)

#	Memory Card # / Metadata	Description, compass direction (if applicable)	Taken By
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			

**Notes:** On northeast side of bridge. Freshwater wetland but can get inundated by saltwater during king tides or storm events.

**Helpful Definitions for Applying Ch 62-340, F.A.C.**

<sup>1</sup>**RSJ** stands for Reasonable Scientific Judgment where used throughout this Data Form (See *The Florida Wetlands Delineation Manual* pg. 2 & 12)

<sup>2</sup>**HSTS** stands for Hydric Soils Technical Standard (See NRCS Hydric Soils Technical Note 11)

*Definition from §62.340.200(19) Florida Administrative Code*

**"Wetlands,"** as defined in subsection 373.019(17), F.S., means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

*Definition from §373.019(19) Florida Statutes*

**"Surface water"** means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

*Definition from §373.019(14) Florida Statutes*

**"Other watercourse"** means any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted.

*Definition from §62.340.200(15) Florida Administrative Code*

**"Seasonal High Water"** means the elevation to which the ground and surface water can be expected to rise due to a normal wet season.

*From The Florida Wetlands Delineation Manual pg. 37*

**Ordinary high water** is that point on the slope or bank where the surface water from the water body ceases to exert a dominant influence on the character of the surrounding vegetation and soils. The OHWL frequently encompasses areas dominated by non-listed vegetation and non-hydric soils. When the OHWL is not at a wetland edge, the general view of the area may present an "upland" appearance.

*Definition from §403.803(14) Florida Statutes*

**"Swale"** means a manmade trench which:

- (a) Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical;
- (b) Contains contiguous areas of standing or flowing water only following a rainfall event;
- (c) Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and
- (d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.