# **DEPARTMENT OF THE ARMY PERMIT**

Permittee: Siesta V. Land Trust c/o Chris Claussen 2134 Sevilla Way Naples, FL 34109

Permit No: SAJ-1997-05999-(SP-RMT)

### Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

**Project Description:** Clear, grade, excavate, dredge and fill to construct and maintain an upscale residential development with an access road, driveways and other associated infrastructure. The proposed project would discharge approximately 19,360 cubic yards of fill material into 3.00± acres of tidal wetlands and discharge 2,614 cubic yards of fill material into 0.36± acre of other tidal waters.

The work described above is to be completed in accordance with the 18 pages of site plans (Attachment # 1) and 6 other attachments affixed to the end of this permit instrument.

**Project Location:** North of San Carlos Island on the west side of San Carlos Boulevard in Sections 12 and 13, Township 46 South, Range 23 East, Lee County, Florida.

**Directions to site:** From Fort Myers, take US 41 to Gladiolus Drive, turn west to Summerlin Road, turn south to San Carlos Boulevard, turn west to Siesta Drive, turn south to Old Pelican Bay Drive and proceed to the site.

Approximate Central Coordinates:	Latitude: 26.472816° North
	Longitude: 81.957303° West

Permit Conditions:

General Conditions:

#### PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 2 of 18

1. The time limit for completing the work authorized ends on <u>4 September 2023</u>. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and the mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached (Attachment # 2) if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

#### **Special Conditions:**

**1. Reporting Address:** The Permittee shall submit all reports, notifications, documentation and correspondence required by the general and special conditions of this permit to the following address:

a. For standard mail: U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement Branch, 1520 Royal Palm Square Boulevard, Ste. 310, Fort Myers, Florida 33919.

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b. For electronic mail CESAJ-ComplyDocs@usace.army.mil (not to exceed 10 MB).The Permittee shall reference this permit number, SAJ-1997-05999-(SP-RMT) on all submittals.

**2. Commencement Notification:** Within 10 days from the date of initiating the work authorized by this permit/Within 10 days from the date of initiating the work authorized by this permit for each phase of the authorized project, the Permittee shall provide a written notification of the date of commencement of authorized work to the Corps.

**3. Certification:** Within 60 days of completion of the work authorized by this permit, the Permittee shall complete the attached "As-built Certification" form (Attachment # 3) and submit to the Corps. In the event that the completed work deviates in any manner from the authorized work, the Permittee shall describe the deviations between the work authorized by this permit and the work as constructed on the "As-built Certification" form. The description of any deviations on the "As-built Certification" form does not constitute approval of any deviations by the Corps.

a. A plan view drawing of the location of the authorized work footprint, as shown on the permit drawings, with transparent overlay of the work as constructed in the same scale as the permit drawings on 8½-inch by 11-inch sheets. The plan view drawing should show all "earth disturbance," including wetland impacts and water management structures.

b. In the event that the completed work deviates, in any manner, from the authorized work, describe on the attached "As-Built Certification By Professional Engineer" form the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. Please note that the depiction and/or description of any deviations on the drawings and/or "As-Built Certification By Professional Engineer" form does not constitute approval of any deviations by the Corps.

c. Include the Department of the Army permit number on all sheets submitted.

**4. Agency Changes/Approvals:** Should any other agency require and/or approve changes to the work authorized or obligated by this permit, the Permittee is advised a modification to this permit instrument is required prior to initiation of those changes. It is the Permittee's responsibility to request a modification of this permit from the *Fort Myers Permits Office.* The Corps reserves the right to fully evaluate, amend, and approve or deny the request for modification of this permit.

**5. Posting of Permit:** The Permittee shall have available and maintain for review a copy of the permit and approved plans at the project site at all times during the construction phase.

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**6. Turbidity Barriers:** Prior to the initiation of any of the inwater work authorized by this permit, the Permittee shall install floating turbidity barriers with weighted skirts that extend to within define distance desired or use one (1) foot or eliminate distance from bottom of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all suspended and erodible materials have been stabilized. Turbidity barriers shall be removed upon stabilization of the work area.

**7. Erosion Control:** The applicant shall install and maintain erosion control measures along the perimeter of all work areas prior to the initiation of any work authorized by the permit; and to stabilize cleared and fill areas after final grading.

**8. Fill Material:** The Permittee shall use only clean fill material for this project. The fill material shall be free from items such as trash, debris, automotive parts, asphalt, construction materials, concrete block with exposed reinforcement bars, and soils contaminated with any toxic substance, in toxic amounts in accordance with Section 307 of the Clean Water Act.

**9. Manatee Conditions:** The Permittee shall comply with the "Standard Manatee Conditions for In-Water Work – 2011" and the "Guide to Manatee Educational Signs, revised June 2011" (Attachment # 4).

**10. Sea Turtle and Smalltooth Sawfish Conditions:** The Permittee shall comply with National Marine Fisheries Service's "Sea Turtle and Smalltooth Sawfish Construction Conditions" dated 23 March 2006, (Attachment # 5).

**11. Mitigation Bank Credit Purchase:** By letter dated 27 April 2010, Little Pine Island Mitigation Bank (LPIMB) provided verification to the Corps that 1.33 saltwater forested wetland credits have been purchased from LPIMB (Corps Permit # SAJ-1994-00037) for this proposal. The LPIMB mitigation credit ledger confirms that 1.33 saltwater forested wetland credits have been purchased by the Siesta V Land Trust for this project [Corp permit number SAJ-1997-05999-(SP-RMT)].

**12. On-site Preserve (Upland) Berm Removal:** Within 60 months from the date of initiating the work authorized by this permit, the Permittee must complete the removal of the existing (upland) berms located within the onsite 82.8<u>+</u> acre preserve, as per the agreement made between the Permittee and the NMFS-HCD, in accordance with the Preserve Berm Removal Plans (Attachment # 6). For any further questions and/or instructions regarding the berm removal the Permittee shall contact Mr. Mark Sramek at the Southeast Regional NMFS-HCD Office located at 263 13<sup>th</sup> Avenue South, St.

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Petersburg, Florida 33701-5505. The phone No. is (727) 824-5311; Mr. Sramek' s email address is Mark.Sramek@noaa.gov.

**13. On-site Preserve Berm Removal Plans:** The berm removal activities shall be conducted in accordance with the attached Berm Removal Plans (Attachment # 6.) Any proposed deviation(s), from the attached berm removal plans, must receive pre-approval from the Corps and the NMFS-HCD prior to proceeding with any such deviation(s).

14. Biological Opinion (BO): The proposed activity is approved under the NOAA-National Marine Fisheries Service's (NMFS) Biological Opinion (BO), dated 25 January 2018, issued for the Siesta V. Trust Fund development project and its references. That BO becomes a part of this permit instrument as Attachment # 7. The Permittee is responsible for complying with the BO. The Permittee shall implement all reasonable and prudent measures and comply with the Conservation Recommendations identified in the BO. The NMFS has issued the BO specifically for this project. The incidental take of the BO is for the smalltooth sawfish. Authorization under this permit is conditional upon compliance with all of the mandatory terms and conditions associated with the BO, which are incorporated by reference into this permit. Failure to comply with the terms and conditions associated with the BO, and where take of other federally listed species occurs, would constitute noncompliance with this permit. Failure to comply with this permit will be the basis for its suspension and revocation and may be the basis for other enforcement action. The NMFS has directed that this BO, issued to the Corps, serve as the formal consultation for your project however, where the terms and conditions of the BO differ from the special conditions of this permit, the special conditions of this permit will take precedence as the more stringent condition.

**15. Incidental Take Statement (ITS):** This permit does not authorize the Permittee to take a federally listed endangered species, to include the smalltooth sawfish or any other federally listed threatened or endangered species. The NMFS BO dated 25 January 2018, Service No: SER-2017-18772 (Attachment # 7) includes an ITS issued to the Corps. The Permittee understands and agrees that, even where it is in full compliance with the terms and conditions of the BO's ITS and this permit, an incidental take by the Permittee within the area covered by the BO may result in suspension or modification of this permit by the Corps. The amount of incidental take that will trigger suspension, and the need for any such suspension, shall be determined at the discretion of the Corps. The Permittee understands and agrees on behalf of itself, its agents, contractors, and other representatives, that no claim, legal action in equity or for damages, adjustment, or other entitlement against the Corps shall arise as a result of such suspension or related action.

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#### 16. Cultural Resources/Historic Properties:

a. No structure or work shall adversely affect impact or disturb properties listed in the National Register of Historic Places (NRHP) or those eligible for inclusion in the NRHP.

b. If during the ground disturbing activities and construction work within the permit area, there are archaeological/cultural materials encountered which were not the subject of a previous cultural resources assessment survey (and which shall include, but not be limited to: pottery, modified shell, flora, fauna, human remains, ceramics, stone tools or metal implements, dugout canoes, evidence of structures or any other physical remains that could be associated with Native American cultures or early colonial or American settlement), the Permittee shall immediately stop all work and ground-disturbing activities within a 100-meter diameter of the discovery and notify the Corps within the same business day (8 hours). The Corps shall then notify the Florida State Historic Preservation Officer (SHPO) and the appropriate Tribal Historic Preservation Officer(s) (THPO(s)) to assess the significance of the discovery and devise appropriate actions.

c. Additional cultural resources assessments may be required of the permit area in the case of unanticipated discoveries as referenced in accordance with the above Special Condition; and if deemed necessary by the SHPO, THPO(s), or Corps, in accordance with 36 CFR 800 or 33 CFR 325, Appendix C (5). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume on non-federal lands without written authorization from the SHPO for finds under his or her jurisdiction, and from the Corps.

d. In the unlikely event that unmarked human remains are identified on non-federal lands, they will be treated in accordance with Section 872.05 Florida Statutes. All work and ground disturbing activities within a 100-meter diameter of the unmarked human remains shall immediately cease and the Permittee shall immediately notify the medical examiner, Corps, and State Archeologist within the same business day (8-hours). The Corps shall then notify the appropriate SHPO and THPO(s). Based, on the circumstances of the discovery, equity to all parties, and considerations of the public interest, the Corps may modify, suspend or revoke the permit in accordance with 33 CFR Part 325.7. Such activity shall not resume without written authorization from the State Archeologist and from the Corps.

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#### **Further Information:**

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403)

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344)

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413)

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

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4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

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Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE)

(DATE)

(PERMITTEE NAME-PRINTED)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

for:

(DISTRICT ENGINEER) Andrew D. Kelly Jr. Colonel, U.S. Army District Commander (DATE)

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When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEREE-SIGNATURE)

(DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 11 of 18

# Attachments to Department of the Army Permit Number SAJ-1997-05999

1. PERMIT DRAWINGS: 18 pages, dated December 2016.

2. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit. 11 pages.

3. AS-BUILT CERTIFICATION FORM: 2 pages.

4. MANATEE PROTECTION AND EDUCATION CONDITIONS: 4 pages, Standard Manatee Conditions for In-Water Work & Educational Signs – 2011

5. SEA TURTLE AND SMALLTOOTH SAWFISH CONDITIONS: 1 page, Sea Turtle and Smalltooth Sawfish Construction Conditions, revised March 23, 2006.

6. ON-SITE PRESERVE (UPLAND) BERM REMOVAL PLANS: 3 pages.

7. NMFS BIOLOGICAL OPINION (BO): 39 pages, dated 25 January 2018.

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# ATTACHMENT # 1 PERMIT DRAWINGS

(18 pages, dated December 2016.)













 Soil Unit
 Description

 7
 MATLACHA-URBAN LAND COMPLEX

- 16 PECKISH MUCKY FINE SAND
- 24 KESSON FINE SAND 69 MATLACHA GRAVELLY FINE SAND
- 100 WATERS OF THE GULF OF MEXICO



#### NOTES:

AERIAL PHOTOGRAPH PROVIDED BY THE LEE COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF JANUARY 2016.

ROADWAY NETWORKS WERE ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE.

SOILS MAPPING WAS ACQUIRED FROM THE FLORIDA GEOGRAPHIC DATA LIBRARY WEBSITE OCTOBER 2007 AND CREATED BY THE NATURAL RESOURCES CONSERVATION SERVICE 1990.



DRAWN BY DATE D.B. 12/13/16 Reviewed by Date M.A.M. 12/13/16 Rev sed Date





COE WETLANDS (86.02 Ac ±)

COE "WATERS" (17.89 Ac ±)

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FLUCECS			%0
CODES	DESCRIPTIONS	ACREAGE	TOTA
422	BRAZILIAN PEPPER	0.16 Ac.±	0.19
4221	BRAZILIAN PEPPER, HYDRIC	0.02 Ac. ±	0.09
512	TIDAL CREEK	2.85 Ac.±	2.6
514	CANAL/DITCH	10.74 Ac.±	9.79
520	ARTIFICIAL POND	0.31 Ac. ±	0.3
535	STORMWATER MANAGEMENT AREA	0.24 Ac. ±	0.29
541	EMBAYMENT	3.99 Ac. ±	3.69
612	MANGROVES	84.64 Ac.±	76.79
6129 E1	MANGROVES, DISTURBED (0-24% EXOTICS)	0.43 Ac.±	0.49
651	TIDAL FLAT	0.04 Ac. ±	0.0
740	DISTURBED LAND	4.81 Ac. ±	4.4
7401	DISTURBED LAND, HYDRIC	0.89 Ac.±	0.8
743	SPOIL BERM	1.18 Ac.±	1.15
814	ROAD	0.07 Ac.±	0.19
-	TOTAL	110.37 Ac.±	100.09

#### NOTES:

AERIAL PHOTOGRAPHS WERE PROVIDED BY THE LEE COUNTY PROPERTY APPRAISER'S OFFICE AND WERE FLOWN JANUARY 2016.

PROPERTY BOUNDARY SHOWN PER BARRACO AND ASSOCIATES, INC. DRAWING NO.21352P00.DWG DATED AUGUST 2, 2016 AND DRAWING No. 21352-SIESTA V-WORKSHEET.DWG DATED DECEMBER 6, 2016.

SURVEYED WETLAND LINES PER BARRACO AND ASSOCIATES, INC. DRAWING No. WETLAND\_LOCS \_2016-07-11.DWG DATED JULY 12, 2016.

FLUCFCS LINES ESTIMATED FROM I"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).





REVISIONS	DATE	drawn by D.B.	DRAWN BY D.B.	DATE 12/13/16	13620 Metropolis Avenue
	-	DESIGNED BY M.A.M.	DATE 12/13/16	Fort Myers, Florida 33912	
	- (b	REVIEWED BY M.A.M.	DATE 12/13/16	Phone (239) 274-0067 Fax (239) 274-0069	



-DEEP PASSAGE LN





DATE: 12/13/16

SCALE: 1"=600'

APPLICANT: CHARLES R. MEADOR, JR. DRAWN BY: D.B. REVISIONS:













Project Name: Siesta V	FLUCFCS AND COE WETLANDS MAP		
	DWG. NO. 97MMP121-08	SHEET: 8 OF 14	
APPLICANT: CHARLES R. MEADOR, JR.	DRAWN BY: D.B.	DATE: 12/13/16	-
	REVISIONS:	SCALE: 1"=300'	







FLUCFCS CODE	WETLAND	WETLAND FILL	WATERS NON-IMPACT	WATERS FILL	TOTAL
4221	0.02 Ac.±	1.4		1.2	0.02 Ac.±
512		14	2.85 Ac.±	1	2.85 Ac.±
514	-	-	10.74 Ac.±		10.74 Ac.±
520	i i i i i	÷	i i i	0.31 Ac.±	0.31 Ac.±
541	-		3.94 Ac.±	0.05 Ac.±	3.99 Ac.±
612	82.47 Ac.±	2.16 Ac.±		-	84.63 Ac.±
6129 E1	0.43 Ac.±	-	÷	$\times$	0.43 Ac.±
651	0.02 Ac.±	0.02 Ac.±		÷	0.04 Ac.±
7401	0.08 Ac.±	0.82 Ac.±		~	0.90 Ac.±
TOTAL	83.02 Ac.±	3.00 Ac.±	17.53 Ac.±	0.36 Ac.±	103.91 Ac.±

PROPERTY BOUNDARY SHOWN PER BARRACO AND ASSOCIATES, INC. DRAWING No.21552P00.DWG DATED AUGUST 2, 2016 AND DRAWING No. 21552-SIESTA V-WORKSHEET.DWG DATED DECEMBER 6, 2016.

SITE PLAN PER BARRACO AND ASSOCIATES, INC. DRAWING No. 21352-SIESTA V-WORKSHEET.DWG DATED DECEMBER 6, 2016.

SURVEYED WETLAND LINES PER BARRACO AND ASSOCIATES, INC. DRAWING NO. WETLAND\_LOCS \_2016-07-11.DWG DATED JULY 12, 2016.

FLUCFCS LINES ESTIMATED FROM I"=200" AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

UPLAND/WETLAND LIMITS HAVE NOT BEEN VERIFIED BY ANY AGENCY AND ARE SUBJECT TO CHANGE.

Project Name: Siesta V	COE WETLAND IMPACT MAP		
	Dwg. No. 97mmp121-11	SHEET: II OF 14	
Applicant: Charles R. Meador, Jr.	DRAWN BY: D.B.	DATE: 12/13/16	
	REVISIONS:	SCALE: 1"=300'	



NOTES:

CROSS SECTION PER BARRACO AND ASSOCIATES, INC. DRAWING No. SIESTA V REVISED ROADWAY SECTION.DWG DATED DECEMBER 28, 2016.

Project Name: Siesta V	CROSS SECTIONS		
	DWG. NO. 97MMP121-12	SHEET: 12 OF 14	
APPLICANT: CHARLES R. MEADOR, JR.	DRAWN BY: D.B.	DATE: 12/28/16	
	REVISIONS:	SCALE: N.T.S.	





NOTES:

CROSS SECTIONS PER BARRACO AND ASSOCIATES, INC. DRAWING No.21352D60.dwg DATED NOVEMBER 21, 2008.

Project Name: Siesta V	CROSS SECTIONS		
	DWG. No. 97MMP121-14	SHEET: 14 OF 14	
APPLICANT: CHARLES R. MEADOR, JR.	DRAWN BY: D.B.	DATE: 12/28/16	
	REVISIONS:	SCALE: N.T.S.	

PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 13 of 18

# ATTACHMENT # 2 FDEP-ERP/WQC

(11 pages, dated December 2016.)



## FLORIDA DEPARTMENT OF

Environmental Protection SOUTH DISTRICT P.O. BOX 2549 FORT MYERS, FL 33902-2549 SouthDistrict@dep.state.fl.us

CARLOS LOPEZ-CANTERA LT. GOVERNOR

JONATHAN P. STEVERSON SECRETARY

#### VIA ELECTRONIC MAIL

January 2, 2015

Charles R. Meador, Jr. c/o Passarella & Associates, Inc. 13620 Metropolis Avenue, Suite 200 Fort Myers, FL 33912 <u>mikem@passarella.net</u>

Re: Lee County – ERP File No. 36-0157404-006 Modification of 36-0157404-002/003/004/005

Dear Mr. Meador:

Your request to modify this permit has been received and reviewed by Department staff. The proposed permit modifications are to:

- Extend the expiration date of the construction phase;
- Modify project description and several permit conditions;
- Minor modifications to the Conservation Easement, Indigenous Preservation Management Plan, the Mitigation Plan and the Declaration of Covenants, Conditions, and Restrictions for the Siesta V Subdivision.

After review by staff, the proposed modifications are not expected to adversely affect water quality and will not be contrary to the public interest, provided the permit is amended as follows:

EXPIRATION OF CONSTRUCTION PHASE:

From: May 14, 2015

To: May 14, 2020

PROJECT DESCRIPTION:

**From:** The project is to create a single family residential subdivision consisting of 39 lots, requiring a maximum placement of 6.05 acres of fill within wetlands and 0.55 acres

Siesta V Land Trust File No. 36-0157404-006 Page 2 of 11

of open waters, installation of a 11 slip common dock (40' x 6' access walk, 214' x 6' terminal, with six 30' x 3' finger piers to total 2,064 sq. ft.), installation of one smaller dock (241' x 6') to accommodate docking for four of the proposed lots, installation of an observation deck (not to accommodate the mooring of vessels) with a 70' x 6' with a 78' x 6' terminal platform, dredge an irregular 0.32 acre area to 5' MLW depth with spoil to be placed on uplands, and mitigation in the form of removal of 1.18 acres of spoil berm, preservation of 31.05 acres of wetlands and surface waters, and 0.16 acres of upland buffer.

The permittee shall construct a stormwater treatment system to serve 13.54 acres of onsite area of the entire 137.98-acre property, in addition to 6.89 acres of off-site area runoff contributed from Siesta Isle as previously permitted under SFWMD Permit No. 36-00755-S. The proposed system will serve a total combined area of 20.43 acres.

**To:** The project is to create a single family residential subdivision consisting of 28 lots, requiring a maximum placement of 3.24 acres of fill within wetlands and 0.43 acres of open waters, and mitigation in the form of enhancement and preservation of 32.80 acres of wetland and surface waters, and enhancement and preservation of 3.38 acres of uplands.

The permittee shall construct a stormwater treatment system to serve 13.54 acres of onsite area of the entire 137.98-acre property, in addition to 6.89 acres of off-site area runoff contributed from Siesta Isle as previously permitted under South Florida Water Management District Permit No. 36-00755-S. The proposed system will serve a total combined area of 20.43 acres.

#### SPECIFIC CONDITIONS:

#### **Delete Specific Condition 3**

#### **Specific Condition 4:**

#### Modified as follows:

To offset additional impacts to wetlands, the Permittee shall place approximately 35.43 acres ± of forested saltwater wetlands under a conservation easement located within the subject parcel. The conservation easement (CE) shall run with the land, in perpetuity, and prohibit construction or placing of structures on, above, or below the ground. The unsigned CE is attached to this permit. **The CE shall be recorded** in the Public Records of Lee County at **least 90 days prior to commencement of construction**. **No construction may commence until the Department receives the recorded document or an alternate mitigation plan has been finalized and approved by the Department**. The following steps must be taken *prior* to recording the conservation easement:

a. The permittee shall submit an updated boundary survey, legal description of the CE property, title commitment naming the State of Florida

Department of Environmental protection as the insured, and all other items as previously requested in the attached Environmental Resource Permit # 36-157404-002;

- b. The Department will review the title commitment and coordinates with applicant and title company to ensure that exceptions that adversely affect the purposes of the CE are removed and then instruct the Permittee to sign the CE;
- a. Upon receipt of the signed CE the Department will request the title company to search the gap between the effective date of the title commitment and the time and date they record the CE;
- b. If any additional documents have been recorded that will adversely affect the purposes of the CE, they must be resolved before the CE is recorded. If Department staff identifies any encumbrances listed as exceptions to the title commitment that affect the integrity of the CE, they will need to be removed before the CE is recorded. Once these steps have been taken, the Department will instruct the title company to record the CE; and
- c. A copy of the recorded CE shall be mailed to the Department within 10 days of recording. The original documents shall be received within 30 days of recording. The Department will be contacting the title company and request that they take all necessary steps to record the conservation easement in the county's land records. The title company will be instructed to send a recorded copy of the conservation easement and a recorded copy of all applicable subordination agreements and lien releases **directly to the Department.** The Permittee is responsible for all costs incurred by the title company, including recording, copying, and mailing.

If for any reason the permittee elects not to carry out any of the activities for which the CE is required, then the Permittee may request that the grantee vacate/release the conservation easement. To obtain a release, the Permittee must acknowledge that the permit is no longer required and formally surrender the permit. Once the Permittee formally surrenders the permit, then the Department will prepare a Release of Conservation Easement for the permittee to record in the County's land records at their own cost.

#### **Specific Condition 6:**

#### Modified as follows:

The permittee shall record within the Public Records of Lee County the Declaration of Covenents, Conditions, and Restrictions for Siesta V Subdivision (Attachment IV) within 180 days of permit modification issuance. The Permittee shall submit a recorded copy of the Declaration of Covenants, Conditions, and Restrictions and associated exhibits (including Legal Description, Easements for Drainage System, etc.). A copy of this permit and its conditions shall be attached to the Declaration of Covenants,

Siesta V Land Trust File No. 36-0157404-006 Page 4 of 11

Conditions, and Restrictions for Siesta V Subdivision (Attachment IV) as an exhibit. The Registered Agent for the Association shall maintain copies of all further permitting actions for the benefit of the Association. No change shall occur to aspects relating to stormwater treatment, water quality, environmental education, water conservation, and docks, maintenance of the common areas and conservation easement, and other covenants running with the land without prior written Department consent. No sale of any building lots may be finalized prior to the recording of the Declaration of Covenants, Conditions, and Restrictions for Siesta V Subdivision.

#### **Specific Condition 7:**

#### Modified as follows:

The requirements of the Declaration of Covenants, Conditions, and Restrictions for Siesta V Subdivision (Attachment IV) as they relate to the maintenance of the surface water management system, the maintenance of the common areas and conservation easement areas, the requirement for the San Carlos Bay Shoreline Buffer, the requirement for the Siesta V Homeowners Environmental Education Plan (Appendix D of Attachment IV), and the requirement for boat lifts at all docks, shall be binding on the permittee and their assigns. These requirements shall run with the land in perpetuity, and constitute the assurance demonstrated to the Department that the permitted project is not contrary to the public interest.

#### **Specific Condition 8:**

Modified as follows:

In accordance with the Declaration of Covenants, Conditions, and Restrictions for Siesta V Subdivision (Attachment IV), boat lifts will be required on all docks serving the development along the canal shoreline.

In addition, all future docks proposed along the canal shoreline serving the development shall be constructed of non-CCA-leaching materials (recycled plastic, concrete, greenheart, or wrapped with impermeable plastic or PVC sleeves in such a manner as to eliminate the leaching of deleterious substances from the pilings into the water column and sediments).

#### **Specific Condition 11:**

Modified as follows:

In compliance with the Siesta V Homeowners Educational Plan (Appendix D of Attachment IV), upon construction of the first dock along the canal, the permittee shall submit to the Department for approval an itemized outline of the boater and manatee educational program each year at least 60 days prior to the program date. This program should include, at a minimum:

- Avoidance of seagrass impacts because of groundings;
- Proper techniques for dislodging grounded boats;

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- The location of manatee speed zones within Lee County, restrictions and requirements within the zone, and their significance;
- Safe boating procedures in manatee areas;
- Avoidance of water quality impacts during use and maintenance of boats;
- Fuel spill containment and proper use of the equipment available on site;
- Location of used oil and battery recycling receptacles maintained on site;
- Reminder of the regulations concerning mangrove alteration and trimming;
- Review of the restrictions placed on mangrove alteration as a result of this permit;
- Review of the importance of the conservation areas created by this permit and the Consent Final Judgement;
- Water conservation techniques and xeriscape opportunities; and
- The importance of recycling.

This training program will be administered in the winter months when the most residents are present. The program may be tailored each year to address current concerns and issues, but must include the above listed items. The permittee may request additional informational materials as may be available from the Department. The permittee and/or assigns shall show due diligence in encouraging all residents to attend.

#### **Specific Condition 12:**

Modified as follows:

The locations of the manatee protection and speed zone signage required by the Educational Plan are shown in Attachment I on the drawing entitled, "Site Plan and Sign Location Map." The designs for the signage are also attached (Attachment V). In compliance with the Siesta V Homeowners Educational Plan (Appendix D of Attachment IV), within 90 days of permit modification issuance, the permittee shall identify the size of the manatee protection and speed zone signage required by the Educational Plan and submit the information to the Department for approval. The permittee and/or assigns will be responsible for maintenance of the signs in perpetuity.

## Delete Specific Conditions 13 and 14

#### **Specific Condition 19:**

#### Modified as follows:

Prior to commencement of construction, all waters and jurisdictional wetlands not affected by the proposed construction shall be clearly and conspicuously marked. The permittee shall contact the Fort Myers Department of Environmental Protection Office at (239) 344-5600, or by email at <u>FTMerp Compliance@dep.state.fl.us</u>, to arrange an inspection. Construction shall not begin until the Fort Myers office has approved the staking. Due care shall be taken at all times during construction to avoid inadvertent impacts to those areas outside of the construction limits. Work shall proceed from
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within the limits of permitted fill with no disturbance to areas to be preserved. All vegetative debris shall be removed to a self-contained upland disposal site. There will be no stockpiling of construction materials or fill within wetlands.

## Delete Specific Conditions 25, 28, 29, 32, 33, 34

## **Specific Condition 35:**

Modified as follows:

Stormwater quality treatment for the project area (including 6.89 acres of off-site area runoff received from Siesta Isle, as previously permitted by the South Florida Water Management District under Permit No. 36-00755-S) will be provided by a dry detention areas before discharging through a Control Structure into on-site mangroves and eventually Pelican Bay. Also, contiguous rear-lot water quality retention treatment swales will provide detention pretreatment with excess runoff discharging to one of two receiving water bodies (see permit drawings). In accordance with Specific Condition 3 of this permit, any modification to the stormwater treatment facility must be approved by the Department prior to construction.

Dry Detention Area Bottom Elevation: 3.0 Feet, NGVD

## **Specific Condition 36:**

Modified as follows: Stormwater Discharge Facilities (see permit drawings):

a. Basin One:

Overflow Weir Crest Elevation:5.00 Feet, NGVD3" Dia. Orifice Invert Elevation:2.00 Feet, NGVD12 -inch CMP Baffle Top/Bottom Elevations:5.00/1.50 Feet, NGVDMinimum Basin Detention Area Berm Elevation:5.20 Feet, NGVDRip Rap Discharge Apron Elevation:2.00 Feet, NGVD

c. Contiguous rear-lot water quality retention pretreatment swales (see permit drawings for details):

Rear Lot Retention Swale Invert Elevation:4.00 Feet, NGVDRear Lot Retention Swale Berm/Crest Overflow Elev.:4.50 Feet, NGVD

Receiving Bodies: San Carlos Bay and Canal (Class III Florida Waters).

Wet Season Water Table Elevation: 2.00 Feet, NGVD

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## **Specific Condition 38:**

## Modified as follows:

The minimum finished top elevations of the detention area berms shall be Elevation 5.2 Feet, NGVD. The berms shall be surveyed prior to the placement of the filter fabric and riprap to confirm these minimum elevations. The top elevation of these berms shall be maintained at that elevation.

## **Specific Condition 43:**

## Modified as follows:

The stormwater treatment systems shall be inspected after all heavy storm events and at other appropriate times to remove any and all debris from the systems to assure their proper functioning, but no less than once a month, to include the stormwater collection swales, inlets, culverts and detention areas and rear-lot retention areas and their respective berms. Particular attention should be given to the discharge control structures/weirs in order to assure their proper function and operation. Accumulated debris and sediment at the bleeder orifices, rip-rap sumps and aprons shall be removed promptly and disposed of properly.

## **Specific Condition 46:**

## Modified as follows:

Prior to completion of the first single-family dock along the canal, the permittee shall install permanent educational manatee signs in accordance with Florida Fish and Wildlife Conservation Commission (FWC) guidelines, including FWC approval for the number, type, and location of signs. Permittee agrees to replace the signs in the event the signs fade, become damaged or outdated, and maintain these signs for the life of the facility. The guidelines for installation can be found at http://www.myfwc.com/manatee/signs/, or can be obtained by contacting the Florida Fish and Wildlife Conservation Commission, Imperiled Species Management Section at: 620 Meridian Street, 6A, Tallahassee, Florida 32399-1600 (telephone 850/922-4330).

## Delete Specific Conditions 47, 48, 49, 50, 51, 52

## **Specific Condition 54:**

Modified as follows:

The wetland enhancement and exotic vegetation control program shall be considered successful when the following conditions have been met for a consecutive three (3) year period:

a. Plant cover in the enhanced wetlands (exotic treatment areas) is at least 80%, and consists of typical mangrove or salt marsh wetland vegetation listed in Florida Administrative Code Rule 62-340.450. Percent cover shall be reported for the aggregate of those wetland species, relative to the total area, including a

measure of percent cover by non-wetland species, bare ground and water. A list of the wetland species included in the aggregate shall be included;

- b. There is evidence of growth, reproduction, and general good health of the wetland vegetation deemed typical of mangrove and salt marsh wetlands;
- c. (*Typha* sp.), primrose willow (Ludwigia peruviana), Brazilian pepper (*Schinus terebinthifolius*), punk tree (*Melaleuca quinquinervia*), Australian pine (*Casurina equisetifolia*), and all species listed by the Florida Exotic Pest Plant Council are limited to 1% or less of the total cover and their density is naturally static or declining;
- d. There is evidence of wildlife usage in the mitigation area; and
- e. The mitigation area has achieved viable, sustainable ecological and hydrological functions.

## **Specific Condition 55:**

## Modified as follows:

The Permittee shall perform the exotic treatment in accordance with the attached Mitigation/Monitoring/Maintenance Plan (Attachment VI) and the Indigenous Preserve Management Plan (Attachment VII). The Permittee shall treat all exotic vegetation from the wetland and upland areas of the property. The Permittee shall maintain all areas to be preserved under the permit or under the consent final judgement free from exotic vegetation in perpetuity. The initial exotic treatment shall be completed concurrently with construction or the placement of fill on site. In addition to the annual monitoring reports required below, the Permittee shall submit a "Time Zero" monitoring report within 30 days upon completion of the initial exotic treatment event (Note, the exotic treatment and monitoring activities were initiated in 2010. The baseline, time-zero, and first through fourth annual monitoring reports have been submitted to-date. The final, fifth annual monitoring report will be provided in 2015).

## Delete Specific Condition 56 and 59

## **Specific Condition 60:**

Modified as follows:

The Fort Myers Department of Environmental Protection office (2295 Victoria Avenue Suite 364, Fort Myers, FL 33901; <u>FTMerp Compliance@dep.state.fl.us</u>) shall be notified in writing or by email, 48 hours prior to commencement of work.

## **Specific Condition 61:**

Modified as follows:

The Permittee shall provide notification, in writing or by email, to the Department's Fort Myers District office (2295 Victoria Avenue Suite 364, Fort Myers, FL 33901; <u>FTMerp Compliance@dep.state.fl.us</u>) within 72 hours of construction completion. Since the proposed modification(s) along with the above amended permit conditions and monitoring requirements are not expected to result in any adverse environmental Siesta V Land Trust File No. 36-0157404-006 Page 9 of 11

impact and water quality degradation, the permit is hereby modified as requested. By copy of this letter and the attached drawings, we are notifying all necessary parties of the modification.

This letter does not alter the permit other than as described above. This letter and referenced enclosures must be attached to the original permit.

This modification is hereby granted unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, (F.S.), before the deadline for filing a petition. The procedures for petitioning for a hearing are set forth below.

Mediation is not available.

A person whose substantial interests are affected by the Department's action may petition or an administrative proceeding (hearing) under Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below an must be filed (received by the clerk) in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Because the administrative hearing process is designed to redetermine final agency action on the application, the filing of a petition for an administrative hearing may result in a modification of the permit or even a denial of the application. If a sufficient petition for an administrative hearing or request for an extension of time to file a petition is timely filed, this permit automatically becomes only proposed agency action on the application, subject to the result of the administrative review process. Accordingly, the applicant is advised not to commence construction or other activities under this permit until the deadlines noted below for filing a petition for an administrative hearing, or request for an extension of time have expired.

Under Rule 62-110.106(4), Florida Administrative Code (F.A.C.), a person whose substantial interests are affected by the Department's action may also request an extension of time to file a petition for an administrative hearing. The Department may, for good cause shown, grant the request for an extension of time. Requests for extension of time must be filed with the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, before the applicable deadline. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

In the event that a timely and sufficient petition for an administrative hearing is filed, other persons whose substantial interests will be affected by the outcome of the administrative process have the right to petition to intervene in the proceeding. Any intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

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In accordance with Rules 28-106.111(2) and 62-110.106(3)(a)(4), F.A.C., petitions for an administrative hearing by the applicant or any of the parties listed below must be filed within 21 days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 21 days of publication of the notice or within 21 days of receipt of the written notice, whichever occurs first.

Under Section 120.60(3), F.S., however, any person who has asked the Department for notice of agency action may file a petition within 21 days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition for an administrative hearing within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

- (a) The name and address of each agency affected and each agency's file or identification number, if known;
- (b) The name, address and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests are or will be affected by the agency determination;
- (c) A statement of when and how the petitioner received notice of the agency decision;
- (d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
- (e) A concise statement of the ultimate facts alleged, including the specific facts that the petitioner contends warrant reversal or modification of the agency's proposed action;
- (f) A statement of the specific rules and statutes that the petitioner contends require reversal or modification of the agency's proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wishes the agency to take with respect to the agency's proposed action.

A petition that does not dispute the material facts on which the Department's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C. Under Sections 120.569(2)(c) and (d), F.S., a petition for administrative hearing must be dismissed by

Siesta V Land Trust File No. 36-0157404-006 Page 11 of 11

the agency if the petition does not substantially comply with the above requirements or is untimely filed.

The action is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above. Upon the timely filing of a petition this order will not be effective until further order of the Department.

This permit constitutes an order of the Department. The applicant has the right to seek judicial review of the order under Section 120.68, F.S., by the filing of a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when the final order is filed with the Clerk of the Department.

Sincerely,

Jon M. Iglehart Director of District Management

JMI/pc/se

Attachments: Revised Declaration of Covenants, 4 pages Revised Indigenous Plan, 8 pages Revised Mitigation Plan, 17 pages Conservation Easement, 23 pages Permit Drawings, 15 pages Permit 36-157404-002, 191 pages

cc: U.S. Army Corps of Engineers (electronically)

#### CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this document, including all copies, was mailed before the close of business on January 2, 2015, to the above listed person(s).

#### FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section 120.52(7), F.S., with the designated Department clerk, receipt of which is hereby acknowledged.

word Edulards

January 2, 2015 Date PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 14 of 18

## ATTACHMENT # 3 AS-BUILDS (2 PAGES)

## AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Regulatory Division, Special Projects and Enforcement Branch, 1520 Royal Palm Square Boulevard, Ste. 310, Fort Myers, Florida 33919... *If you have questions regarding this requirement, please contact the Enforcement Branch at 904-232-3131.* 

- 1. Department of the Army Permit Number: SAJ-1997-05999-(IP-RMT)
- 2. Permittee Information:

Name:	 	 	
Address:	 	 	

3. Project Site Identification (physical location/address):

4. As-Built Certification: I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled, and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer	Name ( <i>Please type</i> )		
(FL, PR, or VI) Reg. Number	Company Name		
City	State	ZIP	
(Affix Seal)			

Identify any deviations from the approved permit drawings and/or special conditions (attach additional pages if necessary):

PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 15 of 18

## ATTACHMENT # 4 MANATEE PROTECTION AND EDUCATION CONDITIONS

(4 pages, revised 2011)

## STANDARD MANATEE CONDITIONS FOR IN-WATER WORK

2011

The permittee shall comply with the following conditions intended to protect manatees from direct project effects:

- a. All personnel associated with the project shall be instructed about the presence of manatees and manatee speed zones, and the need to avoid collisions with and injury to manatees. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.
- b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- c. Siltation or turbidity barriers shall be made of material in which manatees cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.
- d. All on-site project personnel are responsible for observing water-related activities for the presence of manatee(s). All in-water operations, including vessels, must be shutdown if a manatee(s) comes within 50 feet of the operation. Activities will not resume until the manatee(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the manatee(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.
- e. Any collision with or injury to a manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-731-3336) for north Florida or Vero Beach (1-772-562-3909) for south Florida, and to FWC at ImperiledSpecies@myFWC.com
- f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

## **CAUTION: MANATEE HABITAT**

# All project vessels

When a manatee is within 50 feet of work all in-water activities must

# SHUT DOWN

Report any collision with or injury to a manatee:



Wildlife Alert: 1-888-404-FWCC(3922)

cell \*FWC or #FWC



Florida Fish and Wildlife Conservation Commission

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street Tallahassee, Florida 32399-1600

MyFWC.com

## Manatee Educational Signs

Required by Permit or Submerged Lands Lease March 2011

In order to obtain FWC approval for the manatee educational signs required by state permit or submerged lands lease, requests should be sent to:

ImperiledSpecies@myfwc.com

or:

Florida Fish and Wildlife Conservation Commission Imperiled Species Management Section 6-A 620 South Meridian Street Tallahassee, FL 32399-1600.

The FWC requests that the permittee propose and submit a plan for installing signs based on the guidelines discussed below. FWC will review the sign placement proposal and notify the permittee within 60 days of receiving the plan if the signs and locations are unacceptable. Modifications to the type, location and number of proposed signs may be required. All sign proposals should follow the general guidelines in this document. The following information should be included in this plan and forwarded to FWC for review:

- A detailed upland project site plan with proposed sign locations, types, and proposed numbers of manatee signs. Include which way the signs are proposed to face.
- The project address or a location map of the facility in relation to waterways.
- The project permit or submerged lands lease number.
- Your name, email address, mailing address and a phone number.

## Guidelines for the installation of signs

- Signs must be placed in a prominent location for maximum visibility. Areas that are recommended include: dock walkways, dock master offices, near restrooms or other high patron foot traffic areas.
- Signs must be replaced when faded, damaged or outdated.
- If the facility is large or has multiple docks with separate walkways that are a considerable distance apart, multiple signs should be installed.
- These signs must not face the water, must never be attached to pilings or navigational markers in the water. One exception to signs facing the water exists for the temporary sign, "Caution Boaters" during in-water work.

## FWC Approved Signs and Sign Specifications

The FWC designs manatee educational signs, which can be produced by most sign companies. Signs other than depicted may be considered, but must be pre-approved by FWC's Imperiled Species Management Section. There is a list of known sign vendors who produce FWC signs on our <u>Manatee Sign Vendor webpage</u> as well as downloadable files for sign companies not on this list who may want to produce these signs.

## Manatee Educational Signs

February 2011

For durability, all signs should be fiberglass or metal with rounded corners (hand-sanded to remove all sharp edges and burrs), constructed of 0.08 Gauge 5052-H38 Aluminum with an Alodine 1200 conversion coating and Engineer Grade Type I reflective sheeting. Signs constructed to other specifications may not provide durability acceptable to the consumer.

The approved signs must meet the following specifications:

Florida Friendly Boating (2009)	Caution: Boaters (2009)	Entanglement (2010)	Caution: Shut Down (2009)
Minimum size should be 30" tall x 36" wide with rounded corners	Minimum size should be 30" tall x 24" wide with rounded corners	Minimum size should be 15" tall X 12" wide with rounded corners	Minimum size should be 8 <sup>1</sup> / <sub>2</sub> " tall by 11" wide metal with rounded corners
Florida Friendly Boating	Caution Boaters Watch for Manatees Willie Mere Heiter Here Heter Here Marker H	Recycle your line or discard tin trash containers.	CAUTION: MANATEE HABITAT A Drawer waren DLE SPEED / NO WARE MELSE SPEED / NO WARE WITH A DRAWER STRUCTURE SPEED / NO WARE MELSEN
This sign is considered the manatee educational sign. In 2009, it replaced the older manatee educational sign called "Manatee Basics for Boaters".	This sign is sometimes referred to as an awareness sign. In 2009, it replaced the "Caution: Manatee Area" sign. These signs are also frequently used as temporary signs for construction purposes.	This entanglement sign is typically placed near recycling bins or trash containers.	This temporary sign is required as part of the standard manatee construction conditions and is intended to be placed near dredge, tugboat and work boat operators.

The size and type of signs required by permit or lease may vary from those depicted in this guide. If you have any questions, please contact FWC's Imperiled Species Management Section.

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## ATTACHMENT # 5 SEA TURTLE AND SMALLTOOTH SAWFISH CONDITIONS

(1 page, revised 2006)



## SEA TURTLE AND SMALLTOOTH SAWFISH CONSTRUCTION CONDITIONS

The permittee shall comply with the following protected species construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.
- c. Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment. Barriers may not block sea turtle or smalltooth sawfish entry to or exit from designated critical habitat without prior agreement from the National Marine Fisheries Service's Protected Resources Division, St. Petersburg, Florida.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.
- e. If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle or smalltooth sawfish. Operation of any mechanical construction equipment shall cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.
- f. Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service's Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.
- g. Any special construction conditions, required of your specific project, outside these general conditions, if applicable, will be addressed in the primary consultation.

Revised: March 23, 2006 O:\forms\Sea Turtle and Smalltooth Sawfish Construction Conditions.doc



PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 17 of 18

## **ATTACHMENT #6 ON-SITE PRESERVE** (UPLAND) BERM REMOVAL PLANS

(3 pages, dated August 2018)

#### SIESTA V BERM REMOVAL PLAN CORPS APPLICATION NO. 199705999

#### August 2018

## INTRODUCTION

The Siesta V project totals  $110.37\pm$  acres located in Sections 12 and 13, Township 46 South, Range 23 East, Lee County. The following outlines the berm removal plan for Siesta V. The plan is for the removal of an existing spoil berm located along the western side of an existing manmade canal within the Siesta V project. See Sheet 1 of 2 of the attached drawings for the location of the berm removal area. Typical sections of the existing berm elevations and proposed elevations are provided on Sheet 2 of 2 of the attached drawings. The purpose underlying the removal of the berm is the enhancement of tidal flows.

## **BERM REMOVAL**

The spoil berm will be removed via hydro-blasting. Hydro-blasting is a method of transporting materials using water as a force to move particles out of designated areas in a controlled environment. The berm will be cleared of vegetation using small hand tools (machetes, chain saws, loppers, etc.) with roots left in place. A small high pressure pump will be placed within 25 feet of the canal; output hoses will be utilized that can range in length from 25 feet to 3,000 feet. A nozzle is placed at the end of each output hose to allow for direct pressure and control of the water flow. The spoil material from the berm will then be hydro-blasted such that the height of the berm will be brought below wetland grade in a manner that is meant to evenly distribute the spoil matter and minimize impacts to the surrounding area.

The steps for the work will be:

- A surveyor will stake the area boundary identifying mean high water.
- Turbidity curtains will be placed on the canal side of the work.
- The work area will be cleared by hand to remove vegetation.
- The pump and hoses will be set up.
- Pressurized water will be used to remove spoil from above mean high tide.
- The pump and hoses will be removed.
- The blasted spoil will settle.
- The turbidity curtains will be removed.

## SUCCESS CRITERIA

The berm removal shall be considered successful when the berm elevation has been lowered to match the ground elevation of the adjacent mangrove wetlands. An as-built survey will be completed immediately after the hydro-blasting work is completed to document that target ground elevations have been met.



PROJECT NAME: SIECTA V	DERM REMOVAL AREA		
TROJECT INAME. SIESTA V	Dwg. No. 97MMP121-1	SHEET: 1 OF 2	
APPLICANT: SIESTA V LAND TRUST,	DRAWN BY: H.H. DATE: 7/30/I		
CHARLES MEADOR, TRUSTEE	REVISIONS:	SCALE: 1"=200'	



PERMIT NUMBER: SAJ-1997-05999-(SP-RMT) PERMITTEE: Siesta V. Land Trust PAGE 18 of 18

## ATTACHMENT # 7 NMFS-BIOLOGICAL OPINION (BO)

(39 pages, dated 25 January 2018)



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration NATIONAL MARINE FISHERIES SERVICE Southeast Regional Office 263 13th Avenue South St. Petersburg, Florida 33701-5505 http://sero.nmfs.noaa.gov

JAN 2 5 2018

F/SER31: DMB SER-2017-18772

Chief, Fort Myers Section Jacksonville District Corps of Engineers Department of the Army 1520 Royal Palm Square Boulevard, Suite 310 Fort Myers, Florida 33919

Ref.: SAJ-1997-05999(SP-RMT), Siesta V Land Trust, Residential Development, San Carlos Island, Lee County, Florida

Dear Sir or Madam:

The enclosed Biological Opinion ("Opinion") was prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7(a)(2) of the Endangered Species Act (ESA). The Opinion considers the effects of a proposal by the Jacksonville District of the U.S. Army Corps of Engineers (USACE) to authorize a residential development under the authorities of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act on the following listed species and/or critical habitat: loggerhead sea turtle (Northwest Atlantic [NWA] distinct population segment [DPS]), Kemp's ridley sea turtle, green sea turtle (North Atlantic [NA] and South Atlantic [SA] DPSs), smalltooth sawfish (U.S. DPS), and smalltooth sawfish critical habitat. NMFS concludes that the proposed action may affect, but is not likely to adversely affect, loggerhead sea turtle (NWA DPS), Kemp's ridley sea turtle, green sea turtle (NA and SA DPSs), and smalltooth sawfish (U.S. DPS). NMFS determines the proposed action is likely to adversely affect, but will not destroy or adversely modify, smalltooth sawfish critical habitat.

Please direct questions regarding this Opinion to Dana M. Bethea, Consultation Biologist, by phone at (727) 209-5974, or by email at Dana.Bethea@noaa.gov.

Sincerely.

Roy E. Crabtree, Ph.D. Regional Administrator

Enclosures: Biological Opinion

File: 1514-22 F.4



#### Endangered Species Act - Section 7 Consultation Biological Opinion

Siesta V Land Trust

Action Agency:

**Applicant:** 

Activity:

**Consulting Agency:** 

U.S. Army Corps of Engineers (USACE), Jacksonville District

Permit Number SAJ-1997-05999 (SP-RMT)

Residential Development, Sections 12 and 13, Township 46 South, Range 23 East, Lee County, Florida

National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Southeast Regional Office, Protected Resources Division, St. Petersburg, Florida

Consultation Number SAJ-1997-05999 (SP-RMT)

Approved by:

Roy E. Crabtree, Ph.D., Regional Administrator NMFS, Southeast Regional Office St. Petersburg, Florida

Date Issued:

Jan 25, 2018

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## **Acronyms and Abbreviations**

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CFR	Code of Federal Regulations
CHEU	Charlotte Harbor Estuary Unit of designated smalltooth sawfish critical habitat
CHPSP	Charlotte Harbor Preserve State Park
$CO_2$	Carbon Dioxide
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GMFMC	Gulf of Mexico Fishery Management Council
IPCC	Intergovernmental Panel on Climate Change
ISED	International Sawfish Encounter Database
LAA	Likely to Adversely Affect
MHW	Mean High Water
MLLW	Mean Lower Low Water
NA DPS	North Atlantic DPS of green sea turtle
NLAA	Not Likely to Adversely Affect
NMFS	National Marine Fisheries Service
NOAA	National Ocean and Atmospheric Association
NWA DPS	Northwest Atlantic DPS of loggerhead sea turtle
Opinion	Biological Opinion
PCTS	Public Consultation Tracking System
RM	Red mangrove essential feature of designated smalltooth sawfish critical habitat
SA DPS	South Atlantic DPS of green sea turtle
SH	Shallow, euryhaline habitat essential feature of designated smalltooth sawfish
TTIEII	Cilical haddal
TILU	habitat
US	Habitat
U.S. USACE	US Army Corps of Engineers
USACE	U.S. Fish and Wildlife Service
VOV	Voung of the year
101	1 Julig-01-mc-year

## Units of Measurement

ac	acre(s)
°C	degrees Celsius
cm	centimeter(s)
°F	degrees Fahrenheit
ft	foot/feet
ft <sup>2</sup>	square feet

in	inches
km	kilometer(s)
lin ft	linear feet
m	meter(s)
mi <sup>2</sup>	square miles

## **1 INTRODUCTION**

Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 et seq.), requires that each federal agency ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. Section 7(a)(2) requires federal agencies to consult with the appropriate Secretary on any such action. The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) share responsibilities for administering the ESA.

Consultation is required when a federal action agency determines that a proposed action "may affect" listed species or designated critical habitat. Informal consultation is concluded after NMFS determines that the action is not likely to adversely affect listed species or critical habitat. Formal consultation is concluded after NMFS issues a Biological Opinion ("Opinion") that identifies whether a proposed action is likely to jeopardize the continued existence of a listed species, or destroy or adversely modify critical habitat, in which case reasonable and prudent alternatives to the action as proposed must be identified to avoid these outcomes. The Opinion states the amount or extent of incidental take of the listed species that may occur, develops measures (i.e., reasonable and prudent measures) to reduce the effect of take, and recommends conservation measures to further the recovery of the species.

This document represents NMFS's Opinion based on our review of impacts associated with the proposed action to issue a permit within Lee County, Florida. This Opinion analyzes the proposed action's effects on threatened and endangered species and designated critical habitat, in accordance with Section 7 of the ESA. We based our Opinion on project information provided by USACE and other sources of information, including the published literature cited herein.

## 2 CONSULTATION HISTORY

The following is a documentation of the consultation history for this Opinion, Siesta V. Residential Development (NMFS Public Consultation Tracking System [PCTS] identifier number SER-2017-18772):

- NMFS received a request for formal consultation from USACE Jacksonville District on July 20, 2017, in a letter dated April 19, 2017.
- NMFS sent requests for additional information (RAIs) to USACE via e-mail on July 28, August 3, September 1, and October 12 and 18, 2017.
- NMFS, USACE, and the applicant held a conference call on October 26, 2017, to discuss details of the conservation easement (CE), the inclusion of smalltooth sawfish in the Homeowner's Environmental Educational Plan (HEEP), and any outstanding RAIs.
- NMFS received a final draft of the HEEP with added smalltooth sawfish best management practices (BMPs) on November 6, 2017, and initiated formal consultation that day.
- NMFS requested additional information on December 19, 2017, and January 11, 2018, during our internal review process.

## **3 DESCRIPTION OF THE PROPOSED ACTION AND ACTION AREA**

### **3.1 Proposed Action**

The USACE proposes to permit Siesta V Land Trust to construct and maintain 28 upscale, waterfront, single-family residential lots with an access road, driveways, and stormwater quality retention swales and add  $35\pm$  acre (ac) of wetlands to the existing  $82\pm$  ac of wetlands granted to the Florida Department of Environmental Protection (FDEP) as a conservation easement (CE) (ERP No. 36-0157404) (Figure 1).



Figure 1. Image showing the proposed action (access road and numbered lots in black and white), the existing 82-acre conservation easement (lighter green), and the proposed 35-acre area to be added to the conservation easement (darker green) (ERP No. 36-0157404; Image supplied by USACE).

The majority of the entire proposed construction project will occur landward of the mean high water (MHW) (Figures 2-4). The construction landward of MHW will include the placement of fill in an approximately 0.36 ac man-made pond and 3.00 ac of wetlands that have varying degrees of exotic infestation, such as Brazilian pepper, Australian pine, and earleaf acacia.<sup>1</sup> Except for the 117.17 linear feet (lin ft) discussed below, the existing red mangroves along the shoreline of this area will remain. The proposed stormwater quality treatment will tie into runoff received at Siesta Isle, an existing adjacent residential development (South Florida Water Management District Permit No. 36-00755-S). The proposed  $35\pm$  ac to be added to the CE will be maintained in the same manner as the existing  $82\pm$  ac per Environmental Resource Permit No. 36-0157404. That is, it will be maintained free from exotic vegetation, will run with the land, in perpetuity, and will not allow for construction or placing of structures on, above, or below the ground. The initial exotic treatment of the proposed  $35\pm$  ac CE addition will occur from the

<sup>&</sup>lt;sup>1</sup> Passarella & Associates, Inc. Siesta V Environmental Supplement for U.S. Army Corps of Engineers Dredge and Fill Permit Application (COE Permit No. SAJ-1997-5999). Fort Myers, Florida. Project No. 97MMP121. January 2017.

uplands and be completed concurrently with the proposed construction project. The entire proposed construction project is expected to take 6-8 months to complete.



Figure 2. An image showing the entire proposed construction project site outlined in yellow. The 3.0 acres shaded in light green occurs landward of MHW and will be affected by the proposed action. The area in darker green will remain intact (Image provided by USACE).



Figure 3. A typical cross-section of rear lot treatment along the canal, showing construction occurring landward of MHW, the 6-ft water quality swale, and the existing mangroves to remain (Image supplied by USACE).



Figure 4. A typical cross-section of rear lot treatment along the bay, showing construction occurring landward of MWH, the 6-ft water quality swale, and the existing mangroves to remain (Image supplied by USACE).

We do not believe that there are any routes of effect to listed species and critical habitat under NMFS purview from the proposed construction project occurring landward of MHW; therefore, we are consulting on the effects resulting from the in-water portion of the construction project only. The in-water portion of the construction project will (1) remove and replace approximately 117.17 lin ft of red mangroves with 73 lin ft of riprap and (2) fill approximately 0.04 ac (1,742 ft<sup>2</sup>) of a tidal embayment waterward of MHW for road construction (Figure 5). All in-water work will occur from the shoreline and will take up to 4 days of work to complete, during daylight hours only.



Figure 5. Location of the portion of the proposed action occurring waterward of MHW along the east side of Lot 18 and Lot 19. The 117.17 lin ft of red mangroves to be removed and replaced by 73 lin ft of riprap is outlined in red. The 0.04 ac of shallow water habitat to be filled is highlighted in orange (Image provided by USACE).

The applicant states the following in support of efforts to avoid and/or minimize effects to the aquatic environment:

- Residents who purchase a lot along the canal may install a single-family dock on the rear of those lots in the future; however, the shoreline shall remain as constructed (Figures 3) and those docks may require future consultation with the USACE and/or NMFS.
- Seawalls will not be permitted within Siesta V.

The applicant agrees to use the following BMPs:

- The applicant will comply with NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions*,<sup>2</sup> including the use of turbidity curtains.
- Prior to the completion of the first single-family dock along the canal, the applicant will install permanent smalltooth sawfish educational signs in accordance with NOAA Fisheries Southeast Regional Office (SERO) guidelines, including SERO approval for the number, type, and location of signs. Permittee agrees to replace the signs in the event the signs fade, become damaged, or outdated. Permittee agrees to maintain these signs for the life of the facility. Guidelines for installation can be found at:

http://sero.nmfs.noaa.gov/protected\_resources/section\_7/protected\_species\_educational\_sign s/index.html

- The applicant will implement an annual boater safety and wildlife educational program. During that program, residents will learn about the smalltooth sawfish, including species identification, safe handling and release guidelines, and how to report encounters and sightings (E-mail: Sawfish@MyFWC.com or Telephone: 1-844-472-9347 [1-844-4SAWFISH]). The permittee will contact the SERO Protected Resources Division (PRD) smalltooth sawfish species coordinator for program coordination and/or educational material 2 weeks prior to each program.
- The applicant will provide each lot purchaser an educational packet that contains smalltooth sawfish educational material, including safe handling release guidelines and "how to" reporting information. The permittee will contact the NOAA SERO PRD smalltooth sawfish species coordinator for educational material as needed.
- Based on the functional assessment submitted as part of the USACE's permit application, the proposed action's affects result in a loss of 1.01 wetland functional units. The applicant will purchase 1.33 credits at Little Pine Island Mitigation Bank to offset this loss.

## 3.2 Action Area

The project site is located north of San Carlos Island on the west side of San Carlos Boulevard in Fort Myers Beach, Lee County, Florida (26.473091°N, 81.957184°W [North American Datum 1983]) within the boundaries of the Charlotte Harbor Estuary Unit (CHEU) of designated smalltooth sawfish critical habitat (Figure 6). The project site is within the Estero Bay Frontal Watershed and the proposed action affects tidal waters of Matanzas Pass and the Gulf of Mexico.

<sup>&</sup>lt;sup>2</sup> NMFS. 2006. Sea Turtle and Smalltooth Sawfish Construction Conditions revised March 23, 2006. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office, Protected Resources Division (PRD), Saint Petersburg, Florida.



Figure 6. Location of the proposed action in Ft. Myers Beach, Lee County, Florida, in relation to San Carlos Boulevard (SR865), San Carlos Island, and Pelican Bay (©2017 Google Earth).

The action area is defined by regulation as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 Code of Federal Regulations (CFR) 402.02). For the purposes of this Federal action, the action area includes the entire 3.00 ac of wetlands to be affected by the construction and maintenance of the proposed residential lots as outlined in yellow in Figure 2 as well as the additional  $35\pm$  ac to be added to the existing CE shown in Figure 1.

## 4 STATUS OF LISTED SPECIES AND CRITICAL HABITAT

Table 1 provides the effect determinations for ESA-listed species the USACE and/or NMFS believe may be affected by the proposed action. In Section 4.1, we discuss why we believe green sea turtle (North Atlantic [NA] and South Atlantic [SA] distinct population segments [DPSs]), Kemp's ridley sea turtle, loggerhead sea turtle (Northwest Atlantic [NWA] DPS), and smalltooth sawfish (U.S. DPS) may be affected, but are not likely to be adversely affected, by the proposed action.

Species (DPS)	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination	
S	ea Turtles	•		
Green (NADPS)	Т	NLAA	NLAA	
Green (SA DPS)	Т	NLAA	NLAA	
Kemp's ridley	E	NLAA	NLAA	
Loggerhead (NWA DPS)	Т	NLAA	NLAA	
Fish				
Smalltooth sawfish (U.S. DPS)	Е	LAA	NLAA	
E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect				

 Table 1. Effects Determinations for Species (DPSs) the Action Agency and/or NMFS
 Believe May be Affected by the Proposed Action

Table 2 provides the effects determinations for designated critical habitat occurring within the action area that the USACE and/or NMFS believe are likely to be adversely affected by the proposed action. The proposed action area is within the boundary of smalltooth sawfish designated critical habitat (CHEU). The physical and biological features essential to the conservation of the U.S. DPS of smalltooth sawfish, which provide nursery area functions are: (1) shallow, euryhaline habitats characterized by water depths between MHW and 3 ft (0.9 meters [m]) measured at Mean Lower Low Water (MLLW), and (2) red mangroves. In Section 4.2, we discuss why we believe both essential features are likely to be adversely affected by the proposed action.

 Table 2. Effects Determinations for Designated Critical Habitat the Action Agency and/or

 NMFS Believe May Be Affected by the Proposed Action

Species	Unit	USACE Effect Determination	NMFS Effect Determination
Smalltooth sawfish	Charlotte Harbor Estuary Unit (CHEU)		LAA, Will not destroy or adversely modify
LAA = likely to adversely affect			

## 4.1 Potential Routes of Effect Not Likely to Adversely Affect Listed Species

We have identified the following potential effects to sea turtles and smalltooth sawfish. We believe that these species are not likely to be adversely affected by the proposed in-water construction activities, as described below.

## Physical Injury from Construction Activities

Effects to sea turtles and smalltooth sawfish include the risk of injury from construction activities, which will be discountable due to the species' ability to move away from the project site if disturbed. The applicant's implementation of NMFS's *Sea Turtle and Smalltooth Sawfish Construction Conditions* will further reduce the risk by requiring all construction workers to watch for these ESA-listed species. Operation of any mechanical construction equipment will

cease immediately if a sea turtle or smalltooth sawfish is seen within a 50-ft radius of the equipment. Activities will not resume until the ESA-listed species has departed the project area of its own volition.

## Habitat Effects

Sea turtles and smalltooth sawfish may be affected by their temporary inability to access the project area due to their avoidance of construction activities and physical exclusion from the project area due to blockage by turbidity curtains. The permanent fill of 0.04 ac and the permanent removal of red mangrove shoreline may also affect these species. Effects to sea turtles and smalltooth sawfish from both temporary habitat exclusion and permanent habitat loss will be insignificant due to the small in-water project footprint (0.04 ac), limited duration of in-water work (4 days), and the much greater area of more suitable shallow water and red mangrove habitat available nearby.

Expanding the existing CE by 35 acres may affect sea turtles and smalltooth sawfish using the area. Over time, the expanded CE may provide an indirect benefit to listed sea turtles and smalltooth sawfish by maintaining the existing, natural shoreline through the prohibition of new construction and by increasing the availability of higher-quality red mangrove shorelines and shallow water habitat through exotic removal. However, any future benefit is speculative, and we therefore consider the CE expansion to have no effect on listed species.

## 4.2 Potential Routes of Effect Likely to Adversely Affect Critical Habitat

We believe the proposed action is likely to adversely affect smalltooth sawfish designated critical habitat due to the permanent fill of 0.04 ac  $(1,742 \text{ ft}^2)$  of the shallow, euryhaline habitat essential feature and the permanent removal of 117.17 lin ft of the red mangrove shoreline essential feature. Because we calculate and track losses to the shallow, euryhaline habitat essential feature of critical habitat in acres, we use only acres in the analyses of that essential feature below. We discuss the effects of the permanent loss of the essential features on critical habitat in the Effects of the Action on Critical Habitat section below.

## 4.3 Status of Critical Habitat Likely to be Adversely Affected

## Smalltooth Sawfish Critical Habitat

The U.S. Distinct Population Segment (DPS) of smalltooth sawfish was listed as endangered on April 1, 2003; however, at that time, NMFS was unable to determine critical habitat. After funding additional studies necessary for the identification of specific habitats and environmental features important for the conservation of the species, establishing a smalltooth sawfish recovery team, and reviewing the best scientific data available, NMFS issued a Final Rule (74 Federal Register [FR] 45353; see also 50 CFR § 226.218) to designate critical habitat for the U.S. DPS of smalltooth sawfish on September 2, 2009. Through the additional studies, researchers identified 2 primary nursery areas in southwest Florida and centered the critical habitat designations around these nurseries. The critical habitat consists of 2 units located along the southwestern coast of Florida: the Charlotte Harbor Estuary Unit (CHEU), which is comprised of approximately 221,459 acres (ac) (346 square miles [mi<sup>2</sup>]) of coastal habitat, and the Ten Thousand Islands/Everglades Unit (TTIEU), which is comprised of approximately 619,013 ac (967 mi<sup>2</sup>) of coastal habitat.

## Critical Habitat Unit Affected by this Action

This consultation focuses on an activity occurring in the CHEU, which encompasses portions of Charlotte and Lee Counties (Figure 5). The CHEU is comprised of Charlotte Harbor, Gasparilla Sound, Matlacha Pass, Pine Island Sound, San Carlos Bay, and Estero Bay. The unit is fed by the Myakka and Peace Rivers to the north and the Caloosahatchee River to the east. A series of passes between barrier islands connect the CHEU with the Gulf of Mexico. The CHEU is a relatively shallow estuary with large areas of submerged aquatic vegetation, oyster bars, saltwater marsh, freshwater wetlands, and mangroves. Freshwater flows from the Caloosahatchee River are controlled by the Franklin Lock and Dam, which periodically releases water, which thereby affects downstream salinity regimes. The CHEU boundaries are defined in detail in the Final Rule (74 FR 45353; see also 50 CFR § 226.218).



Figure 7. Map of smalltooth sawfish critical habitat -CHEU

## Essential Features of Critical Habitat

The recovery plan developed for the smalltooth sawfish, which represents NMFS's best judgment about the objectives and actions necessary for the species' recovery, identified a need to increase the number of juvenile smalltooth sawfish developing into adulthood by protecting or restoring nursery habitat (NMFS 2009). NMFS determined that without sufficient habitat, the population was unlikely to increase to a level associated with low extinction risk and de-listing. Therefore, within the 2 critical habitat units NMFS identified 2 habitat features essential for the
conservation of this species: (1) red mangroves, and (2) shallow, euryhaline habitats (shallow, euryhaline habitats) characterized by water depths between the mean high water line (MHWL) and 3 ft (0.9 m) measured at mean lower low water (MLLW) (Final Rule, 74 FR 45353). These essential features of critical habitat provide juveniles refuge from predation and forage opportunities within their nursery habitat. One or both of these essential features must be present in an action area for it to function as critical habitat for smalltooth sawfish.

#### Habitat Use

Juvenile smalltooth sawfish, identified as those up to 3 years of age or approximately 8 ft (2.4 meters [m]) in length (Simpfendorfer et al. 2008), inhabit the shallow waters of estuaries and can be found in sheltered bays, dredged canals, along banks and sandbars, and in rivers (NMFS 2000). Juvenile smalltooth sawfish occur in euryhaline waters (i.e., waters with a wide range of salinities) and are often closely associated with muddy or sandy substrates, and shorelines containing red mangroves (Simpfendorfer 2001; 2003). The structural complexity of red mangrove prop roots creates a unique habitat used by a variety of fish, invertebrates, and birds. Juvenile smalltooth sawfish, particularly young-of-the-year (YOY) (measuring less than 39.4 inches (in) [100 centimeters (cm)] in length), use these areas as both refuge from predators and forage grounds, taking advantage of the large number of fish and invertebrates found there.

Tracking data from the Caloosahatchee River in Florida indicate very shallow depths and specific salinity ranges are important abiotic factors influencing juvenile smalltooth sawfish movement patterns, habitat use, and distribution (Simpfendorfer et al. 2011). An acoustic tagging study in a developed region of Charlotte Harbor, Florida, identified the importance of mangroves in close proximity to shallow-water habitat for juvenile smalltooth sawfish, stating that juveniles generally occur in shallow water within 328 ft (100 m) of mangrove shorelines (Simpfendorfer et al. 2010). Juvenile smalltooth sawfish spend the majority of their time in waters shallower than 13 ft (4 m) deep (Simpfendorfer et al. 2010) and are seldom found deeper than 32 ft (10 m) (Poulakis and Seitz 2004). Simpfendorfer et al. (2010) also indicated the following developmental differences in habitat use: the smallest YOY juveniles generally used water shallower than 1.6 ft (0.5 m), had small home ranges, and exhibited high levels of site fidelity. Although small juveniles exhibit high levels of site fidelity for specific nursery habitats for periods of time lasting up to 3 months (Wiley and Simpfendorfer 2007), they undergo small movements coinciding with changing tidal stages. These movements often involve moving from shallow sandbars at low tide and among red mangrove prop roots at higher tides (Simpfendorfer et al. 2010), behavior likely to reduce the risk of predation (Simpfendorfer 2006). As juveniles increase in size, they begin to expand their home ranges (Simpfendorfer et al. 2010; Simpfendorfer et al. 2011), eventually moving to more offshore habitats where they likely feed on larger prey and eventually reach sexual maturity.

Researchers have identified several areas within the Charlotte Harbor Estuary that are disproportionately more important to juvenile smalltooth sawfish, based on intra- or inter-annual capture rates during random sampling events within the estuary (Poulakis 2012; Poulakis et al. 2011). The areas, which were termed "hotspots," correspond with areas where public encounters are most frequently reported. Use of these hotspots can be variable within and among years based on the amount and timing of freshwater inflow. Smalltooth sawfish use hotspots further upriver during drought (i.e., high salinity) conditions and hotspot areas closer to the mouth of the

Caloosahatchee River during times of high freshwater inflow (Poulakis et al. 2011). At this time, researchers are unsure what specific biotic (e.g., presence or absence of predators and prey) or abiotic factors (e.g., flow rate, water temperature, etc.) influence this habitat selection. Still, they believe a variety of conditions in addition to salinity, such as temperature, dissolved oxygen, water depth, shoreline vegetation, and food availability, may influence smalltooth sawfish habitat selection (Poulakis et al. 2011).

### Status and Threats to Critical Habitat

Modification and loss of smalltooth sawfish critical habitat is an ongoing threat contributing to the current status of the species. Activities such as agricultural and urban development, commercial activities, dredge-and-fill operations, boating, erosion, and diversions of freshwater runoff contribute to these losses (SAFMC 1998). Large areas of coastal habitat were modified or lost between the mid-1970s and mid-1980s within the United States (Dahl and Johnson 1991; USFWS 1999). Since then, rates of loss have decreased even though habitat loss continues. Between 1998 and 2004, approximately 2,450 ac (3.8 mi<sup>2</sup>) of intertidal wetlands consisting of mangroves or other estuarine shrubs were lost along the Atlantic and Gulf coasts of the United States (Stedman and Dahl 2008). In another study, Orlando et al. (1994) analyzed 18 major southeastern estuaries and recorded over 703 mi (1,131 kilometers [km]) of navigation channels and 9,844 mi (15,842 km) of shoreline with modifications. Additionally, changes to the natural freshwater flows into estuarine and marine waters through construction of canals and other water-control devices have altered the temperature, salinity, and nutrient regimes, reduced both wetlands and submerged aquatic vegetation coverage, and degraded vast areas of coastal habitat utilized by smalltooth sawfish (Gilmore 1995; Quigley and Flannery 2002; Reddering 1988; Whitfield and Bruton 1989). Juvenile sawfish and their critical habitat are particularly vulnerable to these kinds of habitat losses or alterations due to the juveniles' affinity for (and developmental need of) shallow, estuarine systems. Although many forms of habitat modification are currently regulated, some permitted direct and/or indirect damage to habitat from increased urbanization still occurs and is expected to continue in the future.

In Florida, coastal development often involves the removal of mangroves, the armoring of shorelines through seawall construction, and the dredging of canals. This is especially apparent in master plan communities such as Cape Coral and Punta Gorda which are located within the Charlotte Harbor Estuary. These communities were created through dredge-and-fill projects to increase the amount of waterfront property available for development, but in doing so, developers removed the majority of red mangrove habitat from the area. The canals created by these communities require periodic dredging for boat access, further affecting the shallow, euryhaline essential feature of critical habitat. Development continues along the shorelines of Charlotte Harbor in the form of docks, boat ramps, shoreline armoring, utility projects, and navigation channel dredging.

To protect critical habitat, federal agencies must ensure that their activities are not likely to result in the destruction or adverse modification of the physical and biological features that are essential to the conservation of sawfish, or the species' ability to access and use these features (ESA Section 7(a)(2); see also 50 CFR 424.12(b) [discussing essential features]). Therefore, proposed actions that may impact critical habitat require an analysis of potential impacts to each essential feature. As mentioned previously, there are 2 essential features of smalltooth sawfish critical habitat: (1) red mangroves; and (2) shallow, euryhaline habitats characterized by water depths between the MHWL and 3 ft (0.9 m) measured at MLLW. The USACE oversee the permitting process for residential and commercial marine development in the CHEU. The Florida Department of Environmental Protection (FDEP) and their designated authorities also regulate mangrove removal in Florida. All red mangrove removal permit requests within smalltooth sawfish critical habitat necessitate ESA Section 7 consultation. NMFS Protected Resources Division tracks the loss of these essential features of smalltooth sawfish critical habitat.

#### Threats to Critical Habitat

#### Dock and Boat Ramp Construction

The USACE recommends that applicants construct docks in accordance with the NMFS-USACE *Dock Construction Guidelines in Florida for Docks or Other Minor Structures Constructed in or over Submerged Aquatic Vegetation (SAV), Marsh, or Mangrove Habitat* ("Dock Construction Guidelines") when possible. The current dock construction guidelines allow for some amount of mangrove removal; however, it is typically restricted to either (1) trimming to facilitate a dock, or (2) complete removal up to the width of the dock extending toward open water, which the guidelines define as a width of 4 ft. Installation or replacement of boat ramps is often part of larger projects such as marinas, bridge approaches, and causeways where natural and previously created deepwater habitat access channels already exist. Boat ramps can result in the permanent loss of both the red mangrove and the shallow, euryhaline habitat features of critical habitat for smalltooth sawfish.

#### Marina Construction

Marinas have the potential to adversely affect aquatic habitats. Marinas are typically designed to be deeper than 3 ft MLLW to accommodate vessel traffic; therefore, most existing marinas lacking essential features are unlikely to function as critical habitat for smalltooth sawfish. The expansion of existing marinas and creation of new marinas can result in the permanent loss of large areas of this nursery habitat.

#### Bulkhead and Seawall Construction

Bulkheads and other shoreline stabilization structures are used to protect adjacent shorelines from wave and current action and to enhance water access. These projects may adversely impact critical habitat for smalltooth sawfish by removal of the essential features through direct filling and dredging to construct vertical or riprap seawalls. Generally, vegetation plantings, sloping riprap, or gabions are environmentally-preferred shoreline stabilization methods instead of vertical seawalls because they provide better quality fish and wildlife habitat. Nevertheless, placement of riprap material removes more of the shallow euryhaline essential feature than a vertical seawall. Also, many seawalls built along unconsolidated shorelines require the removal of red mangroves to accommodate the seawalls.

#### Cable, Pipeline, and Transmission Line Construction

While not as common as other activities, excavation of submerged lands is sometimes required for installing cables, pipelines, and transmission lines. Construction may also require temporary or permanent filling of submerged habitats. Open-cut trenching and installation of aerial

transmission line footers are activities that have the ability to temporarily or permanently impact critical habitat for smalltooth sawfish.

#### Transportation Infrastructure Construction

Potential adverse effects from federal transportation projects in smalltooth sawfish critical habitat (CHEU) include operations of the Federal Highway Administration, USACE, and the Federal Emergency Management Agency. Construction of road improvement projects typically follow the existing alignments and expand to compensate for the increase in public use. Transportation projects may impact critical habitat for smalltooth sawfish through installation of bridge footers, fenders, piles, and abutment armoring, or through removal of existing bridge materials by blasting or mechanical efforts.

### Dredging

Riverine, nearshore, and offshore areas are dredged for navigation, construction of infrastructure, and marine mining. An analysis of 18 major southeastern estuaries conducted in 1993-1994 demonstrated that over 7,000 kilometers of navigation channels have already been dredged (Orlando et al. 1994). Habitat effects of dredging include the loss of submerged habitats by disposal of excavated materials, turbidity and siltation effects, contaminant release, alteration of hydrodynamic regimes, and fragmentation of physical habitats (GMFMC 1998; GMFMC 2005; SAFMC 1998). In the CHEU, dredging to maintain canals and channels constructed prior to the critical habitat designation, limits the amount of available shallow, euryhaline essential feature to the edges of waterways and these dredging activities can disturb juveniles that are using these areas. At the time of critical habitat designation, many previously dredged channels and canals existed within the boundaries of the critical habitat units; however, we are unsure which of those contained the shallow-water essential feature at that time. It is likely that many of these channels and canals were originally dredged deeper than -3 ft MLLW, but they have since shoaled in and now contain the essential feature of shallow, euryhaline habitat. Therefore, maintenance dredging impacts are counted as a loss to this essential feature, even though the areas may or may not have contained the essential feature at time of designation (see Figure 6, Diagrams A and B).



B.



C.



Figure 8. Diagram A depicts a cross section of a historically dredged channel/canal within the boundaries of the critical habitat units that has not been maintained. Diagram B depicts the typical cross section of a maintenance dredged channel/canal. Diagram C depicts a cross section of a maintained dredged channel/canal after sea level rise of > 1 ft.

Construction, Operations and Maintenance of Impoundments and Other Water Level Controls Federal agencies such as the USACE have historically been involved in large water control projects in Florida. Agencies sometimes propose impounding rivers and tributaries for such purposes as flood control, salt water intrusion prevention, or creation of industrial, municipal, and agricultural water supplies. Projects to repair or replace water control structures may affect smalltooth sawfish critical habitat by limiting sufficient freshwater discharge which could alter the salinity of estuaries. The ability of an estuary to function as a nursery depends upon the quantity, timing, and input location of freshwater inflows (Garmestani and Percival 2005; Norton et al. 2012; USEPA 1994). Estuarine ecosystems are vulnerable to the following man-made disturbances: (1) decreases in seasonal inflow caused by the removal of freshwater upstream for agricultural, industrial, and domestic purposes; (2) contamination by industrial and sewage discharges; (3) agricultural runoff carrying pesticides, herbicides, and other toxic pollutants; and (4) eutrophication (e.g., influx of nutrients such as nitrates and phosphates most often from fertilizer runoff and sewage) caused by excessive nutrient inputs from a variety of nonpoint and point sources. Additionally, rivers and their tributaries are susceptible to natural disturbances, such as floods and droughts, whose effects can be exacerbated by these man-made disturbances.

As stated above, smalltooth sawfish show an affinity for a particular salinity range, moving downriver during wetter months and upriver during drier months to remain within that range (Simpfendorfer et al. 2011). Therefore, water management decisions that affect salinity regimes may impact the functionality of critical habitat. This may result in smalltooth sawfish following specific salinity gradients into less advantageous habitats (e.g., areas with less shallow-water or red mangrove habitat). Furthermore, large changes in water flow over short durations would likely escalate movement patterns for smalltooth sawfish, thereby increasing predation risk and energy output. Researchers are currently looking into the effects of large-scale freshwater discharges on smalltooth sawfish and their designated critical habitat. The most vulnerable portion of the juvenile sawfish population to water-management outfall projects appears to be smalltooth sawfish in their first year of life. Newborn smalltooth sawfish remain in smaller areas irrespective of salinity, which potentially exposes them to greater osmotic stress (a sudden change in the solute concentration around a cell, causing a rapid change in the movement of water across its cell membrane), and impacts the nursery functions of sawfish critical habitat (Poulakis et al. 2013; Simpfendorfer et al. 2011).

#### Climate Change Threats

The Intergovernmental Panel on Climate Change (IPCC) has stated that global climate change is unequivocal and its impacts to coastal resources may be significant (IPCC 2007). There is a large and growing body of literature on past, present, and future impacts of global climate change induced by human activities (i.e., global warming mostly driven by the burning of fossil fuels). The latest report by the IPCC (2013) is more explicit, stating that, "science now shows with 95% certainty that human activity is the dominant cause of observed warming since the mid-twentieth century." Some of the anticipated outcomes are sea level rise, increased frequency of severe weather events, and changes in air and water temperatures. NOAA's climate change web portal provides information on the climate-related variability and changes that are exacerbated by human activities (http://www.climate.gov/#understandingClimate). The EPA's climate change webpage also provides basic background information on these and other measured or anticipated effects (http://www.epa.gov/climatechange/index.html).

Though the impacts on smalltooth sawfish cannot, for the most part, be predicted with any degree of certainty, we can project some effects to sawfish critical habitat. We know that both essential features (red mangroves and shallow, euryhaline waters less than 3 ft deep at MLLW) will be impacted by climate change. Sea level rise is expected to exceed 3.3 ft (1 m) globally by 2100, according to the most recent publications, exceeding the estimates of the Fourth Assessment of the IPCC (Meehl et al. 2007; Pfeffer et al. 2008; Rahmstorf et al. 2009). Mean sea level rise projections have increased since the Fourth Assessment because of the improved physical understanding of the components of sea level, the improved agreement of process-based models with observations, and the inclusion of ice-sheet dynamical changes (IPCC 2013). A 1-m sea level rise in the state of Florida is within the range of recent estimates by 2080 (Pfeffer et al. 2008; Rahmstorf et al. 2009).

Sea level increases would affect the shallow-water essential feature of smalltooth sawfish critical habitat within the CHEU. A 2010 climate change study by the Massachusetts Institute of Technology (MIT) forecasted sea level rise in a study area with significant overlap with the

CHEU (Vargas-Moreno and Flaxman 2010). The study investigated possible trajectories of future transformation in Florida's Greater Everglades landscape relative to 4 main drivers: climate change, shifts in planning approaches and regulations, population change, and variations in financial resources. MIT used (IPCC 2007) sea level modeling data to forecast a range of sea level rise trajectories from low, to moderate, to high predictions (Figure 7). The effects of sea level rise on available shallow-water habitat for smalltooth sawfish would be exacerbated in areas where there is shoreline armoring (e.g., seawalls). This is especially true in canals where the centerlines are maintenance-dredged deeper than 3 ft (0.9 m) for boat accessibility. In these areas, the areas that currently contain the essential feature depth (less than 3 ft at MLLW) will be reduced along the edges of the canals as sea level rises (see previous Figure 6, Diagram C).



Figure 9. From left to right: current shoreline, +3.5 in (+9 cm); +18.5 in (+47 cm); and +38.97 in (+99 cm) sea level rise by 2060.<sup>3</sup>

Along the Gulf Coast of Florida, and south Florida in particular, rises in sea level will impact mangrove resources. As sea levels rise, mangroves will be forced landward in order to remain at a preferred water inundation level and sediment surface elevation, which is necessary for successful growth. This retreat landward will not keep pace with conservative projected rates of elevation in sea level (Gilman et al. 2008). This forced landward progression poses the greatest threat to mangroves in areas where there is limited or no room for landward or lateral migration (Semeniuk 1994). Such is the case in areas of the CHEU where landward mangrove growth is restricted by shoreline armoring and coastal development. This man-made barrier will prohibit mangroves from moving landward and will result in the loss of the mangrove essential feature. Other threats to mangroves result from climate change: fluctuations in precipitation amounts and distribution, seawater temperature, carbon dioxide  $(CO_2)$  levels, and damage to mangroves from increasingly severe storms and hurricanes (McLeod and Salm 2006). A 25% increase in precipitation globally is predicted by 2050 (McLeod and Salm 2006), but the specific geographic distribution will vary, leading to increases and decreases in precipitation at the regional level. Changes in precipitation patterns caused by climate change may adversely affect the growth of mangroves and their distribution (Field 1995; Snedaker 1995). Decreases in precipitation will increase salinity and inhibit mangrove productivity, growth, seedling survival, and spatial

<sup>&</sup>lt;sup>3</sup> Adapted from (Vargas-Moreno and Flaxman), M. Addressing the Challenges of Climate Change in the Greater Everglades Landscape. Project Sheet. November, 2010. Department of Urban Planning, MIT.

coverage (Burchett et al. 1984). Decreases in precipitation may also change mangrove species composition, favoring more salt-tolerant types (Ellison 2010). Increases in precipitation may benefit some species of mangroves, increasing spatial coverage and allowing them to outcompete other salt marsh vegetation (Harty 2004). Even so, potential mangrove expansion requires suitable habitat for mangroves to increase their range, which depends to a great extent on patterns and intensity of coastal development (i.e., bulkhead and seawall construction). Seawater temperature changes will have potential adverse effects on mangroves as well. Many species of mangroves show an optimal shoot density in sediment temperatures between 59°-77°F (15°-25°C) (Hutchings and Saenger 1987). Yet, at temperatures between 77°-95°F (25°-35°C), many species begin to show a decline in leaf structure and root and leaf formation rates (Saenger and Moverley 1985). Temperatures above 95°F lead to adverse effects on root structure and survivability of seedlings (UNESCO 1992) and temperatures above 100.4°F (38°C) lead to a cessation of photosynthesis and mangrove mortality (Andrews et al. 1984). Although impossible to forecast precisely, sea surface ocean temperatures are predicted to increase 1.8°-3.6°F (1°-2°C) by 2060 (Chapter 11 (IPCC 2013)), which will in turn impact underlying sediment temperatures along the coast. If mangroves shift pole-ward in response to temperature increases, they will at some point be limited by temperatures at the lower end of their optimal range and available recruitment area. This is especially true when considering already armored shorelines in residential communities such as those within and surrounding the CHEU of critical habitat for smalltooth sawfish.

As atmospheric  $CO_2$  levels increase, mostly resulting from man-made causes (e.g., burning of fossil fuels), the world's oceans will absorb much of this  $CO_2$ , causing potential increases in photosynthesis and mangrove growth rates. This increase in growth rate, however, would be limited by lower salinities expected from  $CO_2$  absorption in the oceans (Ball et al. 1997), and by the availability of undeveloped coastline for mangroves to expand their range. A secondary effect of increased  $CO_2$  concentrations in the oceans is the deleterious effect on coral reefs' ability to absorb calcium carbonate (Hoegh-Guldberg et al. 2007), and subsequent reef erosion. Eroded reefs may not be able to buffer mangrove habitats from waves, especially during storm/hurricane events, causing additional physical effects.

Finally, the anticipated increase in the severity of storms and hurricanes may also impact mangroves. Tropical storms are expected to increase in intensity and/or frequency, which will directly impact existing mangroves that are already adversely impacted by increased seawater temperatures, CO<sub>2</sub>, and changes in precipitation (Cahoon et al. 2003; Trenberth 2005). The combination of all of these factors may lead to reduced mangrove height (Ning et al. 2003). Further, intense storms could result in more severe storm surges and lead to potential changes in mangrove community composition, mortality, and recruitment (Gilman et al. 2006). Increased storms surges and flooding events could also affect mangroves' ability to photosynthesize (Gilman et al. 2006) and the oxygen concentrations in the mangrove lenticels (Ellison 2010).

### 5 ENVIRONMENTAL BASELINE

This section describes the effects of past and ongoing human and natural factors contributing to the current status of the affected smalltooth sawfish critical habitat in the action area. The

environmental baseline describes the critical habitat's health based on information available at the time of this consultation.

By regulation (50 CFR 402.02), environmental baselines for Biological Opinions include the past and present impacts of all state, federal, or private actions and other human activities in, or having effects in, the action area. We identify the anticipated impacts of all proposed federal projects in the specific action area of the consultation at issue that have already undergone formal or early Section 7 consultation (as defined in 50 CFR 402.11), as well as the impact of state or private actions, or the impacts of natural phenomena, which are concurrent with the consultation in process (50 CFR 402.02).

Focusing on the current state of critical habitat, is important because in some areas, critical habitat features will commonly exhibit, or be more susceptible to, adverse responses to stressors than they would be in other areas, or may have been exposed to unique or disproportionate stresses. These localized stress responses or stressed baseline conditions may increase the severity of the adverse effects expected from the proposed action.

### 5.1 Status of Designated Critical within the Action Area

As stated in Section 3.2, the project site is a vacant, residential property within the Estero Bay Frontal Watershed in Fort Myers Beach, Lee County, Florida. The majority of the proposed action area (3.00 ac) is landward of the mean high water (MHW) line and includes wetlands that have varying degrees of exotic infestation. Road construction necessitates the removal and replacement of 117.17 linear feet (lin ft) of red mangroves with 73 lin ft of riprap and the filling of 0.04 ac (1,742 ft<sup>2</sup>) of shallow, euryhaline habitat waterward of MHW along the east side of Lot 18 and Lot 19. There have been no reported sightings of smalltooth sawfish within the larger 3.0 ac action area; however, there have been four sightings of juvenile smalltooth sawfish (birth to 200 centimeters [cm] total length) outside of the canal along the natural shoreline immediately adjacent to action area (ISED, unpublished data last updated May 2014).

# 5.2 Factors Affecting Critical Habitat within the Action Area

### Federal Actions

We have consulted on several USACE projects in Ft. Myers Beach where the project is located since the effective date of critical habitat designation (i.e., October 2, 2009). No other federally permitted projects are known to have occurred within the action area, as per a review of the NMFS PRD's completed consultation database by the consulting biologist on October 12, 2017.

### State or Private Actions

Examples of nonfederal activities that may adversely affect designated critical habitat for smalltooth sawfish in the action area include impacts from residential in-water activities that do not require federal permits or otherwise have a federal nexus. The direct and indirect impacts from these activities are difficult to quantify but may include loss or degradation of red mangroves or shallow, euryhaline habitat from unauthorized mangrove trimming, shoreline stabilization, or in-water construction. NMFS does not have any knowledge of state or private actions occurring in or near to the action area that would not also require a federal permit; the likelihood of a project occurring in or near to the action area that does not require a federal permit for in-water construction work is very small. Where possible, conservation actions in

ESA Section 10 permits, ESA Section 6 cooperative agreements, and state permitting programs are being implemented or investigated to monitor or study impacts from these sources.

### Other Potential Sources of Impacts to the Environmental Baseline

Stochastic events, such as hurricanes, are common throughout the range of smalltooth sawfish, especially in the current core of its range (i.e., south and southwest Florida). These events are by nature unpredictable and their effect on the survival and recovery of the species and on critical habitat are unknown; however, they have the potential to impede the survival and recovery directly if animals die as a result of them, or indirectly if habitat, especially critical habitat, is damaged as a result of these disturbances. In 2017, Hurricane Irma likely damaged habitat, including mangroves, and around the action area.

### Conservation and Recovery Actions Shaping the Environmental Baseline

Federal Essential Fish Habitat (EFH) consultation requirements pursuant to the Magnuson-Stevens Fishery Conservation and Management Act can minimize and mitigate for losses of wetland and preserve valuable foraging and developmental habitat that is used by juvenile smalltooth sawfish, including areas that has been designated as smalltooth sawfish critical habitat. NMFS has designated mangrove and estuarine habitats as EFH as recommended by the Gulf of Mexico Fishery Management Council (GMFMC). Both essential features (shallow, euryhaline water less than 3 ft MLLW and red mangroves) are critical components of areas designated as EFH and receive a basic level of protection under the Magnuson-Stevens Act to the extent that the Act requires minimization of impacts to EFH resources.

# 6 EFFECTS OF THE ACTION ON CRITICAL HABITAT

The proposed action is located within the boundary of smalltooth sawfish designated critical habitat (CHEU). We believe the proposed action is likely to adversely affect the essential features of designated critical habitat as descried below.

### 6.1 Shallow, Euryhaline Essential Feature Impacts

The proposed action will result in a permanent loss of 0.04 ac of the shallow, euryhaline habitat essential feature as potential forage, shelter, and/or nursery area for juvenile smalltooth sawfish. NMFS estimated that the total amount of shallow, euryhaline habitat in CHEU at the effective date of species listing (May 1, 2003) was approximately 84,480 ac. While the available shallow, euryhaline essential feature will be diminished, the proposed action is not severing or preventing juvenile smalltooth sawfish access to alternate habitat with this essential feature in the surrounding area. Still, some ecological function provided to juvenile smalltooth sawfish currently using the area, and conservation benefits to future juvenile sawfish in terms of the shallow, euryhaline essential feature, will be lost; therefore, we believe the project is likely to adversely affect critical habitat in the CHEU.

### 6.2 Red Mangrove Essential Feature Impacts

The proposed action will result in a permanent loss of approximately 117.17 lin ft of the red mangrove essential feature as potential forage, shelter, and/or nursery area for juvenile smalltooth sawfish. Using remote sensing data acquired from the Florida Fish and Wildlife Conservation Commission (FWC) Fish and Wildlife Research Institute (FWRI), we were able to compile information relating to the total area of this essential feature within smalltooth sawfish

critical habitat. Based on that information, we estimated that the total amount of red mangrove shoreline in CHEU at the effective date of species listing (May 1, 2003) was approximately 5,512,320 lin ft (1,044 mi). While the available red mangrove essential feature in the CHEU will be diminished, the proposed action is not severing or preventing juvenile smalltooth sawfish access to alternate habitat with this essential feature in the surrounding area. Still, some ecological function provided to juvenile smalltooth sawfish in terms of the red mangrove essential feature will be lost; therefore, we believe the project is likely to adversely affect critical habitat in the CHEU.

# 7 CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, or local private actions that are reasonably certain to occur in the action area considered in this Opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA (50 CFR 402.02).

Many threats to smalltooth sawfish critical habitat are expected to be exacerbated by the effects of global climate change (see Threats to Critical Habitat section). Potential increases in sea level may impact the availability of nursery habitat, particularly shallow, euryhaline habitat and red mangrove lined, low-lying coastal shorelines (IPCC 2014; Wanless et al. 2005). For example, nursery habitat could be negatively affected by increased temperatures, salinities, and acidification of coastal waters (Snedaker 1995), Wanless et al. 2005 (Scavia et al. 2002), as well as increased runoff and erosion due to the expected increase in extreme storm events (IPCC 2014; Wanless et al. 2005). These alterations of the marine environment due to global climate change could affect the distribution of shallow, euryhaline habitat, which would ultimately affect the distribution, physiology, and growth rates of red mangroves. These alterations could potentially eliminate red mangroves from particular areas. The magnitude of the effects of global climate change on smalltooth sawfish critical habitat are difficult to predict, yet, when combined with the cyclical loss of habitat from extreme storm events, a decrease in the red mangrove essential feature of smalltooth sawfish critical habitat is likely. (Norton et al. 2012; Scavia et al. 2002). However, the in-water portion of the proposed action is of such a small scale, scope, and limited time frame that is not very likely to contribute to, or be affected cumulatively by climate change.

Smalltooth sawfish habitat, in general, and designated critical habitat, specifically, have been degraded or modified throughout the southeastern United States of America (U.S.) from agriculture, urban development, commercial activities, channel dredging, boating activities, and the diversion of freshwater runoff. No future actions with effects beyond those already described, and no other future state, tribal, or local private actions, are reasonably certain to occur in the action area. The residential properties within the CHEU will likely continue to experience the same types of actions described in the Status of the Critical Habitat within the Action Area section above. These threats include shoreline armoring, canal dredging, and dock construction.

### 8 INTEGRATION AND SYNTHESIS

### 8.1 Critical Habitat Destruction/Adverse Modification Analysis

NMFS's regulations define *Destruction or adverse modification* to mean "a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features" (50 CFR § 402.02). Other alterations that may destroy or adversely modify critical habitat may include impacts to the area itself, such as those that would impede access to or use of the essential features. We intend the phrase "significantly delay" in development of essential features to encompass a delay that interrupts the likely natural trajectory of the development of physical and biological features in the designated critical habitat to support the species' recovery. NMFS will generally conclude that a Federal action is likely to "destroy or adversely modify" designated critical habitat if the action results in an alteration of the quantity or quality of the essential physical or biological features of designated critical habitat, or that precludes or significantly delays the capacity of that habitat to develop those features over time, and if the effect of the alteration is to appreciably diminish the value of critical habitat for the conservation of the species.

This analysis takes into account the geographic and temporal scope of the proposed action, recognizing that "functionality" of critical habitat necessarily means that it must now and must continue in the future to support the conservation of the species and progress toward recovery. The analysis must take into account any changes in amount, distribution, or characteristics of the critical habitat that will be required over time to support the successful recovery of the species. Destruction or adverse modification does not depend strictly on the size or proportion of the area adversely affected, but rather on the role the action area and the affected critical habitat serves with regard to the function of the overall critical habitat designation, and how that role is affected by the action.

The smalltooth sawfish recovery plan identifies 3 recovery objectives to help facilitate recruitment of juveniles into the recovering adult population (NMFS 2009). Recovery Objective #1 is to minimize human interactions and associated injury and mortality; this objective is not relevant to critical habitat. Recovery Objective #2 is to protect and/or restore smalltooth sawfish habitats. Recovery Objective #3 is to ensure smalltooth sawfish abundance increases substantially and the species reoccupies areas from which it had previously been extirpated. Our analysis evaluates whether the anticipated impacts to critical habitat associated with the proposed action would interfere with Recovery Objectives #2 and #3, and ultimately, the conservation objective behind the designated critical habitat—that is, facilitation of juvenile recruitment into a recovering adult population.

#### 8.2 Protect and Restore Smalltooth Sawfish Habitat (Recovery Objective #2)

In establishing Recovery Objective #2, we recognized that recovery and conservation of smalltooth sawfish depends on the availability and quality of nursery habitats. Historically, juvenile sawfish were documented in mangrove and non-mangrove habitat in the southeastern U.S. Due to the protections provided by the Ten Thousand Islands National Wildlife Refuge, Everglades National Park, and the Florida Keys National Marine Sanctuary, much of the historic

juvenile smalltooth sawfish habitat in southwest Florida has remained high-quality juvenile habitat. Recovery Regions G, H, and I in southwest Florida extend from the Manatee River on the west coast of Florida, south through Everglades National Park and the Florida Keys to Caesar Creek on the southeast coast of Florida. The CHEU is in Recovery Region G. While much of the CHEU is protected by the Charlotte Harbor Preserve State Park (CHPSP) system, it is also highly anthropomorphically influenced (See Section 5 "Environmental Baseline").

The recovery plan states that for the 3 recovery regions with remaining high-quality habitats (i.e., Recovery Regions G, H, and I), juvenile habitats "must be maintained over the long term at or above 95% of the acreage available at the time of listing" (NMFS, 2009). To ensure that a proposed action will not impede Recovery Objective #2, we determine whether the critical habitat unit will be able to maintain 95% of the areas containing each essential feature after taking into account project impacts in the context of the status of the critical habitat, the environmental baseline, and cumulative effects. While the CHEU is only a part of the larger Recovery Region G, and the 95% protection threshold applies across not just Recovery Region G, but also Recovery Regions H and I, the threshold is still useful for evaluating the impacts at the individual recovery region level and for sub-units of the recovery regions. The CHEU contains the only known nursery areas within Recovery Region G, thus we believe it is appropriate to evaluate impacts at the level of the unit. In addition, functioning critical habitat contains either one or both of the essential features, and the essential features were selected based on their role in facilitating recruitment of juvenile animals into the adult population, which the recovery plan likewise seeks to conserve and protect. Consequently, we also believe it is appropriate to consider whether 95% of each of the essential features of critical habitat in the CHEU is maintained. Therefore, below we estimate the percent impact the proposed action will have on the shallow, euryhaline habitat and red mangrove essential features of critical habitat within the CHEU.

#### Shallow, Euryhaline Essential Feature Impacts

NMFS estimated that 84,480 ac of shallow, euryhaline habitat (abbreviated SH throughout this section) was available within the CHEU at the effective date of species listing (i.e., May 1, 2003) (Table 3, Line 1). As discussed above, we must determine whether a proposed action's impact will interfere with long-term maintenance of this essential feature at or above 95% of the acreage available at the time of listing; however, loss of critical habitat was not formally monitored until the effective date of critical habitat designation (i.e., October 2, 2009). Therefore, we must estimate habitat loss that occurred during the period between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009).

To do this, we use an 84 month dataset of our completed Section 7 consultations (October 3, 2009 – September 30, 2016), including losses due to programmatic consultations, to generate a rate of loss that can then be used to back-calculate the loss of SH between the effective date of species listing and the effective date of critical habitat designation. We rely on this dataset because using approximately 7 years of information helps avoid over- or under-estimating the rate of habitat loss due to any potential inter-annual variability associated with economic growth and contraction that may have occurred in that time. During this time, 17.60 ac of SH in the CHEU was lost due to federal agency actions.

Based on these losses, we estimate a monthly loss rate of SH in the CHEU using the following equation:

Monthly loss rate of SH (CHEU) = SH lost through federal agency actions  $\div$ 84 months Monthly loss rate of SH (CHEU) = 17.60 ac  $\div$  84 months Monthly loss rate of SH (CHEU) = 0.21 ac per month

Assuming the same monthly loss rate, we back-calculate the loss of SH in the 77 months between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009) for the CHEU using the following equation:

SH lost prior to critical habitat designation (CHEU) = 0.21 ac per month × 77 months SH lost prior to critical habitat designation (CHEU) = 16.17 ac (Table 3, Line 2)

Next, we determine the loss of SH since the effective date of critical habitat designation. From the effective date of critical habitat designation through December 31, 2017,<sup>4</sup> 22.27 ac of SH in the CHEU has been lost due to federal agency actions (Table 3, Line 3). While this amount of loss only takes into account projects with a federal nexus requiring ESA Section 7 consultation, there are very few projects without a federal nexus that could affect shallow, euryhaline habitat in the CHEU as most in-water construction projects require federal authorization.

Using this information, we calculate the SH currently available in CHEU using the following equation:

SH currently available (CHEU) = SH at time of species listing - (SH lost prior to critical habitat designation + SH lost since critical habitat designation) SH currently available (CHEU) = 84,480 ac - (16.17 ac + 22.27 ac) SH currently available (CHEU) = 84,441.56 ac (Table 3 Line 4)

We calculate the amount of SH that must be maintained in the CHEU per Recovery Objective #2 using the following equation:

SH that must be maintained (CHEU) = SH at time of species listing  $\times$  95% SH that must be maintained (CHEU) = 84,480 ac  $\times$  0.95 SH that must be maintained (CHEU) = 80,256 ac (Table 3 Line 5)

The proposed action would result in the permanent loss of 0.04 ac of SH (Table 3 Line 6). Using the above results, we estimate the total amount of SH lost in the CHEU since species listing, including losses from the proposed action:

<sup>&</sup>lt;sup>4</sup> Due to the high frequency of relatively small projects affecting smalltooth sawfish critical habitat, NMFS updates shallow, euryhaline habitat losses quarterly based on the U.S. federal fiscal year (December 31, Mar 31, June 30, September 30).

% SH lost since species listing (CHEU)

= [(SH loss due to this project

+ SH lost prior to critical habitat designation

+ SH lost since critical habitat designation)

 $\div$  Total SH at time of species listing]  $\times$  100

% SH lost since species listing (CHEU)

 $= [(0.04 \ ac + 16.17 \ ac \ + 22.27 \ ac) \div 84,480 \ ac] \times 100$ 

% SH lost since species listing (CHEU) =  $(38.48 \text{ ac} \div 84, 480 \text{ ac}) \times 100$ % SH lost since species listing (CHEU) = 0.045549% (Table 3, Line 7)

Thus, we estimate the percent of SH remaining within the CHEU as:

% SH remaining (CHEU) = 100% - % SH lost since species listing (CHEU) % SH remaining (CHEU) = 100% - 0.045549% (Table 3, Line 7) % SH remaining (CHEU) = 99.954451% (Table 3, Line 8)

Sha	llow, Euryhaline Habitat in the CHEU	Acres		
1.	Available at the time of species listing	84,480		
2.	Losses prior to critical habitat designation	16.17		
3.	Losses since critical habitat designation	22.27		
4.	Available as of December 31, 2017	84,441.56		
5.	Area that must be maintained per Recovery Plan	80,256 (95% of 84,480)		
<u>6</u> .	Affected by the proposed action	0.04		
7.	Affected since species listing (including the proposed action)	36.48 (0.045549% of 84,480)		
8.	Remaining (including the proposed action)	84,441.52 (99.954451% of 84,480)		

Table 3.	Summary	of Im	pacts to th	he Shallo	w, Euryha	line Habitat	t Essential Feature
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### Red Mangrove Essential Feature Impacts

Remote sensing data from FWRI indicated that approximately 5,512,320 lin feet of red mangrove shoreline (abbreviated RM throughout this section) was available in the CHEU at the effective date of species listing (i.e., May 1, 2003) (Table 4 Line 1). As described above, we must determine whether project impacts will interfere with long-term maintenance of this essential feature at or above 95% of the linear feet of habitat available at the time of listing; however, as described above, loss of critical habitat was not formally monitored until the effective date of critical habitat designation (i.e., October 2, 2009). Therefore, we must estimate habitat loss that occurred during the period between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009).

To do this, we use an 84 month dataset of our completed Section 7 consultations (October 3, 2009 – September 30, 2016), including losses due to programmatic consultations, to generate a rate of loss that can then be used to back-calculate the loss of RM between the effective date of species listing and the effective date of critical habitat designation. We rely on this dataset

because using approximately 7 years of information helps avoid over- or under-estimating the rate of habitat loss due to any potential inter-annual variability associated with economic growth and contraction that may have occurred in that time. During this time, 9,142.50 lin ft of RM in CHEU was lost due to federal agency actions.

Based on these losses, we estimate a monthly loss rate of RM using the following equation:

Monthly loss rate of RM (CHEU) = RM lost through federal agency actions ÷ 84 months Monthly loss rate of RM (CHEU) = 9,142.50 lin ft ÷ 84 months Monthly loss rate of RM (CHEU) = 108.84 lin ft per month

Assuming the same monthly loss rates, we back-calculate the loss of RM in the 77 months between the effective date of species listing and the effective date of critical habitat designation (i.e., May 1, 2003 – October 2, 2009) in the CHEU using the following equation:

RM loss prior to critical habitat designation (CHEU) = 108.84 lin ft per month × 77 months RM loss prior to critical habitat designation (CHEU) = 8,380.68 lin ft (Table 4, Line 2)

Next, we determine the loss of RM since the effective date of critical habitat designation. From the effective date of critical habitat designation through December 31, 2017,<sup>5</sup> 12,941.75 lin ft of RM in the CHEU has been lost due to federal agency actions (Table 4, Line 3). While this amount of loss only takes into account projects with a federal nexus requiring ESA Section 7 consultation, there are very few projects without a federal nexus that could affect red mangrove shoreline in the CHEU as most in-water construction projects require federal authorization.

Using this information, we calculate the RM currently available in the CHEU using the following equation:

RM currently available (CHEU)

= RM at time of species listing

- (RM loss prior to critical habitat designation

+ *RM* loss since critical habitat designation)

RM currently available (CHEU) = 5,512,320 lin ft - (8,380.68 lin ft + 12,941.75 lin ft)RM currently available (CHEU) = 5,490,997.57 lin ft (Table 4, Line 4)

We calculate the amount of RM that must be maintained in the CHEU using the following equation:

RM that must be maintained (CHEU) = RM at time of species listing  $\times$  95% RM that must be maintained (CHEU) = 5,512,320 lin ft  $\times$  0.95 RM that must be maintained (CHEU) = 5,236,704 lin ft (Table 4, Line 5)

<sup>&</sup>lt;sup>5</sup> Due to the high frequency of relatively small projects smalltooth sawfish critical habitat, NMFS updates red mangrove shoreline losses quarterly based on the U.S. federal fiscal year (December 31, Mar 31, June 30, September 30).

The proposed action would result in the loss of 117.17 lin ft of RM (Table 4, Line 6). Using the above results, we estimate the total amount of RM lost in the CHEU since species listing, including losses from the proposed action:

% RM lost in CHEU since species listing

= [(RM loss due to this project

+ RM lost prior to critical habitat designation

+ RM lost since critical habitat designation)

 $\div$  Total RM in CHEU at time of species listing]  $\times$  100

% RM lost in CHEU since species listing

 $= [(117.17 lin ft + 8,380.68 lin ft + 12,941.75 lin ft) \div 5,512,320 lin ft] \times 100$ 

% RM lost in CHEU since species listing =  $(21,439.43 \text{ lin } ft \div 5,512,320 \text{ lin } ft) \times 100$ % RM lost in CHEU since species listing = 0.388937% (Table 4, Line 7)

Thus, we estimate the percent of RM remaining within the CHEU as:

% RM remaining (CHEU) = 100% - % RM lost since species listing (CHEU) % RM remaining (CHEU) = 100% - 0.388937% (Table 4, Line 7) % RM remaining (CHEU) = 99.611063% (Table 4, Line 8)

Red	Mangrove Shoreline in the CHEU	Linear Feet		
1.	Available at the time of species listing	5,512,320		
2.	Losses prior to critical habitat designation	8,380.68		
3.	Losses since critical habitat designation	12,941.75		
4.	Available as of December 31, 2017	5,490,997.57		
5.	Linear feet that must be maintained per Recovery Plan	5,236,704 (95% of 5,512,320)		
6.	Affected by the proposed action	117.17		
7.	Affected since species listing (including the proposed action)	21,439.43 (0.388937% of 5,512,320)		
8.	Remaining (including the proposed action)	5,490,880.57 (99.611063% of 5,512,320)		

Table 4. Summary of Impacts to the Red Mangrove Essential Feature

### Summary of Impacts to the Essential Features

A very small percentage of the essential features of smalltooth sawfish designated critical habitat have been affected by in-water construction since the effective date of species listing. Including losses from this project, 99.954451% of the SH essential feature (Table 3, Line 8) and 99.611063% of the RM essential feature (Table 4, Line 8) available at the time of species listing remain in the CHEU. Thus, the loss of essential features associated with the proposed action, in combination with losses since we listed the species, does not provide any impediment to

effectively protecting 95% of juvenile habitat in the CHEU available at the effective date of species listing, and therefore will not be an impediment to Recovery Objective #2.

## 8.3 Ensure Smalltooth Sawfish Abundance Increases (Recovery Objective #3)

In establishing Recovery Objective #3, we recognized that it was important that sufficient numbers of juvenile sawfish inhabit several nursery areas across a diverse geographic area to ensure survivorship and growth and to protect against the negative effects of stochastic events within parts of their range. To meet this objective, Recovery Region G (i.e., CHEU) must support sufficiently large numbers of juvenile sawfish to ensure that the species is viable in the long-term and can maintain genetic diversity. Recovery Objective #3 requires that the relative abundance of small juvenile sawfish (< 200 cm) either increases at an average annual rate of at least 5% over a 27-year period, or juvenile abundance is at greater than 80% of the carrying capacity of the recovery region.

Assessing the effect of the proposed action on small juvenile abundance is made difficult by the state of available data. Since the designation of critical habitat and the release of the recovery plan in 2009, ongoing studies have been in place to monitor the US DPS of smalltooth sawfish. FWC FWRI is conducting a study in the CHEU that is supported primarily with funding provided by NMFS through the ESA Section 6 Species Recovery Grants Program, while Florida State University, also funded by NMFS through ESA Section 6, and the NOAA NMFS Southeast Fisheries Science Center Panama City Laboratory and have focused studies in the TTIEU. The intent of these studies is to determine the abundance, distribution, habitat use, and movement of juvenile sawfish. Given the limited duration of the study in the CHEU (September 2009current]), there is not yet enough data to discern the trend in juvenile abundance within that Unit. Early indications are that juvenile sawfish are at least stable and likely increasing in the CHEU, due in large part to ESA-listing of the species and designation of critical habitat. While it may be too early to state definitively that juveniles within CHEU are surviving to adulthood, researchers consistently capture newborn smalltooth sawfish, particularly within "hot spots," indicating adult smalltooth sawfish are pupping within Recovery Region G. Available data from the adjacent Recovery Region H (i.e., the TTIEU) indicate that adult smalltooth sawfish are also reproducing within this recovery region and that the juvenile population trend is at least stable and possibly increasing—though variability is high (Carlson and Osborne 2012; Carlson et al. 2007). With no other data to consider, the abundance trend in TTIEU represents the best data available for assessing the population trends in the CHEU. Therefore, we do not believe the loss of habitat associated with the proposed action, in combination with the losses to date, will impede the 5% annual growth objective for the juvenile population within Recovery Region G.

# 9 CONCLUSION

After reviewing the current status of smalltooth sawfish critical habitat, the environmental baseline, and the cumulative effects, it is our Opinion that the loss of 0.04 ac (1,742 ft<sup>2</sup>) of shallow, euryhaline essential feature and the loss of 117.17 lin ft of red mangrove essential feature from the proposed seawall installation will not interfere with achieving the relevant habitat-based Recovery Objectives for smalltooth sawfish. Therefore, we conclude the proposed action will not impede the critical habitat's ability to support the smalltooth sawfish's conservation, despite permanent adverse effects. Given the nature of the proposed action and the

information provided above, we conclude that the action, as proposed, is likely to adversely affect, but is not likely to destroy or adversely modify, smalltooth sawfish critical habitat.

# 10 INCIDENTAL TAKE STATEMENT

NMFS does not anticipate that the proposed action will incidentally take any species and no take is authorized. Nonetheless, any takes of smalltooth sawfish or sea turtles shall be immediately reported to takereport.nmfsser@noaa.gov. Refer to the present Biological Opinion by title (Siesta V. Residential Development), issuance date, NMFS PCTS identifier number SER-2017-18772, and USACE permit number SAJ-1997-05999 (SP-RMT). At that time, consultation must be reinitiated.

# 11 CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs federal agencies to utilize their authority to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations identified in Biological Opinions can assist action agencies in implementing their responsibilities under Section 7(a)(1). Conservation recommendations are discretionary activities designed to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The following conservation recommendations are discretionary measures that NMFS believes are consistent with this obligation and therefore should be carried out by the federal action agency:

- 1. Continue public outreach and education on smalltooth sawfish and smalltooth sawfish critical habitat in an effort to minimize interactions, injury, and mortality.
- 2. Provide funding to conduct directed research on smalltooth sawfish that will help further our understanding about the species (e.g., implement a relative abundance monitoring program which will help define how spatial and temporal variability in the physical and biological environment influence smalltooth sawfish) in an effort to predict long-term changes in smalltooth sawfish distribution, abundance, extent, and timing of movements.
- 3. Fund surveys of detailed bathymetry and mangrove coverage within smalltooth sawfish critical habitat. Lee County and the USACE recently funded such surveys within the Cape Coral municipality. Data is needed from other municipalities within the CHEU to establish a more accurate baseline assessment of both critical habitat features (red mangroves and shallow-water areas).
- 4. Fund and support restoration efforts that rehabilitate and create shallow, euryhaline and mangrove fringe habitats within the range of smalltooth sawfish.

To stay abreast of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

### **12 REINITIATION OF CONSULTATION**

This concludes NMFS's formal consultation on the proposed action. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary federal action agency involvement or control over the action has been retained, or is authorized by law, and if (1) the amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action on listed species or designated critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

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