APPENDIX D – PERTINENT CORRESPONDENCE

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TABLE D-1. SCOPING COMMENTS RECEIVED AND RESPONSES

Comment #	Commenter	Comment	Response
1	NPCA	The NPCA is pleased that the Corps is moving forward with preparation of the Draft EA for an operations field test for constructed features of the MWD project. This important next step in the process will bring the ecosystem benefits of this project – which are desperately needed as the natural system continues to decline – closer to realization. NPCA is strongly supportive of the goal of the MWD project to reestablish a natural flow of clean, freshwater to NESRS while alleviating western Shark Slough from unusually high water levels. The data obtained through field testing will provide insight as to the best operations methods for maximizing restoration investments made to date while continuing to guide future planning and construction initiatives. We appreciate the Corp's assertion that water supply and fish and wildlife protections for ENP will be maintained during the field test.	Thank you for your comment.
2	FWC	The FWC has fish and wildlife and land management responsibilities for WCAs 2 and 3, which are managed as the EWMA. We recommend water management actions that will help reduce extreme high water levels and prolonged inundation periods within WCA 3 that result in negative impacts to its natural communities. In support of our recommendations and to assist with identifying issues that should be addressed during the planning process for this project, we would like to highlight several recent actions relevant to this scoping process. The FWC conveyed comments and recommendations on the G-3273 constraint in letters (enclosed) through the Florida State Clearinghouse dated November 1, 2010, and September 5, 2013. The FWC has developed a position paper entitled "Hydrologic Requirements for the EWMA" dated November 20, 2013 (enclosed). This paper provides biologically based guidance for managing water levels in the Everglades to ensure restoration of fish and wildlife populations, habitats, and diversity so that the CERP goals can be fully realized.	The Corps understands the FWC concerns and is proactively working to modify water management operations in south Florida. The Corps and SFWMD, as well as other stakeholders, have met on several occasions to develop a plan of action to deliver more water from WCA 3A to ENP. Our joint effort to relax G-3273 and utilize S-356 is the best path forward for modifying water management operations and alleviating the high water issues the FWC has identified. The multiple purposes of the C&SF Project which include the protection of fish and wildlife will be maintained during the field test. ERTP Periodic Scientist Calls will continue to be conducted throughout the G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy to ensure wildlife recommendations are considered during the water management decision process. The information exchanged by FWC staff and other agencies during the

Comment #	Commenter	Comment	Response
			Periodic Scientist calls remains invaluable to the decision-making process for water management operations.
3	FWC	The G-3273 constraint of 6.8 feet NGVD exists as flood protection measure and has been used since 1985 as a trigger to cease S-333 discharges from flowing south into NESRS as a protective measure for residential and agricultural areas to the east. Because many of the MWD to ENP project features have been built, the opportunity exists for relaxation of the G-3273 constraint and subsequent increased water deliveries from WCA 3A. The FWC fully supports the relaxation of the G-3273 constraint that curtails flows from WCA 3A to ENP through NESRS as positive step towards restoration by assisting in reducing high water levels in WCA 3A, and furthering the MWD objective of providing increased flows to NESRS.	Thank you for your comment.
4	Miami-Dade County Public Works and Waste Management	While our Department fully supports any efforts regarding the restoration of the Everglades, we have concerns regarding the additional changes in maximum stage limit stages, for G-3273, without any additional mitigation. Here are our comments, regarding the proposed changes in the trigger stages. The latest 10-year statistics from USGS indicate that the Average October Water Table in the 8.5 Sq. Mile Area is 5.63 feet NGVD, for the period from 2000 through 2009, as indicated by the G-3273 Gauge; the 25 % probability of exceedances stage is 5.36 for this gauge, representing the wettest conditions within that basin. The proposed trigger in the EA is therefore too high to maintain the baseline levels of service for flood protection in this area. Please refer to the attached chart. The existing trigger of 6.8 feet NGVD is close to the 28% probability of exceedance or 1 in 3.6 years.	The multiple purposes of the C&SF Project will be maintained during the field test. During the G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy, the required level of flood mitigation for the 8.5 SMA will be maintained, consistent with the 2011 Interim Operational Criteria for the 8.5 SMA.
5	Miami-Dade County Public Works and Waste Management	Considering the entire period of record, from 1986 to 2013, the maximum operating limit of 7.5 feet NGVD at Tamiami Trail corresponds to the 1.5 % probability of exceedance (1 in 67 years), meaning that the proposed changes to 8.5 feet NGVD is equivalent to a practical removal of the trigger, from the perspective of flood protection. The operational changes	During the field test, the current maximum operating stage limit in the L-29 canal will be maintained at 7.5 ft NGVD, as established under the 2012 WCAs, ENP, ENP-SDCS Water Control Plan (USACE 2011c). Information and operational criteria identified from the Increment 1 field test will be used to develop an

Comment #	Commenter	Comment	Response
		already implemented in the area are already creating flood impacts to business along the Tamiami Trail; any further increases of stage triggers may require flood mitigation.	expanded set of operations and monitoring criteria for a subsequent operational field test (Increment 2) that will raise the maximum operating limit in the L-29 Canal level above 7.5 feet NGVD, up to a maximum of 8.5 feet NGVD. Environmental effects to flood control as a result of the field test are discussed in Section 4.6.
6	Miami-Dade County Public Works and Waste Management	We suggest that S-380 be closed while the tests occur, to prevent additional flows to the C-4 Impoundment and C-4 (Tamiami Canal).	S-380 will be operated consistent with the 2012 WCAs-ENP-SDCS Water Control Plan (USACE 2012c) during the field test.
7	Miami-Dade County Public Works and Waste Management	I have concerns regarding the effectiveness of S-357 for control seepage within the 8.5 SMA, the relaxation/elimination of the trigger may worsen the flood conditions in the area.	Field Test operational criteria for S-357 are defined within **Appendix A** (consistent with 2012 WCAs-ENP-SDCS Water Control Plan) (USACE 2012c). Recall that currently, this criteria for S-357 is supplemented by S-331 use if water level in southwest corner of 8.5 SMA reaches criteria, this is still the case during the Field Test. The new seepage collection canal C-358 and future S-357N (this Field Test implements testing protocol for S-357N) are expected to allow S-357 to be utilized more during the Field Test but S-331 is also available to supplement, if necessary. The net effect of reduced WCA 3A regulatory discharges to NESRS combined with increased flood control releases from S-331/S-173 and increased seepage to the L-31N Canal south of S-331 is not able to be quantified prior to completion of the field test and associated hydrologic monitoring, which will aid in quantifying both long-term and intra-annual/seasonal effects of increased stages within NESRS. Additional inflow volumes to L-31N Canal, if resultant from the field test, are expected to be primarily managed with the C-111 South Detention Area using S-332 B, S-332C, and S-332D, given the significant reduction in WCA 3A regulatory releases to the SDCS. The field test will include assessment of the combined effects of increased seepage east resultant from increased stage levels in NESRS and will incorporate the ongoing SFWMD

Comment #	Commenter	Comment	Response
			operations, monitoring, and performance assessments conducted as part of the C-111 Spreader Canal Western Project.
8	Miami-Dade County Public Works and Waste Management	The table of performance measures should include the maximum stages not to be exceeded along the L-31N, for S-380, G-211 and S-331, since the S-356 and S-357 are not operational.	The field test will maintain the current operating limit constraint of 7.5 feet NGVD in the L-29 Canal, while relaxing the G-3273 stage constraint and utilizing S-356 for control of seepage to the L-31N Canal. S-357, S-331, S-336, S-380 are to be operated consistent with the 2012 WCAs-ENP-SDCS Water Control Plan (USACE 2012c). The field test will also implement a testing protocol to assist in defining operating criteria for the new 8.5 SMA S-357N water control structure following completion of construction. Monitoring for the field test is outlined in **Appendix C**.
9	Miami-Dade County Public Works and Waste Management	The report does not explore additional options for changing the schedule for operations of the S-12 structures, during the wet season and lower the stages on the WCA 3A.	The Corps is proactively working to modify water management operations in south Florida. The Corps and SFWMD, as well as other stakeholders, have met on several occasions to develop a plan of action to deliver more water from WCA 3A to ENP. Our joint effort to relax G-3273 and utilize S-356 is currently the best path forward for modifying water management operations and alleviating the high water issues that have been identified for WCA 3.
10	FDACS	FDACS appreciates the opportunity to comment in accordance with the NEPA regarding the identification of issues and resources to be considered during the scoping process for the project referenced above. We are strongly opposed to relaxing the G-3273 constraint without a firm commitment to operate the S-356 pump station. This commitment must also include operational changes to the C-111 Canal Structures which will include the S-18C and the S-197 as part of the first increment under the NEPA process for relaxation of the G-3273 constraint. The agricultural economy in Miami-Dade has been repeatedly harmed by elevated water levels that adversely impact growers due to the lack of operational integration between the WCAs, ENP, and the SDCS, including the C-111 structures. The areas of	The Corps is committed to continuing to work with agencies and stakeholders to improve deliveries to ENP, which will ultimately lead to less water delivered through the ENP-SDCS. The Corps understands the FDACS position and your urgency to move forward with a plan of action to quickly address concerns recently raised by the South Miami-Dade agricultural community. Please see **Section 4.5** and **4.6** of the EA for an analysis of potential effects of the field test on the SDCS. Operational criteria for S-197 were considered during the NEPA process and were extensively discussed with members of the hydrology and hydraulics sub team as the operational strategy for the field test was developed.

Comment #	Commenter	Comment	Response
		negative impact include all agricultural land east of ENP and the Frog Pond/C-111 project and in the vicinity of the C-111 West Spreader Canal Project.	Operational criteria for S-197 was included and considered under Alternatives E and G. Alternative G has been identified as the Preferred Alternative.
11	FDACS	The scope of the field test must include more than just S-356 and S-357. Although the letter states that the ultimate goal is to develop an operating plan that includes the C-111 Canal structures, there is no mention that any changes to those structures are contemplated in any phase of this test. Including the C-111 Canal structures as part of the first increment is needed in order to achieve a combined operational plan on the schedule you indicate. A good place to start is the operations table attached to the May 27, 2014 letter from Rich Budell, FDACS to Eric Bush USACE.	Please see response to comment 10 above.
12	FDACS	Based on the description of the first increment provided in the USACE June 26, 2014 PDT invitation letter, it is our understanding that the L-29 7.5 ft. NGVD maximum level will be maintained. S-356 must be allowed to operate up to the full L-29 constraint even if S-333 releases have to be scaled back in order to gather the information needed for the future WCP to combine the WCAs, ENP, and the SDCS with the features of the MWD project and the C-111 projects.	During the field test, the current maximum operating stage limit in the L-29 Canal will be maintained at 7.5 ft NGVD, as established under the 2012 WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Reference **Appendix A** for a detailed description of the operational changes to S-333 and S-356 during the field test.
13	FDACS	The short time frame requested for comments after the scoping notice is insufficient to allow for a new document consolidating all the information and concerns expressed previously. Please see the enclosures for a recap of our previous comments, all of which consistently point out the repeated negative impacts to agriculture in south Miami-Dade caused by increasing water levels without system-wide protocols to avoid adverse conditions. 1) March 7, 2008 – FDACS comments on the "Preliminary Draft – Interim WCP for pump station S-357". This provides a historical reference to the importance of the G-3273 constraint. 2) January 13, 2012 – FDACS comments to the USACE on the "Final Environmental Impact Statement for the ERTP." Please review the second concern on page 2 explaining the	Please see response to comment 10 above.

Comment #	Commenter	Comment	Response
		need to keep the canal operations existing prior to the adoption of the ERTP as a constraint. 3) September, 17, 2013 – FDACS comments on the "EA and Draft FONSI – Proposed G-3273 Planned Deviation for the 2012 WCAs, ENP, and ENP-SDCS WCP-Miami-Dade-County, Florida dated August 2013." Provided as reference. 4) May 27, 2014 – FDACES letter from Rich Budell, director, Office of Agricultural Water Policy to Eric Bush, Chief, Planning and Policy Division, USACE. This letter provides comments and recommendations following the May 2014 interagency meeting on elevated water levels in the South Miami-Dade agricultural area.	
14	FPL	As noted in our September 19, 2013 correspondence on the EA for the proposed G-3273 deviation, FPL's property within NESRS would be impacted by any flooding or storage of water. We also noted that because the congressionally authorized land exchange (by which the federal government would obtain the required property rights to increase flowage of water over FPL's lands) has not been completed, the federal government currently does not have the necessary rights to increase water flow over FPL's property. A copy of our September 19, 2013 correspondence is attached. For purposes of the record, we reiterate the comments contained therein.	Please reference **Section 4.16** of the EA for potential impacts to properties within the project area. The purpose of this field test is to evaluate relaxing the existing G-3273 stage constraint of 6.8 feet NGVD to enable increased water deliveries from WCA 3A to ENP through NESRS. Under the current WCP for the WCAs, ENP, and ENP-SDCS, stages at G-3273 currently exceed 6.8 feet NGVD due to rainfall. A review of historical stage data from 2002 through 2014 indicate that the current constraint of 6.8 feet NGVD at G-3273 is exceeded approximately 30% of the time during the referenced period of record. During this time period, stages up to 7.6 feet NGVD have been observed at G-3273. During the field test, the stage experienced at G-3273 is expected to be similar to the range of stages currently experienced under existing conditions as the current maximum operating stage limit in the L-29 Canal will be maintained at 7.5 feet NGVD. The duration at which stages at G-3273 exceed 6.8 feet NGVD is inspected to increase. Efforts by ENP to acquire the referenced property are ongoing. Cures and easements are anticipated to be completed in September 2017 (per personal communication with DOI).
15	SFWMD	We believe the interagency team is on the right path to	The Corps is proactively working with the SFWMD, as

Comment #	Commenter	Comment	Response
		developing a water control plan that will reduce prolonged high water events in WCA 3A, ensure that the necessary water is delivered to the ENP, while at the same time ensuring the continued protection of the agricultural and urban areas in southern Miami-Dade County. However, the proposed operational modifications represent a very modest first increment in a series of increments that will be needed to reach the Final Water Control Plan for the MWD/C-111 projects. We are concerned about the amount of time that it will take to arrive at a Final Water Control Plan and how the integrated system operations of WCA 2A, ENP and South Miami-Dade Conveyance System will be handled in the interim. With the 2014 wet season upon us, we feel that additional operational flexibility should be afforded during this wet season. Our respective staff have met to discuss what a potential deviation would consist of building off of the planning efforts that were undertaken during the 2013 wet season.	well as other stakeholders, to modify water management operations in south Florida. The Corps and SFWMD, as well as other stakeholders, have met on several occasions to develop a plan of action to deliver more water from WCA 3A to ENP. Our joint effort to relax G-3273 and utilize S-356 is the best path forward for modifying water management operations. This effort will be implemented in three increments. The field test will start in May of 2015. The second and third increments will build upon what is learned from the first. In the time period prior to the start of the field test, the Corps will continue to follow the approved water control plan.
16	SFWMD	The SFWMD has also transmitted in June 2014 a draft proposal for a short duration pump test of S-356 that could be conducted before the wet season conditions taper off this year. The two to three week test of S-356 is proposed to better understand local surface and groundwater dynamics that occur during pump operation with recently added features, Tamiami Trail Bridge and L-31 N seepage barrier in place. Information from this short-duration test will be used to develop a water budget and may be used to improve characterization of the aquifer in computer simulation models, further develop incremental field test protocols and provide information for the development of the comprehensive operating plan for the MWD and C-111 projects.	The Corps received the SFWMD's request to conduct a short duration pump test of S-356 and has worked proactively with the SFWMD in defining the scope of the pump test. In anticipation of the field test, the Jacksonville District will perform a limited duration (up to three weeks) pump test of S-356 to ensure mechanical function. The pump test is anticipated to be executed prior to implementation of the field test.
17	FDEP	The DEP has previously provided both verbal and written comments regarding the incremental relaxation of the G-3273 constraint for deliveries to the ENP throughout the joint planning efforts and the State's Coastal Zone Management Program responses. Our comments on similar proposals were provided in the following letters submitted to the Corps: September 6, 2013 FDEP Memo with SFWMD Comments on the Corps' draft EA for the Proposed G-3273 Planned	Thank you for your comments. Prior concerns have been considered during the planning process for the field test. The Corps has and will continue to work proactively with the FDEP to resolve any regulatory issues that arise.

Comment #	Commenter	Comment	Response
		Deviation from the 2012 Water WCAs, ENP, and ENP-SDCD Water Control Plan (SAI# FL201308236696C); November 16, 2012 FDEP letter requesting additional information for a two year S-356 pump station and G-3273 gauge constraint relaxation field test for the MWD to ENP project (DEP File No. 0246512); July 8, 2011 FDEP Clearinghouse letter for Scoping Notice – Combined Operations Plan, MWD (SAI #FL201105255769); November 9, 2010 FDEP Memo to the State Clearinghouse regarding the Corps' draft EA for Temporary Deviation from Interim Operating Plan (IOP) Table ES-1; S-333: G-3273 Constraint (SAI#FL10-5486C); December 9. 2009 FDEP Memo to Susan Conner (USACE) providing comments on the G-3273 Modification field test.	
18	FDEP	Please consider the Department's previous clearinghouse and regulatory comments on prior proposals for G-3273 relaxations and S-356 pump station testing when developing your scope. We recognize that some of the previous comments may conflict with the recent negotiations between the Department, the SFWMD, and the Corps with regard to the CEPP. For those comments that appear to conflict or directly conflict with the negotiated language, we expect to work diligently with the Corps to address those issues throughout the PDT process.	Thank you for your comments. Prior concerns have been considered during the planning process for the field test. The Corps has and will continue to work proactively with the FDEP to resolve any regulatory issues that arise.
19	FDEP	Please note, S-356 pump station testing, temporary deviations to the G-3273 gage constraint, and operations of the S-357N water control structure are not currently authorized in the MWD to ENP permit (File No 0246512-010). Please coordinate with Department staff from the OEP Permitting Section to obtain any necessary authorizations prior to commencement of the test.	Information regarding the filed test will be submitted to the FDEP per specific condition 18 of the CERPRA permit no. 0246512-10 (or other subsequent modifications in force at the time of application) in order to obtain approval for a test of features constructed under the MWD Project. The Proposed Action requires a CZMA consistency determination (refer to **Appendix B)**. The Corps is coordinating a consistency determination pursuant to the CZMA through the circulation of this EA. All required permits and/or modifications to existing permits would be acquired prior to implementation of the field test to satisfy the requirement for water quality certification under the Clean Water Act.

Miccosukee Tribe of Indians
of Florida

April 18, 2011

Via E-Mail and Express Mail

Colonel Alfred Pantano
United States Army Corps of Engineers
701 San Marco Blvd., The Prudential Building
Jacksonville, Florida 32207-8175

Re: Comments; Miccosukee Tribe of Indians of Florida on the Draft Environmental Impact Statement, Everglades Restoration Transition Plan

Dear Colonel Pantano:

Enclosed, please find the official comments of the Miccosukee Tribe of Indians of Florida for the above referenced matter.

For far too many years, as a direct result of discriminatory water management actions, hundreds of thousands of acres of Tribal Everglades in Water Conservation Area 3A have been flooded and degraded. This has led to, among other things, the destruction of tribal culturally sensitive archeological areas. It has threatened the health and safety of the Miccosukee community and brought the Snail Kite to the verge of extinction. This is an area of the Everglades that the government promised to preserve in a natural state *in perpetuity* for the Miccosukee Tribe. These places are vital to Miccosukee culture and way of life.

The Miccosukee Tribe expects that all agencies not only comply with federal environmental statutes, but also with their trust responsibility to the Miccosukee People. Based upon our experts' review, the Miccosukee Tribe hopes that the proposed alternative should begin to alleviate some of our concerns. However, should the Corps' representations prove to be incorrect, the Miccosukee Tribe reasonably expects additional action to reduce the high water levels that do not include bridging. Bridging is simply not the answer.

The Miccosukee Tribe hopes that the implemented plan will treat all parts of the Everglades, and all species, equally. Only by protecting all of the Everglades will the goal of Everglades Restoration be achieved.

Sincerely,

Colley Billie
Chairman

cc: Dr. Gina Ralph at ertpcomments@usace.army.mil
Enclosures

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

JUN 30 2014

To Whom It May Concern:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Draft Environmental Assessment (EA) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N (Figure 1). The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 (C-111) South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations.

The purpose of this field test is to evaluate raising or removing the existing G-3273 stage constraint to enable increased water deliveries from Water Conservation Area 3A to ENP through Northeast Shark River Slough (NESRS) for the benefit of natural resources. The field test will also provide data to support operating permit applications for S-356 and S-357 N and to develop future water management operating criteria. The water management operations contained in this proposed field test will be implemented in 2015. If weather or other system-wide conditions during this period do not provide sufficient data for a conclusive field test, the field test may be extended for a maximum of two years.

The multiple purposes of the C&SF Project to provide flood control, water supply for municipal, industrial, and agricultural uses, prevention of saltwater intrusion, water supply for ENP and protection of fish and wildlife will be maintained during the field test.

We invite the participation of Federal and State agencies, Native American tribes, local agencies, and interested parties and individuals in providing comments and identifying any issues. Please share this notice with any interested party not included on the address list, and send any comments you may have to the attention of Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil no later than 14 days from the date of this letter.

All individuals who respond with comments will be included in future mailings. Others may be included by making a written request in writing (postcard) to the same address or by email.

Sincerely,

Kenneth R Duggan

for Eric P. Summa
Chief, Environmental Branch

Enclosure

Figure 1. Location map showing the approximate location of G-3273.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 2 6 2014

Planning and Policy Division
Environmental Branch

Honorable Colley Billie
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, FL 33144

Dear Chairman Billie:

The purpose of this letter is to invite you and/or your representative to participate on the Project Delivery Team (PDT) and to invite scoping level comments for National Environmental Policy Act document and subsequent the G-3273/S-356 operations field test to raise the current operational stage constraint for the Gage-3273 (G-3273) and operate the S-356 pump station to manage additional seepage eastward from Everglades National Park (ENP). The purpose of this field test is to increase and/or remove the existing G-3273 stage constraint to increase water deliveries from Water Conservation Area (WCA) 3A to ENP, through Northeast Shark River Slough (NESRS), for the benefit of natural resources. The field test will also include continued operation of the S-357 and S-331 pump stations to provide flood mitigation for the 8.5 Square Mile Area residential communities, and the field test will integrate operation of the new S-357N water control structure following completion of construction. The U.S. Army Corps of Engineers (Corps), Jacksonville District, is initiating the G-3273/S-356 field test as the 1st increment in a series of increments that will help define operations for the constructed features of the Modified Water Deliveries to Everglades National Park (MWD) project. As such I would request the Tribe's participation as part of the PDT as this first increment is developed and to provide any comments during this scoping period prior to the Draft Environmental Assessment (EA). I would also like to extend the opportunity to have the Corps come down and consult with you or your representatives directly, as part of our obligation for continued Government-to-Government consultation. As the team continues to move forward on this project, the Corps will be available to consult with you regarding any concerns that the Tribe may have.

Development of the operations and monitoring criteria and completion of the associated National Environmental Policy Act (NEPA) assessment for the G-3273/S-356 (Increment 1) field test is expected to take approximately 6-8 months and will be followed by implementation and testing for at least one year. The Increment 1 field test will maintain the current 7.5 ft NGVD maximum operating limit in the L-29 Canal.

Information and operational criteria identified from the Increment 1 field test will be used to develop an expanded set of operations and monitoring criteria for a subsequent operational field test (Increment 2) that will raise the maximum operating limit in the L-29 Canal level above 7.5 feet NGVD, up to a maximum of 8.5 feet NGVD. Implementation and testing of Increment 2 will follow Increment 1, and the Increment 2 field test will also be conducted for at least one year. Development of the operations and monitoring criteria and completion of the associated NEPA assessment for the Increment 2 field test will be completed in parallel with completion of the Increment 1 field test.

The 3rd increment is the development of the integrated operating plan for the MWD and the Canal 111 (C-111) South Dade Projects. This operational plan will replace the Everglades Restoration Transition Plan (ERTP) as the operational plan for the southern portion of the Central and South Florida Project for Flood Control and Other Purposes (C&SF) project features in Miami-Dade County, Florida. Increment 3 development will be informed by the results of Increment 1 and Increment 2 and is expected to be complete in 2018.

We intend to pursue an open and public process and recognize the obligations that the Corps has to its tribal partners. Your involvement, either through participation in the PDT or direct consultation, combined with other participants, will provide the skills, knowledge, and experience vital for successful project development, will facilitate the dissemination of information, and will assist in achieving concurrence and support by key agency stakeholders throughout implementation.

I would greatly appreciate if you would identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the Increment 1 project team to Ms. Donna George by July 11, 2014. For any other consultation meetings that you would like to occur please contact our acting Tribal Liaison, Eric Summa. The PDT kick off meeting and workshop is currently scheduled July 16, 2014, at the South Florida Water Management District–Davie Field Station, 2535 Davie Road, Davie, Florida 33317. If you have any questions, please contact Donna S. George, P.E., Corps Senior Project Manager, at (904) 232-1766, Donna.S.George@usace.army.mil, or Eric Summa, Corps Tribal Liaison/Environmental Branch Chief, at (904) 232-1665, Eric.P.Summa@usace.army.mil.

Sincerely,

Alan M. Dodd
Colonel, Corps of Engineers
District Commander

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JUN 2 6 2014

Planning and Policy Division
Environmental Branch

Honorable James Billie
Chairman, Seminole Tribe of Florida
6300 Sterling Road
Hollywood, FL 33024

Dear Chairman Billie:

The purpose of this letter is to invite you and/or your representative to participate on the Project Delivery Team (PDT) and to invite scoping level comments for National Environmental Policy Act document and subsequent the G-3273/S-356 operations field test to raise the current operational stage constraint for the Gage-3273 (G-3273) and operate the S-356 pump station to manage additional seepage eastward from Everglades National Park (ENP). The purpose of this field test is to increase and/or remove the existing G-3273 stage constraint to increase water deliveries from Water Conservation Area (WCA) 3A to ENP, through Northeast Shark River Slough (NESRS), for the benefit of natural resources. The field test will also include continued operation of the S-357 and S-331 pump stations to provide flood mitigation for the 8.5 Square Mile Area residential communities, and the field test will integrate operation of the new S-357N water control structure following completion of construction. The U.S. Army Corps of Engineers (Corps), Jacksonville District, is initiating the G-3273/S-356 field test as the 1st increment in a series of increments that will help define operations for the constructed features of the Modified Water Deliveries to Everglades National Park (MWD) project. As such I would request the Tribe's participation as part of the PDT as this first increment is developed and to provide any comments during this scoping period prior to the Draft Environmental Assessment (EA). I would also like to extend the opportunity to have the Corps come down and consult with you or your representatives directly, as part of our obligation for continued Government-to-Government consultation. As the team continues to move forward on this project, the Corps will be available to consult with you regarding any concerns that the Tribe may have.

Development of the operations and monitoring criteria and completion of the associated National Environmental Policy Act (NEPA) assessment for the G-3273/S-356 (Increment 1) field test is expected to take approximately 6-8 months and will be followed by implementation and testing for at least one year. The Increment 1 field test will maintain the current 7.5 ft NGVD maximum operating limit in the L-29 Canal.

Information and operational criteria identified from the Increment 1 field test will be used to develop an expanded set of operations and monitoring criteria for a subsequent operational field test (Increment 2) that will raise the maximum operating limit in the L-29 Canal level above 7.5 feet NGVD, up to a maximum of 8.5 feet NGVD. Implementation and testing of Increment 2 will follow Increment 1, and the Increment 2 field test will also be conducted for at least one year. Development of the operations and monitoring criteria and completion of the associated NEPA assessment for the Increment 2 field test will be completed in parallel with completion of the Increment 1 field test.

The 3rd increment is the development of the integrated operating plan for the MWD and the Canal 111 (C-111) South Dade Projects. This operational plan will replace the Everglades Restoration Transition Plan (ERTP) as the operational plan for the southern portion of the Central and South Florida Project for Flood Control and Other Purposes (C&SF) project features in Miami-Dade County, Florida. Increment 3 development will be informed by the results of Increment 1 and Increment 2 and is expected to be complete in 2018.

We intend to pursue an open and public process and recognize the obligations that the Corps has to its tribal partners. Your involvement, either through participation in the PDT or direct consultation, combined with other participants, will provide the skills, knowledge, and experience vital for successful project development, will facilitate the dissemination of information, and will assist in achieving concurrence and support by key agency stakeholders throughout implementation.

I would greatly appreciate if you would identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the Increment 1 project team to Ms. Donna George by July 11, 2014. For any other consultation meetings that you would like to occur please contact our acting Tribal Liaison, Eric Summa. The PDT kick off meeting and workshop is currently scheduled July 16, 2014, at the South Florida Water Management District–Davie Field Station, 2535 Davie Road, Davie, Florida 33317. If you have any questions, please contact Donna S. George, P.E., Corps Senior Project Manager, at (904) 232-1766, Donna.S.George@usace.army.mil, or Eric Summa, Corps Tribal Liaison/Environmental Branch Chief, at (904) 232-1665, Eric.P.Summa@usace.army.mil.

Sincerely,

Alan M. Dodd
Colonel, Corps of Engineers
District Commander

July 9, 2014

Ms. Melissa Nasuti
Planning and Policy Division
U.S. Army Corps of Engineers, Jacksonville District
Email delivery: melissa.a.nasuti@usace.army.mil

Re: Preparation of Draft EA for Modified Waters Deliveries Test Operation

Dear Ms. Nasuti:

The National Parks Conservation Association (NPCA) is pleased that the U.S. Army Corps of Engineers (Corps) is moving forward with preparation of the Draft Environmental Assessment for an operations field test for constructed features of the Modified Waters Delivery project. This important next step in the process will bring the ecosystem benefits of this project– which are desperately needed as the natural system continues to decline – closer to realization.

NPCA is strongly supportive of the goal of the Modified Waters Deliveries project to reestablish a natural flow of clean, freshwater to Northeast Shark River Slough while alleviating western Shark Slough from unusually high water levels. The data obtained through field testing will provide insight as to the best operations methods for maximizing restoration investments made to date while continuing to guide future planning and construction initiatives. We appreciate the Corps' assertion that water supply and fish and wildlife protections for Everglades National Park will be maintained during the field test.

We look forward to reviewing the Draft Environmental Assessment upon its release and providing more detailed feedback. Please do not hesitate to contact me at (954) 961-1280 x 402 or ccapp@npca.org if NPCA can be helpful in the Environmental Assessment process.

Sincerely,

Cara Capp

Cara Capp
Everglades Restoration Program Manager

Florida Fish and Wildlife Conservation Commission

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Executive Director

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Jennifer Fitzwater
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Nick Wiley
Executive Director

(850) 487-3796
(850) 921-5786 FAX

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620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: (850) 488-4676

Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

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July 11, 2014

Mr. Eric P. Summa, Chief
Environmental Branch, Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019
Eric.P.Summa@usace.army.mil

Re: Department of the Army, Jacksonville District Corps of Engineers - Scoping Notice - Proposed G-3273 Operations Field Test, Relaxation of the G-3273 Constraint and Operation of Water Control Structures S-356 and S-357 N, Everglades National Park, Miami-Dade County, Florida

Dear Mr. Summa:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the above-referenced project and provides the following comments for your consideration in accordance with the National Environmental Policy Act, and to assist in identifiying issues and resources to be considered during the scoping process.

The U.S. Army Corps of Engineers (COE) proposes an operations field test that includes relaxation of the existing Gage-3273 (G-3273) stage constraint. Relaxation of this constraint would enable increased water deliveries from Water Conservation Area (WCA) 3A to Everglades National Park (ENP) through Northeast Shark River Slough (NESRS). The field test would also provide data for the S-356 and S-357 N water control structures in order to develop future water management operating criteria. The proposed test would be implemented in 2015 for duration of one year, unless sufficient data was not obtained, in which case the test would be extended for up to two years.

The FWC has fish and wildlife and land management responsibilities for WCAs 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). We recommend water management actions that will help reduce extreme high water levels and prolonged inundation periods within WCA 3 that result in negative impacts to its natural communities. In support of our recommendations and to assist with identifying issues that should be addressed during the planning process for this project, we would like to highlight several recent actions releveant to this scoping process. The FWC conveyed comments and recommendations on the G-3273 constraint in letters (enclosed) through the Florida State Clearinghouse dated November 1, 2010, and September 5, 2013. The FWC has also developed a position paper entitled "Hydrologic Requirements for the EWMA" dated November 20, 2013 (enclosed). This paper provides biologically based guidance for managing water levels in the Everglades to ensure restoration of fish and wildlife populations, habitats, and diversity so that the Comprehensive Everglades Restoration Plan (CERP) goals can be fully realized.

The G-3273 constraint of 6.8 feet NGVD exists as a flood protection measure and has been used since 1985 as a trigger to cease S-333 discharges from flowing south into NESRS as a protective measure for residential and agricultural areas to the east. Because many of the Modified Water Deliveries (MWD) to ENP project features have been built,

the opportunity exists for relaxation of the G-3273 constraint and subsequent increased water deliveries from WCA3A. The FWC fully supports the relaxation of the G-3273 constraint that curtails flows from WCA 3A to ENP through NESRS as a positive step towards restoration by assisting in reducing high water levels in WCA 3A, and furthering the MWD objective of providing increased flows to NESRS.

The FWC remains supportive of the COE's efforts to reduce high water levels in the WCAs and increase flows to NESRS, as recommended in our previous correspondence. We remain committed to working with partnering agencies to fulfill CERP goals and conserve Florida's fish and wildlife resources. If you, your staff, or COE staff would like to coordinate further on the recommendations contained in this letter, I can be reached at (850) 488-3831 or by email at scott.sanders@myfwc.com. If you or your staff has any specific questions regarding our comments, I encourage them to contact Ms. Marsha Ward in our Sunrise Field Office at (954) 746-1789 or at marsha.ward@myfwc.com.

Sincerely,

Scott Sanders, Director
Office of Conservation Planning Services

ss/mk/mw
ENV 1-3-2
G-3273 Operations Field Test Everglades National Park_19467_071114

Enclosures: Enclosure 1. Florida State Clearinghouse Letter Dated November 1, 2010
Enclosure 2. Florida State Clearinghouse Letter Dated September 5, 2013
Enclosure 3. FWC Position Paper Dated November 20, 2013

cc: Chuck Collins, FWC, Chuck.Collins@myFWC.com
Michael Anderson, FWC, Michael.Anderson@myFWC.com
Melissa Nasuti, USACE, Melissa.A.Nasuti@usace.army.mil
Larry Williams, USFWS, Larry_Williams@fws.gov
Lauren Milligan, DEP, Lauren.Milligan@DEP.state.fl.us

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November 1, 2010

Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399

Re: SAI# FL201009295486C, Draft Environmental Assessment, Temporary Deviation from IOP Tables ES-1; S-333: G-3273 Constraint – Miami-Dade County, Florida.

Dear Ms. Milligan:

The Division of Habitat and Species Conservation, Terrestrial Habitat Conservation and Restoration Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the above referenced project, and provides the following comments in accordance with the Coastal Zone Management Act/Florida Coastal Management Program and the National Environmental Policy Act.

The project is a temporary deviation of the G-3273 Trigger Stage stated in the 2006 Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow (*Ammodramus maritimus mirabilis*, CSSS). The trigger stage modification would be concluded by December 31 and would not affect the CSSS breeding window. The proposed action would not adversely affect water quality, as water quality would continue to be monitored at the S-12 and S-333 structure locations. The proposed action would potentially move more water into Northeast Shark River Slough (NESRS) from Water Conservation Area (WCA) 3A through S-333. The limited duration of the deviation would allow the U. S. Army Corps of Engineers' (COE) to test operations to determine how much additional water can be moved through S-333. All structure flows and canal levels would be monitored to ensure that no significant impacts occur to flood protection levels. In addition, this temporary deviation would also afford the COE an opportunity to collect data for use in the G-3273 Trigger Stage Modification Field Test.

The FWC views the relaxation of the G-3273 constraint that curtails flows from WCA 3A to Everglades National Park through NESRS as a positive step towards the restoration of both areas. As many of the Modified Water Deliveries (MWD) to Everglades National Park project features have been built, the opportunity exists for relaxation of the constraint. Modification and/or removal of the trigger would provide ecological benefits by assisting in reducing high water levels in WCA 3A and further the MWD objective of providing increased flows to NESRS.

The preferred alternative is Alternative B, which will provide an incremental modification of the G-3273 constraint up to 7.0 feet NGVD until December 31, 2010. As the FWC supports the relaxation of the constraint, we suggest Alternative C (providing incremental modification of the G-3273 constraint up to 7.2 feet NGVD until December 31, 2010) as the preferred alternative; however, we do not oppose Alternative B. Furthermore, we recommend that the testing window be extended, as we understood that testing would begin in September 2010. We believe that potential negative impacts on CSSS breeding from this deviation could be avoided by inter-agency coordination.

The FWC has fish and wildlife and land management responsibilities for WCA 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area. Based upon our review of the information provided, we do not feel that the project as proposed would result in significant impacts to fish and wildlife resources or their habitats. The FWC supports the anticipated ecological benefits expected from this project.

We appreciate the opportunity to provide comments on this project. If you or your staff would like to coordinate further on the recommendations contained in this letter, please contact Joe Walsh at (772) 778-6354 or email him at joe.walsh@myfwc.com and he will be glad to help make the necessary arrangements. If you or your staff has any specific questions regarding our comments, I encourage them to contact Ms. Marsha Ward in our Sunrise Field Office at (954) 746-1789 or at marsha.ward@myfwc.com.

Sincerely,

Chuck Collins

Chuck Collins
Regional Director

CC/mw/jw
ENV 2-11-2/3
IOP Deviation_3065_102910
cc: Joe Walsh, FWC
Marsha Ward, FWC

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Voice: (850) 488-4676

Hearing/speech-impaired:
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(800) 955-8770 (V)

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September 5, 2013

Lauren Milligan
Florida State Clearinghouse
Department of Environmental Protection
3900 Commonwealth Boulevard, MS 47
Tallahassee, FL 32399
Lauren.milligan@dep.state.fl.us

Re: SAI #FL201308236696C, Draft Environmental Assessment, Proposed G-3273 Planned Deviation from the 2012 Water Conservation Areas, Everglades National Park, and South Dade Conveyance System Water Control Plan, Miami-Dade County, Florida

Dear Ms. Milligan:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the above-referenced project, and provides the following comments for your consideration in accordance with the National Environmental Policy Act and the Coastal Zone Management Act/Florida Coastal Management Program. We are also sending a copy to the U.S. Army Corps of Engineers (COE) under the Fish and Wildlife Coordination Act.

The COE proposes to temporarily relax the normal operating constraint at the G-3272 gauge from 6.8 feet National Geodetic Vertical Datum of 1929 (NGVD) to 7.5 feet NGVD and increase water flows through the S-333, S-355A, and S-355B structures. The purpose of this deviation in the Water Control Plan (WCP) for the Water Conservation Areas (WCAs), Everglades National Park (ENP), and ENP-South Dade Conveyance System (SDCS) is to assist in lowering high water levels in WCAs 3A and 3B and pass more flows into Northeast Shark River Slough (NESRS) when water levels in WCA 3A are above 12.0 feet NGVD. The G-3273 constraint of 6.8 feet NGVD exists as a flood protection measure, and has been used since 1985 as a trigger to cease S-333 discharges from flowing south into NESRS as a protective measure for residential areas to the east.

The FWC fully supports the relaxation of the G-3273 constraint that curtails flows from WCA 3A to ENP through NESRS as a positive step towards the restoration of both areas. As the Environmental Assessment states, many of the Modified Water Deliveries (MWD) to Everglades National Park project features have been built and the opportunity exists for relaxation of the constraint. Modification and/or removal of the trigger would provide ecological benefits by assisting in reducing high water levels in WCA 3A and further the MWD objective of providing increased flows to NESRS.

The preferred alternative, Alternative C, would provide an incremental modification of the G-3273 constraint up to 7.5 feet NGVD until January 2015 when water levels in Water Conservation Area (WCA) 3A are above 12.0 feet NGVD. Although FWC supports Alternative C, we ask that the COE consider implementing this approach when water levels in WCA 3A are above 10.80 feet NGVD as measured by the three-gauge average (average of gauges 63, 64, and 65). We recommend water management actions that will help reduce extreme high water levels and prolonged inundation periods within WCA 3 that result in negative impacts to its natural communities.

The FWC has fish and wildlife and land management responsibilities for WCA 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). When water levels reach our high water criterion (62/63 gauge average of 11.60 feet NGVD), we close the EWMA to public access in order to reduce stress on native wildlife. A reading of 11.60 feet NGVD at the average of the 62 and 63 gauges corresponds to approximately 10.92 feet NGVD at the three-gauge average. Under these conditions, terrestrial wildlife such as white-tailed deer (*Odocoileus virginianus*), marsh rabbit (*Syvilagus palustris*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*) utilize tree islands and levees for refuge. High water conditions reduce the amount of available food sources and the amount of dry ground, leading to crowding and increased stress levels, and mortalities. Prolonged high water conditions also impact upland habitats such as tree islands. The duration of high water events is critical. Short-term events (less than 30 days) typically result in less damage than longer duration events.

Additional support for our recommendation is the Everglades Restoration Transition Plan (ERTP) tree island performance measure. The WCP water management criteria are outlined within the ERTP and its associated performance measures and ecological targets. The recommendations within the U.S. Fish and Wildlife Service's Multi-Species Transition Strategy (MSTS) form the basis for these measures. The ERTP WCA 3A tree island performance measure provides for high-water peaks less than 10.8 feet NGVD, water levels not to exceed 10.8 feet NGVD for more than 60 days per year, and water levels less than 10.3 feet NGVD by December 31 (USACE 2012). The intent of this wet season high-water performance measure is to serve as a guide for the restoration of desired hydrology that will avoid adversely affecting tree island woody vegetation within WCA 3A, and is based on the 3-gauge average. This recommendation also improves conditions for the Everglade snail kite (*Rostrhamus sociabilis plumbeus*), wood stork (*Mycteria americana*), and other wading birds and their habitat in WCA 3A, while maintaining protection for the Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*), all of which are the objectives of ERTP.

We note that water levels in WCA 3A have exceeded 12.0 feet NGVD only three times since 1980, yet since 2005, FWC has partnered with COE and other agencies to take emergency action that lowered water levels to relieve damaging conditions for wildlife and their habitats five times. These actions support our recommendation for a more aggressive approach to relaxing the G-3273 constraint during periods of high water in WCA 3A. The FWC would be glad to work with our state and federal partners to develop appropriate water level criteria that would trigger actions during high water conditions during the implementation of this deviation.

The FWC fully supports the COE's efforts to reduce high water levels in the WCAs and increase flows to NESRS. We concur that the proposed action is consistent with our authorities contained in Florida's Coastal Zone Management Plan. We offer our staff's assistance to our state and federal partners to refine water level criteria that would trigger actions during high water conditions. If you or your staff would like to coordinate further on the recommendations contained in this letter, please contact Mr. Scott Sanders at (850) 488-3831 or email him at scott.sanders@myfwc.com, and he will be glad to help make the necessary arrangements. If you or your staff has any specific questions regarding our

comments, I encourage them to contact Ms. Marsha Ward in our Sunrise Field Office at (954) 746-1789 or at marsha.ward@myfwc.com.

Sincerely,

Nick Wiley
Executive Director

nw/ss/mw
ENV 1-3-2
Water Management Deviations – G-3273 to assist WCA-3_18019_090513
cc: Larry Williams, USFWS, Larry_Williams@fws.gov
Amy Thompson, USACE, Amy.D.Thompson@usace.army.mil
Manley Fuller, Florida Wildlife Federation, wildfed@gmail.com

Literature Cited

USACE. Everglades Restoration Transition Plan Final Environmental Impact Statement. Jacksonville, Florida, USA: Jacksonville District, 2012.

POSITION PAPER: HYDROLOGIC REQUIREMENTS FOR THE EVERGLADES AND FRANCIS S. TAYLOR WILDLIFE MANAGEMENT AREA FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

November 20, 2013

Purpose

A stated goal of the Comprehensive Everglades Restoration Plan (CERP) is "to capture fresh water that now flows unused to the ocean and the Gulf and redirect it to areas that need it most. Most of the water will be devoted to environmental restoration, reviving a dying ecosystem." The Florida Fish and Wildlife Conservation Commission (FWC) believes that guidelines currently being considered for management of water in and through this ecosystem may result in high and low water conditions that have an impact on fish and wildlife populations, habitat, and diversity, particularly certain state- and federally listed imperiled species. Such outcomes would be inconsistent with the goal of reviving a dying ecosystem; however, modifications are feasible to ensure water management guidelines are consistent with CERP goals. The purpose of this paper is to provide biologically based guidance for managing water levels in the Everglades to ensure restoration of fish and wildlife populations, habitats, and diversity so that CERP goals can be fully realized.

Executive Summary

The Florida Fish and Wildlife Conservation Commission (FWC) fully supports the stated goals of CERP. It is the position of the FWC that water levels in the Central Everglades should be managed in a manner that sustains and restores native fish and wildlife populations, habitat, and diversity. To achieve this outcome FWC asserts that water levels in the Water Conservation Areas (WCAs) should not exceed two feet in depth at the height of the wet season with water recession and ascension rates not exceeding 0.25 feet per week. The FWC has revisited the regulation schedule recommended to the U.S. Army Corps of Engineers for WCA 3A by its predecessor agency, the Florida Game and Fresh Water Fish Commission in 1980, and has reviewed the U.S. Fish and Wildlife Service's draft *Multi-Species Transition Strategy for Water Conservation Area 3A* to form this position on a biologically based water management strategy. Together, these two proposals explicitly take into account the hydrologic tolerances and limitations of a variety of species and communities that are characteristic of the Everglades. Other sources supporting this position include research on the relationship of water levels and tree islands; apple snails; maximum foraging depths for wading birds (five of which are listed as a Species of Special Concern); and over three decades of telemetry data on movements of Florida panthers in the Everglades and Big Cypress region, which correlates effectively to depths that white-tailed deer can access. In addition, this position and findings in this paper have been informed by six decades of FWC staff experience in managing the Everglades and Francis S. Taylor Wildlife Management Area (EWMA).

Comprising Water Conservation Areas 2A, 2B, 3A, and 3B, the EWMA totals 671,831 acres or 82% of the Water Conservation Areas in south Florida and roughly 30% of the remaining Everglades landscape south of the Everglades Agricultural Area. We conclude the 1980 recommendation remains generally applicable and the draft *Multi-Species Transition Strategy for Water Conservation Area 3A*, with a few exceptions noted, recommends water depths that fall within reasonable ranges. In general, the FWC recommends optimal water depths no more than two feet during the height of the wet season (late October – early November) and close to ground level during the driest time of the year (late May – early June), as measured from the average slough elevation. Extreme high water resulting from prolonged rainfall, hurricanes, or tropical storms causing water levels to exceed two feet must not be allowed to persist longer than 60 days.

Introduction

The Florida Fish and Wildlife Conservation Commission (FWC) is committed to supporting the Central Everglades Planning Project (CEPP) and working collaboratively with our partners. CEPP represents a water management plan for the Everglades that stems from and is central to the Comprehensive Everglades Restoration Plan (CERP). We intend for this document to serve as the foundation for the FWC's recommendations regarding the planning and implementation of CERP and CEPP. We acknowledge this document may need to be refined further as we work with other agencies, researchers, and stakeholders to evaluate subsequent CERP projects and other CEPP-related activities such as water regulation schedules that would affect the Everglades and Francis S. Taylor Wildlife Management Area (EWMA or Water Conservation Areas [WCAs] 2A, 2B, 3A, and 3B). It is our intent to make sure water management parameters provide for water depths and durations for this area that will sustain and restore resident fish and wildlife, including imperiled species.

There is a long history of research, biological observation, and expertise associated with identifying water management parameters most suitable for wildlife. Staff review of two documents was central to the development of this position paper; these include the draft *USFWS Multi-Species Transition Strategy for Water Conservation Area 3A* (U.S. Fish and Wildlife Service [USFWS] 2010) and the regulation schedule recommended by the Florida Game and Fresh Water Fish Commission (GFC) in 1980 (Schortemeyer 1980). Both of these documents present a multi-species approach toward determining biologically based recommendations for managing water in the EWMA.

This paper provides guidelines based on historical information for maintaining fish and wildlife diversity and richness in the largest part of the EWMA: WCA 3A. Most of the research in the EWMA has focused on WCA 3A since it is the largest of the WCAs. This paper addresses water management aspects of Everglades restoration from a fish and wildlife diversity perspective and recommends general ranges of water depths for both the peak of the wet season (October into November) and the driest part of the dry season (May into June). Additionally, this paper describes how water levels managed outside of the desired range of conditions have impacted vegetation communities, wildlife diversity, and species richness, particularly for state- and federally listed species. The FWC's position statement references the experiences and reports

the FWC and its predecessor agency, the GFC, have provided since the authorization of the Central and South Florida Project in 1948 and continuing into current CERP planning efforts.

Background

Because roughly half of the original extent of the Everglades has been lost to development and agriculture, today's water managers face a difficult task of routing the same amount of rain that historically fell through today's much-reduced system consisting of canals, levees, and impoundments while providing water supply, flood control, and conserving the remaining Everglades landscape for fish and wildlife. One of the greatest challenges for CERP is to accomplish this three-pronged mission. The WCAs in this area are now subject to extremely high water levels for extended periods of time, particularly in the southern end of WCA 3A, when the capacity of the Central and South Florida Project is exceeded by periods of high rainfall. They are also subject to artificially low water levels, and particularly in the northern part of WCA 3A, during drought periods.

The FWC and GFC have six decades of experience in managing the large part of the Everglades landscape that is today referred to as WCAs 2A, 2B, 3A, and 3B. The Central and South Florida Project was authorized by Congress in 1948, and construction of its levee and canal system, including the WCAs, began in 1952 (Light and Dineen 1994). In 1952, WCAs 2 and 3 were designated as the EWMA with the GFC as the land management agency, and in 1953 the GFC began the Everglades Impoundment Investigation with funding from the Federal Aid in Fish and Wildlife Restoration Acts (Wallace 1960). The July 1953 annual report by Clay Gifford, GFC biologist, clearly recognized even then that a multi-species approach would be required (Gifford 1953). It also acknowledged the difficulty in developing the knowledge base necessary to link engineered hydrologic regimes with the ecological needs of a complex biological community.

The GFC continued to investigate, implement, and evaluate management approaches within the EWMA. In 1960, it issued a formal status report, *Recommended Program for Conservation Area 3* (Wallace 1960), outlining the expected impacts of constructing the proposed L-67 levee system. Later, and primarily as a result of a dramatic deer die off in the WCAs in the late 1960s, the Florida Chapter of the Wildlife Society appointed the Special Study Team on the Florida Everglades, a group of five national fish and wildlife biologists, to "evaluate the...wildlife situation in the Everglades...and suggest some possible courses of action." This team was assembled at the request of the Central and Southern Florida Flood Control District (predecessor of today's South Florida Water Management District), and with agreement by the GFC. Their 1970 report, *Everglades Water and Its Ecological Implications*, also recognized the need to address a suite of native species if the WCAs were to be successfully managed (Cornell et al. 1960). For deer management, it recommended that water levels not exceed two feet during the wet season and recede to a depth of six to eight inches in February, during fawning. In 1983, staff developed a deer management approach that reduced the likelihood of catastrophic deer mortalities due to high water levels (GFC 1983).

A decade later, the GFC published its first set of comprehensive recommendations for managing water levels to support fish and wildlife in WCA 3A (Schortemeyer 1980). This report, *An*

Evaluation of Water Management for Optimum Wildlife Benefits in Conservation Area 3A, recognized three hydrologic zones in WCA 3A: an area that was negatively affected by low water and peat fires, largely lying north of Alligator Alley; an area in central WCA 3A where the sawgrass ridges, sloughs, and tree islands appeared to be relatively intact; and an area along eastern and southern WCA 3A that had suffered from prolonged high water levels. Based on an analysis of Everglades plant communities and selected wildlife species, Schortemeyer (1980) developed schedules for seven species or suites of species: the deer; the alligator, passerine birds, and the pig frog; the Everglade snail kite; wood stork; largemouth bass; diving ducks; and dabbling ducks. Recognizing that no one place would be optimal for all species, he summarized these recommendations in a proposed water regulation schedule that would allow water levels in the sawgrass community to peak at a depth of about 1.38 feet on November 1 and then gradually and steadily recede to a low of -0.05 feet by June 1. At that time, water levels would increase to the 1.38-foot depth at the beginning of November. This proposal was formally approved as a recommended schedule for WCA 3A by the GFC's Commissioners in May 1980.

The GFC continued to provide recommendations based on experience in the EWMA to water managers in the 1980s (Schortemeyer 1999), and in 1995 formed a team of biologists to participate in the interagency "Restudy" that developed CERP, which was approved in 2000. During that time, the GFC drew on its past experience, including its analysis of the effects of the extreme high-water event in 1994–1995 (Coughlin and Richards 1995, Guerra 1997), to influence the development of key performance measures used during the Restudy to evaluate alternative draft plans, particularly in WCAs 2 and 3. The GFC also gathered data from WCAs 3A and 3B in a field study that investigated the vegetative community structure and composition on the heads of tree islands from the three zones identified by Schortemeyer (1980), a fourth zone of hardwood hammocks in southwestern WCA 3A, and in WCA 3B. This study determined that both extremely high and extremely low water levels are predictors of tree and shrub species diversity on tree islands in the WCAs (Heisler et al. 2002). The information from this effort enabled the Restudy to refine its performance measures in key indicator regions in WCAs 3A and 3B. Anderson (2000) further analyzed the effects of hydrologic and topographic gradients on woody vegetation of tree islands in the dry zone of northern WCA 3A and the moderately wet zone in central WCA 3A. He concluded that the optimal hydrology to maintain the natural diversity of woody vegetation on tree islands in WCA 3A would involve fewer extremely high and low water events, and would include hydroperiods ranging from 80 to 90% inundation and average ponding depths of 0.78 to 1.41 feet. More recently, staff co-authored a report that concluded that canopy composition and structure of tree islands in WCAs 3A and 3B are strongly correlated with extremely wet and extremely dry conditions, as opposed to mean annual water levels (Wetzel et al. 2008).

The FWC has continued to contribute its knowledge and expertise after CERP was approved through contributions to the initial raising of the Tamiami Trail and into the development of the Everglades Restoration Transition Plan. Since the inception of the WCAs, FWC staff has built on its experience in managing WCAs 2 and 3 (with the exception of the portion of WCA 3A that is the Reservation of the Miccosukee Tribe of Indians of Florida), relying on field observations, field studies, and reports by other researchers (e.g, by the U.S. Geological Survey, South Florida Water Management District, and universities). An excellent summary of knowledge gained,

particularly as related to high water levels, was presented as a PowerPoint presentation to the RECOVER team by FWC biologist Tim Towles in 2009 (Towles 2009).

Hydrology of the Everglades

The hydrology of the Everglades is driven by a pattern of high levels of precipitation in late May through October and a dry season between October and May (Cornwell et al. 1970, Duever et al. 1994). It is generally accepted that the predrainage system existed as a hydrologic unit that originated in the Kissimmee headwaters, meandered through the Kissimmee River and its oxbows and marshes, and then gathered into Lake Okeechobee. Lake Okeechobee would periodically overflow into the sawgrass plains immediately south of the lake into what is now the Everglades Agricultural Area, and traveled south via sheetflow through the ridge and slough system into Shark River Slough in today's Everglades National Park (Cornwell et al. 1970, Light and Dineen 1994). The scale of this system allowed for water level fluctuations that were attenuated by marsh vegetation.

Because roughly half of the original extent of the Everglades has been lost to development and agriculture (Davis and Ogden 1994), the capacity of the Central and South Florida Project is exceeded by periods of high rainfall, particularly in the southern part of WCA 3A, where water levels tend to pond. Conversely, artificially low water levels in the northern part of WCA 3A have caused damaging peat fires during drought periods.

Imperiled Species and their Relation to Water Depth in the EWMA

Florida panther

Water depths in western WCA 3A in particular are of significance to the Florida panther. This area lies within the eastern part of the panther's breeding range (Oronato et al. 2011). Consistent with this range estimate, telemetry data confirm that panthers consistently used the western part of WCA 3A before the year 2000. Since that time, however, in spite of the fact that panther populations have increased significantly, their use of this area has dropped dramatically, coinciding with deeper water levels persisting for longer durations and fewer deer (an important prey species). MacDonald-Beyers and Labisky (2005) studied the relationship between water levels in the Big Cypress prairies and radio-collared deer and concluded that the depth at which deer movement is negatively affected is about 19.7 inches. Ensuring water levels in this historical panther breeding range can support a healthy deer herd will be critical not only to the conservation of panthers, but also to their recovery.

While panthers can and do use shallow wetlands, they rely on forested areas to stalk their prey and to rest. The tree islands and their associated thicker vegetation provide this type of habitat in western WCA 3A, but deeper water and a reduced amount of upland areas provided by tree islands would discourage panther use of this part of WCA 3A (Darrell Land, FWC, personal communication 2013). Water levels managed not to exceed a depth of two feet at the peak of the wet season and to near the ground surface at the peak of the dry season will be necessary for the panther to regain use of western WCA 3A.

Wading birds

To a large extent, the depth at which wading birds can forage is limited by the length of their bills. For the seven wading bird species (white ibis, snowy egret, little blue heron, tricolored heron, roseate spoonbill [all of which are Species of Special Concern], great egret, and great blue heron) that commonly forage in the Everglades, maximum depths at which they can forage range from about 6.3 inches to about 15.3 inches (Powell 1987). These depths need to be taken into account if the EWMA is to continue to provide foraging opportunities for these species. Recession rates are also an important factor to consider when managing wading birds. The FWC recommends recession rates averaging between 0.05 and 0.25 feet per week, with no water-level reversals, beginning in January and ending at the end of May. Water levels managed not to exceed a depth of two feet at the peak of the wet season and to near the surface at the peak of the dry season will be necessary for these species to nest and forage in the EWMA.

Everglade snail kite

Snail kites search for prey by sight, so they typically forage over relatively open wet prairies and sloughs. They capture apple snails within about four inches of the surface as the snails come to the surface to respire (Bennetts et al. 1994). Apple snails feed on the periphyton component of both wet prairies and sloughs (Browder et al. 1994). Wet prairies, as opposed to sloughs, appear to be an important area for apple snail production, particularly in areas dominated by maidencane (Karunaratne et al. 2006). Water depths greater than 1.6 feet during the peak apple snail breeding season result in fewer egg clusters and delayed egg laying that result in a larger number of juvenile snails that are too small for snail kites in the following year. The main areas where snail kites nested historically were in the WCAs and Lake Okeechobee; however, in recent years,

most of the snail kite nesting effort has been at the northern extent of its range, in the Kissimmee Chain of Lakes. This northward shift is problematic in that colder weather at the start of the nesting season would delay nesting, resulting in poor nest success for that year (Z. Welch, FWC, personal communication 2013). Water levels managed not to exceed a depth of two feet at the peak of the wet season and to near the ground surface at the peak of the dry season with ascension and recession rates not exceeding 0.25 feet per week will be necessary for snail kites to forage on apple snails in the EWMA. The science on snail kites and apple snails lead us to conclude that if water levels are not managed as prescribed above, snail kites will become further imperiled if not extirpated.

Draft *USFWS Multi-Species Transition Plan*
The USFWS (2010) recommends recommended ranges of water levels, specifically in WCA 3A, that would benefit the wood stork; Everglade snail kite and the kite's main prey species, the Florida apple snail; tree islands; and the wet prairie in southwestern WCA 3A. These individual species/community requirements were then blended to provide a multi-species approach to estimating appropriate water depths overall. This plan did not address limits to water depths for the stork, kite, or apple snail during the wet season, but instead focused on a maximum desirable depth during the pre-breeding season, starting on January 1. The following are their recommendations.

Wood stork: Water depths should peak in October and recede to about 1.16 to 2.03 feet in January. The recommended water level recession rate is about 0.84 inches per week. During the dry season (May), the minimum water depth should fall to between -0.34 and 0.52 feet.

Everglade snail kite: During the dry season (May), water levels should fall no lower than -0.34 and +0.52 feet in the southwestern part of WCA 3A.

Florida apple snail: Water depths for apple snails should reach 1.31 to 1.97 feet in January. The recession rate should be about 0.8 inches per week. During the dry season (May), the water depth should be no greater than 1.31 feet and no less than 0.33 feet), the depth at which apple snails quit moving. However, FWC staff recommends revisiting these water levels because they understand that Phil Darby, who collected the field data upon which this was based, disagrees with the USFWS' calculations, believing them to be too deep (Z. Welch, FWC, personal communication). Recession rates are important for managing for apple snails. The FWC recommends ascension rates no greater than 0.05 to 0.25 feet per week from the beginning of June to the beginning of October.

Taking into account these water depths, as well as ones estimated for tree islands and wet prairie, the USFWS (2010) developed a regulation schedule that peaked at a depth of about 2 feet.

Major Vegetation Communities in the EWMA and Their Importance to Fish and Wildlife

Three major vegetation communities occur in the EWMA: tree islands, sawgrass ridges and sloughs (collectively known as the ridge and slough system), and wet prairies. These communities support a wide variety of aquatic, wetland-dependent, and semi-terrestrial species,

including some that are listed for special protection by the State of Florida and the USFWS. Water levels managed not to exceed a depth of two feet at the peak of the wet season and to near the surface at the peak of the dry season will be necessary for the continued existence and recovery of these plant communities.

Tree islands: Tree islands are a unique structural component of the Everglades, providing habitat for wildlife species that require some component of upland habitat with trees or brush in an overall matrix of marsh. Tree islands may occur (in order of increasing height above the slough bottom) as willow strands, bayhead swamp forests, and tropical hardwood hammocks. The last of these may be found throughout the EWMA, but are more numerous in southwestern WCA 3A and southern WCA 3B. Willow strands, which may also contain other brushy species such as pond apple, provide colonial wading bird habitat (Rodgers et al. 1996), while the bayheads and tropical hardwood hammocks may be important for neotropical migrating passerine birds (Mitchell 2010, Gawlik and Rocque 1998). Alligators, turtles, and snakes lay their eggs on the dry parts of tree islands (Towles 2009).

Much attention has also been given to the higher tree islands as refugia for Everglades's wildlife species, such as deer, bobcats, marsh rabbits, raccoons, and other small mammals. During extreme high-water events, these terrestrial or semi-terrestrial species crowd onto what remains at or above water on tree islands and onto levees, where overcrowding and competition for food create physical stress (in extreme cases, resulting in death) and susceptibility to disease and parasites. This is particularly true for does, yearling, and fawns (Cornwell et al. 1970). Cornwell et al. (1970) noted that the situation became so severe during the high-water events in 1957–1958 and 1966 that all vegetation was completely removed, the bark of trees and shrubs eaten as high up as a deer could reach, and tree island soils were trampled into mud by both deer and wild hogs.

While less information is available on impacts to Everglades wildlife species other than deer, Schortemeyer (1980) noted that water reversals during periods of naturally occurring recession have caused nest failure for alligators and turtles. FWC staff has also reported opossums, grey foxes, bobcats, and raccoons crowded on levees during high-water events in 1986 and in 2005, and evidence of extensive predation on marsh rabbits during the 1986 event (unpublished GFC internal reports; T. Towles, FWC, personal communication 2013). Much of the effect on the diversity and abundance of wildlife can be inferred by changes in tree island vegetation. For example, the willow strand that supported the Andytown rookery in WCA 3A was one of the largest (over 60 acres) used by nesting wading birds before 1994; now only one-quarter acre of it remains.

High-water events are not the only threat to tree islands. While fire naturally occurred in the predrainage Everglades (Gunderson and Snyder 1994), water management has exacerbated the extent and duration of extreme drought, particularly in WCA 2 (Worth 1988) and WCA 3A. By 1970, a combination of peat fires and high water levels had severely degraded tree islands in much of WCA 2 (Cornwell et al. 1970, Light and Dineen 1994). Loss of tree islands, whether it is through flood or fire, results in loss of an important habitat component of the Everglades landscape.

The draft *USFWS Multi-Species Transition Plan* (USFWS 2010) proposes that the maximum water depths (expected to occur from mid-September to mid-October) that tree islands could tolerate was 2.5 feet for no longer than 120 days. However, FWC staff does not consider this to be interpreted as an acceptable water depth to be reached on a regular basis; a slightly lower depth of 2.46 feet would represent the deepest water that tree islands in WCA 3A can tolerate as long as this depth does not exceed 60 days. Furthermore, the plan does not examine the potential effects of extremely low water levels, such as those that contributed to conditions that burned out tree islands in northern WCA 3A.

Ridge and slough system: The ridge and slough system is typified by a generally north to south orientation of alternating ridges that support sawgrass and slough communities. The sloughs are characterized by water lilies, floating hearts, and spatterdock at the surface and submerged bladderworts, whose stems provide a substrate for growth of periphyton, a naturally occurring algal community (Gunderson 1994). Periphyton is an important contributor to the primary production in the Everglades (Browder et al. 1994). During periods of relatively high water, the fish population expands into the higher sawgrass areas (Wallace 1960). When water levels recede, fishes are concentrated into the sloughs, where they provide prey for up to 11 species of wading birds, including the federally listed wood stork and the state-listed white ibis, little blue heron, tricolored heron, snowy egret, and roseate spoonbill (Gawlik 1999). Bancroft et al. (1991) noted that the southern part of WCA 3A is a critical foraging area for overwintering wood storks during dry years, when much of their foraging habitat elsewhere has dried out. Alligator holes are an important feature in the transition area between the sloughs and the ridges, becoming critical refugia for fishes and other aquatic species during periods of low water, particularly for larger fishes (Robertson and Frederick 1994), and a source of water for deer (Loveless 1959) and presumably for other mammal species as well. During extreme drought, however, they can be destroyed by peat fires, which can also kill the alligators themselves (Schortemeyer 1980).

Wet prairies: Wet prairies are a form of marsh dominated by emergent grass-like species, usually spikerush, beakrush, and maidencane (Gunderson 1994). Periphyton is also an important component of the submerged part of this community (Browder et al. 1994). They generally have a hydroperiod of 290 to 365 days (Goodrick 1974). Wet prairies in the EWMA, particularly in southwestern WCA 3A, have historically been important habitat for the federally endangered Everglade snail kite and its prey, the apple snail. The wet prairies and the ridge and slough communities provide critical foraging habitat for a wide variety of wading birds, including those currently designated by the State as Species of Special Concern. Wet prairies also provide high-quality browse for deer as long as the water depths remain below about 20 inches, a depth above which begins to hamper deer movement (MacDonald-Beyers and Labisky 2005).

The USFWS (2010) acknowledged the need for dry-downs of wet prairies to a depth below 1.6 inches for no longer than four to six weeks every four to five years. The recommended duration range has been shortened by two weeks in order to avoid overdrying the northern part of WCA 3A.

Recommended Water Depths

In response to data indicating that the snail kite and the apple snail population in WCA 3A had greatly declined in the late 1990s and early 2000s, the USFWS worked with snail kite and apple snail researchers in 2008 to determine measures that would help return kites and the snails to their previous numbers and densities in WCA 3A. The product was the *WCA 3A Snail Kite Transition Strategy*. It was subsequently revised with input from FWC and South Florida Water Management District staffs; expanded to address the wood stork, tree islands, and wet prairie; and was renamed the *USFWS Multi-Species Transition Strategy for Water Conservation Area 3A* (USFWS 2010). We have reviewed this draft report, and considered it in light of the regulation schedule that the GFC officially recommended in 1980. We have also consulted studies conducted by others (see Towles 2009) who have investigated the effects of water levels on tree islands and the wet prairie community. The USFWS (2010) target depths are slightly deeper than those recommended by Schortemeyer (1980), having been developed for a different suite of species and habitats, primarily south of Alligator Alley (Interstate 75). In general, however, both reflect a range of desired targets with peak water levels occurring in the late October to early November timeframe, receding steadily to a low at or near ground level in late May and early June, and then rising steadily to a peak again by late October and early November. It is important to recognize that interannual variations in rainfall may not allow these targets to be reached during all years, and that actual depths will vary depending on the location at which they are measured; however, these figures provide an envelope for an ecologically acceptable hydrologic regime for WCA 3A, and perhaps for WCA 3B, for most years.

An integral component of the USFWS approach is that an interagency team would meet regularly during the year to determine the targets for each specific season based on an assessment of the species' needs. This assessment would include up-to-date monitoring data, forecasted climate conditions, and the past years' hydrology. As new information and technologies become available, these guidelines will have to be revised. It is also important to recognize that all of these targets may not be attainable during all years and that their application should not cause unintended adverse consequences.

Conclusions

- A review of the two multi-species regulation schedules that have been proposed for WCA 3A, data on the effects of hydrology on its tree islands, and maximum depths for foraging for wading birds common to the Everglades provides the basis for the FWC's position. Guidance for water level management within the EWMA generally remains as recommended by Schortemeyer (1980), with a high-water depth no more than two feet by late October to early November and then a gradual and a steady recession to a low of near ground level by late May to early June. At that time, water levels would increase back to no deeper than two feet by the end of October to early November.
- During extreme storms or unusually wet seasons, water levels may rise above the desired levels, but even then depths should not persist for longer than 60 days above desired levels. At an average water depth of two feet north of Alligator Alley, the FWC has to

close the EWMA to avoid exacerbating stress on the terrestrial and semi-terrestrial species that crowd on the highest points of tree islands and the levees.

- Recession rates are an important factor to consider when managing wading birds. The FWC recommends recession rates averaging between 0.05 and 0.25 feet per week, with no water-level reversals, beginning in January and ending at the end of May. Recession rates are also important for managing for apple snails. The FWC recommends ascension rates no greater than 0.05 to 0.25 feet per week from the beginning of June to the beginning of October.
- WCA 3B has not been subjected to a regulation schedule; thus, water levels are not dictated by human-induced extreme fluctuations. Instead, water levels are affected by precipitation, evapotranspiration, seepage, and inflow from the S-151structure. As a result, the tree islands in WCA 3B represent some of the least impacted islands north of Everglades National Park. Transferring high water levels from WCA 3A to WCA 3B via CEPP or any other water management plan is not an acceptable approach to the FWC. Staff has developed a draft management strategy for WCA 3B: water depths at the beginning of January should be 1.7 feet and recede at a rate of 0.6 inches per week until it hits a dry-season low of 0.7 feet (8.4 inches) in late May. At that time, water would rise to a depth of a little less than 1.9 feet in the first part of October, after which the water would recede gradually to the 1.7-foot level recommended for the beginning of January.
- The stated goal of CERP prioritizes water management for restoration of the Everglades ecosystem. CERP components, including CEPP, should strive not just to conserve, but to restore conditions for listed species, including the federally endangered Florida panther.
- If we continue down the path of managing the hydrology in the EWMA based on the current water regulation schedule that allows for periods of prolonged high water levels, the science and basic biology lead us to conclude that native plant and wildlife species that characterize the central Everglades will not be restored, but instead will be further harmed.
- While this paper represents our current opinion, it is the intent of FWC to continue working with partners and stakeholders to continue to refine hydrologic requirements as more information becomes available. We continue our commitment to ensuring that, in the near term, CEPP and, in the longer term, CERP realize the goal of restoration of the greater Everglades system.

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Nasuti, Melissa A SAJ

From: Steelman, Marcia (PWWM) [SteelM@miamidade.gov]
Sent: Monday, July 14, 2014 5:33 PM
To: Nasuti, Melissa A SAJ
Cc: Blanco-Pape, Marina (PWWM); George, Donna S SAJ; Burzycki, Gwen (RER); Grossenbacher, Craig (RER)
Subject: [EXTERNAL] Draft Environmental Assessment (EA) - relaxation of the Gauge -3273 Constraint
Attachments: 201407031518.pdf; POR Chart G-3273.pdf

This e-mail is a response to the letter sent to our department regarding the EA for the relaxation of the G-3273 Constraints (attached).

While our Department fully supports any efforts regarding the restoration of the Everglades, we have concerns regarding the additional changes in maximum stage limit stages, for G-3273, without any additional mitigation

Here are our comments, regarding the proposed changes in the trigger stages.

a. The latest 10-year statistics from USGS), indicate that the Average October Water Table in the 8.5 Sq. Mile Area is 5.63 feet NGVD, for the period from 2000 through 2009, as indicated by the G-3273 Gauge; the 25 % probability of exceedances stage is 5.36 for this gauge, representing the wettest conditions within that basin. The proposed trigger in the EA is therefore too high to maintain the baseline levels of service for flood protection in this area. Please refer to the attached chart. The existing trigger of 6.8 feet NGVD is close to the 28% probability of exceedance or 1 in 3.6 years.

b. Considering the entire period of record, from 1986 to 2013, the maximum operating limit of 7.5 feet NGVD at Tamiami Trail corresponds to the 1.5 % probability of exceedance (1 in 67 years), meaning that the proposed changes to 8.5 feet NGVD is equivalent to a practical removal of the trigger, from the perspective of flood protection. The operational changes already implemented in the area are already creating flood impacts to business along the Tamiami Trail; any further increases of stage triggers may require flood mitigation.

c. We suggest that S-380 be closed while the tests occur, to prevent additional flows to the C-4 Impoundment and C-4 (Tamiami Canal).

d. I have concerns regarding the effectiveness of S-357 for control seepage within the 8.5 Sq. Mile Area, the relaxation/elimination of the trigger may worsen the flood conditions in the area.

e. The Table of Performance Measures should include the maximum stages not to be exceeded along the L-31N, for S-380, G-211 and S-331, since the S-356 and S-357 are not operational.

f. The report does not explore additional options for changing the schedule for operations of the S-12 Structures, during the wet season and lower the stages on the WCA-3A.

We look forward to collaborate with your Agency in this project.

Regards,

Marcia Steelman, CFM, Engineer 3

Miami-Dade County Public Works and Waste Management

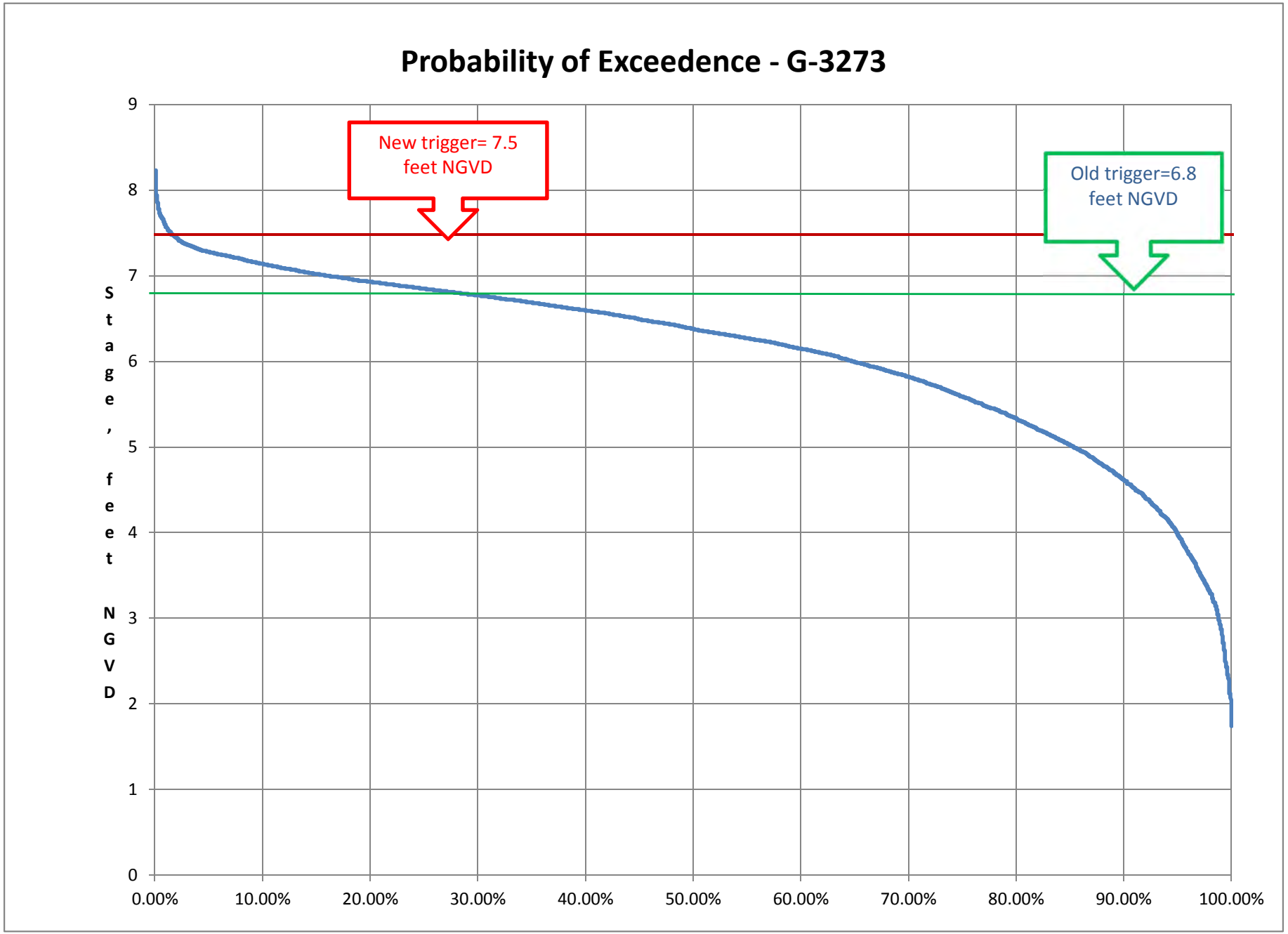
Stormwater Utility Planning Division

http://www.miamidade.gov/development/flooding-protection.asp
<http://www.miamidade.gov/development/flooding-protection.asp>

701 NW 1st Court, 5th Floor, Miami, Florida 33136

(305) 372-6691 (305) 372-6425 fax

“Delivering Excellence Every Day”


Probability of Exceedence - G-3273
New trigger= 7.5 feet NGVD
Old trigger=6.8 feet NGVD
Stage, feet NGVD
9
8
7
6
5
4
3
2
1
0
0.00%
10.00%
20.00%
30.00%
40.00%
50.00%
60.00%
70.00%
80.00%
90.00%
100.00%

OFFICE OF AGRICULTURAL WATER POLICY
(850) 617-1700

MAGNOLIA CENTER, SUITE 200
1203 GOVERNOR'S SQUARE BOULEVARD
TALLAHASSEE, FLORIDA 32301

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER ADAM H. PUTNAM

July 14, 2014

Mrs. Melissa Nasuti
Planning and Policy Division Environmental Branch
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019
Melissa.A.Nasuti@usace.army.mil

RE: Scoping Notice for draft Environmental Assessment (EA) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S356 and S-357 N dated June 30, 2014

Dear Mrs. Nasuti:

FDACS appreciates the opportunity to comment in accordance with the National Environmental Policy Act (NEPA) regarding the identification of issues and resources to be considered during the scoping process for the project referenced above.

We are strongly opposed to relaxing the G 3273 constraint without a firm commitment to operate the S-356 pump station. This commitment must also include operational changes to the C-111 Canal Structures which will include the S-18C and the S-197 as part of the first increment under the NEPA process for relaxation of the G 3273 constraint. The agricultural economy in Miami-Dade has been repeatedly harmed by elevated water levels that adversely impact growers due to the lack of operational integration between the Water Conservation Areas (WCA), Everglades National Park (ENP) and the South Dade Conveyance System (SDCS), including the C-111 Structures. The areas of negative impact include all agricultural land east of the Everglades National Park (ENP) and the Frog Pond/C-111 project and in the vicinity of the C-111 West Spreader Canal Project.

The scope of this field test must include more than just S-356 and S-357. Although the letter states that the ultimate goal is to develop an operating plan that includes the C-111 Canal structures, there is no mention that any changes to those structures are contemplated in any phase of this test. Including the C-111 Canal structures as part of the first increment is needed in order to achieve a combined operational plan on the schedule you indicate. A good place to start is the

operations table attached to the May 27, 2014 letter from Rich Budell, FDACS to Eric Bush, USACE. See enclosures list below.

Based on the description of the first increment provided in the USACE June 26, 2014 Project Delivery Team invitation letter, it is our understanding that the L-29 7.5 ft. NGVD maximum level will be maintained. S-356 must be allowed to operate up to the full L-29 constraint even if S-333 releases have to be scaled back in order to gather the information needed for the future Water Control Plan to combine the Water Conservation Areas (WCA), Everglades National Park (ENP) and the South Dade Conveyance System (SDCS) with the features of the Modified Water Deliveries (MWD) project and the C-111 projects.

The short time frame requested for comments after the scoping notice is insufficient to allow for a new document consolidating all the information and concerns expressed previously. Please see the enclosures for a recap of our previous comments, all of which consistently point out the repeated negative impacts to agriculture in south Miami-Dade caused by increasing water levels without system-wide protocols to avoid adverse conditions.

1) March 7, 2008 - FDACS comments on the "Preliminary Draft – Interim water Control Plan for Pump Station S-357". This provides a historical reference to the importance of the G-3273 constraint.

2) January 13, 2012 – FDACS comments to the USACE on the "Final Environmental Impact Statement for the Everglades Restoration Transition Plan (ERTP)". Please review the second concern on page 2 explaining the need to keep the canal operations existing prior to the adoption of the ERTP as a constraint.

3) September 17, 2013 - FDACS comments on the "Environmental Assessment and Draft Finding of No Significant Impact – Proposed G-3273 Planned Deviation for the 2012 Water Conservation Areas, Everglades National Park, and ENP-South Dade Conveyance System Water Control Plan-Miami-Dade County, Florida dated August 2013." Provided as reference.

4) May 27, 2014 – FDACS letter from Rich Budell, Director, Office of Agricultural Water Policy to Eric Bush, Chief, Planning and Policy Division, USACE. This letter provides comments and recommendations following the May 2014 interagency meeting on elevated water levels in the South Dade agricultural area.

Thank you for the opportunity to provide scoping comments. If you have any questions regarding FDACS' comments please contact Ray Scott at (850) 617-1716 or Rebecca Elliott at (561) 682-6040.

Sincerely,

Rebecca Elliott
Water Policy Liaison, Office of Agricultural Water Policy

Florida Department of Agriculture and Consumer Services
CHARLES H. BRONSON, Commissioner
The Capitol • Tallahassee, FL 32399-0800
www.doacs.state.fl.us

Please Respond to:
Office of Agricultural Water Policy
Rebecca Elliott
P.O. Box 24680
3301 Gun Club Road
West Palm Beach, FL 33416

March 7, 2008

U.S. Army Corps of Engineers, Jacksonville District
Attn: Trent Ferguson
701 San Marco Boulevard
Jacksonville, FL 32207 - 8175

RE: Preliminary Draft - Interim Water Control Plan For Pump Station S-357

Florida Department of Agriculture and Consumer Services' Comments on the Preliminary Draft for the Interim Water Control Plan For Pump Station S-357

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to comment on the Preliminary Draft for the Interim Water Control Plan For Pump Station S-357 and requests the following concern be addressed in the Final Draft for the Interim Water Control Plan For Pump Station S-357.

The G-3273 constraint on operating S-333 should not be removed until all the permits needed to operate S-356 per the operational protocol proposed in the Combined Structural and Operational Plan (CSOP) are obtained.

Tom MacVicar, the FDACS consultant representing FDACS at the Project Delivery Team (PDT) meetings, provided comments to the United States Army Corp of Engineers (USACE) and the South Florida Water Management District (SFWMD) on the Interim Water Control Plan for Pumping Station S-357 during the PDT meetings.

Originally the S-356 Pump Station was included in the Draft Interim Water Control Plan for Pump Station S-357. In the interest of getting S-357 through the permitting process, Tom MacVicar recommended the S-356, which we all acknowledge will be more difficult to resolve, be removed as one of the operational components, predicated on retaining the G-3273 constraint. It was FDACS' understanding that the water management needs of the agricultural stakeholders had been identified and would be incorporated into the Interim Water Control Plan for Pumping Station S-357.

The subsequent removal of the S-356 Pump Station along with the removal of the G-3273 constraint in the Preliminary Draft - Interim Water Control Plan For Pump Station S-357 is unexpected and unacceptable. Without operating the S-356 Pump Station, removing the G-3273 constraint means an increase in water diverted to south Dade during wet periods. This is in direct contradiction to all FDACS' comments and input over the 3 years of CSOP and over the past 15 years of debating all the various experimental programs including Test 7, ISOP, ISOP 2000 and IOP.

Retaining the G-3273 constraint is an essential component of the Interim Water Control Plan for Pump Station S-357 if the S-356 Pump Station will not be operated per the CSOP protocols during the interim period. FDACS cannot support the Interim Water Control Plan for Pump Station S-357 proposed in the Preliminary Draft.

We appreciate the opportunity to comment on the Preliminary Draft - Interim Water Control Plan for Pump Station S-357. Our level of concern with the issue we raise here is heightened by the proposed Interim Water Control Plan's lack of consideration for the operational constraint requiring that both the USACE and the SFWMD not reduce the existing levels of flood protection. If you have questions regarding FDACS' comments, please contact Rebecca Elliott at (561) 682-6040.

Sincerely,

Rebecca Elliott
Water Policy Liaison

cc: Ray Scott, FDACS
Tom MacVicar, MFL

Office of Agricultural
Water Policy
(850) 617-1700

Magnolia Center, Suite 200
1203 Governor's Square Boulevard
Tallahassee, Florida 32301

Florida Department of Agriculture and Consumer Services

Commissioner Adam H. Putnam

January 13, 2012

Dr. Gina Paduano Ralph, Ph.D.
Planning and Policy Division /Environmental Branch
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Final Environmental Impact Statement for the Everglades Restoration Transition Plan
Dec. 2011 CD sent out under letter from Stuart Appelbaum, Chief, Planning Division.

Dear Dr. Ralph,

A brief staff level review of the Final Environmental Impact Statement (FEIS) for the Everglades Restoration Transition Plan (ERTP) identified two concerns regarding the operational intent of the ERTP.

1) Table ES-1 expands the application of the L-29 borrow canal's 9.0 feet, NGVD level beyond Interim Operational Plan (IOP) intentions without consideration of impacts to other areas besides the road bed and in contradiction to previous information.

Table ES-1, page xxi – xxii, addresses operational criteria for the S-333 and includes this note: "If FDOT has no roadway subbase concerns, S-333 will be closed when the tailwater is above 9.0 feet, NGVD. However, when FDOT has roadway subbase concerns, S-333 will be closed when the tailwater is above 7.5 feet, NGVD. However, upon completion of the Tamiami Trail Bridge Modification, these concerns may no longer exist."

This operational guidance is unexpected given the draft versions of ERTP and previous discussions with Corp staff. At the March 24, 2011 ERTP public meeting held in Homestead, I requested an explanation of the 9.0 feet, NGVD level note for the L-29 borrow canal in the draft ERTP operations tables as an item of particular interest to FDACS. Corp representatives at the meeting described the 9.0 feet, NGVD level as operational flexibility provided by IOP so operations can respond to unusual hydrological conditions without seeking a deviation. The current FEIS for ERTP referenced above also describes the 9.0 feet,

NGVD level as "short-term deviations in response to specific hydrological conditions" in Section 3 - Affected Environment, page 3-13. See excerpt below.

"The water management operating criteria for the L-29 borrow canal between S-333 and S-334 is meant to limit the L-29 borrow canal stage to no more than 7.5 feet, NGVD in response to roadway sub-base concerns identified by the Florida Department of Transportation (FDOT), although short-term deviations have been previously implemented in response to specific hydrologic conditions. Higher water levels within the canal may erode the roadway sub-base and create a potential safety hazard. In addition, the L-29 borrow canal water level has an additional constraint related to potential flooding and seepage effects within residential and/or agricultural areas of Miami-Dade County."

The road base is not the only constraint on increases in the L-29 borrow canal stage. We oppose the liberal application of the 9.0 feet, NGVD level since additional seepage into the L-31N will occur without functional seepage management features to contain the additional water in Everglades National Park (ENP). The normal operational constraint of 7.5 feet, NGVD should remain until additional seepage management features are operational and the Combined Operational Plan is in place.

2) Operational flexibility in the FEIS ERTP represents a paradigm shift in water management within Water Conservation Area 3, ENP and the South Dade Conveyance System since IOP relies on hard and fast structural closure dates.

We do not oppose Operational Flexibility for WCA 3 and the S-12s but it should not be used to send more water into south Dade canals even if levels remain within the canal stage constraints. The flood protection analysis in the study did not look at more flow into areas outside of ENP due to operational flexibility and the existing canal operations should be viewed as a hard constraint.

Thank you for the opportunity to comment on the Final Environmental Impact Statement for the Everglades Restoration Transition Plan, December 2011. If you have questions regarding FDACS' comments, please contact Ray Scott at (850) 617-1716 or Rebecca Elliott at (561) 682-6040.

Sincerely,

Rebecca Elliott
Environmental Manager
Office of Agricultural Water Policy

Office of Agricultural Water Policy
(850) 617-1700

Magnolia Center, Suite 200
1203 Governor's Square Boulevard
Tallahassee, Florida 32301

Florida Department of Agriculture and Consumer Services

Commissioner Adam H. Putnam

September 17, 2013

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Blvd, M.S. 47
Tallahassee, FL 32399-3000

Dear Ms. Milligan:

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments on the Environmental Assessment and Draft Finding of No Significant Impact – Proposed G-3273 Planned Deviation from the 2012 Water Conservation Areas, Everglades National Park, and ENP-South Dade Conveyance System Water Control Plan-Miami-Dade County, Florida dated August 2013. We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation.

We are concerned that implementation of the proposed deviation will result in negative impacts to privately owned agricultural lands in Miami-Dade County that rely on the South Dade Conveyance System (SDCS) and appropriate operation of the C-111 project to maintain flood protection.

Current operations by the USACE to convey water from WCA 3A are unprecedented in the duration and volume of excess WCA 3A water pumped into the SDCS. From our perspective, an unevaluated deviation is already occurring and this should be evaluated in the EA in conjunction with any other operational deviations proposed. The S-334 was not authorized for flood control releases to alleviate high water in WCA 3A so current operations are a misuse of the ERTP / Column 2 authorities.

The current operations are stacking water in the south end of the system and eliminating the buffer needed within the detention, groundwater and conveyance system to avoid rain induced flood events. The operations proposed in the current EA will only make matters worse. We cannot support the operations proposed in this EA and its lack of an evaluation of impacts in the developed areas east of Everglades National Park and the Frog Pond/ C-111 project.

During the USACE teleconference with FDACS on August 16, 2013, FDACS asked that the main goal be to reduce releases to the SDCS in line with Column 1 in conjunction with the relaxation of 3273G constraint. Also, that while these large, unprecedented releases to the SDCS continue, the S-197 should be opened to provide some drainage out of the SDCS of at least 300 cfs.

Our recommendation is to withdraw this EA and restart the process taking into account the comments received, both formal and informal, since the current EA's Clearinghouse comment period began. Cumulative effects need to be evaluated through an operational plan that includes all the deviations contemplated for the entire WCAs-ENP-SDCS system.

Thank you for the opportunity to provide Clearinghouse comments. If you have any questions regarding FDACS' comments, please contact Ray Scott at (850) 617-1716 or Rebecca Elliott at (561) 682-6040.

Sincerely,

W. Ray Scott
Environmental Administrator

WRS/bh

Office of Agricultural Water Policy
(850) 617-1700

Magnolia Center, Suite 200
1203 Governor's Square Boulevard
Tallahassee, Florida 32301

Florida Department of Agriculture and Consumer Services

Commissioner Adam H. Putnam

May 27, 2014

Mr. Eric Bush
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Bush:

We appreciated the opportunity to participate in the interagency meeting to discuss revising the water control plan for WCA/ENP/SDCS. The approach proposed at the meeting provides a reasonable path forward that could resolve many of the problems associated with the southern portion of the C&SF project area. Our only concern is with the timeline for implementing the necessary projects and satisfying the related planning requirements. While it provides a long-term solution, we believe that more operational flexibility is needed to address the issue facing the South Dade agricultural community while that long-term solution is being planned and implemented.

Elevated water levels in the South Dade agricultural area have adversely affected growers in that area and will continue to have a negative economic impact on the community as a whole. The Corps needs to exercise its operational flexibility to relieve these conditions and to avoid future adverse impacts. Specifically, the Corps needs to:

1. Operate the S-356 Pump Station to return water to the Park. This pump would provide great benefit to Everglades National Park, and to the South Miami-Dade farmers and the impediments with Tamiami Trail have now been removed.

2. Temporarily modify the operation of S-18C and S-197 to provide some relief to agricultural property. There was a consensus among the key agencies last year to open S-197 but the Corps would not take action. The Corps needs to be willing to open these gates this summer and fall so the water does not back up onto private property as it did last year.

We have attached a set of operating parameters that could be used to provide benefits while the longer range plan is being planned and implemented. We have tried to stay within a range that will maintain the Everglades benefits to be provided by the Mod Waters and C-111 Projects. Also enclosed is page 9-32 of the Yellow Book which contains provisions (outlined in red) authorizing modifications to the operations of the C-111 project consistent with our recommendations.

Again, we need to pursue long-term solutions, but the Corps also needs to make use of existing structural features to prevent the adverse impacts like those that resulted from conditions last summer. We are available to assist in this effort in any way that can be helpful, and look forward to working together on both immediate and long-term efforts to improve system operations. Thanks in advance for your consideration of our request.

Sincerely,

R. J. Budell

Richard J. Budell
Director, Office of Agricultural Water Policy

RJB/bh

cc: Ernie Marks, DEP

Attachments

The regional effect from the implementation of this additional conservation would be more efficient utilization of water resources by the public and a reduction of the volume of water delivered from Lake Okeechobee, the Water Conservation Areas, and other regional storage facilities to recharge coastal canals and wellfields.

9.2.5.3 Operational Modification to Southern Portion of L-31N and C-111 (OO)

Modifications to the operations of the C-111 Project, currently under construction, will be made to the southern portion of L-31N Borrow Canal and C-111. These operational modifications will be made to improve deliveries to Everglades National Park and decrease flood risk of adjacent agricultural areas in the Lower East Coast Service Area.

9.3 PILOT PROJECTS

In addition to the construction and operational features previously discussed, a series of pilot projects have been recommended. These pilot projects are needed to address uncertainties associated with some of the physical facilities that are proposed in the recommended plan. The pilot projects will be designed to determine the feasibility, as well as optimum design, of a facility prior to embarking upon full scale implementation of a new facility.

9.3.1 Lake Okeechobee Aquifer Storage and Recovery – Pilot Project (GG)

This feature is multi-purpose and provides benefit to environmental, urban and agricultural users (see ***Section 9.1.2.1***). The pilot project is necessary to identify the most suitable sites for the aquifer storage and recovery wells in the vicinity of Lake Okeechobee and to identify the optimum configuration of those wells. Additionally, the pilot project will determine the specific water quality characteristics of waters to be injected, the specific water quality characteristics and amount of water recovered from the aquifer, and the water quality characteristics of the receiving aquifer. Further information from the pilot project will provide the hydrogeological and geotechnical characteristics of the upper Floridan Aquifer System within the region, and the ability of the upper Floridan Aquifer System to maintain injected water for future recovery.

9.3.2 Caloosahatchee River (C-43) Basin Aquifer Storage and Recovery – Pilot Project (D)

Aquifer Storage and Recovery wells are proposed in order to maximize the benefits associated with the Caloosahatchee River Storage Reservoir (see ***Section 9.1.3.1***). A pilot project for these wells is necessary to identify the most suitable

Modified Water Deliveries and C-111 Pre-Test Operations.

The operational guidelines shown below are designed to provide an initial data set to be used in setting up the first iteration of the Modified Water Deliveries experimental program to begin in 2015. These guidelines are proposed to be followed during the Cape Sable Seaside Sparrow non-nesting season, July 15 through October 31, 2014.

L-29 Borrow Canal	Stage not to exceed 7.5 feet, NGVD, through operations of S-333.
S-333: G-3273 less than or equal to 7.2 feet, NGVD	Rainfall Plan target flow for S-333 (to NESRS), plus as much of the remaining Rainfall Plan target flow that the S-12s cannot discharge, subject to L-29 Constraint.
S-333: G-3273 greater than 7.2 feet, NGVD	Closed
S-334	Closed
S-356	Pump to maintain a headwater stage range between 5.5 and 6.0 based on local conditions and rainfall forecasts.
G-211	If S-356 is operating at full capacity then: Open at headwater of 6.0 feet, NGVD Close at headwater of 5.5 feet, NGVD. Note: Operations for G-211 will be adjusted as needed to be compatible with conditions in the 8.5 SMA and the capabilities of S-357 and S-331 existing at the time.
S-18C	Open at headwater of 2.25 feet, NGVD Close at headwater of 2.0 feet, NGVD
S-197	If S-18C headwater is greater than 2.0 feet, NGVD, operate S-197 to achieve a target flow rate of 200 cfs. If S-18C headwater is greater than 2.6 feet, NGVD, operate S-197 to achieve a target flow rate of 400 cfs. If S-177 headwater is greater than 4.1 feet, NGVD or S-18C headwater is greater than 3.1 feet, NGVD, then open 13 culverts. Begin closing gates when S-18C headwater is less than 2.5 feet NGVD and Storm has moved away from the basin 3. Keep 3 culverts open until the S-18C stage reaches 2.4 feet NGVD.

July 14, 2014

Ms. Melissa Nasuti
Planning and Policy Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Subject: USACE June 30, 2014, Notice re: Preparation of draft EA for operations field test (relaxation of Gage – 3273)

Dear Ms. Nasuti:

Florida Power & Light Company (FPL) has received your notice dated June 30, 2014 requesting comments for the preparation of a Draft Environmental Assessment (EA) for the Corp's proposed field test involving relaxation of the Gage 3273 constraint and revision to operation of water control structure S-356 and S-357. The notice advises that the purpose of the field test is to evaluate these changes to enable increased water deliveries to Everglades National Park (ENP) through Northeast Shark River Slough (NESRS). FPL appreciates the opportunity to comment.

As noted in our September 19, 2013 correspondence on the EA for the Proposed Gauge 3273 deviation, FPL's property within NESRS would be impacted by any flooding or storage of water. We also noted that because the congressionally authorized land exchange (by which the federal government would obtain the required property rights to increase flowage of water over FPL's lands) has not been completed, the federal government currently does not have the necessary rights to increase water flow over FPL's property. A copy of our September 19, 2013 correspondence is attached. For purposes of the record, we reiterate the comments contained therein.

We continue to look forward to working with the USACE and ENP on the appropriate resolution to support your proposed project.

Please contact Ken Proctor at (561) 691-7068 to coordinate resolution of this issue prior to the implementation of the proposed field test.

Sincerely,

Matthew J. Raffenberg
Director of Environmental Licensing and Permitting
Environmental Services Department
Florida Power & Light Company

Encl: FPL Sept.19, 2013 comment letter re: Proposed G-3273 Planned Deviation

Florida Power & Light Company, P.O. Box 14000, Juno Beach, FL 33408-0420
700 Universe Boulevard

FPL

September 19, 2013

Mr. Eric P. Summa
Chief, Environmental Branch
Planning and Policy Division
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Subject: Proposed G-3273 Planned Deviation

Dear Mr. Summa;

Florida Power & Light Company (FPL) appreciates the opportunity to review and comment on the Environmental Assessment for the Proposed G-3273 Planned Deviation ("Proposed Deviation" or "Project"). Through the review, it has come to our attention that the proposed action will result in the flooding or storage of water on FPL's fee right-of-way property crossed by the new Tamiami Bridge.

This property has long been the focus of numerous discussions beginning with the Congressionally approved, and funded, Modified Water Deliveries Project ("Mod Waters"). Over a decade ago, Everglades National Park (ENP) commenced discussions and negotiations with FPL regarding the existing private utility corridor. ENP made it clear it wanted to obtain the land for restored water flows including the Mod Waters project. FPL has been willing from the beginning to part with its corridor in return for either a replacement corridor or just compensation. And since the dollar costs of buying a new corridor would be in the tens of millions of dollars, ENP and FPL collaboratively looked for a low cost option.

The result of this collaborative effort was 2009 Congressional enactment of section 7107 of the Omnibus Public Lands Act. Congress reviewed and expressly authorized a very specific land trade: FPL would convey to ENP the 7.4 mile long utility corridor and ENP would transfer to FPL a comparable land corridor on the eastern edge of the Park along the L-31 canal. In an effort to avoid a hostile federal taking at substantial cost to ENP and taxpayers, FPL has offered and supported the land exchange. In August 2008, anticipating the potential for flows over the property in association with the Modified Waters Project, FPL granted a five-year temporary flowage easement to the Army Corps of Engineers (USACE). This duration was assumed to provide ample time to conduct the Land Exchange. Unfortunately, due to lengthy and avoidable federal delays, this land exchange is still far from resolution. The temporary flowage easement expired in August 2013 and has not been renewed. Timely execution of the federally authorized Land Exchange is the preferred resolution to this longstanding issue. In the absence of the envisioned exchange, FPL's property rights must be satisfactorily addressed before its property can be used for your project.

To be clear, FPL objects to the use of its land for flooding, the storage of water, or any other purpose without permission and necessarily would be viewed by FPL as a constructive taking. We look forward to working with the USACE on the appropriate resolution to support your proposed project.

Please contact Florette Braun at (561) 691-7059 to coordinate resolution of this issue prior to the implementation of the proposed plan.

Sincerely,

Matthew J. Raffenberg
Director of Environmental Licensing and Permitting
Environmental Services Department
Florida Power & Light Company

CC: Wade R. Litchfield, Esq.
VP and General Counsel
Florida Power & Light Company

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

July 22, 2014

Mrs. Melissa Nasuti
Biologist, Planning and Policy Division
Environmental Branch, Jacksonville District
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-8175

Subject: Department of the Army, Jacksonville District Corps of Engineers Scoping Notice: Proposed G-3273 Operations Field Test, Relaxation of the G-3273 Constraint and Operation of Water Control Structures S-356 and S-357N

Dear Mrs. Nasuti:

The South Florida Water Management District (SFWMD) appreciates the opportunity to provide input into the operational field test that is proposed to evaluate opportunities to use constructed features of the Modified Water Deliveries (MWD) project to increase water deliveries to Everglades National Park (ENP) through Northeast Shark River Slough. The SFWMD recognizes that the proposed field test signals the reactivation of efforts to prepare the combined operating plan for the MWD and C-111 projects. In support of this important first step, the SFWMD has accepted the invitation to participate in the Project Delivery Team and will provide staff to support the technical sub teams forming to develop the operating strategy and monitoring regime for start-up of S-356 operations and to evaluate raising stages at G-3273 in 2015.

We believe the interagency team is on the right path to developing a water control plan that will reduce prolonged high water events in WCA 3A, ensure that the necessary water is delivered to the ENP, while at the same time ensuring the continued protection of the agricultural and urban areas in southern Miami-Dade County. However, the proposed operational modifications represent a very modest first increment in a series of increments that will be needed to reach the Final Water Control Plan for the MWD/C-111 projects. We are concerned about the amount of time that it will take to arrive at a Final Water Control Plan and how the integrated system operations of WCA 3A, ENP and South Dade Conveyance System will be handled in the interim. With the 2014 Wet Season upon us, we feel that additional operational flexibility should be afforded during this wet season. Our respective staff have met to discuss what a potential deviation would consist of building off of the planning efforts that were undertaken during the 2013 wet season.

The SFWMD has also transmitted in June 2014 a draft proposal for a short-duration pump test of S-356 that could be conducted before the wet season conditions taper off this year. The two to three week test of S-356 is proposed to better understand local surface and groundwater dynamics that occur during pump operation with recently added features, Tamiami Trail Bridge and L-31N seepage barrier, in place. Information from this short-duration test will be used to develop a water budget and may be used to improve characterization of the aquifer in computer simulation models, further develop incremental field test protocols and provide information for the development of the comprehensive operating plan for the MWD and C-111 projects.

The SFWMD respectfully requests that the USACE pursue an operational deviation for the system, and that a short-duration test of S-356 pump station be conducted during the 2014 wet season. If you have any questions, please call Tom Teets our Federal Policy Chief at 561-682-6993 or email tteets@sfwmd.gov.

Sincerely,

Lennart J. Lindahl, P.E.
Assistant Executive Director
South Florida Water Management District

LJL/pav

c: Daniel DeLisi, SFWMD
Blake C. Guillory, P.E., SFWMD
Jeff Kivett, SFWMD
Temperince Morgan, SFWMD
Eric P. Summa, USACE
Tom Teets, SFWMD

Memorandum

TO: Eric P. Summa, Chief of Environmental Branch

THROUGH: Ernie Marks, Director of Ecosystem Projects

FROM: Inger Hansen, Deinna Nicholson, Rhapsodie Osborne

DATE: July 14, 2014

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers – Scoping Notice – Proposed Operations Field Test that includes Relaxation of the G-3273 Constraint and Operation of Water Control Structures S-356 and S-357N, Everglades National Park – Miami-Dade County, Florida.

Background:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Draft Environmental Assessment (EA) for an operations field test that will include relaxation of the Gauge-3273 (G-3273) constraint and operation of water control structures S-356 and S-357N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 (C-111) South Dade projects into a comprehensive system-wide Central and Southern Florida (C&SF) Project operations plan.

The Department of Environmental Protection (DEP) has previously provided both verbal and written comments regarding the incremental relaxation of the G-3272 constraint for deliveries to the ENP throughout the joint planning efforts and the State's Coastal Zone Management Program responses. Our comments on similar proposals were provided in the following letters submitted to the Corps:

- September 6, 2013 FDEP Memo with SFWMD Comments on the Corps' draft EA for the Proposed G-3273 Planned Deviation from the 2012 Water Conservation Areas, Everglades National Park and ENP-South Dade Conveyance System Water Control Plan (SAI# FL201308236696C).
- November 16, 2012 FDEP letter requesting additional information for a two year S-356 pump station and G-3273 gauge constraint relaxation field test request for the MWD to ENP project (DEP File No. 0246512). The letter contained both SFWMD and FDEP comments on the proposed testing project.
- July 8, 2011 FDEP Clearinghouse letter for Scoping Notice – Combined Operations Plan, MWD (SAI # FL201105255769).
- November 9, 2010 FDEP Memo to the State Clearinghouse regarding the Corps' draft EA for Temporary Deviation from Interim Operation Plan (IOP) Table ES-1; S-333: G-3273 Constraint (SAI# FL10-5486C)
- December 9, 2009 FDEP Memo to Susan Conner (USACE) providing comments on the G-3273 Modification field test.

Comments:

Please consider the Department's previous clearinghouse and regulatory comments on prior proposals for G-3273 relaxations and S-356 pump station testing when developing your scope. We recognize that some of the previous comments may conflict with the recent negotiations between the Department, the South Florida Water Management District and the Corps with regard to the Central Everglades Planning Project. For those comments that appear to conflict or directly conflict with the negotiated language, we expect to work diligently with the Corps to address those issues throughout the Project Delivery Team process.

Please note, S-356 pump station testing, temporary deviations to the G-3273 gauge constraint, and operations of the S-357N water control structure are not currently authorized in the USACE MWD to ENP permit (File No 0246512-010). Please coordinate with Department staff from the OEP Permitting Section to obtain any necessary authorizations prior to commencement of the test.

The Department sincerely appreciates the opportunity to comment. Should you have any questions on the comments provided, please feel free to contact Natalie Barfield at (850) 245-3197.

Electronic copies to:
Inger Hansen
Ernie Marks
Stacey Feken
Kelli Edson
Deinna Nicholson
Frank Powell
Rhapsodie Osborne
Chad Kennedy
Paul Julian

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 1 4 2014

Ms. Cara Capp
Everglades Restoration Program Manager
National Parks Conservation Association
450 N. Park Road, Suite 301
Hollywood, FL 33021

Dear Ms. Capp:

Thank you for your letter dated July 9, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps, South Florida Water Management District, and ENP, in coordination with stakeholders, are moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your continued participation and support. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 1 4 2014

Mr. Scott Sanders
Director Office of Conservation Planning Services
620 South Meridian Street
Tallahassee, Florida 32339

Dear Mr. Sanders:

Thank you for your letter dated July 11, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps, South Florida Water Management District, and ENP, in coordination with stakeholders, are moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your continued support and participation. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

Copies Furnished:
Chuck Collins, FWC, Chuck.Collins@myFWC.com
Michael Anderson, FWC, Michael.Anderson@myFWC.com
Larry Williams, USFWS, Larry_Williams@fws.gov
Lauren Milligan, DEP, Lauren.Milligan@DEP.state.fl.us

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 14 2014

Ms. Marcia Steelman
Miami-Dade County Public Works and Waste Management
Stormwater Utility Planning Division
701 NW 1st Court, 5th Floor
Miami, Florida 33136

Dear Ms. Steelman:

Thank you for your email dated July 14, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps, South Florida Water Management District, and ENP, in coordination with stakeholders, are moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your continued participation. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 1 4 2014

Ms. Rebecca Elliot
Water Policy Liaison
Office of Agricultural Water Policy
Magnolia Center, Suite 200
1203 Governor's Square Boulevard
Tallahassee, FL 32301

Dear Ms. Elliot:

Thank you for your letter dated July 14, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps, South Florida Water Management District, and ENP, in coordination with stakeholders, are moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your continued participation. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 14 2014

Mr. Matthew J. Raffenberg
Director of Environmental Licensing and Permitting
Environmental Services Department
Florida Power and Light Company
700 Universe Boulevard
Juno Beach, FL 33408

Dear Mr. Raffenberg:

Thank you for your letter dated July 14, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps, South Florida Water Management District, and ENP, in coordination with stakeholders, are moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your comments. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 14 2014

Mr. Lennart J. Lindahl, P.E.
Assistant Executive Director
South Florida Water Management District
P.O. Box 24680
West Palm Beach, FL 33416-4680

Dear Mr. Lindahl:

Thank you for your letter dated July 22, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps is proactively working with the South Florida Water Management District, ENP, and other interested stakeholders to move forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. Thank you for your continued support and participation. Further responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

Copies Furnished:
Mr. Jeff Kivett, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680
Ms. Temperince Morgan, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680
Mr. Daniel DeLisi, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680
Mr. Tom Teets, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680
Mr. Blake C. Guillory, P.E., South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 20 2014

Mr. Ernie Marks
Director of Ecosystem Projects
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 2560
Tallahassee, FL 32399

Dear Mr. Marks:

Thank you for your letter dated July 14, 2014 regarding preparation of a Draft Environmental Assessment (EA) by the Jacksonville District, U.S. Army Corps of Engineers (Corps) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 South Dade projects into system-wide Central and Southern Florida Project operations.

The Corps is proactively working with the South Florida Water Management District, Florida Department of Environmental Protection (FDEP), ENP, and other interested stakeholders in moving forward with efforts to begin delivering more water from the Conservation Areas to ENP, as envisioned in the MWD to ENP project. The Corps will continue to maintain ongoing communications with the FDEP during project team meetings to address regulatory issues that may arise. The Corps will also continue to coordinate with the FDEP to obtain any necessary authorizations required prior to commencement of the field test. Responses to the Jacksonville District's letter dated June 30, 2014 soliciting comments on the field test will be provided within the Draft EA. If you have any questions or need additional information, please contact Mrs. Melissa Nasuti at the letter head address or email melissa.a.nasuti@usace.army.mil.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

AUG 2 2 2014

Mr. Larry Williams, Field Supervisor
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960

Dear Mr. Williams,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Draft Environmental Assessment for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N (Figure 1). The purpose of this field test is to evaluate raising or removing the existing G-3273 stage constraint to enable increased water deliveries from Water Conservation Area 3A (WCA 3A) to Everglades National Park through Northeast Shark River Slough for the benefit of natural resources. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries (MWD) to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations.

The C&SF system-wide project is located in South Florida and includes portions of several counties as well as portions of ENP, Big Cypress National Preserve, and adjacent areas. The 1992 MWD General Design Memorandum defines the project boundary as Shark River Slough and that portion of the C&SF Project north of S-331 to include WCA 3. G-3273 lies within eastern ENP, directly west of 8.5 Square Mile Area (Figure 1).

Pursuant to the Endangered Species Act, as amended, the Corps is requesting written confirmation of species or their critical habitat either listed or proposed for listing that may be present within the referenced project area within 30 days upon receipt of this letter. The Corps has tentatively determined that the following list of threatened and endangered species may be present within the project area as illustrated in Tables 1 and 2.

If you have any questions, or need further information, please contact Melissa Nasuti by email melissa.a.nasuti@usace.army.mil or telephone 904-232-1368. Thank you for your assistance in this matter.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosures

Copy Furnished:
Mr. Kevin Palmer, U.S. Fish and Wildlife Service, 1339 20th Street, Vero Beach, Florida 32960

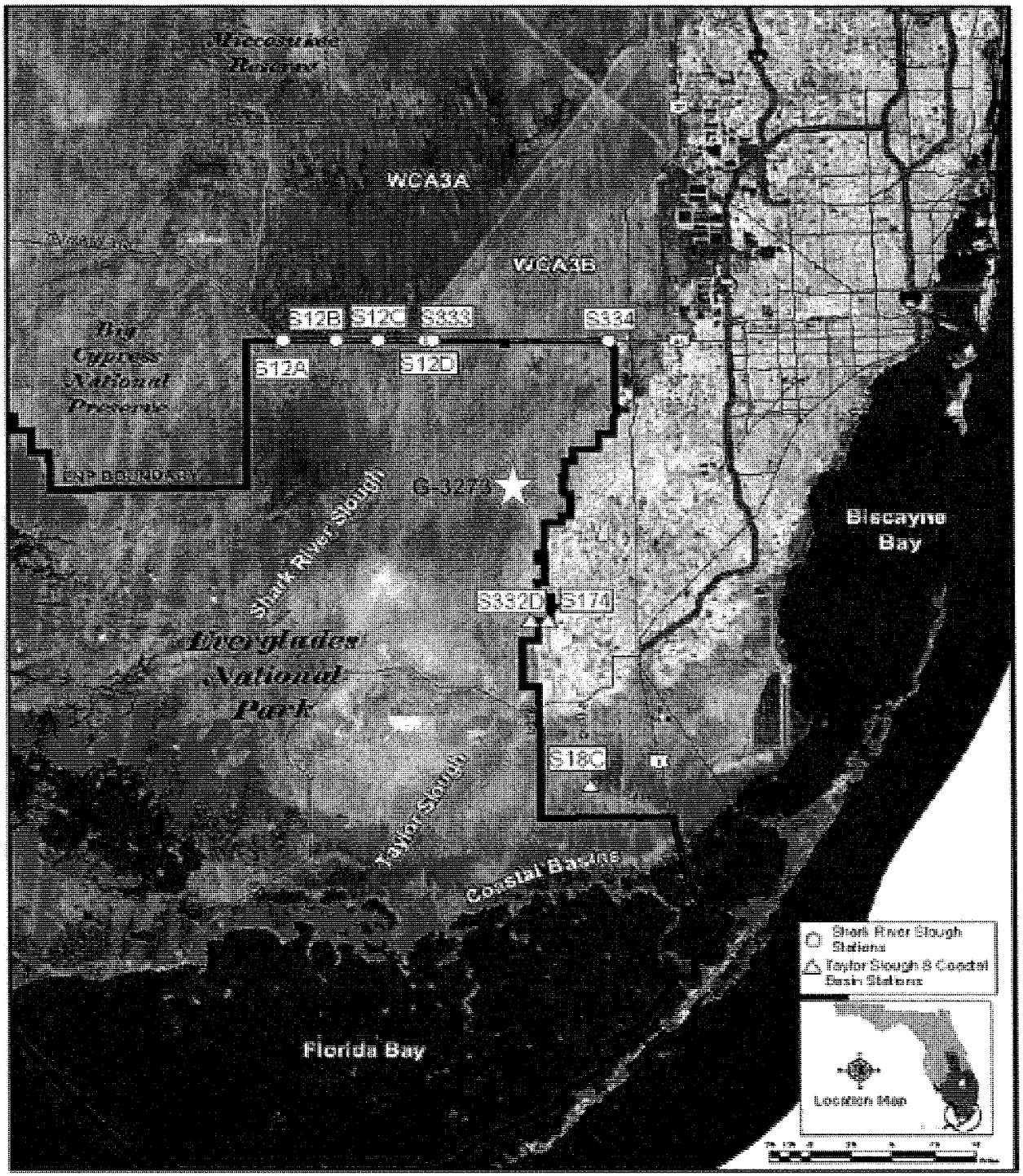


Figure 1. Project Area

Table 1. List of Federally Threatened and Endangered Species within the project area (E: Endangered, T: Threatened, SA: Similarity of Appearance, CH: Critical Habitat, C: Candidate Species)

Common Name	Scientific Name	Status
Mammals		
Florida panther	*Puma concolor coryi*	E
West Indian Manatee	*Trichechus manatus*	E, CH
Florida bonneted bat	*Eumops floridamus*	E
Birds		
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH
Red-cockaded woodpecker	*Picoides borealis*	E
Roseate tern	*Sterna dougallii dougallii*	T
Wood stork	*Mycteria americana*	E
Reptiles		
American Alligator	*Alligator mississippiensis*	T, SA
American crocodile	*Crocodylus acutus*	T, CH
Eastern indigo snake	*Drymarchon corais couperi*	T
Green sea turtle*	*Chelonia mydas*	E
Hawksbill sea turtle*	*Eretmochelys imbricate*	E
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E
Leatherback sea turtle*	*Dermochelys coriacea*	E
Loggerhead sea turtle*	*Caretta caretta*	E
Fish		
Smalltooth sawfish*	*Pristia pectinata*	E, CH
Invertebrates		
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E
Bartram's hairstreak butterfly	*Strymon acis bartrami*	C
Florida leafwing butterfly	*Anaea troglodyta floridalis*	C
Plants		
Crenulate lead plant	*Amorpha crenulata*	E
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E
Garber's spurge	*Chamaesyce garberi*	T
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E

Small's milkpea	*Galactia smallii*	E
Tiny polygala	*Polygala smallii*	E
Big pine partridge pea	*Chamaecrista* var. *keyensis*	C
Blodgett's silverbush	*Argythamnia blodgettii*	C
Cape Sable thoroughwort	*Chromolaena frustrata*	C
Carter's small-flowered flax	*Linum carteri* var. *carteri*	C
Everglades bully	*Sideroxylon reclinatum* spp. *austrofloridense*	C
Florida brickell-bush	*Brickellia mosieri*	C
Florida bristle fern	*Trichomanes punctatum* spp. *Floridanum*	C
Florida pineland crabgrass	*Digitaria pauciflora*	C
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C
Florida semaphore cactus	*Consolea corallicola*	C
Pineland sandmat	*Chamaesyce deltoidea* spp. *pinetorum*	C
Sand flax	*Linum arenicola*	C

* Marine species under the purview of National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS

Table 2. List of State Listed Species within the project area (E: Endangered, T: Threatened, SC: Species of Special Concern)

Common Name	Scientific Name	Status
Mammals		
Florida black bear	*Ursus americanus floridanus*	T
Everglades mink	*Mustela vison evergladensis*	T
Florida mouse	*Podomys floridanus*	SC
Florida mastiff bat	*Eumops glaucinus floridanus*	E
Birds		
Piping plover	*Charadrius melodus*	T
Snowy plover	*Charadrius alexandrinus*	T
American oystercatcher	*Haematopus palliates*	E
Brown pelican	*Pelecanus occidentalis*	SC
Black skimmer	*Rynchops niger*	SC
Least tern	*Sterna antillarium*	T
White-crowned pigeon	*Columba leucocephalus*	T
Least tern	*Sterna antillarum*	T
Limpkin	*Aramus guarauna*	SC
Little blue heron	*Egretta caerulea*	SC
Tricolored heron	*Egretta tricolor*	SC
Snowy egret	*Egretta thula*	SC
Reddish egret	*Egretta rufescens*	SC
White ibis	*Eudocimus albus*	SC
Roseate spoonbill	*Ajaja ajaja*	SC
Fish		
Mangrove rivulus	*Rivulus marmoratus*	SC
Invertebrates		
Miami blue butterfly	*Cyclargus [=Hermiargus] thomasi bethunebakeri*	E
Florida tree snail	*Liguus fasciatus*	SC
Plants		
Pine-pink orchid	*Bletia purpurea*	T
Lattace vein fern	*Thelypteris reticulate*	E
Eatons spikemoss	*Selaginella eatonii*	E
Wright's flowering fern	*Anemia wrightii*	E
Tropical fern	*Schizaea pennula*	E
Mexican vanilla	*Manilla mexicana*	E

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

AUG 2 9 2014

Planning and Policy Division
Environmental Branch

Reid Nelson
Director Office of Federal Agency Programs
Advisory Council on Historic Preservation
401 F Street NW, Suite 308,
Washington, DC 20001-2637

Dear Mr. Reid Nelson

The purpose of this letter is to invite Advisory Council on Historic Preservation (ACHP) to participate on the consultation effort associated with the Corps G-3273/S-356 operations field test to raise the current operational stage constraint for the Gage-3273 (G-3273) and operate the S-356 pump station to manage additional seepage eastward from Everglades National Park (ENP). The purpose of this field test is to increase and/or remove the existing G-3273 stage constraint to increase water deliveries from Water Conservation Area (WCA) 3A to ENP, through Northeast Shark River Slough (NESRS), for the benefit of natural resources. The U.S. Army Corps of Engineers (Corps), Jacksonville District, is initiating the G-3273/S-356 field test as the first increment in a series of three increments that will help define operations for the constructed features of the Modified Water Deliveries to Everglades National Park (MWD) project (See enclosure). As the project is a planned deviation from the Corps current water regulation schedule, it is an undertaking defined by Section XIV (A) Deviations under the Programmatic Agreement (ERTP PA) entitled: *Programmatic Agreement Among The U.S. Army Corps Of Engineers, The Advisory Council On Historic Preservation, and The Florida State Historic Preservation Officer Regarding The Everglades Restoration Transition Plan For Features of The Central and Southern Florida Project In Southern Florida*. This PA was signed by the ACHP on 13 August 2012 and remains in effect in regards to the project for which it was designed. Under this section of the PA, the Corps is currently consulting with all interested parties to notify them of this separate undertaking and to determine what if any potential for effects exists associated with this short term test.

The project is designed to occur in three increments that will see water delivery increases in the first two increments to raise water levels in ENP. Levels will be raised at the northeastern end of the park to 7.5 and 8.5 NGVD respectively. Each increase may have the potential for impacts to culture resources as water levels are deviated away from the 6.8 NGVD gage restriction which regulates water levels coming into the ENP through Northeast Shark River Slough (NESRS). Specifically these tests will assist the Corps in understanding the nature of the water elevations and flowage away from its input source in NESRS. The final stage, increment three, will evolve the development of a new operational plan.

This operational plan will replace the Everglades Restoration Transition Plan (ERTP) as the operational plan for the southern portion of the Central and South Florida Project for Flood Control and Other Purposes (C&SF) project features in Miami-Dade County, Florida. Each increment is expect to take approximately one year and will be dependent upon the availability of water within the system to conduct the test. Prior to the third increment, it is expected that the Corps will have completed all testing and finalized its determination of effects associated with the ERTP PA. This data will be combined with the data obtained in increments one and two and will be utilized to determine effects associated with the third increment which will set the final operation schedule for MWD.

Pursuant to 36 CFR § 800.6, I am formally requesting consultation on this project. At your convenience, Corps staff will be available to meet to discuss any comments or concerns you may have regarding this project. Mr. Dan Hughes will be the Corps' lead on this effort. If you are or members of your staff have any questions, please contact Mr. Hughes by phone at 904-232-3028 or by e-mail at daniel.b.hughes@usace.army.mil.

Sincerely,

Kenneth R. Dwyer

for Eric P. Summa
Chief, Environmental Branch

Enclosure

Copy Furnished:
Tom McCulloch
Advisory Council on Historic Preservation 401 F Street NW, Suite 308, Washington, DC 20001-2637

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

SEP 0 3 2014

Planning and Policy Division
Environmental Branch

Mr. Bob Krumenaker
Superintendent
Everglades National Park
40001 State Road 9336
Homestead, Florida 33034-6733

Dear Mr. Krumenaker:

The purpose of this letter is to request information regarding potential effects to significant historic properties located within Everglades National Park (ENP). As you are aware the Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Draft Environmental Assessment (EA) and conducting Section 106 consultation under the National historic Preservation ACT (NHPA) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The purpose of this field test is to evaluate raising or removing the existing G-3273 stage constraint of 6.8 ft National Geodetic Vertical Datum (NGVD) to increase water deliveries from Water Conservation Area (WCA) 3A to ENP, through Northeast Shark River Slough (NESRS), for the benefit of natural resources. The field test is the first in a series of sequential efforts that are intended to incorporate the constructed features of the Modified Water Deliveries to Everglades National Park (MWD) and the Canal 111 South Dade (C-111 SD) projects into system-wide Central and Southern Florida (C&SF) Project operations.

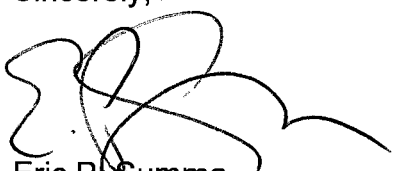
The project is designed to occur in three increments. With the relaxation of the G-3273 gage and the L-29 Canal stage of 7.5 ft NGVD in increment one and 8.5 ft NGVD in increment two, both increments have the potential for impacts to cultural resources. Specifically these tests will assist the Corps in understanding the nature of the water elevations and flowage away from its input source in NESRS. The final stage, increment three, will include the development of a new operational plan. This operational plan will replace the Everglades Restoration Transition Plan (ERTP) as the operational plan for the southern portion of the C&SF Project features in Miami-Dade County, Florida. Increments 1 and 2 will be implemented for a period of up to one year and will be dependent upon the availability of water within the system to conduct the tests. If weather or other system-wide conditions during this period do not provide sufficient data for a conclusive field test, each field test may be extended for a maximum of two years. Prior to the third increment, it is expected that the Corps will have completed all testing and finalized its determination of effects associated with the ERTP Programmatic Agreement.

This data will be combined with the data obtained in Increments 1 and 2 and will be utilized to determine effects associated with the third increment which will set the final operation schedule for MWD.

As the project is a planned deviation from the Corps current water regulation schedule, it is an undertaking defined by Section XIV (A) Deviations under the Programmatic Agreement (ERTP PA) entitled: *Programmatic Agreement Among The U.S. Army Corps Of Engineers, The Advisory Council On Historic Preservation, and The Florida State Historic Preservation Officer Regarding The Everglades Restoration Transition Plan For Features of The Central and Southern Florida Project In Southern Florida.* This PA was signed by ENP on 23 August 2012 and remains in effect in regards to the project for which it was designed. Under this section of the PA, the Corps is currently consulting with all interested parties to notify them of this separate undertaking and to determine what if any potential for effects exists associated with this short term field test. Key to this three increment approach and completion of the MWD is information on what, if any, anticipated effects ENP anticipates in relation to Increments 1 and 2. While the Corps does not anticipate any adverse effects to cultural resources, we are requesting input from ENP to move forward with our formal determination of effects for this project. Specifically we need information for the first increment test and will re-consult on each increment thereafter. If ENP does anticipate any adverse effects we would like to request a meeting to discuss these effects and would hope that restrictions could be included within the increment one monitoring plan such that a no adverse effect determination can be achieved and be utilized in our formal Section 106 determination and subsequent EA.

Pursuant to 36 CFR § 800.4, I am formally requesting consultation on this project. At your convenience, Corps staff will be available to meet to discuss any comments or concerns you may have regarding this project. Dr. Dan Hughes will be the Corps' lead on this effort. If you are or members of your staff have any questions, please contact Dr. Hughes by phone at 904-232-3028 or by e-mail at daniel.b.hughes@usace.army.mil.

Sincerely,



Eric P. Summa
Chief, Environmental Branch

Enclosure

United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
1339 20th Street
Vero Beach, Florida 32960

September 11, 2014

Eric Summa
Chief, Environmental Branch
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232

Service Activity Code: 04EF2000-2014-CPA-0183
Date Received: August 26, 2014
Project: G-3273 / S-356 Test
County: Miami-Dade

Dear Mr. Summa:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corp) letter dated August 22, 2014, requesting confirmation of federally-listed species or their designated critical habitat and candidate species for listing that may be present within the G-3273 / S-356 Test Project area. The species list is a National Environmental Policy Act (42 U.S. Code (USC) § 4321) requirement for the environmental analysis. This species list is also provided in accordance with the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project area lies entirely within Miami-Dade County, Florida; however, manipulation of current operating procedures may affect Water Conservation Areas 3A, 3B, Northeast Shark River Slough in Everglades National Park, and the lower C-111 South Dade Conveyance System including Manatee Bay.

The Service has reviewed our Geographic Information System (GIS) database and other information for recorded locations of federally-listed threatened and endangered species and critical habitats on or adjacent to the project site. The GIS database is a compilation of data received from several sources. The G-3273 / S-356 Test Project occurs mainly in wetland habitats in the planning area, however, effects of the proposed project could reach into adjacent habitats as well. State-listed species and those proposed for Federal listing are included due to the projected life of the proposed project. The following tables list species with both Federal (Table 1) and State (Table 2) status that should be considered in the planning process for the G-3273 / S-356 Test Project.

Table 1. List of federally Threatened and Endangered Species within the project area (E: Endangered, T: Threatened, SA: Similarity of Appearance, CH: Critical Habitat, C: Candidate Species).

Common Name	Scientific Name	Status
Mammals		
Florida panther	*Puma concolor coryi*	E
Florida manatee	*Trichechus manatus latirostris*	E, CH
Florida bonneted bat	*Eumops floridanus*	E
Birds		
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH
Piping plover	*Charadrius melodus*	T
Red-cockaded woodpecker	*Picoides borealis*	E
Roseate tern	*Sterna dougallii dougallii*	T
Wood stork	*Mycteria americana*	E
Reptiles		
American Alligator	*Alligator mississippiensis*	T, SA
American crocodile	*Crocodylus acutus*	T, CH
Eastern indigo snake	*Drymarchon corais couperi*	T
Gopher tortoise	*Gopherus polyphemus*	C
Green sea turtle*	*Chelonia mydas*	E
Hawksbill sea turtle*	*Eretmochelys imbricate*	E
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E
Leatherback sea turtle*	*Dermochelys coriacea*	E
Loggerhead sea turtle*	*Caretta caretta*	E
Fish		
Smalltooth sawfish*	*Pristis pectinata*	E, CH
Invertebrates		
Bartram's hairstreak butterfly	*Strymon acis bartrami*	C
Elkhorn coral	*Acropora palmata*	T, CH
Florida leafwing butterfly	*Anaea troglodyta floridalis*	C
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E
Staghorn coral	*Acropora cervicornis*	T, CH
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T
Plants		
Crenulate lead plant	*Amorpha crenulata*	E
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E
Garber's spurge	*Chamaesyce garberi*	T
Johnson's seagrass*	*Halophila johnsonii*	E, CH
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E

Small's milkpea	*Galactia smallii*	E
Tiny polygala	*Polygala smallii*	E
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	C
Blodgett's silverbush	*Argythamnia blodgettii*	C
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH
Carter's small-flowered flax	*Linum carteri* var. *carteri*	Pr E
Everglades bully	*Sideroxylon reclinatum* spp. *austrofloridense*	C
Florida brickell-bush	*Brickellia mosieri*	Pr E, Pr CH
Florida bristle fern	*Trichomanes punctatum* spp. f*loridanum*	C
Florida pineland crabgrass	*Digitaria pauciflora*	C
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C
Florida semaphore cactus	*Consolea corallicola*	E
Pineland sandmat	*Chamaesyce deltoidea* ssp. *pinetorum*	C
Sand flax	*Linum arenicola*	C

* Marine species under the purview of National Marine Fisheries Service (NOAA Fisheries), the Corps will conduct a separate consultation with NOAA Fisheries.

Table 2. List of State-listed species, not otherwise federally designated, within the project area (E: Endangered, T: Threatened, SC: Species of Special Concern).

Common Name	Scientific Name	Status
Mammals		
Everglades mink	*Neovison vison evergladensis*	T
Florida mouse	*Podomys floridanus*	SC
Birds		
Snowy plover	*Charadrius nivosus*	T
American oystercatcher	*Haematopus palliates*	SC
Brown pelican	*Pelecanus occidentalis*	SC
Black skimmer	*Rynchops niger*	SC
Least tern	*Sterna antillarium*	T
White-crowned pigeon	*Patagioenas leucocephala*	T
Limpkin	*Aramus guarauna*	SC
Little blue heron	*Egretta caerulea*	SC
Tricolored heron	*Egretta tricolor*	SC
Snowy egret	*Egretta thula*	SC
Reddish egret	*Egretta rufescens*	SC
White ibis	*Eudocimus albus*	SC
Roseate spoonbill	*Platalea ajaja*	T
Fish		
Mangrove gambusia	*Gambusia rhizophorae*	SC
Mangrove rivulus	*Rivulus marmoratus*	SC

Invertebrates		
Florida tree snail	*Liguus fasciatus*	SC
Plants		
Pine-pink orchid	*Bletia purpurea*	T
Lattace vein fern	*Thelypteris reticulate*	E
Eatons spikemoss	*Selaginella eatonii*	E
Wright's flowering fern	*Anemia wrightii*	E
Tropical fern	*Schizaea pennula*	E
Mexican vanilla	*Vanilla mexicana*	E

The complete species list provided in Tables 1 and 2 concludes the statutory requirements set forth in 50 CFR §402.12(d) of the Act. Please be aware that verification of current accuracy of the species list is for a time period not to exceed 90 days as stated in 50 CFR §402.12(e) of the Act. If the Corps does not begin preparation of the biological assessment within 90 days of receipt of (or concurrence with) the species list, then they must verify (formally or informally) with the Service the current accuracy of the species list at the time the preparation of the biological assessment is begun. Further, the Corps shall complete the biological assessment within 180 days after its initiation (receipt of or concurrence with the species list) consistent with 50 CFR §402.12(i) of the Act.

Thank you for your cooperation in the effort to conserve fish and wildlife resources. If you have questions concerning this consultation process, please contact the project biologist Kevin Palmer at 773-469-4280.

Sincerely yours,

for Bob Progulske
Everglades Program Supervisor
South Florida Ecological Services Office

cc:
Corps, Jacksonville, Florida (Melissa Nasuti)

Preserving America's Heritage

September 26, 2014

Mr. Eric P. Summa
Chief, Environmental Branch
Jacksonville District, Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-019

Ref: Proposed Gage-3273 and S-356 Pump Station Operations Field Test for the Everglades Restoration Transition Plan in Southern Florida

Dear Mr. Summa:

On September 8, 2014, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on properties listed on and eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases,* of our regulations, "Protection of Historic Properties" (36 CFR Part 800) does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed. However, if we receive a request for participation from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or another party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 CFR 800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Florida State Historic Preservation Officer (SHPO) and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require further assistance, please contact Brian Lusher at 202-517-0221, or via email at blusher@achp.gov.

Sincerely,

Raymond V. Wallace

Raymond V. Wallace
Historic Preservation Technician
Office of Federal Agency Programs

Nasuti, Melissa A SAJ

From: Robbins, Rick - NRCS, Gainesville, FL [rick.a.robbins@fl.usda.gov]
Sent: Tuesday, September 30, 2014 10:05 AM
To: Nasuti, Melissa A SAJ
Subject: [EXTERNAL] RE: Prime and Unique Farmland (UNCLASSIFIED)

Hello Melissa,

I am fairly positive of 2 items concerning the FPPA process for this project:

1) This area is unmapped and therefore without mapping, there is no farmland designation.
2) If this area was mapped, it would probably classify as "Not Prime Farmland", "Not Unique Farmland", or "Not Locally Important Farmland".

Finally, I will still have to complete the AD-1006 for this project if Federal money is used. But the form will be a quick return.

Best,

Rick

Rick Robbins
Soil Scientist
USDA-Natural Resources Conservation Service
Gainesville, FL 32606

-----Original Message-----
From: Nasuti, Melissa A SAJ [mailto:Melissa.A.Nasuti@usace.army.mil]
Sent: Tuesday, September 30, 2014 9:57 AM
To: Robbins, Rick - NRCS, Gainesville, FL
Cc: Nasuti, Melissa A SAJ
Subject: Prime and Unique Farmland (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Robbins,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Draft Environmental Assessment (EA) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357N. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries to Everglades National Park (MWD to ENP) and Canal 111 (C-111) South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations.

The purpose of this field test is to evaluate raising or removing the existing G-3273 stage constraint to enable increased water deliveries from Water Conservation Area 3A to ENP through Northeast Shark River Slough (NESRS) for the benefit of natural resources. The field test will also provide data to support operating permit applications for S-356 and S-357N and to develop future water management operating criteria. The water management operations

contained in this proposed field test will be implemented in 2015. If weather or other system-wide conditions during this period do not provide sufficient data for a conclusive field test, the field test may be extended for a maximum of two years.

Attached is a project map. Requesting concurrence on prime and unique farmland within the project area.

Please let me know if further information is needed for purposes of consultation and/or to ensure compliance under the Farmland Protections Policy Act.

Melissa Nasuti
U.S. Army Corps of Engineers
Planning Division - Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207
Office Phone: 904-232-1368

Classification: UNCLASSIFIED
Caveats: NONE

Audubon Florida • Clean Water Action • Everglades Foundation
National Parks Conservation Association • Sierra Club • Tropical Audubon Society

Col. Alan M. Dodd, District Commander
United States Army Corps of Engineers
4070 Boulevard Center, Suite 201
Jacksonville, FL 32207

Blake Guillory, Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

November 17, 2014

RE: Operational Testing for Modified Water Deliveries and C-111 South Dade Projects

Dear Col. Dodd and Mr. Guillory:

On behalf of the undersigned organizations, we write to comment on the incremental testing of elements of the Modified Water Deliveries (MWD) and C-111 South Dade Projects provides an important opportunity to ensure that these valuable restoration initiatives will deliver robust ecological benefits to Everglades National Park and Florida Bay. We support ongoing efforts to plan for incremental operations testing of these projects that do not reverse recently-achieved restoration benefits.

We object, however, to operational elements that would reverse the phased implementation of the C-111 Spreader Canal Western Project. Proposals that lower water levels in the C-111 canal and divert water to Biscayne Bay not only decrease the benefits of an important restoration project that was fast-tracked by the South Florida Water Management District (SFWMD) and recently authorized by Congress, but potentially do environmental damage. Moreover, the rationale for these proposed operations, that these operations would ease flooding, is an uncertain response to an unsubstantiated concern. **We urge you proceed with testing of the MWD and C-111 structures without modifying the C-111 Spreader Canal Western Project operations. Rather, the Corps and SFWMD should proceed with the phased implementation of the C-111 Spreader Canal Western Project while undertaking the requisite investigations to determine its effects.**

The goal of this initiative – to restore the Everglades – will be jeopardized if elements of flood control are interjected into the operational testing plan, particularly without just cause. We would support efforts by the Corps and District to investigate the claim that increased flooding is linked to C-111 operations, and look forward to rigorous discussion on the issue. In the meantime, proposing to lower levels in the S-18C, instead of raising them as previously approved, and operate the S-197 for flood relief under the auspices of operational testing is counterproductive to restoration efforts and not in the public interest.

Now is not the time to backtrack on progress that is already underway. The first two years of the C-111 Spreader Canal Western Project have shown promising increases in the amount of water being delivered to Taylor Slough and Northeast Florida Bay. Salinity levels have improved and lead to increased growth of submerged aquatic vegetation. We can capitalize on these benefits by moving forward with efforts to raise water levels at the S-18C by one-tenth of a foot per year as initially planned. Postponing this effort, while simultaneously allowing harmful releases of 200cfs from the S-197, will be detrimental to ongoing restoration efforts.

We urge you to ensure that both the incremental testing and final operational plan be designed in a way that maximizes the ecological benefits these projects were constructed to achieve. This includes not lowering water levels at the S-18C or allowing releases from the S-197.

Thank you for considering this input. We look forward to continuing to participate in the Project Delivery Team process and working toward an operational testing plan to restore America's Everglades.

Sincerely,

Dr. Tabitha Cale
Everglades Policy Associate
Audubon Florida

Sarah de Flesco
Florida Program Coordinator
Clean Water Action

Dr. Tom Van Lent
Director of Science and Policy
Everglades Foundation

Cara Capp
Everglades Restoration Program Manager
National Parks Conservation Association

Jonathan Ullman
South Florida/Everglades Senior Field Organizer
Sierra Club

Laura Reynolds
Executive Director
Tropical Audubon Society

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
Florida State Office
2614 NW 43rd Street
Gainesville, FL 32606

PH 352-338-9500
FX 352-338-9574
www.fl.nrcs.usda.gov

November 21, 2014

Melissa Nasuti
U.S. Army Corps of Engineers
Planning Division – Jacksonville District
701 San Marco Boulevard
Jacksonville, FL

Important Farmland Assessment for the Everglades National Park Rehydration project in Miami-Dade County, Florida

This letter is in response to your request on the Prime, Unique, or Locally Important Farmland assessment as part of the FPPA requirements for the Everglades National Park Project in Miami-Dade County, Florida. Enclosed are the Important Farmlands map and Farmland Conversion Impact Rating forms (AD-1006) for the project area.

Briefly, the USDA-NRCS is responsible for monitoring the conversion of Prime, Unique, or Locally Important Farmland to urban uses. We have determined that there are delineations of Important Farmland soils (Farmland of Unique Importance) within the scope of this project.

If you have any questions, please feel free to contact me.

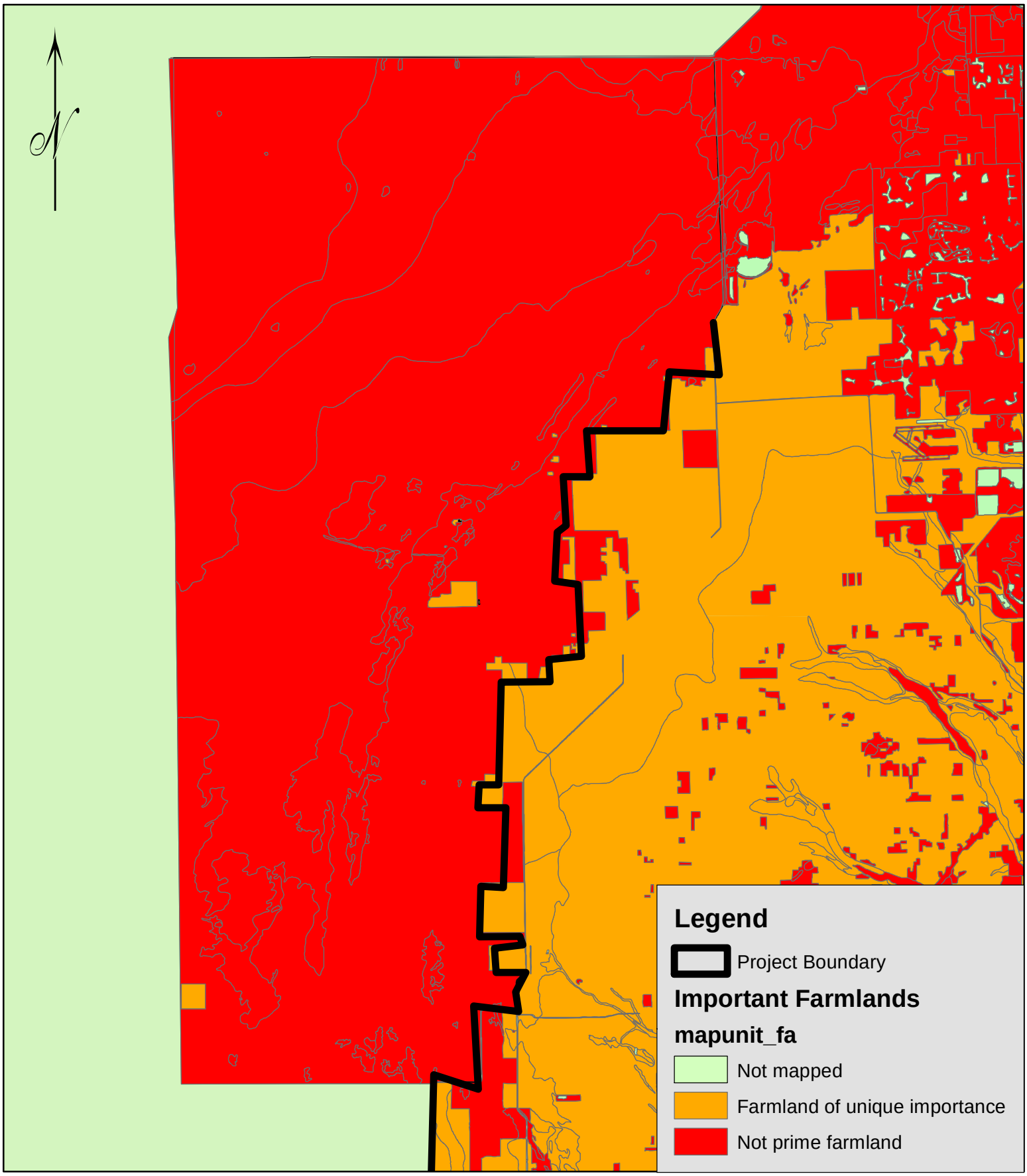
Regards,

Rick

Rick Robbins
USDA-NRCS
Soil Scientist
Gainesville, Florida

w/ AD-1006, and map attachments

Everglades Rehydration Project (ACOE)



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

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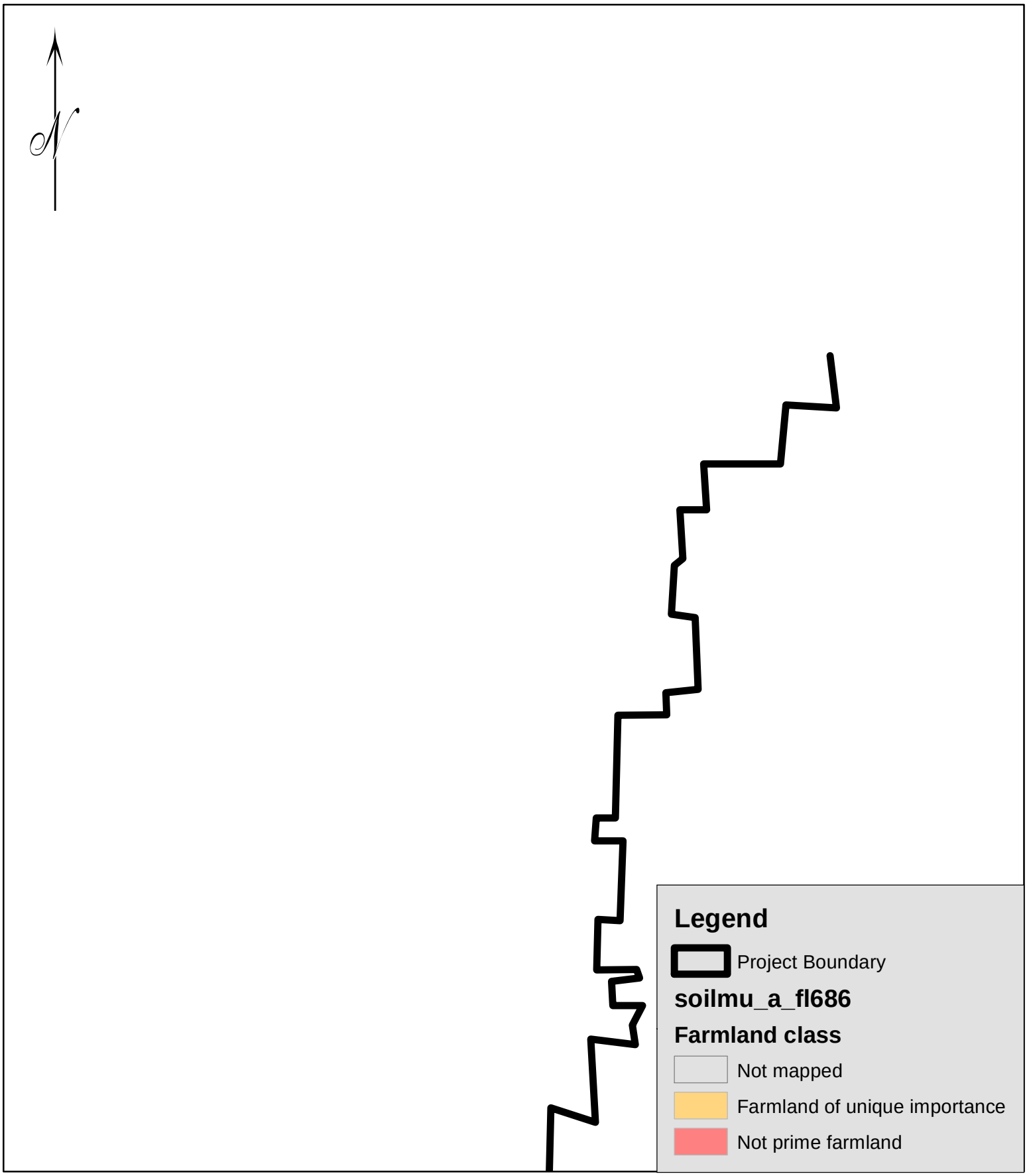
Miles

Survey Area: Miami-Dade County (eastern part), Florida
Survey Area Version Date: 01/13/2010; fully certified
Orthoimagery: USDA-NRCS NCGC Mr. Sid Mosaic
Map Created: 11/21/2014
Rick Robbins, (Phone: 352.338.9536)
USDA-NRCS, Gainesville, Florida

Everglades Rehydration Project (ACOE)



USDA NRCS
United States Department of Agriculture
Natural Resources Conservation Service

0 0.751.5 3 4.5 6
Miles

Survey Area: Miami-Dade County (eastern part), Florida
Survey Area Version Date: 01/13/2010; fully certified
Orthoimagery: USDA-NRCS NCGC Mr. Sid Mosaic
Map Created: 11/21/2014
Rick Robbins, (Phone: 352.338.9536)
USDA-NRCS, Gainesville, Florida

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 11/21/14
Name Of Project G-3273 Contstraint Relaxation Field Test	Federal Agency Involved U.S. Army Corps of Engineers
Proposed Land Use Rehydration of Everglades National Park	County And State Miami Dade County, Florida
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 11/21/14

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated 38,954	Average Farm Size 27 acres

Major Crop(s) Vegetables, fruit	Farmable Land In Govt. Jurisdiction Acres: 92,770 % 7.50	Amount Of Farmland As Defined in FPPA Acres: 52,725 % 4.2
Name Of Land Evaluation System Used Soil Productivity Index	Name Of Local Site Assessment System None	Date Land Evaluation Returned By NRCS

PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0.0	0.0	0.0	0.0
B. Total Acres To Be Converted Indirectly	0.0	0.0	0.0	0.0
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	975.1			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.00200			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	23.7			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	30.1			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	30.1			
Total Site Assessment *(From Part VI above or a local site assessment)*	160	0	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	30	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☐ No ☐

Reason For Selection:

(See Instructions on reverse side)

This form was electronically produced by National Production Services Staff

Clear Form

Form AD-1006 (10-83)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 – Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 – Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 – NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step '4 – In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 – NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 – The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 – The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.

2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at l60.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site "A."}$$

Site Assessment Scoring for the Twelve Factors Used in FPPA

The Site Assessment criteria used in the Farmland Protection Policy Act (FPPA) rule are designed to assess important factors other than the agricultural value of the land when determining which alternative sites should receive the highest level of protection from conversion to non agricultural uses.

Twelve factors are used for Site Assessment and ten factors for corridor-type sites. Each factor is listed in an outline form, without detailed definitions or guidelines to follow in the rating process. The purpose of this document is to expand the definitions of use of each of the twelve Site Assessment factors so that all persons can have a clear understanding as to what each factor is intended to evaluate and how points are assigned for given conditions.

In each of the 12 factors a number rating system is used to determine which sites deserve the most protection from conversion to non-farm uses. The higher the number value given to a proposed site, the more protection it will receive. The maximum scores are 10, 15 and 20 points, depending upon the relative importance of each particular question. If a question significantly relates to why a parcel of land should not be converted, the question has a maximum possible protection value of 20, whereas a question which does not have such a significant impact upon whether a site would be converted, would have fewer maximum points possible, for example 10.

The following guidelines should be used in rating the twelve Site Assessment criteria:

1. How much land is in non-urban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent:	15 points
90-20 percent:	14 to 1 points
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the area within one mile of the proposed site is non-urban area. For purposes of this rule, "non-urban" should include:

- Agricultural land (crop-fruit trees, nuts, oilseed)
- Range land
- Forest land
- Golf Courses
- Non paved parks and recreational areas
- Mining sites
- Farm Storage
- Lakes, ponds and other water bodies
- Rural roads, and through roads without houses or buildings
- Open space
- Wetlands
- Fish production
- Pasture or hayland

Urban uses include:

- Houses (other than farm houses)
- Apartment buildings
- Commercial buildings
- Industrial buildings
- Paved recreational areas (i.e. tennis courts)
- Streets in areas with 30 structures per 40 acres
- Gas stations

- Equipment, supply stores
- Off-farm storage
- Processing plants
- Shopping malls
- Utilities/Services
- Medical buildings

In rating this factor, an area one-mile from the outer edge of the proposed site should be outlined on a current photo; the areas that are urban should be outlined. For rural houses and other buildings with unknown sizes, use 1 and 1/3 acres per structure. For roads with houses on only one side, use one half of road for urban and one half for non-urban.

The purpose of this rating process is to insure that the most valuable and viable farmlands are protected from development projects sponsored by the Federal Government. With this goal in mind, factor S1 suggests that the more agricultural lands surrounding the parcel boundary in question, the more protection from development this site should receive. Accordingly, a site with a large quantity of non-urban land surrounding it will receive a greater
number of points for protection from development. Thus, where more than 90 percent of the area around the proposed site (do not include the proposed site in this assessment) is non-urban, assign 15 points. Where 20 percent or less is
non-urban, assign 0 points. Where the area lies between 20 and 90 percent non-urban, assign appropriate points from 14 to 1, as noted below.

Percent Non-Urban Land within 1 mile	**Points**
90 percent or greater	15
85 to 89 percent	14
80 to 84 percent	13
75 to 79 percent	12
70 to 74 percent	11
65 to 69 percent	10
60 to 64 percent	9
55 to 59 percent	8
50 to 54 percent	7
45 to 49 percent	6
40 to 44 percent	5
35 to 39 percent	4
30 to 24 percent	3
25 to 29 percent	2
21 to 24 percent	1
20 percent or less	0

2. How much of the perimeter of the site borders on land in non-urban use?

More than 90 percent:	l0 points
90 to 20 percent:	9 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the land adjacent to the proposed site is non-urban use. Where factor #1 evaluates the general location of the proposed site, this factor evaluates the immediate perimeter of the site. The definition of urban and non-urban uses in factor #1 should be used for this factor.

In rating the second factor, measure the perimeter of the site that is in non-urban and urban use. Where more than 90 percent of the perimeter is in non-urban use, score this factor 10 points. Where less than 20 percent, assign 0 points. If a road is next to the perimeter, class the area according to the

use on the other side of the road for that area. Use 1 and 1/3 acre per structure if not otherwise known. Where 20 to 90 percent of the perimeter is non-urban, assign points as noted below:

Percentage of Perimeter Bordering Land	Points
90 percent or greater	10
82 to 89 percent	9
74 to 81 percent	8
65 to 73 percent	7
58 to 65 percent	6
50 to 57 percent	5
42 to 49 percent	4
34 to 41 percent	3
27 to 33 percent	2
21 to 26 percent	1
20 percent or Less	0

3. How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last ten years?

More than 90 percent:	20 points
90 to 20 percent:	19 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the proposed conversion site has been used or managed for agricultural purposes in the past 10 years.

Land is being farmed when it is used or managed for food or fiber, to include timber products, fruit, nuts, grapes, grain, forage, oil seed, fish and meat, poultry and dairy products.

Land that has been left to grow up to native vegetation without management or harvest will be considered as abandoned and therefore not farmed. The proposed conversion site should be evaluated and rated according to the percent, of the site farmed.

If more than 90 percent of the site has been farmed 5 of the last 10 years score the site as follows:

Percentage of Site Farmed	Points
90 percent or greater	20
86 to 89 percent	19
82 to 85 percent	18
78 to 81 percent	17
74 to 77 percent	16
70 to 73 percent	15
66 to 69 percent	14
62 to 65 percent	13
58 to 61 percent	12
54 to 57 percent	11
50 to 53 percent	10
46 to 49 percent	9
42 to 45 percent	8
38 to 41 percent	7
35 to 37 percent	6
32 to 34 percent	5
29 to 31 percent	4
26 to 28 percent	3

23 to 25 percent	2
20 to 22 percent percent or Less	1
Less than 20 percent	0

4. Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected:	20 points
Site is not protected:	0 points

This factor is designed to evaluate the extent to which state and local government and private programs have made efforts to protect this site from conversion.

State and local policies and programs to protect farmland include:

State Policies and Programs to Protect Farmland

1. Tax Relief:

   A. Differential Assessment: Agricultural lands are taxed on their agricultural use value, rather than at market value. As a result, farmers pay fewer taxes on their land, which helps keep them in business, and therefore helps to insure that the farmland will not be converted to nonagricultural uses.

      1. Preferential Assessment for Property Tax: Landowners with parcels of land used for agriculture are given the privilege of differential assessment.

      2. Deferred Taxation for Property Tax: Landowners are deterred from converting their land to nonfarm uses, because if they do so, they must pay back taxes at market value.

      3. Restrictive Agreement for Property Tax: Landowners who want to receive Differential Assessment must agree to keep their land in - eligible use.

   B. Income Tax Credits

   Circuit Breaker Tax Credits: Authorize an eligible owner of farmland to apply some or all of the property taxes on his or her farmland and farm structures as a tax credit against the owner's state income tax.

   C. Estate and Inheritance Tax Benefits

   Farm Use Valuation for Death Tax: Exemption of state tax liability to eligible farm estates.

2. "Right to farm" laws:

   Prohibits local governments from enacting laws which will place restrictions upon normally accepted farming practices, for example, the generation of noise, odor or dust.

3. Agricultural Districting:

   Wherein farmers voluntarily organize districts of agricultural land to be legally recognized geographic areas. These farmers receive benefits, such as protection from annexation, in exchange for keeping land within the district for a given number of years.

4. Land Use Controls: Agricultural Zoning.

Types of Agricultural Zoning Ordinances include:

A. Exclusive: In which the agricultural zone is restricted to only farm-related dwellings, with, for example, a minimum of 40 acres per dwelling unit.

B. Non-Exclusive: In which non-farm dwellings are allowed, but the density remains low, such as 20 acres per dwelling unit.

Additional Zoning techniques include:

A. Slidinq Scale: This method looks at zoning according to the total size of the parcel owned. For example, the number of dwelling units per a given number of acres may change from county to county according to the existing land acreage to dwelling unit ratio of surrounding parcels of land within the specific area.

B. Point System or Numerical Approach: Approaches land use permits on a case by case basis.

LESA: The LESA system (Land Evaluation-Site Assessment) is used as a tool to help assess options for land use on an evaluation of productivity weighed against commitment to urban development.

C. Conditional Use: Based upon the evaluation on a case by case basis by the Board of Zoning Adjustment. Also may include the method of using special land use permits.

5. Development Rights:

A. Purchase of Development Rights (PDR): Where development rights are purchased by Government action.

Buffer Zoning Districts: Buffer Zoning Districts are an example of land purchased by Government action. This land is included in zoning ordinances in order to preserve and protect agricultural lands from non-farm land uses encroaching upon them.

B. Transfer of Development Rights (TDR): Development rights are transferable for use in other locations designated as receiving areas. TDR is considered a locally based action (not state), because it requires a voluntary decision on the part of the individual landowners.

6. Governor's Executive Order: Policy made by the Governor, stating the importance of agriculture, and the preservation of agricultural lands. The Governor orders the state agencies to avoid the unnecessary conversion of important farmland to nonagricultural uses.

7. Voluntary State Programs:

A. California's Program of Restrictive Agreements and Differential Assessments: The California Land Conservation Act of 1965, commonly known as the Williamson Act, allows cities, counties and individual landowners to form agricultural preserves and enter into contracts for 10 or more years to insure that these parcels of land remain strictly for agricultural use. Since 1972 the Act has extended eligibility to recreational and open space lands such as scenic highway corridors, salt ponds and wildlife preserves. These contractually restricted lands may be taxed differentially for their real value. One hundred-acre districts constitute the minimum land size eligible.

Suggestion: An improved version of the Act would state that if the land is converted after the contract expires, the landowner must pay the difference in the taxes between market value for the land and the agricultural tax value which he or she had been

paying under the Act. This measure would help to insure that farmland would not be converted after the 10 year period ends.

B. Maryland Agricultural Land Preservation Program: Agricultural landowners within agricultural districts have the opportunity to sell their development rights to the Maryland Land Preservation Foundation under the agreement that these landowners will not subdivide or develop their land for an initial period of five years. After five years the landowner may terminate the agreement with one year notice.

   As is stated above under the California Williamson Act, the landowner should pay the back taxes on the property if he or she decides to convert the land after the contract expires, in order to discourage such conversions.

C. Wisconsin Income Tax Incentive Program: The Wisconsin Farmland Preservation Program of December 1977 encourages local jurisdictions in Wisconsin to adopt agricultural preservation plans or exclusive agricultural district zoning ordinances in exchange for credit against state income tax and exemption from special utility assessment. Eligible candidates include local governments and landowners with at least 35 acres of land per dwelling unit in agricultural use and gross farm profits of at least $6.000 per year, or $18,000 over three years.

8. Mandatory State Programs:

A. The Environmental Control Act in the state of Vermont was adopted in 1970 by the Vermont State Legislature. The Act established an environmental board with 9 members (appointed by the Governor) to implement a planning process and a permit system to screen most subdivisions and development proposals according to specific criteria stated in the law. The planning process consists of an interim and a final Land Capability and Development Plan, the latter of which acts as a policy plan to control development. The policies are written in order to:

   - prevent air and water pollution;
   - protect scenic or natural beauty, historic sites and rare and irreplaceable natural areas; and
   - consider the impacts of growth and reduction of development on areas of primary agricultural soils.

B. The California State Coastal Commission: In 1976 the Coastal Act was passed to establish a permanent Coastal Commission with permit and planning authority The purpose of the Coastal Commission was and is to protect the sensitive coastal zone environment and its resources, while accommodating the social and economic needs of the state. The Commission has the power to regulate development in the coastal zones by issuing permits on a case by case basis until local agencies can develop their own coastal plans, which must be certified by the Coastal Commission.

C. Hawaii's Program of State Zoning: In 1961, the Hawaii State Legislature established Act 187, the Land Use Law, to protect the farmland and the welfare of the local people of Hawaii by planning to avoid “unnecessary urbanization”. The Law made all state lands into four districts: agricultural, conservation, rural and urban. The Governor appointed members to a State Land Use Commission, whose duties were to uphold the Law and form the boundaries of the four districts. In addition to state zoning, the Land Use Law introduced a program of Differential Assessment, wherein agricultural landowners paid taxes on their land for its agricultural use value, rather than its market value.

D. The Oregon Land Use Act of 1973: This act established the Land Conservation and Development Commission (LCDC) to provide statewide planning goals and guidelines.

Under this Act, Oregon cities and counties are each required to draw up a comprehensive plan, consistent with statewide planning goals. Agricultural land preservation is high on the list of state goals to be followed locally.

If the proposed site is subject to or has used one or more of the above farmland protection programs or policies, score the site 20 points. If none of the above policies or programs apply to this site, score 0 points.

5. How close is the site to an urban built-up area?

The site is 2 miles or more from an urban built-up area	15 points
The site is more than 1 mile but less than 2 miles from an urban built-up area	10 points
The site is less than 1 mile from, but is not adjacent to an urban built-up area	5 points
The site is adjacent to an urban built-up area	0 points

This factor is designed to evaluate the extent to which the proposed site is located next to an existing urban area. The urban built-up area must be 2500 population. The measurement from the built-up area should be made from the point at which the density is 30 structures per 40 acres and with no open or non-urban land existing between the major built-up areas and this point. Suburbs adjacent to cities or urban built-up areas should be considered as part of that urban area.

For greater accuracy, use the following chart to determine how much protection the site should receive according to its distance from an urban area. See chart below:

Distance From Perimeter of Site to Urban Area	Points
More than 10,560 feet	15
9,860 to 10,559 feet	14
9,160 to 9,859 feet	13
8,460 to 9,159 feet	12
7,760 to 8,459 feet	11
7,060 to 7,759 feet	10
6,360 to 7,059 feet	9
5,660 to 6,359 feet	8
4,960 to 5,659 feet	7
4,260 to 4,959 feet	6
3,560 to 4,259 feet	5
2,860 to 3,559 feet	4
2,160 to 2,859 feet	3
1,460 to 2,159 feet	2
760 to 1,459 feet	1
Less than 760 feet (adjacent)	0

6. How close is the site to water lines, sewer lines and/or other local facilities and services whose capacities and design would promote nonagricultural use?

None of the services exist nearer than 3 miles from the site	15 points
Some of the services exist more than one but less than 3 miles from the site	10 points
All of the services exist within 1/2 mile of the site	0 points

This question determines how much infrastructure (water, sewer, etc.) is in place which could facilitate nonagricultural development. The fewer facilities in place, the more difficult it is to develop an area. Thus, if a proposed site is further away from these services (more than 3 miles distance away), the site should be awarded the highest number of points (15). As the distance of the parcel of land to services decreases, the number of points awarded declines as well. So, when the site is equal to or further than 1 mile but less than 3 miles away from services, it should be given 10 points. Accordingly, if this distance is 1/2 mile to less than 1 mile, award 5 points; and if the distance from land to services is less than 1/2 mile, award 0 points.

Distance to public facilities should be measured from the perimeter of the parcel in question to the nearest site(s) where necessary facilities are located. If there is more than one distance (i.e. from site to water and from site to sewer), use the average distance (add all distances and then divide by the number of different distances to get the average).

Facilities which could promote nonagricultural use include:

- Water lines
- Sewer lines
- Power lines
- Gas lines
- Circulation (roads)
- Fire and police protection
- Schools

7. Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage of Farm Units in Operation with $1,000 or more in sales.)

As large or larger:	10 points
Below average: Deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more is below average	9 to 0 points

This factor is designed to determine how much protection the site should receive, according to its size in relation to the average size of farming units within the county. The larger the parcel of land, the more agricultural use value the land possesses, and vice versa. Thus, if the farm unit is as large or larger than the county average, it receives the maximum number of points (10). The smaller the parcel of land compared to the county average, the fewer number of points given. Please see below:

Parcel Size in Relation to Average County Size	Points
Same size or larger than average (l00 percent)	10
95 percent of average	9
90 percent of average	8
85 percent of average	7
80 percent of average	6
75 percent of average	5
70 percent of average	4
65 percent of average	3
60 percent of average	2
55 percent of average	1
50 percent or below county average	0

State and local Natural Resources Conservation Service offices will have the average farm size information, provided by the latest available Census of Agriculture data

8. If this site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project	10 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project	9 to 1 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project	0 points

This factor tackles the question of how the proposed development will affect the rest of the land on the farm The site which deserves the most protection from conversion will receive the greatest number of points, and vice versa. For example, if the project is small, such as an extension on a house, the rest of the agricultural land would remain farmable, and thus a lower number of points is given to the site. Whereas if a large-scale highway is planned, a greater portion of the land (not including the site) will become non-farmable, since access to the farmland will be blocked; and thus, the site should receive the highest number of points (10) as protection from conversion

Conversion uses of the Site Which Would Make the Rest of the Land Non-Farmable by Interfering with Land Patterns

Conversions which make the rest of the property nonfarmable include any development which blocks accessibility to the rest of the site Examples are highways, railroads, dams or development along the front of a site restricting access to the rest of the property.

The point scoring is as follows:

Amount of Land Not Including the Site Which Will Become Non-Farmable	Points
25 percent or greater	10
23 - 24 percent	9
21 - 22 percent	8
19 - 20 percent	7
17 - 18 percent	6
15 - 16 percent	5
13 - 14 percent	4
11 - 12 percent	3
9 - 11 percent	2
6 - 8 percent	1
5 percent or less	0

9. Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available	5 points
Some required services are available	4 to 1 point(s)
No required services are available	0 points

This factor is used to assess whether there are adequate support facilities, activities and industry to keep the farming business in business. The more support facilities available to the agricultural

landowner, the more feasible it is for him or her to stay in production. In addition, agricultural support facilities are compatible with farmland. This fact is important, because some land uses are not compatible; for example, development next to farmland cam be dangerous to the welfare of the agricultural land, as a result of pressure from the neighbors who often do not appreciate the noise, smells and dust intrinsic to farmland. Thus, when all required agricultural support services are available, the maximum number of points (5) are awarded. When some services are available, 4 to 1 point(s) are awarded; and consequently, when no services are available, no points are given. See below:

Percent of Services Available	Points
100 percent	5
75 to 99 percent	4
50 to 74 percent	3
25 to 49 percent	2
1 to 24 percent	1
No services	0

10. Does the site have substantial and well-maintained on farm investments such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment	20 points
Moderate amount of non-farm investment	19 to 1 point(s)
No on-farm investments	0 points

This factor assesses the quantity of agricultural facilities in place on the proposed site. If a significant agricultural infrastructure exists, the site should continue to be used for farming, and thus the parcel will receive the highest amount of points towards protection from conversion or development. If there is little on farm investment, the site will receive comparatively less protection. See-below:

Amount of On-farm Investment	Points
As much or more than necessary to maintain production (100 percent)	20
95 to 99 percent	19
90 to 94 percent	18
85 to 89 percent	17
80 to 84 percent	16
75 to 79 percent	15
70 to 74 percent	14
65 to 69 percent	13
60 to 64 percent	12
55 to 59 percent	11
50 to 54 percent	10
45 to 49 percent	9
40 to 44 percent	8
35 to 39 percent	7
30 to 34 percent	6
25 to 29 percent	5
20 to 24 percent	4
15 to 19 percent	3
10 to 14 percent	2
5 to 9 percent	1
0 to 4 percent	0

11. Would the project at this site, by converting farmland to nonagricultural use, reduce the support for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted	10 points
Some reduction in demand for support services if the site is converted	9 to 1 point(s)
No significant reduction in demand for support services if the site is converted	0 points

This factor determines whether there are other agriculturally related activities, businesses or jobs dependent upon the working of the pre-converted site in order for the others to remain in production. The more people and farming activities relying upon this land, the more protection it should receive from conversion. Thus, if a substantial reduction in demand for support services were to occur as a result of conversions, the proposed site would receive a high score of 10; some reduction in demand would receive 9 to 1 point(s), and no significant reduction in demand would receive no points.

Specific points are outlined as follows:

Amount of Reduction in Support Services if Site is Converted to Nonagricultural Use	**Points**
Substantial reduction (100 percent)	10
90 to 99 percent	9
80 to 89 percent	8
70 to 79 percent	7
60 to 69 percent	6
50 to 59 percent	5
40 to 49 percent	4
30 to 39 percent	3
20 to 29 percent	2
10 to 19 percent	1
No significant reduction (0 to 9 percent)	0

12. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?

Proposed project is incompatible with existing agricultural use of surrounding farmland	10 points
Proposed project is tolerable of existing agricultural use of surrounding farmland	9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland	0 points

Factor 12 determines whether conversion of the proposed agricultural site will eventually cause the conversion of neighboring farmland as a result of incompatibility of use of the first with the latter. The more incompatible the proposed conversion is with agriculture, the more protection this site receives from conversion. Therefor-, if the proposed conversion is incompatible with agriculture, the site receives 10 points. If the project is tolerable with agriculture, it receives 9 to 1 points; and if the proposed conversion is compatible with agriculture, it receives 0 points.

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor-type site or design alternative for protection as farmland along with the land evaluation information.

For Water and Waste Programs, corridor analyses are not applicable for distribution or collection networks. Analyses are applicable for transmission or trunk lines where placement of the lines are flexible.

(1) How much land is in nonurban use within a radius of 1.0 mile form where the project is intended?

(2)	More than 90 percent	(3)	15 points
(4)	90 to 20 percent	(5)	14 to 1 point(s).
(6)	Less than 20 percent	(7)	0 points

(2) How much of the perimeter of the site borders on land in nonurban use?

(3)	More than 90 percent	(4)	10 point(s)
(5)	90 to 20 percent	(6)	9 to 1 points
(7)	less than 20 percent	(8)	0 points

(3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

(4)	More than 90 percent	(5)	20 points
(6)	90 to 20 percent	(7)	19 to 1 point(s)
(8)	Less than 20 percent	(9)	0 points

(4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected	20 points
Site is not protected	0 points

(5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage of Farm Units in Operation with $1,000 or more in sales.)

As large or larger	10 points
Below average deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average	9 to 0 points

(6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project	25 points
Acreage equal to between 25 and 5 percent of the acres directly convened by the project	1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project	0 points

(7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available	5 points
Some required services are available	4 to 1 point(s)
No required services are available	0 points

(8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment	20 points
Moderate amount of on-farm investment	19 to 1 point(s)
No on-farm investment	0 points

(9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is convened	25 points
Some reduction in demand for support services if the site is convened	1 to 24 point(s)
No significant reduction in demand for support services if the site is converted	0 points

(10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?

Proposed project is incompatible to existing agricultural use of surrounding farmland	10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland	9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland	0 points

United States Department of the Interior
NATIONAL PARK SERVICE

Everglades and Dry Tortugas National Parks
40001 State Road 9336
Homestead, Florida 33034

In Reply Refer to:
L76

DEC 05 2014

Eric P. Summa
Chief, Environmental Branch
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

Re: Potential Effects to Historic Properties for the Draft Environmental Assessment (EA) for the Operation Field Test Relaxation of the Gage-3273 (G-3273)

Dear Mr. Summa:

Thank you for consulting with Everglades National Park and seeking our comments regarding the Jacksonville District, U.S. Army Corps of Engineers' Draft Environmental Assessment (EA) for the operation field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. In your letter, you also discussed additional project stages that would include an 8.5 feet canal stage and the development of a new operation plan to replace the existing Everglades Restoration Transition Plan.

The park concurs with your determination that the proposed project will have an effect on cultural resources. The G-3273 gage and the L-29 Canal stage of 7.5 feet in increment one (1) will only occur during a one-year time period, thus the park concurs with your recommendation of No Adverse Effect to Historic Properties for this stage of the proposed action. The additionally proposed increments, stage two (2) and stage three (3) are for 8.5 feet and are for a much longer duration. The park is unable to provide comments on proposed stages two and three until further analyses and documentation is completed regarding the project's effects to cultural resources.

We look forward to working with you in the future to develop a cultural resource monitoring strategy and inadvertent discovery plan as you move forward with stages two and three. If you have any questions or comments please contact Penelope Del Bene, Chief of Cultural Resources for Everglades National Park by phone at (305) 242-7755 or by email at penelope_delbene@nps.gov.

Sincerely,

for Robert J. Krumenaker
Acting Superintendent

Nasuti, Melissa A SAJ

From: Palmer, Kevin [kevin_palmer@fws.gov]
Sent: Wednesday, December 17, 2014 11:23 AM
To: Nasuti, Melissa A SAJ
Cc: miles meyer; Lori Miller
Subject: [EXTERNAL] Species list for G-3273 Relaxation

Melissa,

Thank you for requesting an update to the federally listed species and their designated critical habitat and candidate species list that may be present within the G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy project area. Our original letter was submitted on September 11, 2014, and the 90-day verification window has ended. We feel that if the following amendments to the table are made, the Corps will have an accurate species list which will be good for an additional 90 days.

1. The status designation for the wood stork should be changed to T
2. The Carter's small-flowered flax status designation should be changed to E, Pr CH
3. The Florida brickell-bush status designation should be changed to E, Pr CH
4. The Florida bristle fern status designation should be changed to Pr E

Again, thank you for coordinating with the Service on this requirement and we look forward to seeing a successful field test of the G-3273 and other system components.

Please call with any questions.

Kevin

--

****

Kevin Palmer
U.S. Fish and Wildlife Service
South Florida Ecological Services Field Office
1339 20th Street
Vero Beach, Florida 32960-3559
Phone: 772-469-4280
Fax: 772-562-4288 & 564-7393
Email: Kevin_Palmer@fws.gov

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

JAN 06 2015

Mr. Larry Williams, Field Supervisor
U.S. Fish and Wildlife Service
1339 20th Street
Vero Beach, FL 32960

Dear Mr. Williams:

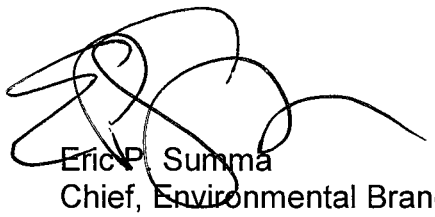
In accordance with provisions of Section 7 of the Endangered Species Act, as amended, the U.S. Army Corps of Engineers (Corps) is hereby initiating consultation with the U.S. Fish and Wildlife Service (USFWS) for an operations field test that will include relaxation of the Gage-3273 (G-3273) constraint and operation of water control structures S-356 and S-357 N. The purpose of this field test is to evaluate raising or removing the existing G-3273 stage constraint to enable increased water deliveries from Water Conservation Area 3A (WCA 3A) to Everglades National Park (ENP) through Northeast Shark River Slough for the benefit of natural resources. In addition, relaxation or removal of the G-3273 constraint is a Term and Condition of the 2010 Everglades Restoration Transition Plan Biological Opinion. The field test is the first in a series of sequential efforts that are intended to incorporate constructed features of the Modified Water Deliveries (MWD) to ENP and Canal 111 South Dade projects into system-wide Central and Southern Florida (C&SF) Project operations. The Corps is preparing an Environmental Assessment (EA) to evaluate alternatives for the field test. The attached initiation package describes the proposed action.

The C&SF system-wide project is located in South Florida and includes portions of several counties as well as portions of ENP, Big Cypress National Preserve, and adjacent areas. The 1992 MWD General Design Memorandum defines the project boundary as Shark River Slough and that portion of the C&SF Project north of S-331 to include WCA 3. G-3273 lies within eastern ENP, directly west of 8.5 Square Mile Area

Pursuant to the Endangered Species Act, the Corps has determined that the proposed action will have the following effects on federally listed species and critical habitat as illustrated in Table 1. We request your concurrence with our determinations pursuant to the Endangered Species Act.

If you have any questions concerning this project or our determination, please contact Mrs. Melissa Nasuti by email Melissa.A.Nasuti@usace.army.mil or by telephone 904-232-1368. Thank you for your assistance in this matter.

Sincerely,



Eric P. Summa
Chief, Environmental Branch

Enclosure

Copies Furnished:

Kevin Palmer, U.S. Fish & Wildlife Service, South Florida Ecological Services Office, 1339 20th Street, Vero Beach, Florida 32960-3559

Table 1. List of Federally Threatened and Endangered Species within the Project Area and Determination (E: Endangered, T: Threatened, SA: Similarity of Appearance, CH: Critical Habitat, C: Candidate Species)

Common Name	Scientific Name	Status	May Affect, Likely to Adversely Effect	May Affect, Not Likely to Adversely Effect	No Effect
Mammals					
Florida panther	*Puma concolor coryi*	E			X
Florida manatee	*Trichechus manatus latirostris*	E, CH			X
Florida bonneted bat	*Eumops floridanus*	E		X	
Birds					
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH		X	
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH		X	
Piping plover	*Charadrius melodus*	T			X
Red-cockaded woodpecker	*Picoides borealis*	E			X
Roseate tern	*Sterna dougallii dougallii*	T			X
Wood stork	*Mycteria americana*	T		X	
Reptiles					
American Alligator	*Alligator mississippiensis*	T, SA			X
American crocodile	*Crocodylus acutus*	T, CH			X
Eastern indigo snake	*Drymarchon corais couperi*	T			X
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X

Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	E			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E, CH			X
Invertebrates					
Bartram's hairstreak butterfly	*Strymon acis bartrami*	C			X
Elkhorn coral	*Acropora palmata*	T, CH			X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	C			X
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E			X
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E			X
Staghorn coral	*Acropora cervicornis*	T, CH			X
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T			X
Plants					
Crenulate lead plant	*Amorpha crenulata*	E			X
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E		X	
Garber's spurge	*Chamaesyce garberi*	T		X	
Johnson's seagrass*	*Halophila johnsonii*	E, CH			X
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E			X
Small's milkpea	*Galactia smallii*	E		X	

Tiny polygala	*Polygala smallii*	E		X	
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	C			X
Blodgett's silverbush	*Argythamnia blodgettii*	C			X
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH			X
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, Pr CH			X
Everglades bully	*Sideroxylon reclinatum* spp. *austrofloridense*	C			X
Florida brickell-bush	*Brickellia mosieri*	E, Pr CH			X
Florida bristle fern	*Trichomanes punctatum* spp. *floridanum*	Pr E			X
Florida pineland crabgrass	*Digitaria pauciflora*	C			X
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C			X
Florida semaphore cactus	*Consolea corallicola*	E			X
Pineland sandmat	*Chamaesyce deltoidea* ssp. *pinetorum*	C			X
Sand flax	*Linum arenicola*	C			X

E=Endangered; T=Threatened; SA=Similarity of Appearance; CH=Critical Habitat; Candidate Species, Pr E = Proposed Endangered, Pr CH = Proposed Critical Habitat

* Marine species under the purview of the National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS.

PROPOSED G-3273 CONSTRAINT RELAXATION/S-356 FIELD TEST AND S-357N OPERATIONAL STRATEGY

COMPLETE INITIATION PACKAGE

U.S. FISH AND WILDLIFE SERVICE

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1.0 PROJECT AUTHORITY

A minimum schedule of water deliveries from the Central and Southern Florida (C&SF) Project to Everglades National Park (ENP) was authorized by Congress in 1970 in Public Law (PL) 91-282. Section 1302 of the Supplemental Appropriations Act of 1984 (PL 98-181), passed in December 1983, authorized the U.S. Army Corps of Engineers (Corps), with the concurrence of the National Park Service (NPS) and South Florida Water Management District (SFWMD), to deviate from the minimum delivery schedule for two years in order to conduct an Experimental Program of water deliveries to improve conditions within ENP. Section 107 of PL 102-104 amended PL 98-181 to allow continuation of the Experimental Program until modifications to the C&SF Project, authorized by Section 104 of the ENP Protection and Expansion Act of 1989 (PL 101-229) were completed and implemented. The purpose of PL 101-229 was "To modify the boundaries of the Everglades National Park and to provide for the protection of lands, waters, and natural resources within the park, and for other purposes". This act also authorized the Secretary of the Army, upon completion of a General Design Memorandum (GDM), to modify the C&SF Project to improve water deliveries to the park and to the extent practicable permit steps to restore the natural hydrology within the park. The Modified Water Deliveries (MWD to ENP GDM and Final Environmental Impact Statement (EIS) were published in July 1992 (USACE 1992).

When the Corps completed the MWD GDM and Final EIS in 1992, the operational plan identified in the GDM was not considered final. The recommended plan was selected on the basis of expected environmental benefits derived from a modified water delivery schedule. The GDM called for hydrologic modeling, coordination of modeling results, and environmental evaluations to develop an acceptable water control plan. The GDM also recognized that review and adjustment of project operations would continue as experience and additional assessment of data revealed potential for improvement.

The PL for the MWD Project (PL 101-229) was amended as PL 108-7 (Appropriations Act, 2003). This authorization bill identified Alternative 6D (the Selected Alternative in the July 2000 General Reevaluation Report [GRR] and Final Supplemental EIS for 8.5 Square Mile Area [8.5 SMA]) as the plan to be built, authorized relocation of residents, and other provisions (USACE 2000).

2.0 LOCATION

The MWD Project is a specific feature of the C&SF Project that is located in south Florida and includes portions of Miami-Dade County as well as portions of ENP and adjacent areas (**FIGURE 1**). The 1992 MWD GDM and Final EIS defines the project boundary as Shark River Slough (SRS) and that portion of the C&SF Project north of structure 331 (S-331) to include Water Conservation Area 3 (WCA 3).

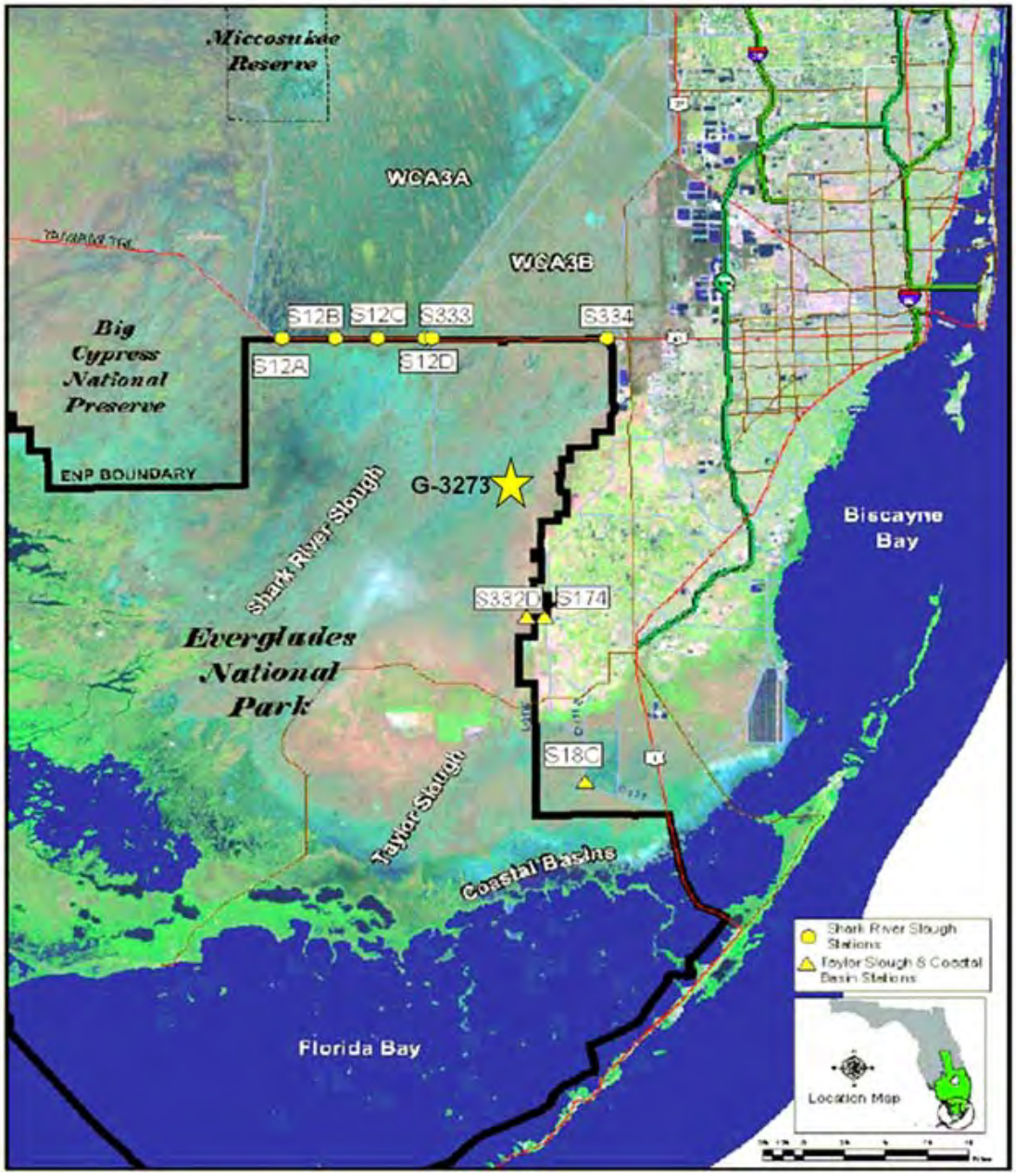

FIGURE 1. PROJECT LOCATION

3.0 PROJECT BACKGROUND

The MWD Project provides a system of water deliveries to ENP across the full width of the historic SRS flow-way and consists of four main components: (1) conveyance and seepage control features to facilitate flow through the system from WCA 3A to WCA 3B and to limit seepage eastward from WCA 3B and ENP; (2) modifications to Tamiami Trail to facilitate flow under the road to SRS; (3) flood mitigation for the developed East Everglades area (also referred to as the 8.5 SMA); and (4) project implementation support, which includes monitoring and operational changes. The MWD GDM and Final EIS (USACE 1992) includes a discussion of the location, capacity, and environmental impacts for the proposed structural modifications,

which included structures S-345A, B and C; S-349A, B and C; S-355A and B; S-334 modification, removal of the L-67 extension levee and borrow canal filling; and a levee and canal system for flood mitigation in 8.5 SMA. The levee and canal system included two pumping stations, S-356 and S-357 (**FIGURE 2**).

The 8.5 SMA features were constructed to provide flood mitigation to the Las Palmas Community in order to prevent impacts from higher stages within Northeast Shark River Slough (NESRS) resulting from the implementation of MWD to the private land owners located east of ENP. A GRR and Final Supplemental EIS for 8.5 SMA were completed in July 2000 (USACE 2000). The GRR recommended Alternative 6D, consisting of a perimeter levee (Levee 357W [L-357W]), internal levees, a seepage collection canal, a new pump station (S-357), and a detention cell that would discharge into the proposed C-111 South Dade North Detention Area (NDA), as part of the C-111 South Dade Project (**FIGURE 2**). A design refinement for 8.5 SMA and environmental assessment (EA) were completed in August of 2012 (USACE 2012a). An operational test conducted in 2009 indicated that the S-357 pump station may have greater efficiency with removing water from the 8.5 SMA and adjacent lands than envisioned, causing an increase in seepage in the southwest corner. To allow for utilization of the S-357 pump station at maximum capacity, an additional east-west seepage collection canal (C-358) was identified to prevent groundwater stage increases in the southwest corner (east of L-357W). In addition, the 8.5 SMA detention area would need to be connected to the proposed C-111 South Dade NDA. A structure (S-357N), not yet constructed, would connect this seepage collection canal to the existing infrastructure.

Construction of the 8.5 SMA features, as described in the July 2000 GRR and Final Supplemental EIS was completed prior to completion of the proposed full build-out of the C-111 South Dade NDA. The C-111 South Dade Project was constructed as part of the ENP–South Dade Conveyance Canals Project authorized by the Flood Control Act (FCA) of 1968 PL 90-483. This Act authorized modifications to the existing C&SF Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). Further modifications to the C-111 were authorized as an addition to the C&SF project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303). The C-111 South Dade Integrated GRR and EIS was published in May 1994 (USACE 1994). This report described a conceptual plan for five pump stations and levee-bounded retention/detention areas to be built west of the L-31N Canal, between the 8.5 SMA and the Frog Pond Area to control seepage out of ENP while providing flood mitigation to agricultural lands east of C-111 Canal (**FIGURE 2**). The original and existing configuration of these structural features are described in detail in the 2006 Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow Final Supplemental EIS (USACE 2006) and the 2012 EA for the expansion of the C-111 South Dade NDA (USACE 2012b).

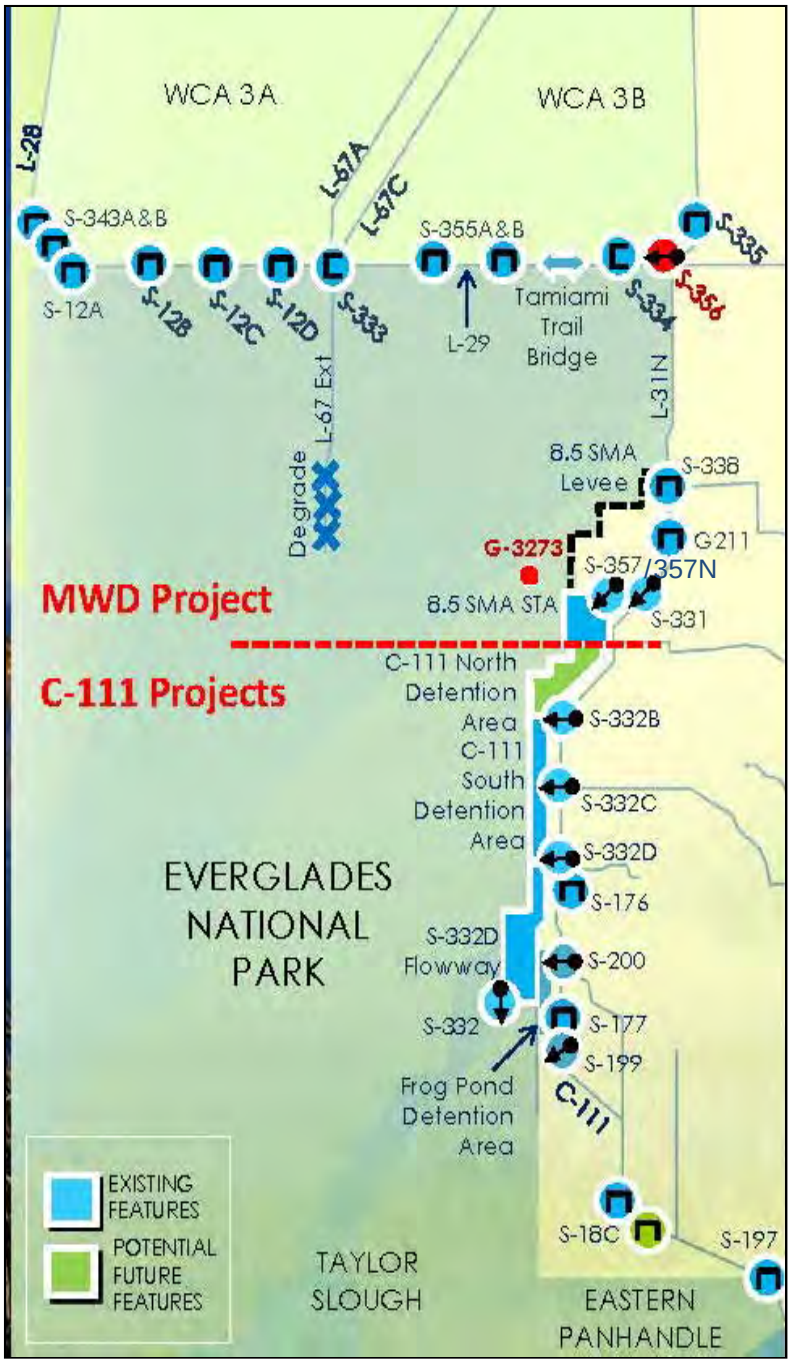

FIGURE 2. RELEVANT C&SF PROECT FEATURES OF THE MWD PROJECT AND C-111 SOUTH DADE PROJECTS

Much of the MWD Project has been completed, including the 8.5 SMA Project, construction of S-355A and B, S-333 and S-334 modifications, S-356, Tiger Tail camp raising, removal of four miles of the L-67 Extension Levee, and Tamiami Trail modifications. However, some features originally included in the 1992 MWD GDM and Final EIS, including features to provide hydrologic connectivity between WCA 3A and WCA 3B and complete degradation of the L-67 Extension Levee and adjacent canal, have not been completed for various reasons, including

operational (water levels) constraints within WCA 3B, lowered MWD maximum operational stages for the L-29 Canal (9.7 feet National Geodetic Vertical Datum of 1929 [NGVD] was assumed with the 1992 MWD GDM and Final EIS), and potential water quality concerns.

Constructed features of the C-111 South Dade Project include the detention areas 332-B, 332-C and 332-D, the L-320 and L-322 levees which form the east and west boundary of the C-111 South Dade buffer area from S-332 D north to S-332 C, and the L-323 levee which completes the S-333 B-C connector and forms a secondary buffer area east of the C-111 South Dade area.

Operations in the project area are currently governed by the WCAs, ENP, ENP to South Dade Conveyance System (SDCS) Water Control Plan (USACE 2012c). The Corps, Jacksonville District, is initiating the Gage-3273 (G-3273) and S-356 operations field test to raise the current operational stage constraint for G-3273, and operate the S-356 pump station to return seepage from NESRS to the adjacent L-31N Canal. The field test will also implement a testing protocol to assist in defining operating criteria for the new 8.5 SMA S-357N water control structure following completion of construction. The MWD Increment 1 Field Test will be the first increment in a series of three related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operating Plan (COP), for the operation of the water management infrastructure associated with the MWD and C-111 South Dade Projects.

The first increment will maintain the current 7.5 feet NGVD maximum operating limit in the L-29 Canal. Information and operational criteria identified from the field test (Increment 1) will be used to develop an expanded set of operations and monitoring criteria for a subsequent operational field test (Increment 2) that will raise the maximum operating limit in the L-29 Canal level above 7.5 feet NGVD, up to a maximum of 8.5 feet NGVD, as outlined in the 1992 MWD GDM and Final EIS (USACE 1992). The third increment is development of the COP that incorporates constructed features of the MWD and C-111 South Dade Projects into the WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Increment 3 will be informed by the Increment 1 and Increment 2 field tests.

4.0 PROJECT NEED OR OPPORTUNITY

The overarching project need is to increase the availability of S-333 to increase water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. A small incremental step toward achieving that goal is to reduce the number of times S-333 discharges are limited by the existing G-3273 stage constraint of 6.8 feet NGVD. G-3273 lies within eastern ENP, directly west of the 8.5 SMA (**FIGURE 1**). The G-3273 constraint of 6.8 feet, NGVD exists as a flood protection measure. A stage of 6.8 feet NGVD at this gage has been used since 1985 as a trigger to cease S-333 discharges from flowing south into NESRS as a protective measure for residential areas to the east, particularly the 8.5 SMA. Since many of the MWD features have been built, including the protective levee around the 8.5 SMA and much of the C-111 South Dade Project detention areas to the south, there are more opportunities to begin relaxation of the G-3273 constraint and subsequent increased water deliveries from WCA 3A into NESRS.

The releases from S-333 are part of a regulation schedule for WCA 3A and are typically dependent on the Interim Operational Procedure for Restricted Rain-Driven Water Deliveries to

ENP via NESRS (Rainfall Plan) outlined in the WCAs-ENP-SDCS Water Control Plan (USACE 2012c). This Rainfall Plan consists of a rainfall-based delivery formula that specifies the amount of water to be delivered to ENP in weekly volumes through the S-333 and S-12s. Currently, the flow distribution is 55% through S-333 into NESRS and 45% through the S-12s into ENP west of the L-67 extension levee; however, during the dry season non-regulatory target flows are 80% through S-333 and 20% through the S-12 structures. Releases through the S-333 are limited by the constraint at G-3273 under the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Therefore, when G-3273 is below 6.8 feet NGVD, 55% of wet season and 80% of dry season Rainfall Plan target flow is released into NESRS. However, when G-3273 is above 6.8 feet NGVD, S-334 is used to pass all or partial S-333 flows through SDCS, thereby preventing water from entering NESRS. When S-333 is closed and partial flows cannot be passed through S-334, the volume of flow that could not be delivered at S-333 shifts to the S-12s. In this manner, the G-3273 constraint limits the volume of water entering NESRS. The proposed modification to the G-3273 constraint is anticipated to reduce the number of times that S-333 discharge is reduced and increase the number of times the maximum (*i.e.* 55% of wet season or 80% of dry season) Rainfall Plan deliveries from WCA 3 through S-333 into NESRS are achieved.

The current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) does not contain water management operating criteria for the planned spillway (S-357N) located in the 8.5 SMA upstream of S-357, at the intersection of C-357 and the newly constructed seepage collection canal (C-358) (**FIGURE 2**). The 2012 Design Refinement for the 8.5 SMA EA did not address water management operating criteria for S-357N or C-358 and stated that all gates would be in the closed position until a new operational protocol is developed for the MWD Project (USACE 2012a). Interim water management operating criteria for the planned 8.5 SMA gated culvert S-35N will be implemented in conjunction with Increment 1.

Information obtained from Increment 1, if successful with achievement of field test goals and objectives will be codified within the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). In addition, information obtained through Increment 1 will be used to support development of a second field test (Increment 2) and subsequent consideration of future incremental modifications to the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c).

5.0 PROPOSED ACTION

Summary details of the Proposed Action are listed below:

- The L-29 Canal will be managed to prevent a sustained stage above 7.5 feet NGVD (average of S-333 tail water and S-334 headwater), which is the maximum operating stage intended within the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). This will be achieved by stopping inflow into the L-29 Canal when the L-29 Canal stage rises above 7.5 feet NGVD.

- Both S-333 and S-356 releases to the L-29 Canal will be subject to the 7.5 feet NGVD constraint however, the water level at G-3273 will no longer be a constraint, allowing

NESRS to receive additional water year-round, pursuant to the WCA 3A Regulation Schedule and Rainfall Plan.

- The 6.8 feet NGVD water level at G-3273 and the WCA 3A stage level (as measured using the average of monitoring gauges/sites 63, 64, and 65) will be utilized to define the priority of releases from S-333 and S-356 to the L-29 Canal and NESRS. In addition, the field test Action Line is a seasonally varying WCA 3A stage (10.0 to 10.75 feet, NGVD) which will also serve to define the S-333 and S-356 releases to the L-29 Canal and NESRS.

- S-355 A and S-355 B may be utilized to discharge to the L-29 Canal as indicated under current operations and other future associated permit requirements.

- Implementation of a testing protocol for S-357N will be incorporated into the field test following completion of the C-358 seepage collection canal and the associated S-357N control structure.

- Additional low volume releases from S-197 are expected. The S-178 Tail Water is used as a trigger to define the opening criteria for S-197 discharges. The Proposed Action reduces the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) Level 1 S-197 opening from 800 to 500 cubic feet per second. Operating criteria for S-197 will revert to the operating criteria in the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) once Contracts 8 and 9 of the C-111 South Dade Project are constructed and operable.

- Test duration will be a minimum of one year. If weather conditions during the one year test period do not provide sufficient data for a conclusive field test, the test may be extended up to one year for a maximum of two years.

Further detailed information on the Proposed Action can be found in the G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy (**Appendix A**).

6.0 EFFECT DETERMINATIONS TO FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

The Corps requested written confirmation of federally listed threatened and endangered species that are either known to occur or are likely to occur within the project area from the U.S. Fish and Wildlife Service (USFWS) by letter dated August 22, 2014. Concurrence on the presence of listed species was received on September 11, 2014. The USFWS provided an update to the concurrence letter on December 17, 2014. The Corps has determined that the Proposed Action may affect, but is not likely to adversely affect, Cape Sable Seaside Sparrow (CSSS) (*Ammodramus maritimus mirabilis)* and its associated critical habitat; Everglade snail kite (*Rostrhamus sociabilis plumbeus)* and its associated critical habitat; wood stork (*Mycteria americana)*; Florida bonneted bat (*Eumops floridanus*); Deltoid spurge (*Chamaesyce deltoidea* spp. *Deltoidea)*; Garber's spurge *Chamaesyce garberi)*; Small's milkpea (*Galactia smallii)*; and Tiny polygala (*Polygala smallii*). Effects determinations for federally threatened and

endangered species within the project area are listed within **TABLE 1**. These determinations are based on the short duration of the field test and the generally beneficial nature of this action.

Terms and Conditions within the USFWS Biological Opinion (BO) on the Everglades Restoration Transition Plan (ERTP) required the Corps to initiate the planning process to begin field testing and relaxing or removing the existing G-3273 gage constraint of 6.8 feet NGVD in order to be exempt from the prohibitions of Section 9 of the Endangered Species Act (ESA) (USFWS 2010).

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND EFFECTS DETERMINATION OF THE PROPOSED ACTION

Common Name	Scientific Name	Status	May Affect, Likely to Adversely Effect	May Affect, Not Likely to Adversely Effect	No Effect
Mammals					
Florida panther	*Puma concolor coryi*	E			X
Florida manatee	*Trichechus manatus latirostris*	E, CH			X
Florida bonneted bat	*Eumops floridanus*	E		X	
Birds					
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH		X	
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH		X	
Piping plover	*Charadrius melodus*	T			X
Red-cockaded woodpecker	*Picoides borealis*	E			X
Roseate tern	*Sterna dougallii dougallii*	T			X
Wood stork	*Mycteria americana*	T		X	
Reptiles					
American Alligator	*Alligator mississippiensis*	T, SA			X
American crocodile	*Crocodylus acutus*	T, CH			X
Eastern indigo snake	*Drymarchon corais couperi*	T			X
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X

Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	E			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E, CH			X
Invertebrates					
Bartram's hairstreak butterfly	*Strymon acis bartrami*	C			X
Elkhorn coral	*Acropora palmata*	T, CH			X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	C			X
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E			X
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E			X
Staghorn coral	*Acropora cervicornis*	T, CH			X
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T			X
Plants					
Crenulate lead plant	*Amorpha crenulata*	E			X
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E		X	
Garber's spurge	*Chamaesyce garberi*	T		X	
Johnson's seagrass*	*Halophila johnsonii*	E, CH			X
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E			X
Small's milkpea	*Galactia smallii*	E		X	
Tiny polygala	*Polygala smallii*	E		X	
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	C			X
Blodgett's silverbush	*Argythamnia blodgettii*	C			X
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH			X
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, Pr CH			X
Everglades	*Sideroxylon*	C			X

bully	*reclinatum* spp. *austrofloridense*				
Florida brickell-bush	*Brickellia mosieri*	E, Pr CH			X
Florida bristle fern	*Trichomanes punctatum* spp. f*loridanum*	Pr E			X
Florida pineland crabgrass	*Digitaria pauciflora*	C			X
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C			X
Florida semaphore cactus	*Consolea corallicola*	E			X
Pineland sandmat	*Chamaesyce deltoidea* ssp. *pinetorum*	C			X
Sand flax	*Linum arenicola*	C			X

E=Endangered; T=Threatened; SA=Similarity of Appearance; CH=Critical Habitat; Candidate Species, Pr E = Proposed Endangered, Pr CH = Proposed Critical Habitat

* Marine species under the purview of the National Marine Fisheries Service (NMFS), the Corps will conduct a separate consultation with NMFS.

6.1 Florida Panther and "No Effect Determination"

One of 30 cougar subspecies, the Florida panther is tawny brown on the back and pale gray underneath, with white flecks on the head, neck, and shoulder. Male panthers weigh up to 130 pounds and females reach 70 pounds. Preferred habitat consists of cypress swamps, pine, and hardwood hammock forests. The main diet of the Florida panther consists of white-tailed deer, sometimes wild hog, rabbit, raccoon, armadillo, and birds. Present population estimations range from 80 to 100 individuals. Florida panthers are solitary, territorial, and often travel at night. Males have a home range of up to 400 square miles and females about 50 to 100 square miles. Female panthers reach sexual maturity at about three years of age. Mating season is December through February. Gestation lasts about 90 days and females bear two to six kittens. Juvenile panthers stay with their mother for about two years. Females do not mate again until their young have dispersed. The main survival threats to Florida panther include habitat loss due to human development and population growth, collision with vehicles, parasites, feline distemper, feline alicivirus (an upper respiratory infection), and other diseases. Habitat loss has driven the subspecies into a small area, where the few remaining animals are highly inbred, causing such genetic flaws as heart defects and sterility.

Implementation of the Proposed Action would not result in significant effects to Florida panther. Lands have been designated for panther conservation (**FIGURE 3**). These lands include the Panther Focus Area located in central and southern Florida. Preferred habitat consists of cypress swamps, pine, and hardwood hammock forests. Florida panthers presently inhabit lands in ENP adjacent to the Southern Glades, and radio tracking studies have shown that they venture into the Southern Glades on occasion during post-breeding dispersion (**FIGURE 4**). The field test is

expected to benefit ENP by increasing flows to NESRS. By reducing limitations on S-333, potentially more water will be delivered to NESRS.

The Proposed Action is expected to increase the number of unconstrained discharges from WCA 3A to NESRS by up to 1,176 days, a 64% increase relative to the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). During Increment 1, the stage elevations experienced at G-3273 and other locations within NESRS are expected to be similar to the intra-annual range of water stages experienced under recent C&SF Project operations. The duration at which water stages at G-3273 exceed 6.8 feet NGVD is expected to increase, however, this is not expected to have any effect on Florida panther or its habitat. Elimination or modification to panther habitat within ENP is not expected under the field test. Conversion of upland habitat is not proposed. The Florida panther is a wide-ranging species with the majority of sightings west of the project area. The Corps has determined that there would be no effect on this species from implementation of the Proposed Action.

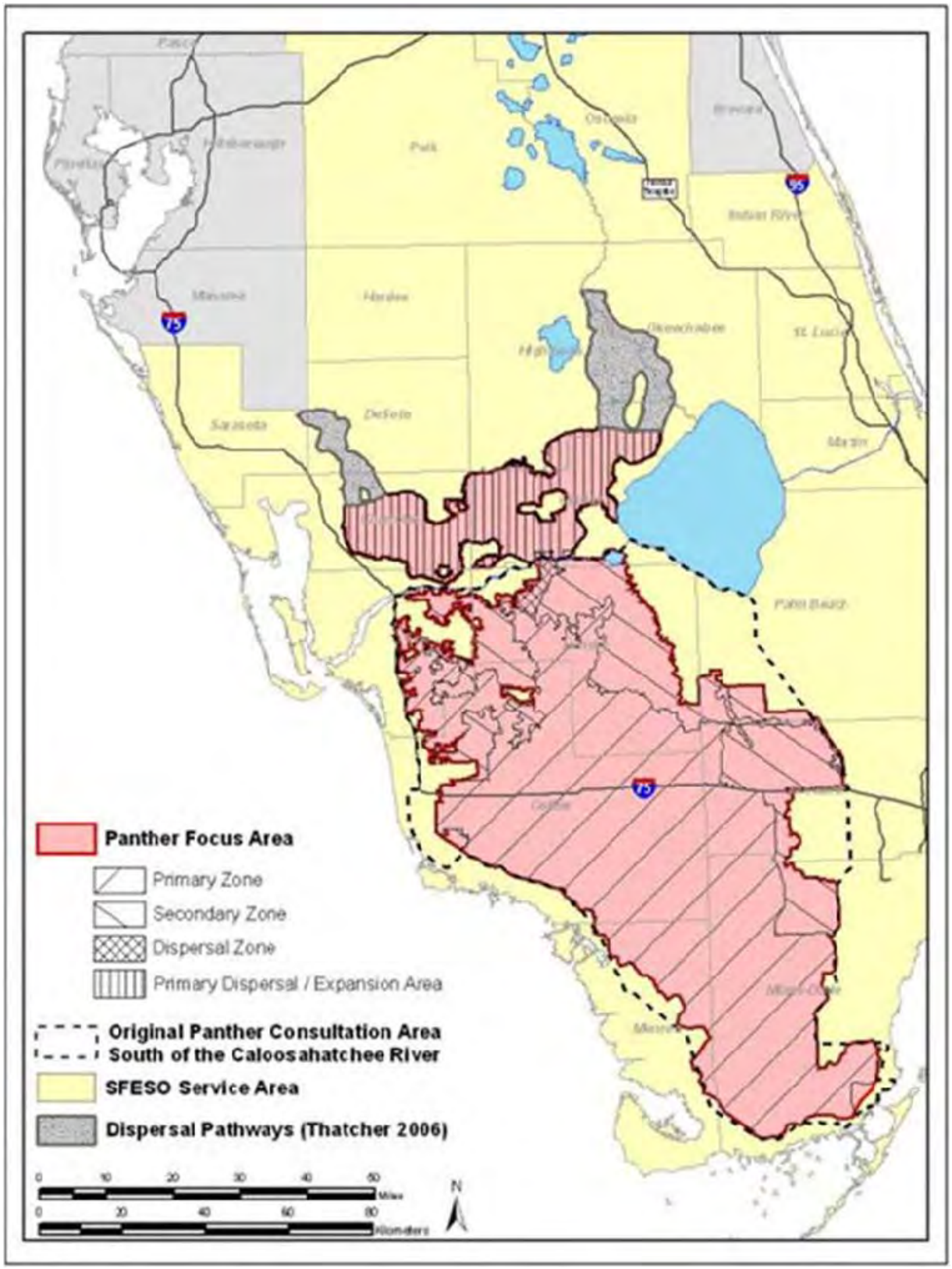

FIGURE 3. FLORIDA PANTHER ZONES IN SOUTH FLORIDA

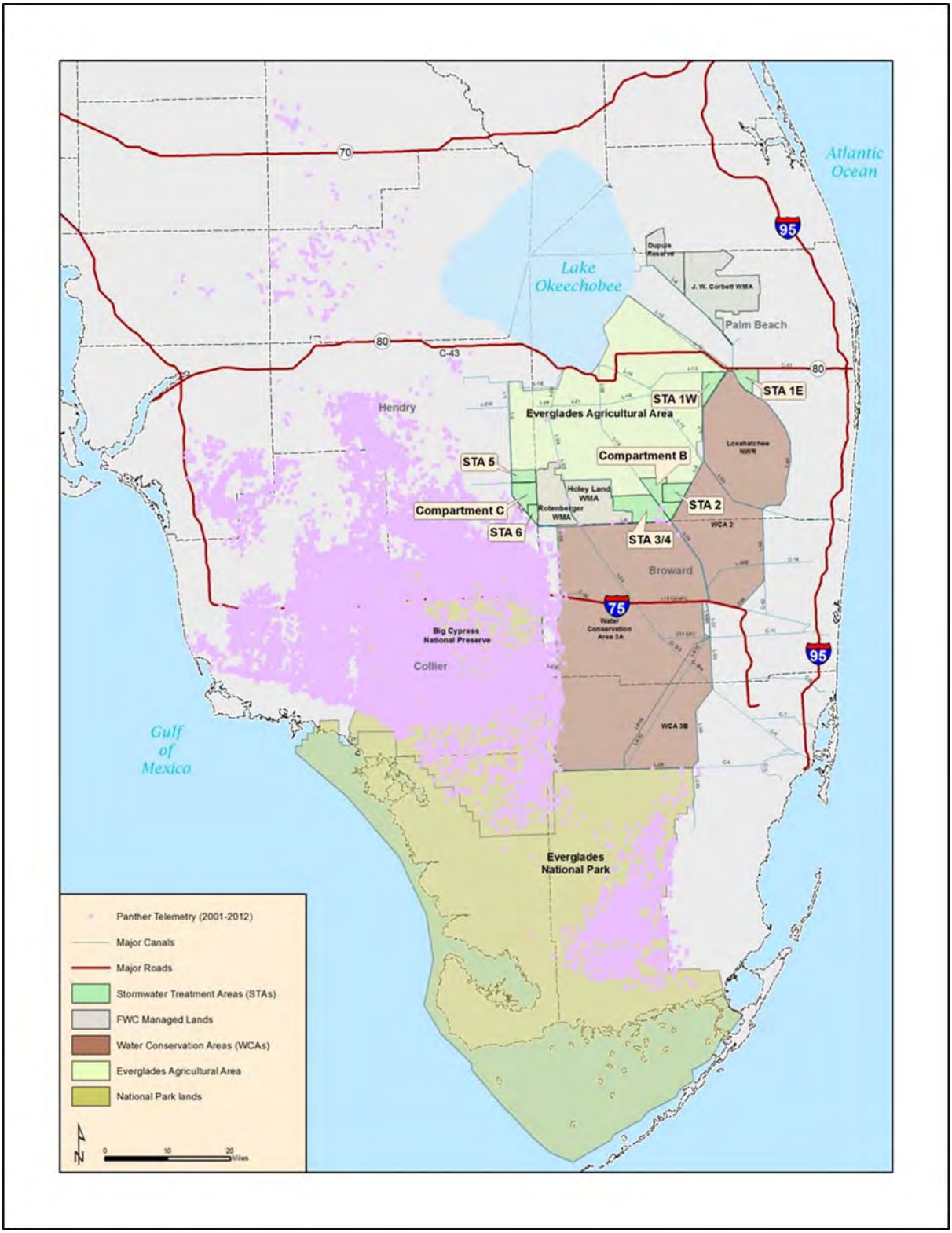

FIGURE 4. FLORIDA PANTHER TELEMETRY INFORMATION FROM 2002 TO 2012

6.2 Florida Manatee and Critical Habitat and "No Effect Determination"

The Florida manatee is a large, plant-eating aquatic mammal with a fusiform body that is compressed dorsoventrally and is grey to grey-brown in color. Florida manatees live in freshwater, brackish, and marine habitats; can move freely between salinity extremes; and are found throughout the southeastern United States. Because they are a subtropical species with little tolerance for cold, they remain near warm water sites in peninsular Florida during the winter. During periods of intense cold, Florida manatees will remain at these sites and will tend to congregate in warm springs and outfall canals associated with electric generation facilities. During warm interludes, Florida manatees move throughout the coastal waters, estuaries, bays, and rivers of both coasts of Florida and are usually found in small groups. During warmer months, Florida manatees may disperse great distances. Florida manatees have been sighted as far north as Massachusetts and as far west as Texas and in all states in between (Rathbun et al. 1982, Fertl et al. 2005). Water depths of at least three to seven feet (one to two meters) are preferred and flats and shallows are avoided unless adjacent to deeper water.

Over the past centuries, the principal sources of Florida manatee mortality have been opportunistic hunting by man and deaths associated with unusually cold winters. Today, poaching is rare, but high mortality rates from human-related sources threaten the future of the species. In general, the largest single mortality factor is collision with boats and barges. Florida manatees also are killed in flood gates and canal locks, by entanglement or ingestion of fishing gear, and through loss of habitat and pollution (Florida Power and Light 1989).

Florida manatees have been observed in conveyance canals within the project area, specifically in the lower C-111 Canal just downstream of S-197; and adjacent nearshore seagrass beds throughout Florida Bay including all waters of Card, Barnes, Blackwater, Little Blackwater, Manatee and Buttonwood sounds. The extensive acreages of seagrass beds in Florida Bay provide important feeding areas for Florida manatees. Florida manatees also depend upon canals as a source of freshwater and resting sites and as a source of cold-weather refuge. The relatively deep waters of the canals respond more slowly to temperature fluctuations at the air/water interface than the shallow bay waters. Thus, the canal waters remain warmer than open bay waters during the passage of winter cold fronts. **FIGURE 5** illustrates canals that Florida manatees have access to within south Florida.

The Florida manatee's critical habitat includes all waters of Card, Barnes, Blackwater, Little Blackwater, Manatee and Buttonwood sounds between Key Largo, Monroe County and mainland Miami-Dade County (**FIGURE 6**). Another component of designated critical habitat is defined as Biscayne Bay, and all adjoining and connected lakes, rivers, canals, and waterways from the southern tip of Key Biscayne northward to and including Maule Lake, Dade County. This was one of the first designations of critical habitat for an endangered species and the first for an endangered marine mammal. No specific primary or secondary constituent elements were included in the critical habitat designation. However, researchers agree that essential habitat features for Florida manatee include seagrasses for foraging, shallow areas for resting and calving, channels for travel and migration, warm water refuges during cold weather and freshwater for drinking (FWS 2001).

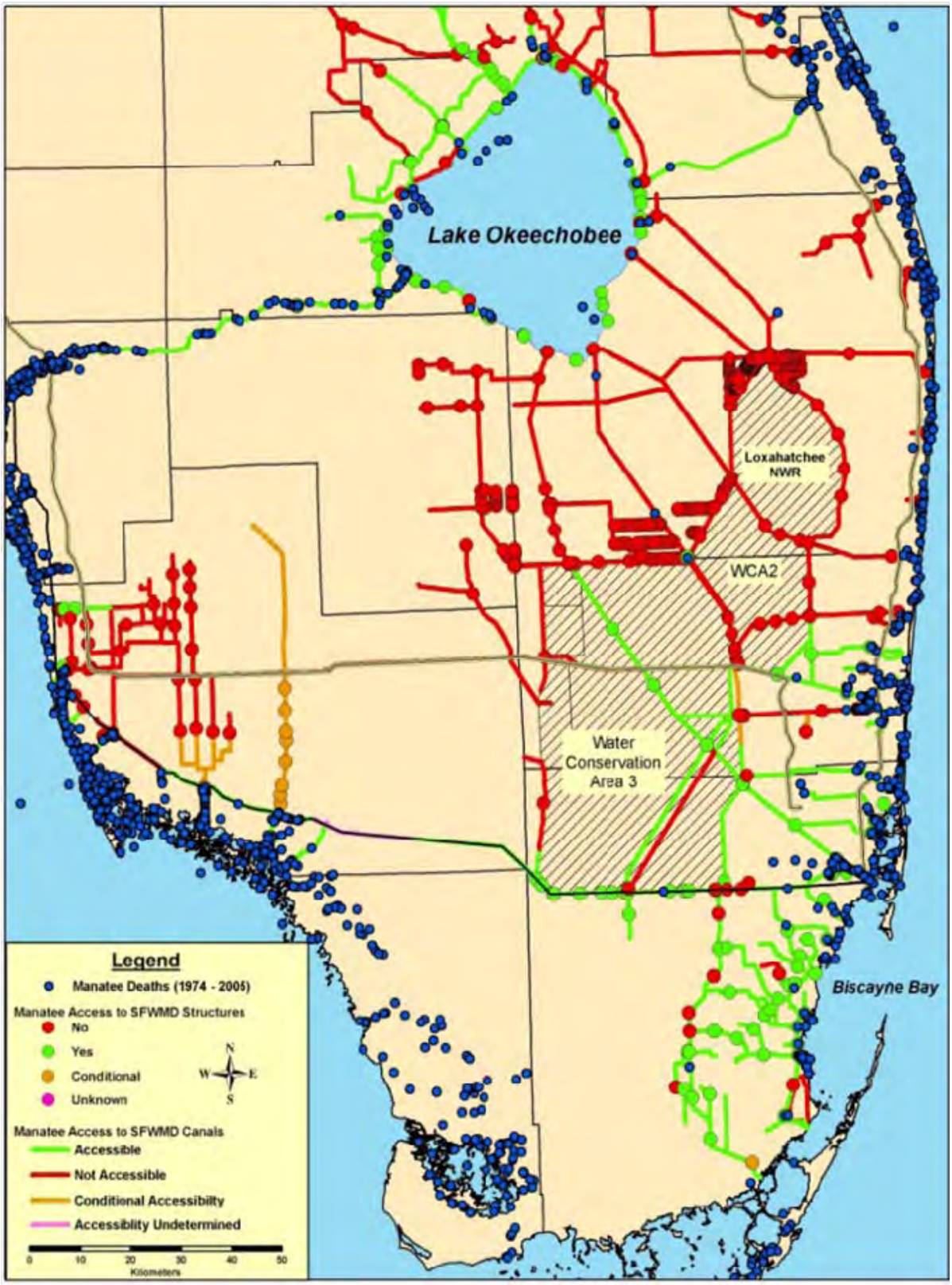

FIGURE 5. CANALS THAT FLORIDA MANATEES HAVE ACCESS TO WITHIN SOUTH FLORIDA

FIGURE 6. FLORIDA MANATEE CRITICAL HABITAT

The S-197 structure (**FIGURE 7**) provides a gravity outlet for stormwater runoff for the SDCS during flood conditions and acts as a barrier to prevent saltwater intrusion into the freshwater wetlands. Under the Proposed Action, the frequency of S-197 discharges potentially increase from 14 days to a range of 39 to 82 days and the volume of S-197 discharges potentially increases between 20,000 to 30,000 acre-feet, an increase of 11-67% relative to the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Potential increases in the frequency of S-197 discharges under the Proposed Action are expected to occur primarily during the wet season (June-November). These low volume releases are not anticipated to have major adverse effects on the receiving estuaries of Manatee Bay and Barnes Sound.

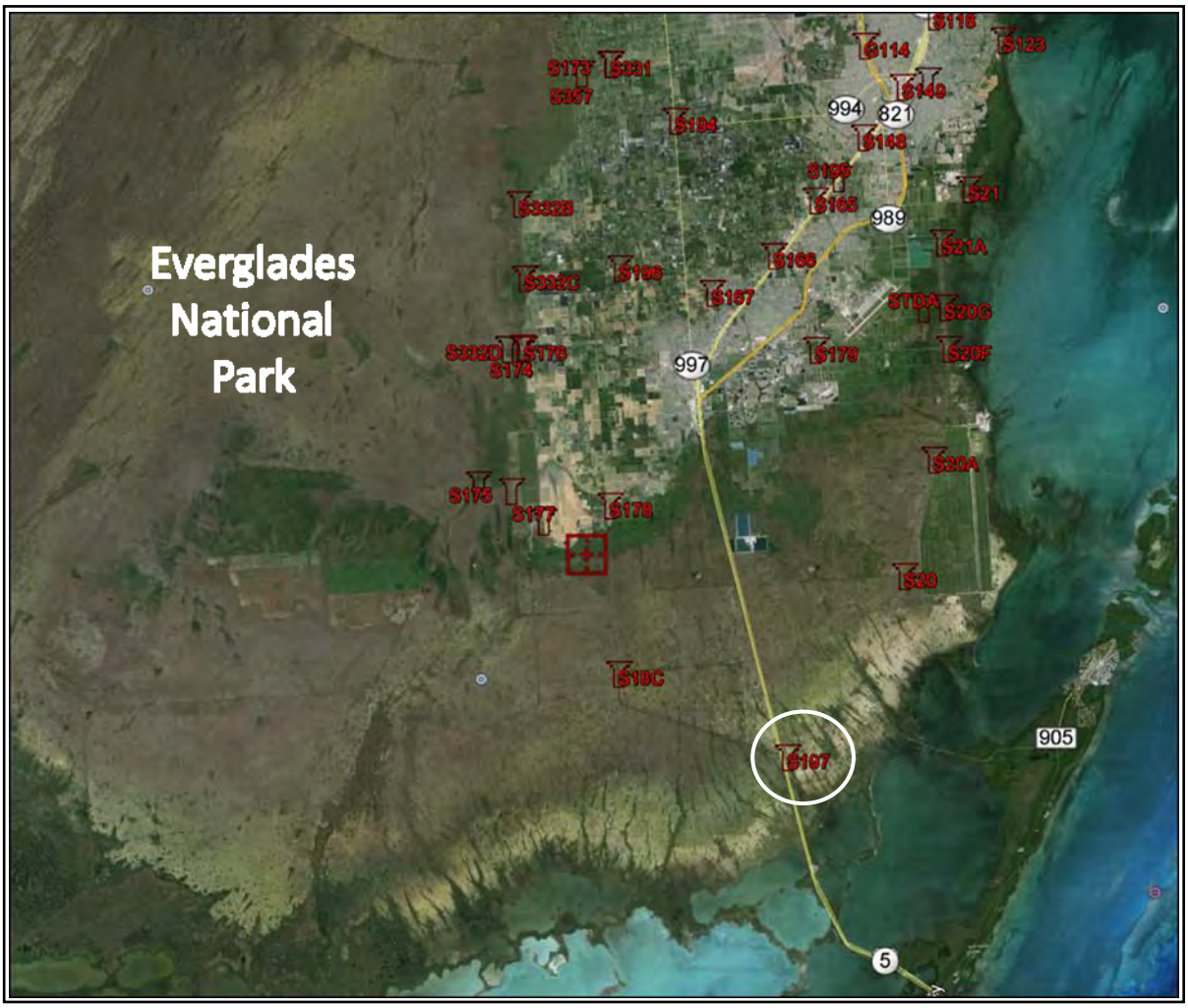

FIGURE 7. LOCATION OF S-197 STRUCTURE

Nearshore salinity conditions within the coastal estuaries are elevated much of the year as a result of the less than adequate freshwater flow deliveries. Overland flow of freshwater into coastal estuaries is preferred as compared with point source discharges through the S-197 structure, however; low volume releases to Manatee Bay and Barnes Sound through this structure are considered preferential to high volume releases which result in increased incidence of large salinity swings as well as high nutrient load delivery. Manatee Bay and Barnes Sound

are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times relative to northeastern Florida Bay (Marshall 2014). In addition, these areas experience greater tidal flushing relative to northeastern Florida Bay. Potential salinity fluctuations due to implementation of the Proposed Action would be temporary and spatially limited to nearshore areas. Scouring of bottom sediments and significant increases in turbidity resulting in diminished light penetration through the water column and potential impacts to seagrasses within Manatee Bay and Barnes Sound are not expected. Low volume releases at S-197 have the potential to decrease flows to Taylor Slough, and subsequently Florida Bay. Currently, water which discharges from S-18C (**FIGURE 7**) are allowed to flow over the scraped down canal banks into ENP's Eastern Panhandle towards the tidal creeks feeding into Long Sound and Joe Bay. The Proposed Action is not expected to result in significant stress to seagrasses within the coastal estuaries due to the limited volume of S-197 discharges and the temporary nature of the operational changes being considered. Seagrasses have an optimum salinity range of 24 to 35 practical salinity unit (psu), but can tolerate considerable short-term salinity fluctuations. Based on the above information and the fact that Increment 1 includes a robust monitoring plan, the Corps has determined that there would be no effect on the Florida manatee and its designated critical habitat from implementation of the Proposed Action. The Corps will monitor existing salinity gages in Joe Bay, Long Sound, Manatee Bay, and Barnes Sound throughout the duration of the field test (**Appendix C**). In addition, the Corps will continue to implement Periodic Scientists Calls as outlined within the 2011 ERTP Final EIS and will include assessment of conditions within the southern estuaries.

6.3 Florida Bonneted Bat and "May Affect Not Likely to Adversely Affect Determination"

The Florida bonneted bat is Florida's largest bat, weighing approximately 1.1 to 2.0 ounces, with a 19 to 21 inch wingspan, and a body length of 5.1 to 6.5 inches. The species has dark brown fur and large broad ears that join together and slant forward over the eyes. Relatively little is known regarding the ecology and habitat requirements of this species. In general, bats will forage over ponds, streams and wetlands and require roosting habitat for daytime roosting, protection from predators and rearing of young (Marks and Marks 2008). Florida bonneted bats roost in tree cavities, rocky outcrops and dead palm fronds. In residential communities, the bats roost in Spanish tile roofs, but have also been found in attics, rock or brick chimneys and fireplaces of old buildings (NatureServe 2009). Colonies are small, with the largest reported as just a few dozen individuals. The bat is a nocturnal insectivore and relies upon echolocation to navigate and detect prey. Females give birth to a single pup from June through September (Scott 2004); however limited data suggests that a female may undergo a second birthing season possibly in January or February.

The Florida bonneted bat is Florida's only endemic bat. The range of this species is limited to southern Florida, although this species was encountered in 2008 in two locations within the Kissimmee River Wildlife Management Area north of Lake Okeechobee. The Florida bonneted bat has only been documented in 12 locations within Florida, including Coral Gables, Homestead, Naples, Everglades City, and North Fort Myers. Seven of the locations are under public ownership with the Florida bonneted bat found in discrete and specific areas within Big Cypress National Preserve, Fakahatchee Strand Preserve State Park, Kissimmee River Wildlife

Management Area, Babcock Ranch and Fred C. Babcock and Cecil M. Webb Wildlife Management Area. Florida bonneted bats roost in tree cavities, rocky outcrops and dead palm fronds. In residential communities, the bats roost in Spanish tile roofs, but have also been found in attics, rock or brick chimneys and fireplaces of old buildings (NatureServe 2009).

The USFWS has defined consultation areas and focal areas for the Florida bonneted bat in south Florida (**FIGURE 8**). The main action area falls within a defined focal area. At present, no active, natural roost sites are known within the main action area. All active, known roosts are bat houses. Impacts to potential roost sites are not anticipated under the field test. Based on the 2013 Florida Bonneted Bat USFWS Consultation guidelines, the Corps has determined that implementation of the Proposed Action may affect, but is not likely to adversely affect, this species.

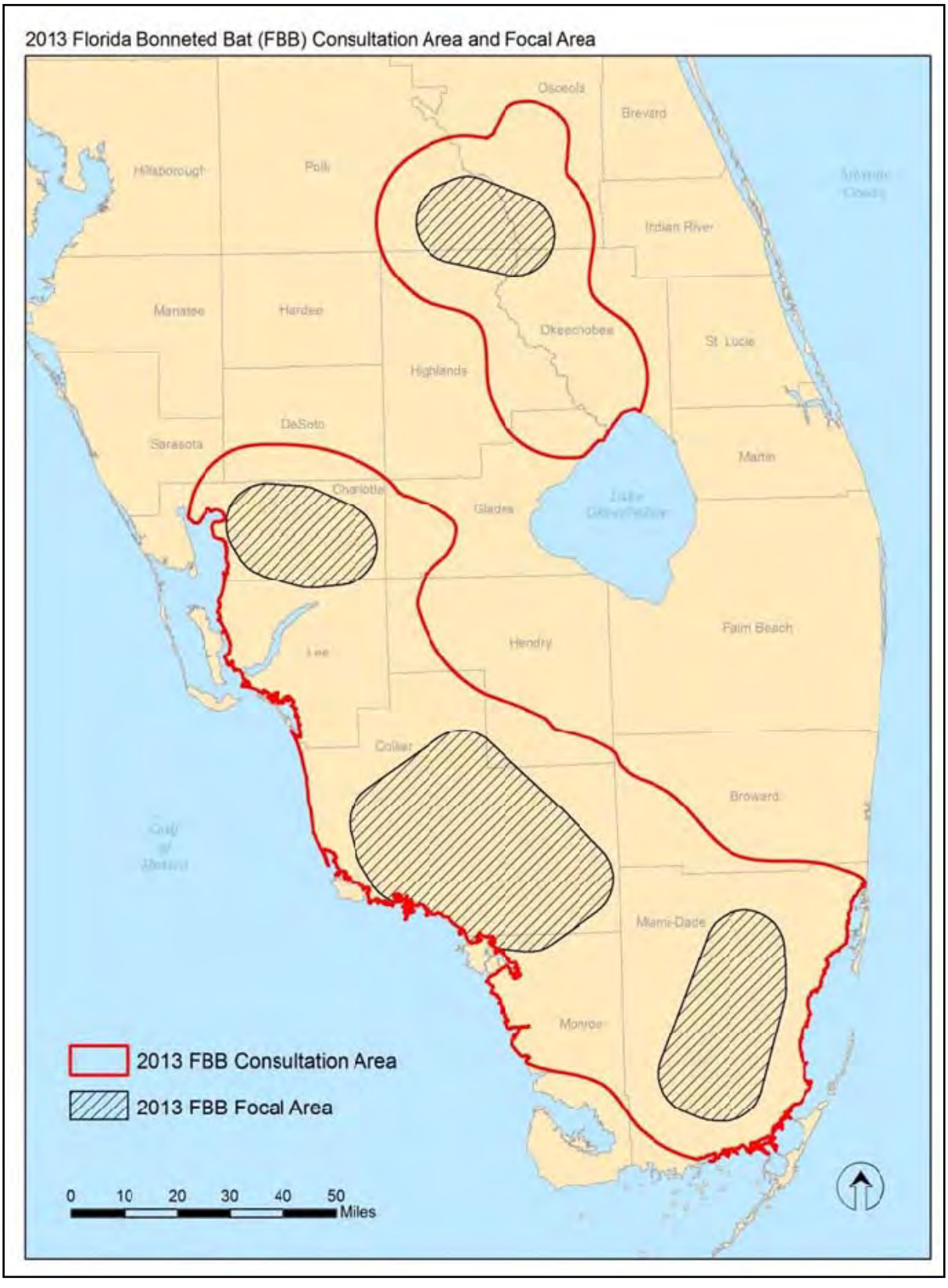

FIGURE 8. FLORIDA BONNETED BAT CONSULTATION AREA

6.4 Cape Sable Seaside Sparrow and Critical Habitat and "May Affect Not Likely to Adversely Affect Determination"

The CSSS is one of nine subspecies of seaside sparrows (Werner 1975). CSSS are non-migratory residents of freshwater to brackish marshes and their range is restricted to the lower Florida peninsula. They were originally listed as endangered in 1969 due to their restricted range (USFWS 1999). Subsequent changes in their habitat have further reduced their range and continue to threaten this subspecies with extinction.

CSSS prefer mixed marl prairie communities that include muhly grass (*Muhlenbergia filipes*) for nesting (Stevenson and Anderson 1994). Marl prairie communities have short-hydroperiods (the period of time during which a wetland is covered by water) and contain a mosaic of moderately dense, clumped grasses, interspersed with open space that permit ground movements by the sparrows (USFWS 1999). CSSS are generally not found in communities dominated by dense sawgrass, cattail (*Typha* spp.) monocultures, long-hydroperiod wetlands with tall, dense vegetative cover, spike rush marshes, and sites supporting woody vegetation (Werner 1975, Kushlan and Bass 1983). CSSS also avoid sites with permanent water cover (Curnutt and Pimm 1993). The combination of hydroperiod and periodic fire events are critical in the maintenance of suitable mixed marl prairie communities for the CSSS (Kushlan and Bass 1983).

CSSS nest in the spring when the marl prairies are dry. While the majority of nesting activities have been observed between March 1 and July 15 when Everglades marl prairies are dry, (Lockwood et al. 1997, 2001), nesting has been reported as early as late February (Werner 1975), and as late as early August (Dean and Morrison 2001). Males will establish breeding territories in early February (Balent et al. 1998) and defend these territories throughout the breeding season (USFWS 1999). Male sparrows vocalize to attract females and this particular breeding activity has been shown to decrease with increased surface water conditions (Nott et al. 1998, Curnutt and Pimm 1993).

Successful CSSS breeding requires that breeding season water levels remain at or below ground level in the breeding habitat. Nott et al. (1998) cited a "10-centimeter (cm)" rule for maximum water depth over which the CSSS will initiate nesting. This conclusion was based upon observations within the ENP range-wide survey in which no singing males were heard when water depths exceeded that level. However, Dean and Morrison (1998) demonstrated that nesting may occur when average water depths exceed this rule. CSSS construct their nests relatively close to the ground in clumps of grasses composed primarily of muhly, beakrushes (Rhynchospora spp.), and Florida little bluestem (Schizachyrium rhizomatum) (Pimm et al. 2002). The average early season nest height is 17 cm (6.7 inches) above ground, while the average late season nest height is 21 cm (8.3inches) above ground (Lockwood et al. 2001). The shift in average nest height after the onset of the wet season rainfall pattern, which typically begins in early June (Lockwood et al. 2001), appears to be an adaptive response to rising surface water conditions. In general, the CSSS will raise one or two broods within a season; however, if weather conditions permit, a third brood is possible (Kushlan et al. 1982, USFWS 1983). A new nest is constructed for each successive brood. The end of the breeding season is triggered by the onset of the rainy season when ground water levels rise above the height of the nest off the ground (Lockwood et al. 1997).

CSSS will lay three to four eggs per clutch (Werner 1978, Pimm et al. 2002) with a hatching rate ranging between 0.66 and 1.00 (Boulton et al. 2009b). The nest cycle lasts between 34 and 44 days in length and includes a 12-13 day incubation period, 9-11 day nestling period and 10-20 days of post-fledgling care by both parents (Sprunt 1968, Trost 1968, Woolfenden 1968, Lockwood et al. 1997, Pimm et al. 2002). Nest success rate varies between 21 and 60 percent, depending upon timing of nest initiation within the breeding season (Baiser et al. 2008, Boulton et al. 2009a). Substantially higher nest success rates occur within the early portion of the breeding season (approximately 60 percent prior to June 1) followed by a decline in success as the breeding season progresses to a low of approximately 21% after June 1 (Baiser et al. 2008, Boulton et al. 2009a, Virzi et al. 2009). In most years, June 1 is a good division between the early high success period and the later, lower success period (Dr. Julie Lockwood email correspondence to USFWS, October 15, 2009). Nearly all nests that fail appear to fail due to predation, and predation rates appear to increase as water level increases (Lockwood et al. 1997, 2001, Baiser et al. 2008). A complete array of nest predators has not been determined. However, raccoons (Procyon lotor), rice rats (Oryzomys palustris), and snakes may be the chief predators (Lockwood et al. 1997, Dean and Morrison 1998, Post 2007).

A dietary generalist, CSSS feed by gleaning food items from low-lying vegetation (Ehrlich et al. 1992, Pimm et al. 2002). Common components of their diet include soft-bodied insects such as grasshoppers, spiders, moths, caterpillars, beetles, dragonflies, wasps, marine worms, shrimp, grass, and sedge seeds (Stevenson and Anderson 1994). The importance of individual food items appear to shift in response to their availability (Pimm et al. 1996, 2002).

CSSS are non-migratory with males displaying high site fidelity, defending the same territory for two to three years (Werner 1975). CSSS are capable of both short-distance and longer-range movements, but appear to be restricted to short hydroperiod prairie habitat (Dean and Morrison 1998). Large expanses of deep water or wooded habitat act as barriers to long-range movements (Dean and Morrison 1998). Recent research by Julie Lockwood, Ph.D. of Rutgers University and her students have revealed substantial movements between subpopulations east of Shark River Slough (Lockwood et al. 2008, Virzi et al. 2009), suggesting that the CSSS may have the capacity to colonize unoccupied suitable habitat if it is available (Sustainable Ecosystems Institute 2007).

Presently, the known distribution of the CSSS is restricted to two areas of marl prairies east and west of Shark River Slough in the Everglades region (within ENP and BCNP) and the edge of Taylor Slough in the Southern Glades Wildlife and Environmental Area in Miami-Dade County. ENP staff first undertook a comprehensive survey of the CSSS in 1981 to identify all areas where sparrows were present. This survey, hereafter referred to as the range-wide survey, resulted in the first complete range map for the CSSS (Bass and Kushlan 1982, Kushlan and Bass 1983). From the resulting range map, Curnutt et al. (1998) divided the CSSS into six separate subpopulations, labeled as A through F (**FIGURE 9**) with subpopulation A (CSSS-A) as the only subpopulation west of Shark River Slough (SRS).

Designated critical habitat for the CSSS includes areas of land, water, and airspace in the Taylor Slough vicinity of Collier, Dade, and Monroe counties, with the following components: those portions of ENP within T57S R36E, T57S R36E, T57S R37E, T58S R35E, T58S R36E, T58S

R37E, T58S R35E, T58S R36E, T59S R35E, T59S R36E, T59S R37E. Areas outside of ENP within T55S R37E Sec. 36, T55S R38E Sec. 31, 32, T56S R37E Sec. 1, 2, 11-14, 23-26, T56S R38E Sec. 5-7, 18, 19, T57S R37E Sec. 5-8, T58S R38E Sec. 27, 29-32, T59S R38E Sec. 4 (CFR Vol. 72, No. 214 / 11-6-07). Designated CSSS critical habitat is depicted in (FIGURE 9). Primary constituent elements include suitable soil, vegetation, hydrologic conditions, and forage base.

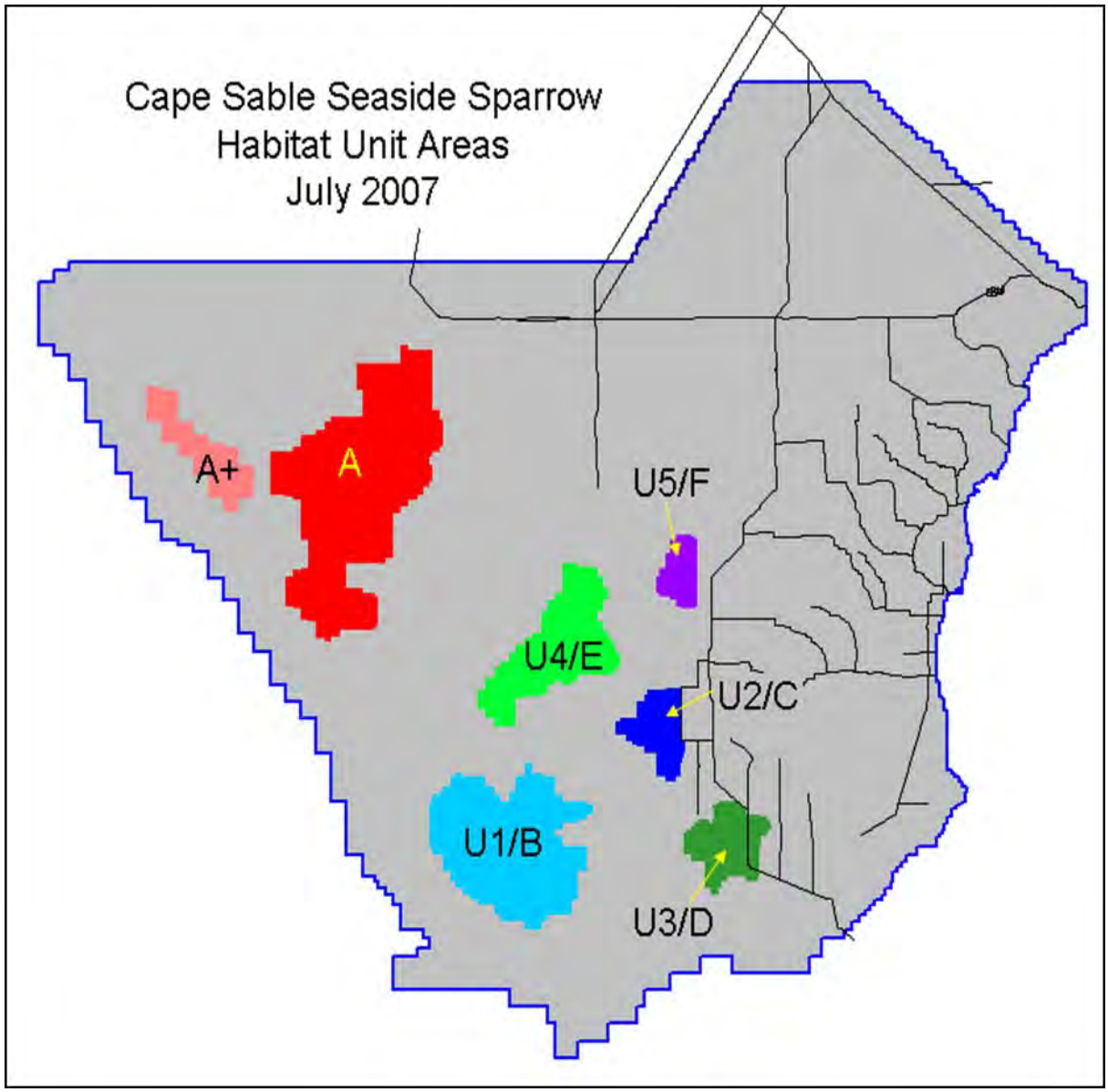

FIGURE 9. CAPE SABLE SEASIDE SPARROW SUBPOPULATIONS (A-F) AND DESIGNATED CRITICAL HABITAT UNITS (U1-U5)

1. Subpopulation A (CSSS-A) - Increased water in NESRS or within the C-111 Detention area may potentially affect CSSS habitat by increasing hydroperiod. The western marl

prairies, where CSSS-A resides may experience a backwater effect due to increased flows in NESRS with the Comprehensive Everglades Restoration Plan (CERP) (Corps 2007). The field test increases the G-3273 constraint from 6.8 feet NGVD to 7.5 feet NGVD, potentially allowing the S-333 flow volume to meet the Rainfall Plan Target of 55%, just a small fraction of the anticipated flows under the CERP. Additional water being delivered to NESRS may reduce the volume of flow through the S-12 structures, thereby increasing the likelihood of meeting the Rainfall Plan Target of 55%, and thereby limiting overflow to the S-12 structures. Based upon the temporary nature of the field test and the small increase in the G-3273 constraint, the Corps has concluded that the Proposed Action would have little, if any impact, on CSSS-A.

2. Subpopulation B (CSSS-B/Unit 1) - No effect would be anticipated. CSSS-B represents the largest sparrow subpopulation and has remained relatively stable since implementation of the Interim Operational Plan (IOP) in 2002. Wet prairie vegetation predominates within this unit (Ross, Sah and Snyder, et al. 2006). Due to its location downstream of the elevated pine rocklands, Unit 1 is relatively well protected from the managed water releases under ERTP. Consequently, implementation of the field test is not expected to alter designated critical habitat within Critical Habitat Unit 1 or affect the status of CSSS-B.

3. Subpopulation C (CSSS-C/Unit 2) – Habitat of varying suitability occurs within Unit 2. Long-hydroperiod marshes occur south of the S-332 pump station, while areas to the north are overdrained and prone to frequent fires. The most recent fire occurred in March 2007 when the Frog Pond fire swept through this area. The habitat has yet to fully recover (Sah et al. 2008, Virzi et al. 2009). The variable habitat conditions are thought to be a consequence of the 1980 construction of the S-332 pump station, located at the boundary of ENP and Taylor Slough. Unit 2 holds relatively few CSSS. Recent research has indicated that within Unit 2, CSSS-C is suffering from the ill-effects of small population size including fewer breeding individuals, male-biased sex ratios, lower hatch rates, and lower juvenile return rates (Boulton et al. 2009a, Virzi et al. 2009). IOP and subsequent ERTP Operations improved the hydrologic and habitat conditions within Unit 2. Through a reduction of seepage out of ENP, use of the S-332 Detention Areas has lessened the over-drying of potential sparrow habitat within Unit 2 (CSSS-C). The field test is expected to benefit ENP by increasing flows to NESRS.

4. Subpopulation D (CSSS-D/Unit 3) – Since 1981, when an estimated 400 CSSS resided within Unit 3, this subpopulation experienced a continual decline in population size (Cassey et al. 2007). CSSS-D is a small, dynamic subpopulation that fluctuates annually; occupancy within Unit 3 is low and detection probability is highly variable. Thought to be functionally extirpated in 2007 (Lockwood et al. 2007), CSSS were again encountered within this area in 2009 when Virzi et al. (2009) encountered four males and two females. However, in 2012, 14 birds were counted with a population estimate of 224, which is substantially higher than between the years 2007 and 2011. Prior to the 2012 survey, vegetation within this critical habitat unit was thought to be unsuitable for CSSS breeding. Since 2000, high water levels and longer hydroperiods have prevailed resulting in a sawgrass-dominated community interspersed with patches of muhly grass at higher

elevations (Ross et al. 2003). Field test water management operations may result in increased seepage to the L-31N Canal south of the S-331 pump station, prior to the construction and operation of the C-111 South Dade Project NDA. The additional volume of seepage to the L-31N Canal is expected to be primarily managed with the C-111 South Detention Area using S-332 B, S-332C, and S-332D, given the significant reduction in WCA 3A regulatory releases to the SDCS. Pumping at S-332D may result in more water in the vicinity of Critical Habitat Unit 3. However, due to the temporary nature of the field test and the fact that it would primarily occur during the wet season, water levels would not be affected during the CSSS breeding season.

5. Subpopulation E (CSSS-E/Unit 4) - Located along the eastern edge of SRS, Critical Habitat Unit 4 encompasses approximately 66 km^2. The Rocky Glades separate Unit 4 and CSSS-E from the other eastern subpopulations. Unit 4 holds the second greatest number of sparrows among all subpopulations. This unit is expected to be affected by an altered hydroperiod that is too long to support marl prairie habitat requirements. Due to its location, Unit 4 is relatively well protected from the managed water releases that occur under ERTP. Effects of IOP operations on Unit 4 have been relatively small and are expected to continue to be minor under relaxation of the G-3273 constraint. Therefore, the field test is not expected to alter the status of CSSS-E or its designated critical habitat due to the temporary nature of the test and limited operational changes.

6. Subpopulation F (CSSS-F/Unit 5) - The most easterly of all the CSSS critical habitat units, Unit 5 is located at the ENP boundary in close proximity to agricultural and residential development. Habitat within this critical habitat unit suffers from over-drainage, reduced water flow, exotic tree invasion and frequent human-induced fires (Ross, Sah and Snyder, et al. 2006, Lockwood, Ross and Sah 2003). To alleviate the perpetual drier conditions and its associated problems, increased water flows within this area are required. Increased water into NESRS of the volume anticipated by the field test is not expected to significantly improve conditions within Critical Habitat Unit.

Since 1999, through deviations, IOP and ERTP, USFWS has always maintained that moving water to the east through the historical flow path into NESRS was the solution to improve nesting and habitat conditions for CSSS. By reducing limitations on S-333, potentially more water will be delivered to NESRS. Implementation of the Proposed Action is not expected to alter the physical and biological features essential to the nesting success and overall conservation of the subspecies. In order to protect CSSS, structural closings implemented under 2006 IOP and preserved under 2012 ERTP will be retained under the field test. The action related hydrologic changes are expected to be temporary due to the limited duration of the field test. In addition, relaxation of the G-3273 constraint is a Term and Condition under the 2010 USFWS ERTP BO. The Proposed Action is expected to increase the number of unconstrained discharges from WCA 3A to NESRS by up to 1,176 days, a 64% increase relative to the No Action Alternative. Increased water in NESRS or within the C-111 South Dade Project Area may potentially affect CSSS habitat by increasing hydroperiod. All regulatory monitoring requirements included in the 2009 C-111 Western Spreader Canal Project BO and 2010 ERTP BO will continue as mandated within those opinions. However, the Corps proposes an additional assessment metric to examine potential hydrologic impacts within CSSS subpopulations and

critical habitat units (*i.e.* CSSS-F/Unit 5, CSSS-E/Unit 4, CSSS-C/Unit 2). See **Appendix C**. Additional evaluation is being proposed to measure potential direct effects of the field test within these locations. The Corps has determined that the implementation of the Proposed Action may affect, but is not likely to adversely affect, this subspecies.

6.5 Everglade Snail Kite and Critical Habitat and "May Affect Not Likely to Adversely Affect Determination"

A wide-ranging, New World raptor, the snail kite is found primarily in lowland freshwater marshes in tropical and subtropical America from Florida, Cuba, and Mexico, and south to Argentina and Peru (USFWS 1999). The Florida and Cuban subspecies of the Everglade snail kite, *R. sociabilis plumbeus*, was initially listed as endangered in 1967 due to its restricted range and highly specific diet (USFWS 1999). Its survival is directly tied to the hydrology, water quality, vegetation composition and structure within the freshwater marshes that it inhabits (Martin et al. 2008, Cattau et al. 2008).

Everglade snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes where the apple snail (*Pomacea paludosa*), the Everglade snail kite's main food source, can be found. Snail kite populations in Florida are highly nomadic and mobile; tracking favorable hydrologic conditions and food supplies, and thus avoiding local droughts. Snail kites move widely throughout the primary wetlands of the central and southern portions of Florida. Snail kite nesting locations between 2001 and 2012 within south Florida are depicted in **FIGURE 10.** The Everglades snail kite is threatened primarily by habitat loss and destruction. Widespread drainage has permanently lowered the water table in some areas. This drainage permitted development in areas that were once Everglade snail kite habitat. In addition to loss of habitat through drainage, large areas of marsh are heavily infested with water hyacinth, which inhibits the Everglade snail kite's ability to see its prey.

The Everglade snail kite has a highly specialized diet typically composed of apple snails, which are found in palustrine, emergent, long-hydroperiod wetlands. As a result, the Everglade snail kite's survival is directly dependent on the hydrology and water quality of its habitat (USFWS 1999). Snail kites require foraging areas that are relatively clear and open in order to visually search for apple snails. Suitable foraging habitat for the Everglade snail kite is typically a combination of low profile marsh and a mix of shallow open water. Shallow wetlands with emergent vegetation such as spike rush (*Eleocharis* spp.), maidencane, sawgrass, and other native emergent wetland plant species provide good Everglade snail kite foraging habitat as long as the vegetation is not too dense to locate apple snails. Dense growth of plants reduces the ability of the Everglade snail kite to locate apple snails and their use of these areas is limited even when snails are in relatively high abundance (Bennetts et al. 2006). Areas of sparse emergent vegetation enable apple snails to climb near the surface to feed, breathe, and lay eggs and thus they are easily seen from the air by foraging Everglade snail kites. Suitable foraging habitats are often interspersed with tree islands or small groups of scattered shrubs and trees which serve as perching and nesting sites.

Snail kite nesting primarily occurs from December to July, with a peak in February-June, but can occur year-round. Nesting substrates include small trees such as willow, cypress (*Taxodium* spp.), and pond apple, and herbaceous vegetation such as sawgrass, cattail, bulrush (*Scirpus*

validus), and reed (*Phragmites australis*). Snail kites appear to prefer woody vegetation for nesting when water levels are adequate to inundate the site (USFWS 1999). Nests are more frequently placed in herbaceous vegetation during periods of low water when dry conditions beneath willow stands (which tend to grow to at higher elevations) prevent Everglade snail kites from nesting in woody vegetation (USFWS 1999). Nest collapse is rare in woody vegetation but common in non-woody vegetation, especially on lake margins (USFWS 1999). In order to deter predators, nesting almost always occurs over water (Sykes et al. 1995).

Snail kites construct nests using dry plant material and dry sticks, primarily from willow and wax myrtle (Sykes 1987), with a lining of green plant material that aids in incubation (USFWS 1999). Courtship includes male displays to attract mates and pair bonds form from late November through early June (USFWS 1999). Snail kites will lay between one and five eggs with an average of about three eggs per nest (Sykes 1995, Beissinger 1988). Each egg is laid at about a two-day interval with incubation generally commencing after the second egg is laid (Sykes 1987). Both parents incubate the eggs for a period of 24 to 30 days (Beissenger 1983). Hatching success is variable between years and between watersheds, but averages 2.3 chicks/nest (USFWS 1999, Cattau et al. 2008). February, March, and April have been identified as the most successful months for hatching (Sykes 1987). Snail kites may nest more than once within a breeding season and have been documented to renest after both failed and successful nesting attempts (Sykes 1987, Beissinger 1988). Chicks are fed by both parents through the nestling period although ambisexual mate desertion has been documented (USFWS 1999). Young fledge at approximately 9 to 11 weeks of age (Beissenger 1988). Adults forage no more than 6 kilometers from the nest, and generally less than a few hundred meters (Beissenger 1988, USFWS 1999). When food is scarce or ecological and hydrologic conditions are unfavorable, adults may abandon the nest altogether (Sykes et al. 1995).

The persistence of the Everglade snail kite in Florida depends upon maintaining hydrologic conditions that support the specific vegetative communities that compose their habitat along with sufficient apple snail availability across their range each year (Martin et al. 2008). Historically, WCA 3A has been a critical component within the Everglade snail kites' wetland network for foraging and reproduction. High water levels during the wet season are important in maintaining quality wet prairie and emergent slough habitat (USFWS 2010). High water levels and extended hydroperiods have resulted in vegetation shifts within WCA 3A, degrading Everglade snail kite critical habitat. This vegetation transition directly affects Everglade snail kites in several ways, most importantly by reducing the amount of suitable foraging and nesting habitat, and reducing prey abundance and availability. Wetter conditions reduce the amount of woody vegetation within the area upon which Everglade snail kites rely for nesting and perch hunting. In addition, prolonged hydroperiods reduce habitat structure in the form of emergent vegetation, which is critical for apple snail aerial respiration and egg deposition (Turner 1996, Darby et al. 1999). Drying events are essential in maintaining the mosaic of vegetation types needed by a variety of wetland fauna (Sklar et al. 2002), including the Everglade snail kite (USFWS 2010) and its primary food source, the apple snail (Karunaratne et al. 2006, Darby et al. 2008). However, little annual variation in water depths has occurred within WCA 3A since 1993, virtually eliminating the drying events necessary to maintain this mosaic. This is particularly apparent in southwestern WCA 3A, which has experienced excessive ponding in recent years.

Low water levels have an effect on Everglade snail kite nest success in WCA 3A (Cattau et al. 2008). If water levels become too low and food resources become too scarce, adults will abandon their nest sites and young (Sykes et al. 1995). Predation on nests is also higher when water levels are low. A strong relationship exists between annual minimum stage and juvenile Everglade snail kite survival rate (Martin et al. 2007, Cattau et al. 2008). Due to their inability to move large distances, juvenile Everglade snail kites rely upon the marshes surrounding their nests for foraging. If water levels within these marshes become too low to support foraging (due to low apple snail availability), juvenile survival will be diminished.

Recent scientific information has indicated that apple snail egg production is maximized when dry season low water levels are less than 50 cm (was previously 40 centimeters) but greater than 10 cm (Darby et al. 2002, USFWS 2010). Water depths outside this range can significantly affect apple snail recruitment and survival. If water levels are less than 10 cm, apple snails cease movement and may become stranded, hence they are not only unavailable to foraging Everglade snail kites; they are also unable to successfully reproduce. Depending upon the timing and duration of the dry down, apple snail recruitment can be significantly affected by the truncation of annual egg production and stranding of juveniles (Darby et al. 2008). Since apple snails have a 1.0 to 1.5-year life span (Hanning 1979, Ferrer et al. 1990, Darby et al. 2008), they only have one opportunity (*i.e.* one dry season) for successful reproduction. Egg cluster production may occur from February to November (Odum 1957, Hanning 1979, Darby et al. 1999); however, approximately 77% of all apple snail egg cluster production occurs between April and June (Darby et al. 2008). Dry downs during peak apple snail egg cluster production substantially reduce recruitment (Darby et al. 2008). The length of the dry down, age, and size of the apple snail are all important factors in apple snail recruitment and survival. Larger apple snails can survive dry downs better than smaller apple snails (Kushlan 1975, Darby et al. 2006, 2008).

Critical habitat for the Everglade snail kite was designated September 22, 1977 (42 FR 47840 47845) and includes areas of land, water, and airspace within portions of the St. Johns Reservoir, Indian River County; Cloud Lake Reservoir, St. Lucie, County; Strazzulla Reservoir, St. Lucie County; western portions of Lake Okeechobee, Glades and Hendry counties; Loxahatchee National Wildlife Refuge (WCA 1), Palm Beach County; WCA 2A, Palm Beach and Broward counties; WCA 2B, Broward County; WCA 3A, Broward and Miami-Dade counties; and ENP to the Miami-Dade/Monroe County line (**FIGURE 11**). The designated area encompasses approximately 841,635 acres (340,598 hectares).

The field test is an operational plan that is expected to benefit ENP by increasing flows to NESRS. By reducing limitations on S-333, potentially more water will be delivered to NESRS. The Proposed Action is expected to increase the number of unconstrained discharges from WCA 3A to NESRS by up to 1,176 days, a 64% increase relative to the current WCAs-ENP-ENP to SDCS Water Control Plan (USACE 2012c). During the field test, stage levels experienced at G-3273 and other locations within NESRS are expected to be similar to the intra-annual range of water stages experienced under recent C&SF Project operations. The duration at which water stages at G-3273 exceed 6.8 feet NGVD is expected to increase. A potential increase in hydroperiods within NESRS may provide an overall net benefit for Everglade snail kites and apple snail habitat. Increases in volume into NESRS provide an opportunity for improved

vegetation, including expansion of sloughs and wet prairies, and contraction of sawgrass ridges. However, due to the short duration of this test, significant vegetation changes are not anticipated.

WCA 3A represents the largest and most consistently utilized portion of Everglade snail kite designated critical habitat. Over the past two decades, Everglade snail kites have shifted nesting activities to areas of higher elevation within WCA 3A in response to habitat degradation in traditional nesting areas resulting from prolonged high water levels. Nesting activity has shifted up the elevation gradient to the west, and has also moved south in response to recent increased drying rates, restricting current nesting to the southwest corner of WCA 3A. The field test includes a seasonally varying WCA 3A water level of 10.0 to 10.75 feet NGVD (*i.e.* Increment 1 Action Line), as measured by the three gage average, which will serve to define S-333 and S-356 releases to the L-29 Canal and NESRS. Implementation of an Action Line to manage high water conditions in WCA 3A, would prevent conditions of extreme high water levels and prolonged inundation periods within WCA 3A as a result of field test operations. Based on this information and the limited duration of the field test, the Corps has determined that implementation of the Proposed Action may affect, but is not likely to adversely affect, this species and its designated critical habitat.

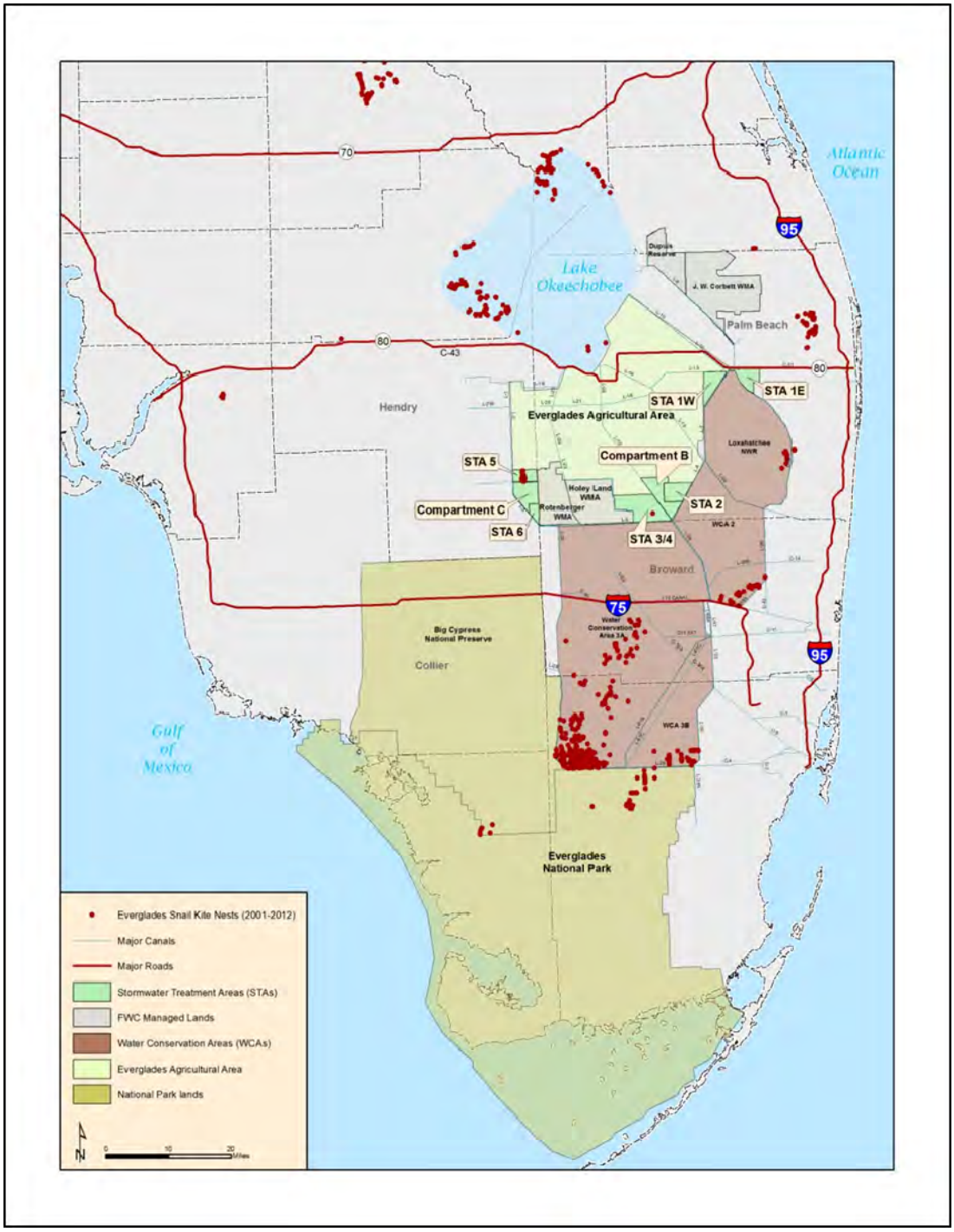

FIGURE 10. SNAIL KITE NESTING LOCATIONS BETWEEN 2001 AND 2012

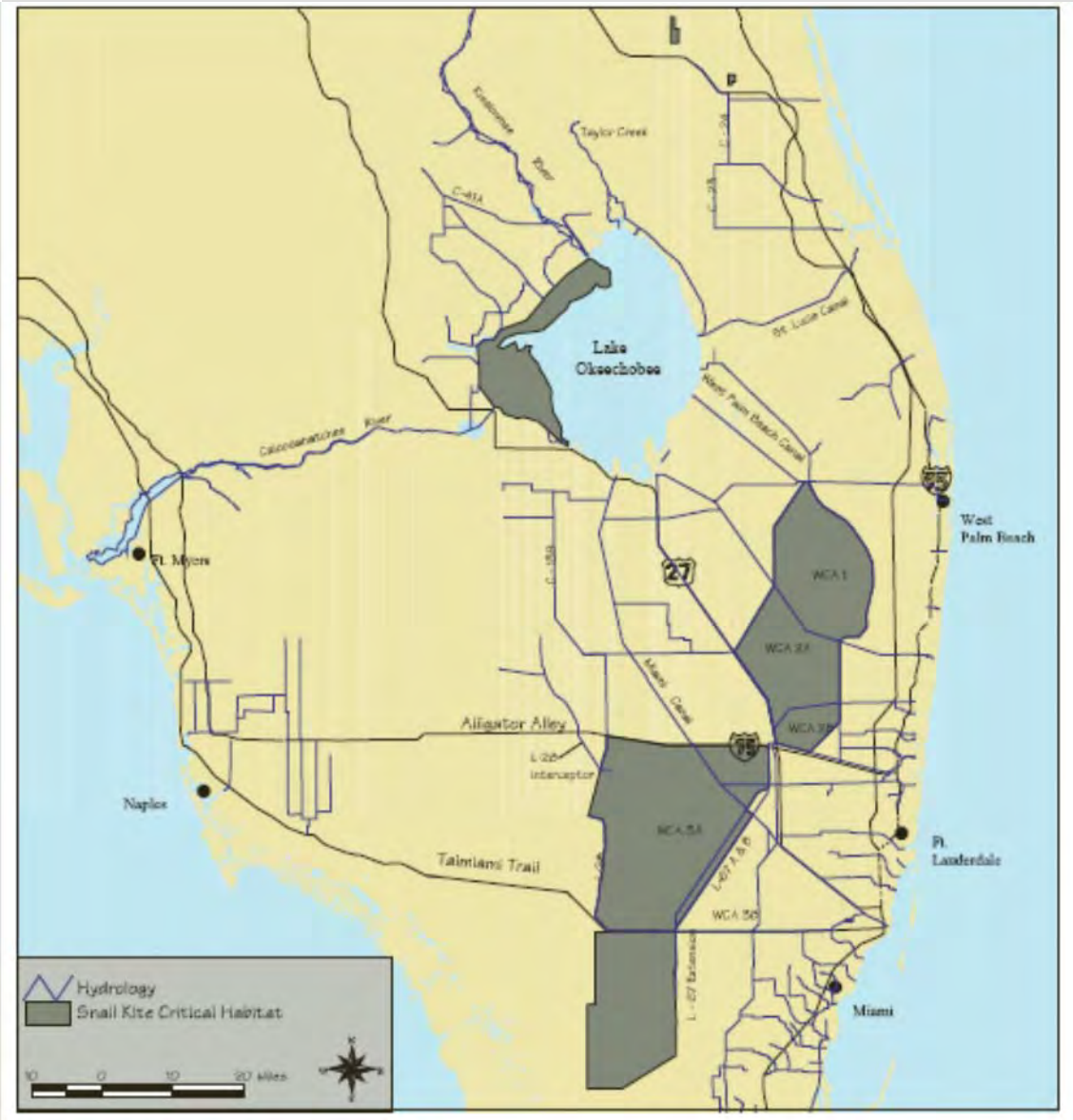

FIGURE 11. CRITICAL HABITAT FOR THE EVERGLADES SNAIL KITE

6.6 Piping Plover and "No Effect Determination"

The piping plover does not breed in Florida; breeding populations occur near the Great Lakes, the Northern Great Plains, and the Atlantic Coast. Piping plovers regularly winter in the south Florida counties of Broward, Collier, Indian River, Lee, Martin, Miami-Dade, Monroe, Palm Beach, St. Lucie, and Sarasota (Haig 1992). Piping plovers nest and feed along coastal sand and gravel beaches throughout North America. Due to lack of preferred wintering habitat within the project area, the Corps has determined that the Proposed Action would have no effect on the piping plover.

6.7 Red-cockaded Woodpecker and "No Effect Determination"

The red-cockaded woodpecker is identified by its conspicuous white cheek patch, black and white cross-barred back, black cap and nape, white breast and flanks with black spots. In addition, the males have a small bright red spot on each side of the black cap (USFWS 1999). Red-cockaded woodpeckers are a social species and live in groups with a breeding pair and up to four helpers, generally male offspring from the previous year. Approximately 200 acres of mature pine forests are necessary to support each group's nesting and foraging habitat needs. Juvenile females will leave the group prior to the breeding season and establish a breeding pair within a solitary male group. Breeding pairs are monogamous and will raise a single brood each breeding season. Three to four small white eggs will be laid within the roost cavity and incubated by members of the group for a period of ten to twelve days. Chicks are also fed by members of the group and remain within the roost cavity for approximately 26 days. Insects including ants, caterpillars, moths, grasshoppers, spiders, and beetle larvae comprise approximately 85 percent of their diet. The remainder of their diet consists of wild grapes, cherries, poison ivy berries, blueberries, and nuts such as pecans (USFWS 1999).

Red-cockaded woodpeckers live in mature pine forests, specifically those with longleaf pines averaging 80 to 120 years old and loblolly pines averaging 70 to 100 years old. Destruction of its preferred long-leaf pine habitat by humans or disease (pines afflicted by fungus or red-ring rot) resulted in the woodpecker becoming listed as endangered in 1970. The current range is from eastern Texas to the southeastern United States and southern Florida. The red-cockaded woodpecker is primarily an upland species, also inhabiting hydric pine flatwoods. Due to lack of appropriate habitat within the project area, the Corps has determined that there would be no effect on this species from implementation of the Proposed Action.

6.8 Roseate Tern and "No Effect Determination"

The roseate tern is about 40 centimeters in length, with light-gray wings and back and a black cap. The rest of the body is white, with a rosy tinge on the chest and belly during the breeding season. The tail is deeply forked. A coastal species, the roseate tern nests on open sandy beaches away from potential predation and human disturbance. This species feeds in nearshore surf on small schooling fishes. In southern Florida, the roseate tern's main nesting areas are located in the Florida Keys and the Dry Tortugas where they nest on isolated islands, rubble islets, and dredge spoils. Due to the lack of appropriate habitat within the project area, the Corps has determined that there would be no effect on this species from implementation of the Proposed Action.

6.9 Wood Stork and "May Affect Not Likely to Adversely Affect Determination"

The wood stork is a large, white, long-legged wading bird that relies upon shallow, freshwater wetlands for foraging. The wood stork is found from northern Argentina, eastern Peru and western Ecuador north to Central America, Mexico, Cuba, Hispaniola, and the southeastern United States (AOU 1983). Only the population segment that breeds in the southeastern United States is listed and on July 20, 2014 was upgraded from endangered to threatened status under ESA of 1973, as amended. In the United States, wood storks were historically known to nest in all coastal states from Texas to South Carolina (Wayne 1910, Bent 1926, Howell 1932, Oberholser 1938, Cone and Hall 1970, Oberholser 1938).

The primary cause of the wood stork population decline in the United States is loss of wetland habitats or loss of wetland function resulting in reduced prey availability. Almost any shallow wetland depression where fish become concentrated, either through local reproduction or receding water levels, may be used as feeding habitat by the wood stork during some portion of the year, but only a small portion of the available wetlands support foraging conditions (high prey density and favorable vegetation structure) that wood storks need to maintain growing nestlings.

Wood storks forage primarily within freshwater marsh and wet prairie vegetation types, but can be found in a wide variety of wetland types, as long as prey are available and the water is shallow and open enough to hunt successfully (Ogden et al. 1978, Coulter 1987, Gawlik and Crozier 2004, Herring and Gawlik 2007). Calm water, about 5 to 25 cm in depth, and free of dense aquatic vegetation is ideal, however, wood storks have been observed foraging in ponds up to 40 centimeters in depth (Coulter and Bryan 1993, Gawlik 2002). Typical foraging sites include freshwater marshes, ponds, hardwood and cypress swamps, narrow tidal creeks or shallow tidal pools, and artificial wetlands such as stock ponds, shallow, seasonally flooded roadside or agricultural ditches, and managed impoundments (Coulter et al. 1999, Coulter and Bryan 1993, Herring and Gawlik 2007). During nesting, these areas must also be sufficiently close to the colony to allow wood storks to efficiently deliver prey to nestlings.

Wood storks feed almost entirely on fish between 2 and 25 cm (1 to 10 inches) in length (Kahl 1964, Ogden et al. 1976, Coulter 1987) but may occasionally consume crustaceans, amphibians, reptiles, mammals, birds, and arthropods. Wood storks generally use a specialized feeding behavior called tactilocation, or grope feeding, but also forage visually under some conditions (Kushlan 1979). Occasionally, wood storks stir the water with their feet in an attempt to startle hiding prey (Rand 1956, Kahl 1964, Kushlan 1979). This foraging method allows them to forage effectively in turbid waters, at night, and under other conditions when other wading birds that employ visual foraging may not be able to forage successfully.

Hydrologic and environmental characteristics have strong effects on fish density, and these factors may be some of the most significant in determining foraging habitat suitability, particularly in southern Florida. Within the wetland systems of southern Florida, the annual hydrologic pattern is very consistent, with water levels rising over three feet during the wet season (June-September), and then receding gradually during the dry season (October-May). Wood storks nest during the dry season, and rely on the drying wetlands to concentrate prey items in the ever-narrowing wetlands (Kahl 1964). Because of the continual change in water levels during the wood stork nesting period, any one site may only be suitable for wood stork foraging for a narrow window of time when wetlands have sufficiently dried to begin concentrating prey and making water depths suitable for storks to access the wetlands (Gawlik 2002, Gawlik et al. 2004). Once the wetland has dried to where water levels are near the ground surface, the area is no longer suitable for wood stork foraging, and will not be suitable until water levels rise and the area is again repopulated with fish. Consequently, there is a general progression in the suitability of wetlands for foraging based on their hydroperiods, with the short hydroperiod wetlands being used early in the season, the mid-range hydroperiod sites being used during the middle of the nesting season, and the longest hydroperiod areas being used later in the season (Kahl 1964, Gawlik 2002).

Wood storks generally forage in wetlands between 0.5 kilometer and 74.5 kilometer away from the colony site (Bryan and Coulter 1987, Herring and Gawlik 2007), but forage most frequently within 10-20 kilometer (12 miles) of the colony (Coulter and Bryan 1993, Herring and Gawlik 2007). Maintaining this wide range of feeding site options ensures sufficient wetlands of all sizes and varying hydroperiods are available, during shifts in seasonal and annual rainfall and surface water patterns, to support wood storks. Adults feed farthest from the nesting site prior to laying eggs, forage in wetlands closer to the colony site during incubation and early stages of raising the young, and then farther away again when the young are able to fly.

Wood stork nesting habitat consists of mangroves as low as 1 meter (3 feet), cypress as tall as 30.5 meters (100 feet), and various other live or dead shrubs or trees located in standing water (swamps) or on islands surrounded by relatively broad expanses of open water (Rodgers et al. 1997, Coulter et al. 1999). Wood storks nest colonially, often in conjunction with other wading bird species, and generally occupy the large-diameter trees at a colony site (Rodgers et al. 1995). **FIGURE 12** shows the locations of wood stork colonies throughout Florida. The same colony site will be used for many years as long as the colony is undisturbed and sufficient foraging habitat remains in the surrounding wetlands. However, not all wood storks nesting in a colony will return to the same site in subsequent years (Kushlan and Frohring 1986). Natural wetland nesting sites may be abandoned if surface water is removed from beneath the trees during the nesting season (Rodgers et al. 1995). In response to this type of change to nest site hydrology, wood storks may abandon that site and establish a breeding colony in managed or impounded wetlands (Ogden 1991). Wood storks that abandon a colony early in the nesting season due to unsuitable hydrologic conditions may re-nest in other nearby areas (Borkhataria et al. 2004, Crozier and Cook 2004).

The wood stork life history strategy has been characterized as a “bet-hedging” strategy (Hylton et al. 2006) in which high adult survival rates and the capability of relatively high reproductive output under favorable conditions allow the species to persist during poor conditions and capitalize on favorable environmental conditions. This life-history strategy may be adapted to variable environments (Hylton et al. 2006) such as the wetland systems of southern Florida. Nest initiation date, colony size, nest abandonment, and fledging success of a wood stork colony vary from year to year based on availability of suitable wetland foraging areas, which can be affected by local rainfall patterns, regional weather patterns, and anthropogenic hydrologic management (Frederick and Ogden 2001). While the majority of wood stork nesting occurs within traditional wood stork rookeries, a handful of new wood stork nesting colonies are discovered each year (Meyer and Frederick 2004, SFWMD 2004, 2009). These new colony locations may represent temporary shifts of historic colonies due to changes in local conditions, or they may represent formation of new colonies in areas where conditions have improved.

Breeding wood storks are believed to form new pair bonds every season. First age of breeding has been documented in 3 to 4-year-old birds but the average first age of breeding is unknown. Eggs are laid as early as October in south Florida and as late as June in north Florida (Rodgers 1990, USFWS 1999). A single clutch of two to five (average three) eggs is laid per breeding season but a second clutch may be laid if a nest failure occurs early in the breeding season (Coulter et al. 1999). There is variation among years in the clutch sizes, and clutch size does not appear to be related to longitude, nest data, nesting density, or nesting numbers, and may be

related to habitat conditions at the time of laying (Frederick 2009, Frederick et al. 2009). Egg laying is staggered and incubation, which lasts approximately 30 days, begins after the first egg is laid. Therefore, the eggs hatch at different times and the nestlings vary in size (Coulter et al. 1999). In the event of diminished foraging conditions, the youngest birds generally do not survive.

The young fledge in approximately eight weeks but will stay at the nest for three to four more weeks to be fed. Adults feed the young by regurgitating whole fish into the bottom of the nest about three to ten times per day. Feedings are more frequent when the birds are young (Coulter et al. 1999). When wood storks are forced to fly great distances to locate food, feedings are less frequent (Bryan et al. 1995). The total nesting period from courtship and nest-building through independence of young, lasts approximately 100 to 120 days (Coulter et al. 1999). Within a colony, nest initiation may be asynchronous, and consequently, a colony may contain active breeding wood storks for a period significantly longer than the 120 days required for a pair to raise young to independence. Adults and independent young may continue to forage around the colony site for a relatively short period following the completion of breeding. Appropriate water depths for successful foraging are particularly important for newly fledged juveniles (Borkhataria et al. 2008).

Receding water levels are necessary in south Florida to concentrate suitable densities of forage fish (Kahl 1964, Kushlan et al. 1975) to sustain successful wood stork nesting. During the period when a nesting colony is active, wood storks are dependent on consistent foraging opportunities in wetlands within their core foraging area (30 kilometer radius, USFWS 2010) surrounding a nest site. The greatest energy demands occur during the middle of the nestling period, when nestlings are 23 to 45 days old (Kahl 1964). The average wood stork family requires 201 kilograms (443 pounds) of fish during the breeding season, with 50 percent of the nestling stork's food requirement occurring during the middle third of the nestling period (Kahl 1964). Although the short hydroperiod wetlands support fewer fish and lower fish biomass per unit area than long hydroperiod wetlands, these short hydroperiod wetlands were historically more extensive and provided foraging areas for wood storks during colony establishment, courtship and nest-building, egg-laying, incubation, and the early stages of nestling provisioning.

The annual climatological pattern that appears to stimulate the heaviest nesting efforts by wood storks is a combination of the average or above-average rainfall during the summer rainy season prior to colony formation and an absence of unusually rainy or cold weather during the following winter-spring nesting season. This pattern produces widespread and prolonged flooding of summer marshes that maximizes production of freshwater fishes, followed by steady drying that concentrates fish during the dry season when storks nest (Kahl 1964, Frederick et al. 2009). However, frequent heavy rains during nesting can cause water levels to increase rapidly. The abrupt increases in water levels during nesting, termed reversals (Crozier and Gawlik 2004), may cause nest abandonment, re-nesting, late nest initiation, and poor fledging success. Abandonment and poor fledging success was reported to have affected most wading bird colonies in southern Florida during 2004, 2005 and 2008 (Crozier and Cook 2004, Cook and Call 2005, SFWMD 2008).

Following the completion of the nesting season, both adult and fledgling wood storks generally begin to disperse away from the nesting colony. Fledglings have relatively high mortality rates within the first six months following fledging, most likely as a result of their lack of experience, including the selection of poor foraging locations (Hylton et al. 2006, Borkhataria et al. 2008). Post-fledging survival also appears to be variable among years, probably reflecting the environmental variability that affects wood storks and their ability to forage (Hylton et al. 2006, Borkhataria et al. 2008).

The original Everglades ecosystem, including the WCAs, provided abundant primary and secondary wading bird production during the summer and fall months (Holling et al. 1994). This productivity was concentrated during the dry season when water levels receded. The concentrations of food provided ideal foraging habitat for numerous wetlands species, especially large flocks of wading birds (Bancroft 1989, Ogden 1994). However, the hydrology of the Everglades ecosystem and WCA 3A has been severely altered by extensive drainage and the construction of canals and levees (Abbott and Nath 1996). The resulting system is not only spatially smaller, but also drier than historical levels (Walters et al. 1992). Breeding populations of wading birds have responded negatively to the altered hydrology (Ogden 1994, Kushlan and Fohring 1986, Bancroft 1989).

Wood stork colonies exist directly adjacent to Tamiami Trail and within NESRS. Tamiami Trail East 1 (TT-East), TT-East 2, TT-West, and Grossman's Ridge West all occur within the main action area (**FIGURE 12**). The field test is an operational plan that is expected to benefit ENP by increasing flows to NESRS. By reducing limitations on S-333, potentially more water will be delivered to NESRS, rehydrating historic wetlands. During the field test, the stage elevation experienced at G-3273 and other locations within NESRS are expected to be similar to the intra-annual range of water stages experienced under recent C&SF Project operations. The duration at which water stages at G-3273 exceed 6.8 feet NGVD is expected to increase. The Proposed Action is expected to increase the number of unconstrained discharges from WCA 3A to NESRS by up to 1,176 days, a 64% increase relative to the No Action Alternative. A potential increase in hydroperiods within NESRS may provide an overall net benefit for wood stork foraging suitability by maximizing production of freshwater fishes. Monitoring of optimal foraging depths and recession rates for this species is being proposed as part of the field test, (reference **Appendix C**). Since the foraging radius of TT-East 1, TT-East 2, TT-West and Grossman's Ridge West includes parts of WCA 3A, WCA 3B, ENP, and the Pennsuco Wetlands, sufficient foraging opportunities are anticipated to remain in other areas to offset any poor foraging conditions that may result from the field test; however, it is not anticipated that such conditions would occur. Potential reductions in wood stork foraging conditions and colony abandonment due to artificial reversals at the end of the dry season/start of the wet season is also not anticipated as a result of field test implementation. Historically, wood stork nesting started around November-December, but in recent decades it has shifted to January-March. Additional water being delivered to NESRS is also only expected to occur during the wet season when areas are already anticipated to be inundated. Potential increases are expected to occur during the wet season. Based on this information and the limited duration of the field test, the Corps has determined that implementation of the Proposed Action may affect but is not likely to adversely affect this species. The Corps will continue to implement Periodic Scientist Calls as outlined within the 2011 ERTP Final EIS and will include assessment of conditions within the project

area to ensure wildlife recommendations are considered during the water management decision process.

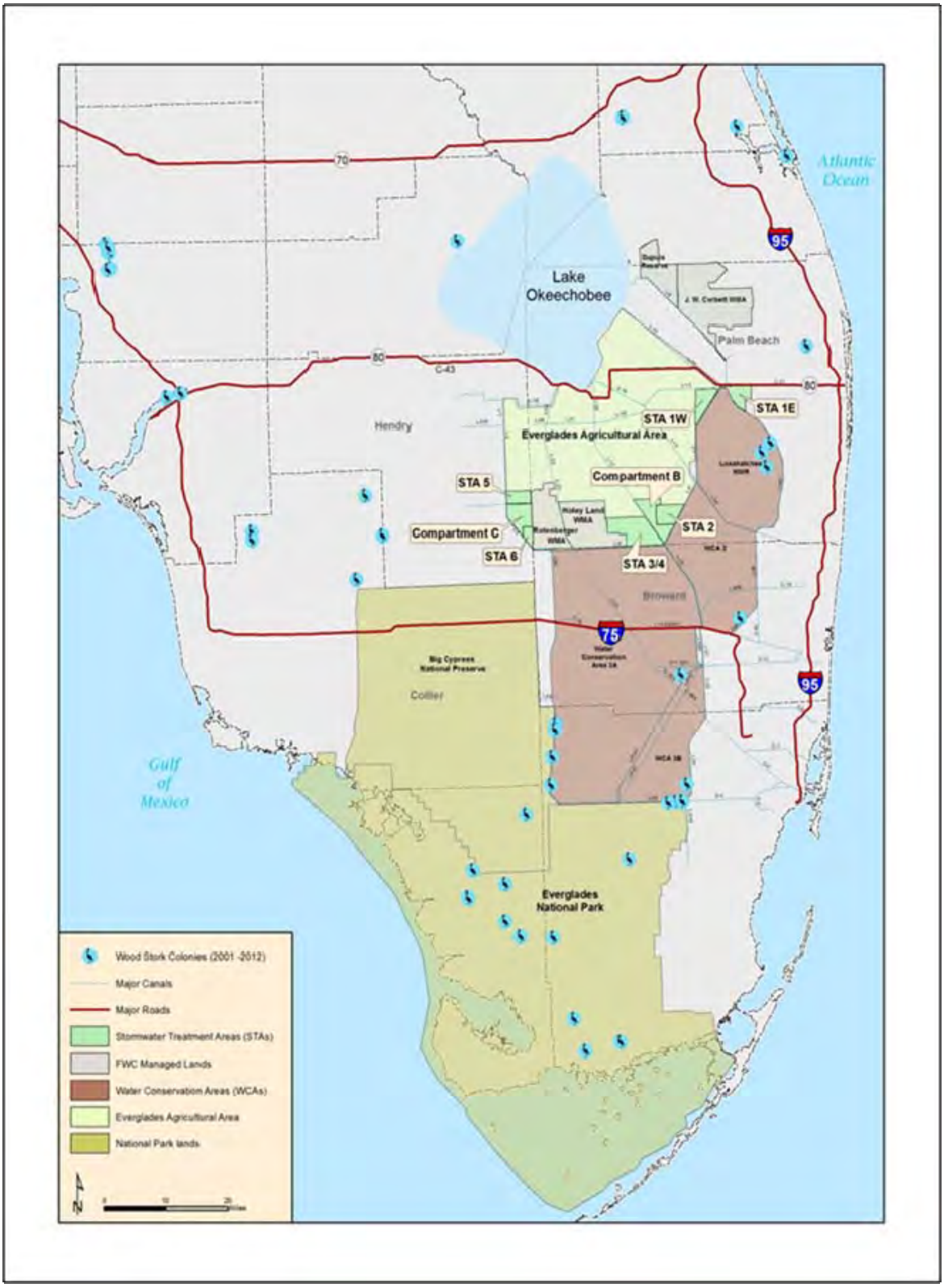

FIGURE 12. LOCATION OF WOODSTORK COLONIES IN SOUTH FLORIDA BETWEEN 2001 AND 2012

6.10 American Alligator and "No Effect Determination"

The American alligator is listed as threatened by the USFWS due to similarity of appearance to the American crocodile, an endangered species. A keystone species within the Everglades ecosystem, the American alligator is dependent on spatial and temporal patterns of water fluctuations that affect courtship and mating, nesting, and habitat use (Brandt and Mazzotti 2000). Historically, American alligators were most abundant in the peripheral Everglades marshes and freshwater mangrove habitats, but are now most abundant in canals and the deeper slough habitats of the central Everglades. Water management practices including drainage of peripheral wetlands and increasing salinity in mangrove wetlands as a result of decreased freshwater flows has limited occurrence of American alligators in these habitats (Craighead 1968, Mazzotti and Brandt 1994). Increased water deliveries to ENP may beneficially affect American alligator habitat. During the field test, the stage levels experienced at G-3273 and other locations within NESRS are expected to be similar to the intra-annual range of water stages experienced under recent C&SF Project operations. The duration at which water stages at G-3273 exceed 6.8 feet NGVD is expected to increase. Elimination or modification of American alligator habitat is not expected under the field test. The Corps has determined that there would be no effect on this species from the implementation of the Proposed Action.

6.11 American Crocodile and Critical Habitat and "No Effect Determination"

American crocodiles are known to exist throughout the project area, specifically around the coastal fringes from Miami to the bottom of the peninsula and up around Naples (Cherkiss 1999). The cooling canals of Florida Power and Light's Turkey Point Power Plant support the most successful crocodile nesting population in south Florida (Mazzotti et al. 2007). These cooling canals offer premium nesting habitat because they satisfy the crocodile's two primary nesting requirements – suitable substrate above the normal high water level and adjacent deep-water refugia. While crocodiles prefer sandy substrates, they will often utilize canal spoil banks (Kushlan and Mazzotti 1989). The ideal salinity range for American crocodiles is 0 to 20 psu (Moler 1992, Mazzotti 1999, Mazzotti et al. 2007).

The American crocodile's critical habitat includes all land and water within the following boundary: beginning at the easternmost tip of Turkey Point, Dade County, on the coast of Biscayne Bay; then southeastward along a straight line to Christmas Point at the southernmost tip of Elliott Key; then southwestward along a line following the shores of the Atlantic Ocean side of Old Rhodes Key, Palo Alto Key, Anglefish Key, Key Largo, Plantation Key, Windley Key, Upper Matecumbe Key, Lower Matecumbe Key, and Long Key; then to the westernmost tip of Middle Cape; then northward along the shore of the Gulf of Mexico to the north side of the mouth of Little Sable Creek; then eastward along a straight line to the northernmost point of Nine-Mile Pond; then northeastward along a straight line to the point of beginning (**FIGURE 13**).

Under the Proposed Action, the frequency of S-197 discharges potentially increase from 14 days to a range of 39 to 82 days and the volume of S-197 discharges potentially increases between 20,000 to 30,000 acre-feet, an increase of 11-67% relative to the current WCAs-ENP-ENP to SDCS Water Control Plan (USACE 2012c). Potential increases in the frequency of S-197 discharges, under the Proposed Action are expected to occur primarily during the wet season (June-November).

Nearshore salinity conditions within the coastal estuaries are elevated much of the year as a result of the less than adequate freshwater flow deliveries. Overland flow of freshwater into coastal estuaries is preferred as compared with point source discharges through the S-197 structure, however; low volume releases to Manatee Bay and Barnes Sound through this structure are considered preferential to high volume releases which result in increased incidence of large salinity swings as well as high nutrient load delivery. Manatee Bay and Barnes Sound are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times relative to northeastern Florida Bay (Marshall 2014). In addition, these areas experience greater flushing relative to northeastern Florida Bay. Potential salinity fluctuations due to implementation of the Proposed Action would be temporary and spatially limited to nearshore areas. Most crocodiles within this area have been observed near Card Sound Road, the southeast corner of Florida Power and Light Company's Turkey Point Power Plant, and the Crocodile Lake National Wildlife Refuge on the Key Largo shore of Barnes Sound. Fewer crocodiles have been observed near the S-197 structure (Cherkiss et al. 2011). Low volume releases at S-197 has the potential to decrease flows to Taylor Slough, and subsequently Florida Bay. Currently, water which discharges from S-18C (**FIGURE 7**), is allowed to flow over the scraped down canal banks into ENP's Eastern Panhandle towards the tidal creeks feeding into Long Sound and Joe Bay.

Based on the above information and the fact that Increment 1 includes a robust monitoring plan, the Corps has determined that there would be no effect on the American crocodile and its designated critical habitat from implementation of the Proposed Action. The Corps will monitor existing salinity gages in Joe Bay, Long Sound, Manatee Bay, and Barnes Sound throughout the duration of the field test (**Appendix C**). In addition, the Corps will continue to implement Periodic Scientist Calls as outlined within the 2011 ERTP Final EIS and will include assessment of conditions within the southern estuaries.

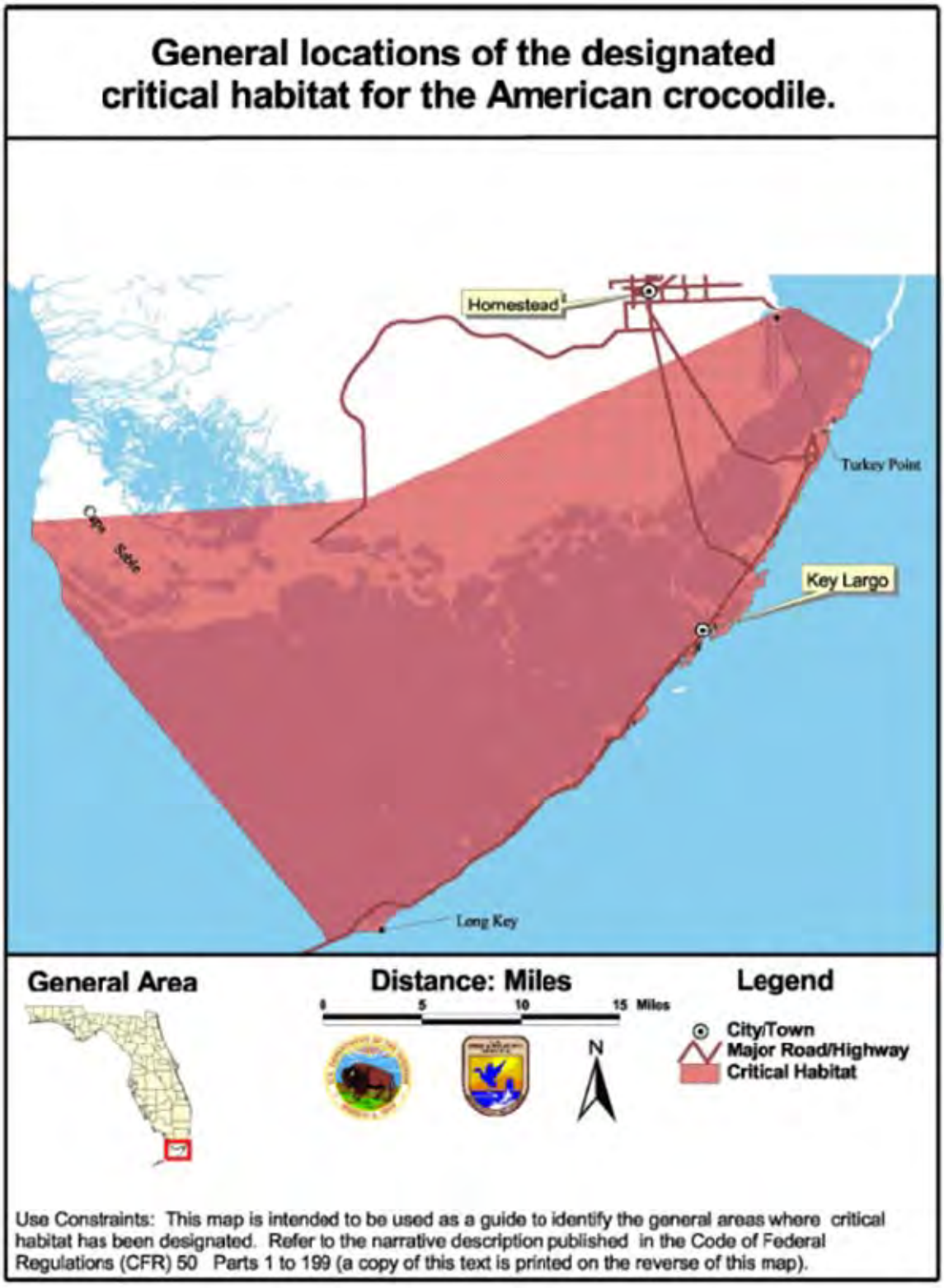

FIGURE 13. AMERICAN CROCODILE CRITICAL HABITAT

6.12 Eastern Indigo Snake and "No Effect Determination"

Eastern indigo snakes were listed as threatened in 1978 due primarily to habitat loss due to development. Further, as habitats become fragmented by roads, Eastern indigo snakes become increasingly vulnerable to highway mortality as they travel through their large territories (Schaefer and Junkin 1990). Declines in Eastern indigo snake populations were also due to over-collection by the pet trade and mortality caused by rattlesnake collectors who gas gopher tortoise burrows to collect snakes (USFWS 2013).

The Eastern indigo snake is the largest native non-venomous snake in North America, reaching lengths of up to 8.5 feet (Moler 1992). It is an isolated subspecies occurring in southeastern Georgia and throughout peninsular Florida. The Eastern indigo snake prefers drier habitats, but may be found in a variety of habitats including pine flatwoods, scrubby flatwoods, floodplain edges, sand ridges, dry glades, tropical hammocks, edges of freshwater marshes, muckland fields, coastal dunes, cabbage palm hammocks, and xeric sandhill communities (Schaefer and Junkin 1990, USFWS 1999). Eastern indigo snakes also use agricultural lands and various types of wetlands. Observations over the last 50 years made by maintenance workers in citrus groves in east-central Florida indicate that eastern indigo snakes are most frequently observed near the canals, roads, and wet ditches (USFWS 2013). It is anticipated that eastern indigo snakes would be present in sugarcane fields since one of their prey species; the King snake (*Lampropeltis getula floridanus*) has been previously documented in sugarcane fields (Krysko 2002, USFWS 2013). Eastern indigo snakes need relatively large areas of undeveloped land to maintain their population. In general, adult males have larger home ranges than females or juveniles. In Florida, Smith (2003) indicated that female and male home ranges extend from 5 to 371 acres and 4 to 805 acres, respectively.

In south Florida, the Eastern indigo snake is thought to be widely distributed. Given their preference for upland habitats (Steiner et al. 1983), Eastern indigo snakes are not commonly found in great numbers in the wetland complexes of the Everglades region, even though they may be found in pinelands, tropical hardwood hammocks, and mangrove forests in extreme south Florida (Duellman and Schwartz 1958, Steiner et al. 1983). They prefer dry, well drained sandy soils, and commonly use burrows and other natural holes as dens. Steiner et al. (1983) also reported that Eastern indigo snakes inhabit abandoned agricultural land and human-altered habitats in south Florida which would include levees within the WCAs. The field test is an operational plan that is expected to benefit ENP by increasing flows to NESRS. The field test is not expected to have significant effects on the upland habitats preferred by this species. No construction is proposed. The Corps has determined that there would be no effect on this species from the implementation of the Proposed Action.

6.13 Miami Blue Butterfly and "No Effect Determination"

The Miami blue is a small butterfly endemic to Florida. The Miami blue has a forewing length of 10 to 13 millimeters. Males and females are both bright blue dorsally, but females have an orange eyespot near their hind wing. Both sexes have a gray underside with four black spots. The Miami blue butterfly occurs at the edges of tropical hardwood hammocks, beachside scrub, and occasionally in rockland pine forests. Larval host plants include the seed pods of nickerbeans (*Caesalpinia spp.*), blackbeards (*Pithecellobium spp.*), and balloon vine

(*Cardiospermum halicababum*), a non-native species. Adults feed on the nectar of Spanish needles (*Bidens pilosa*), cat tongue (*Melanthera aspera*), and other weedy flowers near disturbed hammocks. Primarily a south Florida coastal species, the Miami blue's historic distribution ranged as far north as Hillsborough County on the Gulf Coast and Volusia County on the Atlantic Coast and extended south to the Florida Keys and the Dry Tortugas (FWC 2013). The butterfly was thought to be extinct following Hurricane Andrew in 1992, but was observed in November 1999 at Bahia Honda State Park in the Florida Keys. More than 329 surveys conducted at locations in mainland Florida and the Keys have failed to detect other colonies of this species. The Corps has determined that the Proposed Action would have no effect on the Miami blue Butterfly.

6.14 Schaus Swallowtail Butterfly and "No Effect Determination"

The Schaus swallowtail butterfly is a large dark brown and yellow butterfly originally listed as an endangered species because of population declines caused by the destruction of its tropical hardwood hammock habitat, mosquito control practices, and over-harvesting by collectors. Schaus swallowtail butterfly distribution is limited to tropical hardwood hammocks and is concentrated in the insular portions of Miami-Dade and Monroe counties, from Elliott Key in Biscayne National Park and associated smaller Keys to central Key Largo (USFWS 1999). It is estimated that remaining suitable habitat for this species is 43% of the historical suitable habitat in Biscayne National Park and 17 percent for north Key Largo. The decline has been attributed primarily to habitat destruction (USFWS 1999). Due to the lack of preferred subtropical hardwood hammock habitat in the main action area, the Corps has determined that the Proposed Action would have no effect on the Schaus swallowtail butterfly.

6.15 Stock Island Tree Snail and "No Effect Determination"

The arboreal Stock Island tree snail inhabits hardwood hammocks consisting of tropical trees and shrubs such as gumbo limbo, mahogany, ironwood, poisonwood, marlberry and wild coffee, among others. The historic distribution of the Stock Island tree snail was thought to be limited to hardwood hammocks on Stock Island and Key West and possibly other lower Keys hammocks. Recently, the range of this species has been artificially extended through the actions of collectors who have introduced it to Key Largo and the southernmost reaches of the mainland. At present, this snail occupies six sites outside of its historic range including ENP and Big Cypress National Preserve. Due to the lack of preferred subtropical hardwood hammock habitat in the main action area, the Corps has determined that the Proposed Action would have no effect on this species.

6.16 Crenulate Lead Plant and "No Effect Determination"

A perennial, deciduous shrub, the crenulate lead-plant is endemic to Miami-Dade County. Agricultural, urban and commercial development within Miami-Dade County have destroyed approximately 98-99% of the pine rockland communities where this species occurred, prompting the USFWS to list the crenulate lead-plant as endangered in 1985 (USFWS 1999). Other threats to the continued existence of this species include fire suppression, drainage and exotic plant invasion. Its present distribution is restricted to eight known locations within a 20-square mile area from Coral Gables to Kendall, Miami-Dade County. Four of the known sites are within public parks managed by the Miami-Dade County Parks Department (USFWS 1999). As the

crenulate lead-plant is not known to occur within WCA 3A or ENP, the Corps has determined that the Proposed Action will have no effect on this species.

6.17 Deltoid Spurge, Garber's Spurge, Small's Milkpea, Tiny Polygala and "May Affect Not Likely to Adversely Affect Determination"

Pine rocklands are the primary habitat for deltoid spurge, Garber's spurge, Small's milkpea, and tiny polygala. This community occurs on areas of relatively high elevation and consequently, has been subject to intense development pressure. In addition, pine rocklands are a fire-maintained community and require regular burns to maintain the open shrub/herbaceous stratum and to control hardwood encroachment (Gunderson 1997). Fire suppression, fragmentation, invasion by exotic species, and a lowered water table have negatively affected the remaining tracts of pine rocklands, prompting the listing of these species under the Endangered Species Act (ESA) (USFWS 1999).

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. These listed plant species have the potential to occur within the rocky glades surrounding the Frog Pond Detention Area. Under the field test, there are no proposed changes to the operations of the C-111 South Dade Detention Area. Field test water management operations may result in increased seepage to the L-31N Canal south of the S-331 pump station, prior to the construction and operation of the C-111 South Dade Project NDA. The additional volume of seepage to the L-31N Canal is expected to be primarily managed with the C-111 South Detention Area using S-332 B, S-332C, and S-332D, given the significant reduction in WCA 3A regulatory releases to the SDCS. The Corps has determined that the implementation of the Proposed Action may affect, but is not likely to adversely affect, these species.

6.18 Okeechobee Gourd and "No Effect Determination"

The Okeechobee gourd is a climbing annual or perennial vine. The cream-colored flowers are bell-shaped and the light green gourd is globular or slightly oblong. The Okeechobee gourd was locally common in the extensive pond apple forest that once grew south of Lake Okeechobee. Historically, the Okeechobee gourd was found on the southern shore of Lake Okeechobee in Palm Beach County and in the Everglades. Currently this species is limited to two disjunct populations, one along the St. Johns River in Volusia, Seminole, and Lake Counties in northern Florida and a second around the shoreline of Lake Okeechobee in south Florida (USFWS 1999). The conversion of the pond apple forested swamps and marshes for agricultural purposes as well as water-level regulation within Lake Okeechobee have been the principal causes of the reduction in both range and number of the Okeechobee gourd. As the Okeechobee gourd is not known to occur within WCA 3A or ENP, the Corps has determined that the Proposed Action will have no effect on this species.

6.19 Cape Sable Thoroughwort and Critical Habitat and "No Effect Determination"

The Cape Sable thoroughwort is endemic to south Florida, and is a flowering perennial herb that is 8-40 inches tall. The Cape Sable thoroughwort was historically known from Monroe County, both on the Florida mainland and the Florida Keys, and in Miami-Dade County along Florida Bay. The current range of the species includes areas in ENP and five islands in the Florida Keys.

It occurs throughout coastal rock barrens and berms and sunny edges of rockland hammock. The decline of the species is primarily the result of habitat loss from commercial and residential development, sea level rise, storms, competition from non-native plants, predation by non-native herbivores, and wildfires. Critical habitat for the species occurs in nine separate units across approximately 10,968 acres of Miami-Dade and Monroe Counties. The nine units are: 1) ENP, 2) Key Largo, 3) Upper Matecumbe Key, 4) Lignumvitae Key, 5) Lower Matecumbe Key, 6) Long Key, 7) Big Pine Key, 8) Big Munson Island, and 9) Boca Grande Key. Seven of the nine units are currently occupied by the plant. The field test is not expected to affect coastal rock barrens; therefore, the Corps has determined that the Proposed Action will have no effect on this species or its designated critical habitat.

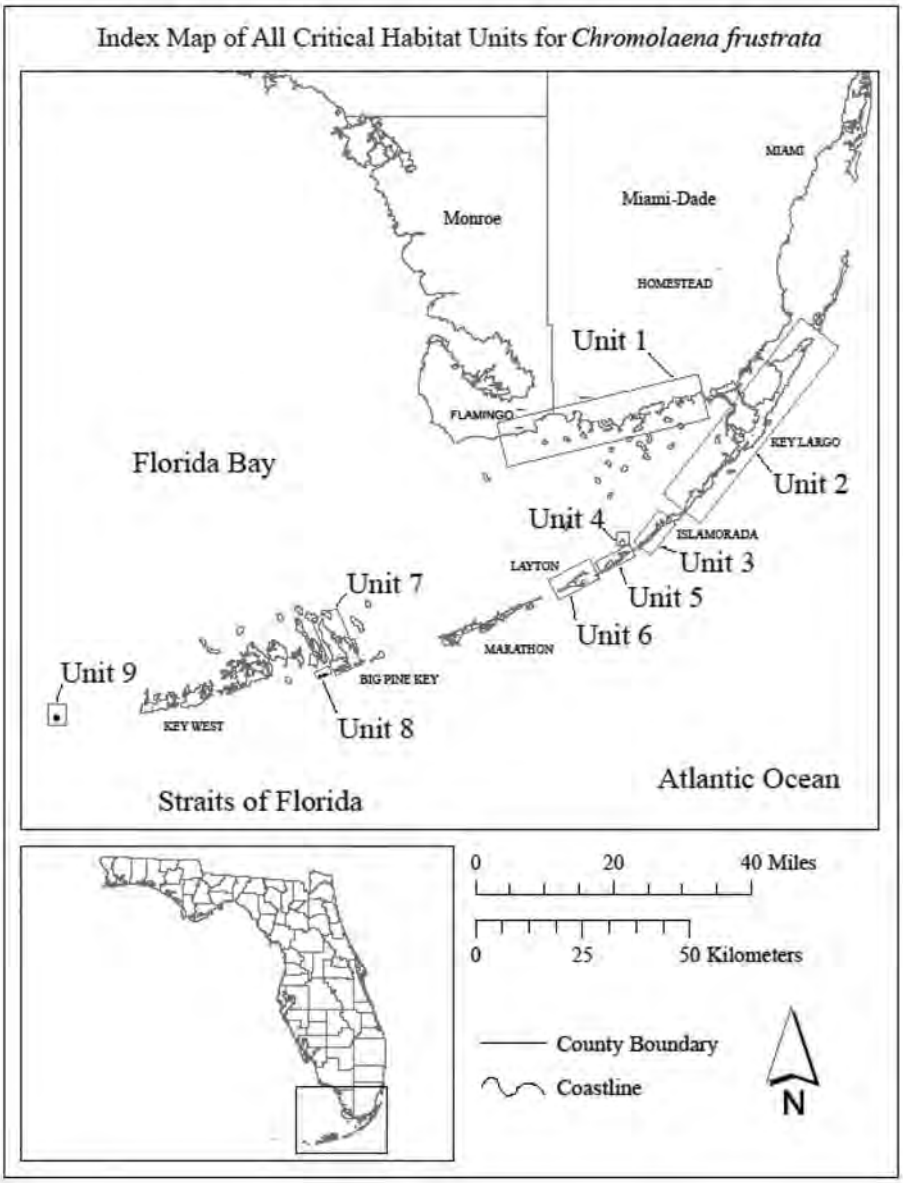

FIGURE 14. CAPE SABLE THOROUGHWORT CRITICAL HABITAT

6.20 Carters Small-Flowered Flax and Florida Brickell-Bush and "No Effect Determination"

Carter's small-flowered flax and Florida brickell-bush are endemic to the pine rocklands of the Miami Rock Ridge in Miami-Dade County. Both species grow exclusively on the Miami Rock Ridge outside the boundaries of ENP (79 FR 52567; September 4, 204). Carter's small-flowered flax is an annual or short-lived perennial herb and was first collected between coconut Grove and Cutler areas of Miami. It is currently found from R. Hardy Matheson Preserve southwest to Naranja/Modello, with a distance of approximately 27.3 km between the farthest locations.

Florida brickell-bush is a perennial herb and was known to historically occur from central and southern Miami-Dade County from approximately Coconut Grove to Florida City, although the full extent of its historical range is unknown. Florida brickell-bush is currently distributed from central and southern Miami-Dade County from SW 120 Street to Florida City. Little research has been done into the demography, reproductive biology, or genetics of the species.

Field observations indicate the species does not usually occur in great abundance. Populations are typically sparse and contain a low density of plants even in well-maintained pine rockland habitat. Carter's small-flowered flax and Florida brickell-bush have experienced substantial destruction, modification, and curtailment of their habitat and range. Specific treats to these plants include habitat loss, fragmentation, and modification cause by development (i.e. conversion to both urban and agricultural land uses) and inadequate fire management. Only small and fragmented occurrences of these two plants remain. The current ranges span such a small geographic area – a narrow band no more than 4.0 km in width, and approximately 30.1 km in length, respectively, along the Miami Rock Ridge.

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. Although potentially suitable habitat exists within the action area, the Corps has determined that the implementation of the Proposed Action will have no effect on these species due to the lack of anticipated changes in hydrology within pine rockland habitat.

6.21 Florida Bristle Fern and "No Effect Determination"

The Florida bristle fern is very small in size and superficially resembles other bryophytes, such as mosses and liverworts, making it difficult to observe in its natural habitat. It is mat forming, has no roots, and contains trichomes (hairlike/bristelike outgrowth) on the tip of the fern. In southeastern North America, *Trichomanes spp.* Are considered rare because of their delicate nature and requirements for deeply sheltered habitats with almost continuous high moisture and humidity (Farrar 1993b, Zots and Buche 2000). In Florida, the sub-species is only known to occur in Miami-Dade and Sumter Counties. In Miami-Dade County, the Florida bristle-fern is generally epiphytic (a plant that grows non-parasitically upon another plant) or epipetric (growing on rocks), typically growing in rocky outcrops of rockland hammocks, in oolitic limestone solution holes, and, occasionally, on tree roots in limestone surrounded areas (Philips 1940, Nauman 1986, Whitney *et al. 2004, Possley 2013f, Van der Heiden 2014b).* In Miami-Dade, the historical range of the subspecies extended from Royal Palm Hammock (now in ENP) at its southern limit, northeast to Snapper Creek Hammock, which is located in R. Hardy Matheson Preserve. The four populations that constitute the Miami Dade County metapopulation are located in urban preserves managed by the County's Environmentally

Endangered Lands Program and include Castellow Hammock Park, Hattie Bauer Hammock, Fuchs Hammock Preserve, and Meissner Hammock. Factors affecting the sub-species include habitat modification and destruction caused by human population growth and development.
Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. Although potentially suitable habitat exists within the action area, the Corps has determined that the implementation of the Proposed Action will have no effect on the sub-species. Systematic surveys completed in ENP over the years have not been able to find the Florida bristle fern (79 FR 61148; October 9, 2014).

6.22 Florida Semaphore Cactus and "No Effect Determination"

The Florida semaphore cactus is a prickly pear cactus endemic to the Florida Keys. Plants can grow to tree like form with flattened branches, red flowers, and many long spines. Historically, the Florida semaphore cactus was known from Key Largo and Big Pine Key (Barnhardt 1935), but development has destroyed these populations. The only "wild' population remaining is located in a Nature Conservancy preserve in the middle Keys. Several out plantings by Fairchild Tropical Garden and the University of South Florida were made in the late 1990s. Fairchild Tropical Gardens planted less than 200 cacti on Key Largo and Big Pine Key, the majority of which have died. The University of South Florida planted 240 cacti on Big Pine Key, Upper Sugarloaf Key, No Name Key, Little Torch Key, Ramrod Key, and Cudjoe Key. At least 3/4 of cacti planted by the University of Florida have been lost to damage from the introduced exotic cactus moths (Lippencott 1990). Threats to the species include habitat destruction due to development, collection of the species by cactus enthusiasts, introduction of the exotic cactus moth (*Cactoblastis cactorum*), salt water intrusion, lack of genetic diversity, and pathogens. The Corps has determined that the Proposed Action will have no effect on this species.

7.0 EFFORTS TO ELIMINATE POTENTIAL IMPACTS ON LISTED SPECIES

The Corps commits to avoiding, minimizing or mitigating for adverse effects. All practicable means to avoid or minimize environmental effects were incorporated into the Proposed Action. A monitoring plan has been developed for the field test and has been included in **Appendix C**. In addition to the monitoring outlined within **Appendix C**, the Corps and South Florida Water Management District (SFWMD) will continue existing hydrologic and species monitoring plans to ensure that the Incidental Take as defined within the USFWS 2009 C-111 Western Spreader Canal Project BO and the 2010 ERTP BO is not exceeded. In February 2012, the SFWMD completed construction of the C-111 Western Spreader Canal Project as part of its state-expedited program. The SFWMD currently conducts an annual assessment of the project in accordance with Corps permit reporting guidelines (Department of Army Permit SAJ-2005-9856 [IP-AAZ]) and the USFWS 2009 BO (http://www.fws.gov/verobeach/verobeach_olddont_delete/sBiologicalOpinion/index.cfm?method=biologicalopinion.search). Annual reporting is summarized in the South Florida Environmental Report. In accordance with the Terms and Conditions within the USFWS 2010 ERTP BO, the Corps is required to provide an annual assessment of ERTP operations. The annual assessment includes a summary of Periodic Scientist Calls, analysis of incidental take, analysis of ERTP performance measures, and ecological targets and species monitoring. The Incidental Take Statements, Terms and Conditions and Reinitiation Notice are defined in the 2010 ERTP BO (http://www.evergladesplan.org/pm/program_docs/ertp.aspx). The Corps will

continue to maintain ongoing communications with the USFWS throughout the duration of the field test.

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9.0 LIST OF PREPARERS

Name	Affiliation	Qualification/Role
Melissa Nasuti	USACE	Biologist – Preparation
Gina Ralph	USACE	Biologist - Reviewer

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PROPOSED G-3273 CONSTRAINT RELAXATION/S-356 FIELD TEST AND S-357N OPERATIONAL STRATEGY

SPECIES DETERMINATION OF EFFECTS

NATIONAL MARINE FISHERIES SERVICE

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1.0 PROJECT AUTHORITY

A minimum schedule of water deliveries from the Central and Southern Florida (C&SF) Project to Everglades National Park (ENP) was authorized by Congress in 1970 in Public Law (PL) 91-282. Section 1302 of the Supplemental Appropriations Act of 1984 (PL 98-181), passed in December 1983, authorized the U.S. Army Corps of Engineers (Corps), with the concurrence of the National Park Service (NPS) and South Florida Water Management District (SFWMD), to deviate from the minimum delivery schedule for two years in order to conduct an Experimental Program of water deliveries to improve conditions within ENP. Section 107 of PL 102-104 amended PL 98-181 to allow continuation of the Experimental Program until modifications to the C&SF Project, authorized by Section 104 of the ENP Protection and Expansion Act of 1989 (PL 101-229) were completed and implemented. The purpose of PL 101-229 was "To modify the boundaries of the Everglades National Park and to provide for the protection of lands, waters, and natural resources within the park, and for other purposes". This act also authorized the Secretary of the Army, upon completion of a General Design Memorandum (GDM), to modify the C&SF Project to improve water deliveries to the park and to the extent practicable permit steps to restore the natural hydrology within the park. The Modified Water Deliveries (MWD to ENP GDM and Final Environmental Impact Statement (EIS) were published in July 1992 (USACE 1992).

When the Corps completed the MWD GDM and Final EIS in 1992, the operational plan identified in the GDM was not considered final. The recommended plan was selected on the basis of expected environmental benefits derived from a modified water delivery schedule. The GDM called for hydrologic modeling, coordination of modeling results, and environmental evaluations to develop an acceptable water control plan. The GDM also recognized that review and adjustment of project operations would continue as experience and additional assessment of data revealed potential for improvement.

The PL for the MWD Project (PL 101-229) was amended as PL 108-7 (Appropriations Act, 2003). This authorization bill identified Alternative 6D (the Selected Alternative in the July 2000 General Reevaluation Report [GRR] and Final Supplemental EIS for 8.5 Square Mile Area [8.5 SMA]) as the plan to be built, authorized relocation of residents, and other provisions (USACE 2000).

2.0 LOCATION

The MWD Project is a specific feature of the C&SF Project that is located in south Florida and includes portions of Miami-Dade County as well as portions of ENP and adjacent areas (**FIGURE 1**). The 1992 MWD GDM and Final EIS defines the project boundary as Shark River Slough (SRS) and that portion of the C&SF Project north of structure 331 (S-331) to include Water Conservation Area 3 (WCA 3).

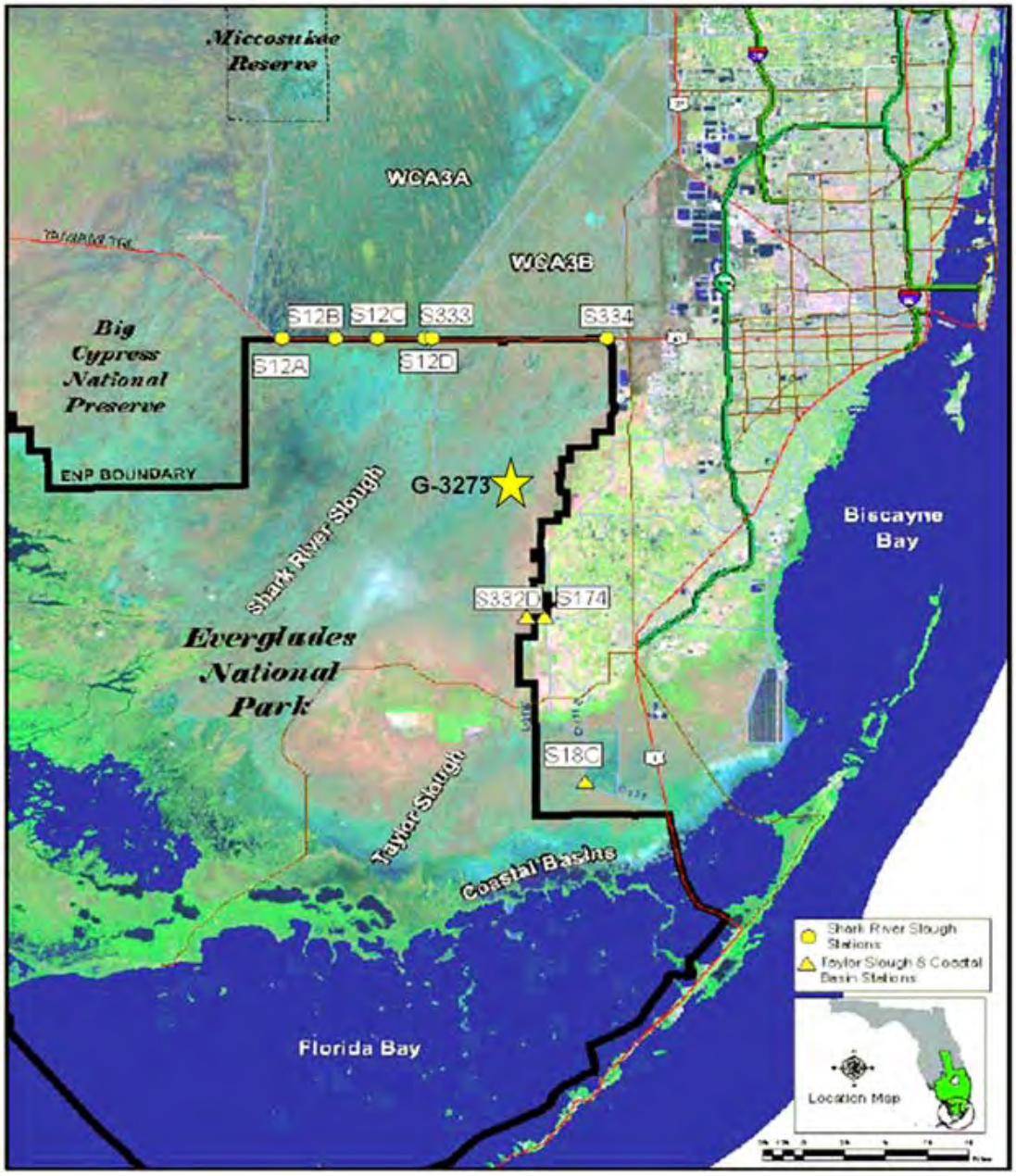

FIGURE 1. PROJECT LOCATION

3.0 PROJECT BACKGROUND

The MWD Project provides a system of water deliveries to ENP across the full width of the historic SRS flow-way and consists of four main components: (1) conveyance and seepage control features to facilitate flow through the system from WCA 3A to WCA 3B and to limit seepage eastward from WCA 3B and ENP; (2) modifications to Tamiami Trail to facilitate flow under the road to SRS; (3) flood mitigation for the developed East Everglades area (also referred to as the 8.5 SMA); and (4) project implementation support, which includes monitoring and operational changes. The MWD GDM and Final EIS (USACE 1992) includes a discussion of the location, capacity, and environmental impacts for the proposed structural modifications,

which included structures S-345A, B and C; S-349A, B and C; S-355A and B; S-334 modification, removal of the L-67 extension levee and borrow canal filling; and a levee and canal system for flood mitigation in 8.5 SMA. The levee and canal system included two pumping stations, S-356 and S-357 (**FIGURE 2**).

The 8.5 SMA features were constructed to provide flood mitigation to the Las Palmas Community in order to prevent impacts from higher stages within Northeast Shark River Slough (NESRS) resulting from the implementation of MWD to the private land owners located east of ENP. A GRR and Final Supplemental EIS for 8.5 SMA were completed in July 2000 (USACE 2000). The GRR recommended Alternative 6D, consisting of a perimeter levee (Levee 357W [L-357W]), internal levees, a seepage collection canal, a new pump station (S-357), and a detention cell that would discharge into the proposed C-111 South Dade North Detention Area (NDA), as part of the C-111 South Dade Project (**FIGURE 2**). A design refinement for 8.5 SMA and environmental assessment (EA) were completed in August of 2012 (USACE 2012a). An operational test conducted in 2009 indicated that the S-357 pump station may have greater efficiency with removing water from the 8.5 SMA and adjacent lands than envisioned, causing an increase in seepage in the southwest corner. To allow for utilization of the S-357 pump station at maximum capacity, an additional east-west seepage collection canal (C-358) was identified to prevent groundwater stage increases in the southwest corner (east of L-357W). In addition, the 8.5 SMA detention area would need to be connected to the proposed C-111 South Dade NDA. A structure (S-357N), not yet constructed, would connect this seepage collection canal to the existing infrastructure.

Construction of the 8.5 SMA features, as described in the July 2000 GRR and Final Supplemental EIS was completed prior to completion of the proposed full build-out of the C-111 South Dade NDA. The C-111 South Dade Project was constructed as part of the ENP–South Dade Conveyance Canals Project authorized by the Flood Control Act (FCA) of 1968 PL 90-483. This Act authorized modifications to the existing C&SF Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). Further modifications to the C-111 were authorized as an addition to the C&SF project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303). The C-111 South Dade Integrated GRR and EIS was published in May 1994 (USACE 1994). This report described a conceptual plan for five pump stations and levee-bounded retention/detention areas to be built west of the L-31N Canal, between the 8.5 SMA and the Frog Pond Area to control seepage out of ENP while providing flood mitigation to agricultural lands east of C-111 Canal (**FIGURE 2**). The original and existing configuration of these structural features are described in detail in the 2006 Interim Operational Plan (IOP) for Protection of the Cape Sable Seaside Sparrow Final Supplemental EIS (USACE 2006) and the 2012 EA for the expansion of the C-111 South Dade NDA (USACE 2012b).

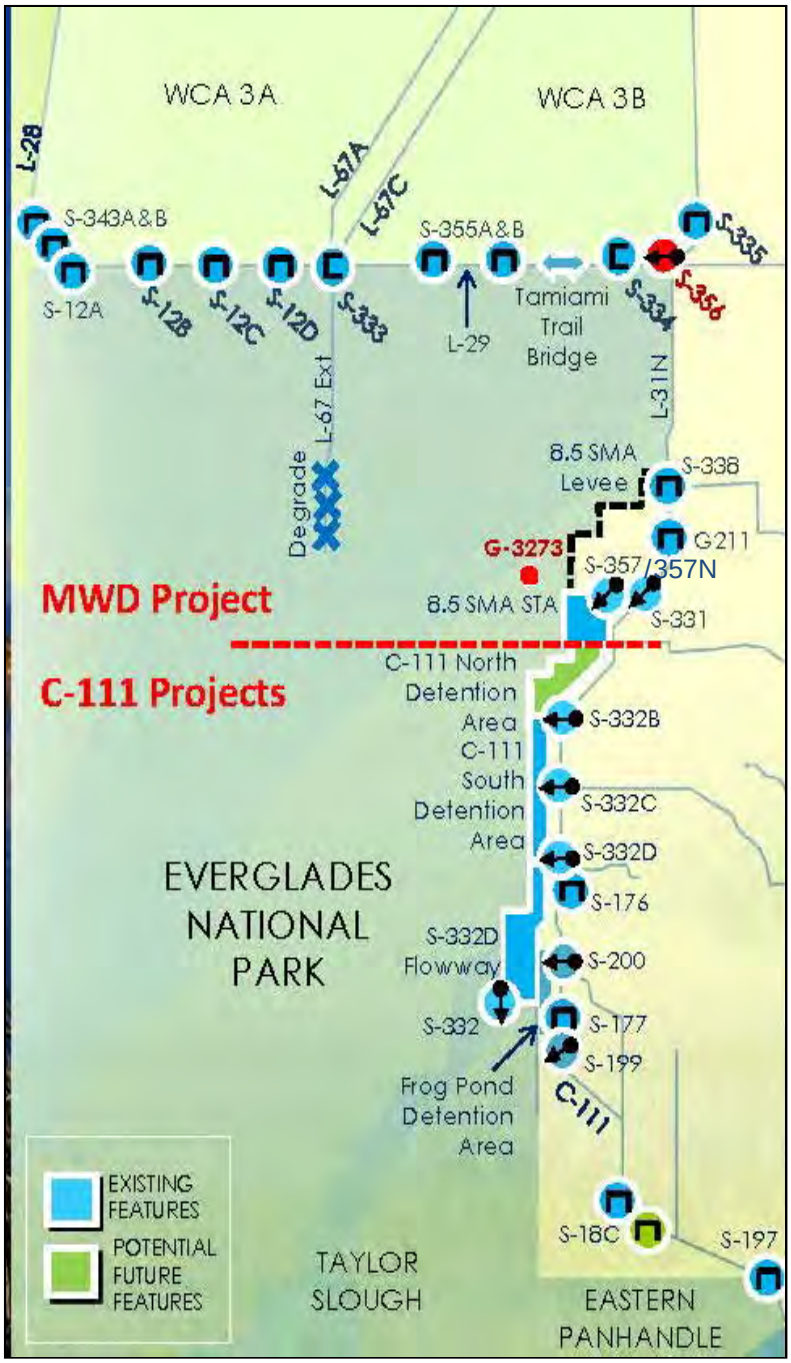

FIGURE 2. RELEVANT C&SF PROECT FEATURES OF THE MWD PROJECT AND C-111 SOUTH DADE PROJECTS

Much of the MWD Project has been completed, including the 8.5 SMA Project, construction of S-355A and B, S-333 and S-334 modifications, S-356, Tiger Tail camp raising, removal of four miles of the L-67 Extension Levee, and Tamiami Trail modifications. However, some features originally included in the 1992 MWD GDM and Final EIS, including features to provide hydrologic connectivity between WCA 3A and WCA 3B and complete degradation of the L-67 Extension Levee and adjacent canal, have not been completed for various reasons, including

operational (water levels) constraints within WCA 3B, lowered MWD maximum operational stages for the L-29 Canal (9.7 feet National Geodetic Vertical Datum of 1929 [NGVD] was assumed with the 1992 MWD GDM and Final EIS), and potential water quality concerns.

Constructed features of the C-111 South Dade Project include the detention areas 332-B, 332-C and 332-D, the L-320 and L-322 levees which form the east and west boundary of the C-111 South Dade buffer area from S-332 D north to S-332 C, and the L-323 levee which completes the S-333 B-C connector and forms a secondary buffer area east of the C-111 South Dade area.

Operations in the project area are currently governed by the WCAs, ENP, ENP to South Dade Conveyance System (SDCS) Water Control Plan (USACE 2012c). The Corps, Jacksonville District, is initiating the Gage-3273 (G-3273) and S-356 operations field test to raise the current operational stage constraint for G-3273, and operate the S-356 pump station to return seepage from NESRS to the adjacent L-31N Canal. The field test will also implement a testing protocol to assist in defining operating criteria for the new 8.5 SMA S-357N water control structure following completion of construction. The MWD Increment 1 Field Test will be the first increment in a series of three related, sequential efforts that will result in a comprehensive integrated water control plan, referred to as the Combined Operating Plan (COP), for the operation of the water management infrastructure associated with the MWD and C-111 South Dade Projects.

The first increment will maintain the current 7.5 feet NGVD maximum operating limit in the L-29 Canal. Information and operational criteria identified from the field test (Increment 1) will be used to develop an expanded set of operations and monitoring criteria for a subsequent operational field test (Increment 2) that will raise the maximum operating limit in the L-29 Canal level above 7.5 feet NGVD, up to a maximum of 8.5 feet NGVD, as outlined in the 1992 MWD GDM and Final EIS (USACE 1992). The third increment is development of the COP that incorporates constructed features of the MWD and C-111 South Dade Projects into the WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Increment 3 will be informed by the Increment 1 and Increment 2 field tests.

4.0 PROJECT NEED OR OPPORTUNITY

The overarching project need is to increase the availability of S-333 to increase water deliveries from WCA 3A to ENP through NESRS for the benefit of natural resources. A small incremental step toward achieving that goal is to reduce the number of times S-333 discharges are limited by the existing G-3273 stage constraint of 6.8 feet NGVD. G-3273 lies within eastern ENP, directly west of the 8.5 SMA (**FIGURE 1**). The G-3273 constraint of 6.8 feet, NGVD exists as a flood protection measure. A stage of 6.8 feet NGVD at this gage has been used since 1985 as a trigger to cease S-333 discharges from flowing south into NESRS as a protective measure for residential areas to the east, particularly the 8.5 SMA. Since many of the MWD features have been built, including the protective levee around the 8.5 SMA and much of the C-111 South Dade Project detention areas to the south, there are more opportunities to begin relaxation of the G-3273 constraint and subsequent increased water deliveries from WCA 3A into NESRS.

The releases from S-333 are part of a regulation schedule for WCA 3A and are typically dependent on the Interim Operational Procedure for Restricted Rain-Driven Water Deliveries to

ENP via NESRS (Rainfall Plan) outlined in the WCAs-ENP-SDCS Water Control Plan (USACE 2012c). This Rainfall Plan consists of a rainfall-based delivery formula that specifies the amount of water to be delivered to ENP in weekly volumes through the S-333 and S-12s. Currently, the flow distribution is 55% through S-333 into NESRS and 45% through the S-12s into ENP west of the L-67 extension levee; however, during the dry season non-regulatory target flows are 80% through S-333 and 20% through the S-12 structures. Releases through the S-333 are limited by the constraint at G-3273 under the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). Therefore, when G-3273 is below 6.8 feet NGVD, 55% of wet season and 80% of dry season Rainfall Plan target flow is released into NESRS. However, when G-3273 is above 6.8 feet NGVD, S-334 is used to pass all or partial S-333 flows through SDCS, thereby preventing water from entering NESRS. When S-333 is closed and partial flows cannot be passed through S-334, the volume of flow that could not be delivered at S-333 shifts to the S-12s. In this manner, the G-3273 constraint limits the volume of water entering NESRS. The proposed modification to the G-3273 constraint is anticipated to reduce the number of times that S-333 discharge is reduced and increase the number of times the maximum (*i.e.* 55% of wet season or 80% of dry season) Rainfall Plan deliveries from WCA 3 through S-333 into NESRS are achieved.

The current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) does not contain water management operating criteria for the planned spillway (S-357N) located in the 8.5 SMA upstream of S-357, at the intersection of C-357 and the newly constructed seepage collection canal (C-358) (**FIGURE 2**). The 2012 Design Refinement for the 8.5 SMA EA did not address water management operating criteria for S-357N or C-358 and stated that all gates would be in the closed position until a new operational protocol is developed for the MWD Project (USACE 2012a). Interim water management operating criteria for the planned 8.5 SMA gated culvert S-35N will be implemented in conjunction with Increment 1.

Information obtained from Increment 1, if successful with achievement of field test goals and objectives will be codified within the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). In addition, information obtained through Increment 1 will be used to support development of a second field test (Increment 2) and subsequent consideration of future incremental modifications to the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c).

5.0 PROPOSED ACTION

Summary details of the Proposed Action are listed below:

- The L-29 Canal will be managed to prevent a sustained stage above 7.5 feet NGVD (average of S-333 tail water and S-334 headwater), which is the maximum operating stage intended within the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c). This will be achieved by stopping inflow into the L-29 Canal when the L-29 Canal stage rises above 7.5 feet NGVD.

- Both S-333 and S-356 releases to the L-29 Canal will be subject to the 7.5 feet NGVD constraint however, the water level at G-3273 will no longer be a constraint, allowing

NESRS to receive additional water year-round, pursuant to the WCA 3A Regulation Schedule and Rainfall Plan.

- The 6.8 feet NGVD water level at G-3273 and the WCA 3A stage level (as measured using the average of monitoring gauges/sites 63, 64, and 65) will be utilized to define the priority of releases from S-333 and S-356 to the L-29 Canal and NESRS. In addition, the field test Action Line is a seasonally varying WCA 3A stage (10.0 to 10.75 feet, NGVD) which will also serve to define the S-333 and S-356 releases to the L-29 Canal and NESRS.

- S-355 A and S-355 B may be utilized to discharge to the L-29 Canal as indicated under current operations and other future associated permit requirements.

- Implementation of a testing protocol for S-357N will be incorporated into the field test following completion of the C-358 seepage collection canal and the associated S-357N control structure.

- Additional low volume releases from S-197 are expected. The S-178 Tail Water is used as a trigger to define the opening criteria for S-197 discharges. The Proposed Action reduces the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) Level 1 S-197 opening from 800 to 500 cubic feet per second. Operating criteria for S-197 will revert to the operating criteria in the current WCAs-ENP-SDCS Water Control Plan (USACE 2012c) once Contracts 8 and 9 of the C-111 South Dade Project are constructed and operable.

- Test duration will be a minimum of one year. If weather conditions during the one year test period do not provide sufficient data for a conclusive field test, the test may be extended up to one year for a maximum of two years.

Further detailed information on the Proposed Action can be found in the G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy (**Appendix A**).

6.0 EFFECT DETERMINATIONS TO FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

The Corps requested written confirmation of federally listed threatened and endangered species that are either known to occur or are likely to occur within the project area from the U.S. Fish and Wildlife Service (USFWS) by letter dated August 22, 2014. Concurrence on the presence of listed species was received on September 11, 2014. The USFWS provided an update to the concurrence letter on December 17, 2014. The Corps has determined that the Proposed Action will have no effect on species listed within **TABLE 1** under the purview of the National Marine Fisheries Service (NMFS). These determinations are based on the short duration of the field test and the generally beneficial nature of this action.

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND EFFECTS DETERMINATION OF THE PROPOSED ACTION

Common Name	Scientific Name	Status	May Affect, Likely to Adversely Effect	May Affect, Not Likely to Adversely Effect	No Effect
Mammals					
Florida panther	*Puma concolor coryi*	E			X
Florida manatee	*Trichechus manatus latirostris*	E, CH			X
Florida bonneted bat	*Eumops floridanus*	E		X	
Birds					
Cape Sable seaside sparrow	*Ammodramus maritimus mirabilis*	E, CH		X	
Everglade snail kite	*Rostrhamus sociabilis plumbeus*	E, CH		X	
Piping plover	*Charadrius melodus*	T			X
Red-cockaded woodpecker	*Picoides borealis*	E			X
Roseate tern	*Sterna dougallii dougallii*	T			X
Wood stork	*Mycteria americana*	T		X	
Reptiles					
American Alligator	*Alligator mississippiensis*	T, SA			X
American crocodile	*Crocodylus acutus*	T, CH			X
Eastern indigo snake	*Drymarchon corais couperi*	T			X
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	E			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E, CH			X
Invertebrates					

Bartram's hairstreak butterfly	*Strymon acis bartrami*	C			X
Elkhorn coral	*Acropora palmata*	T, CH			X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	C			X
Miami blue butterfly	*Cyclargus thomasi bethunebakeri*	E			X
Schaus swallowtail butterfly	*Heraclides aristodemus ponceanus*	E			X
Staghorn coral	*Acropora cervicornis*	T, CH			X
Stock Island tree snail	*Orthalicus reses* (not incl. *nesodryas*)	T			X
Plants					
Crenulate lead plant	*Amorpha crenulata*	E			X
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E		X	
Garber's spurge	*Chamaesyce garberi*	T		X	
Johnson's seagrass*	*Halophila johnsonii*	E, CH			X
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E			X
Small's milkpea	*Galactia smallii*	E		X	
Tiny polygala	*Polygala smallii*	E		X	
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	C			X
Blodgett's silverbush	*Argythamnia blodgettii*	C			X
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH			X
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, Pr CH			X
Everglades bully	*Sideroxylon reclinatum* spp. *austrofloridense*	C			X
Florida brickell-bush	*Brickellia mosieri*	E, Pr CH			X
Florida bristle fern	*Trichomanes punctatum* spp. f*loridanum*	Pr E			X
Florida pineland crabgrass	*Digitaria pauciflora*	C			X
Florida prairie-	*Dalea*	C			X

clover	*carthagenensis* var. *floridana*				
Florida semaphore cactus	*Consolea corallicola*	E			X
Pineland sandmat	*Chamaesyce deltoidea* ssp. *pinetorum*	C			X
Sand flax	*Linum arenicola*	C			X

E=Endangered; T=Threatened; SA=Similarity of Appearance; CH=Critical Habitat; Candidate Species, Pr E = Proposed Endangered, Pr CH = Proposed Critical Habitat

* Marine species under the purview of NMFS.

6.1 Green Sea Turtle, Hawksbill Sea Turtle, Kemp's Ridley Sea Turtle, Leatherback Sea Turtle, Loggerhead Sea Turtle and "No Effect Determination"

The green sea turtle lives in tropical and sub-tropical waters. Areas that are known as important feeding areas for the green turtles in Florida include the Indian River Lagoon, the Florida Keys, Florida Bay, Homosassa, Crystal River and Cedar Key. Green turtles occupy three habitat types: high energy oceanic beaches, convergence zones in the pelagic habitat, and benthic feeding grounds in the relatively shallow, protected waters. Green sea turtles forage in pastures of seagrasses and/or algae, but small green turtles can also be found over coral reefs, worm reefs, and rocky bottoms.

The hawksbill sea turtle lives in tropical and sub-tropical waters of the Atlantic, Pacific, and Indian Oceans. Areas that are known as important feeding areas for hawksbill turtles in Florida include the waters near the Florida Keys and on the reefs off Palm Beach County. Hawksbill turtles use different habitat types at different stages of their life cycle. Post hatchlings take shelter in weed lines that accumulate at convergence zones. Coral reefs are the foraging habitat of juveniles, sub-adults, and adults. They are also known to inhabit mangrove-fringed bays and estuaries, particularly along the eastern shore where coral reefs are absent. Hawksbills feed predominantly on sponges and nest on low and high energy beaches, frequently sharing the high-energy beaches with green sea turtles.

The Kemp's ridley sea turtle is a shallow water benthic feeder consuming mainly algae and crabs. Juveniles and sub-adults have been found along the eastern seaboard of the United States and in the Gulf of Mexico. However, the major nesting beach for the Kemp's ridley sea turtle is on the northeastern coast of Mexico. This species occurs mainly in coastal areas of the Gulf of Mexico and in the northwestern Atlantic Ocean. The post-pelagic stages are commonly found dwelling over crab-rich sandy or muddy bottoms. Juveniles frequent bays, coastal lagoons, and river mouths.

The leatherback sea turtle lives in tropical and sub-tropical waters. Habitat requirements for juvenile and post-hatchling leatherbacks are virtually unknown. Nesting females prefer high-energy beaches with deep unobstructed access. Leatherbacks feed primarily on jellyfish.

Loggerhead sea turtles inhabit the continental shelves and estuarine environments along the margins of the Atlantic, Pacific, and Indian Oceans. Females select high energy beaches on

barrier strands adjacent to continental land masses for nesting. Steeply sloped beaches with gradually sloped offshore approaches are favored. After leaving the beach, hatchlings swim directly offshore and eventually are found along drift lines. They migrate to the near-shore and estuarine waters along the continental margins and utilize those areas as the developmental habitat for the sub-adult stage. Loggerheads are predators of benthic invertebrates.

Although the sea turtles are expected to be found foraging in nearshore seagrass habitats or near hardbottom habitats within Florida Bay, significant impacts to food sources are not expected. Additionally, none of the above mentioned sea turtles would attempt to utilize areas for nesting purposes since there is no suitable habitat for nesting in the project area. The Corps has determined that implementation of the Proposed Action will have no effect on the green sea turtle, hawksbill sea turtle, Kemps ridley sea turtle, leatherback sea turtle or loggerhead sea turtle.

6.2 Smalltooth Sawfish and Critical Habitat and "No Effect Determination"

Smalltooth sawfish have been reported in the Pacific and Atlantic Oceans, and the Gulf of Mexico; however, the United States population is found only in the Atlantic Ocean and Gulf of Mexico. Historically, the United States population was common throughout the Gulf of Mexico from Texas to Florida, and along the east coast from Florida to Cape Hatteras. The current range of this species includes peninsular Florida. Juvenile sawfish use shallow habitats with a lot of vegetation, such as mangrove forests, as important nursery areas. Many important nursery habitats have been modified or lost due to development of the coastal areas of Florida and other southeastern states. The loss of juvenile habitat likely contributed to the decline of this species. As stated in the final rule published in the Federal Register on 2 September 2009, critical habitat consists of two coastal habitat units: the Charlotte Harbor Estuary Unit (**FIGURE 3**) and the Thousand Islands/Everglades Unit (**FIGURE 4**).

According to the final rule designating critical habitat for the smalltooth sawfish, juvenile sawfish encounters were highly correlated with euryhaline habitat areas. By definition, the term "euryhaline" used in the designation of smalltooth sawfish critical habitat (74 FR 45353, September 2, 2009) indicates a species that is able to tolerate a wide range of salinities. Several studies conducted in recent years have tracked juvenile sawfish movements in relation to salinity changes in the Caloosahatchee River and its estuary (Simpfendorfer et al., 2011; Poulakis et al., 2011; and Poulakis et al., 2012). Simpfendorfer et al. (2011) and Poulakis et al. (2012) conducted studies to assess how changes in environmental conditions within estuarine areas affected the presence, movements, and activity space of smalltooth sawfish. Simpfendorfer et al. (2011) found that smalltooth sawfish preferred salinities between 18 and at least 24 practical saline units (psu), while longer-term studies in this region expanded that range from 18 to 30 psu (Poulakis et al., 2011; Poulakis et al., 2012). Smalltooth sawfish moved within these ranges in part to stay within this salinity preference; however, sawfish were found throughout the entire range of conditions encountered (temperatures between 14.6 and 32.6 C; salinity ranges from 0.1 to 33.6 psu, and freshwater inflow from 0.0 to 627.4 m^3s^{-1}; Simpfendorfer et al., 2011).

Jiang et al. (2012) developed a model to estimate the resilience of a halophytic mangrove and glycophytic hardwood hammock ecotone to storm surge. The authors noted that a disturbance, such as an input of salinity to the soil from a storm event, could upset this ecotone boundary.

This could possibly cause salinity-tolerant vegetation to migrate inland. For the model developed in this study, the authors found a pulse disturbance was not sufficient to cause a shift in the vegetative boundary. Any change in salinity would have to be held at a high level for some time for this type of shift to occur (Jiang et al., 2012). Although the above referenced study by Jiang et al. (2012) provides only limited data on how mangrove habitats respond to salinity variations, it suggests that gradual releases of low volume freshwater releases from S-197 would not be sufficient to affect red mangrove habitats that provide nursery functions to juvenile smalltooth.

Based on the above information, the Corps has determined that there would be no effect on the smalltooth sawfish and its designated critical habitat from implementation of the Proposed Action. The Corps will monitor existing salinity gages in Joe Bay, Long Sound, Manatee Bay, and Barnes Sound throughout the duration of the field test (**Appendix C**).

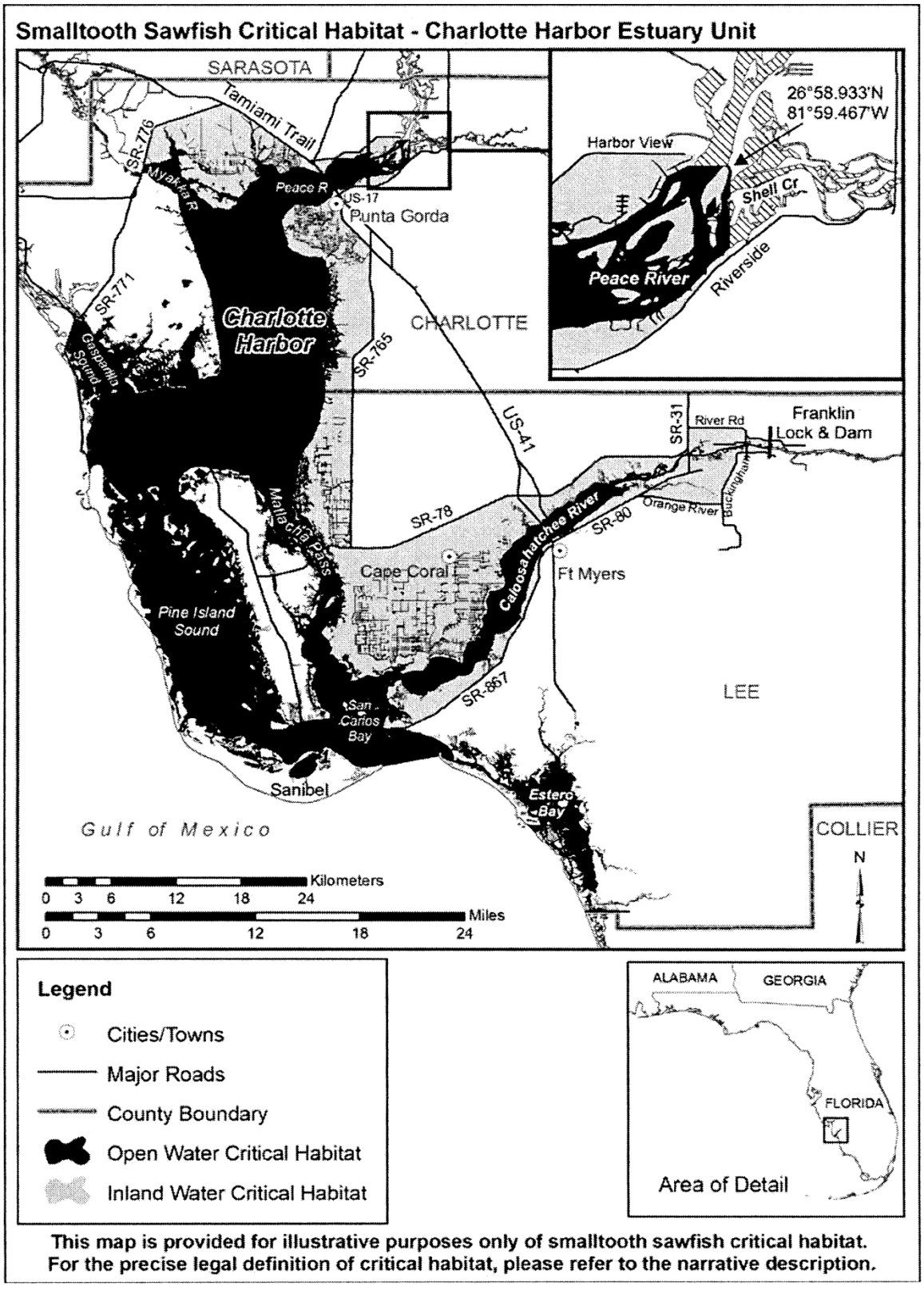

FIGURE 3. CRITICAL HABITAT FOR THE SMALLTOOTH SAWFISH - CHARLOTTE HARBOR ESTUARY UNIT

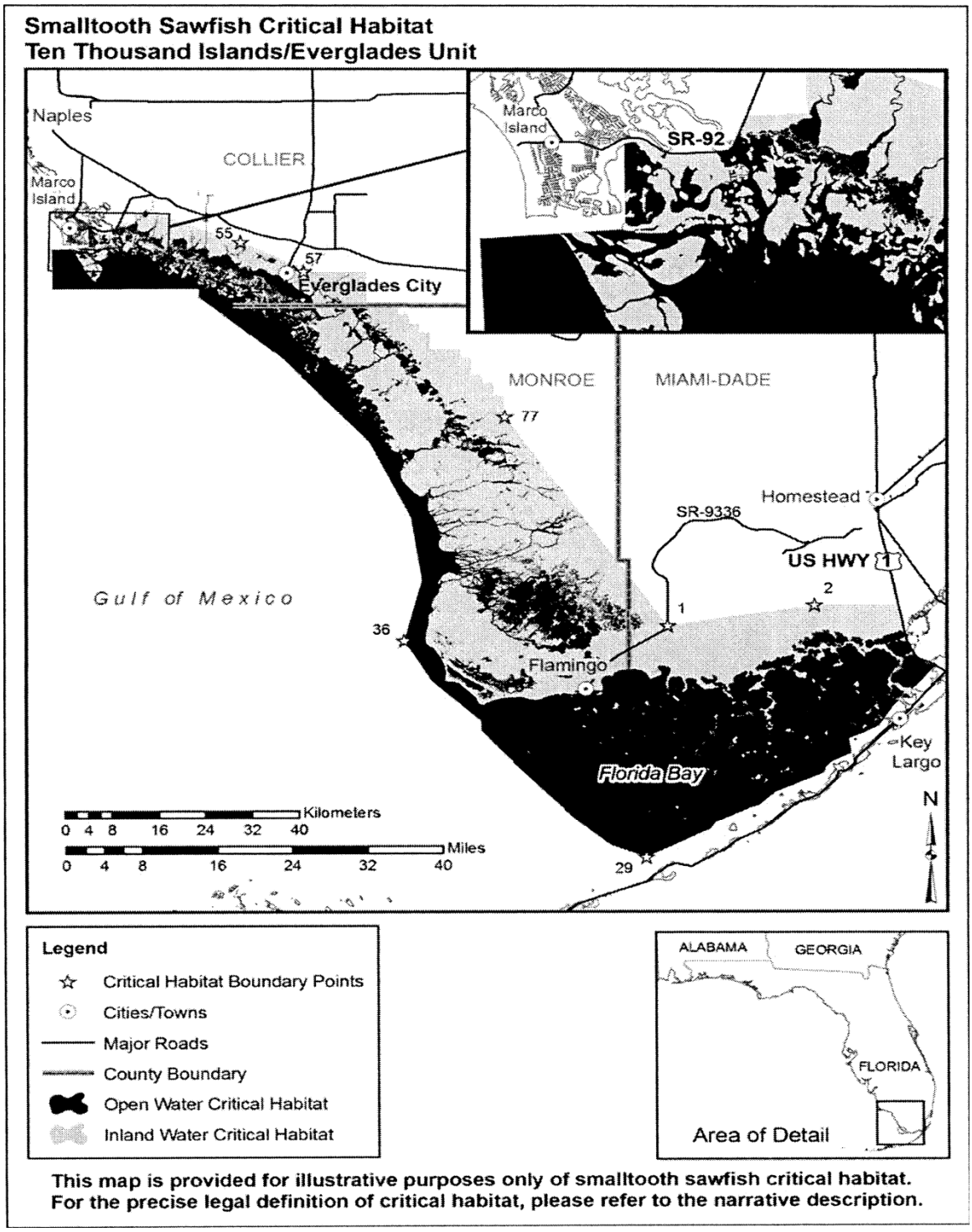

FIGURE 4. CRITICAL HABITAT FOR THE SMALLTOOTH SAWFISH – THOUSAND ISLANDS/EVERGLADES UNIT

6.3 Elkhorn and Staghorn Corals and Critical Habitat and "No Effect Determination"

Elkhorn coral is a large, branching coral with thick and sturdy antler-like branches. Elkhorn coral was formerly the dominant species in shallow water (3-16 feet deep) throughout the Caribbean and on the Florida Reef Tract, forming extensive, densely aggregated thickets in areas of heavy surf. Coral colonies prefer exposed reef crest and fore reef environments in depths of less than 20 feet, although isolated corals may occur to 65 feet. Elkhorn coral is found on coral reefs in southern Florida, the Bahamas, and throughout the Caribbean. Its northern limit is the Biscayne Bay National Park and it extends south to Venezuela; it is not found in Bermuda.

Staghorn coral is a branching coral with cylindrical branches ranging from a few centimeters to over 6.5 feet in length. Staghorn coral has been one of the three most important Caribbean corals in terms of its contribution to reef growth and fish habitat. Staghorn coral occur in back reef and fore reef environments from 0-98 feet (0-30 m) deep. Staghorn coral is found throughout the Florida Keys, the Bahamas, and the Caribbean islands. This coral occurs in the western Gulf of Mexico, but is absent from U.S. waters in the Gulf of Mexico. It also occurs in Bermuda and the west coast of South America. The northern limit is on the east coast of Florida, near Boca Raton.

In southeast Florida, staghorn coral has been documented along the east coast as far north as Palm Beach County in deeper (16 to 30 m) water and is distributed south and west throughout the coral and hard-bottom habitats of the Florida Keys, through Tortugas Bank. Elkhorn coral has been reported as far north as Broward and Miami-Dade counties, with significant reef development and framework construction by this species beginning at Ball Buoy Reef in Biscayne National Park, extending discontinuously southward to the Dry Tortugas (CFR Vol. 73, No. 25, 02-06-08). Critical habitat for both species is depicted in **FIGURE 5**.

Elkhorn and staghorn corals may be found outside the waters of Florida Bay, specifically within the offshore reef track of the Florida Keys where salinities are stable (35 psu) and more representative of open ocean conditions. The reef tract is approximately 10 to 20 miles seaward of the shoreline. The Corps has determined that the Proposed Action will have no effect on elkhorn coral and staghorn coral and their designated critical habitat.

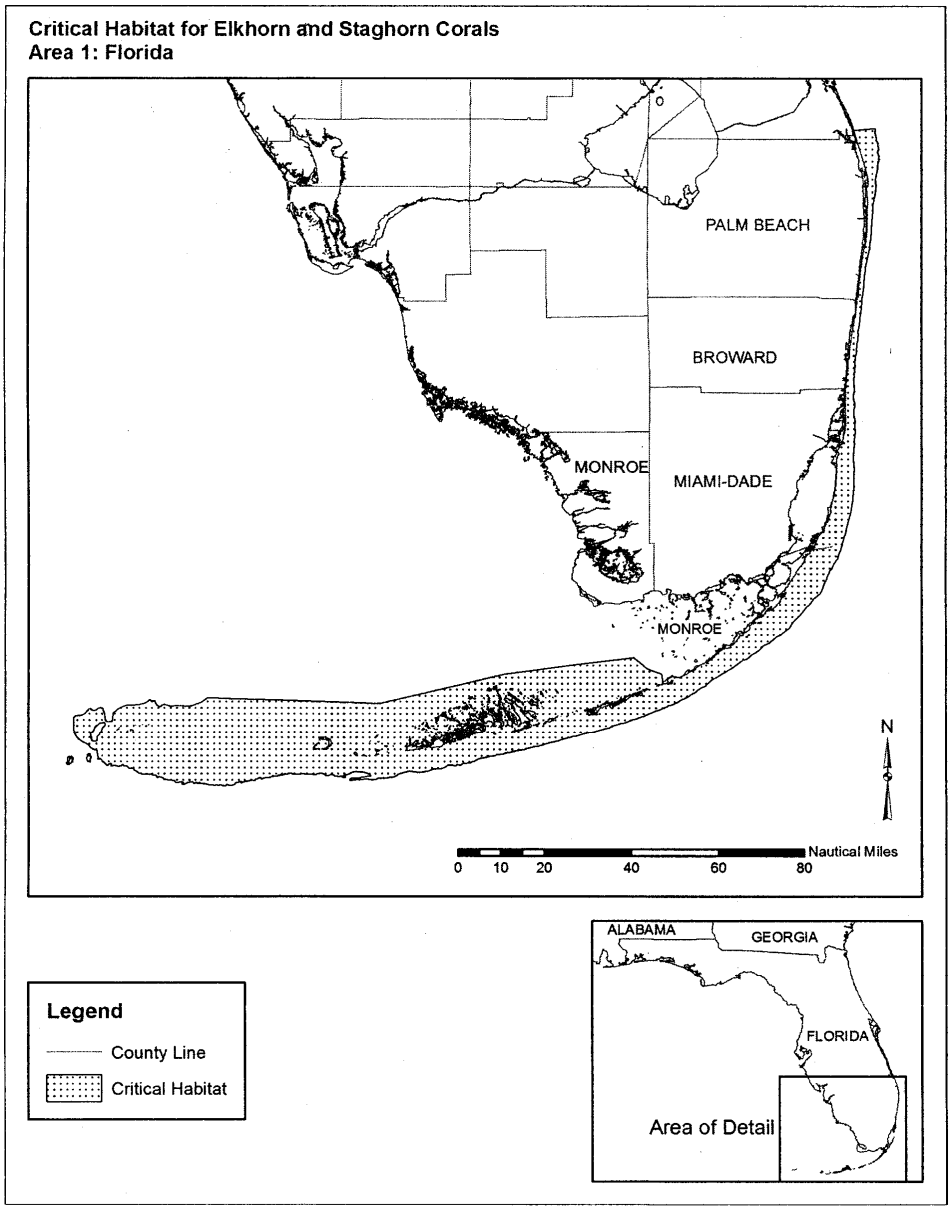

FIGURE 5. CRITICAL HABITAT FOR ELKHORN AND STAGHORN CORALS

6.4 Johnson's Seagrass and Critical Habitat and "No Effect Determination"

Johnson's seagrass is a rare plant that may have the most limited distribution of any seagrass in existence. It frequently occurs in small isolated patches from centimeters to a few meters in diameter. Johnson's seagrass prefers to grow in coastal lagoons in the intertidal zone, or deeper than many other seagrasses. It fares worse in the intermediate areas where other seagrasses thrive. The species has been found in coarse sand and muddy substrates and in areas of turbid waters and high tidal currents. Johnson's seagrass is more tolerant of salinity, temperature, and desiccation variation than other seagrasses in the area. It has a disjunct and patchy distribution along the east coast of Florida from central Biscayne Bay to Sebastian Inlet. The largest patches have been documented inside Lake Worth Inlet. The southernmost distribution is reported to be in the vicinity of Virginia Key in Biscayne Bay.

As defined in the Code of Federal Regulations (50 CFR Part 226, Section 226.213, Vol. 65, 5 April 2000), the Johnson's seagrass critical habitat includes all land and water within the following boundary: Beginning at the easternmost tip of Turkey Point, Dade County, on the coast of Biscayne Bay; then southeastward along a straight line to Christmas Point at the southernmost tip of Elliott Key; then southwestward along a line following the shores of the Atlantic Ocean side of Old Rhodes Key, Palo Alto Key, Anglefish Key, Key Largo, Plantation Key, Windley Key, Upper Matecumbe Key, Lower Matecumbe Key, and Long Key; then to the westernmost tip of Middle Cape; then northward along the shore of the Gulf of Mexico to the north side of the mouth of Little Sable Creek; then eastward along a straight line to the northernmost point of Nine-Mile Pond; then northeastward along a straight line to the point of beginning (**FIGURE 6**).

As Johnson's seagrass is not known to occur within the project area, the Corps has determined that the Proposed Action will have no effect on this species and its designated critical habitat.

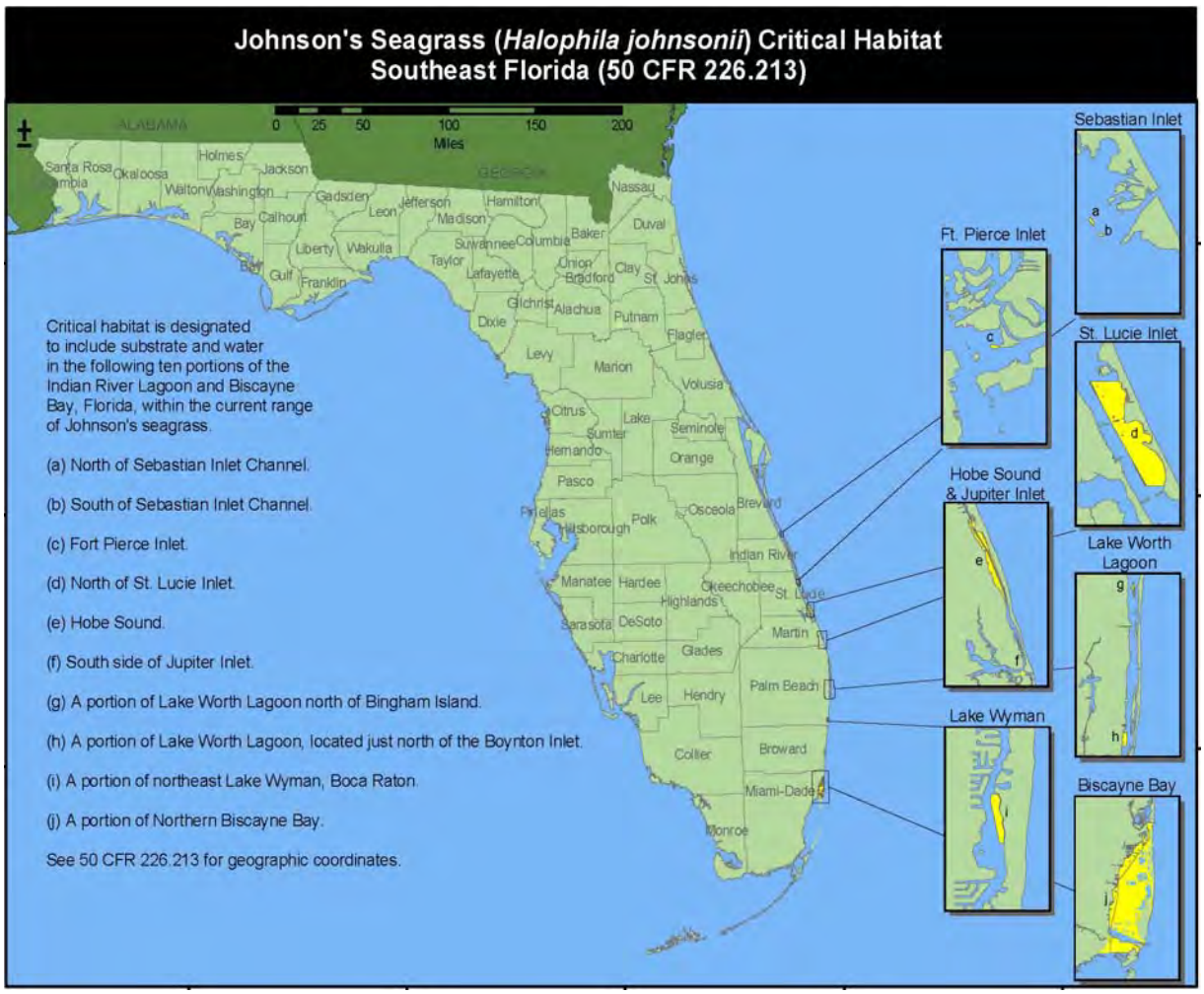

FIGURE 6. CRITICAL HABITAT FOR JOHNSONS SEAGRASS

7.0 EFFORTS TO ELIMINATE POTENTIAL IMPACTS ON LISTED SPECIES

The Corps commits to avoiding, minimizing or mitigating for adverse effects. All practicable means to avoid or minimize environmental effects were incorporated into the Proposed Action. A monitoring plan has been developed for the field test and has been included in **Appendix C**. In addition to the monitoring outlined within **Appendix C**, the Corps and South Florida Water Management District (SFWMD) will continue existing hydrologic and species monitoring plans to ensure that the Incidental Take as defined within the USFWS 2009 C-111 Western Spreader Canal Project Biological Opinion (BO) and the 2010 ERTP BO is not exceeded. In February 2012, the SFWMD completed construction of the C-111 Western Spreader Canal Project as part of its state-expedited program. The SFWMD currently conducts an annual assessment of the project in accordance with Corps permit reporting guidelines (Department of Army Permit SAJ-2005-9856 [IP-AAZ]) and the USFWS 2009 BO (http://www.fws.gov/verobeach/verobeach_olddont_delete/sBiologicalOpinion/index.cfm?method=biologicalopinion.search). Annual reporting is summarized in the South Florida Environmental Report. In accordance with the Terms and Conditions within the USFWS 2010

ERTP BO, the Corps is required to provide an annual assessment of ERTP operations. The annual assessment includes a summary of Periodic Scientist Calls, analysis of incidental take, analysis of ERTP performance measures, and ecological targets and species monitoring. The Incidental Take Statements, Terms and Conditions and Reinitiation Notice are defined in the 2010 ERTP BO (http://www.evergladesplan.org/pm/program_docs/ertp.aspx).

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9.0 LIST OF PREPARERS

Name	Affiliation	Qualification/Role
Melissa Nasuti	USACE	Biologist – Preparation
Gina Ralph	USACE	Biologist - Reviewer

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