CANAL 111 (C-111) SOUTH DADE
SOUTH DADE COUNTY, FLORIDA

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT, L-31W

US Army Corps of Engineers **October 2016**
Jacksonville District

This page intentionally left blank

FINDING OF NO SIGNIFICANT IMPACT

Modifications to the C-111 South Dade Project
Environmental Assessment
South Dade County, Florida

The proposed action consists of 1) raising the elevation of the existing gap in the L-31West (L-31W) levee and shortening the length of the gap to resolve backflow problems during dry conditions and maintain the hydraulic ridge during wet conditions and, 2) to place earthen plugs on the L-31W canal, reducing the canal's ability to drain Everglades National Park and the habitat available for exotic fish. Based on the information analyzed and presented in the Environmental Assessment (EA) attached hereto, dated October 2016, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are, in summary:

- The project will not adversely affect existing fish and wildlife habitat.

- Adverse impacts to protected species are not anticipated. Special measures will be incorporated during project construction to avoid or minimize adverse effects on any listed endangered, threatened, or species of special concern that may be present (see Section 4.8.2). Consultation began May 18, 2016 on an extensive list of endangered and threatened species known to be present in Miami-Dade County. On August 4, 2016, US Fish and Wildlife Service (FWS) concurred with Corps determinations of effect. No incidental take of protected species is anticipated.

- The proposed project has been coordinated with the Florida State Historic Preservation Office and the appropriate federally recognized Tribes in accordance with the National Historic Preservation Act and consideration given under the National Environmental Policy Act. The Corps has determined that the proposed project will have no adverse effect on historic properties eligible or potentially eligible for inclusion in the National Register of Historic Places. The State Historic Preservation Office has concurred with the determination of no adverse effect. Coordination of effects with the appropriate federally recognized tribes is complete, and no comments have been received.

- The project is in compliance with the Clean Water Act. A Water Quality Certificate for this project will be acquired from Florida Department of Environmental Protection. All State water quality requirements will be followed.

- The U.S. Army Corps of Engineers (Corps) coordinated a consistency determination under the Coastal Zone Management Act (CZMA) through the circulation of this Environmental Assessment. The Corps determined that the proposed action is consistent with the State of Florida Coastal Management Program. The Florida Department of Environmental Protection, State Clearinghouse concurred with this determination in September 2016. The evaluation can be referenced in Appendix C of this report.

- The project will directly benefit wetlands and fish and wildlife habitat in Everglades National Park through rehydration and restoration of more natural (longer) hydroperiods, and reduction of access for invasive exotic fish species.

  This finding was coordinated with the public and agencies in accordance with 40 CFR 1501.4(e) and Engineer Regulation ER 200-2-2 (part 11 and Appendix A) between the dates of July 1 and September 3, 2016.

In view of the above, and after consideration of public and agency comments received on the Environmental Assessment, I have concluded that the proposed action for modifications to the L-31 West Borrow Canal and to associated features will not result in a significant adverse effect on the human environment. This finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment attached hereto.

C.D.T.

C. David Turner
Brigadier General, U. S. Army
Commanding

7 Dec 16

Date

ENVIRONMENTAL ASSESSMENT
MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT
MIAMI DADE COUNTY, FLORIDA

TABLE OF CONTENTS

List of Figures

List of Tables

APPENDICES

ENVIRONMENTAL ASSESSMENT FOR MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT MIAMI DADE COUNTY, FLORIDA

1.0 PROJECT PURPOSE AND NEED

The purpose of this Environmental Assessment (EA) is to update National Environmental Policy Act (NEPA) evaluations for a modification to the Canal-111 South Dade (C-111 SD) Project, South Dade County, Florida, part of the Central and Southern Florida (C&SF) Project, as authorized under the Water Resources Development Act (WRDA) of 1996. NEPA documentation for the currently proposed actions is tiered from habitat restoration actions authorized under this law, as proposed in the Final Integrated General Reevaluation Report and Final Environmental Impact Statement dated 1994 (referred to as the 1994 GRR/EIS). Additional evaluation of potential environmental consequences is assessed within the Interim Operating Plan Final Supplemental Environmental Impact Statement (FSEIS 2006, ROD 2007) and the 2012 and 2016 Environmental Assessments. Please refer to Section 1.7 for further details. This EA evaluates the options for backfill and/or placement of plugs within the existing L-31W canal and modifying existing features, including the gap in the L-31W Levee. This EA is intended to cover the final construction and modifications of the 1994 GRR/EIS Plan, with the exception of western culverts in the South Detention Area (SDA) and the connector canal from C-111 to Taylor Slough, which will be further evaluated after more field observations and/or modeling analyses are available to determine if and where such structures may be needed.

1.1 PROJECT AUTHORITY

The C-111 South Dade Project was built as part of the Everglades National Park (ENP)–South Dade Conveyance Canals Project authorized by the Flood Control Act (FCA) of 1968 (Public Law (PL) 90-483). This Act authorized modifications to the existing Central and Southern Florida (C&SF) Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). The original purpose of the C-111 Canal was to reduce or mitigate flooding in the agricultural drainage basin immediately east of existing borders of ENP; to provide agricultural and other water supply; and to support habitat restoration in ENP. Changes to the existing C-111 Project as described in the 1994 GRR/EIS were authorized as an addition to the C&SF Project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303). The 1994 GRR/EIS marked a major additional purpose for the C-111 Canal, largely in response to the addition of nearly 200,000 acres of former agricultural lands and wetlands to the eastern side of ENP, and recognition that this area was over-drained. The 1989 Everglades National Park Protection and Expansion Act (PL 101-229) had authorized acquisition of the over 109,000 acres of ENP from approximately the location of the L-67 Extension Levee/Canal eastward to the current ENP boundary, and changed the purpose of land management in the expanded ENP to habitat restoration. Modifications to the C-111 South Dade Project were designed to reverse or inhibit gravity drainage previously provided by the canal in lands that became ENP. In contrast, it was desirable to maintain their wetland character, while providing flood mitigation features on adjacent lands in the eastern basin. The GRR/EIS described a conceptual plan for five pump stations and levee-bounded water retention areas (currently referred to as the C-111 SDA) to be built west of the L-31N Borrow Canal between the 8.5

Square Mile Area and the Frog Pond Area (currently referred to as the S-332D Detention Area) to its south. These pump stations and retention areas would hold water and thereby reduce seepage out of ENP, while providing flood mitigation to agricultural lands to the east. The configuration of the original proposed structural features is described in detail in the 1994 GRR/EIS. Modifications to detain additional water were built as described in the 2006 Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow (IOP) Final Supplemental EIS (Alternative 7R). The plan as proposed in the 1994 GRR/EIS included infrastructure to enable direct discharge westward from the retention/detention area to ENP through a series of culverts and an emergency discharge weir.

1.2 PROJECT LOCATION

The project is located in southern Miami-Dade County in southeastern Florida (Figure 1). It is situated within the C-111 basin, consisting of both natural wetlands and agricultural and residential lands in the Homestead/Florida City area. The project is located immediately east of ENP and discharges water to Taylor Slough, the eastern panhandle of ENP, Florida Bay, Manatee Bay, and Barnes Sound.

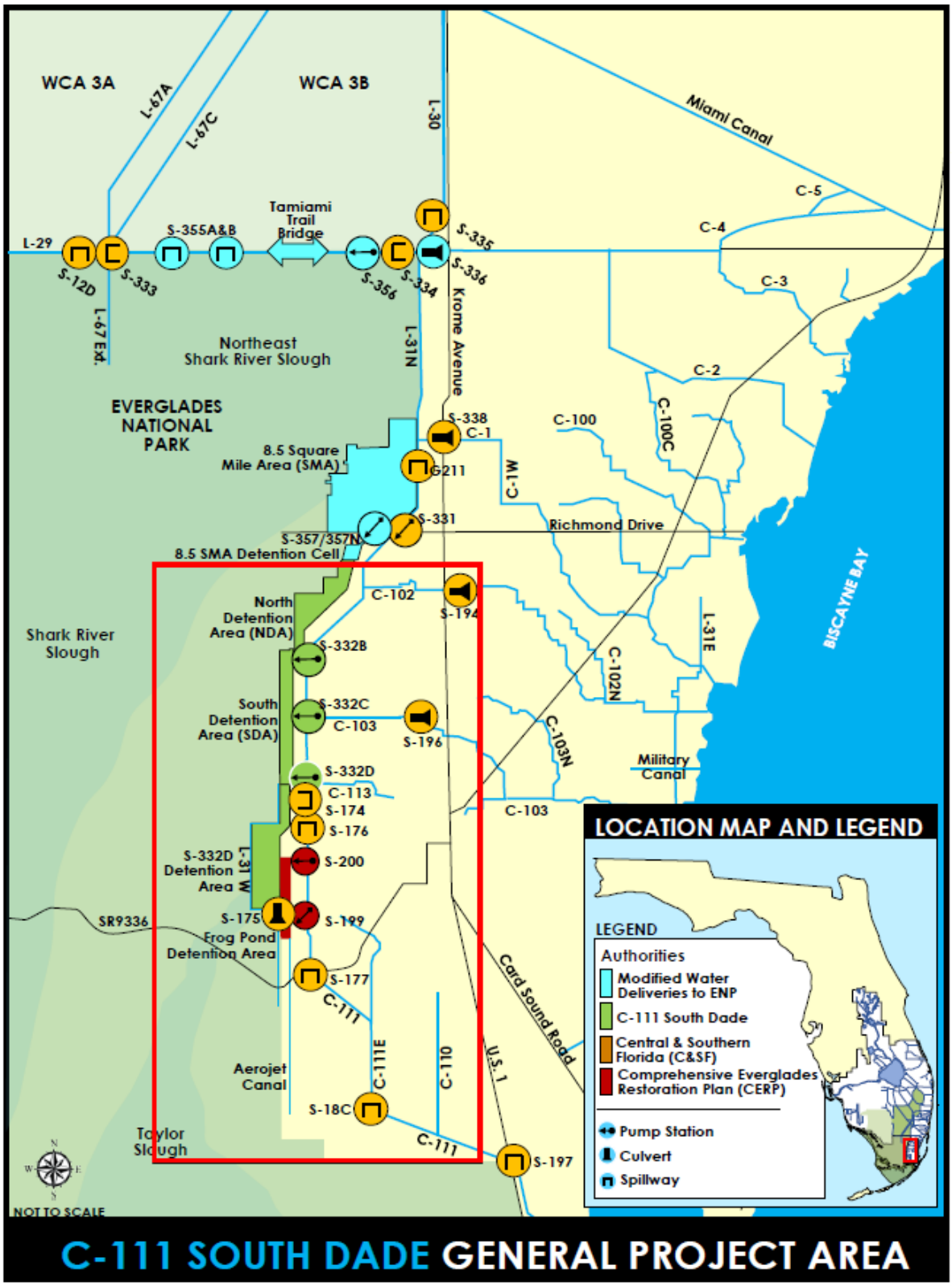


Figure 1. Project Location Map

1.3 PROJECT HISTORY

The C-111 system was first built under authorization of FCA of 1962 as an addition to the C&SF Project. It was later enlarged (deepened and widened) as the South Dade Conveyance System (SDCS), authorized by Congress in 1968. The SDCS purpose was to provide water to urban and agricultural interests in southern Dade County, as well as to ENP. Its management was largely focused on flood mitigation with a lesser amount of water provided to ENP, prior to passage of the Everglades Protection and Expansion Act of 1989, which authorized addition of over 109,000 acres of the "East Everglades" to ENP lands. These newly acquired lands were in the C-111 Canal drainage, and some structural changes to the C-111 project were proposed to prevent over-drainage of the new ENP lands. The 1994 GRR/EIS was the response of USACE to the needed revisions to the C-111 Canal Project in accordance with its dual purpose, flood protection and ENP habitat improvement.

1.3.1 Experimental Program of Water Deliveries

The C-111 system was managed between 1985 and 1999 under an Experimental Program of Water Deliveries to ENP, a series of water management tests providing progressively more water to ENP. In February 1999, the U.S. Fish and Wildlife Service (USFWS) determined that continued operations under the Experimental Program were likely to cause "jeopardy" to the endangered Cape Sable seaside sparrow (CSSS). The USFWS Jeopardy Biological Opinion (BO) effectively ended the Experimental Program and required additional efforts to improve habitat conditions in sparrow nesting populations inside ENP.

1.3.2 Interim Structural and Operational Plan (ISOP) And IOP

Due to the need to comply with the reasonable and prudent alternatives within the 1999 Jeopardy Biological Opinion, the U.S. Army Corps of Engineers (Corps) implemented modifications to the Canal 111 SD Project. These structural modifications included expanded detention reservoirs to create areas that would hold more water above ground level east of ENP's boundary and, by creating a hydraulic "head", detain seepage out of ENP.

In additional to structural modifications, responding to the Jeopardy BO, the Corps also undertook operational modifications to promote suitable conditions for the CSSS. This operations plan, termed the Interim Structural and Operational Plan (ISOP) (USACE 2000) was designed to meet the conditions of the USFWS Reasonable and Prudent Alternatives (RPAs) included in the USFWS Jeopardy BO beginning in March 2000 until implementation of the Interim Operational Plan (IOP) for the Protection of the CSSS in 2002. The Record of Decision (ROD) for IOP was signed in July 2002, and IOP was implemented to continue USFWS RPA protective measures for the CSSS. Components within IOP included a 215 acre North Detention Area (also referred to as the S-332B NDA, or Partial NDA) that was expected to inhibit seepage out of the ENP just east of a Critical Habitat area. By an order issued in March 2006 by the U.S. District Court for the Southeastern District of Florida Miami Division, resolving a lawsuit by the Miccosukee Tribe regarding NEPA compliance and other matters related to IOP, the Corps was required to issue a supplement to its 2002 Final EIS, which resulted in a new, November 2006 BO which was incorporated into the December 2006 Final Supplemental EIS (FSEIS) for IOP for the Protection of the CSSS. A ROD for the December 2006 FEIS was signed in May 2007. The BO has been revised several times, most recently in 2010 (with an addendum dated 2012) with the development of the Everglades Restoration

Transition Plan (ERTP) which superseded the IOP. Because ERTP is an operational plan still in refinement, it will not be discussed in detail in this document, which addresses current and proposed construction activities only. ERTP, as well as its predecessor operational plans ISOP and IOP, have been fully coordinated under separate EIS documents.

1.4 CURRENT STUDIES

1.4.1 Comprehensive Everglades Restoration Plan

The Comprehensive Everglades Restoration Plan (CERP) provides a framework and guide to restore, protect and preserve the water resources of central and southern Florida, including ENP. It covers 16 counties over an 18,000-square-mile area and centers on an update of the C&SF Project. The goal of CERP is to restore the Everglades through capturing fresh water that currently flows unused to the Atlantic Ocean and the Gulf of Mexico and redirect it to areas that need it the most. The majority of the water will be devoted to environmental restoration, reviving a degenerating ecosystem. The remaining water will benefit cities and farmers. CERP was authorized in WRDA of 2000. It includes more than 60 elements, will take more than 30 years to construct and will cost an estimated $10.4 billion (2015 Price Levels). There are several elements in CERP that are interrelated with some of the features of the C-111 Project.

The closest element involves the CERP C-111 Western Spreader Canal Project, documented in a Project Implementation Report (PIR) dated 2011, largely built by South Florida Water Management District (SFWMD) using State funds and authorized under the 2014 Water Resources Reform and Development Act (WRRDA 2014). The CERP C-111 SC Project extends the hydraulic ridge to the south of the C-111 SD features and has been in operation by SFWMD since 2012. Additional information may be found at: See http:// 141.232.10.32/pm/projects/proj_29_c111.aspx.

Another CERP project, the Central Everglades Planning Project (CEPP) is a long term plan that may ultimately provide additional water to the ENP that is awaiting authorization by Congress. The ROD for CEPP was signed on August 31, 2015.

1.4.2 Everglades Restoration Transition Plan

The purpose of ERTP, an operational plan, is to establish water management operating criteria for the C&SF project features, the currently constructed features of the Modified Water Deliveries (MWD), and C-111 South Dade projects until the expiration of the ERTP Biological Opinion in 2016 or until another operating plan is approved.

The objective of ERTP is to improve conditions in Water Conservation Area (WCA) 3A for the endangered Everglade snail kite, threatened wood stork and other wading bird species including their habitat, while maintaining protection for the endangered CSSS and its habitat and congressionally authorized purposes of the C&SF project.

1.5 PROJECT NEED

It is generally recognized that hydrologic conditions are unfavorably dry in Taylor Slough, the eastern panhandle of ENP, Manatee Bay, and Barnes Sound, while agricultural and residential

interests continue requiring flood mitigation within the C-111 basin as authorized in WRDA of 1996. The L-31W Canal, especially the segment south of S-332D Pump Station, still receives large volumes of seepage water from the eastern part of ENP. Water drained into the L-31W borrow canal, which is immediately adjacent to ENP, flows as groundwater and surface flow to the south and east, raising groundwater and C-111 levels and impeding drainage of lands east of C-111. Backfill or plugging in L-31 W, along with modifications to the L-31W levee gap, are expected to provide additional rehydration benefits to lands in eastern ENP as are the expansion of NDA and construction of flowways in both NDA and SDA, which were discussed in the Corps' June 24, 2016 EA/FONSI. Construction should be consistent with the original purpose of the project and with the terms and conditions of the ERTP Biological Opinion to avoid jeopardy to the species protected under the Endangered Species Act.

1.6 PROJECT GOAL OR OBJECTIVE

The C-111 South Dade project is designed to maintain levels of flood protection for areas east of L-31N and C-111 and to restore natural hydrologic conditions within the western C-111 basin and throughout eastern ENP. This objective remains the same as the 1994 GRR/EIS:

> "The purpose of this General Reevaluation Report (GRR) is restoration of the Ecosystem in Taylor Slough and the eastern panhandle of ENP that were affected by construction of the flood control project in the C-111 basin. The study also focuses on preserving the current level of flood protection for the agricultural activities in the C111 basin…..to provide restoration of the ecological integrity of Taylor Slough and the eastern panhandle of the ENP and flood protection for the agricultural interests adjacent to the C-111."

1.7 RELATED ENVIRONMENTAL DOCUMENTS

The Corps has documented a number of actions relevant to the proposed action:

- *General Design Memorandum and Environmental Impact Statement, Modified Water Deliveries to Everglades National Park,* U.S. Army Corps of Engineers, Jacksonville District, June 1992.
- *1994 C-111 General Reevaluation Report and Environmental Impact Statement,* U.S. Army Corps of Engineers. ROD, November 1994.
- *1999 Central and Southern Florida Project Comprehensive Review Study and Environmental Impact Statement (Restudy)* – U.S. Army Corps of Engineers. ROD, December 2000.
- *2000 Final Environmental Assessment, 2000 Emergency Actions to Protect the Cape Sable Seaside Sparrow* (*ISOP).* U.S. Army Corps of Engineers, 2000.
- *2000 8*.5 *Square Mile Area General Reevaluation Report and Final Supplemental Environmental Impact Statement.* ROD, December 2000.
- *2002 Interim Operating Plan (IOP) for the Protection of the Cape Sable Seaside Sparrow Final Supplemental EIS.* U.S. Army Corps of Engineers. ROD, January 2002.
- *2006 Interim Operating Plan for the Protection of the Cape Sable Seaside Sparrow Final Supplemental Environmental Impact Statement.* ROD, May 2007.
- *2011 Environmental Assessment for Proposed Interim Operation Criteria for 8.5 Square Mile Area Project,* U.S. Army Corps of Engineers, Jacksonville District, June 2011.

- *2012a CERP C-111 Spreader Canal Western Project Final Integrated Project Implementation Report and Environmental Impact Statement*, U.S. Army Corps of Engineers, Jacksonville District, January 2011. ROD, 2012.
- *2012b Environmental Assessment; Design Refinement for the 8.5 Square Mile Area*, Miami-Dade County, Jacksonville, Florida, U.S. Army Corps of Engineers, Jacksonville, August 2012.
- *2012c Environmental Assessment and FONSI for Expansion of Canal 111 (C-111) Detention Area and Associated Features, South Miami-Dade County,* Florida. U.S.Army Corps of Engineers, Jacksonville.(North Detention Area).
- *2012d Everglades Restoration Transition Plan Final Environmental Impact Statement*, U.S. Army Corps of Engineers, Jacksonville District, October 19, 2012.
- *2012e Environmental Assessment, Central and South Florida Project: Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Miami-Dade Conveyance System*. U.S. Army Corps of Engineers, Jacksonville, Florida, October 2012.
- *2015 G-3273 Environmental Assessment, Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy*, U.S. Army Corps of Engineers, May 27, 2015. This is referred to throughout this EA as the MWD Increment 1 field test..
- *2016 Environmental Assessment and FONSI for Modifications to the C-111 South Dade North and South Detention Areas and Associated Features.* USACE, Jacksonville, Florida, January 29, FONSI, June 24, 2016.

2.0 ALTERNATIVE DEVELOPMENT

Background

An interdisciplinary team comprised of the U.S. Environmental Protection Agency (EPA), ENP, USFWS, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection (FDEP), and SFWMD collaborated in the preparation of the 1994 alternatives evaluation and final GRR/EIS. Construction of the features described in the 1994 GRR/EIS was authorized under WRDA of 1996. Several features of the original plan authorized in WRDA of 1996 (1994 GRR/EIS) have been adjusted in subsequent years. The resulting modifications have been built and operated as described in previous documentation in the Corps' 2007 Final Supplemental Environmental Impact Statement – Interim Operational Plan (IOP) for the Cape Sable Seaside Sparrow (2007 IOP FEIS) and in five previous EAs for construction of C-111 South Dade features, operational changes and modifications to structures associated with the 8.5 SMA (2012a, b, c, d and e and 2016 in the list above).

Early History of proposed fill in Canal L-31W

The 1994 GRR/EIS authorized plan recommended complete backfill of the northern portion of the L-31 W Canal, beginning in the north at the S-174 Structure located just west of S-332D Pump Station on C-111 Canal, extending west, south and west again around the north side of the Frog Pond, and turning southward and extending to the S-332 Pump Station. The plan is illustrated in Figure 3. The purpose of filling this segment of L-31W was to reduce gravity-induced seepage of surface and ground water out of ENP into the Canal, from which it could be observed flowing down the Canal to the south. Reducing seepage loss from this segment of ENP became even more urgent after the identification of significant CSSS habitat immediately adjacent to the Frog Pond inside ENP. While the sparrow nests mainly in the dry season, over-drying of this segment of critical habitat was believed by bird specialists to be limiting nesting habitat in muhly grass prairie (short-hydroperiod wetland).

Subsequent construction and modifications to the C-111 South Dade project, as well as prior regional operational studies, led to various iterations of plans for backfilling or plugging L-31W, as described briefly below.

2.1 ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Evaluation of the No Action Alternative is a requirement of NEPA. The No Action Alternative includes all features of the C-111 South Dade project that are built or currently under construction and coordination. These include features of the 2007 IOP FEIS, features currently under construction, and those features planned for future construction that were covered in prior NEPA documents identified in Section 1.7. The No Action Alternative includes two existing plugs located in the northern segment of the L-31W Canal at the junctions with the east (400 feet length) and west (1100 feet length) perimeter levees of the SDA. The No Action Alternative also includes an existing 2,100 foot gap in the L-31W Levee, immediately north of the S-332 pump station. The gap was completed during 2003 to provide a pathway for surface water deliveries from the S-332D pump station to the S-332D Detention Area and from there into the L-31W Canal and headwaters of Taylor Slough. No further construction actions would be pursued under this alternative.

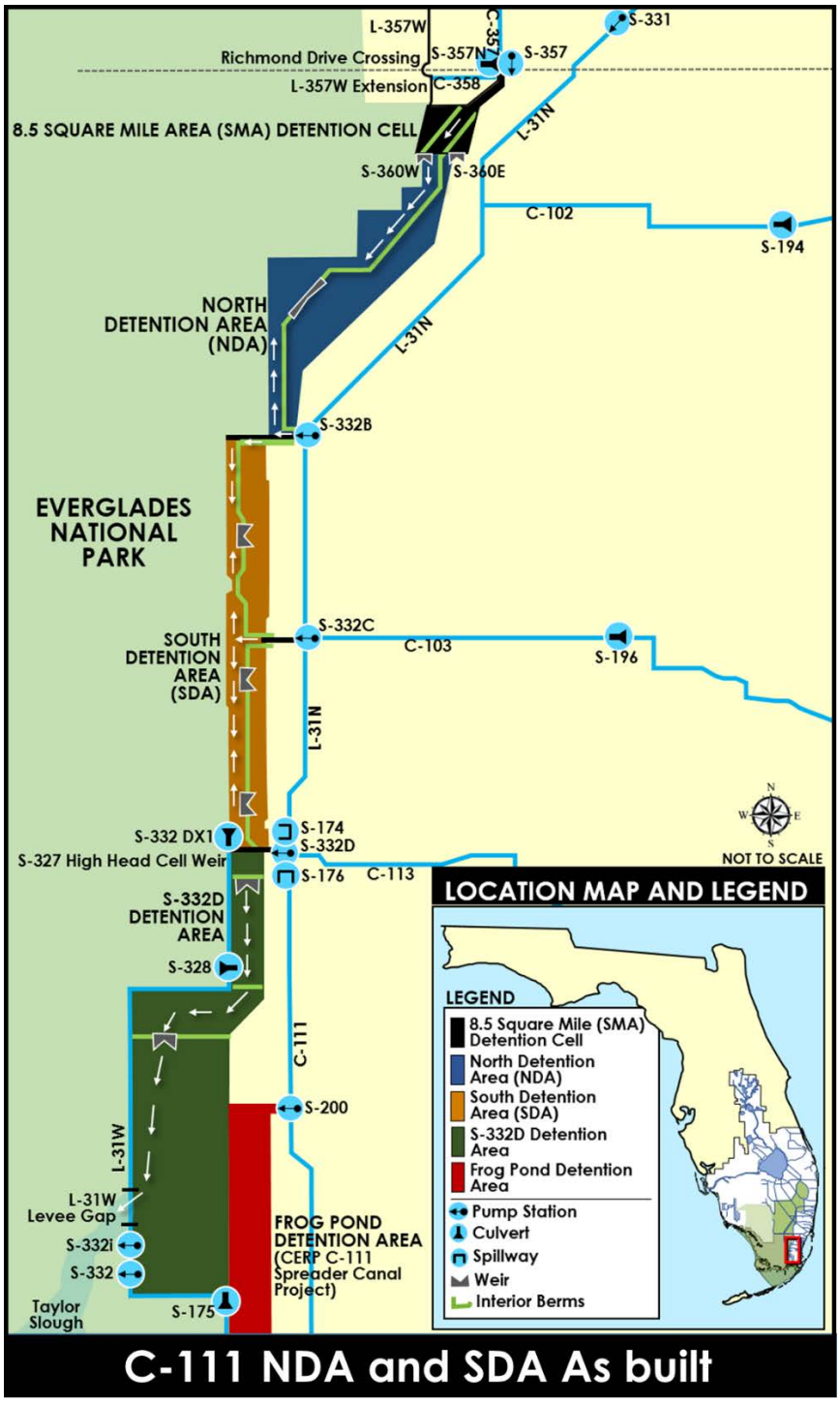


Figure 2. No Action Alternative (Alternative 1)

2.2 ALTERNATIVE 2 - ORIGINAL 1994 GRR/EIS PLAN

This alternative was the preferred alternative in the 1994 C-111 GRR/EIS and was authorized in WRDA of 1996. Of the features not currently built or modified through previous NEPA documentation, the 1994 GRR/EIS additionally included L-31W Canal backfill for 25,500 linear feet from S-174 to S-332 and 24 western-discharging culverts and an emergency

spillway to allow for emergency overflow from the SDA into ENP (Figure 3). The culverts were proposed for the SDA, north of S-332D Pump Station, extending the length of the SDA up to the latitude of S-332B, with one overflow weir along the tieback levee of the SDA. The proposed NDA (refer to Figure 2) was not identified as a detention area in the 1994 GRR/EIS, as this area was originally designed to receive direct surface discharges from the proposed S-332A pump station, and therefore, no culverts or weirs were identified within this portion of the C-111 South Dade project area. The Alternative 2 backfill option would require approximately 876,000 cubic yards of suitable material for the L-31W Canal backfill. The material estimate includes a 'bulking factor' of 20% to account for subsidence of the fill after it is deposited within the remnant L-31W Canal.

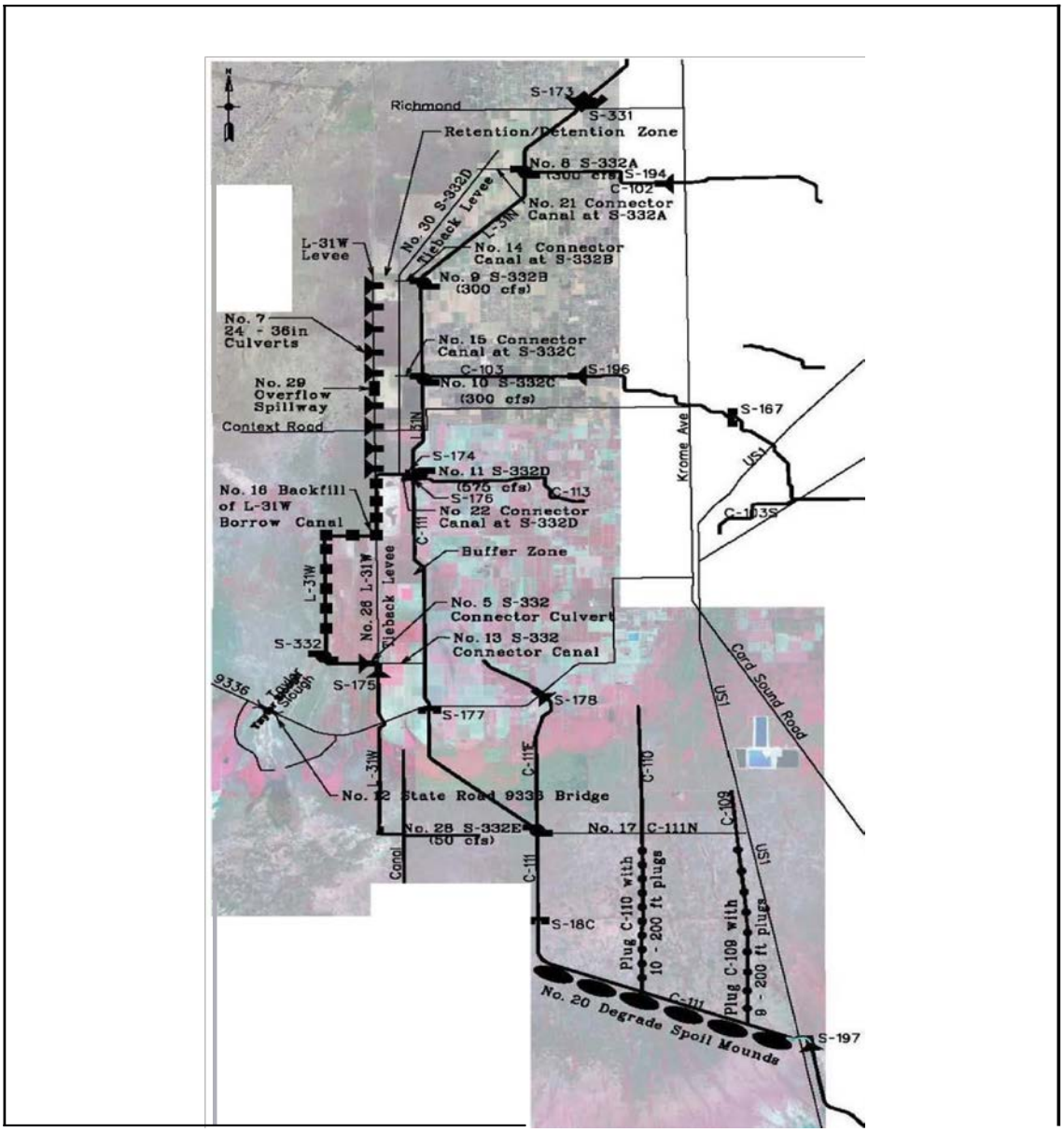


Figure 3. Alternative 2 – 1994 GRR Plan, backfill down to S-332 in L-31W, west-discharging culverts, and an overflow spillway along the west side of the SDA

2.3 ALTERNATIVE 3- PARTIAL BACKFILL OR SHALLOWING AS DEVELOPED IN 2008

This alternative requires complete plugging of a segment and partial backfill of additional lengths of the L-31W Canal. Figure 4 shows the location of fill recommended for the reach of the L-31W Canal located south of S-174. Partial backfill of the L-31W Canal is included for the proposed L-31W modifications south of S-175. This plan includes some L-31W backfill between S-332 and S-175 and north and south of State Road 9336, farther south than identified in the 1994 GRR/EIS Recommended Plan. The Alternative 3 backfill option would require approximately 1,440,000 cubic yards of suitable backfill material for the L-31W Canal. This proposed alternative was never recommended in a final design report or NEPA document. Of the alternatives discussed in this EA, this alternative would require the largest volume of acceptable fill material.

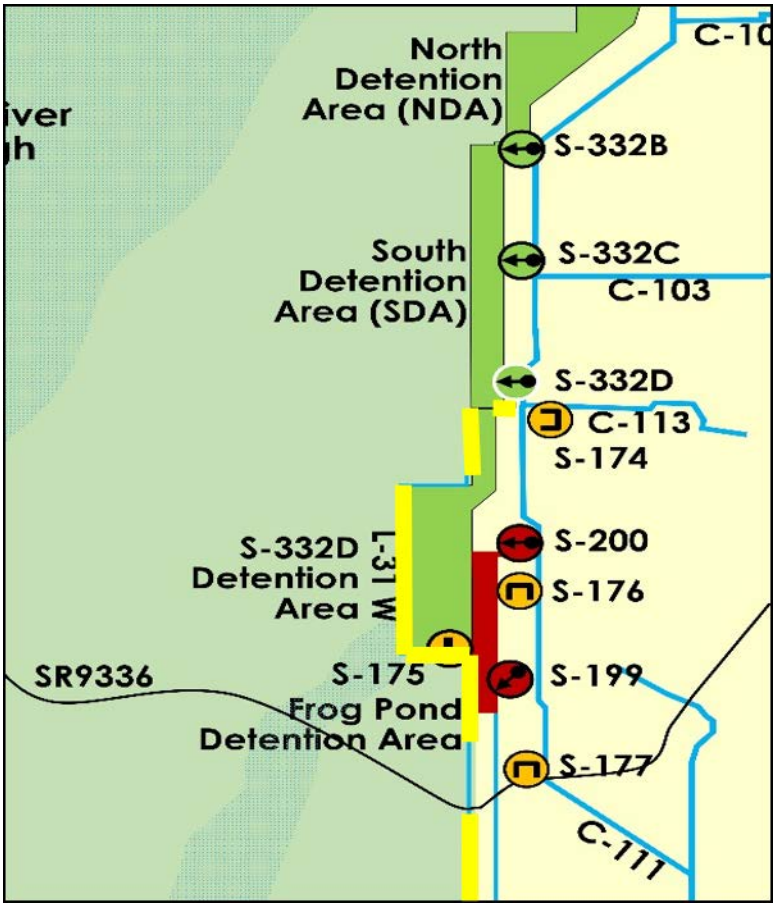


Figure 4. Alternative 3 – Developed in 2008. Backfill and partial backfill over a total of 47,000 linear feet of L-31W.

2.4 ALTERNATIVE 4 –"MINIMUM" BACKFILL PLAN

The minimum backfill plan was developed in 2012 through interagency coordination when the quantity of available backfill material located on-site adjacent to the L-31W Canal was not considered as a source for L-31W backfill. A minimal backfill plan was developed by an

interagency team based on a 2012 survey of the verified volume of fill from the SFWMD stockpile located immediately north of S-175 within the S-332D Detention area footprint (also referred to as Borrow Area 1). The "minimum" backfill plan of 2012 consisted of two (2) 1,000 foot long plugs (at the two northern plug locations in Reach 2) and four (4), 500 foot long plugs located along L-31W (shown as yellow dots on Figure 5). This plan includes L-31W plugs south of S-175, north and south of State Road 9336 and farther south than identified in the 1994 GRR/EIS Recommended Plan. This plug configuration would provide a backfill option to achieve the minimum acceptable threshold for benefits resulting from L-31W backfill, including minimal benefits to reduce seepage losses from the adjacent ENP wetlands and reduce refugia for exotic species available within the existing L-31W Canal. These invasive species would lose their full route to invasion of ENP waters after partial plugs are installed. The Alternative 4 backfill option would require approximately 138,000 cubic yards of suitable backfill material for the proposed L-31W Canal plugs.

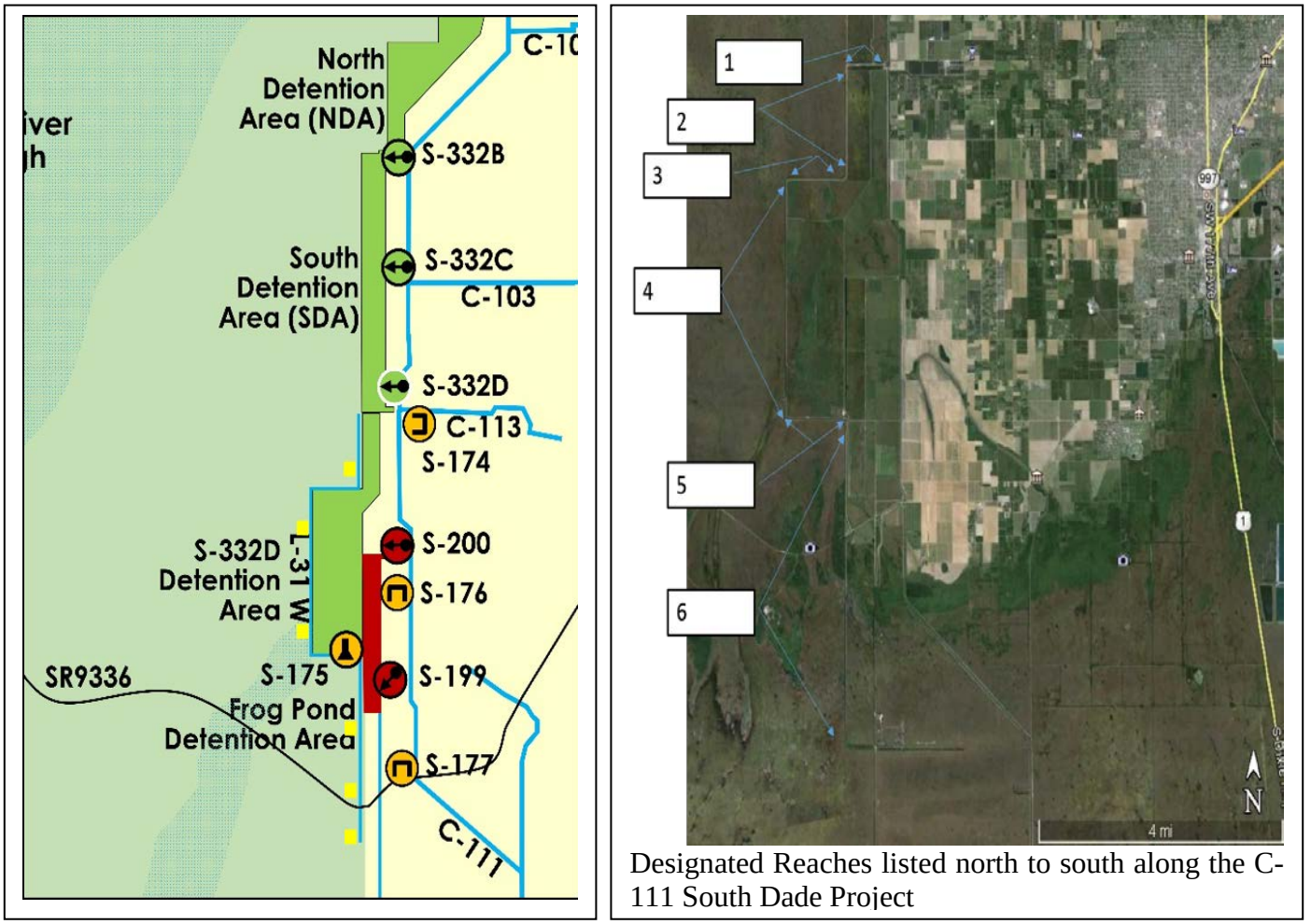


Figure 5. Alternative 4 - Minimum backfill plan (2012) and Reaches Identified

2.5 ALTERNATIVE 5 – "CSOP" PLAN

This alternative arose based on modeling and observations completed for the proposed "Combined Structural and Operational Plan" (CSOP) developed between 2003 and 2005. Though the plan was developed using early modeling and assumptions that came from developing MWD Project, some of which have changed significantly, it proposed a modified backfill scheme for L-31W for reasons that appear to still be valid. The CSOP proposal included a tiered list of backfill location priorities, with the expectation that the availability of suitable backfill material and project budget considerations would be used to identify the final configuration for L-31W Canal backfill. Many of the backfill priorities from this plan have not significantly changed since 2005. However, consideration of the completed features of the CERP C-111 Spreader Canal Project (refer to Section 1.4.1), which was designed and constructed after development of this plan, would result in a lowered priority for L-31W backfill components located south of S-175. This point provides an explanation for the revised priority listing. Figure 6 and Table 1 illustrate the Alternative 5 proposal; canal reaches referenced in Table 1 are indicated in Figure 5. This plan includes some L-31W backfill north and south of State Road 9336, farther south than identified in the 1994 GRR Recommended Plan. To address all six indicated priority areas, the Alternative 5 backfill option would require approximately 430,000 cubic yards of suitable backfill material for the L-31W Canal.

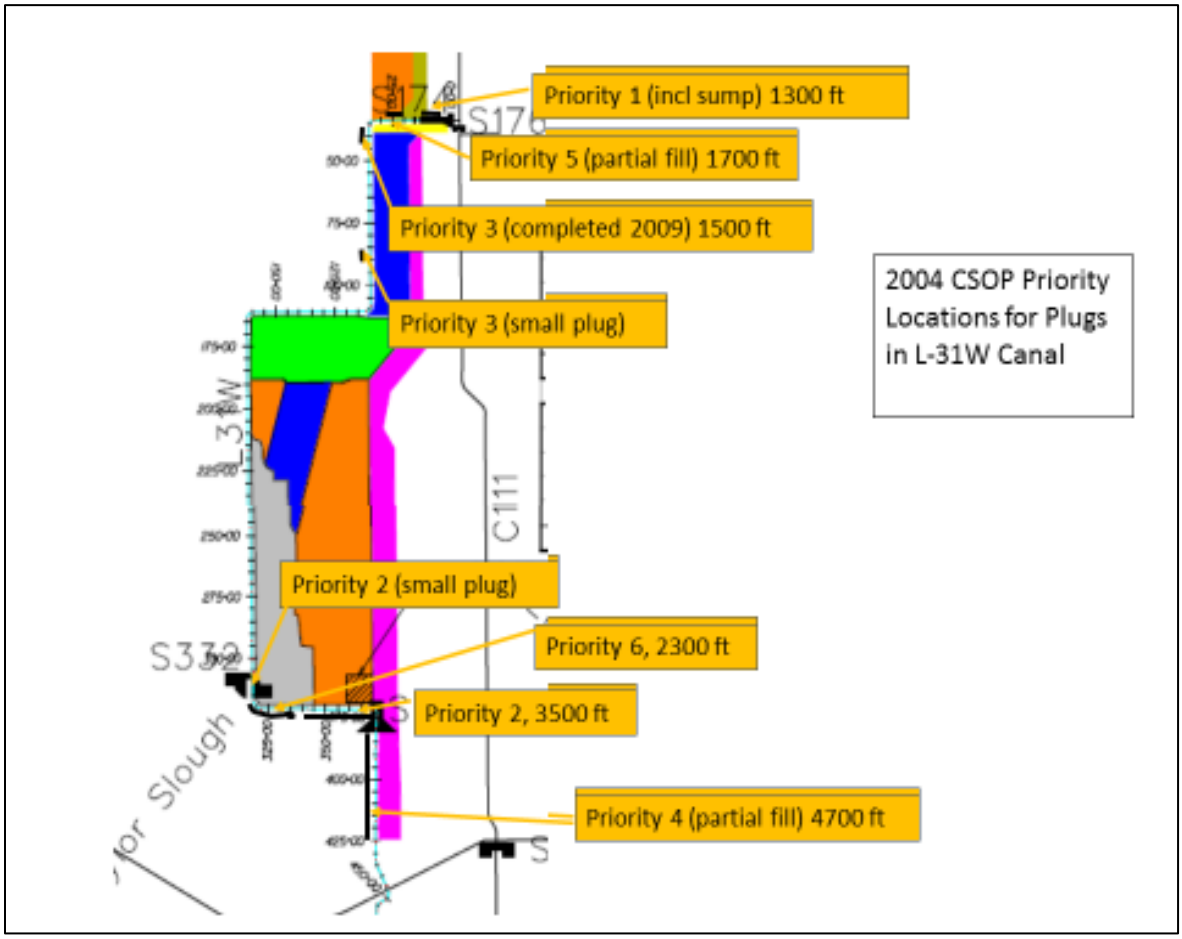


Figure 6. Alternative 5 – Priorities for fill placement under "CSOP"

Table 1. Fill locations in the CSOP Plan

Priority-Location	Reason
1.Complete backfill east and west of S-174, 1300 ft. of reach 1 (northern East-West segment of L-31W).	Reduce return seepage back to L-31N Canal and C-111 Canal.
2. Complete backfill along the Lower L-31W Canal, 3500 ft. of East-West segment up to S-175. Small plug south of the existing gap, at the south end of reach 4/ west end of reach 5).	High potential for seepage to C-111 Canal and to the lower L-31W Canal south of S-175 (west to east surface water conveyance); allows water that should go into Taylor Slough to flow east rather than southwest.
3. Plug along L-31W opposite Cell 1 inside S-332D Detention Area (approximately one mile south of the northern limit of the high head cell), along the North-South reach (reach 2) of L-31W Canal	One or more small plugs to inhibit loss from ENP to S-332D Detention Area. One small plug at West end of High head cell was completed in 2009, to complete the western perimeter levee of the SDA.
4. Partial fill in L-31W south of S-175 (Reach 6- shallowing)	Reduce cross-section of canal; will reduce conveyance to the south, particularly during dry conditions.
5. Partial fill in East-West upper end of L-31W Canal (reach 1) west of Priority 1 fill.	Further reduce return seepage from S-332D High Head Cell to L-31N Canal and C-111 Canal. The original location did not consider the future completion of the S-332DX1 structure.
6. Additional backfill in the East-West segment of L-31W Canal from S-332 to S-175 (reach 5)	Reduce volume of seepage to the east.

2.6 ALTERNATIVE 6 – FLEXIBLE ALTERNATIVE

One of the uncertainties affecting prior formulation of alternatives was lack of information quantifying the amount of available fill material. The Corps completed a survey of excess material along the L-31W Levee in April-May of 2016, and developed an estimate of material available on-site for backfill or plugging the L-31W Canal. Additionally, in consultation with SFWMD, ENP, FDEP and resource agencies, an updated table of priorities was developed to indicate preferred locations for L-31W Canal backfill and/or plugs based on consideration of the survey results and other new information available since the development of the Alternative 5 prioritization. Commercial fill is not recommended because the cost is approximately seven times higher than locally available fill. To be acceptable, fill must be free of contaminants and fine material, unless the fine material can be immobilized under heavier material so that it does not remain in suspension.

The survey quantified the volume of excess material located along the L-31W Levee. The stockpiled spoil material located adjacent to the L-31W levee and excess material from the maintenance berm adjacent to the L-31W Levee (the berm is wider than required for the levee

design template) contains approximately 683,000 cubic yards (cy) of excess material that may be available for use as a source of backfill material.

Alternative 6 proposes to construct backfill and/or plugs in the L-31W Canal using this excess spoil material located on-site and includes a 'bulking factor' of 20% to account for subsidence of the backfill after it is deposited within the L-31W Canal.

The specific priority locations identified in the CSOP plan were modified in 2016 to incorporate recent hydrologic monitoring data and input from technical experts of SFWMD and ENP, adding high seepage locations along the L-31W Canal based on ENP field measurements and expert knowledge of seepage areas (Figure 7). Field measurements of the L-31W water budget provided by ENP scientists indicate that certain locations along L-31W are most directly contributing to drainage of the adjacent ENP wetland areas. Figure 7 provides a flow map to demonstrate areas of seepage (Source: ENP 2016). Green dots indicate relative flow volumes out of ENP into the L-31W Canal, while blue dots indicate flow from the L-31W Canal into ENP wetlands to the west of the canal. The relative magnitude of seepage out of ENP (green) and outflows from the S-332D Detention Area to ENP (blue) along L-31W are indicated by the relative size of the circles. Since the green dots indicate surface water and groundwater (seepage) flows from the adjacent ENP wetlands, this is where additional plugs of varying sizes (depending on the amount of fill) would be added to previous priority sites indicated in Alternative 5 (illustrated in Figure 6) under this alternative.

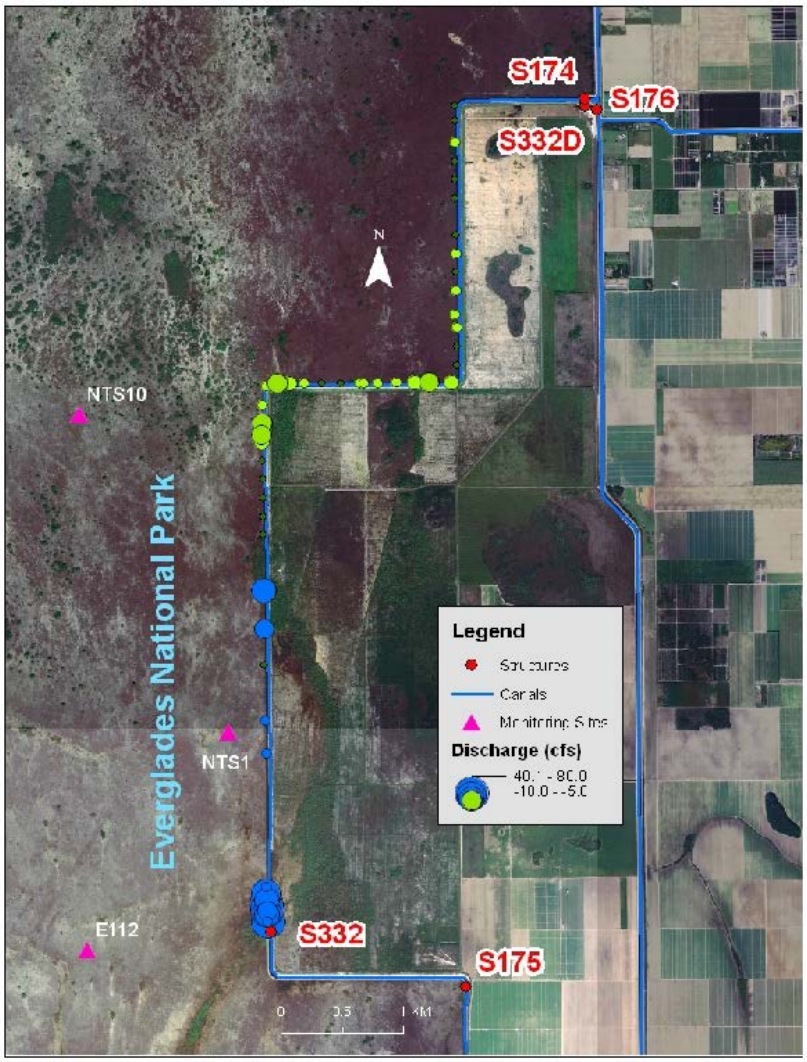


Figure 7. Alternative 6 – Green dots indicate flow out of ENP into L-31W (seepage); blue dots indicate outflow from the L-31W Canal into ENP. Pink triangles are ENP monitoring gauges.

The seepage information provided by ENP scientists was added to the re-evaluated "CSOP" priorities list to develop a consolidated plugging list. Interagency discussions led to recognition of additional seepage areas and a recommendation of a minimum length of 1,000 feet for plugs. The recommended plug lengths at 1,000 feet is also consistent with the Corps previous analysis of backfill lengths and spacing able to most closely mimic complete backfill conditions along the Miami Canal, an analysis which was conducted originally for the CERP WCA-3A Decompartmentalization project and subsequently incorporated into the CEPP (refer to Annex A-2 of the CEPP PIR Engineering Appendix for further details). All recommended plugs were specified to include full backfill of the L-31W Canal cross-section to match the adjacent marsh grade. Figure 8 shows the recommended plug locations.

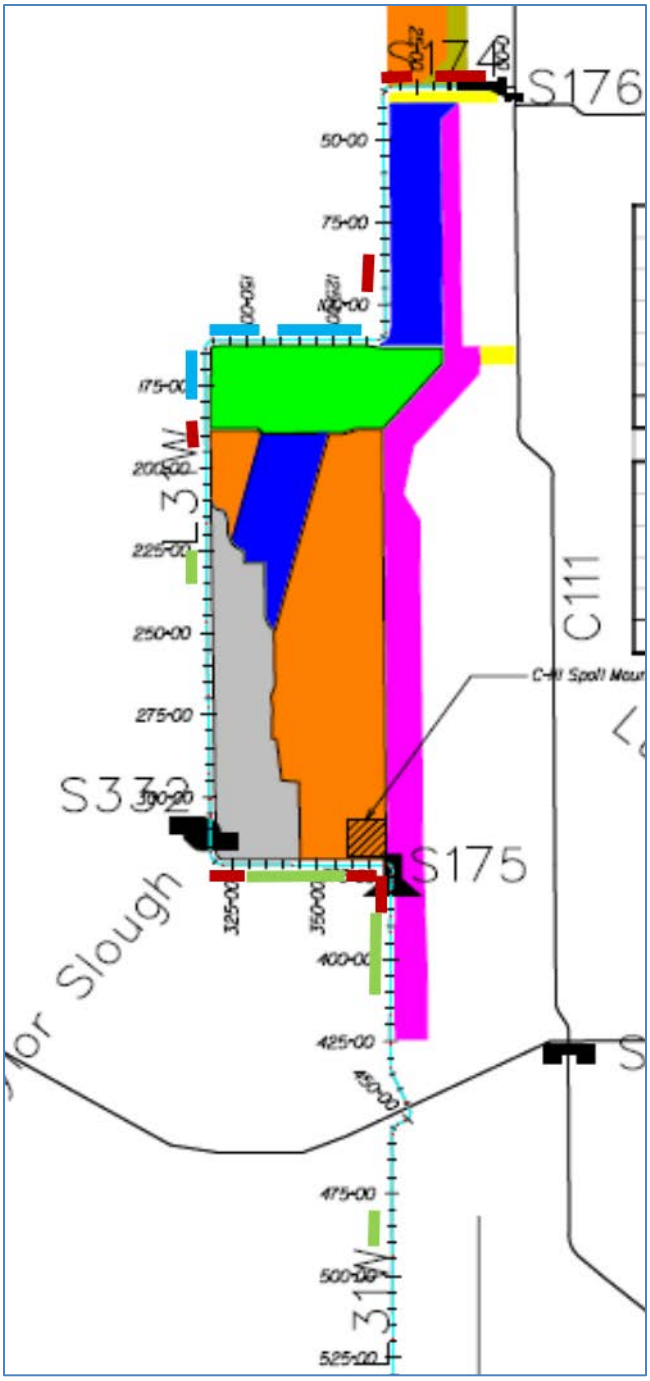


Figure 8. Recommended plug/fill alternative for L-31W

High priority locations (Priority 1 in Table 2) include red plugs (as required to decommission existing water control structures S-174/S-175 or as recommended by CSOP studies). Secondary priority plug locations (Priority 2 in Table 2) are shown in green. Tertiary priority plug locations (Priority 3) are shown in blue; these backfill locations would provide incremental ecological benefits, but the seepage reduction along reach 3 and reach 4 is partially addressed by the Priority 1 plug at the north end of reach 4. Highest priority plugs are along the northernmost East-West reach (Reach 1), from S-174 to the first southward turn of the

canal, as well as the southern East-West stretch between S-332 and S-175 (Reach 5). The three blue plugs correspond to high seepage areas indicated on Figure 7.

Stationing, length and cumulative disposal material volume in cubic yards (cy) for the proposed plugs are tabulated below. Plugs are listed in order of priority in Table 2.

Table 2. Proposed Plug Location (Station), Length, And Cumulative Fill Used

Station (approx.)	Station (approx.)	Description and Priority	Feet	CY	Cumulative feet	Cumulative CY
Priority 1						
00+00	35+00	Reach 1 (less DX1, existing plug, Cnt 8 levee crossing), 3 segments	2,000	57,120	1,000	57,120
85+00	95+00	Reach 2	1,000	28,560	2,000	85,680
185+00	195+00	Reach 4, cell 2	1,000	28,560	3,000	114,240
320+00	330+00	Reach 5, west	1,000	28,560	4,000	142,800
365+00	375+00	Reach 5, east	1,000	28,560	5,000	171,360
375+00	385+00	Reach 6, near S-175	1,000	28,560	6,000	199,920
Priority 2						
385+00	410+00	Reach 6, N of woods	2,500	71,400	8,500	271,320
480+00	490+00	Reach 6, S of woods	1,000	28,560	9,500	299,880
225+00	235+00	Reach 4, btwn gap & cell 2	1,000	28,560	10,500	328,440
330+00	365+00	Reach 5, all of center	3,000	85,680	13,500	414,120
Priority 3						
115+00	140+00	Reach 3, east end	2,500	71,400	16,000	485,520
145+00	160+00	Reach 3, west end	1,500	42,840	17,500	528,360
165+00	180+00	Reach 4, north	1,500	42,840	19,000	571,200

The quantity of material required to complete all of the backfill reaches and/or plugs identified in Table 2 is less than shown by the recent Corps surveys, but calculations do not include fill that will potentially be required to address the existing L-31W Levee gap. It appears that there is sufficient material available on-site to construct all of the plugs in Table 2; the decision on how many and where to build may be based on priorities and cost, as well as consideration of public and agency input. The decision on how many of the listed plugs will be completed by

the C-111 South Dade project has not been finalized at the time this EA was written. The plug locations indicated in red represent the minimum configuration of L-31W backfill/plugs that the interagency technical team believes would achieve the ecological objectives of the C-111 South Dade project to improve hydroperiods within ENP adjacent to Taylor Slough. These Priority 1 locations (refer to Figure 8 and Table 2) along the L-31W Canal would be backfilled/plugged by the C-111 South Dade project. Additional backfill/plugs (Priority 2 and/or Priority 3 locations) would be pursued based on the prioritization indicated in Figure 8, if sufficient backfill material and project funding is available. All locations would be considered in terms of their potential beneficial environmental effects and agency priorities.

A 2,100 foot long gap in the L-31W Levee (located just north of the S-332 Pump Station in the S-332D Detention Area) was built in 2003 as a component of IOP to maximize conveyance of water into Taylor Slough through the S-332D pump station and the S-332D Detention Area. Alternatives to the existing gap were evaluated by the Corps with input from technical experts of SFWMD and ENP. Alternatives considered included: (1) no modification to existing gap; (2) vegetation removal and geotextile gravel overlay across the existing gap footprint; and (3) a narrower gap with or without a raised weir. The design cross-section for the L-31W Levee could be re-constructed to reduce the width of the gap from its current 2,100 feet, and a weir could be built to raise the elevation of the gap using either an Articulated Concrete Block Mat (ACBM) or a geotextile gravel overlay. The design cross-section for the L-31W Levee requires a top elevation of approximately 7.4-7.5 feet NAVD88 vertical datum (9.0 feet NGVD29), a crest width of 10 feet, and 3H:1V side slopes.

Alternative 6 proposes to reduce the gap width to 500 feet and construct an ACBM weir set initially at +2 feet above ground level (ground elevation is approximately 2.5 feet NAVD88, or 4.0 feet NGVD29), with the degraded levee segment to be rebuilt along the remaining 1,600 feet across the existing gap length. The ACBM weir would be located near the center of the existing gap, and the minimum width of the ACBM weir would be 24 feet to provide for safe vehicle crossing, if vehicle access is required for maintenance. The minimum transition slope from the re-constructed portion of the L-31W Levee to the ACBM would be 10H:1V This proposed structure would avoid water loss from Taylor Slough into the S-332D Detention Area when surface water levels in ENP are higher than inside the S-332D Detention Area flowway. The crest elevation for the initial placement of the ACBM weir may be adjusted in response to further design analyses, including consideration of observed flow conditions at the gap following the partial degrade of the S-327 weir (refer to Figure 9) in August 2016. Portions of the ACBM length may also be constructed with adjustable flashboards to provide additional operational flexibility for water managers to respond to changing seasonal water level gradients across the gap.

2.7 ALTERNATIVES ELIMINATED FROM FURTHER EVALUATION

Initial evaluation of alternatives developed in prior planning and NEPA documents led to elimination of Alternatives 2, 4, and 5 in this assessment. Alternatives 2 and 5, unmodified, have been identified as somewhat inflexible and too large to construct (Alternative 2 would require 876,000 cubic yards of suitable backfill material) within funding and resource availability. Since Alternative 3 requires the greatest amount of fill at 1,440,000 cubic yards, this alternative was analyzed throughout this EA in Section 4. However, the conclusion of the

analysis in Section 4 results in preferring Alternative 6 over Alternative 3 because most of the benefits remain similar between the two alternatives with a significant cost difference. Alternative 6 provides more benefits by including the partial fill of the levee gap as well. Alternative 5, the "CSOP" alternative, formed the basis for prioritizing fill sites under the Recommended Plan, using a minimum plug length of 1,000 feet, but would not have addressed areas of high seepage reported by ENP (Fig. 7). Alternative 4 was identified as providing minimal hydroperiod benefits to adjacent ENP wetlands, insufficient seepage reduction and insufficient reduction of refugia for exotic species within the existing L-31W Canal to meet the objectives and goals of the C-111 South Dade project, as envisioned in the 1994 GRR Recommended Plan. Therefore, Alternatives 3 and 6 (Flexible Alternative) will be carried forward for further evaluation, along with the No Action Alterantive.

2.8 WESTERN DISCHARGING CULVERTS

The 1994 GRR/EIS and the authorized plan included a bank of western discharging culverts and a spillway along the west side of the SDA to provide additional surface water inflows to ENP and to achieve the flood mitigation requirements of the C-111 South Dade project. At this time it is uncertain whether, or how many, western-discharging culverts (or other water control structures) would be needed to ensure the completed C-111 South Dade project also maintains authorized pre-project flood protection for the South Dade basin. Culverts would provide operational flexibility to close when releases from the SDA are not needed or if releases may result in adverse impacts to the downstream areas within ENP. The final operating plan for the completed C-111 South Dade project will be developed in a future operational planning study, the Combined Operating Plan (COP). The COP study will re-examine these authorized features, including consideration of additional information collected from operational experience with the completed C-111 South Dade NDA and SDA features (currently estimated to be completed in 2017-2018). Operational constraints within the future operating plan could include maximum depth limits within the NDA and/or SDA or other limiting criteria in response to CSSS requirements or other system constraints, and operational constraints within the COP could also limit discharges from the South Dade basin to Manatee Bay/Barnes Sound and/or Biscayne Bay. Regardless of potential constraints, the C-111 South Dade project requires the Corps to maintain the pre-project level of flood protection for the South Dade basin, and western discharges from the NDA and/or SDA towards ENP may be recommended in the future to ensure this requirement is achieved with the completed project features.

There is no plan to construct or analyze these culverts as part of the actions under consideration within this EA. However, field data collected from Increment 1 and Increment 2 of the MWD field tests, and/or modeling for the COP, may indicate that culverts are needed. If the need for these culverts is verified, these culverts would be coordinated separately under a new NEPA document.

2.9 IDENTIFICATION OF THE RECOMMENDED PLAN

Alternative 6 (Flexible Plan) is the current Recommended Alternative for plugs/backfill. This Alternative includes priority areas of plugs within the L-31W canal and a reduction in the size of the levee gap along the North-South segment (Reach 4) of the remnant L-31W Canal. The reason priorities for backfill/plugs were determined was concern over potential funding

constraints and unknown availability of clean, free fill to use for the construction of the L-31W backfill/plugs.
The SFWMD announced a plan in July 2016 to increase flows into the headwaters of Taylor Slough, which connects to Florida Bay. The SFWMD plan proposes modifications to the L-31W gap and construction of ten plugs along the L-31W Canal. The SFWMD proposed plug locations are consistent with the Alternative 6 Recommended Plan for this EA, and 9 of the proposed plugs would be constructed to match the adjacent marsh grade. The plugs located along Reach 5 between S-332 and S-175 were proposed at an elevation 2-3 feet below the adjacent marsh grade to continue to allow limited conveyance in this segment of the L-31W Canal. The necessity for continued conveyance within Reach 5 is dependent on additional design modifications to the separately authorized CERP C-111 Spreader Canal project, which is currently operated and maintained by the SFWMD, and these modifications are therefore unable to be addressed within this EA for the C-111 South Dade Project. Although the Corps is continuing to review the SFWMD Florida Bay proposal, the preliminary assessment has concluded that the SFWMD proposed shallowing of the L-31W Canal along Reach 5 would provide benefits that are functionally similar to complete backfill to marsh grade.

3.0 AFFECTED ENVIRONMENT

The affected environment of the C-111 basin was most recently described in the Final EIS for ERTP (2011) and CEPP (2014). The Final CEPP EIS can be viewed at the following location: http://141.232.10.32/pm/projects/docs_51_cepp.aspx

Additional descriptions of current project hydrology and operations are provided in the 2016 Corps EA titled *Modifications To The C-111 South Dade North and South Detention Areas And Associated Features, USACE, June 2016* (located under Dade County-http://www.saj.usace.army.mil/About/Divisions-Offices/Planning/Environmental-Branch/Environmental-Documents). The lands acquired by the SFWMD as buffer lands for the C-111 Project were largely former marshland, some converted to agriculture, in the Rocky Glades region of western Dade County. Lands were prepared for agriculture by rock-plowing (grinding rocky outcrops between swales into a more uniform surface) and providing drainage. Seasonal agricultural activities on these lands prior to their acquisition for the project included mostly winter (dry season) vegetable crops. Lands are characterized as low relief, with occasional outcrops of limestone or lower, wet areas that may support tree islands.

3.1 CURRENT CONSTRUCTION STATUS OF THE C-111 SOUTH DADE PROJECT

The following is a description of the features that have been constructed on the C-111 project to date. This includes constructed features authorized under the 1994 GRR/EIS and modifications to the project authorized under ISOP and IOP. Collectively, these changes represent the existing C-111 South Dade project conditions (Figure 2).

The S-332D pump station was completed in 1996. During the design phase, the pump station capacity was increased from 300 cubic feet per second to 575 cubic feet per second.

The removal of the C-111 spoil mounds in the southern part of the project was completed in 1996. The spoil mounds were located on the south bank of the lower C-111 and were removed

to provide better sheet flow into the panhandle of ENP. The material was relocated and stockpiled north of L-31W and southeast of L-329 (north of S-175 within the S-332D Detention Area) for future use on another C-111 South Dade portion of the project. The Taylor Slough Bridge was constructed in 1999 to establish historic sheet flow patterns in Taylor Slough. Interim pump stations S-332B and S-332C were constructed in 2000 and 2003, respectively, under ISOP and IOP, as well as the SDA and partial NDA. The C-109 was backfilled as proposed in the 1994 GRR. Under the CERP project C-111 Western Spreader Canal, the C-110 was plugged. A partial plug was deposited in Reach 1 of L-31W in 2009 (see Fig. 6).

The 8.5 SMA Detention Cell was built in 2012 but cannot operate under normal operating conditions to receive the full design discharge rate from the S-357 pump station until the NDA and its internal flowways are built. C-111 South Dade construction Contract 8 (awarded October 2015) will complete the construction of the NDA perimeter levees and emergency discharge structures, providing the storage capacity to accept discharges from the 8.5 SMA. Current construction activity will establish the L-357 Extension Levee from the 8.5 SMA Detention Cell to the southern limits of Richmond Drive, but will not complete the Richmond Drive Levee crossing. Planned future construction activities anticipated under C-111 South Dade construction covered under the recent 2016 signed FONSI for Modifications to the C-111 South Dade Project will construct internal flowway berms in the NDA and the SDA, complete the levee crossing at Richmond Drive, provide a hydraulic connection between the 8.5 SMA Detention Cell and the NDA, partially demolish S-174 and S-175, and decommission the S-332 and S-332I pump stations. Completion of the above features is currently projected during 2017-2018.

3.2 CLIMATE

The subtropical climate of south Florida, with its distinct wet and dry seasons, high rate of evapotranspiration, and climatic extremes of floods, droughts, and hurricanes, represents a major physical driving force that sustains the Everglades while creating water management challenges for water supply and flood control issues in the agricultural and urban areas of the basin.

Seasonal rainfall patterns in south Florida resemble the wet and dry season patterns of the humid tropics more than the winter and summer patterns of temperate latitudes. Of the 53 inches of rain that south Florida receives on average annually, 75 percent falls during the wet season months of May through October. During the wet season, thunderstorms that result from easterly tradewinds and land-sea convection patterns occur almost daily. Wet season rainfall follows a bimodal pattern with peaks during May through June and September through October. Tropical storms and hurricanes also provide major contributions to wet season rainfall with a high level of interannual variability and low level of predictability. During the dry season (November through April), rainfall is governed by large-scale winter weather fronts that pass through the region approximately weekly. However, due to the variability of climate patterns (La Niña and El Niño), dry periods may occur during the wet season and wet periods may occur during the dry season. High evapotranspiration rates in south Florida roughly equal annual precipitation. Recorded annual rainfall in south Florida has varied from 37 to 106 inches, and interannual extremes in rainfall result in frequent years of flood and drought.

3.3 GEOLOGY AND SOILS

Reference the 2014 CEPP EIS for a description of surrounding soils in the area. The hydrology of these former Everglades soils has been impacted by prior agricultural practices (e.g. ditching, rock plowing, etc.) and regional water management. The majority of the project area could be best described as prior converted cropland no longer in agricultural production.

3.4 HYDROLOGY

The major characteristics that influence the movement of water within South Florida are local rainfall, evapotranspiration, canals and water control structures, flat topography, and the highly permeable surficial aquifer. Surface water that is not removed from the land surface by evapotranspiration and seepage to the aquifer is drained to coastal water bodies via sheet flow from wetlands or via project canals, due to lower stages maintained in canals than the adjacent marsh. Natural groundwater flow direction is generally northwest to southeast in the project area, following surface topography. Due to lower stages being maintained in the C&SF South Dade Conveyance System (SDCS) canals, groundwater in the shallow aquifer inside ENP tends to seep out into the L-31 and C-111 Canals, which were enlarged and deepened during construction of the South Dade Conveyance System in the 1960s. The direction of groundwater flow can be altered on a local scale due to influences of rainfall, canal operations, well-field pumping, or other project features, including surface water impoundments. Fluctuations in groundwater levels are seasonal. Where there is no impermeable formation above the aquifer, surface water recharges the system and the groundwater level can rise freely. In times of heavy rainfall, the aquifer fills and the water table rises above the land surface, contributing to seasonal inundation patterns throughout the area.

Levees and canals constructed under the Central and Southern Florida (C&SF) Project have divided the former Everglades into areas designated for development and areas for fish and wildlife benefits, natural system preservation, and water storage. The C-111 South Dade project is located within south Miami-Dade County (adjacent to ENP) and is operated as part of the SDCS, which was authorized for the purpose of improving the supply and distribution of water to agriculture, ENP, flood control, and for meeting the expanding urban and agricultural water supply needs. Eastern portions of the ENP are influenced by the canals and structures that provide flood control and water supply for agricultural and developed areas. Optimum and design water levels in the project canals are established on the basis of desirable water control conditions in each area, such as optimum groundwater levels, intake and/or discharge structure elevations and removal rates for flood control. Water discharged from the C-111 basin is comprised of water from some or all of the following sources: deliveries from the Water Conservation Areas (WCAs), seepage from ENP, and local runoff from the South Dade basin that is adjacent to L-31N and C-111 Canals. Occasional freshwater discharges from C-111 to the coast are typically due to excessive rainfall, which may negatively impact the salinity in Manatee Bay/Barnes Sound.

3.4.1 Lower East Coast Area

The LEC area is located to the east of the L-31N, L-31W, and C-111 canals. Under ERTP, specified canal water levels/ranges are meant to provide flood protection, water supply, and prevention of saltwater intrusion for the LEC. The LEC can be provided water supply from

WCA 3A and Lake Okeechobee according to their respective regulation schedules. In wet conditions, the excess water from the LEC is discharged to tide.

3.4.2 8.5 Square Mile Area

The 8.5 SMA is a primarily residential area adjacent to, but west of, the L-31N Canal. The 8.5 SMA, which is also known as Las Palmas community, is bordered on both the west and north by NESRS. The community has water management infrastructure consisting of a perimeter levee, two internal seepage collection canals (C-357 and C-358), a pump station (S-357), and a detention area (8.5 SMA Detention Cell) to collectively provide flood mitigation for the effects resultant from higher water levels within ENP following implementation of the MWD Project (USACE 2000). An additional gated water control structure (S-357N) is being constructed along the southern boundary of the 8.5 SMA at the junction of the C-358 and C-357 Canals (along Richmond Drive) as part of the MWD Project, with construction presently planned for completion in December 2016.

3.4.3 Northeast Shark River Slough

NESRS is a complex area located in the northeast corner of ENP. It is currently the northern terminus of Shark River Slough, which is aligned from the northeast to southwest across ENP. Tamiami Trail is the northern boundary, the L-31N Canal the eastern boundary, and the L-67 Extension Canal the western boundary of the NESRS. Prior to construction and operation of the C&SF Project in the 1960s-1970s, NESRS would have been characterized as wet most of the year, but regional developments impacted historic freshwater routes into the area. Hydrologic restoration of the ENP NESRS is a primary objective of the MWD project.

Water enters NESRS primarily from WCA 3A via S-333 which discharges to the L-29 Borrow Canal. Several sets of culverts and the one-mile Tamiami Trail bridge (completed as part of the MWD Project in 2013) under Tamiami Trail deliver water from the L-29 Borrow Canal into the NESRS wetlands. In addition, S-355A and S-355B may also be used to deliver water from WCA 3B to the L-29 Canal for subsequent passage through the culverts and bridge to NESRS. The discharges made from WCA 3A through the S-12 structures and S-333 are target flows determined from the Rainfall Plan. Under the Rainfall Plan, water deliveries are computed and operations adjusted weekly, if necessary based on the sum of two components: a rainfall response component and a WCA 3A regulatory component. The prescribed Rainfall Plan operational target flow distribution is 55% through the S-333 into NESRS and 45% through the S-12 structures into ENP west of the L-67 Extension, although normal operations are conducted to maximize inflows to NESRS. Eastern portions of the ENP are also influenced by the system of canals and structures that provide flood control and water supply for the LEC urban and agricultural areas.

3.4.4 Taylor Slough

Taylor Slough is in the southeast quadrant of ENP. The area through the Rocky Glades and Taylor Slough is higher in elevation compared to ground levels north, south, or west. Because of this characteristic, the area is normally drier than other areas in the ENP. The Rocky Glades and Taylor Slough are somewhat like an island or a peninsula extending from the canals into the ENP. Under ERTP, specified C-111 basin canal water levels/ranges and S-332D pump station operations have resulted in Taylor Slough being provided water from the C-111 Basin mainly during the wet season. During the dry season, under ERTP, water deliveries from S-332D to Taylor Slough are limited to

provide conditions conducive to CSSS Sub-population C nesting (up to 325 cfs from December 1 – January 31; up to 250 cfs from February 1 – July 14). Since completion of the S-332D Detention Area in 2003, maximum surface water flows observed at the Taylor Slough bridge (approximately 1.8 miles downstream of the existing L-31W gap and the remnant S-332/S-332I pump stations) typically range between 250 and 550 cfs during the wet season months of June to October. The flow at Taylor Slough includes contributions from the S-332D Detention Area and flowway, southerly flow within the remnant L-31W Canal (including significant seepage inflows from the S-332D Detention Area), and drainage from the adjacent ENP wetlands. The S-332D Detention Area includes the High Head Cell, the Cell 1 detention area, the Cell 2 detention area, and the flowway cell. Figures 9 and Figure 10 provide an overview of the S-332D Detention Area and the northern reaches of the L-31W Canal, including prevalent surface water flow pathways (indicated by green arrows) and seepage/groundwater flow pathways (indicated by blue arrows). Figure 11 and Figure 12 provide an overview of surface water flows within the southernmost reach of the L-31W Canal, south of the S-175 gated culvert. Backfill and/or plugs within the remnant segments of the L-31W Canal will reduce seepage losses from the S-332D Detention Area to the L-31W Canal, reduce drainage of the adjacent ENP wetlands by the L-31W Canal, and promote increased sheetflow to Taylor Slough.

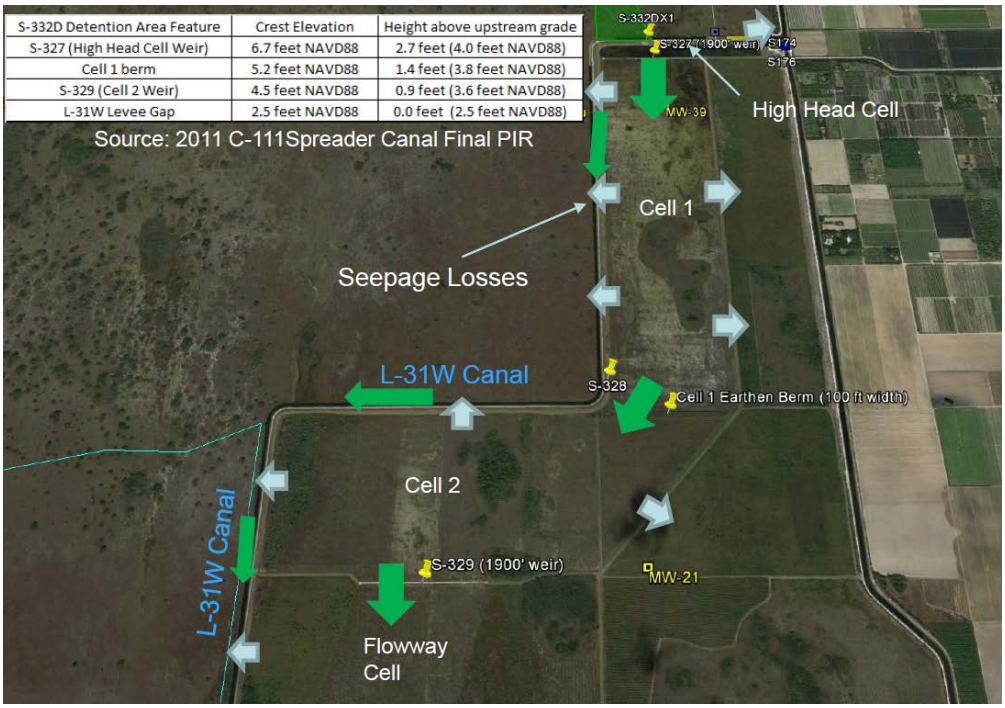


Figure 9. Northern S-332 Detention Area

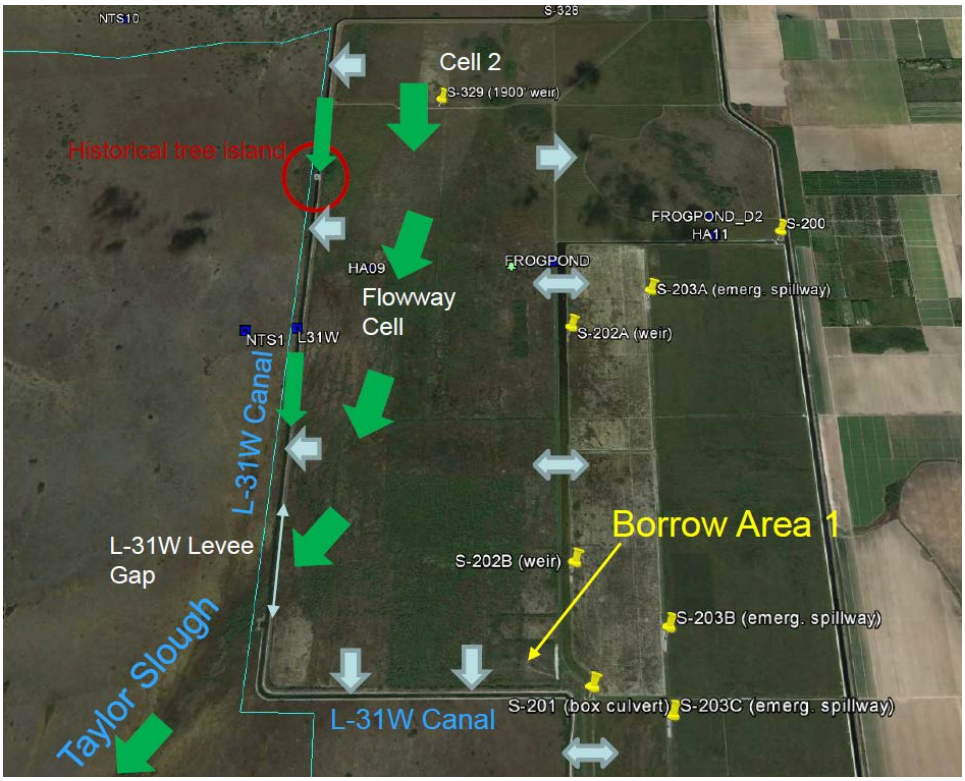


Figure 10. Southern S-332 Detention Area

Figure 11. Southern Reach of L-31W Canal, North of State Road 9336

Figure 12. Southern Reach of L-31W Canal, South of State Road 9336

3.5 WATER QUALITY

The Corps has determined that the surface water from the L-31N canal within this portion of the C-111/L-31 W system has a low phosphorus concentration. This is based on the last 5 years of Settlement Agreement calculations showing compliance with the Taylor Slough/Coastal basin target of a flow weighted mean of 11 parts per billion (ppb). Sample readings have been in the 5-6 ppb range for total phosphorus. Quality of the water impounded within the Detention areas is regularly checked. Pesticide levels in this canal system (surface water and sediment) are routinely checked by the SFWMD and there is no indication of a pesticide problem in the surface water or the ground water in this project area. Trace levels of endosulfan are occasionally found in the canal surface water but this pesticide is ubiquitous at trace levels throughout Florida. The extensive ground water sampling conducted for the C-111 project area has not indicated any ground water problem in the project area either before the C-111 project features were built or after construction and operation. The Miami-Dade Department of Environmental Resource Management (DERM) conducts a routine and very thorough sampling program of the ground water and the surface water in this area and this program also indicates that the project ground water and surface water is generally of very good quality.

3.6 FLOOD RISK MANAGEMENT

Water management and flood risk management is achieved in south Florida through a variety of canals, levees, pumping stations, and control structures within the Water Conservation Areas

(WCAs) and ENP SDCS. The WCAs provide a detention reservoir for excess water from the Everglades Agricultural Area (EAA) and parts of the east coast region, and for flood discharge from Lake Okeechobee to the sea. The WCAs provide levees to prevent the Everglades floodwaters from inundating the east coast urban areas, provide water supply for the east coast areas and ENP, improve water supply for east coast communities by recharging underground freshwater reservoirs, reduce seepage, ameliorate salt-water intrusion in coastal well fields, and provide high quality habitat for fish and wildlife in the Everglades.

The East Coast Canals are flood control outlets located from St. Lucie County southward through Martin, Palm Beach and Broward counties to Dade County. The East Coast Canal watersheds encompass the primary canals and water control structures located along the lower east coast of Florida and their hydrologic basins. The main design functions of the C&SF project canals and structures in the East Coast Canal area are to protect the adjacent coastal areas against flooding; store water in conservation areas west of the levees; control water elevations in adjacent areas; prevent salt-water intrusion and over-drainage; provide freshwater to Biscayne Bay and provide for water conservation and public consumption. There are 40 independently operated canals, one levee, and 50 operating structures, consisting of 35 spillways, 14 culverts, and one pump station. The C&SF project operates to prevent major flood damage; however, due to urbanization, the existing surface water management system now has to handle greater peak flows than in the past.

The coastal canal system, including the SDCS, was overlaid on top of the existing flood control system. Many of these canals are used to remove water from interior areas to tidewater in times of excess water. One of the primary purposes of the SDCS portion of the C&SF Project is flood protection. The project was authorized to remove 40-percent of the Standard Project Flood (SPF) flows. This purpose remains an important objective because of the remaining agriculture within the basin. The South-Dade County basin (south of the S-331 pump station) is provided flood protection by operation of the S-332B/S-332C/S-332D pump stations completed under the C-111 South Dade Project and through operation of the L-31N and C-111 Canal control structures (S-176, S-177, S-18C, and S- 197). The S-200 and S-199 pump stations, located between S-176 and S-177 along the C-111 Canal, are currently operated by the SFWMD as components of the C-111 Spreader Canal CERP Project to manage stages within the lower C-111 Canal while providing hydroperiod benefits to the adjacent wetlands including eastern ENP. The South-Dade County basin may also receive inflows from upstream basin drainage through the S-331 pump station and the adjacent S-173 gated culvert structure. Within the SDCS, S-331/S-173 releases are the result of water management operations to: (1) maintain target L-31N Canal stages; (2) provide flood damage reduction to the 8.5 SMA eastern areas when sufficient capacity is available at S-357 and maintain flood damage reduction for the 8.5 SMA when S-357 operational capacity is limited; and (3) WCA 3A regulatory releases to the SDCS from S-334 during ERTP Column 2 operations.

The MWD Increment 1 field test hydrologic monitoring will aid in quantifying both long-term and intra-annual/seasonal effects of increased stages within NESRS. Development of the COP will be informed by the MWD Increment 1 and Increment 2 field tests. The COP will conduct regional hydrologic modeling in order to balance the ecological restoration objectives of the MWD and C-111 South Dade projects while demonstrating compliance with the project

constraints, which will include requirements to maintain the mitigation for project induced flood damages in the 8.5 SMA and to maintain the level of flood damage reduction associated with the 1994 C-111 GRR Recommended Plan.

3.7 WETLANDS

The lands within the C-111 project area were historically part of the Everglades wetland system. The hydrology of these wetlands has been historically manipulated to suit agricultural interests. The South Detention Area (SDA) and S-332 D Detention Area have higher quality wetlands within the detention area that have not been previously converted to agriculture. However, this area has been impacted by water management operations since its acquisition by the government. The S-332 D Detention area (the western part of the former Frog Pond) was also largely agricultural prior to its purchase by the SFWMD. Vegetation within the proposed project area is described in the 2007 IOP FEIS. Proposed actions evaluated in this EA will be concentrated on the Canal itself, with minimal effects on the lands of the Detention Areas. Most construction activity will be along roads or levees that run along the L-31W or connect to existing pump stations. The proposed re-construction of the levee and sill at the L-31W gap (Reach 4, north of S-332 Pump Station) will remove the wetland vegetation that has developed there since levee removal in 2003. The Florida Department of Environmental Protection, in its correspondence regarding this EA, listed the following wetland indicator species in the levee gap: arrowhead (*Sagittaria spp.*), Carolina willow, spikerush, maiden-cane, cattails, torpedo grass and musky mint.

3.8 FISH AND WILDLIFE OF L-31W CANAL AND ADJACENT LAND

Canal dimensions are approximately 60 feet wide by 15 feet deep, and the Canal harbors both native and exotic fish species. A three year study of the fish fauna of canals leading to and within the Everglades was conducted for ENP by J.S. Rehage, D.A. Gandy and V. Trujillo (2014). Electrofishing led to capture and identification of 33 taxa of native fish and 16 taxa of non-native fish in L-29, L-31W and C-111 north. There is a boat ramp along the Park road (FL 9336) but the canal is accessible to boats only as far north as S-175. The segment of L-31W to the west and north of S-175 is least accessible to boat fishermen, and was one of the canals that had the highest relative abundance of non-native fish species (47% according to Catch per Unit Effort, or CPUE). Sampling by electrofishing introduces a bias on species caught (generally, tiny fish tend to escape catch nets) but the most abundantly caught native species in the L-31W, measured as CPUE, were Florida gar, warmouth, bluegill, dollar, redear and spotted sunfish, and largemouth bass. The most common nonnative taxa were peacock bass, jaguar guapote, mayan cichlid, African jewelfish, peacock eel, Asian swamp eel, blue tilapia, spotted tilapia and unidentified cichlids. Fish specialists have also studied movement of fish from canals into ENP marshes and back, depending on the degree of connectivity between waterways and adjacent marsh (relative water levels), and consider the eastern canals (L-31W and C-111) major pathways for potential introduction of new non-native species, as well as a warm water refuge for introduced exotics during unusually cold weather. Cold-sensitive exotics of tropical origin can survive during winter cold snaps by moving into the depths of deep canals like L-31W, where the cold does not penetrate, and then re-enter ENP marshes as temperatures rise and the onset of the wet season re-connects marshes with canals. ENP biologists recommend filling or shallowing Canal L-31W to reduce the “refugium” effect

on exotic species introductions. A water depth sufficient to allow chilling of the water column below 15° C was considered adequate (Joel Trexler, personal communication).

There are no reports of significant wildlife or fish habitat in or along the L-31W Canal. Native fish species are common and typical of fresh water species found in South Florida canals.

Wildlife in and adjacent to the L31W canal could include alligator, otter and aquatic birds. The Canal banks are near-vertical and offer little foraging potential for long-legged wading birds. Water control structures impede access by wide-ranging species such as the West Indian Manatee. Portions of the canal may include foraging habitat for the Florida Bonneted Bat, a large species that hawks insects, often over water.

3.9 ESSENTIAL FISH HABITAT

The L-31W region of the C-111 South Dade canal system is located inland and is only freshwater-influenced. During coordination of the 2016 USACE EA for *Modifications To The C-111 South Dade North and South Detention Areas And Associated Features, (FONSI, June 24, 2016)* the Corps coordinated a determination with the National Marine Fisheries Service (NMFS) that no essential fish habitat was present in the L-31W region of the C-111 Canal System. By letter dated 29 March 2016, NMFS concurred with this determination. Since work continues in the same area, no further coordination was conducted for the proposed work.

3.10 THREATENED AND ENDANGERED SPECIES

Many threatened or endangered terrestrial plant and animal species are known to occur within Miami-Dade (South Dade) County. The land in the area of the C-111 basin originally consisted of relatively natural Everglades features including sloughs, tree islands, marshes, and coastal mangrove fringe. An extensive list of terrestrial species was coordinated with the U.S. Fish and Wildlife Service (FWS) in relation to the land-based construction proposed for Contract 8 (2012) and North and South Detention Area Features (2016). In contrast, the L-31W Canal itself supports a lesser number of species of fish or invertebrate species. In addition to the native largmouth bass, sunfish of several species, gar and bowfin, canal waters harbor exotics like Mayan cichlids, peacock bass, African jewelfish and several Tilapia species. The West Indian Manatee, an endangered species, once had access to parts of the C-111 Canal system, but spillways and pump stations built both north and south of L-31W make it inaccessible to manatees at present.

Prior consultation with the FWS and NMFS for the 2016 *"C-111 South Dade North and South Detention Area Features)"* (USACE, 2016a) led to concurrence with the Corps' determinations, with determinations of "no effect" on all plant species and most animal species, and determinations of "May Affect, not likely to adversely affect" for the endangered Florida Panther, endangered Cape Sable Seaside Sparrow, threatened Eastern indigo snake, and, as recommended by the Service, the endangered Florida bonneted bat. Service concurrence with these determinations was received on March 30, 2016. The Corps has re-initiated consultation with FWS for this EA, beginning in May 2016, and receiving Service concurrence by letter dated August 4, 2016. The Corps also determined that proposed construction would not affect species under the purview of the NMFS (marked by asterisk in Table 3). By letter dated March 29, 2016, NMFS agreed that the project area did not support marine or estuarine habitat or

Essential Fish Habitat, but could indirectly benefit those habitats. Upon completion of review of this EA, NMFS consultation will be complete. The Corps also determined that the proposed construction would not affect State-listed species. There are no known designated threatened or endangered species in the canal segments proposed for backfill and therefore the Corps determinations are "May Affect, Not Likely to Adversely Affect" and "No Effect" for the proposed action, for the respective land species as shown in Table 3.

Table 3. Federal and State listed species known to occur in Miami-Dade County, Florida, and USACE Assessments of Effect.

Common Name	Scientific Name	Status	May Affect, Not Likely to Adversely Affect	No Effect
Florida panther	*Puma concolor coryi*	E	X	
Florida manatee	*Trichechus manatus latirostris*	E, CH		X
Florida bonneted bat	*Eumops floridanus*	E	X	
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
American Alligator	*Alligator mississippiensis*	T, SA		X
American crocodile	*Crocodylus acutus*	T, CH		X
Eastern indigo snake	*Drymarchon corais couperi*	T	X	
Green sea turtle*	*Chelonia mydas**	E		X
Hawksbill sea turtle*	*Eretmochelys imbricata**	E		X
Kemp's Ridley sea turtle*	*Lepodochelys* kempii*	E		X
Leatherback sea turtle*	*Dermochelys coriacea**	E		X
Loggerhead sea turtle*	*Caretta caretta**	E		X
Smalltooth sawfish*	*Pristis pectinata**	E, CH		X
Bartram's hairstreak butterfly	*Strymon acis bartrami*	E		X
Elkhorn coral *	*Acropora palmata**	T, CH		X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E		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
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. *okeechobeensis*	E		X
Small's milkpea	*Galactia smallii*	E		X
Tiny polygala	*Polygala smallii*	E		X
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	Pr E		X
Blodgett's silverbush	*Argythamnia blodgettii*	Pr T		X
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH		X
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, CH		X
Everglades bully	*Sideroxylon reclinatum* spp. *Austrofloridense*	C		X
Florida brickell-bush	*Brickellia mosieri*	E, CH		X
Florida bristle fern	*Trichomanes punctatum* spp. F*loridanum*	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*	Pr E		X

American alligator is currently federally designated for *Similarity of Appearance to a Threatened Taxon (SAT).*

Table 4. State Endangered, Threatened, and Special Concern Species

Species	Scientific Name	State Status
	MAMMALS	
Everglades mink	*Neovison vison evergladensis*	T
Florida mouse	*Podomys floridanus*	SC
	BIRDS	
Snowy plover	*Charadrius nivosus*	T
American oystercatcher	*Haematopus paliatus*	SC
Brown pelican	*Pelecanus occidentalis*	SC
Black skimmer	*Rynchops niger*	SC
Least tern	*Sterna antillarum*	T
White-crowned pigeon	*Patagioenas leucocephala*	T
Limpkin	Aramus *guarauna*	SC
Little blue heron	*Egretta cerulea*	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
Lattice vein fern	*Thelypteris reticulata*	E
Eaton's spikemoss	*Selaginella eatonii*	E
Wright's flowering fern	*Anemia Wrightii*	E
Tropical fern	*Schizaea pennula*	E
Mexican vanilla	*Vanilla mexicana*	E

State Species of Special Concern (SC) is a species, subspecies, or isolated population that is facing a moderate risk of extinction in the future.

3.11 AIR QUALITY

EPA's AirData database contains measurements of air pollutant concentrations for the entire United States. The measurements include both criteria air pollutants and hazardous air pollutants and are compared against the National Ambient Air Quality Standards (NAAQS) specified by the EPA. The ambient air monitoring network in Florida reflects the state's population growth, new air monitoring technologies, and concern for health. The monitoring equipment has improved and become easier to operate, while analysis methods have become more precise and reliable. The monitoring effort has concentrated on the six criteria pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide and particle pollution. In 2012, there were 203 ambient monitors in the statewide air monitoring network. In 2012 , Florida continued to be in attainment for all criteria pollutants,except for the lead nonattainment area in Hillsborough County. A survey of the 2012 criteria ambient monitoring results shows that the project area is currently in attainment (FDEP Air Monitoring Report 2012).

3.12 RECREATION

Boat fishing is practiced wherever there are boat launch ramps and the canals are not physically blocked. The best boat access point along the L-31W Canal is the ramp along the ENP access road (SR 9336). The segment of L-31W south of the Park Road is fully accessible by boat whereas north of the Park road the canal can be accessed only up to S-175. To the north of the S-175 water control structure, bank fishing is possible by walking along the eastern canal bank along the levee, but the access roads (levees) are fenced and gated and therefore not generally accessible.

3.13 NOISE

Within the major natural areas of south Florida, external sources of noise are limited and of infrequent occurrence. Rural areas typically have noise levels in the range of 34 to 70 decibels, and urban areas may attain noise levels of 90 decibels or greater. Noise levels within ENP are

associated predominantly with the natural undeveloped landscape, with recreational traffic and occasional air traffic contributing intermittent higher levels.

Noise levels are associated with surrounding land use. There are no significant noise generating land users within the project area of the C-111 Detention Cells; however, there is periodic boat and airboat activity in the canals, where accessible. An un-muffled airboat, frequently powered by a V-8 car engine, registers between 115 to 130 decibels at 50 feet, according to University of Florida researchers. Fishing boats have lower noise levels. For the roads adjacent to and cutting through the project area, sound levels typical for automobile, motorcycle and truck traffic could be as high as 90 decibels but typically are lower, in the range of 75 decibels at 50 feet.

3.14 AESTHETICS

The visual characteristics of south Florida can be described according to the three dominant land use categories (natural areas, agricultural lands, and urban areas). The natural areas consist of a variety of upland and wetland ecosystems, including lakes, ponds, vast expanses of flat marsh and wet prairie, with varying vegetative components. Tree islands may project above the overall uniform marsh surface, dotting the landscape. Agricultural fields are often irrigated during the dry season; tree crops present a constant panorama resembling a woodland, whereas tropical vegetables and fruit crops may present bare soil after harvest or early planting. Large extensions of agricultural land are planted to ornamental palms and other tree crops.

3.15 LAND USE

The project area consists predominantly of prior converted agricultural lands and freshwater marsh. Subsequent acquisition of agricultural land for the project by SFWMD has been followed by partial succession of some prior agricultural land to marshy characteristics.

3.16 SOCIOECONOMICS

Florida's economy is characterized by strong wholesale and retail trade, government, and service sectors. The economy of south Florida is based on services, agriculture, and tourism. Florida's warm weather and extensive coastline attract vacationers and other visitors and help make the state a significant retirement destination. The three counties that comprise the LEC (Palm Beach, Broward, and Dade) are heavily populated, and it is estimated that over 6.9 million people will reside in this region by the year 2050.

A complete socioeconomic description of the C&SF Project area was completed in the Comprehensive Review Study (1999). In addition, the 1994 GRR/EIS describes socioeconomic conditions specific to the C-111 Project area.

3.17 AGRICULTURE

The lands in the S-332D Detention Area were classified in the 1999 FLUCCS map as agriculture; however, these lands were acquired by SFWMD from the previous owner and have not been used for agricultural practices in more than 20 years. Agriculture exists on the eastern border of the project area, along the eastern side of the L-31N and C-111 Canals. A variety of fruits, vegetables, and ornamentals are grown within this region and include many tropical and subtropical crops that are grown year-round. The most active growing season is between

September and May. Because of the wet and dry rainy seasons in the area, planting times are controlled by the elevation of groundwater.

3.18 HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE (HTRW)

Hazardous, toxic, and radioactive waste (HTRW) surveys have been conducted as part of EAs and EISs prepared as part of the prior C-111 basin restoration efforts and indicated no problems or occurrence of HTRW levels of contaminants. There is a low potential of occurrence of HTRW within the proposed project area based on the current and past activity in this area. The SFWMD conducted a phase 1 HTRW assessment that was completed in 2007. This assessment indicated no presence of contaminants at HTRW levels. The SFWMD also completed a soils sampling survey in 2008 of the project area construction footprint to address the potential for ecosystem risk (potential negative impacts to sensitive endangered species via bioaccumulation of agricultural amendments). Only trace amounts of agricultural amendments were found throughout the project area. The SFWMD recently completed (2016) an HTRW survey of the material to be used for canal fill. SFWMD has obtained concurrence from the FDEP South East Waste Clean Up Section that this fill is acceptable for placement.

3.19 CULTURAL RESOURCES

Two water control structures (S-174 and S-175) are located within the project area. These structures were constructed following standardized construction design plans, and do not embody distinctive characteristics of a type, period, or method of construction. According to the *1970 Annual Report of the Chief of Engineers (Volume 2)*, the L-31W Canal, S-174, and S-175 were constructed beginning July 1968 and completed in 1970; therefore, these project features are modern, and are not historic properties considered eligible for inclusion in the National Register of Historic Places (NRHP). Consultation in accordance with *Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties* has been coordinated with the Florida State Historic Preservation Office regarding these project components. No recorded archaeological sites exist along the L-31W canal or in its bed. The entire project footprint has been previously disturbed by construction. All fill material that will be utilized for partial backfilling and plugging of the L-31W canal is in disturbed context and aligned adjacent to the canal. Two tree islands identified from modern and historical aerial imagery are transected by the L-31W Canal (see Figures 9-12). No backfilling or plugging of the L-31 Canal will occur at these tree island locations. Only existing roads will be utilized for project ingress and egress. The Corps has determined that project design modifications to the C-111 South-Dade L-31W Canal and associated features would have no adverse effect on historic properties. The State Historic Preservation Officer has concurred with the determination of no adverse effect.

3.20 NATIVE AMERICANS

There are two federally recognized tribes (Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida) that are located within the region of the project area (Figure 13). Both tribes maintain strong connections within south Florida and shared use of the region which may have historically included the project area.

- Members of both Tribes continue to rely upon the Everglades to support their cultural, medicinal, subsistence, and commercial activities. However, while uses are known

throughout the region, there are no known uses of the specific project area. Prior consultation under section 106 of the National Historic Preservation Act on various aspects of the project for construction purposes over the last decade have not indicated any historic uses although that certainly remains possible. The specific issues impacting each tribe have been different over the last few decades, but they are all related to impacts due to man-made changes to the Everglades ecosystem. A request for project consultation with the Seminole Tribe of Florida regarding modifications to the C-111 South Dade Project L-31W Canal was initiated by formal letter dated May 11, 2016. The Miccosukee Tribe of Indians of Florida were contacted via phone on May 2, 2016, and expressed no concern for the demolition or decommissioning of S-174 and S-175 and no concern for modifications to the L-31W Canal as long as project activities are confined to the previously disturbed project footprint.

- Coordination of effects with the appropriate federally recognized tribes is complete, and no comments have been received.

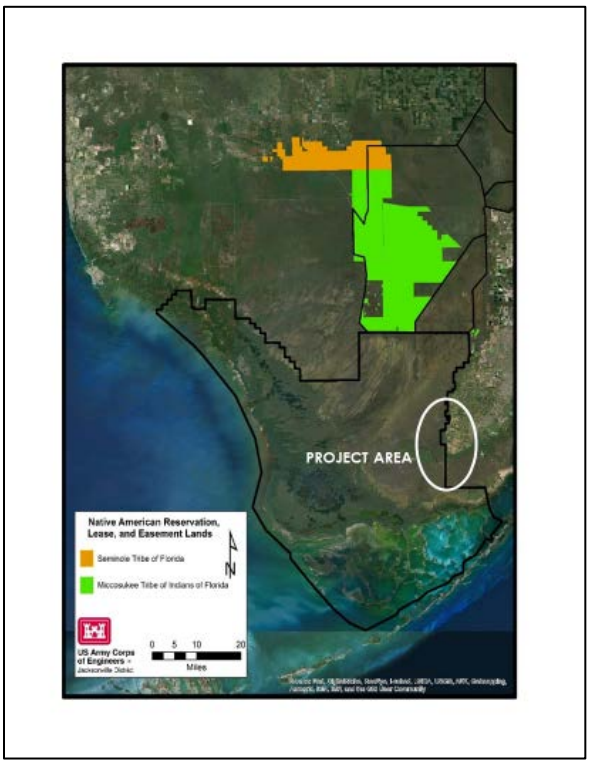


Figure 13. Seminole Tribe of Indians and Miccosukee Tribe of Indians of Florida Lands

4.0 ENVIRONMENTAL EFFECTS

Environmental effects resulting from new modifications that have not been addressed in previous NEPA documents (i.e., 1994 GRR/EIS, 2000 ISOP EA, 2002 IOP EIS, and 2007 IOP FEIS; 2012 EAs and 2016 EA) will be addressed within this EA. No significantly adverse effects on environmental resources are expected as a result of the proposed construction.

4.1 GEOLOGY AND SOILS

4.1.1 No Action Alternative

The No Action Alternative would not cause any additional effects on the geology and soils of the area. Impacts would be as described in the 1994 GRR/EIS

4.1.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Both Alternatives would utilize clean excavated material and levee overbuild areas to fill or plug the L-31W Canal and narrow the existing gap. Degrading overfill material currently deposited along the levee, and partially filling the levee gap would not alter the geology or soils in the area; however, they would meet the project purpose to provide reduced seepage. This would not result in adverse effects.

4.2 HYDROLOGY

4.2.1 No Action Alternative

The No Action Alternative would provide the continued hydrologic functions currently in place and described within the 2016 EA for the North and South Detention Areas. This hydrologic function includes continued unnatural drainage and shortened hydroperiods within the ENP wetlands adjacent to the L-31W Canal.

4.2.2 Alternative 3

The Alternative 3 backfill option would result in a reduction of seepage losses from the S-332D Detention Area to the L-31W Canal and promote increased sheetflow to Taylor Slough. Seepage into the L-31W canal from the adjacent ENP wetlands would be impeded by partial or complete plugs or fill, therefore leading to longer hydroperiods within ENP. Groundwater flow eastward from the S-332D High Head Cell and from the southern reaches of the L-31W Canal (south of S-175) towards the C-111 Canal and adjacent agricultural lands would be reduced, leading to reduction of over-drainage out of ENP.

4.2.3 Alternative 6 (Preferred Alternative)

The recommended locations for backfill and/or plugs within the remnant segments of the L-31W Canal would reduce seepage losses from the S-332D Detention Area to the L-31W Canal and promote increased sheetflow to Taylor Slough. Seepage into the L-31W canal from the adjacent ENP wetlands would be impeded by partial or complete plugs or fill, therefore leading to longer hydroperiods within ENP. Groundwater flow eastward from the S-332D High Head Cell and from the southern reaches of the L-31W Canal (south of S-175) towards the C-111 Canal and adjacent agricultural lands would be reduced, leading to reduction of adverse effects of high water table on the agricultural lands as well as reduced seepage out of ENP. The proposed ACBM weir and partial levee re-construction across the existing L-31W gap would prevent surface water losses from Taylor Slough into the S-332D Detention Area when surface

water levels in ENP are higher than inside the S-332D Detention Area flowway, providing increased hydroperiods within the ENP wetlands adjoining Taylor Slough during the transition months between the wet season and the dry season.

4.3 WATER QUALITY

4.3.1 No Action Alternative

The water quality in the C-111 basin will remain as current conditions under the No Action Alternative. No additional effects on groundwater or surface water are expected under this Alternative.

4.3.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Water quality is not presently a concern in the L-31 canal system with respect to phosphorus (based on the past few years of Settlement Agreement calculations). There is currently no phosphorus criterion/constraint for ground water; only surface water is presently regulated for phosphorus content. Initial deposition of fill in L-31W and construction actions to partially fill the levee gap may lead to temporary increases in water turbidity in un-filled or un-plugged areas. Water quality should return to normal after fill activities are complete.

4.4 FLOOD RISK MANAGEMENT

4.4.1 No Action Alternative

Levels of flood risk management are expected to remain the same with no action.

4.4.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Both Alternatives would be expected to provide a reduction in ground water seepage out of ENP, most notably from the S-332D High Head Cell and from the southern reaches of the L-31W Canal (south of S-175). Reduced return seepage (from west to east) is expected to occur as a result of the shallow sill/weir and levee rebuild at the L-31W gap under the Preferred Alternative. Rebuild of the levee and the sill may provide minor benefits to adjacent agricultural lands to the east of the C-111 Canal by reducing water loss from ENP into the S-332D Detention Area when ENP marsh water levels in Taylor Slough are higher than S-332D Detention Area water levels. Additionally, operation of the S-332D, S-199, and S-200 pump stations to provide flood risk reduction may be increased.

4.5 4.5 WETLANDS

4.5.1 No Action Alternative

No wetland impact is expected with the No Action Alternative. Wetland impacts that resulted from the implementation of the C-111 South Dade Project have been discussed in previous NEPA documents.

4.5.2 Alterantive 3 and Alternative 6 (Preferred Alternative)

The L-31W Canal itself is not a wetland; its average depth is 15-17 feet, making it a deep water habitat. Material proposed for L-31 Canal backfill is on uplands, either within existing levees or in separate stockpiles; it is coarse and rocky. There are wetlands occurring along the footprint of the levee gap at S-332. This footprint area would be converted to levee (1,600 linear feet) or weir (500 feet). They were characterized, on the basis of field observations during an inspection visit on Aug. 25, 2016, as wetlands: see Section 3.7 of this document for

a partial species list. Once complete, the C-111 South Dade Project is expected to provide benefit to 1,155 square miles of wetlands in ENP, including 128 square miles in Taylor Slough and 1,027 square miles in Shark River Slough (USACE 1994). Wetlands within ENP are expected to benefit from the restoration of more natural hydroperiods due to implementation of Alternatives. Restoration of the natural hydroperiods and burning patterns would result in more historic vegetation within these wetlands.

4.6 VEGETATION

4.6.1 No Action Alternative

Vegetation would not be altered due to the No Action Alternative beyond what was discussed in the previous cited NEPA documents. Exotic/invasive vegetation is managed by SFWMD, the land owner of lands adjacent to the levees.

4.6.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Vegetation growing upon levees or stockpiles would be removed. This vegetation includes many exotic and nuisance plants such as *Pennisetum purpureum* (elephant grass), saltbush and the exotic Burma reed. Vegetation in the levee gap, as characterized by DEP, would be removed and this wetland area would be converted to upland.

4.7 FISH AND WILDLIFE RESOURCES

4.7.1 No Action Alternative

The No Action Alternative would remain the same as the existing conditions explanation in Section 3.8.

4.7.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Both Alterantives would block access of native and non-native fish and other species within the stretches of canal that would be filled. Scientists agree that partial fill or full backfill would benefit efforts to the reduce suitable habitat and reduce the spread of exotic species. If a very limited number of L-31W plugs were implemented, similar to Alternative 4, conditions would remain similar to the No Action Alternative, but future introduction of more exotic species into ENP would be inhibited by interruption of the open canal.

4.8 THREATENED AND ENDANGERED SPECIES

4.8.1 No Action Alternative

The No Action Alternative would not impact any threatened and endangered species due to no change within the project area.

4.8.2 Alternative 3 and Alternative 6 (Preferred Alternative)

The Corps has determined that Alternative 3 and Alternative 6 are not likely to adversely affect any of the federally listed species known to occur within the project area. All monitoring and survey of endangered species onsite would be conducted in accordance with survey protocol from the USFWS South Florida Ecological Services Office.

C-111 South Dade Consultation History

In May of 2006, the FWS concurred with the Corps' determination that IOP would have "no affect" on the Okeechobee gourd, Everglade snail kite, and the red cockaded woodpecker. The

FWS also concurred with the Corps' determination of "may affect, not likely to adversely affect" the West Indian manatee and its critical habitat, the Florida panther, the bald eagle, the American crocodile and its critical habitat, the eastern indigo snake, the wood stork, the Cape Sable Seaside Sparrow, and the Garber's spurge (USFWS 2006). Consultation was conducted again in 2012 for the construction of the NDA and related structures, and again in 2015 for the*"C-111 South Dade North and South Detention Area Features)."* Concurrence with Corps determinations was received on 29 March 2016 for the most recent consultation that was conducted for the development of the features within the June 24 2016 EA/FONSI for the NDA and SDA.

The Corps re-initiated consultations on threatened and endangered species with the Fish and Wildlife Service for the Preferred Alternative, beginning on May 18, 2016. A corrected species list was received from FWS on June 6, 2016. A Biological Assessment (Appendix A) was coordinated with the Service on July 3, 2016. No adverse effects on listed species are anticipated as a result of the proposed fill activities in L-31W Canal or the gap closure (See Appendix A). The proposed activities would affect only the waters of L-31W and adjoining levees and spoil piles, and a "no effect" determination for all plant species and the endangered West Indian Manatee, as well as "May Affect, Not Likely to Adversely Affect" determinations for the endangered Florida panther, endangered Cape Sable Seaside Sparrow, endangered Florida Bonneted Bat and the threatened indigo snake were coordinated with the U.S. Fish and Wildlife Service. The Service concurred on August 4, 2016.

The following special measures would be incorporated during project construction to minimize effects on any listed and special status species that may be present:
a) Standard construction protection measures for the eastern indigo snake;
b) Management Guidelines for the Bald Eagle in the Southeast Region and Bald Eagle Standard Local Operating Procedures for Endangered Species;
c) Habitat Guidelines for the Wood Stork in the Southeast Region;

Consultation under Section 7 of the Endangered Species Act with the USFWS will continue throughout the C-111 project's construction.

4.9 AIR QUALITY

4.9.1 No Action Alternative

Effects on air quality under the No Action Alternative would be as described in the 1994 GRR/EIS and subsequent NEPA documents. Not implementing a project would not impact air quality. The pump stations will continue to discharge the same quantity of diesel exhaust products into the project area with or without this project.

4.9.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Construction activities associated with implementing the backfill and/or gap reduction activities would temporarily increase dust and engine emissions within the project area. Best management practices to control dust would be implemented during construction and the contractor would be required to operate its machinery in compliance with all emissions standards. It is not expected that implementing the project would permanently affect air quality.

4.10 NOISE

4.10.1 No Action Alternative

No noise impacts are expected under the No Action Alternative. Existing operational pump stations S-332 B, C and D would continue to operate.

4.10.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Noise impacts associated with implementation of the Alterantives would not permanently increase within the project area. Temporary increases in noise level, caused by engines of earth-moving machinery, would be expected during construction activities; however, this would be limited to the immediate area of construction. All construction activities would occur from the Detention Area side of the Canal and levees.

4.11 AESTHETICS

4.11.1 No Action Alternative

Selection of the No Action Alternative would not affect aesthetics. Normal operations of pump stations would continue under the No Action Alternative.

4.11.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Construction of either alternative would cause some temporary adverse effects such as access restrictions, noise and vehicle exhaust associated with construction sites, but these are not expected to last for a sustained period of time. Access restrictions, noise and exhaust associated with construction sites will interfere to an extent with enjoyment of the area and may disturb wildlife in the immediate area of work. Once work is completed, wildlife will once again inhabit the area around the construction sites and restrictions on access will be lifted. Vegetation will quickly become established on disturbed soil areas and within a year will cover any remaining signs of construction activities.

4.12 LAND USE

4.12.1 No Action Alternative

The No Action Alternative would not be expected to provide any changes to current land use.

4.12.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Both Alternatives would degrade some levees and degrade existing stockpiles of material stored along the L-31W Canal from prior actions in order to use the stockpiles for fill. No change in land use would result. All adjacent lands are either ENP (west of L-31W) or owned by SFWMD.

4.13 RECREATIONAL USE

4.13.1 No Action Alternative

There is limited boat access and bank access, to the north and south of the boat ramp on the ENP road (SR 9336). The northern limit is the S-175 gated culvert. Access would not change with the No Action Alternative.

4.13.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Depending on the extent of the backfill or plugs installed in the L-31W Canal, there may be permanent loss of some fishing access by water. Access by boat is currently restricted to short reaches north and south of the boat ramp on SR 9336 (ENP road). The Preferred Alternative would leave at least one mile of open canal north of the ENP road, and a similar or greater length to the south of the boat ramp. After discussions with ENP biologists, it was determined that recreational use by fishermen in this stretch is limited to small boats with low-horsepower engines. Plugging or backfilling portions of the canal would increase flows through Taylor Slough, potentially increasing recreational opportunities within that area.

4.14 SOCIOECONOMICS

4.14.1 No Action Alternative

The No Action Alternative would not cause any changes to socioeconomics in the area.

4.14.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Both Alternatives would not be expected to change any socioeconomic impacts. The SFWMD currently owns the project lands and the project benefits to ENP could increase recreational opportunities, therefore encouraging more tourism for the area.

4.15 AGRICULTURE

4.15.1 No Action

Agricultural practices are not expected to change due to the No Action Alternative.

4.15.2 Alternative 3 and Alternative 6 (Preferred Alternative)

No active agricultural lands are immediately adjacent to L-31W. In Alternative 3 and Alternative 6, reduced return seepage towards the C-111 Canal may provide minor benefits to adjacent agricultural lands to the east of the C-111 Canal by enabling increased efficiency in operation of the S-332D, S-199, and S-200 pump stations to provide flood risk reduction.

4.16 HAZARDOUS, TOXIC OR RADIOACTIVE WASTE

4.16.1 No Action Alternative

Selection of the No Action alternative would not have any HTRW consequences for this project area.

4.16.2 Alternative 3 and Alternative 6 (Preferred Alternative)

The SFWMD has conducted phase 1 HTRW assessments for this project area. The assessments conducted approximately 5-10 years ago indicated no presence of contaminants at active levelsThis area was primarily used for agriculture . This type of use is normally considered to be relatively low risk for HTRW problems as compared to what could be expected at industrial, residential, or former military sites. The SFWMD completed an HTRW assessment and screening level ecosystem risk analysis (SLERA, a soil sampling and analysis program conducted in a method coordinated with USFWS) of this project area in 2008. There was no evidence of HTRW levels of contaminants and only trace levels were found of residual agricultural amendments. A recent (2016) HRTW assessment conducted by the SFWMD, of the potential fill material (consisting of the limestone excavated from the L-31W canal

template), found this material to be suitable for placement in the L-31W canal. Depositing levee overbuild material in the Canal would not expected to mobilize any contaminants.

4.17 CULTURAL RESOURCES

4.17.1 No Action Alternative

Selection of the No Action alternative would cause no adverse effect on cultural resources. The previous NEPA documents covered the SDA and the current S-332B NDA with a determination of no adverse effect on cultural resources.

4.17.2 Alternative 3 and Alternative 6 (Preferred Alternative)

Selection of the either alternative would have no effect on historic properties. There are no known historic properties present within the previously disturbed project footprint, and undiscovered cultural resources are not likely to be present. Two tree islands have been identified from modern and historical aerial imagery as transected by the L-31W Canal. While resources have been previously identified from the orginal cutting of the canal, there remains some probability that resources could contain unknown cultural resources within tree islands; therefore, no plugging or backfilling of the L-31W Canal will occur at these locations to avoid any potential affects. A determination of no effect on historic properties affected was coordinated with the Florida SHPO and federally recognized tribes. SHPO concurrence was received on August 24, 2016.

4.18 CUMULATIVE IMPACTS

The project area has been subject to Federal involvement for many years. The need for flood damage reduction, water supply, recreation, and fish and wildlife enhancement has provided a difficult task of balancing various and sometimes-conflicting needs for the region. In the early years of the C&SF Project, flood control was the overriding goal, and eventually the need for additional water supplies for south Florida required additional modification to the project. The Everglades National Park Protection and Expansion Act of 1989 directed the Corps:

> "to construct modifications to the Central and Southern Florida Project to improve water deliveries into the park and shall, to the extent practicable, take steps to restore the natural hydrological conditions within the park."

Since that time, a number of Federal actions have been authorized and implemented that have attempted to improve the flow of water to the ENP without compromising the other needs of the region (i.e., flood control, water supply). The cumulative effects of these actions have been mostly positive. However, some adverse effects have occurred; specifically, active agricultural lands were acquired and taken out of agriculture in the Frog Pond and parts of the NDA and SDA for the C-111 Project. The CERP (USACE 1999a) has already addressed cumulative effects of lost agricultural land use with the expansion of publicly owned lands in the region.

Cumulative impacts in terms of hydrology, water quality, and natural resources have occurred under the many Federal projects implemented over the years. However, this proposed action, coupled with other recent and future projects, should eventually restore the hydrology of the ENP to a more historic natural condition, while maintaining the pre-project level of flood protection.

4.19 IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF RESOURCES

Irretrievable and irreversible commitment of resources would occur with the use of funds to backfill parts of the L-31W Canal. Resources committed would also include State and Federal funds to purchase lands, labor, energy, and project materials to build, operate, and maintain the project.

4.20 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Localized short-term disturbances to fish and wildlife are expected from construction activities but are not expected to be permanent upon completion of construction.

4.21 COMPATIBILITY WITH FEDERAL, STATE, AND LOCAL OBJECTIVES

The Corps has partnered with the SFWMD on this project. The proposed action is consistent with the overall goals and objectives of the C-111 South Dade Project and known Federal, State and local plans and objectives.

4.22 ENVIRONMENTAL COMMITMENTS

The Corps, the non-federal sponsor (SFWMD), and contractors commit to avoiding, minimizing, or mitigating for adverse effects during construction activities by taking the following actions:

1. Employ best management practices with regard to erosion and turbidity control. Prior to construction, the construction team should examine all areas of proposed erosion/turbidity control in the field, and make adjustments to the plan specified in the plan control device as warranted by actual field conditions at the time of construction.

2. The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. The contractor will be required to prepare a spill prevention plan.

3. Demolition debris would be transported to a landfill or otherwise disposed of in accordance with Federal, State, and local requirements. Concrete or paving materials would be disposed of in accordance with Federal, State, and local requirements.

4. The Contractor must include a wildlife observer on staff to: inform contractor personnel of the potential presence of threatened and endangered species in the project area, the need for precautionary measures and the ESA prohibition on taking listed species.

5. Incorporate any commitments required by the appropriate regulatory agencies identified during the NEPA and ESA process.

6. The contractor will prepare an environmental protection plan for listed species onsite.

7. Construction activities will avoid impacting existing tree islands.

4.23 COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

4.23.1 National Environmental Policy Act of 1969

Environmental information on the project has been compiled and this EA has been prepared in compliance with NEPA. This EA was coordinated with agencies and the public for 60 days, beginning on July 1, 2016, in full complieance with NEPA. Comments received have been tabulated in Section 6.2, and reproduced in full in Appendix D.

4.23.2 Endangered Species Act of 1973 Section 7

The Corps has consulted with the USFWS with "no effect" and "May affect, not likely to adversely affect" determinations for listed species, receiving Service concurrence on August 4, 2016. Provided that standard conditions for census of CSSS and protection of indigo snakes are followed, the project is in full compliance with this law.

4.23.3 Fish and Wildlife Coordination Act of 1958

The C-111 South Dade Project has been extensively coordinated with the USFWS. Fish and Wildlife Coordination Act (FWCA) reports were submitted by the USFWS for the 1994 GRR, 2002 IOP EIS, 2007 IOP FEIS, 2012 NDA EA, and the 2016 EA. This project is in compliance with the Act.

4.23.4 National Historic Preservation Act

The Proposed Action is in compliance with Section 106 of the National Historic Preservation Act, as amended (Public Law 89-665). As part of the requirements and consultation process contained within the National Historic Preservation Act implementing regulations of 36 CFR Part 800, this project is also in compliance through ongoing consultation with the Archaeological and Historic Preservation Act, as amended (Public Law 93-29), Archeological Resources Protection Act (Public Law 96-95), American Indian Religious Freedom Act (Public Law 95-341), Native American Graves Protection and Repatriation Act (NAGPRA, Public Law), Executive Order 11593, 13007, and 13175, the Presidential Memo of 1994 on Government to Government Relations, and appropriate Florida Statutes. Consultation with the Florida State Historic Preservation Office, appropriate Federally recognized Tribes, and other interested parties has been completed following full coordination of this EA under NEPA. The Proposed Action is in compliance with the goals of this Act. Concurrence of the State Historic Preservation Officer was received on August 24, 2016.

4.23.5 Clean Water Act of 1972

A 404(b)(1) Evaluation was prepared (Appendix B) and coordinated along with this EA. Full compliance with this Act will be achieved upon the issuance of a Water Quality Certification (WQC) and National Pollutant Discharge Elimination System permits by the State of Florida.

4.23.6 Clean Air Act of 1972

Full compliance with this Act was achieved thru coordination and review of this EA with the Environmental Protection Agency and the issuance of any required local permits. No air permit will be required for the construction of these new detention areas. Though not anticipated, if the contractor has to perform any onsite burning activity associated with the clearing and grubbing activity, any required local permits will be acquired by the contractor.

4.23.7 Coastal Zone Management Act of 1972

A Federal consistency determination in accordance with 15 CFR Part 930 Subpart C is included in this EA as Appendix C. The State's preliminary consistency review for this project determined that at this stage the project is in compliance. Full compliance will occur with the issuance of the Water Quality Certificate (**WQC**) by the State of Florida.

4.23.8 Farmland Protection Policy Act of 1981

The Corps consulted with the U.S. Department of Agriculture's Natural Resources Conservation Service in 2012 to determine whether prime or unique farmland would be impacted by implementation of this project. This project is in compliance with the Act.

4.23.9 Wild and Scenic River Act of 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This Act is not applicable.

4.23.10 Marine Mammal Protection Act of 1972

The West Indian manatee is not believed to occur adjacent to the project area, due to the presence of blocking structures at both ends of the canal. Incorporation of the safeguards used to protect threatened and endangered species during construction would protect any animals in the area. Coordination with USFWS will continue as construction and operational guidelines are incorporated to avoid impacts to this species; however, the L-31W canal is blocked from access by manatees in the project area. The project is in full compliance with this Act

4.23.11 Estuary Protection Act of 1968

No designated estuary would be affected by project construction activities however; operations of the project may benefit Florida Bay. The project is in full compliance with this Act upon review of this EA by the NMFS.

4.23.12 Federal Water Project Recreation Act

The principles of the Federal Water Project Recreation Act, (PL 89-72) as amended, have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2).

4.23.13 Submerged Lands Act of 1953

The project would not occur on submerged lands of the State of Florida. This Act does not apply.

4.23.14 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990

There are no designated coastal barrier resources in the project area that would be affected by this project. These Acts are not applicable.

4.23.15 Rivers and Harbors Act of 1899

The proposed work would not obstruct navigable waters of the United States. The project is in full compliance.

4.23.16 Anadromous Fish Conservation Act

Anadromous fish species would not be affected by this project. This Act is not applicable.

4.23.17 Gold and Bald Eagle Protection Act

During Section 7 consultation with the USFWS for the IOP, the USFWS concurred with the Corps' determination that construction and operation of the project was not likely to adversely affect the Bald Eagle. Standard construction specs will be followed to protect this species. This fulfills the Corps' commitments under the Gold and Bald Eagle protection Act. The project is in compliance with the Act.

4.23.18 Migratory Bird Treaty Act and Migratory Bird Conservation Act

No migratory birds would be adversely affected by project activities. The project is in compliance with these Acts upon review of this EA by the USFWS.

4.23.19 Magnuson-Stevens Fishery Conservation and Management Act

This project is located inland and not expected to adversely affect Essential Fish Habitat. Completion of construction on the C-111 South Dade Project does not include water management changes, but it will facilitate improvements in management of seepage waters out of ENP that now reach the lower C-111 Canal through groundwater flow. A greater proportion of this water will be retained in ENP, reaching Florida Bay through Taylor Slough. Essential fish habitat in Florida Bay includes seagrasses, estuarine mangroves, intertidal flats, the estuarine water column, live/hard bottoms, and coral reefs. Project construction activities should have no effect on the nearshore communities or essential fish habitat downstream of the project area. However, this project is expected to have a beneficial indirect effect by increasing overland flow into Florida Bay through Taylor Slough. The increased flow is anticipated to stabilize the water quality and salinities required to improve and sustain nearshore biological communities. The project is in full compliance with this Act.

4.23.20 Marine Protection, Research and Sanctuaries Act (MPRSA)

The term "dumping" as defined in the Act (33 U.S.C. §1402 (f)) does not apply to this project. Therefore, the MPRSA does not apply.

4.23.21 Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response Compensation and Liability Act (CERLA), Toxic Substances Control Act of 1976.

A preliminary Phase I HTRW assessment was conducted in August 1998 to address the potential for the occurrence of HTRW on lands within the full scope of the C&SF project in the study area. No specific sites were identified within the footprint of the structures. Lands related to the C-111 project were also surveyed for HTRW by SFWMD prior to that agency's transfer and certification of lands to the Federal Government. The project is in compliance with these Acts. An HTRW assessment (2016) of the fill material conducted by the SFMWD concluded that this fill was acceptable for placement in the L-31W canal. The FDEP SE Waste Clean Up Section concurred with this conclusion.

4.23.22 E.O. 11988, Flood Plain Management.

Guidance on compliance with this E.O. requires an eight step process: review of existing Management activities and development constraints revealed that management of the floodplain is shared among the Federal Emergency Management Agency, the County of Miami-Dade (secondary canals), the USACE and the South Florida Water Management District. The following questions were considered:

1. Is the proposed activity located in the base flood plain? Yes, The C-111 Canal, a mixed flood mitigation and habitat improvement project, is located in the base flood plain. Actions (construction) evaluated in this EA are improvements to the function of a pre-existing project.
2. Are there practicable alternatives that are outside the flood plain? No, There are no practicable alternatives to the location, as the project was built beginning in 1968, and protects both agricultural interests and ENP. This is the borrow canal for the "East Coast Protective Levee" in southern Miami-Dade County. The entire project area and surrounding ENP is a flood plain.
3. Would the proposed action (modifications to C-111) induce development? No; lands to the west are part of a National Park; while lands to the east are developed for residences, agriculture and other uses. The L-31 Levee is a dividing line between conservation lands and development.
4. Impacts or effects of the proposed construction include: improved wet-season flood mitigation for existing land uses: agriculture, residences and businesses; improved groundwater retention in ENP due to plugging that will reduce seepage; avoiding over-drainage of the eastern boundary lands inside ENP, including CSSS critical habitat.
5. Measures available to minimize adverse effects on natural or beneficial floodplain values: Plugging the canal as proposed would mitigate adverse effects of seepage. It will benefit ENP lands by retaining water while reducing flooding on lands adjacent to C-111 to the east.
6. Modification or re-evaluation of alternatives based on application of the above critieria or questions: Plugging the L-31 Canal is a beneficial modification of the original project.
7. Adverse effects, described elsewhere in this EA, would include temporary wildlife disturbance; irreversible loss of lands under the footprint of levee overbuild to be used for plugging.
8. Conclusion: The areas to be modified under WRDA 1996 authorization within the C-111 project are part of the base floodplain. The purpose of the E.O. is to discourage federally induced development in floodplains. The C-111 Project is part of the Central and Southern Florida Project for Flood Control and other Purposes. Commitment of lands to the C-111 Project occurred many years ago as summarized in Sections 1.3 and 1.4. This project is in compliance with the intent of this E.O. as its major purpose is to build and maintain a hydraulic ridge that can reduce groundwater seepage out of the eastern ENP lands, improving their value as natural habitats. The proposed construction has been coordinated with the public and agencies during a 60 day period beginning on June 20, 2016.

4.23.23 E.O. 12898, Environmental Justice

This E.O. directs Federal agencies to provide for full participation of minorities and low-income populations in the Federal decision-making process and further directs agencies to fully disclose any adverse effects of plans and proposals on minority and low-income populations. This was fully coordinated during the IOP NEPA process. Subsequent construction of the NDA

was re-coordinated during the NDA NEPA process in 2012 and in 2016. Since the design modifications addressed in this EA will be operated under the ERTP modifications to IOP, the results of that coordination are still valid. The operations of the structures would benefit all population groups of southern Miami-Dade County by providing flood damage reduction, drinking water supply protection, and restoration of wetlands and other natural resources inside and outside of the ENP. There are no residents in the project lands. The project would not cause disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. The project is in compliance with this E.O.

4.23.24 E.O. 13045, Protection of Children

Executive Order 13045, requires each Federal agency to "identify and assess environmental risks and safety risks [that] may disproportionately affect children" and ensure that its "policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." This project has no environmental or safety risks that may disproportionately affect children. The project is in compliance.

4.23.25 E.O. 13089, Coral Reef Protection

No coral reefs will be impacted by this project, which is located entirely in the freshwater segment of Canal-111. This E.O. does not apply.

4.23.26 E.O. 13112, Invasive Species

The project will help reduce the abundance and variety of invasive exotic fish species in the project area. Under the Comprehensive Everglades Management Program and cooperative agreements with ENP, SFWMD already conducts an extensive exotic invasive plant species control program. Best management practices will be implemented during the construction phase to preclude the introduction of additional invasive species. The project is in compliance with this E.O.

4.23.27 E.O. 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

The project has been coordinated with the USFWS concerning migratory birds. The project is expected to benefit migratory birds by improved habitat and increased availability of forage species (amphibians, fish, aquatic invertebrates) for wading birds. The Corps will conduct pre-construction monitoring to detect any nesting activities in accordance with existing protocols. The project is in compliance with this E.O.

5.0 LIST OF PREPARERS

5.1 PREPARERS & REVIEWERS

The following individuals listed were responsible for contributing to the preparation, review and technical editing of the EA and proposed Finding of No Significant Impact (FONSI):

Name	Role
Ms. Barbara Cintron	Biologist, NEPA Coordination
Mr. Marc Tiemann	Cultural Resources
Mr. Jim Riley	Water Quality and HTRW

Mr. Rafael Velez	Engineering Design
Mr. Dan Crawford	Hydrology/Engineering
Mr. Andrew LoSchiavo	Document Review
Mr. Michael Drog	Project Management

6.0 PUBLIC INVOLVEMENT

The C-111 South Dade project features have been extensively coordinated with the public. A GRR/EIS was completed in 1994. Project features described in the 1994 GRR/EIS were modified as a result of the IOP. The IOP Supplemental Final EIS was completed in 2002 and another IOP Supplemental Final EIS was completed in 2007. There were also two more EAs to address design modifications to the 1994 GRR in 2012 and 2016. Finally, this EA and proposed FONSI are being circulated for a minimum 60-day review to concerned agencies, organizations, and the interested public, beginning on July 1, 2016.

Upon completion of public review, a table of comments and responses will be added to this section.

6.1 LIST OF RECIPIENTS

The following agencies, groups, and individuals were sent copies of this EA and proposed FONSI:

Native American Tribes
Miccosukee Tribe of Indians of Florida
Seminole Tribe of Florida

Federal Agencies
Federal Emergency Management Agency
US Environmental Protection Agency
US Department of Agriculture, Forest Service
Natural Resources Conservation Service
US Department of Commerce
National Oceanic and Atmospheric Administration
Florida Keys National Marine Sanctuary
National Marine Fisheries Service
US Department of Housing and Urban Development
US Department of the Interior
Bureau of Indian Affairs
US Fish and Wildlife Service
US Geological Survey
National Park Service
Office of Environmental Policy and Compliance
US Coast Guard
US Department of Transportation
Federal Highway Administration
US Public Health Service

State Agencies
Florida Department of Agriculture and Consumer Services
Florida Department of Community Affairs
Florida Department of Environmental Protection
Florida State Clearinghouse
Florida Fish and Wildlife Conservation Commission
Florida Department of Transportation
Florida Division of Historical Resources - SHPO
South Florida Water Management District

Regional Governments
South Florida Regional Planning Council

County Governments
Miami-Dade County

Municipalities
Miami, Florida

Florida City
Homestead, Florida

Groups
Audubon Society of the Everglades
Biodiversity Legal Foundation
Miami-Dade County Farm Bureau
Dairy Farmers, Inc.
Defenders of Wildlife
Environmental Coalition of Broward County
Environmental Defense Fund
Everglades Coordinating Council
Everglades Foundation
Florida Audubon Society
Florida Biodiversity Project
Florida Defenders of the Environment
Florida League of Anglers, Inc.
Florida Power and Light Company
Florida Sportsman Conservation Association
Florida Wetlands
Florida Wildlife Federation
Friends of Florida

Friends of the Everglades
Izaak Walton League of America, Inc.
Lake Worth Drainage District
League of Women Voters
National Audubon Society
National Parks and Conservation Association
National Park Trust
National Resources Defense Council
National Sierra Club
National Parks Conservation Association
National Wildlife Federation
Save the Manatee Club
Sierra Club, Florida Chapter
South Florida Agricultural Council
South Florida Anglers for Everglades Restoration, Inc.
The Environmental Coalition
The Nature Conservancy
The Wilderness Society
Tropical Audubon Society
Trust for Public Lands
World Wildlife Fund

Individuals
A complete list of individuals who received the EA and proposed FONSI is on file in the Jacksonville District of the Corps.

6.2 PUBLIC AND AGENCY COMMENT MATRIX

Commenter	Comment	USACE Response
Florida Fish and Wildlife Conservation Commission (FWC)	1. Once completed, this project should improve the ability to move water along the eastern flow path of ENP to Shark River Slough and Taylor Slough and improve the movement of flows from the WCAs during high water periods. FWC is supportive of this project and supportive of accelerating its implementation and construction schedules to maximize the water management benefits.	Thank you for your support.

FWC	2. Within the project area, there is a boat ramp along the ENP entrance road (FL 9336) which provides access to the canal for boats and recreational users. Recreational use by fishermen in this stretch of canal is potentially limited to small boats. FWC recommends that the boat ramp and remaining canal segments should remain accessible to recreational enthusiasts. The Preferred Alternative will leave at least one mile of open canal north of the ENP entrance road and a similar or greater length to the south of the boat ramp and recognizes that fill availability and costs may be constraint to constructing all of the identified plugs. When constructing the plug south of the boat ramp, which is identified as a lower priority plug, the greater the distance from the boat ramp the greater length of boat accessible canal. FWC staffs appreciate efforts to maintain fishing access as there are limited freshwater fishing opportunities in the area.	None of the proposed alternatives would affect the boat ramp. Alternative 6, the recommended alternative, would provide at least 1 mile of open channel to the north and south of the boat ramp. In developing alternatives, the Corps tried to strike a balance between plugging canal segments to reduce their potential for inducing seepage and facilitating introduction of exotic invasive fish species, and allowing for continued sport fishing.
FWC	3. We appreciate the opportunity to review the EA and we find this EA consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Coastal Management Program.	Thank you for your support.

U.S. Dep't of the Interior, Fish and Wildlife Service. Response to the Biological Assessment (BA) included in the Draft EA. (USFWS)	4. The current consultations will only cover construction activities while any operational changes associated with water management in the area will be dealt with under a future operational planning study, the Combined Operational Plan (COP). Until such time as the COP is complete, ERTP 2016 will be the guiding water management plan and all requirements under the 2016 Biological Opinion for protection of the Cape Sable seaside sparrow and other threatened and endangered species in the area will continue to be met by the Corps.	USACE understands that the current consultation covers the construction period in L-31W.
USFWS	5. Should the currently proposed action result in altered hydrology within the adjacent marsh (which it is expected to do as seepage out of ENP is reduced); the Service expects the Corps and interagency team to reconvene and modify, if necessary, the current operational plan to address any impacts observed. This is especially critical if the actions were to cause water levels to rise above ground surface in CSSS critical habitat during the nesting season (March – August).	USACE is committed to maintaining consultation with the Service as agreed upon for operations. This EA covers construction only.

USFWS	6. The Corps' species effect determinations have changed from previous consultations and are as follows: the proposed project will have "no effect" on the endangered Everglades snail kite *(Rostrhamnus sociabilis plumbeus*) or its critical habitat, endangered red-cockaded woodpecker (*Picoides borealis*), endangered Okeechobee gourd (*Cucurbita okeechobeensis* ssp. *Okeechobeensis*), endangered Florida manatee (*Trichechus manatus latirostris*) or its critical habitat, and threatened wood stork (*Mycteria americana*), among others (see Corps BA, Table 1.) The Corps has also determined that the proposed project "may affect, but it not likely to adversely affect" the endangered Florida panther (*Puma concolor coryi*), endangered Florida bonneted bat (*Eumops floridanus*), endangered Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) or its designated critical habitat, and the threatened eastern indigo snake (*Drymarchon corais couperi)*. The Service concurs with the Corps determinations regarding these species and potential impacts from the proposed action. The Corps will implement the standard construction protection measures for the eastern indigo snake as they are likely to inhabit the spoil mounds and other earthen structures within the project area. The Corps will also incorporate the Habitat Guidelines for the wood stork in the Southeast Region.	Thank you for notifying us of your concurrence with Corps determinations.

South Florida Water Management District, SFWMD	7. The South Florida Water Management District (District), as the local sponsor for the C-111 South Dade Project, fully supports moving forward with modifications to the L-31 W Canal and Levee as part of the District's Governing Board's Florida Bay proposal; the components of which are detailed in the attached information. While backfilling and plugging the L-31 W Canal and rebuilding the L-31W Levee and weir will keep more water in Everglades National Park, the District proffers a slightly varied approach which complements the U.S. Army Corps of Engineers (USACE) recommended plan, achieves the intent of the larger federal project and serves as an extension of the proposed project benefits by significantly increasing flows through Taylor Slough to Florida Bay. The District's alternative approach requires modest alterations to the proposed plan and can be implemented prior to the oncoming dry season to deliver much needed fresh water relief to Florida Bay and aid in avoiding future impacts such as the elevated salinity levels and massive sea grass die-off experienced last year.	We welcome endorsement of the L-31 backfill options levee gap reduction and levee rebuild options presented in the Draft EA. We want to clarify that some options discussed in detail in the SFWMD proposal are not related to the authorized C-111 South Dade Project, but rather to the CERP C-111 Spreader Canal Western Project Implementation Report, as authorized under separate legislation (WRRDA 2014). The C-111 Spreader Canal Western Project has been operated and maintained by the SFWMD since 2012. The current EA, when finalized, could support the proposed complete and partial plugs in L-31W and modifications of the L-31W Levee gap at S-332, including construction of an ACBM weir with adjustable flashboards. This EA cannot support connection of the S-200 and S-199 pump stations to L-31W, or other modifications of the separately authorized CERP C-111 Spreader Canal Western Project. Those modifications require separate permits and documentation under NEPA. We understand that SFWMD has submitted permit applications for these separate actions, which will undergo independent analyses.

U.S. Dept. of Interior, National Park Service (NPS)	8. While the more extensive backfilling proposed in alternative 3 would prove greater ecological benefits, we agree that the strategic plugging identified in alternative 6 represents a reasonable and cost effective approach to decreasing canal conveyance. Plugging the L-31W canal and routing S-332D discharges through the Frog Pond flow-way has a benefit of decreasing the amount of deep water canal refugia for exotic aquatic species that can invade Taylor Slough. The seasonal drying of the Frog Pond flow-way also provides a management opportunity to reduce the spread of exotic aquatic species, as well as increased retention of nutrients and contaminants prior to their entering Everglades wetlands.	Thank you for your support.
U.S. Dept. of Interior, National Park Service (NPS)	9. The SFWMD has recently proposed a series of structural and operational modifications with the goal of increasing water flows into Taylor Slough. We understand the SFWMD's proposal would likely require modifications to the recommended plan in this EA, relative to L-31W canal plugging. We will stay engaged on these proposed actions, and comment on any future revisions that would modify the environmental assessments of the C-111 South Dade Project.	The Corps will prepare a NEPA assessment to evaluate the SFWMD proposal to modify the CERP C-111 Spreader Canal Western Project. The Corps will continue to coordinate with NPS on these actions, and we remain committed to resolving technical concerns with any of the components of the SFWMD Florida Bay proposal.
Florida State Clearinghouse, Office of Intergovernmental Programs	10. Based on the information contained in the EA and enclosed agency comments, the state has determined that, at this stage, the proposed federal activities are consistent with the Florida Coastal Management Program (FCMP).	Thank you for your support.

Florida Dept. of Agriculture and Consumer Services (FDACS)	11. FDACS acknowledges the need to complete the C-111 South Dade Project but has concerns that there is not a cohesive approach for the project construction features and related non-project actions that are being considered for this area. Specifically, the South Florida Water Management District (SFWMD) has proposed modifications to the proposed construction features and has proposed non-project actions for the same area covered in this EA. This has resulted in a SFWMD plan which is significantly different than the EA plan. Additional information, further hydrological analyses and coordination between the United States Army Corps of Engineers (USACE) and SFWMD are needed to determine the actual construction plan that we expect to see implemented.	The recommended coordination is occurring. Several features of the SFWMD's recommended plan cannot be addressed in this EA as they are modifications to another existing Federal project, the CERP-C-111 Spreader Canal Western Project (See response to SFWMD Comment 7). These options are under evaluation as most will require separate permits under Section 404 of the Clean Water Act, and portions of the SFWMD proposal will require permission under Section 408 of the Rivers and Harbors Act of 1899. Other actions related to C-111 South Dade components will require Section 404 permits and an Integral Determination Report. Permit applications have been received and are under separate evaluation.
FDACS	12. Even though this draft EA does not address the project operations which have the most potential to impact private agricultural lands, the construction features authorized will determine the range of operational performance and options available. Project construction features and design flexibility regarding the canal plugs in the L-31 West Canal should be resolved and a final EA should be prepared reflecting the features that will actually be built.	Authorization of fill in the L-31W levee dates from 1996. At this time USACE supports constructing canal plugs in the understanding that they best provide a balance between rehydration of upper Taylor Slough and flood damage mitigation for the agricultural lands to the east. As explained in the final EA, development of a final Combined Operational Plan will depend on the measured and modeled outcome of all increments of the Modified Water Deliveries project.

FDACS	13. The current Draft EA and FONSI for Modifications of the C-111 South Dade Project L-31W includes construction features that impound the headwaters of Taylor Slough which increases impounded water levels in the southern detention area during wet conditions. This could increase seepage to the east and increase seepage to the east and increase water table levels for private property adjacent to the park. It is also contrary to the Final Integrated General Reevaluation Report and Final Environmental Impact Statement dated 1994 (1994 GRR/EIS) which authorized features that did not impound the southern detention area and provided for surface water outlets from the C-111 South Dade Project west into Everglades National Park (ENP).	The headwaters of Taylor Slough drain to the southwest through ENP. Under most conditions Taylor Slough is not "impounded" or prevented from draining by gravity. Replacement of the levee gap at S-332 by a low sill weir will facilitate water retention inside ENP lands under those circumstances when water levels inside ENP are higher than in the S-332D Detention Area. The crest elevation for the initial placement of the ACBM weir may be adjusted in response to further design analyses, including consideration of observed flow conditions at the gap following the partial degrade of the S-327 weir in August 2016. Portions of the ACBM length may also be constructed with adjustable flashboards to provide additional operational flexibility for water managers to respond to changing seasonal water level gradients across the gap. Construction of the NDA under Contract 8, now underway, provides, in combination with the existing SDA, a much larger area to detain water than the original South Detention Area described in the 1994 GRR. The EA acknowledges that field data collected from Increment 1 and Increment 2 of the MWD field tests and/or development of the Combined Operations Plan (COP) may indicate a need for additional discharge from the SDA, in which case such a feature or features would be

		coordinated separately under a new NEPA document.
FDACS	14. Throughout the C-111 South Dade Project history, buffer cell design has not worked as anticipated due to the impact of seepage to the east on project performance and water table levels for private property adjacent to the park. Further evaluation of the performance of proposed features, once they are determined, for a revised final EA and FONSI should be undertaken using the appropriate data and modeling analyses. At this time, it is not clear what range of performance under a variety of hydrological conditions can be expected since we don't yet know what will actually be built.	This EA is not an operational document. As stated in the EA text, both modeling and future on-site monitoring must be complete before the COP can be developed. This future evaluation is planned but cannot be completed at the present time. The Corps is committed to completing the required evaluations and monitoring in coordination with appropriate State and federal agencies when the requisite data is available. The COP will conduct regional hydrologic modeling in order to balance the ecological restoration objectives of the MWD and C-111 South Dade projects while demonstrating compliance with the project constraints, which will include requirements to maintain the mitigation for project induced flood damages in the 8.5 SMA and to maintain the level of flood damage reduction associated with the 1994 C-111 GRR Recommended Plan. It is not considered prudent to further delay installation of plugs in the L-31W canal in order to complete an evaluation for which data are still lacking.
Florida Dept. of Environmental Protection, Office of Ecosystem Projects (FDEP)	15. The Florida Department of Environmental Protection (the Department) supports the need to complete the C-111 South Dade Project, with the understanding that Alternative 6 will require additional coordination with stakeholders and on projects proposed by the South Florida water Management District (SFWMD).	Thank you for your support.

FDEP	16. Specifically, the SFWMD has proposed the installation of ten plugs along the L-31W Canal, reconstruction of the L-31W Levee with an integral weir, and sealing of the S-332D Pump Station Discharge Basin to reduce return seepage to the L-31N Canal. In their South Dade Investigation, the SFWMD proposed modifications to the construction features for the project area that would result in a different plan than Alternative 6 as detailed in the Draft EA.	This revised EA addresses proposed construction of certain C-111 South Dade project features by the Corps of Engineers consistent with what the SFWMD is proposing as non-Federal sponsor for this project. The plugs proposed by SFWMD are located in approximately the same location as 11 of the 13 plugs in the EA. Only the 2 plugs in reach 3 of L-31W were omitted from the SFWMD proposal, in order to allow conditional operation of the S-328 gated culvert. The SFWMD proposal to seal the S-332D discharge basin will require separate permits under Section 404 of the Clean Water Act and will require permission under Section 408 of the Rivers and Harbors Act of 1899. The S-332D discharge basin proposal will therefore not be evaluated as part of this EA. Other features proposed by SFWMD would be modifications to the CERP C-111 Spreader Canal Western Project, which has separate Congressional authorization and would need to undergo a separate analysis process, as part of USACE regulatory authority. See response to comments 7 and 10.

FDEP	17. According to the Draft EA, sufficient fill material is available adjacent to the L-31W Canal to complete the Priority 1, Priority 2, and Priority 3 plugs. The U.S. Army Corps of Engineers (Corps) recommends only completing the Priority 1 plugging due to project funding and backfill availability, with the flexibility of implementing Priorities 2 and 3 as funding and availability of backfill would allow. If enough backfill is available the Department recommends backfilling the L-31W Canal at as much as possible. The minimum of plugging of the L-31W Canal should include all three Priorities as described in the Draft EA.	The EA identified sufficient fill material to build all plugs proposed in the table, including priority 2 and 3 plugs. How many plugs would be built is therefore more subject to cost considerations. The Recommended Plan, Alternative 6, includes as many of the plugs as can be supported under cost considerations, and does not stop at only the Priority 1 plugs. The main difference between the SFWMD proposal of 11 plugs and the EA proposal of 13 plugs is that SFWMD proposes not to build the plugs in Reach 3 of the L-31W Canal, and additionally proposes to build the plugs along Reach 5 at 2-3 feet below the marsh grade, to allow some conveyance in the canal. Given recognition that subsurface seepage rates are higher below the cap-rock layer of the marsh, shallowing the canal as proposed would provide benefits that are functionally similar to complete backfill to match the adjacent marsh grade.

FDEP	18. A 2,100-foot-long gap in the L-31W Levee was built in 2003 north of the S-332 Pump Station in the S-332D Detention Area to maximize conveyance of water into Taylor Slough. Alternative 6 proposes to reduce the gap width to 500 feet and construct an Advanced Cement-Based Material weir with the degraded levee segment to be rebuilt along the remaining 1,600-foot gap length. The Draft EA details the purpose of this project component as a means to avoid water loss from Taylor Slough into the S-332D Detention Area when surface water stages in Everglades National Park are higher than the S-332D Detention Area. The factors that may contribute to this water loss are not addressed in the Draft EA. Please include a discussion of topography, hydrology, and seasonality to explain the need for the L-31W Levee rebuilding. In addition, the Department recommends further analysis be conducted to support rebuilding the L-31W Levee to the proposed design elevation, and that both dry season flows and wet season deliveries be taken in to consideration.	The EA briefly discusses observations of SFWMD and ENP that water sometimes flows into the S-332D Detention Area from adjacent Taylor Slough headwaters; specifically, this occurs when water levels in Taylor Slough are elevated above levels in the L-31W Canal and the Detention Area. Rebuilding of the levee is recommended to minimize this effect, since it is not desirable to allow ENP water to leak backwards into the Detention Area or migrate southward and eastward along the existing canal. The crest elevation for the initial placement of the ACBM weir may be adjusted in response to further design analyses, including consideration of observed flow conditions at the gap following the partial degrade of the S-327 weir in August 2016. Portions of the ACBM length may also be constructed with adjustable flashboards to provide additional operational flexibility for water managers to respond to changing seasonal water level gradients across the gap.
FDEP	19. The No Action Alternative illustrated in Figure 2 (page 9) illustrates features included in Contracts 8 and 8A. The Department recommends removing the Features description on the left edge of Figure 2.	Noted. We removed the description of prior contract construction details to make the figure an “as-built” of actions for which construction is underway or due to begin under prior NEPA documents.

FDEP	20. The Department recommends a legend be included on Figure 8 (page 17) that illustrates the Priorities of the plug/fill alternative for L-31W Canal.	Do not concur. Priority placement is clearly noted in the descriptive paragraph accompanying this figure, and illustrated by color code: highest priority plugs are in red; next are in green, and lowest priority are in blue.
FDEP	21. Section 4.5.2 of the Draft EA states, "The alternatives do not have any existing wetlands present within the footprints." An interagency site visit (the Department and SFWMD) conducted on July 26, 2016, revealed that predominantly obligate and facultative wet vegetative species have recruited in the deconstructed L-31W Levee footprint. In accordance with 62-340, Florida Administrative Code, the presence of hydrologic and vegetative data indicate that this area is a wetland; therefore, the conversion of this area to an upland levee/weir would result in wetland impacts. The Department's preliminary wetland assessment is available for review.	The gap in the L-31W Levee was created by degrading a segment of levee during development of the Interim Operational Plan (IOP) for protection of the CSSS during 2000-2003. Vegetation that grew up in this levee gap is characterized by wetland indicator species. It appears that, at the present time, the gap serves more to facilitate leakage to the east out of ENP into the S-332D Detention Cell, than westward flow into upper Taylor Slough. Therefore, EA has proposed that the gap needs to be narrowed and raised to prevent loss of water from Taylor Slough. The EA text will be amended to reflect the species observed during the FDEP site assessment.

FDEP	22. Section 4.6.2 states that vegetation in the L-31W Levee gap includes weedy and shrubby plant species as well as many exotic and nuisance plants. The Department's wetland assessment identified the vegetative species to include: (*Elocharis spp.*), maiden-cane (*Panicum hemitomon*), cattails (*Typha spp.*), topedo grass (*Panicum repens*), and musky mint (*Hyptis spp.).* The edges of the L-31W Levee contained saltbush (Baccharis halimifolia) and the invasive exotic Burma reed (*Neyraudia reynaudiana*). Although some exotic plants were observed, the exotic/invasive plants are not predominant.	The EA text will be amended to reflect the species observed during the FDEP site assessment.
Florida Dept. of State, Division of Historical Resources (DHR)	23. The proposed project includes decommissioning or demolition of two water control structures (S-174 and S-175) and partially backfilling and plugging the L-31 West Borrow Canal and the Frog Pond Detention Area. Based on the proposed scope of work, it is the opinion of this office that the proposed project will have no adverse effect on historic properties listed, or eligible for listing, on the *National Register of Historic Places*.	Thank you for your support.

7.0 REFERENCES

EWES- US Army Engineer Waterways Experiment Station. 1990 "Archeological Inundation Studies" in Archeological Sites Protection and Preservation Notebook, Technical Notes ASPPN XI-2.

Rehage, J.S., D.A. Gandy and V. Trujillo. Assessing the Impact and Potential for Containment of Nonnative fishes Across Everglades Habitats. 2104, (Critical Ecosystem Studies Initiative, Earth & Environment, Southeast Environmental Research Center and Florida International University).

Smith, Greg C, Mason W. Sheffield, Leslie Raymer, Steve Koski, and Jennifer B. Langdale 2006 Cultural Resources Survey, C-111 Phase II and III, Dade County, Florida. Prepared for US Army Corps of Engineers, Jacksonville District by New South Associates, Stone Mt. GA.

Sykes, P .W., J. A. Rodgers, and R. E. Bennetts. 1995. Snail Kite (*Rostrhamus sociabilis*). *In* The Birds of North America, No. 306, A. Poole and F. Gill (Eds.). Academy of Natural Sciences, Philadelphia, Pennsylvania and American Ornithologists' Union, Washington, D.C., USA.

USACE. 1994. Canal-111, Central and Southern Florida Project for Flood Control and Other Purposes, Final General Reevaluation Report and Environmental Impact Statement, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 1999. Central and Southern Florida Project Comprehensive Review Study: Final Integrated Feasibility Report and Programmatic Environmental Impact Statement. Jacksonville District, Jacksonville, Florida.

USACE. 2000. Final Environmental Assessment, Central and Southern Florida Project for Flood Control and Other Purposes, Interim Structural and Operational Plan, Emergency Deviation from Test 7 of the Experimental Program of Water Deliveries to Everglades National Park for Protection of the Cape Sable Seaside Sparrow, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2002. Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow, Central and Southern Florida Project for Flood Control and Other Purposes, Final Environmental Impact Statement, Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2002. Canal-111, Central and Southern Florida Project for Flood Control and Other Purposes, Final Supplemental Integrated General Reevaluation Report and Environmental Assessment, Miami-Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE. 2006. Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow, Central and Southern Florida Project for Flood Control and Other Purposes, Final

Supplemental Environmental Impact Statement, Miami-Dade County, Florida. Jacksonville District, Jacksonville, Florida.

USACE, 2012a. Environmental Assessment; Design Refinement for the 8.5 Square Mile Area, Miami-Dade County, Jacksonville, Florida

USACE. 2012b. Environmental Assessment for Expansion of Canal 111 (C-111) Detention Area and Associated Features South Miami-Dade County, Florida, Jacksonville, Florida, May 2012.

USACE. 2012c. Central and South Florida Project:Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Miami-Dade Conveyance System. Jacksonville, Florida, October 2012.

USACE. 2012d. 2012d Everglades Restoration Transition Plan Final Environmental Impact Statement, U.S. Army Corps of Engineers, Jacksonville District, October 19, 2012.

USACE. 2012e. Environmental Assessment, Central and South Florida Project: Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Miami-Dade Conveyance System. U.S. Army Corps of Engineers, Jacksonville, Florida, October 2012.

USACE. 2016. C-111 South Dade. Environmental Assessment and Finding of No Significant Impact, Modifications to the C-111 South Dade North and South Detention Areas and Associated Features. June 2016.

U.S. Fish and Wildlife Service. 1999. Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (November 19, 1999).

U.S. Fish and Wildlife Service. 1999b. South Florida Multi-Species Recovery Plan. Southeast Region, Atlanta, Georgia, USA.

U.S. Fish and Wildlife Service. 2002. Final Amended Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (March 28, 2002).

U.S. Fish and Wildlife Service. 2006. Biological Opinion, Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow (November 17, 2006).

Ware, John A. 1989 Archeological Inundation Studies: Manual for Reservoir Managers, Contract Report EL-89-4, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

APPENDIX A

MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT, L-31W

BIOLOGICAL ASSESSMENT

U.S. FISH AND WILDLIFE SERVICE

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

JUN 30 2016

Planning and Policy Division
Environmental Branch

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 communicating a Biological Assessment with the U.S. Fish and Wildlife Service (USFWS) for construction activities under C-111 Project, Contract 9. The reason for interagency coordination is a new Environmental Assessment for proposed deposit of fill or plugs in the L-31W Canal, in the area surrounding the old "Frog Pond" borrow canal. The new Environmental Assessment will begin to circulate beginning on July 1, 2016.

The location of the C-111 Canal Contract 9 actions is around the S-332 Detention Area (Figure 1). The dual purposes of the C-111 Project (habitat improvement and seepage reduction) have not changed.

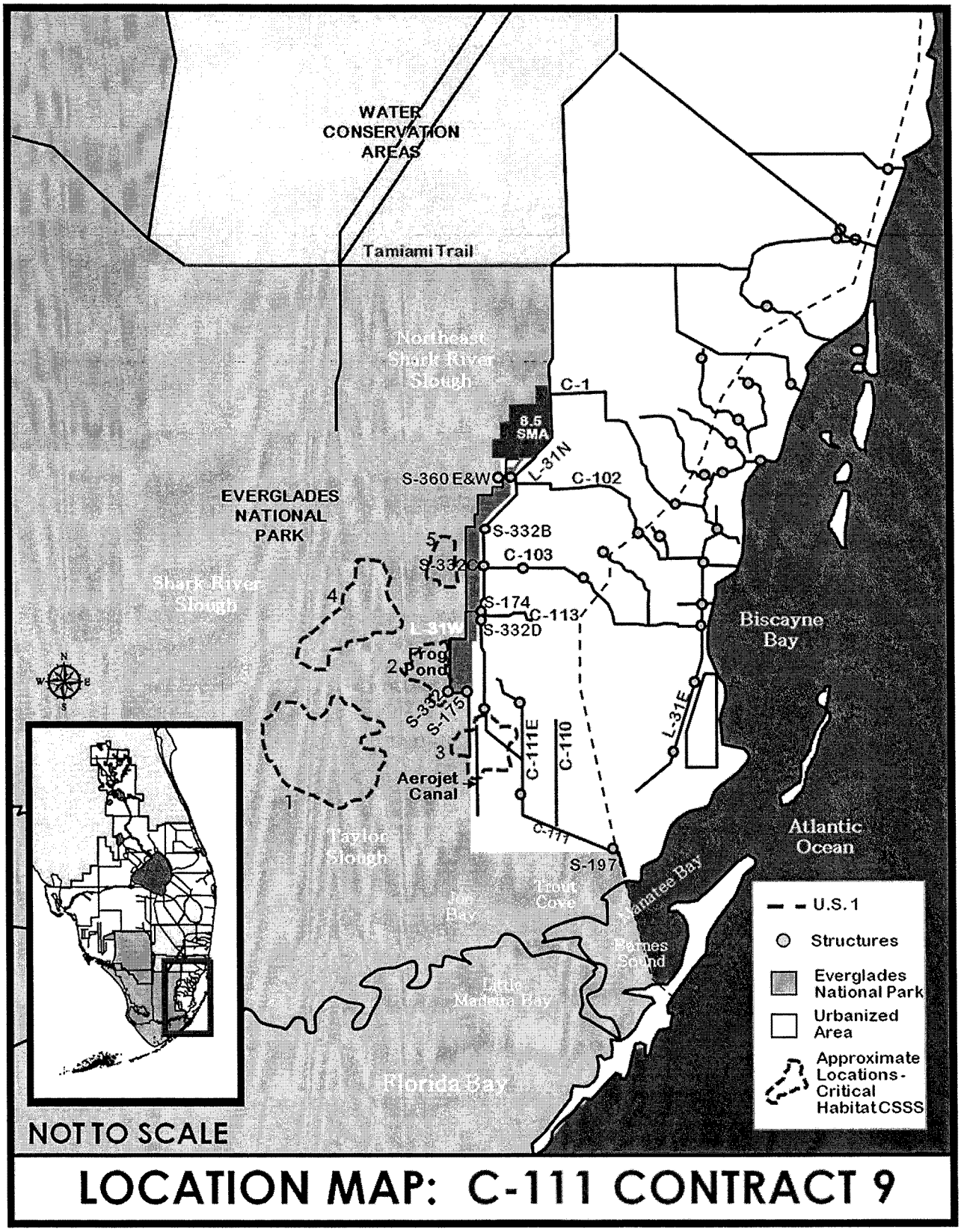
The Corps has prepared a Biological Assessment for endangered or threatened species on the corrected list you communicated with us in June, 2016. If you have any questions concerning the project, please contact Ms. Barbara Cintron by email at Barbara.B.Cintron@usace.army.mil, or by telephone at 904-232-1692. Thank you for your assistance in this matter.

Sincerely,

Gina Paduano Ralph, Ph.D.
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



LOCATION MAP: C-111 CONTRACT 9

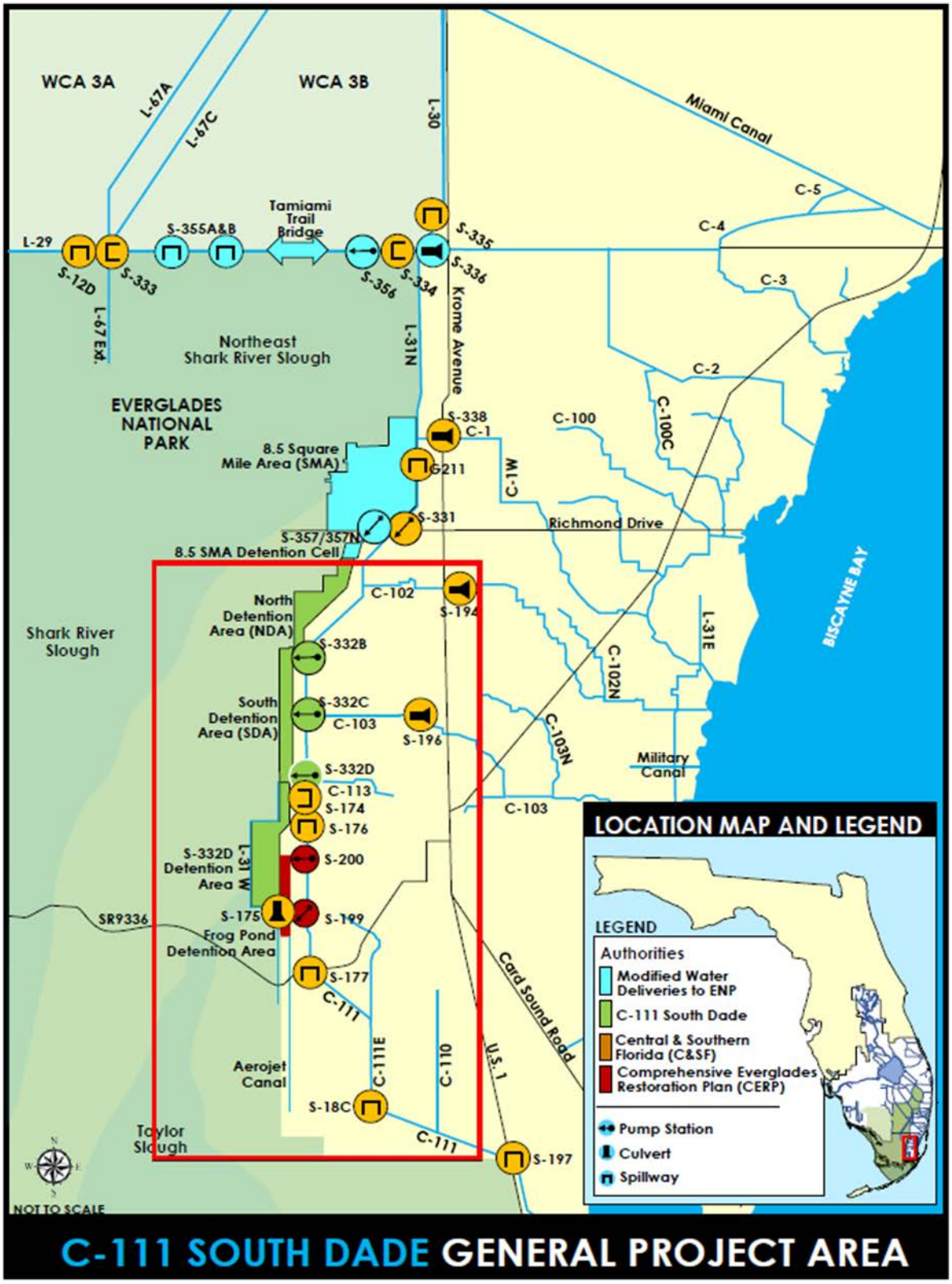
1 PROJECT AUTHORITY

The C-111 South Dade Project was built as part of the Everglades National Park–South Dade Conveyance Canals Project authorized by the Flood Control Act (FCA) of 1968 (Public Law (PL) 90-483). This Act authorized modifications to the existing Central and Southern Florida (C&SF) Project as previously authorized by the FCAs of 1948 (PL 80-858) and 1962 (PL 87-874). The original purpose of the C-111 Canal project was to reduce or mitigate flooding in the agricultural drainage basin immediately east of ENP, to provide agricultural and other water supply, and to favor habitat restoration in the Park. Further modifications to the C-111 as described in the 1994 GRR were authorized as part of the C&SF Project in the Water Resources Development Act (WRDA) of 1996 (PL 104-303). As the ENP expanded, The 1994 GRR/EIS added an expanded purpose of restoration of the ecosystem of Taylor Slough and eastern ENP, largely in response to the 1989 Everglades National Park Protection and Expansion Act, which authorized acquisition of the 109,000 acres of ENP from approximately the location of the L-67 Extension Levee/Canal eastward to the current ENP boundary. In the early 1990s it was recognized that it was no longer desirable to drain lands directly adjacent to ENP. Rather, it was desirable to maintain their wetland character, while maintaining flood damage reduction on adjacent agricultural and residential lands in the eastern basin. The 1994 GRR described a conceptual plan for five pump stations and a levee-bounded water retention/detention area (currently referred to as the C-111 South Detention Area, or SDA) to be built west of the L-31N East Coast Protective Levee and the adjacent L-31N Borrow Canal, extending between the current C-111 South Detention Area and the S-332D Detention Area to its south. Prior to 2015 the last USACE consultation on C-111 construction was for completing construction of the NDA and SDA water retention areas, which would generate a localized "mound" or "hydrologic ridge" of water and thereby reduce seepage out of ENP, with the inflow pump stations operated to maintain target L-31N Canal stages and maintain the pre-project flood protection to agricultural lands east of the L-31N Canal. Early in 2016 the Corps consulted on flow-ways and other features to facilitate connection of the "Mod Waters" and C-111 South Dade Projects. The current construction under evaluation, to be built under Contract 9, is installation of plugs in L-31W Canal and narrowing of the gap on the west side of the S-332D Detention Area (the old "Frog Pond").

2 PROJECT LOCATION

Figure 1 shows the location of the C-111 South Dade Project located in Miami-Dade County. The construction area under this consultation is located south of the previous construction EA, along the L-31W Canal segments surrounding the S-332D Detention Area (the old "Frog Pond Agricultural Area") and points south of S-175, north and south of the ENP entrance road. It is south of the actions described in the previous consultation, beginning at the S-332D structure.

Figure 1. C-111 L31 W Location Map



3 PROJECT PURPOSE AND NEED

The purpose of the proposed construction described in this EA is to create a series of plugs in L-31W Borrow Canal that would stop southward flow along the Canal and inhibit seepage out of the eastern boundary of ENP into the Canal. It also recommends narrowing the gap located N of the S-332 pump station and raising the sill at the remaining gap by two feet. Construction of plugs and gap narrowing is expected to retain or restore favorable (longer) hydroperiods within ENP while maintaining flood protection for areas east of the L-31N and C-111 Canals.

4 PROJECT AND CONSULTATION BACKGROUND

The U.S. Army Corps of Engineers (Corps) initiated informal consultation with the U.S. Fish and Wildlife Service (FWS) under the Endangered Species Act for C-111 South Dade Contract 9 in May, 2015. A species list was provided, with which the Service concurred in June, 2015. Several months passed and the L-31W Canal backfilling actions were postponed and removed from documentation under the ongoing consultation, which instead described recommended modifications to the NDA and SDA Detention Cells, and their connection to the Modified Water Delivery Project, along with removal or decommissioning of some non-functioning structures, including S-174, S-175, L-327 weir, S-332 and S-332i. USACE re-initiated consultation with the Service in September 2015 for the list of species, receiving updates on newly listed species and confirmation of the list in October, 2015. Finally, a Complete Initiation Package and Biological Assessment for this EA, called *"C-111 South Dade Project, Modifications to the North and South Detention Areas"* was sent to FWS on January 26, 2016. On March 30, 2016, FWS concurred with the Assessment, suggesting in the future that all plant species, for which there is no habitat on lands of the project, be assigned a "No Effect" asssessment, and that the Florida Bonneted Bat's assessment be changed from "No Effect" to "May Affect but Not Likely to Adversely Affect", due to absence of bat roosting habitat on project lands and absence of sighting records in the vicinity.

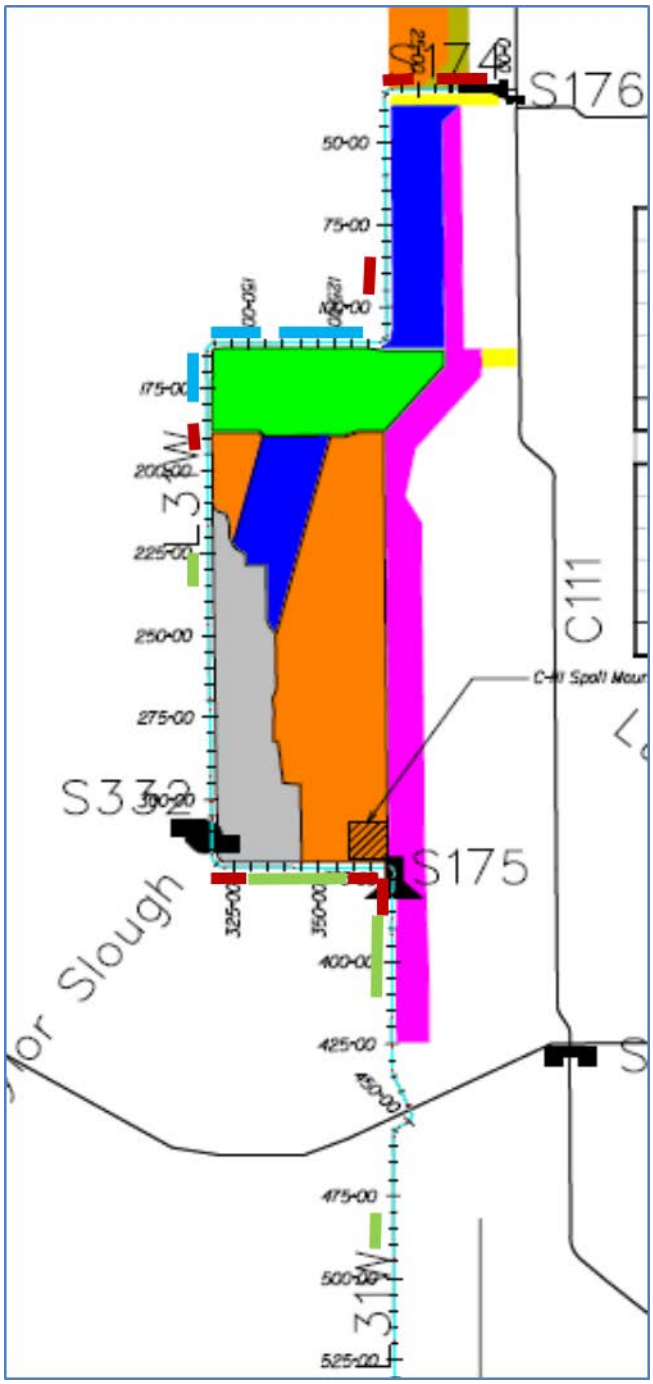
The starting point for this Biological Assessment is a request for confirmation of the species list, sent by USACE to FWS on May 18, 2016. A corrected list was received from FWS on June 6, 2016.

5 PROPOSED ACTION

This Biological Assessment addresses only construction features, with the assumption of current operations. Proposed actions under this assessment include construction of canal plugs beginning west of S-174 (which is to be degraded), continuing down L-31 Canal to and past S-175, to a location South of the ENP entrance road. Recommended plug locations are indicated on the attached map, labeled as Fig. 2. Exact length of the plugs is still to be determined but fill of the canal in all locations will not be complete. Each plug will be at least 1,000 feet long. Plug placement and lengths reflect interagency consultation among SFWMD, ENP and FWS; total volume of placement will depend in part on cost determinations and project cost limits. In the map graphics red lines represent areas of highest potential seepage and therefore highest priority. Hatch marks indicate stationing, beginning at the north at S-174. Blue segments are areas where ENP staff have measured high seepage; green lines indicate other seepage areas of lower priority. While there appears to be sufficient fill available to construct all the plugs shown, cost may be a

constraint. Two areas along L-31W where the initial Canal construction bisected large tree islands will not be altered. These areas still support trees and woody vegetation, represent better than average habitat for wildlife, and will not be disturbed.

Fig. 2. Map of the segments of L-31W proposed for plugging. Plug locations are shown by colored lines. Red lines are highest priority.



6 EFFECT DETERMINATIONS ON INDIVIDUAL SPECIES FOR THE PROPOSED PROJECT

The Corps initiated informal consultation under the ESA by requesting written confirmation of a table of federally listed threatened and endangered species that are known to occur or likely to occur within Miami-Dade County from the U.S. Fish and Wildlife Service (USFWS) by letter dated May 18, 2016. Concurrence and corrections of the list and notification of State Species of Special Concern was received on June 4, 2016. Table 1 indicates the listed species, including some under primary jurisdiction of the National Marine Fisheries Service (NMFS). The determinations in Table 1 are based on the limited scope (size) of the project, the degraded quality of the Canal aquatic habitat, and available information about species' behavior and habitat requirements. Species are discussed individually after the table of determinations.

Table 1. Federally Threatened and Endangered Species Within The Miami-Dade County Area And Effects Determination Of The Proposed Action

Common Name	Scientific Name	Status	May Affect, Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect	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	
Green sea turtle*	*Chelonia mydas**	E			X
Hawksbill sea turtle*	*Eretmochelys imbricata**	E			X
Kemp's Ridley sea turtle*	*Lepodochelys* 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*	E			X
Elkhorn coral	*Acropora palmata**	T, CH			X
Florida leafwing butterfly	*Anaea troglodyta floridalis*	E			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. *okeechobeensis*	E			X
Small's milkpea	*Galactia smallii*	E			X
Tiny polygala	*Polygala smallii*	E			X
Big pine partridge pea	*Chamaecrista lineata* var. *keyensis*	Pr E			X
Blodgett's silverbush	*Argythamnia blodgettii*	Pr T			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*	Pr E			X

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

* Marine species under the purview of the National Marine Fisheries Service (NMFS). NMFS concurred, in April 2016, that no marine or estuarine habitats would be affected by the project.

DETAILED SPECIES DETERMINATIONS EXPECTED WITHIN THE PROJECT AREA:

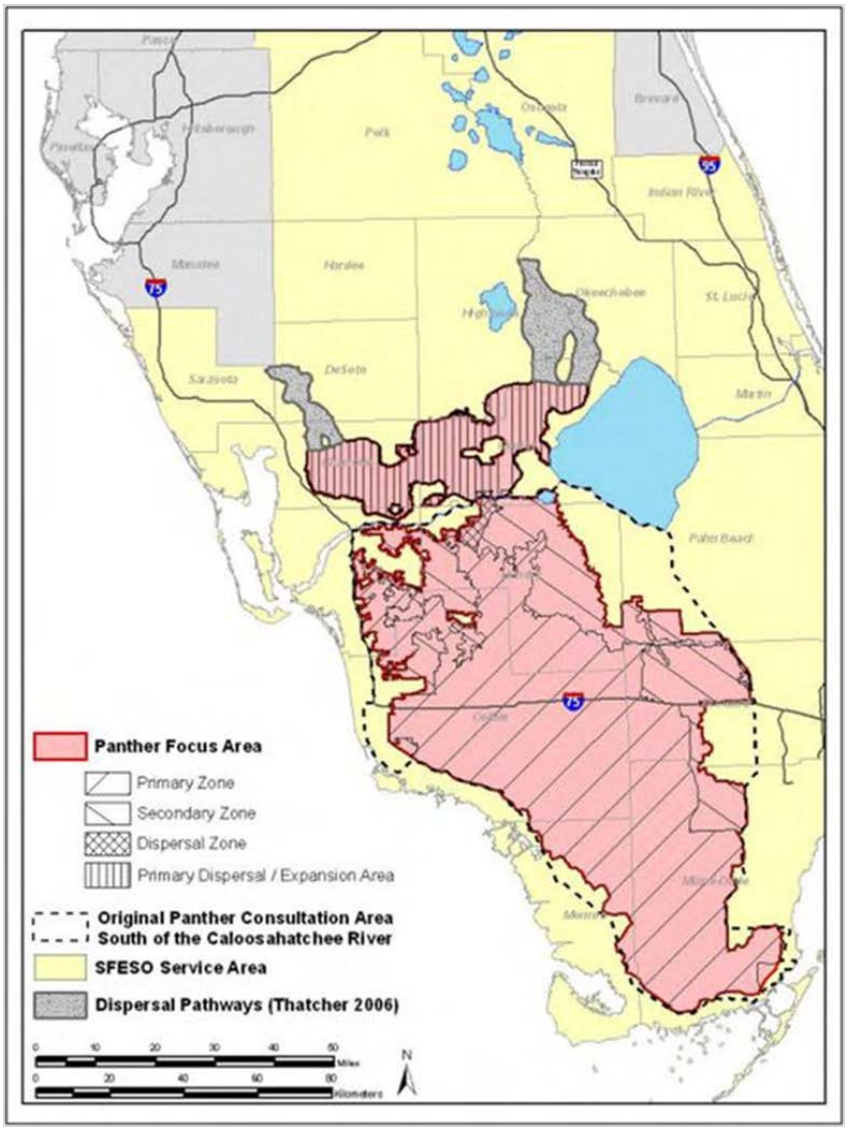
6.1 Florida Panther, *Puma concolor coryi.* (E) "May Affect, Not Likely to Adversely Affect Determination"

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. Present population estimations range from 80 to 100 individuals. 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. 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. Survival threats include habitat loss, collision with vehicles, parasites, feline distemper, feline calcivirus and other infectious diseases.

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.

The Corps determined that proposed project may affect, but is not likely to adversely affect the Florida panther in or near the S-332D Detention Area or L-31 W Canal. Figure 3 shows Florida Panther core habitat and dispersal habitat. The project is not located within the core habitat and does not provide ideal hunting habitat. Panthers, especially dispersing male panthers, may wander into the edges of the Detention Areas, and have been observed in adjacent areas of ENP, but the quality of habitat in the project area (cover and prey species abundance) is poor compared to that available inside ENP. Panthers may avoid the noise and other disturbance in the area caused by heavy construction machinery but this effect due to construction will be temporary in nature.

Figure 2. Florida Panther Consultation Area



6.2 Florida Manatee, *Trichechus manatus latirostris,* (E) "No Effect Determination"

Manatees are large, plant-eating aquatic mammals that transit many South Florida canals, and are also found in Florida Bay and the coastal segment of C-111. Manatees are blocked from the sections of the L-31W canal and C-111 Canal in the project area by pump stations, gates and spillways. No effect of the proposed actions for this project is expected on this species Although recent aerial surveys show that certain parts of the C-111 Project canals may be accessible to

manatees, designated critical habitat is found only along the most coastal segment of C-111, which is not within the proposed project footprint. The Corps has determined that proposed project would not affect manatees or designated critical habitat. Figure 4 illustrates Florida manatee critical habitat.

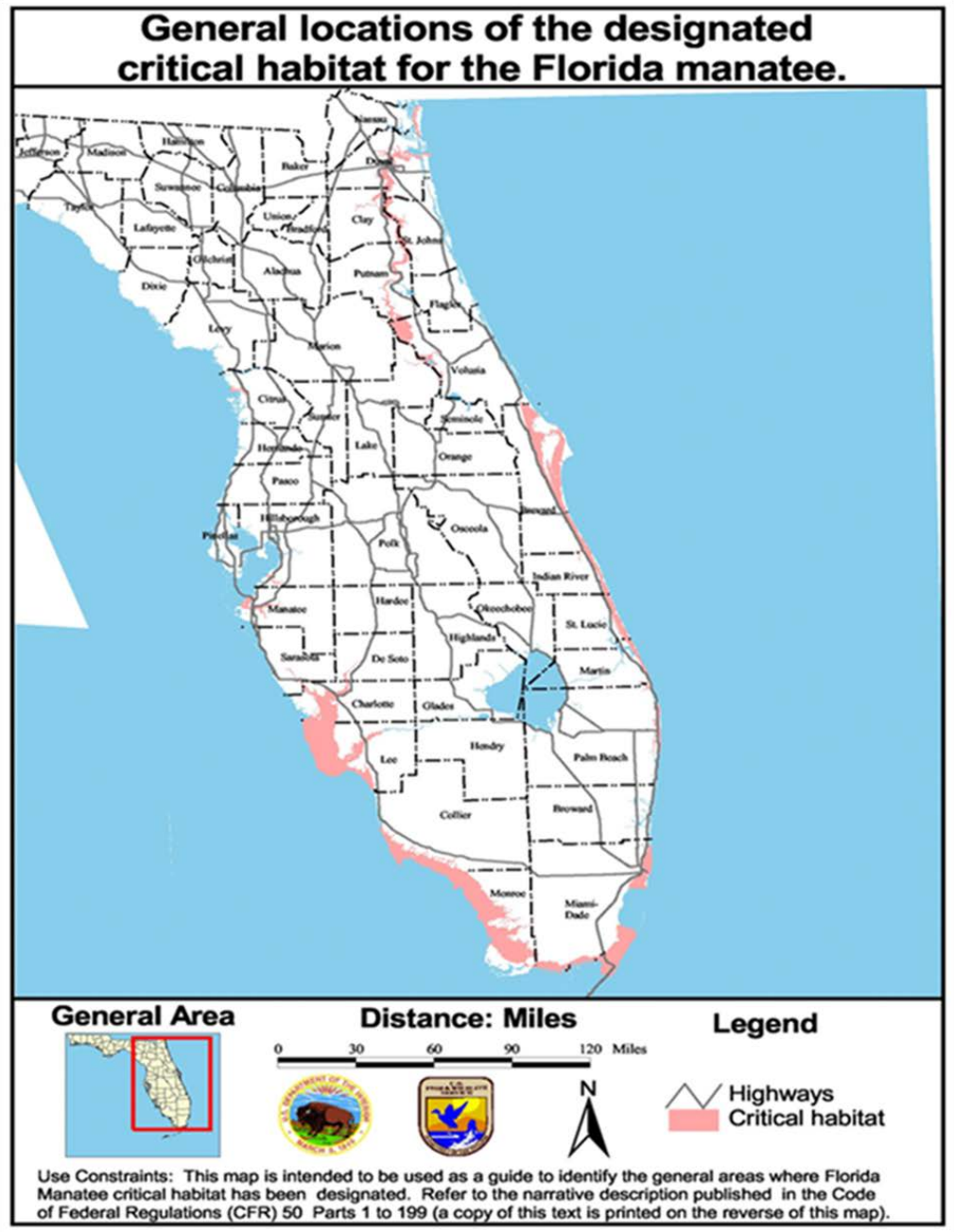


Figure 3. Florida Manatee Critical Habitat

6.3 Florida Bonneted Bat, *Eumops floridanus*, (E) "May Affect, Not Likely to Adversely Affect Determination"

Florida's largest and only endemic bat species, the Florida bonneted bat, appears to inhabit hollows in trees, Spanish tile roofs and bat houses in inhabited areas and limestone cracks and outcroppings. Most known colonies of this insectivorous species were small, and were found in man-made structures (bat houses). The S-332D Detention Cell along the north-south-trending section (reach 4) contains a large tree island that might provide habitat. Another relict tree island is bisected by the Canal south of the Park road. These areas would not be plugged or disturbed. Although its habits are not very well known, the Florida bonneted bat has not been observed in this area, but its calls have been heard inside ENP. ENP staff have to date been unable to find bat roosts. Therefore, although the project falls within a consultation area for the bonneted bat, the lack of trees, residences or outcrops in the Canal segments proposed for plugging has led the Corps to determine that the proposed project "May Affect, but is Unlikely to Adversely Affect" the bonneted bat. Figure 5 shows consultation areas and focus areas for this species. Construction activities will involve heavy earth-moving machinery, whose operations might generate enough noise to temporarily disturb roosting bats, but this effect would be of short duration, and would be unlikely to cause permanent adverse impacts on bat colonies.

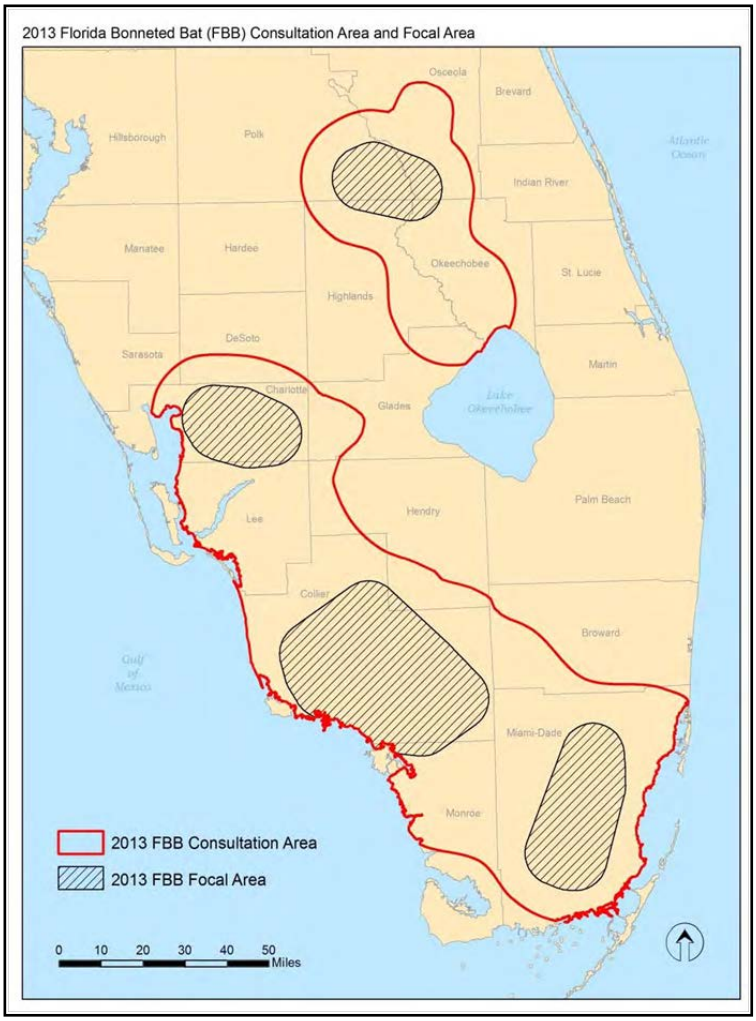


Figure 4. Florida Bonneted Bat Consultation Area

6.4 Cape Sable Seaside Sparrow (CSSS), *Ammodramus maritimus mirabilis* (E) "May Affect Not Likely to Adversely Affect Determination"

The CSSS is one of the most severely endangered bird species in Florida. The CSSS population inhabits short-hydroperiod (*Muhlenbergia* grass) prairies, primarily inside ENP. A small insectivorous bird, it forages on and near the ground and nests in grass only a few inches above the ground surface, initiating reproduction during the dry season. Nests can be flooded and abandoned due to untimely rains during the dry season (more than 20 cm or 6 in. of surface water over more than a short time). In 2007, FWS designated Critical Habitat Units for the CSSS (Figure 6), consisting of only five population clusters, one of which occurs in Taylor Slough in close proximity to the C-111 SD S-332 D Detention Area (Unit 2, Subpopulation C,). Other habitat centers include large Habitat Unit 1 (Subpopulation B), centered west of Taylor Slough along the main ENP road; Unit 3 (Subpopulation D) located to the south of the project, and Unit 4 (Subpopulation E), located farther west and north of Unit 1. The largest habitat unit of the CSSS is located in Subpopulation A, which is northwest of the project footprint, and west of Shark River Slough. Critical Habitat was not designated for subpopulation A. The units close to the project do not support the largest CSSS populations; it is believed that they are too dry to provide optimal nesting habitat quality and durations during most nesting seasons, due in part to the drying effect of groundwater seepage out of ENP to the east.

The combination of proposed project modifications to the C-111SD Project beginning in 1999 and continuing through IOP, ERTP, Increment I of the MWD Field Test and the construction proposed in this assessment, should further decrease or limit seepage out of the eastern ENP boundary, facilitating the rehydration of Taylor Slough and the recovery of Critical Habitat Units 2 and 5. Other, more remote nesting locations would not be expected to be affected. The Corps has determined the proposed project "may affect, but is not likely to adversely affect" the CSSS or its designated critical habitat.

.

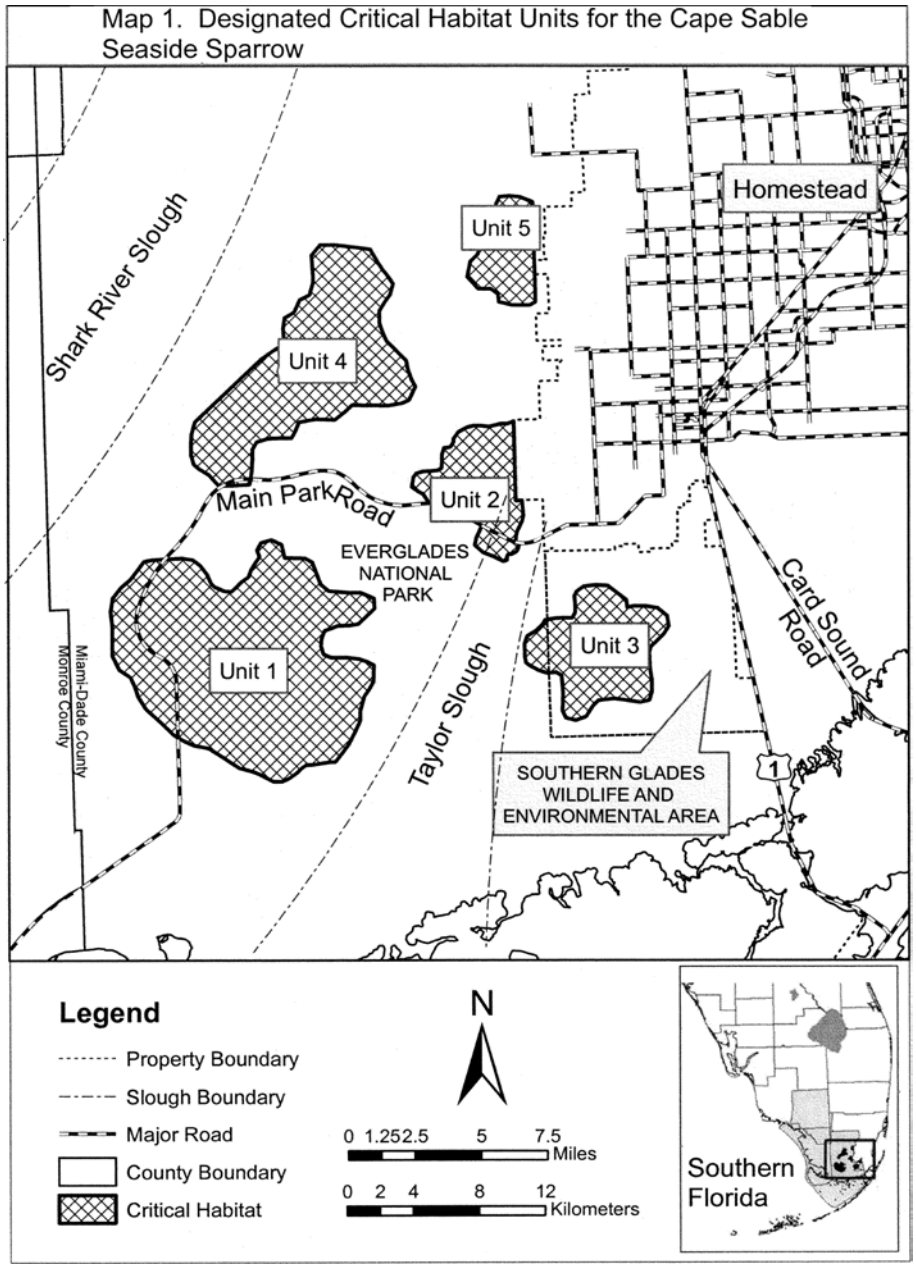


Figure 5. Designated CSSS Critical Habitat (From Federal Register Revised CSSS Critical Habitat Designation, p. 62766. Federal Register / Vol. 72, No. 214 / November 6, 2007

6.5 Everglade Snail Kite, *Rostrhamnus sociabilis plumbeus, (E)* "No Effect 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 south to Argentina and Peru (USFWS 1999). The Florida and Cuban subspecies of the Everglade snail kite, 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 7**.**

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).

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.

Snail kite nesting habitat is not found within or close to the proposed project area, nor is construction likely to cause an effect on feeding, nesting or fledging of nestlings. The Canal itself is too deep to support vegetation for nesting kites. The Corps has determined the proposed project would have "no effect" on the Everglades snail kite nor its designated critical habitat.

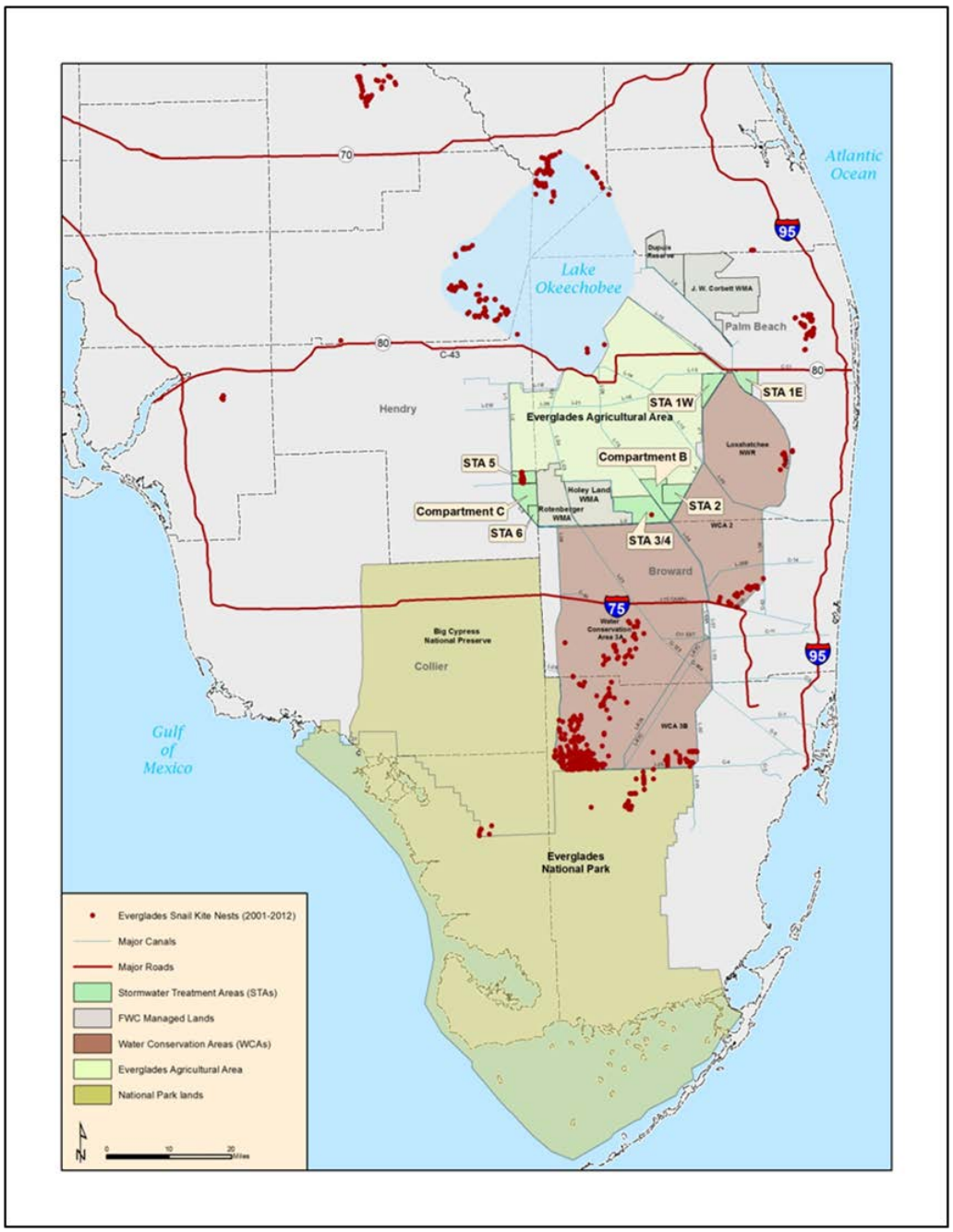


Figure 6. Everglade Snail Kite Nest Locations (2001-2012).

6.6 Piping Plover, *Charadrius melodus,* (T) 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, *Picoides borealis,* (E) and "No Effect Determination"

The red-cockaded woodpecker is a small woodpecker with a conspicuous white cheek patch, black and white cross-barred back, black cap and nape, white breast and flanks with black spots. The male has a small red spot on each side of the head. They are a social species and live in groups with a breeding pair and up to four helpers. 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. There is no breeding or foraging habitat (no pine rockland forest or other pine forest) within the action area of the project; therefore, the Corps has determined that the proposed project would have "no effect" on the red-cockaded woodpecker.

6.8 Roseate tern, *Sterna dougallii dougallii,* (T) and "No Effect Determination"

Roseate tern (*Sterna dougallii)* occurs in South Florida, where it is listed as threatened. Roseate tern nesting habitat is on protected sandy beaches, mostly in the Dry Tortugas of the Florida Keys, remote from the construction area. The Corps has determined that the proposed project would have "no effect" on the roseate tern due to lack of appropriate foraging or nesting habitat in the project area.

6.9 Wood stork, *Mycteria americana,* (T) and "No Effect Determination"

The wood stork is a large, white, long-legged wading bird with a black, naked head that relies upon shallow, freshwater wetlands for foraging. A tactile feeder, 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 downgraded from endangered to threatened status under the 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). Nesting sites are generally in tall trees. During nesting, foraging areas must also be sufficiently close to the colony to allow wood storks to efficiently deliver prey to nestlings. Outside of the nesting season, wood storks may be observed over much of Florida,

including roadside ditches, stream banks and irrigation canals. Nesting colonies exist along the eastern segment of Tamiami Trail and well south of the action area inside ENP (Figure 8).

Proposed plugging actions will not be near any known wood stork nesting areas. Foraging wood storks often are observed alongside highways and agricultural machinery in partially flooded fields; therefore even during earth-moving activities they are unlikely to show disturbance due to construction. The Corps has determined that the proposed project would cause "no effect" on the wood stork.

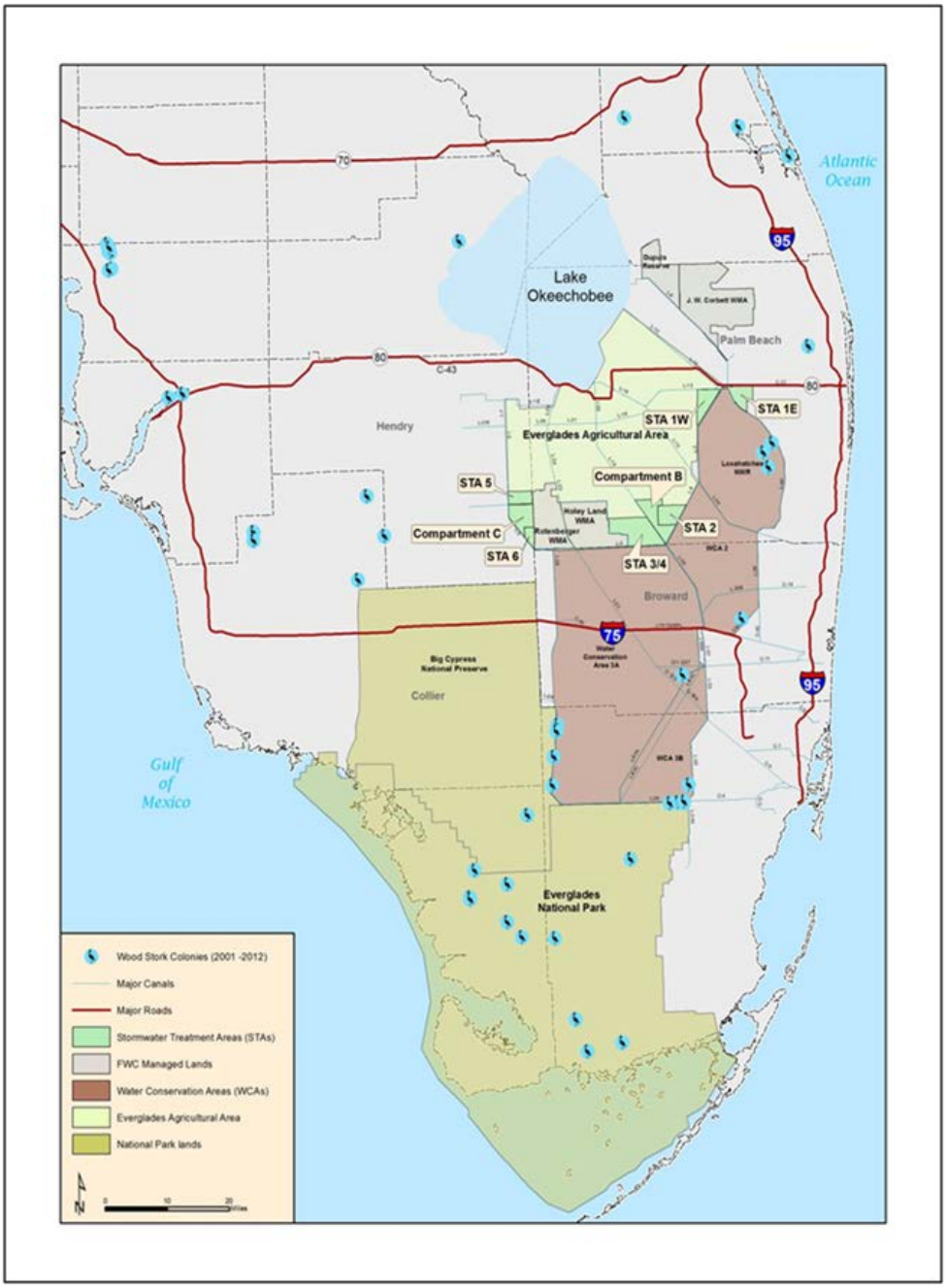


Figure 7. Wood Stork Nesting Locations (2001-2012)

6.10 American alligator, *Alligator mississippiensis*. (T, SA) "No Effect Determination"

The American alligator is listed as threatened by the USFWS due to similarity of appearance to the American crocodile, a threatened 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. Elimination or modification of American alligator habitat is not expected under proposed construction. The Corps has determined that the proposed project would have "no effect" on the American alligator.

6.11 American crocodile, *Crocodylus acutus*, (T, CH) "No Effect Determination"

American crocodiles inhabit coastal fringes from Miami to the bottom of the peninsula and north to the Naples area. There are no coastal fringes within the project area of the, and no known reports of crocodiles within the project area. Crocodile critical habitat is shown in Figure 9. The Corps has determined that the proposed project would have "no effect" on the American crocodile nor its designated critical habitat.

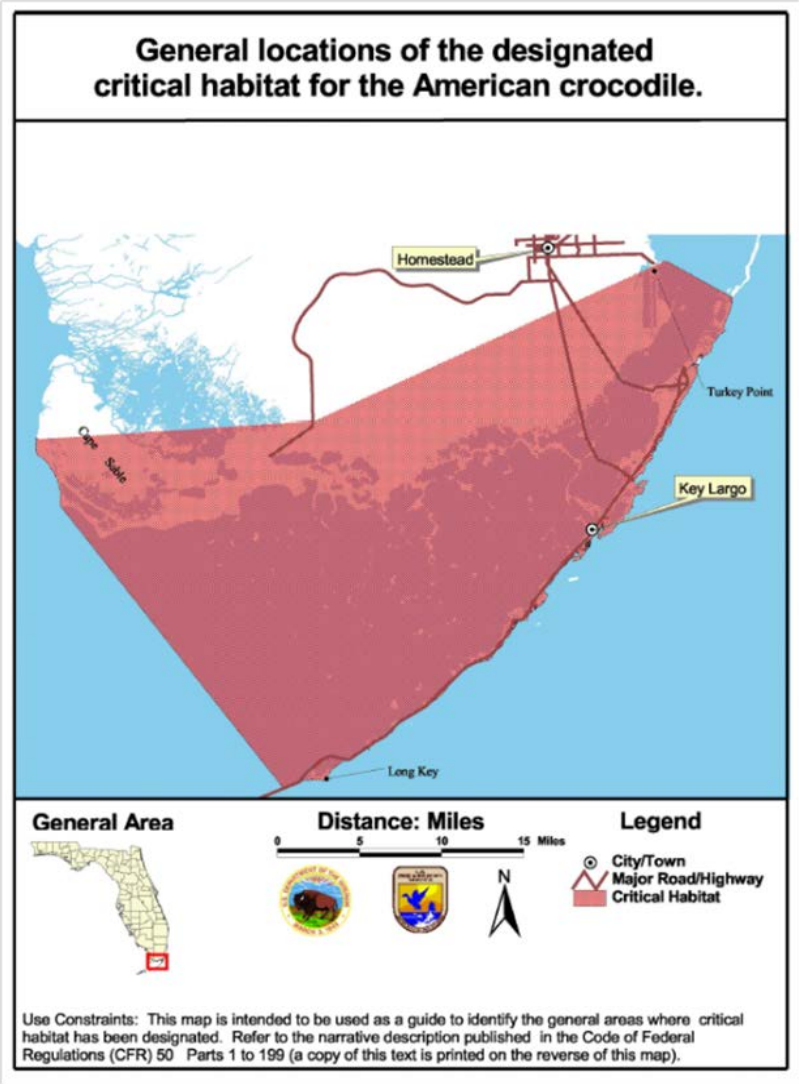


Figure 8. American Crocodile Critical Habitat

6.12 Eastern indigo snake, *Drymarchon corais couperi,* (T) "May Affect, Not Likely to Adversely Affect 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.

Although it is not known if there are eastern indigo snakes within the existing project area, this species has been known to search out and hide in earth-moving machinery. During construction of the project features, special indigo snake precautions will be included in project specifications to avoid adverse effects. Based on special indigo snake specifications, the Corps has determined that the proposed project "may affect, but is not likely to adversely affect" the Eastern indigo snake.

6.13 Bartram's Hairstreak Butterfly, *Strymon acis bartrami,* (E) "No Effect Determination"

Bartram's hairstreak butterfly is a species of pinelands. Larvae feed exclusively on the pineland croton. The species is known only from pine scrub on Big Pine Key and in ENP. The species population appears to be in decline and may be subject to predation by invasive ant species. No suitable habitat occurs in the project construction area; therefore, the Corps has determined that the proposed project would have "no effect" on the Bartram's hairstreak butterfly.

6.14 Miami Blue Butterfly, *Cyclargus thomasi bethunebakeri,* (E) "No Effect Determination"

The Miami blue butterfly occurs at the edges of tropical hardwood hammocks, beachside scrub and in rockland pine forests, feeding on nickerbeans, blackbeard and balloon vine leaves as a larva. Neither the plant species nor the cover type are present in the action area; therefore, the Corps has determined that the proposed project would have "no effect" on the Miami blue butterfly.

6.15 Florida Leafwing Butterfly, (E) *Anea troglodyta floridalis,* "No Effect Determination"

The Florida leafwing is a medium-sized butterfly. The upper-wing (or open wing) surface color is red to red-brown, the underside (closed wings) is gray to tan, with a tapered outline, cryptically looking like a dead leaf when the butterfly is at rest. The Florida leafwing exhibits sexual dimorphism, with females being slightly larger and with darker coloring along the wing margins than the males. The Florida leafwing occurs only within pine rocklands that retain its host plant, pineland croton. Pineland croton, a subtropical species of Antillean origin, is the only known host plant for the leafwing. There are no pine rocklands in the project area. Due to the lack of host plants or habitat, the Corps has determined that the proposed project would have "no effect" on the Florida leafwing butterfly.

6.16 Schaus swallowtail butterfly, *Heraclides aristodemus ponceanus,* (E) "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 subtropical hardwood hammock habitat in the action area, the Corps has determined that the project would have "no effect" on the Schaus swallowtail butterfly.

6.17 Stock Island Tree Snail, *Orthalicus reses (not incl. nesodryas),* (T) "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 action area, the Corps has determined that the proposed project would have "no effect" on the Stock Island tree snail.

6.18 Plants - "No Effect Determination"

There are 19 species of plants on the list of threatened and endangered species in Miami-Dade county. Due to to absence of suitable habitat for the species on the list in the project area, the Corps has determined that the proposed plug construction will not affect any of them. This determination was made on the advice of FWS after consultation on the last C-111 South Dade contract was completed on March 30, 2016.

6.19 Species under jurisdiction of the National Marine Fisheries Service on Table 1. "No Effect Determination"

In separate coordination with the National Marine Fisheries Service, the Corps considered the following species: Green sea turtle, *Chelonia mydas* (E), Hawksbill sea turtle, *Eretmochelys imbricata* (E), Kemp's Ridley sea turtle, *Lepidochelys kempii* (E), Leatherback sea turtle, *Dermochelys coriacea* (E), Loggerhead sea turtle, *Caretta caretta* (T), Smalltooth sawfish, *Pristis pectinata)* (E, CH), Elkhorn coral, *Acropora palmata* (T, CH), Staghorn coral, *Acropora cervicornis* (T, CH), and Johnson's seagrass, *Halophila johnsonii.* Due to lack of marine or estuarine habitat on the project the Corps determined that the proposed project would have "no effect" on these species. NMFS concurred with this determination in April, 2016.

7. EFFORTS TO ELIMINATE POTENTIAL IMPACTS ON LISTED SPECIES.

The Corps commits to avoiding, minimizing or mitigating for adverse effects during construction. All practicable means to avoid or minimize environmental effects were incorporated into the proposed action. Special conditions to accompany the proposed action include: requiring a biologist-observer at the construction site during the flow-way berm construction to orient contractor personnel on appearance of indigo snakes and precautionary measures to avoid take, especially around earth-moving machinery. Additionally, the Corps and South Florida Water Management District (SFWMD) will continue existing hydrologic and species monitoring plans to ensure that Incidental Take as defined within the USFWS 2009 C-111 Western Spreader Canal Project BO and the 2010 or 2016 ERTP BO are not exceeded. Both SFWMD and the Corps are

required to provide annual assessments of ERTP operations. SFWMD summarizes annual results in the South Florida Annual Report. The Corps provides a separate annual assessment of ERTP operations, including a summary of Periodic Scientist Calls, analysis of incidental take, analysis of ERTP performance measures, ecological targets and species monitoring. The Corps will maintain ongoing communications with the FWS throughout the duration of proposed construction.

7 REFERENCES

USACE. Environmental Assessment: C-111 South Dade Modifications to North and South Detention Areas and other Features. January 2016.

USACE. Complete Initiation Package for G-3273/S-356 Field Test and S-357N Operational Strategy. 2015. Appendix A of Environmental Assessment for G-3273 Field Test, 2015.

USACE. Environmental Assessment; Design Refinement for the 8.5 Square Mile Area, Miami-Dade County, Jacksonville, Florida, August 2012a.

USACE. Environmental Assessment for Expansion of Canal 111 (C-111) Detention Area and Associated Features South Miami-Dade County, Florida, Jacksonville, Florida, May 2012b.

USACE. Central and South Florida Project: Water Control Plan for Water Conservation Areas, Everglades National Park, and ENP-South Miami-Dade Conveyance System. Jacksonville, Florida, October 2012c.

USACE. Supplemental Environmental Impact Statement, Jacksonville USACE. Interim Operational Plan for the Protection of the Cape Sable Seaside Sparrow Final, Florida, December 2006 (ROD May, 2007).

USACE. Central and Southern Florida Project, Modified Water Deliveries to Everglades National Park, Florida: 8.5 Square Mile Area. General Re-evaluation Report and Final Supplemental Environmental Impact Statement, 2000.

USACE. Canal-111 (C-111, South Dade County, Florida, Final Integrated General Reevaluation Report and Environmental Impact Statement, 1994.

USFWS. Endangered and Threatened Species webpages and tools: http://www.fws.gov./endangered. Individual species accounts.

USFWS. Designated CSSS Critical Habitat. Revised CSSS Critical Habitat Designation, p. 62766. Federal Register / Vol. 72, No. 214 / Tuesday, November 6, 2007.

USFWS. 2016. Letter of concurrence, USACE EA and Biological Assessment, “C-111 South Dade, Modifications to North and South Detention Areas and related features.” March 30, 2016.

United States Department of the Interior

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

August 4, 2016

Gina Ralph, Ph.D., Chief
Environmental Branch
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232

Service Federal Activity Code: 41420-2009-FA-0385
Date Received: July 5, 2016
Project: C-111 South Dade; Contract 9
County: Miami-Dade

Dear Dr. Ralph:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter and accompanying Environmental Assessment dated June 30, 2016, regarding the next iteration of the Canal-111 South Dade (C-111 SD) Project associated with completion of Contract 9. This document transmits the Service's concurrence on the Corps' affect determinations as they relate to the proposed C-111 SD Project and its effects on threatened and endangered species and their designated critical habitat within the project area, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located within the C-111 basin just east of Everglades National Park (ENP) in southern Miami-Dade County, Florida (Figure 1).

The Service, in coordination with the Corps and other Federal and State partners have consulted on many aspects of the C-111 SD Project and is pleased to see that the current set of modifications will conclude the final construction and modifications of the 1994 General Reevaluation Report/Environmental Impact Statement Plan. As has been the case with previous iterations of this project, the current consultation will only cover construction activities while any operational changes associated with water management in the area will be dealt with under a future operational planning study, the Combined Operational Plan (COP). Until such time as the COP is complete, ERTP 2016 will be the guiding water management plan and all requirements under the 2016 Biological Opinion for protection of the Cape Sable seaside sparrow and other threatened and endangered species in the area will continue to be met by the Corps.

Project Description

The objective of the current set of proposed actions is to install plugs in the L-31 West Borrow Canal such that the southward flow of water along the canal would be reduced and seepage out of the eastern boundary of ENP lessened. The action also includes narrowing the gap located

north of the S-332 pump station and raising the sill at the remainder of the gap by two feet. According to the Corps' Biological Assessment, "Construction of plugs and gap narrowing is expected to retain or restore favorable (longer) hydroperiods within ENP while maintaining flood protection for areas east of the L-31 North and C-111 Canals."

There is some uncertainty in how the hydrology will respond in adjacent marshes to the proposed plugs installed in the L-31W canal. Some modeling was conducted by Everglades National Park around 2008 when the last set of plugs was installed in the L-31W. That modeling indicated that only slight hydrologic change would be observed in adjacent marshes. The Service was not consulted regarding the current placement of plugs or their length, however, ENP was a part of the planning team. Although the original plan (1994 GRR/EIS) called for complete backfill of the L-31W, the total volume of fill for the plugs will be dependent primarily on costs, similar to other borrow canal filling projects. Thus, the current action will not result in complete removal of the L-31W feature. Areas with the highest seepage, as identified by ENP staff, will have the highest priority for plugging.

Should the currently proposed action result in altered hydrology within the adjacent marsh (which it is expected to do as seepage out of ENP is reduced); the Service expects the Corps and interagency team to reconvene and modify, if necessary, the current operational plan to address any impacts observed. This is especially critical if the actions were to cause water levels to rise above ground surface in CSSS critical habitat during the nesting season (March – August).

Species Affect Determinations

The Service has reviewed the Corps' Biological Assessment of June 30, 2016, regarding the current proposal to complete the C-111 SD Project Contract 9. The Corps' species affect determinations have changed from previous consultations and are as follows: the proposed project will have "no effect" on the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) or its critical habitat, endangered red-cockaded woodpecker (*Picoides borealis*), endangered Okeechobee gourd (*Cucurbita okeechobeensis* ssp. *okeechobeensis*), endangered Florida manatee (*Trichechus manatus latirostris*) or its critical habitat, and threatened wood stork (*Mycteria americana*), among others (see Corps' BA, Table 1).

The Corps has also determined that the proposed project "may affect, but is not likely to adversely affect" the endangered Florida panther (*Puma concolor coryi*), endangered Florida bonneted bat (*Eumops floridanus*), endangered Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) or its designated critical habitat, and the threatened eastern indigo snake (*Drymarchon corais couperi*). The Service concurs with the Corps determinations regarding these species and potential impacts from the proposed action. The Corps will implement the standard construction protection measures for the eastern indigo snake as they are likely to inhabit the spoil mounds and other earthen structures within the project area. The Corps will also incorporate the Habitat Guidelines for the wood stork in the Southeast Region.

Thank you for your cooperation and effort in protecting fish and wildlife resources. The Service looks forward to seeing this critical project completed and operational in the near future. If you have any questions regarding this project, please contact Kevin Palmer at 772-469-4280 or by e-mail at Kevin_Palmer@fws.gov.

Sincerely yours,

Miles A Meyer

for Donald Progulske
Everglades Program Manager
South Florida Ecological Services Office

cc: electronic copy only
Corps, Jacksonville, Florida (Barbara Cintron)

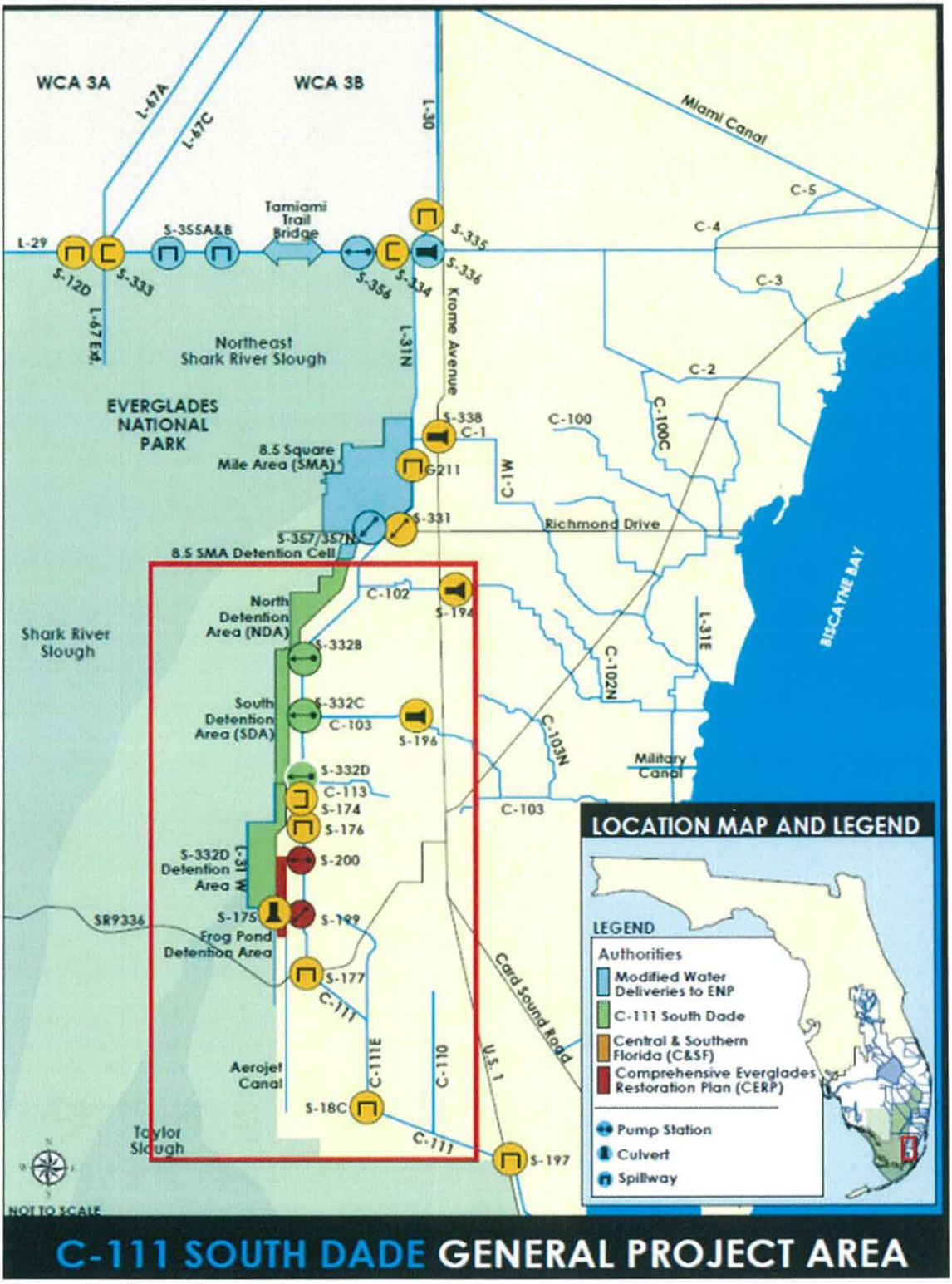


Figure 1. General project area.

APPENDIX B

SECTION 404(b) CLEAN WATER ACT EVALUATION

MODIFICATIONS OF THE C-111 SOUTH DADE PROJECT, L-31W

SOUTH DADE, FLORIDA

This page intentionally left blank

SECTION 404(b) CLEAN WATER ACT EVALUATION

ENVIRONMENTAL ASSESSMENT
CANAL 111 (C-111) SOUTH DADE COUNTY, FLORIDA

I. Project Description

a. Location. The Canal 111 (C-111) Basin is located in southern Florida. The area of focus is located in southeastern Dade County. See Figure 1 in the Environmental Assessment (EA) for the project location.

b. General Description

Authority and Purpose. The C-111 project was constructed as part of the ENP – South Dade Conveyance Canals Project Authorized by the FCA of 1968 (Public Law (PL) 90-483). This Act authorized modifications to the existing Central and Southern Florida (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) to protect the natural values associated with the ENP, while maintaining the existing level of flood protection within the C-111 basin east of Levee 31N (L-31N) and C-111.

The U.S. Army Corps of Engineers (Corps) seeks to improve undesirable resource conditions in Taylor Slough, the eastern panhandle of ENP, Manatee Bay, and Barnes Sound, while maintaining flood mitigation within the C-111 basin as described in the Corps' 1994 Final Integrated General Reevaluation Report (GRR) and Environmental Impact Statement (EIS), Canal 111, South Dade County, Florida (C-111 GRR/EIS). Features of the authorized plan that resulted from the C-111 GRR/EIS have been adjusted in the years since completion of the C-111 GRR/EIS. Certain alterations were previously documented in the Corps' 2002 Final EIS and 2007 Final Supplemental EIS for the Interim Operational Plan for Protection of the Cape Sable Seaside Sparrow (IOP). The intent of the present report is to propose and evaluate changes not previously recorded, and to document recommendations and rationale for depositing plugs in the L-31W Canal at the latitude of the S-332D Detention Area and for modifying the gap in the L-31W levee that is located just north of the S-332 Pump Station, to reduce its width to 500 feet and create a weir or sill at an elevation of + 2 feet. The EA describes locations, priorities and volume of proposed fill for both the plugs and the extensions of the levee to partially close the gap.

General Description of Dredged or Fill Material

(1) General Characteristics of Material.

The material proposed for plugs consists of levee overbuild material located along the L-31W levee in the S-332D Detention Area (old Frog Pond). It is derived from the original excavation of the L_31W Canal, and consists of primarily coarse material (limestone).

(2) Approximate Quantity of Material (cubic yards): Recent surveys provided an estimate of a total of 683,062 cubic yards

(3) Characteristics of the deposit sites for the plugs. The L-31W canal is a man-made water body approximately 60 feet wide and 15 feet deep along the affected reach, from S-174 to S-175, continuing south of SR 9336 (ENP Road). This canal has nearly vertical sides, no littoral zone, and is a fresh, open water habitat. No plugs are proposed in wetland or former wetland habitat. The proposed plug plan is tabulated below, beginning at the northern end of the stretch, adjacent to S-174.

Station along L-31W (priority)			Length, ft	Cumulative cy including a 20% bulking factor
00+00 - 35+00	Reach 1, less DX 1	High	3,000	85,680
85+00 - 95+00	Reach 2	High	1,000	114,240
320+00 - 330+00	Reach 5, west	High	1,000	142,800
365+00 – 375+00	Reach 5, east	High	1,000	171,360
375+00 -385+00	Reach 6, near S175	High	1,000	199,920
385+00 – 410+00	Reach 6, N of wood	Medium	2,500	271,320
480+00 – 490+00	Reach 6,S of wood	Medium	1,000	299,880
225+00 – 235+00	Reach 4 N of gap	Medium	1,000	328,440
330+00 - 365+00	Reach 5 all of center	Medium	3,000	414,200
115+00 -140+00	Reach 3 E end	New (*)	2,500	485,520
145+00 – 160+00	Reach 3 W end	New (*)	1,500	528,360
165+00 – 180+00	Reach 4, North	New (*)	1,500	571,200

Additional material will be used to re-build levees to reduce the gap length from 2,100 feet to 500 feet and install an ACBM weir over a sill in the gap.

Source of Material.

The material that will be used to construct all plugs and rebuild previously degraded levees will be limestone material excavated from the L31N canal footprint when the Canal was built and stored as overbuild along the levee.

Description of the Proposed Discharge Site

(1) Location (map). Proposed plug locations are shown on EA Fig. 8.

(2) Size. Plugs will have lengths shown in the table above. The maximum potential total plug length is 19,000 feet. Plugs will have 1:10 side slopes at each end

(3) Type of Site (confined, unconfined, open water). The Canal is an open water site.

(4) Type(s) of Habitat. The habitat in the NDA, the SDA, the 8.5SMA detention cell, and S-357W construction footprint (with exception of approx 20 acres in the SDA) is rocky glades/marl prairie converted to agriculture by rockplowing and drainage (flood protection project area). Some of the SDA berm footprint area and all of the 8.5 SMA detention area construction will occur in formerly rockplowed areas previously scraped to caprock, which have now revegetated and rehydrated to be classified as freshwater marsh wetlands. These wetland impacts

are taken into consideration in the Uniform Mitigation and Monitoring Assessment (UMAM) report.

Rockplowing removes all native vegetation and creates a soil matrix that can be used for commercial agriculture. Vegetation in the rocky glades is primarily comprised of thinly scattered sawgrass (*Cladium jamaicensis*), spikerush (*Eleocharis cellulosa*), and beakrushes (*Rhynchospora* spp.) on marl soils in association with muhly (*Muhlenbergia* sp.) prairies. The NDA is currently being scraped to caprock (expected to be finished in 2016) to remove exotic vegetation and create a larger detention area. The internal flowway berms within the NDA will be built directly after scraped to caprock and therefore, the habitat will not contain vegetation at the time of construction. It is expected to revegetated with native vegetation with wetland hydrologic functions.

(5) Timing and Duration of Discharge. The project is expected to take 1-2 years, with some of the construction activity preferably conducted in the dry season. Once the internal berms are completed and operations ensue, if the internal flowways within the 8.5 SMA, NDA, and SDA reach 2 ft depth, water will discharge over the overflow weirs into the eastern portion of the detention areas.

c. Description of Disposal Method: The scraped material from the rockplowed areas will have the vegetation removed to the maximum extent practical. The vegetation will either be burned onsite or transported to an approved landfill. The excess fill will be stored in existing project footprint stockpile areas. The existing stockpile areas are within the flood protection influence of the L31N canal and are located on former agricultural lands. Any trash (weed barrier material, irrigation piping, etc.) separated from the scraped soils will be transported by truck to an authorized landfill.

II. Factual Determinations (Section 230.11)

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope. The ground elevation is between five and seven feet, NGVD, and there is almost no slope.

(2) Sediment Type. The substrate at the construction site is limestone rock overlain with marl soil.

(3) Dredged/Fill Material Movement. There will be no appreciable movement of material. It will rest on limestone rock.

(4) Physical Effects on Benthos. All benthos in the fill site will be covered.

(5) Other Effects. Upon completion of construction, the levees would effectively create areas of uplands. The levee surfaces will be mowed on a routine basis to prevent woody vegetation.

(6) Actions Taken to Minimize Impacts (Subpart H). Precautions to confine the fill to the desired roadway-levee Canal alignment will be taken. Existing access roads would be used.

b. Water Circulation. Fluctuation and Salinity Determinations

(1) Water. Water would flow into the closed S-332D detention area from the existing S-332D pump station.

(a) Salinity. The area is fresh water, and this condition would remain unchanged.

(b) Water Chemistry. No changes would occur.

(c) Clarity. During construction, turbidity would be generated in the very slow-moving standing surface water during periods of high rainfall. After construction completion, water clarity would be similar to prior conditions.

(d) Color. No changes would occur.

(e) Odor. No changes would occur.

(f) Taste. No changes would occur.

(g) Dissolved Gas Levels. The material is essentially clean rock; there would be moderate biochemical oxygen demand, and no change in dissolved gases.

(2) Current Patterns and Circulation.

(a) Current Patterns and Flow. Gravity-driven surface water flow in L-31 W Canal is from north to south, generally. More surface and ground water is expected to be retained within Everglades National Park (ENP) due to plugging the Canal segments. The majority of water flow in this area (into and under the L-31W canal) is subsurface.

(b) Velocity. The velocity is essentially zero when the S332D pumps are off. Very slow velocities are expected in the majority of the detention areas when the pumps are on except at the immediate vicinity of the pump discharge points.

(c) Stratification. None.

(d) Hydrologic Regime. The area is characterized by a historic average hydroperiod of six to seven months, but the hydroperiod now is apparently shorter.

(3) Normal Water Level Fluctuations. Zero to a maximum of almost two ft depth in the S-332D Detention Area. L-31W canal canal stage levels varies dependent on rainfall and season of the year, and is matches the ground water/surface stage in this in the adjacent everglades except during rainfall events.

(4) Salinity Gradients. None.

(5) Actions That Will Be Taken to Minimize Impacts (Subpart H): Precautions to confine the fill to the existing L-31 W Canal alignment will be taken. Existing access roads would be used.

c. Suspended Particulate/Turbidity Determinations

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. Turbidity would be temporary and limited to the time of construction. The berms will be constructed using rather coarse materials (clean crushed limestone) and fill material with a low organic content, hence very low quantities of suspendable material. There will be interaction only with with surface water in the L-31W canal. Plug deposition will be done in sequence to avoid escape of turbidity downstream in the L-31W Canal, which is already partially plugged in the northern reaches of the canal. .

(2) Effects on Chemical and Physical Properties of the Water Column. N/A

(a) Light Penetration. Temporary attenuation during construction. No restrictions are expected upon project completion.

(b) Dissolved Oxygen. No BOD; light attenuation effects would be short and negligible, therefore there would be no effect on Dissolved Oxygen.

(c) Toxic Metals and Organics. None.

(d) Pathogens. None.

(e) Aesthetics. Few observers frequent the area, therefore there would be no effect.

(f) Others as Appropriate. None.

(3) Effects on Biota. Fish and invertebrates present in the Canal segments to be plugged will be covered. Open water will be converted to land.

(a) Primary Production, Photosynthesis. Aquatic habitat will be replaced by terrestrial habitat where fill/plugging is complete (to the canal surface). In areas to be shallowed some marsh vegetation may develop.

(b) Suspension/Filter Feeders. Those confined to water in the Canal and unable to move would be covered with the fill. Effects on the biological communities would be negligible.

(c) Sight Feeders. Same as b.

(4) Actions taken to Minimize Impacts (Subpart H). Precautions to confine the fill to the desired plug alignment will be taken. Existing access roads would be used.

d. Contaminant Determinations. None present.

e. Aquatic Ecosystem and Organism Determinations (Subpart G)

(1) Effects on Plankton. With the exception of plankton covered by fill, there would be no effect.

(2) Effects on Benthos. See above. No significant benthic organisms are expected to be present. With the exception of benthos covered by the fill immediately under the plugs, there would be no effect.

(3) Effects on Nekton. None.

(4) Effects on Aquatic Food Web. Each plug would eliminate a segment of Canal and wipe out the aquatic food web in that segment.

(5) Effects on Special Aquatic Sites. L-31W Canal is not a Special Aquatic Site. The construction area is adjacent to ENP. The intent of the project is to help create conditions closer to the historic environmental conditions than those that currently exist.

(a) Sanctuaries and Refuges. As stated above.

(b) Wetlands. Wetland functions and form would be restored to some degree as a result of the project.

(c) Mud Flats. None.

(d) Vegetated Shallows. These are the marl prairies described above. Historic, more natural conditions would be restored to the extent possible.

(e) Coral Reefs. None.

(f) Riffle and Pool Complexes. None.

(6) Threatened and Endangered Species. Consultation with the United States Fish and Wildlife Service was initiated on May 18, 2016. USACE has conducted a Biological Assessment and determination of Effect. Consultation is ongoing at this time.

(7) Other Wildlife. Plugging segments of the Canal will decrease opportunities for further invasion of exotic fish species along the C-111 Canal.

(8) Actions to Minimize Impacts. Precautions to confine the fill to the Canal alignment will be taken. Existing access roads would be used.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. There is no mixing zone because no surface water is available for this project.

(2) Determination of Compliance with Applicable Water Quality Standards (present the standards and rationale for compliance or non-compliance with each standard). All standards will

be complied with, unless a variance should be required for unforeseen reasons. A Section 401 water quality certification will be sought from the State of Florida.

(3) Potential Effects on Human Use Characteristics. Non-consumptive uses, such as bird watching, would be enhanced within ENP.

(a) Municipal and Private Water Supply. No effect.

(b) Recreational and Commercial Fisheries. There would be some restriction of recreational fishing access in the affected segment of L-31W Canal, due to the plugs. Plug locations were optimized to assure some small boat access on both sides of the boat ramp on the ENP access road. Because bank access along L-31W is restricted by fencing, the canal is not a heavily used fishing resource, as would be the case along L-29. There is no commercial fishery in this Canal.

(c) Water Related Recreation. Little effect is expected. Fishing currently is concentrated in small boats with low-horsepower motors, launched from the boat ramp on the ENP road. This access will continue both north and south of the ramp, although the length of accessible segments will be reduced.

(d) Aesthetics. Small temporary effect, due to few observers.

(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves. The project is intended to restore ecological values to the southeastern portion of ENP by plugging segments of the L-31W Canal to reduce surface and ground water seepage out of ENP.

(f) Determination of Cumulative Effects on the Aquatic Ecosystem. To the extent that the project for Modified Water Deliveries (MWD) to ENP is implemented successfully, MWD should interact synergistically with this project to provide significant restoration of ecological integrity to the southeast Everglades.

(g) Determination of Secondary Effects on the Aquatic Ecosystem. All benefits to flora and fauna would be secondary, in that the direct effects would be hydrological, but the secondary effects would be ecological and beneficial.

III. Finding of Compliance or Non-Compliance with the Restrictions on Discharge.

a. No significant adaptations of the guidelines were made relative to this evaluation.

b. The alternative that will be selected from an array of practicable alternatives will be that which best meets the study objectives. It is probable that no practicable alternative is possible that will not involve discharge of fill into waters of the United States.

c. The discharge of fill materials would not cause or contribute to, after consideration of disposal site dilution and dispersion, violation of any Florida water quality standards. The

discharge operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

d. The placement of fill material would not jeopardize the continued existence of any species listed as threatened or endangered under the Endangered Species Act of 1973, as amended. Approximately 480 acres of land currently designated as Critical Habitat for the CSSS is adjacent to the project area. Reduction of seepage of surface and ground water out of this habitat is one of the purposes of the proposed construction.

e. The placement of fill materials would not result in significant adverse effects on human health and welfare, municipal and private water supplies, recreational and commercial fishing, plankton, fish, shellfish, wildlife, wetlands, and special aquatic sites. The life stages of aquatic species and other wildlife will not be adversely affected. Significant adverse effects on aquatic ecosystem diversity, productivity and stability, and recreational, aesthetics, and economic values will not occur.

f. Appropriate steps to maximize positive impacts on aquatic systems will be included in plans for the recommended plan.

APPENDIX C

COASTAL ZONE MANAGEMENT ACT FEDERAL CONSISTENCY DETERMINATION

MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT, L-31W

SOUTH DADE, FLORIDA

This page intentionally left blank

COASTAL ZONE MANAGEMENT ACT AND FLORIDA COASTAL MANAGEMENT PROGRAM FEDERAL CONSISTENCY DETERMINATION

Enforceable Policy. Florida State Statues considered "enforceable policy" under the Coastal Zone Management Act (www.dep.state.fl.us/cmp/federal/24_statutes.htm). Florida Department of Environmental Protection is the lead in implementing this chapter for those projects which SFWMD is the local sponsor.

Applicability of the Coastal Zone Management Act.
The following summarizes the process and procedures under the Coastal Zone Management Act for Federal Actions and for non-Federal Applicants*.

Item	Non-Federal Applicant (15 CFR 930, subpart D)	Federal Action (15 CFR 930, subpart C)
Enforceable Policies	Reviewed and approved by NOAA (in FL www.dep.state.fl.us/cmp/federal/24_statutes.htm)	Same
Effects Test	Direct, Indirect (cumulative, secondary), adverse or beneficial	Same
Review Time	6 months from state receipt of Consistency Certification (30-days for completeness notice) Can be altered by written agreement between State and applicant	60 Days, extendable (or contractible) by mutual agreement
Consistency	Must be Fully Consistent	To Maximum Extent Practicable**
Procedure Initiation	Applicant provides Consistency Certification to State	Federal Agency provides "Consistency Statement" to State
Appealable	Yes, applicant can appeal to Secretary (NOAA)	No (NOAA can "mediate")
Activities	Listed activities with their geographic location (State can request additional listing within 30 days)	Listed or Unlisted Activities in State Program
Activities in Another State	Must have approval for interstate reviews from NOAA	Interstate review approval NOT required
Activities in Federal Waters	Yes, if activity affects state waters	Same

* There are separate requirements for activities on the Outer Continental Shelf (subpart E) and for "assistance to an applicant agency" (subpart F).
** Must be fully consistent except for items prohibited by applicable law (generally does not count lack of funding as prohibited by law, 15 CFR 930.32).

Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed project is not located seaward of the mean high water line and would not affect shorelines or shoreline processes.

Chapters 186 and 187, State and Regional Planning. These chapters establish the State Comprehensive Plan which sets goals that articulate a strategic vision of the State's future. Its purpose is to define in a broad sense, goals and policies that provide decision-makers directions for the future and provide long-range guidance for orderly social, economic and physical growth.

Response: The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the environment. The proposed work will be coordinated with the State through review of this document.

Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project purpose is to retain current flood protection measures and enhance the hydrologic regime in south Florida. Therefore, this work would be consistent with the efforts of Division of Emergency Management.

Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The existing habitat within the project area consists of the L-31 W Canal itself, a deep water habitat, as well as levees enclosing S-332D Detention Area (DA). The S-332 DA borders Cape Sable Seaside Sparrow critical habitat. The Corps determination is that protected species are not likely to be adversely affected by, and no adverse modification to critical habitat will occur from the project. Preconstruction surveys will be conducted to minimize any disturbance in compliance with the USFWS consultation. See the Environmental Assessment for further discussion of natural and cultural resources (Sections 4.5 and 4.15).

Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: The property proposed for this project is already in public ownership. The proposed project would comply with the intent of this chapter.

Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed project would help improve environmental conditions at state parks or aquatic preserves in the region. The project is consistent with this chapter.

Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: Archival research, field work and consultation with the State Historic Preservation Officer (SHPO), have been conducted in accordance with the National Historic Preservation Act, as amended; the Archeological and Historic Preservation Act, as amended and EO 11593. The project will be consistent with the goals of this chapter. A new SHPO letter is being coordinated for the alternatives within the Environmental Assessment for this proposed project. The project will not have an adverse effect on any historic properties included in or potentially eligible for inclusion in the National Register of Historic places. Conditions to protect undiscovered resources will be implemented as follows: Language will be included in construction contract specifications outlining the steps to be taken in the event that undiscovered historical properties are encountered. An informational training session, developed by a professional archaeologist, will be conducted for the contractor's personnel to explain what kinds of archaeological/cultural materials might be encountered during construction, and the steps to be taken in the event these materials are encountered. A professional archaeologist will conduct periodic monitoring of the project area during construction to determine if activities are impacting unanticipated cultural resources. The proposed action is consistent with these Acts. Historic preservation compliance will be completed to meet all responsibilities under Chapter 267.

Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: Contribution of the project area to the State's tourism economy would not be compromised by project implementation. The project would be compatible with tourism for this area due to the potential increase in water levels within ENP. Therefore, the project would be consistent with the goals of this chapter.

Chapters 334 and 339, Transportation. This chapter authorizes the planning and development of a safe, balanced, and efficient transportation system.

Response: No public roads or transportation would be affected by this construction.

Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: This project is inland and not expected to adversely affect saltwater resources.

Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: The non-federal sponsor for this project is the South Florida Water Management District, which is the state agency responsible for implementing this statute. Coordinated planning has been done with this agency to ensure compatibility with established policies. The project is consistent with the goals of this chapter.

Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: This work does not involve the transportation or discharging of pollutants. Conditions will be placed in the contract to handle any inadvertent spill of pollutants. Therefore, the project would comply with this chapter.

Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This work does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore does not apply.

Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development. This chapter also deals with the Area of Critical State Concern program and the Coastal Infrastructure Policy.

Response: The work does not involve land development as described by this chapter; therefore, this chapter is not applicable.

Chapter 388 (Mosquito/Arthropod Control). Chapter 388 provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The work would not further the propagation of mosquitoes or other pest arthropods.

Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Protection.

Response: An Environmental Assessment has been prepared and will be reviewed by the appropriate resource agencies including the Department of Environmental Protection.

Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: Project implementation will include appropriate erosion control plans and measures to ensure compliance.

APPENDIX D

MODIFICATIONS TO THE C-111 SOUTH DADE PROJECT, L-31W

Pertinent Correspondence

(This page intentionally left blank)

1. Correspondence with Tribes

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

MAY 27 2016

Planning and Policy Division
Environmental Branch

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

Dear Chairman Billie,

The U.S. Army Corps of Engineers Jacksonville District (Corps), would like to invite the Seminole Tribe of Florida (STOF) to participate in formal consultation regarding proposed construction activities in the southern part of the C-111 South Dade Canal system. The Corps is preparing an Environmental Assessment (EA) to evaluate construction alternatives. This EA is expected to begin public coordination in June of 2016. The main construction activities consist of partially backfilling and plugging the L-31 West Borrow Canal, south of S-174 and extending southward to south of the S-175 and Frog Pond Detention Area. The purpose of plugging and backfilling the canal is to inhibit seepage out of Everglades National Park via the L-31 West Borrow Canal, while maintaining the flood risk reduction capability of the C-111 canal system in agricultural lands to the east. A map of the project location is included in Figure 1.

Additional activities involve the decommissioning or possible demolition of two water control structures (S-174 and S-175) that are no longer functional due to prior filling of the L-31 West Borrow Canal. In coordination with the Florida State Historic Preservation Officer (DHR Project File No. 2016-0511), the Corps is conducting investigation of these structures in accordance with Section 106 of the National Historic Preservation Act (NHPA).

We invite the STOF to participate in consultation on this matter under the National Environmental Policy Act and NHPA. We understand that there is both the immediate need for consultation and for long term dialogue on the overall project. We will work with your staff to determine the best way to keep you informed and seek your input throughout the process.

If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Mr. Marc Tiemann at 904-232-1557 or e-mail at marc.a.tiemann@usace.army.mil.

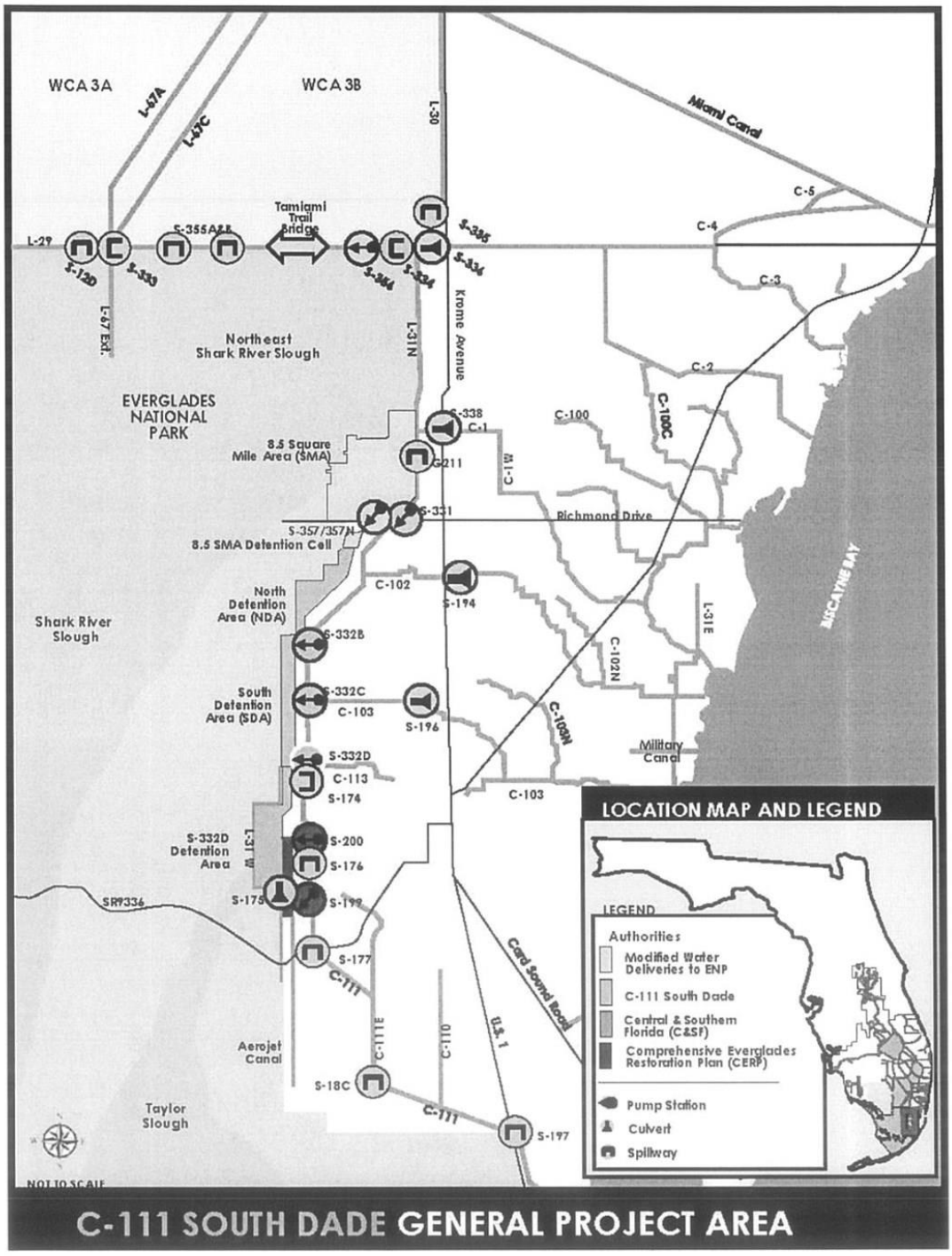
Sincerely,

Jason A. Kirk, P.E.
Colonel, U.S. Army
District Commander

Enclosure

cc:
Dr. Paul Backhouse, Ph.D., Tribal Historic Preservation Officer, Seminole Tribe of Florida, Ah Tha Thi Ki Museum, 30290 Josie Billie Hwy, PMB 1004, Clewiston, Florida
Cherise Maples, Director Environmental Resource Management, 6300 Stirling Road, Hollywood, FL 33024

Figure 1.


WCA 3A
WCA 3B
L-67A
L-67C
L-30
Miami Canal
C-5
C-4
C-3
C-2
L-29
L-67 Ext.
Tamiami Trail Bridge
S-355A,B
S-335
S-336
S-334
S-333
S-12D
Krome Avenue
L-31N
Northeast Shark River Slough
EVERGLADES NATIONAL PARK
8.5 Square Mile Area (SMA)
S-338
C-1
G211
C-100
C-100C
L-31W
S-331
Richmond Drive
S-357/357N
8.5 SMA Detention Cell
C-102
S-194
North Detention Area (NDA)
Shark River Slough
S-332B
L-31E
BISCAYNE BAY
C-102N
S-332C
C-103
S-196
South Detention Area (SDA)
C-103N
Military Canal
S-332D
C-113
S-174
C-103
S-332D Detention Area
L-31W
S-200
S-176
S-175
S-199
SR9336
S-177
C-111
Card Sound Road
U.S. 1
C-111E
C-110
Aerojet Canal
S-18C
C-111
S-197
Taylor Slough
NOT TO SCALE
LOCATION MAP AND LEGEND
LEGEND
Authorities
Modified Water Deliveries to ENP
C-111 South Dade
Central & Southern Florida (C&SF)
Comprehensive Everglades Restoration Plan (CERP)
Pump Station
Culvert
Spillway
C-111 SOUTH DADE GENERAL PROJECT AREA

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
701 San Marco Boulevard
JACKSONVILLE, FLORIDA 32207-8175

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

Honorable Billy Cypress
Chairman, Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Chairman Cypress:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is preparing an Environmental Assessment (EA) for the Modifications to the C-111 South Dade Canal system. This project is located in South (Miami) Dade County, Florida.

The purpose of the project is to inhibit seepage out of the Everglades National Park via the L-31 West Borrow Canal, while maintaining the flood risk reduction capability of the C-111 canal system in agricultural lands to the east. Project features proposed and analyzed in the EA include partially backfilling and plugging the L-31 West Borrow Canal, south of S-174 and extending southward to south of S-175 and Frog Pond Detention Area, and the decommissioning or possible demolition of two water control structures (S-174 and S-175) that are no longer functional due to prior filling of the L-31 West Borrow Canal. All of the alternatives analyzed in the EA will avoid impacting tree islands. I have enclosed our EA and Proposed Finding of No Significant Impact (FONSI) for your review and consultation on the proposed work. Public review of this document will begin on July 1, 2016. Additional electronic copies may be downloaded at: http://www.saj.usace.army.mil/About/Divisions-Offices/Planning/EnvironmentalBranch/Environmental-Documents

Any comments you may have should be submitted in writing to the letterhead address by July 31, 2016. If you have any questions regarding the information in this letter, please feel free to contact me or you may contact Tribal Liaison, Kim Taplin, at 561-801-0285 if you would like to schedule a consultation meeting prior to this date to discuss your concerns. Questions concerning the EA can be submitted to Kim Taplin at the letterhead address, or by phone at 561-472-8899.

Sincerely,

Jason A. Kirk, P.E.
Colonel, U. S. Army
District Commander

Enclosure

Copies Furnished:

Mr. Fred Dayhoff, Section 106/NAGPRA Representative, Consultant to Miccosukee Tribe, HC 61 SR 68 Old Loop Road, Ochopee, FL 34141
Mr. Gintautas Zavadzkas, Director, Fish and Wildlife Department, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Kevin Donaldson, Real Estate Services, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Amy Castaneda, Water Resources Department, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144

United States Department of the Interior

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

August 4, 2016

Gina Ralph, Ph.D., Chief
Environmental Branch
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232

Service Federal Activity Code: 41420-2009-FA-0385
Date Received: July 5, 2016
Project: C-111 South Dade; Contract 9
County: Miami-Dade

Dear Dr. Ralph:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter and accompanying Environmental Assessment dated June 30, 2016, regarding the next iteration of the Canal-111 South Dade (C-111 SD) Project associated with completion of Contract 9. This document transmits the Service's concurrence on the Corps' affect determinations as they relate to the proposed C-111 SD Project and its effects on threatened and endangered species and their designated critical habitat within the project area, in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project site is located within the C-111 basin just east of Everglades National Park (ENP) in southern Miami-Dade County, Florida (Figure 1).

The Service, in coordination with the Corps and other Federal and State partners have consulted on many aspects of the C-111 SD Project and is pleased to see that the current set of modifications will conclude the final construction and modifications of the 1994 General Reevaluation Report/Environmental Impact Statement Plan. As has been the case with previous iterations of this project, the current consultation will only cover construction activities while any operational changes associated with water management in the area will be dealt with under a future operational planning study, the Combined Operational Plan (COP). Until such time as the COP is complete, ERTP 2016 will be the guiding water management plan and all requirements under the 2016 Biological Opinion for protection of the Cape Sable seaside sparrow and other threatened and endangered species in the area will continue to be met by the Corps.

Project Description

The objective of the current set of proposed actions is to install plugs in the L-31 West Borrow Canal such that the southward flow of water along the canal would be reduced and seepage out of the eastern boundary of ENP lessened. The action also includes narrowing the gap located

north of the S-332 pump station and raising the sill at the remainder of the gap by two feet. According to the Corps' Biological Assessment, "Construction of plugs and gap narrowing is expected to retain or restore favorable (longer) hydroperiods within ENP while maintaining flood protection for areas east of the L-31 North and C-111 Canals."

There is some uncertainty in how the hydrology will respond in adjacent marshes to the proposed plugs installed in the L-31W canal. Some modeling was conducted by Everglades National Park around 2008 when the last set of plugs was installed in the L-31W. That modeling indicated that only slight hydrologic change would be observed in adjacent marshes. The Service was not consulted regarding the current placement of plugs or their length, however, ENP was a part of the planning team. Although the original plan (1994 GRR/EIS) called for complete backfill of the L-31W, the total volume of fill for the plugs will be dependent primarily on costs, similar to other borrow canal filling projects. Thus, the current action will not result in complete removal of the L-31W feature. Areas with the highest seepage, as identified by ENP staff, will have the highest priority for plugging.

Should the currently proposed action result in altered hydrology within the adjacent marsh (which it is expected to do as seepage out of ENP is reduced); the Service expects the Corps and interagency team to reconvene and modify, if necessary, the current operational plan to address any impacts observed. This is especially critical if the actions were to cause water levels to rise above ground surface in CSSS critical habitat during the nesting season (March – August).

Species Affect Determinations

The Service has reviewed the Corps' Biological Assessment of June 30, 2016, regarding the current proposal to complete the C-111 SD Project Contract 9. The Corps' species affect determinations have changed from previous consultations and are as follows: the proposed project will have "no effect" on the endangered Everglade snail kite (*Rostrhamus sociabilis plumbeus*) or its critical habitat, endangered red-cockaded woodpecker (*Picoides borealis*), endangered Okeechobee gourd (*Cucurbita okeechobeensis* ssp. *okeechobeensis*), endangered Florida manatee (*Trichechus manatus latirostris*) or its critical habitat, and threatened wood stork (*Mycteria americana*), among others (see Corps' BA, Table 1).

The Corps has also determined that the proposed project "may affect, but is not likely to adversely affect" the endangered Florida panther (*Puma concolor coryi*), endangered Florida bonneted bat (*Eumops floridanus*), endangered Cape Sable seaside sparrow (*Ammodramus maritimus mirabilis*) or its designated critical habitat, and the threatened eastern indigo snake (*Drymarchon corais couperi*). The Service concurs with the Corps determinations regarding these species and potential impacts from the proposed action. The Corps will implement the standard construction protection measures for the eastern indigo snake as they are likely to inhabit the spoil mounds and other earthen structures within the project area. The Corps will also incorporate the Habitat Guidelines for the wood stork in the Southeast Region.

Thank you for your cooperation and effort in protecting fish and wildlife resources. The Service looks forward to seeing this critical project completed and operational in the near future. If you have any questions regarding this project, please contact Kevin Palmer at 772-469-4280 or by e-mail at Kevin_Palmer@fws.gov.

Sincerely yours,

Miles A Meyer

for Donald Progulske
Everglades Program Manager
South Florida Ecological Services Office

cc: electronic copy only
Corps, Jacksonville, Florida (Barbara Cintron)

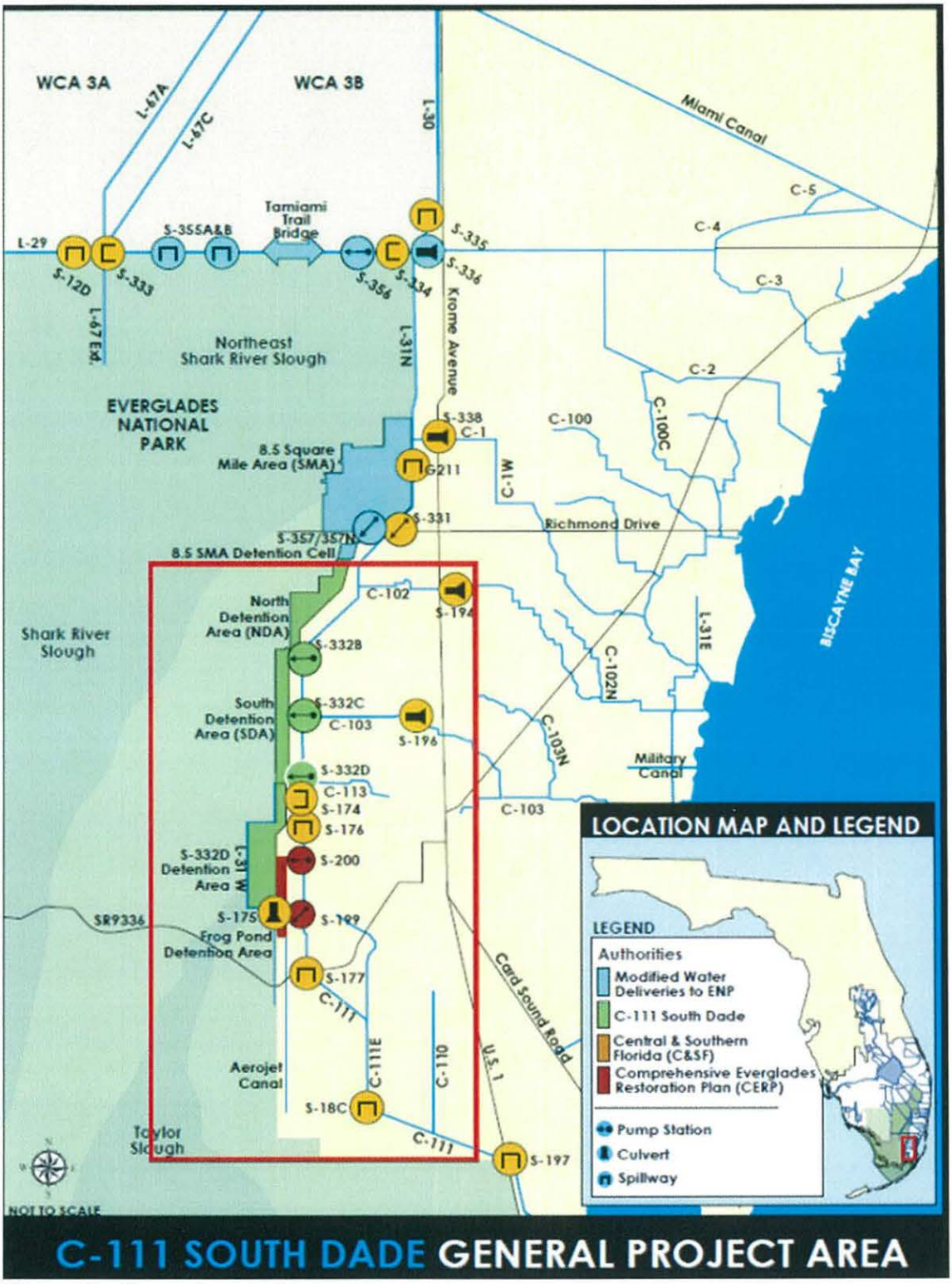


Figure 1. General project area.

United States Department of the Interior
NATIONAL PARK SERVICE

Everglades and Dry Tortugas National Parks

In Reply Refer to:
(L2415)

SEP 01 2016

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch
Planning and Policy Division
Jacksonville, Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-8175

Dear Dr. Paduano Ralph:

Everglades National Park is submitting the following comments to the July 2016 Modifications to the C-111 South Dade Project, L31W Environmental Assessment.

Introduction
The original purpose of the C-111 Canal, as authorized by the Flood Control Act of 1968, was to reduce or mitigate flooding in the agricultural drainage basins immediately east of Everglades National Park; to provide water supply for agricultural, environmental, and other purposes, and to support habitat restoration in ENP. Since the 1960's, the South Dade region of the Central and Southern Florida (C&SF) Project has undergone extensive re-evaluations, in an effort to achieve our broader restoration objectives, while maintaining flood protection and water supply requirements in the adjacent eastern developed areas.

The Overall Plan in the 1994 C-111 South Dade GRR/EIS
The 1994 C-111 South Dade Project Final Integrated General Reevaluation Report and Final Environmental Impact Statement (GRR/EIS) envisioned a new approach for balancing flood control, water supply, and environmental restoration within the C-111 South Dade Project. The 1994 GRR/EIS recommended plan would redirect runoff that previously passed through the L-31N canal and into the lower C-111 canal, westward into a series of surface water detention areas. The detention areas were designed to maintain higher groundwater levels along the eastern boundary of ENP, thereby reducing seepage losses, and restoring more natural wetland characteristics within the headwaters of Taylor Slough. With the South Florida Water Management District's acquisition of the 5,600 acre Frog Pond region, we no longer needed to utilize the L-31W canal for agricultural flood control. The 1994 GRR/EIS therefore recommended backfilling most of the L-31W canal, and abandoning the associated S-174/175 and S-332 water control structures. The 1999 completion of the S-332D pump station relocated the Taylor Slough inflow point approximately 5 miles upstream, allowing discharges to pass through the seasonally flooded Frog Pond flow-way. These changes have been successful at increasing wetland hydroperiods in a large portion of the Taylor Slough headwaters, while maintaining the same flow volumes through lower Taylor Slough.

The Modifications to the C-111 South Dade Project, L-31W
The July 2016 Environmental Assessment for the L-31W canal component addresses the final piece of 1994 GRR/EIS recommended modifications for this area that is immediately adjacent to Taylor Slough. This includes the removal of the inactive S-174/175 and S-332 water control structures and installation of a series of thirteen plugs in the L-31W canal. This would continue the evolution of water management

actions in the Taylor Slough region, which has moved from direct surface water inflows toward dispersed groundwater recharge.

While the more extensive backfilling proposed in alternative 3 would prove greater ecological benefits, we agree that the strategic plugging identified in alternative 6 represents a reasonable and cost effective approach to decreasing canal conveyance. Plugging the L-31W canal and routing S-332D discharges through the Frog Pond flow-way has a benefit of decreasing the amount of deep water canal refugia for exotic aquatic species that can invade Taylor Slough. The seasonal drying of the Frog Pond flow-way also provides a management opportunity to reduce the spread of exotic aquatic species, as well as increased retention of nutrients and contaminants prior to their entering Everglades wetlands.

While the trends in water quality within Taylor Slough and the Coastal Basins has showed improvement, the central channel of Taylor Slough below the L-31W canal has been impacted by long-term phosphorus loading. A shift in vegetation communities from a dominance of sawgrass to cattails has progressively moved downstream, and is particularly evident following the installation of the temporary S-332i pump stations. Fortunately the relocation of Taylor Slough inflows upstream to the S-332D pump station has been associated with reduced phosphorus loading. This suggests that replacing direct surface water flows with dispersed groundwater recharge has also helped to improve Taylor Slough water quality.

SFWMD Proposed South Dade Modifications

The SFWMD has recently proposed a series of structural and operational modifications with the goal of increasing water flows into Taylor Slough. We understand the SFWMD's proposal would likely require modifications to the recommended plan in this EA, relative to L-31W canal plugging. We will stay engaged on these proposed actions, and comment on any future revisions that would modify the environmental assessments of the C-111 South Dade Project.

If you have any questions related to these comments please contact Robert Johnson at 305-224-2400, or sent emails to Robert_johnson@nps.gov.

Sincerely,

for Pedro M. Ramos,
Superintendent, Everglades and Dry Tortugas National Parks

Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

September 7, 2016

Sent by Electronic Mail – Document Access Verification Requested

Ms. Stacie Auvenshine
Stacie.J.Auvenshine@usace.army.mil
Jacksonville District
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, Florida 32207-8175

RE: Department of the Army, Jacksonville District Corps of Engineers - Environmental Assessment and Proposed Finding of No Significant Impact, Modifications of the C-111 South Dade Project, L-31W - Miami-Dade County, Florida.
SAI # FL201607137693C

Dear Ms. Auvenshine:

The Florida State Clearinghouse has coordinated a review of the subject Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Agriculture and Consumer Services, Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission and the South Florida Water Management District have submitted comments and recommendations regarding the EA, all of which (memorandum and letters) are attached hereto, incorporated herein by this reference, and made an integral part of this letter.

Based on the information contained in the EA and enclosed agency comments, the state has determined that, at this stage, the proposed federal activities are consistent with the

Florida Coastal Management Program (FCMP). The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of issues identified during this and any subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process, in accordance with Section 373.428, *Florida Statutes*, if applicable.

Thank you for the opportunity to review the document. Should you have any questions regarding this letter, please don't hesitate to contact me at 850/717-9076.

Sincerely,

Chris Stahl

Chris Stahl, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

Enclosures

cc: Frank Powell, DEP, Frank.Powell@dep.state.fl.us
Rebecca Elliott, DACS, relliott@sfwmd.gov
Mindy Parrott, SFWMD, mparrott@sfwmd.gov
Jane Chabre, FWC, jane.chabre@MyFWC.com

OFFICE OF AGRICULTURAL WATER POLICY
(850) 617-1700

THE MAYO BUILDING
407 SOUTH CALHOUN STREET
TALLAHASSEE, FLORIDA 32399-0800

FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

COMMISSIONER ADAM H. PUTNAM

August 17, 2016

Mr. Chris Stahl
Florida State Clearinghouse
Florida Department of Environmental Protection
2600 Blair Stone Road, M.S. 47
Tallahassee, FL 32399-2400

RE: Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment and Proposed Finding of No Significant Impact, Modifications of the C-111 South Dade Project, L-31W, Miami-Dade County, Florida. - SAI # FL201607137693C

Dear Mr. Stahl:

The Florida Department of Agriculture and Consumer Services (FDACS) appreciates the opportunity to provide comments on the Draft Environmental Assessment (EA) and Proposed Finding of No Significant Impact (FONSI), Modifications of the C-111 South Dade Project L-31W, Miami-Dade County, Florida dated July 2016. We are submitting the following comments for consideration as part of the Florida State Clearinghouse consistency evaluation.

FDACS acknowledges the need to complete the C-111 South Dade Project but has concerns that there is not a cohesive approach for the project construction features and related non-project actions that are being considered for this area. Specifically, the South Florida Water Management District (SFWMD) has proposed modifications to the proposed construction features and has proposed non-project actions for the same area covered in this EA. This has resulted in a SFWMD plan which is significantly different than the EA plan. Additional information, further hydrological analyses and coordination between the United States Army Corps of Engineers (USACE) and SFWMD are needed to determine the actual construction plan that we can expect to see implemented. Even though this draft EA does not address the project operations which have the most potential to impact private agricultural lands, the construction features authorized will determine the range of operational performance and options available. Project construction features and design flexibility regarding the canal plugs in the L-31 West

Canal should be resolved and a final EA should be prepared reflecting the features that will actually be built.

The current Draft EA and FONSI for Modifications of the C-111 South Dade Project L-31W includes construction features that impound the headwaters of Taylor Slough which increases impounded water levels in the southern detention area during wet conditions. This could increase seepage to the east and increase water table levels for private property adjacent to the park. It is also contrary to the Final Integrated General Reevaluation Report and Final Environmental Impact Statement dated 1994 (1994 GRR/EIS) which authorized features that did not impound the southern detention area and provided for surface water outlets from the C-111 South Dade Project west into Everglades National Park (ENP).

Throughout the C-111 South Dade Project history, buffer cell design has not worked as anticipated due to the impact of seepage to the east on project performance and water table levels for private property adjacent to the park. Further evaluation of the performance of proposed features, once they are determined, for a revised final EA and FONSI should be undertaken using the appropriate data and modeling analyses. At this time, it is not clear what range of performance under a variety of hydrological conditions can be expected since we don't yet know what will actually be built.

Thank you for the opportunity to provide Clearinghouse comments. We look forward to continued progress for the C-111 South Dade Project and working with our state and federal partners to improve system-wide capabilities and restoration success. 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
Deputy Director

Memorandum

TO: Chris Stahl, Florida State Clearinghouse

THROUGH: Edward C. Smith, Director
Office of Ecosystem Projects

FROM: Inger Hansen and Shannan Bogdanov
Office of Ecosystem Projects

DATE: August 25, 2016

SAI#: FL201607137693C

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers — Draft Environmental Assessment and Proposed Finding of No Significant Impact, Modifications of the C-111 South Dade Project, L-31W, Miami-Dade County, Florida.

Background

The purpose of the Draft Environmental Assessment (EA) is to update the National Environmental Policy Act (NEPA) evaluation for a modification to the Canal-111 South Dade Project, Dade County, Florida, part of the Central and Southern Florida (C&SF) Project, as authorized under the Water Resources Development Act (WRDA) of 1996. Original NEPA documentation for restoration actions was authorized in the Final Integrated General Reevaluation Report and Final Environmental Impact Statement dated 1994 (referred to as the 1994 GRR/EIS).

The C-111 South Dade Project as authorized in the 1996 WRDA included backfilling of 25,500 feet of the L-31W Canal from S-174 to S-332, and included detention/retention areas that "would be used for temporary storage of excess flood waters before discharge to Taylor Slough" (from section 5.6.4.11 Alternative 6A of the C-111 GRR). The Draft EA evaluates six Alternatives; the recommended plan is Alternative 6. Alternative 6, "Flexible Alternative," includes the installation of a flexible number of plugs in prioritized locations along the L-31W Canal. In addition, Alternative 6 also includes the installation of a 500-foot-long weir 2 feet above ground, and the rebuild of the 2,100-foot gap in the L-31W Levee to allow flows to Taylor Slough and to prevent any seepage or backflow into the detention area during dry times.

Comments

The Florida Department of Environmental Protection (the Department) supports the need to complete the C-111 South Dade Project, with the understanding that Alternative 6 will require additional coordination with stakeholders and on projects proposed by the South Florida Water Management District (SFWMD). Specifically, the SFWMD has proposed the installation of ten plugs along the L-31W Canal, reconstruction of the L-31W Levee with an integral weir, and

sealing of the S-332D Pump Station Discharge Basin to reduce return seepage to the L-31N Canal. In their South Dade Investigation, the SFWMD proposed modifications to the construction features for the project area that would result in a different plan than Alternative 6 as detailed in the Draft EA.

Alternative 6 leaves open the options regarding the amount of backfilling that will be completed and recommends prioritizing the placement of plugs rather than providing a full backfill as originally envisioned in the 1994 GRR. According to the Draft EA, sufficient fill material is available adjacent to the L-31W Canal to complete the Priority 1, Priority 2, and Priority 3 plugs. The U.S. Army Corps of Engineers (Corps) recommends only completing the Priority 1 plugging due to project funding and backfill availability, with the flexibility of implementing Priorities 2 and 3 as funding and availability of backfill would allow. If enough backfill is available, the Department recommends backfilling the L-31W Canal at as much as possible. The minimum of plugging of the L-31W Canal should include all three Priorities as described in the Draft EA. By completing all three Priorities, an increase of direct benefits to wetlands and fish and wildlife habitat in Everglades National Park through rehydration and restoration of more natural hydroperiods would be realized.

A 2,100-foot-long gap in the L-31W Levee was built in 2003 north of the S-332 Pump Station in the S-332D Detention Area to maximize conveyance of water into Taylor Slough. Alternative 6 proposes to reduce the gap width to 500 feet and construct an Advanced Cement-Based Material weir with the degraded levee segment to be rebuilt along the remaining 1,600-foot gap length. The Draft EA details the purpose of this project component as a means to avoid water loss from Taylor Slough into the S-332D Detention Area when surface water stages in Everglades National Park are higher than the S-332D Detention Area. The factors that may contribute to this water loss are not addressed in the Draft EA. Please include a discussion of topography, hydrology, and seasonality to explain the need for the L-31W Levee rebuilding. In addition, the Department recommends further analysis be conducted to support rebuilding the L-31W Levee to the proposed design elevation, and that both dry season flows and wet season deliveries be taken into consideration.

Specific Comments:

- The No Action Alternative illustrated in Figure 2 (page 9) illustrates features included in Contracts 8 and 8A. The Department recommends removing the Features description on the left edge of Figure 2.
- The Department recommends a legend be included on Figure 8 (page 17) that illustrates the Priorities of the plug/fill alternative for L-31W Canal.
- Section 4.5.2 of the Draft EA states, "The alternatives do not have any existing wetlands present within the footprints." An interagency site visit (the Department and SFWMD) conducted on July 26, 2016, revealed that predominantly obligate and facultative wet vegetative species have recruited in the deconstructed L-31W Levee footprint. In accordance with 62-340, Florida Administrative Code, the presence of hydrologic and vegetative data indicate that this area is a wetland; therefore, the conversion of this area to

an upland levee/weir would result in wetland impacts. The Department's preliminary wetland assessment is available for review.

- Section 4.6.2 states that vegetation in the L-31W Levee gap includes weedy and shrubby plant species as well as many exotic and nuisance plants. The Department's wetland assessment identified the vegetative species to include: Arrowhead (*Sagittaria lancifolia*), Carolina Willow (*Salix Caroliniana*), spikerush (*Eleocharis spp.*), maiden-cane (*Panicum hemitomon*), cattails (*Typha spp.*), torpedo grass (*Panicum repens*) and musky mint (*Hyptis spp.*). The edges of the L-31W Levee contained saltbush (*Baccharis halimifolia*) and the invasive exotic Burma reed (*Neyraudia reynaudiana*). Although some exotic plants were observed, the exotic/invasive plants are not predominant.

The Department appreciates the opportunity to provide comments to the Florida State Clearinghouse. The Department requests the Corps continue to coordinate with the Department, SFWMD, Florida Department of Agriculture and Consumer Services, and the Department of the Interior in providing information for the authorization of any future phases of this project. The Department looks forward to the progress of the C-111 South Dade Project and the continued success of Everglades restoration. Should you have any questions regarding our comments, please contact Natalie Barfield at 850-245-3197.

ec: Ed Smith, Frank Powell, Chad Kennedy, Deinna Nicholson, Jordan Pugh, Kelli Edson, Inger Hansen, Shannan Bogdanov, and Virginia King

Memorandum

TO: Chris Stahl, Florida State Clearinghouse

THROUGH: Edward C. Smith, Director
Office of Ecosystem Projects

FROM: Inger Hansen and Shannan Bogdanov
Office of Ecosystem Projects

DATE: August 25, 2016

SAI#: FL201607137693C

SUBJECT: Department of the Army, Jacksonville District Corps of Engineers — Draft Environmental Assessment and Proposed Finding of No Significant Impact, Modifications of the C-111 South Dade Project, L-31W, Miami-Dade County, Florida.

Background

The purpose of the Draft Environmental Assessment (EA) is to update the National Environmental Policy Act (NEPA) evaluation for a modification to the Canal-111 South Dade Project, Dade County, Florida, part of the Central and Southern Florida (C&SF) Project, as authorized under the Water Resources Development Act (WRDA) of 1996. Original NEPA documentation for restoration actions was authorized in the Final Integrated General Reevaluation Report and Final Environmental Impact Statement dated 1994 (referred to as the 1994 GRR/EIS).

The C-111 South Dade Project as authorized in the 1996 WRDA included backfilling of 25,500 feet of the L-31W Canal from S-174 to S-332, and included detention/retention areas that "would be used for temporary storage of excess flood waters before discharge to Taylor Slough" (from section 5.6.4.11 Alternative 6A of the C-111 GRR). The Draft EA evaluates six Alternatives; the recommended plan is Alternative 6. Alternative 6, "Flexible Alternative," includes the installation of a flexible number of plugs in prioritized locations along the L-31W Canal. In addition, Alternative 6 also includes the installation of a 500-foot-long weir 2 feet above ground, and the rebuild of the 2,100-foot gap in the L-31W Levee to allow flows to Taylor Slough and to prevent any seepage or backflow into the detention area during dry times.

Comments

The Florida Department of Environmental Protection (the Department) supports the need to complete the C-111 South Dade Project, with the understanding that Alternative 6 will require additional coordination with stakeholders and on projects proposed by the South Florida Water Management District (SFWMD). Specifically, the SFWMD has proposed the installation of ten plugs along the L-31W Canal, reconstruction of the L-31W Levee with an integral weir, and

sealing of the S-332D Pump Station Discharge Basin to reduce return seepage to the L-31N Canal. In their South Dade Investigation, the SFWMD proposed modifications to the construction features for the project area that would result in a different plan than Alternative 6 as detailed in the Draft EA.

Alternative 6 leaves open the options regarding the amount of backfilling that will be completed and recommends prioritizing the placement of plugs rather than providing a full backfill as originally envisioned in the 1994 GRR. According to the Draft EA, sufficient fill material is available adjacent to the L-31W Canal to complete the Priority 1, Priority 2, and Priority 3 plugs. The U.S. Army Corps of Engineers (Corps) recommends only completing the Priority 1 plugging due to project funding and backfill availability, with the flexibility of implementing Priorities 2 and 3 as funding and availability of backfill would allow. If enough backfill is available, the Department recommends backfilling the L-31W Canal at as much as possible. The minimum of plugging of the L-31W Canal should include all three Priorities as described in the Draft EA. By completing all three Priorities, an increase of direct benefits to wetlands and fish and wildlife habitat in Everglades National Park through rehydration and restoration of more natural hydroperiods would be realized.

A 2,100-foot-long gap in the L-31W Levee was built in 2003 north of the S-332 Pump Station in the S-332D Detention Area to maximize conveyance of water into Taylor Slough. Alternative 6 proposes to reduce the gap width to 500 feet and construct an Advanced Cement-Based Material weir with the degraded levee segment to be rebuilt along the remaining 1,600-foot gap length. The Draft EA details the purpose of this project component as a means to avoid water loss from Taylor Slough into the S-332D Detention Area when surface water stages in Everglades National Park are higher than the S-332D Detention Area. The factors that may contribute to this water loss are not addressed in the Draft EA. Please include a discussion of topography, hydrology, and seasonality to explain the need for the L-31W Levee rebuilding. In addition, the Department recommends further analysis be conducted to support rebuilding the L-31W Levee to the proposed design elevation, and that both dry season flows and wet season deliveries be taken into consideration.

Specific Comments:

- The No Action Alternative illustrated in Figure 2 (page 9) illustrates features included in Contracts 8 and 8A. The Department recommends removing the Features description on the left edge of Figure 2.
- The Department recommends a legend be included on Figure 8 (page 17) that illustrates the Priorities of the plug/fill alternative for L-31W Canal.
- Section 4.5.2 of the Draft EA states, "The alternatives do not have any existing wetlands present within the footprints." An interagency site visit (the Department and SFWMD) conducted on July 26, 2016, revealed that predominantly obligate and facultative wet vegetative species have recruited in the deconstructed L-31W Levee footprint. In accordance with 62-340, Florida Administrative Code, the presence of hydrologic and vegetative data indicate that this area is a wetland; therefore, the conversion of this area to

an upland levee/weir would result in wetland impacts. The Department's preliminary wetland assessment is available for review.

- Section 4.6.2 states that vegetation in the L-31W Levee gap includes weedy and shrubby plant species as well as many exotic and nuisance plants. The Department's wetland assessment identified the vegetative species to include: Arrowhead (*Sagittaria lancifolia*), Carolina Willow (*Salix Caroliniana*), spikerush (*Eleocharis spp.*), maiden-cane (*Panicum hemitomon*), cattails (*Typha spp.*), torpedo grass (*Panicum repens*) and musky mint (*Hyptis spp.*). The edges of the L-31W Levee contained saltbush (*Baccharis halimifolia*) and the invasive exotic Burma reed (*Neyraudia reynaudiana*). Although some exotic plants were observed, the exotic/invasive plants are not predominant.

The Department appreciates the opportunity to provide comments to the Florida State Clearinghouse. The Department requests the Corps continue to coordinate with the Department, SFWMD, Florida Department of Agriculture and Consumer Services, and the Department of the Interior in providing information for the authorization of any future phases of this project. The Department looks forward to the progress of the C-111 South Dade Project and the continued success of Everglades restoration. Should you have any questions regarding our comments, please contact Natalie Barfield at 850-245-3197.

ec: Ed Smith, Frank Powell, Chad Kennedy, Deinna Nicholson, Jordan Pugh, Kelli Edson, Inger Hansen, Shannan Bogdanov, and Virginia King

Florida Fish and Wildlife Conservation Commission

Commissioners
Brian Yablonski
Chairman
Tallahassee

Aliese P. "Liesa" Priddy
Vice Chairman
Immokalee

Ronald M. Bergeron
Fort Lauderdale

Richard Hanas
Oviedo

Bo Rivard
Panama City

Charles W. Roberts III
Tallahassee

Robert A. Spottswood
Key West

Executive Staff
Nick Wiley
Executive Director

Eric Sutton
Assistant Executive Director

Jennifer Fitzwater
Chief of Staff

South Region
Ernest Marks
Regional Director

(561) 625-5122
Wildlife Alert:
888-404-FWCC
(888-404-3922)

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

South Region
8535 Northlake Boulevard
West Palm Beach, Florida
33412-3303
Voice: (561) 625-5122
Hearing/speech-impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)

MyFWC.com

August 11, 2016

Chris Stahl
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, M.S. 47
Tallahassee, FL 32399-3000
Chris.Stahl@dep.state.fl.us

Re: SAI #FL201607137693C, Department of the Army, Jacksonville District Corps of Engineers – Draft Environmental Assessment and Proposed Finding of No Significant Impact, Modifications of the C-111 South Dade Project, L-31W, Miami-Dade County

Dear Mr. Stahl:

The Florida Fish and Wildlife Conservation Commission (FWC) has reviewed the above-referenced assessment, and provides the following comments in accordance with FWC's authorities under Chapter 379, Florida Statutes; Chapter 68, Florida Administrative Code; and Article 4, Section 9, of the Florida Constitution.

Project Description

The C-111 South Dade project is designed to maintain levels of flood protection for areas east of L-31N and C-111, and to restore natural hydrologic conditions within the western C-111 basin and throughout eastern Everglades National Park (ENP). This EA evaluates the options for backfill and/or placement of plugs within the existing L-31W canal and modifying existing features, including the gap in the L-31W levee. The project is situated within the C-111 basin, consisting of both natural wetlands and agricultural and residential lands in the Homestead/Florida City located in southern Miami-Dade County. The project is located immediately east of ENP and discharges water to Taylor Slough, the eastern panhandle of ENP, Florida Bay, Manatee Bay and Barnes Sound. The purpose of the proposed construction features described in the EA is to create a series of plugs in the L-31W Borrow Canal that would stop southward flow along the Canal and inhibit seepage out of the eastern boundary of ENP into the Canal. Additionally, the proposed construction features include narrowing the gap located north of the S-332 pump station and raising the sill at the remaining gap by two feet. Construction of plugs and gap narrowing is expected to retain or restore favorable (longer) hydroperiods within ENP while maintaining flood protection for areas east of the L-31N and C-111 canals.

Alternative 1 is the No Action Alternative and includes all features of the C-111 South Dade project that are built or currently under construction and coordination. The No Action Alternative includes two existing plugs located in the northern segment of the L-31W Canal at the junctions with the east (400 feet length) and west (1,100 feet length) perimeter levees of the South Detention Area (SDA). The No Action Alternative also includes an existing 2,100-foot gap in the L-31W Levee, immediately north of the S-332

pump station. The gap was completed during 2003 to provide a pathway for surface water deliveries from the S-332D pump station to the S-332D Detention Area and from there into the L-31W Canal and headwaters of Taylor Slough. No further construction actions would be pursued under this alternative.

Alternative 2 was the preferred alternative in the 1994 C-111 General Reevaluation Report (GRR)/Environmental Impact Statement (EIS). Of the features not currently built or modified through previous National Environmental Policy Act (NEPA) documentation, the 1994 GRR/EIS additionally included the L-31W Canal backfill for 25,500 linear feet from S-174 to S-332 and 24 western-discharging culverts and an emergency spillway to allow for emergency overflow from the SDA into ENP. The Alternative 2 backfill option would require approximately 876,000 cubic yards of suitable material for the L-31W Canal backfill.

Alternative 3 requires complete plugging of a segment and partial backfill of additional lengths of the L-31W Canal. Partial backfill of the L-31W Canal is included for the proposed L-31W modifications south of S-175. This plan includes come L-31W backfill between S-332 and S-175 and north and south of State Road 9336, farther south than identified in the 1994 GRR/EIS Recommended Plan. The Alternative 3 backfill option would require approximately 1,440,000 cubic yards of suitable backfill material for the L-31W Canal. Out of all of the alternatives discussed in this EA, this alternative would require the largest volume of acceptable fill material.

Alternative 4 is known as the "minimal" backfill plan that was developed in 2012 through interagency coordination which included the following: two 1,000-foot long plugs (at the two northern plug locations in Reach 2) and four 500-foot long plugs located along L-31W. This plan includes L-31W plugs south of S-175, north and south of State Road 9336, and farther south than identified in the 1994 GRR/EIS Recommended Plan. This backfill option would require approximately 138,000 cubic yards of suitable backfill material for the proposed L-31W Canal plugs.

Alternative 5 was developed through modeling and observations completed for the proposed "Combined Structural and Operational Plan" (CSOP) developed between 2003 and 2005. The CSOP proposal included a tiered list of backfill locations priorities, with the expectation that the availability of suitable backfill material and project budget considerations would be used to identify the final configuration for the L-31W Canal backfill. Alternative 5 backfill option would require approximately 430,000 cubic yards of suitable backfill material for the L-31W Canal.

Alternative 6 (Flexible Plan) is the Recommended Alternative for plugs/backfill in this EA. This Alternative includes priority areas of plugs within the L-31W Canal and a reduction in the size of the levee gap along the North-South segment (Reach 4) of the remnant L-31W Canal. Alternative 6 proposed to construct backfill and/or plugs in the L-31W Canal using excess spoil material onsite and includes a 'bulking factor' of 20 percent to account for subsidence of the backfill after it is deposited within the L-31W Canal.

Initial evaluation of alternatives developed in prior planning and NEPA documents led to the elimination of Alternatives 2, 4, and 5 in the EA. The determination through the EA

results in preferring Alternative 6 over Alternative 3 because most of the benefits remain similar between the two alternatives but with a significant cost difference. Alternative 6 provides more benefits by including the partial fill of the levee gap as well.

Comments and Recommendations

The FWC has fish and wildlife and land management responsibilities for Water Conservation Areas (WCAs) 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area. Once completed, this project should improve the ability to move water along the eastern flow path of ENP to Shark River Slough and Taylor Slough and improve the movement of flows from the WCAs during high water periods. FWC is supportive of this project and supportive of accelerating its implementation and construction schedules to maximize the water management benefits.

Within the project area, there is a boat ramp along the ENP entrance road (FL 9336) which provides access to the canal for boats and recreational users. Recreational use by fishermen in this stretch of canal is potentially limited to small boats. FWC recommends that the boat ramp and remaining canal segments should remain accessible to recreational enthusiasts. The Preferred Alternative will leave at least one mile of open canal north of the ENP entrance road and a similar or greater length to the south of the boat ramp and recognizes that fill availability and costs may be constraint to constructing all of the identified plugs. When constructing the plug south of the boat ramp, which is identified as a lower priority plug, the greater the distance from the boat ramp the greater length of boat accessible canal. FWC staffs appreciate efforts to maintain fishing access as there are limited freshwater fishing opportunities in the area.

We appreciate the opportunity to review the EA and we find this EA consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Coastal Management Program. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or by email at FWCConservationPlanningServices@MyFWC.com. If you have specific technical questions regarding the content of this letter, please contact Marissa Krueger by phone at (561) 882-5711 or by email at Marissa.Krueger@MyFWC.com.

Sincerely,

James M. Erskine, Everglades Coordinator
Office of the Executive Director

jme/mk
ENV 1-3-2
C-111 South Dade Project L-31W Draft EA and FONSI_31296_081116

cc: Barbara Cintron, U.S. Army Corps of Engineers,
Barbara.B.Cintron@usace.army.mil

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

RECEIVED
AUG 29 2016
DEP Office of
Intergovt'l Programs

August 18, 2016

Mr. Chris Stahl
Coordinator, Florida State Clearinghouse
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 47
Tallahassee, FL 32399-2400

Subject: Modifications to the C-111 South Dade Project, L-31W Environmental Assessment and Proposed Finding of No Significant Impact

Dear Mr. Stahl:

The South Florida Water Management District (District), as the local sponsor for the C-111 South Dade Project, fully supports moving forward with modifications to the L-31 W Canal and Levee as part of the District's Governing Board's Florida Bay proposal; the components of which are detailed in the attached information. While backfilling and plugging the L-31 W Canal and rebuilding the L-31W Levee and weir will keep more water in Everglades National Park, the District proffers a slightly varied approach which complements the U.S. Army Corps of Engineers (USACE) recommended plan, achieves the intent of the larger federal project and serves as an extension of the proposed project benefits by significantly increasing flows through Taylor Slough to Florida Bay. The District's alternative approach requires modest alterations to the proposed plan and can be implemented prior to the oncoming dry season to deliver much needed fresh water relief to Florida Bay and aid in avoiding future impacts such as the elevated salinity levels and massive sea grass die-off experienced last year.

The District, as part of this comment letter and through several permit applications to the Florida Department of Environmental Protection and the USACE, will propose refinements to the features currently included within the Environmental Assessment and Proposed Finding of No Significant Impact (EA/FONSI) and other USACE documents. These design refinements will accommodate an alternate but compatible method for delivering additional water to Taylor Slough. Minor modifications to the proposed USACE features will continue to aid in the achievement of the goal set forth in the 1994 General Reevaluation Report to restore the ecosystem of Taylor Slough and eastern panhandle of Everglades National Park that were affected by the construction of the flood control project in the C-111 Basin.

The District supports the approval of the EA/FONSI for the L-31W features of the C-111 South Dade project as refined by the District's overall Florida Bay proposal. In addition, the District looks forward to working closely with the USACE to provide any additional information necessary to support the District's refinements.

Sincerely,

Ernie Marks
Division Director, Everglades Policy and Coordination

EM/pv
Attachments

- Description of SFWMD Design Refinements
- Maps of L-31W Canal Plugs and Backfill and Florida Bay Proposal

Attachments

SFWMD's Florida Bay Proposal and

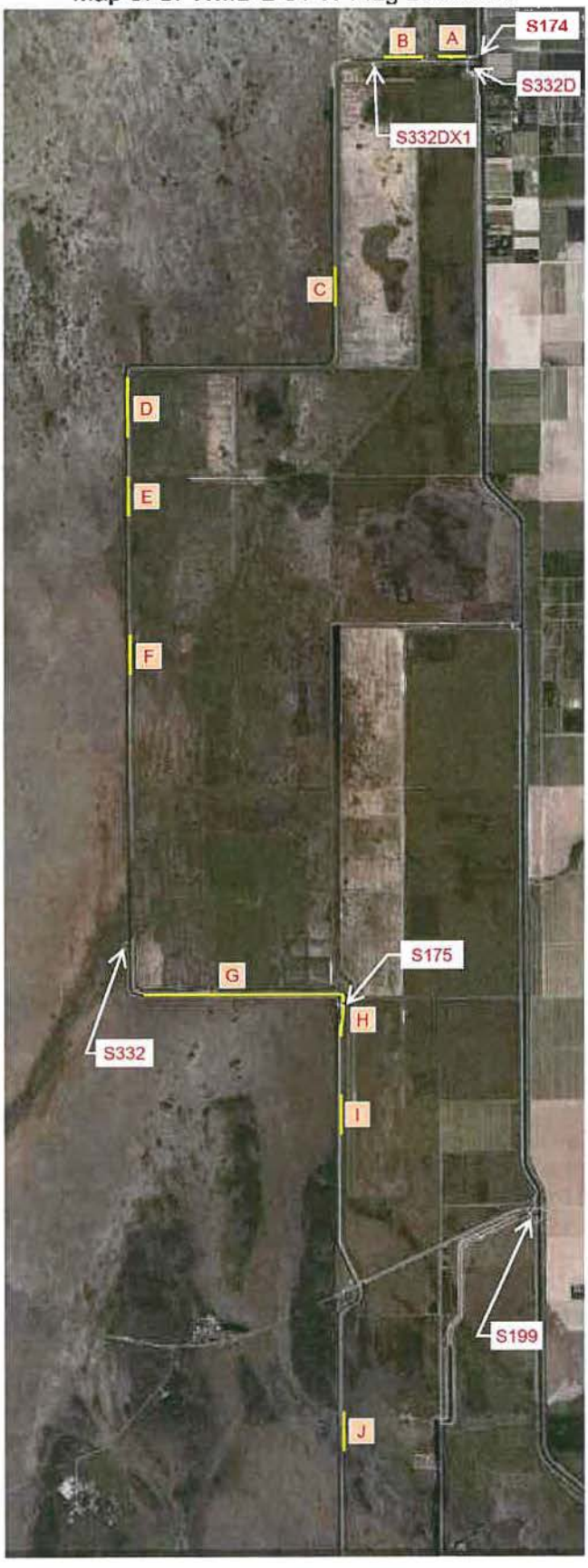
Design Refinements for the L31W Canal Plugs and

Levee Reconstruction with Integral Weir

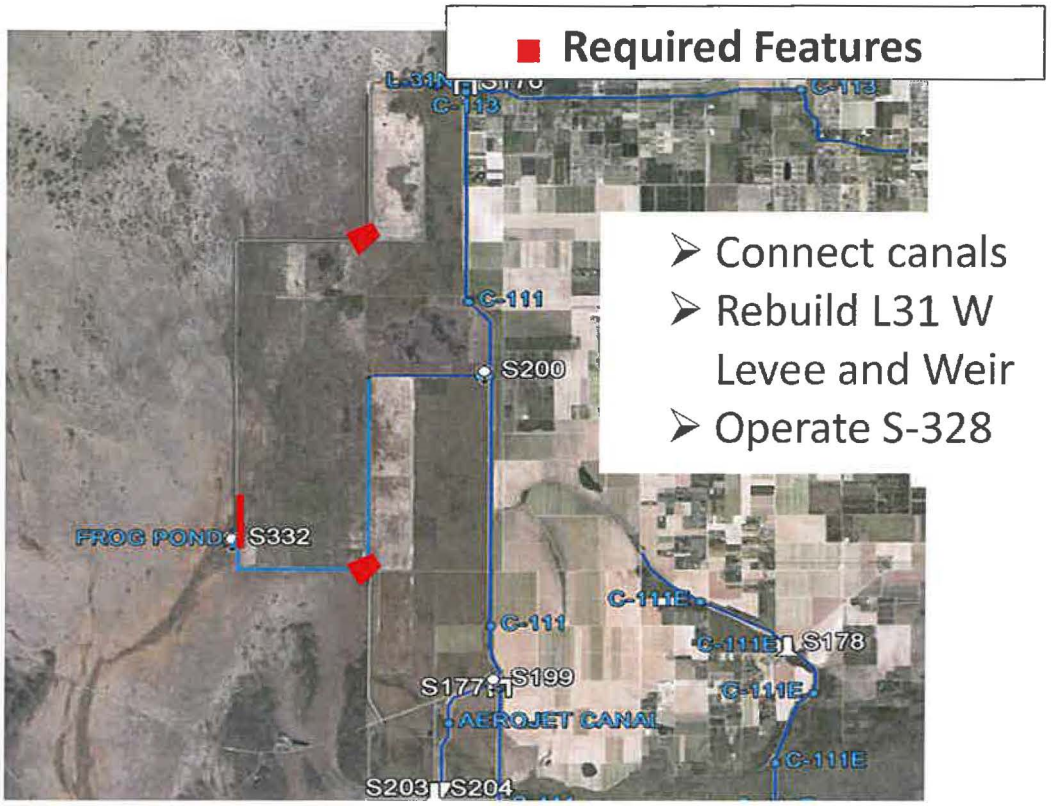
- The District intends to construct a total of ten plugs (identified as A-J) in the L-31W Canal as shown on the map below. The plug locations are consistent with those shown in the EA/FONSI. The plugs located west of S175 structure and south of S332 pump station will be at an elevation less than grade to continue to allow water conveyance in the L-31W Canal.[1]
- The District proposes to construct the L-31W Levee and weir based the refined design which will include an adjustable 100 foot long weir section that will prevent water flow from the Everglades National Park or allow water from the S-332D flowway into Everglades National Park. The function of the weir will depend on water conditions in the local area.[1]
- The District intends to connect the S200 header canal, a feature of the C111 Spreader Canal Western Project, to the L-31W Canal to enable surface water flows from the S200 pump station to be conveyed towards Taylor Slough.
- The District recently finished removing a portion of the weir that formed the S332D high head cell, S327 weir. Surface water flows from the S332D pump station can now freely reach the S332D flowway.
- The SFWMD also proposes to modify the C-111 Spreader Canal Western Project by increasing the pumping capacity at S200 and S199 pump stations by 75 cfs each. This modification will enable more water to reach or remain in Taylor Slough by maintaining the hydrologic ridge formed by the project to the east of Taylor Slough.
- The SFWMD will evaluate the condition of the vegetation in C-111 Basin and how it may affect the project's intended function. A management plan to control vegetation, especially in conveyance canals, will be implemented on an ongoing basis.

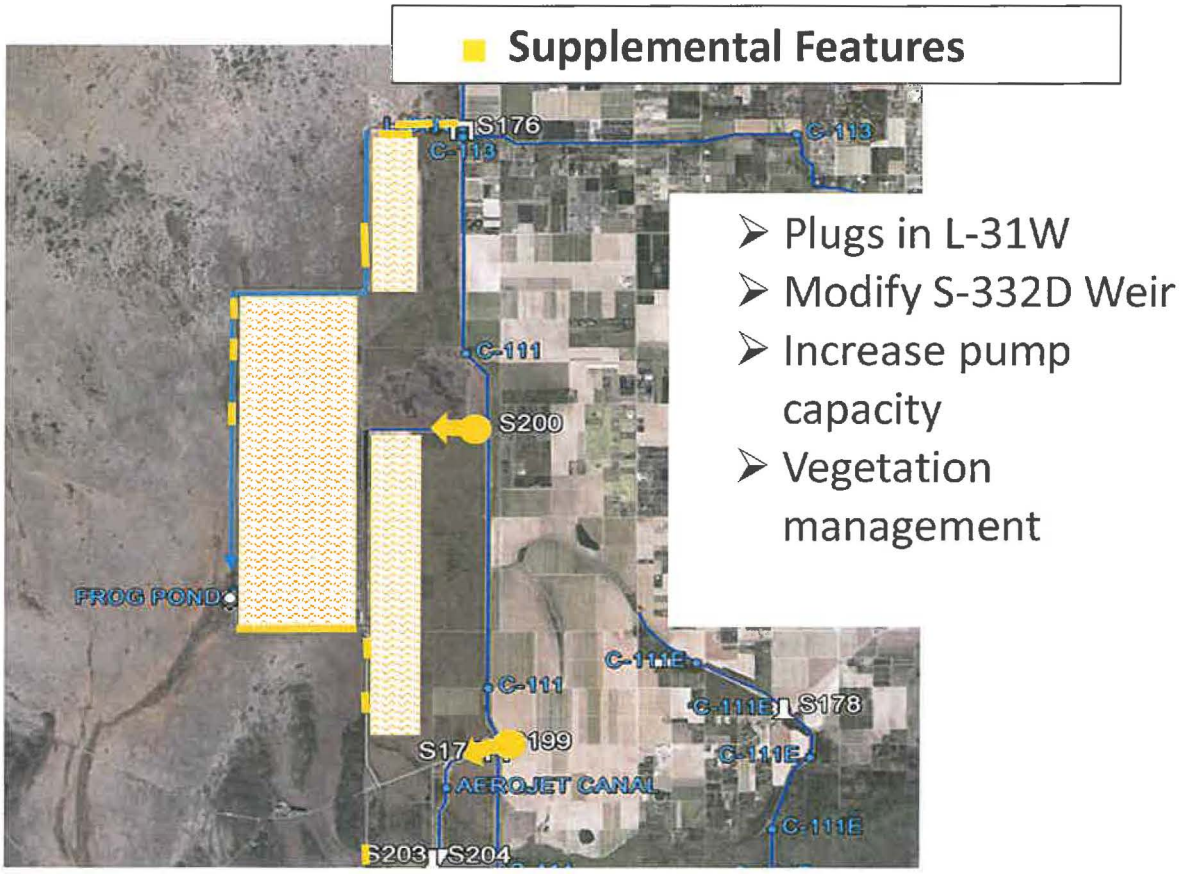
[1] Included in the USACE C-111 South Dade L-31W EA/FONSI

Map of SFWMD L-31 W Plug Locations



SFWMD's Florida Bay Proposal





FLORIDA DEPARTMENT of STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Gina Ralph
Chief, Environmental Branch
Department of the Army
Jacksonville District Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-8175

August 24, 2016

RE: DHR Project File No.: 2016-2892, Received by DHR: July 7, 2016
Project: *Proposed Modification to the C-111 South Dade Canal System, Partially Backfilling and Plugging L-31 West Borrow Canal and the Frog Pond Detention Area, Contact 9*
County: Miami-Dade

Dear Dr. Ralph:

The Florida State Historic Preservation Officer reviewed the referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places.* The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties.*

The proposed project includes decommissioning or demolition of two water control structures (S-174 and S-175) and partially backfilling and plugging the L-31 West Borrow Canal and the Frog Pond Detention Area. Based on the proposed scope of work, it is the opinion of this office that the proposed project will have no adverse effect on historic properties listed, or eligible for listing, on the *National Register of Historic Places.*

If you have any questions, please contact me by email at *Jason.Aldridge@dos.myflorida.com*, or by telephone at 850.245.6344 or 800.847.7278.

Sincerely,

Jason Aldridge
Deputy State Historic Preservation Officer
for Compliance and Review