APPENDIX C – PERTINENT CORRESPONDENCE

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Table C- 1. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) DOCUMENTATION TO SUPPORT THE TEMPORARY EMERGENCY DEVIATION WAS COMPLETED ON FEBRUARY 12, 2016 WITH SIGNING OF AN FINDING OF NO SIGNIFICANT IMPACT (FONSI), INCORPORATING AN ENVIRONMENTAL ASSESSMENT (EA). COMMENTS RECEIVED SINCE COMPLETION OF THE FEBRUARY 12, 2016 EA AND FONSI ARE PROVIDED WITHIN THIS TABLE.

Commenter	Comment	Response
Miccosukee Tribe of Indians of Florida	The Miccosukee Tribe of Indians of Florida have been advised of the dire situation high water levels have created within the Greater Everglades and in Water Conservation Area 3A (WCA 3A). Based on the information provided through the pre-decisional consultation process, USACE should immediately begin maximizing the release of water from WCA 3A through the proposed emergency action to raise water levels in the L-29 Canal and continue exploring all possible alternatives to maximize the release of water from the conservation areas and minimize the ecological and cultural impacts.	Thank you for your comment.
Miccosukee Tribe of Indians of Florida	A full analysis of these actions must be undertaken and reported on in the National Environmental Policy Act (NEPA) supplemental analysis that will be conducted once relief is achieved. The Tribe further requests that the NEPA supplemental analysis includes a full examination of why this flood condition has occurred and why flooding in WCA 3A	NEPA documentation to support the temporary emergency deviation was concluded on February 12th, 2016 with completion of an emergency Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The objective of the Supplemental EA and proposed FONSI is to provide further documentation of the potential environmental effects resulting from the

	continues to impact the Miccosukee homelands.	alternatives considered and the action taken. The U.S. Army Corps of Engineers (Corps) initiated a temporary emergency deviation to the current operating limit constraint of 7.5 feet National Geodetic Vertical Datum (of 1929 NGVD) in the L-29 Canal for purposes of providing high water relief in WCA 3A and the SDCS as the south Florida ecosystem has experienced the highest rainfall on record during the month of January. The first half of the dry season (November 2015-January 2016) was the wettest for this period since record keeping began in 1932. Heavy rainfall has contributed to the current conditions in WCA 3A observed today.
Florida Fish and Wildlife Conservation Commission (FWC)	The FWC has fish and wildlife and land management responsibilities for WCAs 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area. As a result of record amounts of precipitation across south Florida in January 2016, water levels within WCA 3A have increased to levels that are detrimental to area wildlife such as federally and state-listed wading birds and small to large sized mammals. Negative effects to wildlife under high water conditions include poor foraging habitat, reduced breeding efforts, and stranding on tree islands and levees. Critical wildlife	Thank you for your comments.

	habitat such as tree island vegetation can also be negatively affected by extended high water conditions. The proposed emergency deviation will allow water to move out of WCA 3A, which should help reduce adverse impacts to tree islands and their associated wildlife in WCA 3A, as well as lessen the detrimental long-term effects that prolonged high water levels would have on the essential foraging and nesting habitats of snail kites, wood storks, and state-listed wading bird species such as tricolored and little blue herons. The FWC supports this step forward in both coordination and action to help relieve extreme high water conditions in WCA 3A and to facilitate water movement south from Lake Okeechobee through the system, ultimately to Florida Bay.	
Everglades Law Center Everglades Foundation Audubon Florida National Parks Conservation Association Sierra Club	We write in response to the request for public comment related to the temporary emergency deviation to alleviate high water levels in WCA 3A. We strongly support the temporary emergency deviation. We further advocate for the continued implementation of measures that are consistent with the Modified Water Deliveries plan to expedite critical operational changes needed to realize our shared plan for Everglades restoration, and to move toward true multi-species, ecosystem-based management that allows for more appropriate, sustainable water	Thank you for your support. Increased flows at S-197 are expected under the temporary emergency deviation. S-197 discharges are anticipated to be relatively small (~ four thousand acre feet). Significant adverse impacts to natural resources within the southern estuaries is not anticipated due to the short duration of the temporary emergency deviation.

	levels and flows across south Florida ecosystems. We remain opposed to operations which lower S-18C and/or increase S-197 discharges, which are unrelated to the purpose of providing high water relief in WCA 3A, counter to restoration goals, are not reflected in the Modified Water Deliveries plan and which set a dangerous precedent.	
Everglades Law Center Everglades Foundation Audubon Florida National Parks Conservation Association Sierra Club	All indications are, at this point that these operational changes are working both to reduce high water levels in WCA 3A and to move water east and south though NESRS – how water historically flowed and should flow in the Everglades –without adverse effects. With this emergency deviation, we have exceeded the flow capacity of the S-333 structure (1,350 cfs) without going above 8.2 feet in the L-29 Canal. This shows the feasibility of moving more water east and south (as restoration would direct most water flows). Especially given the repeated short term water-related crises we have faced over the past few years in south Florida, this success also lends support to the urgency of working to expedite Everglades restoration, a multi-species management approach that recognizes the need to protect and restore all parts of the South Florida ecosystem.	Thank you for your comment. The Corps continues to work with other Federal and state agencies in planning the future implementation of the Combined Operating Plan (COP), for the operation of the water management infrastructure connected to the MWD to ENP and C-111 South Dade Projects.
Everglades Law Center Everglades Foundation	We hope that the successes of this 'emergency deviation' show that	Thank you for your comment. Lessons learned from implementation of the

Audubon Florida National Parks Conservation Association Sierra Club	Everglades restoration, as envisioned in ModWaters and CERP, is the solution to the problems of water extremes in south Florida. We should accelerate our efforts to implement restoration; the temporary emergency deviation shows that increasing flows south and east south of Tamiami Trail – as envisioned in CERP – is feasible and in all our best interests.	temporary emergency deviation may be used in future planning efforts related to the COP and other restoration efforts.

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

FEB 17 2016

Tim Parsons, Ph.D.
Interim Director, Division of Historical Resources
& Deputy State Historic Preservation Officer
Division of Historical Resources
State Historic Preservation Officer
500 South Bronough Street
Tallahassee, Florida 32399-0250

Dear Dr. Parsons:

The U.S. Army Corps of Engineers, Jacksonville District (Corps), is studying the environmental effects associated with a temporary emergency deviation of the Water Control Plan to affect relief of high water levels within Water Conservation Area (WCA) 3A. The project is a result of acute rainfall in the South Florida Ecosystem which is causing severe impacts to natural resources. All areas of South Florida are inundated with water restricting the ability to safely move water to mitigate the effects of flooding. Immediate action is necessary to deviate from permitted water management practices to move flood water out of the WCAs, and subsequently provide opportunities to move more water south out of Lake Okeechobee, relieving pressure on the Caloosahatchee and St. Lucie Estuaries. As such, we are notifying your office of the project under 36 CRF 800.12(b) (Emergency Situations) and 36 CFR 800.12(b)(2) and request an expedited consultation process of seven (7) days.

Operations in the project area are currently governed by Increment 1 (G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy) which is a deviation to the 2012 Water Conservation Areas, Everglades National Park (ENP) and the ENP to South Dade Conveyance System (SDCS) Water Control Plan. The Corps is initiating an emergency deviation to the current operating limit constraint of 7.5 feet National Geodetic Vertical Datum (of 1929 NGVD) in the L-29 Canal for purposes of providing high water relief in WCA 3A and the SDCS. The proposed action is expected to mitigate for severe economic losses and impacts to listed species currently being experienced as a result of high water levels.

The Proposed Action, would release water from WCA 3A via the S-333 pump station into the L-29 Canal effectively raising water levels in that canal up to no more than 8.5 feet NGVD (see Enclosure). The temporary extent of this deviation is expected to be not more than 90 days from the date of implementation. There will be a meaningful (e.g. 60 day) recovery period once the L-29 constraint is returned to 7.5 feet NGVD, during which the water level would recede to stages typical of the recent hydrological conditions and the operational criteria under the current Water Control Plan, (Increment 1).

To the extent that the raised L-29 stage limit allows, S-333 discharges will be sent to Northeast Shark River Slough (NESRS). It is expected that if the L-29 stage limit is raised to 8.5 feet NGVD, initially there will be sufficient capacity for most, if not all, of S-333's full discharge. If the L-29 stage is below the raised L-29 stage limit (8.5 feet NGVD) with S-333 discharging at its' full capacity (1,350 cfs), the USACE may use S-356 to reduce the flow south and control the L-31N stage. In addition, if the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its maximum allowable gate opening (MAGO) limits, water from WCA-3A could be delivered through the manual route of S-151, S-337, and S-356, as long as the pumping rate at S-356 exceeds the discharge rate at S-335.

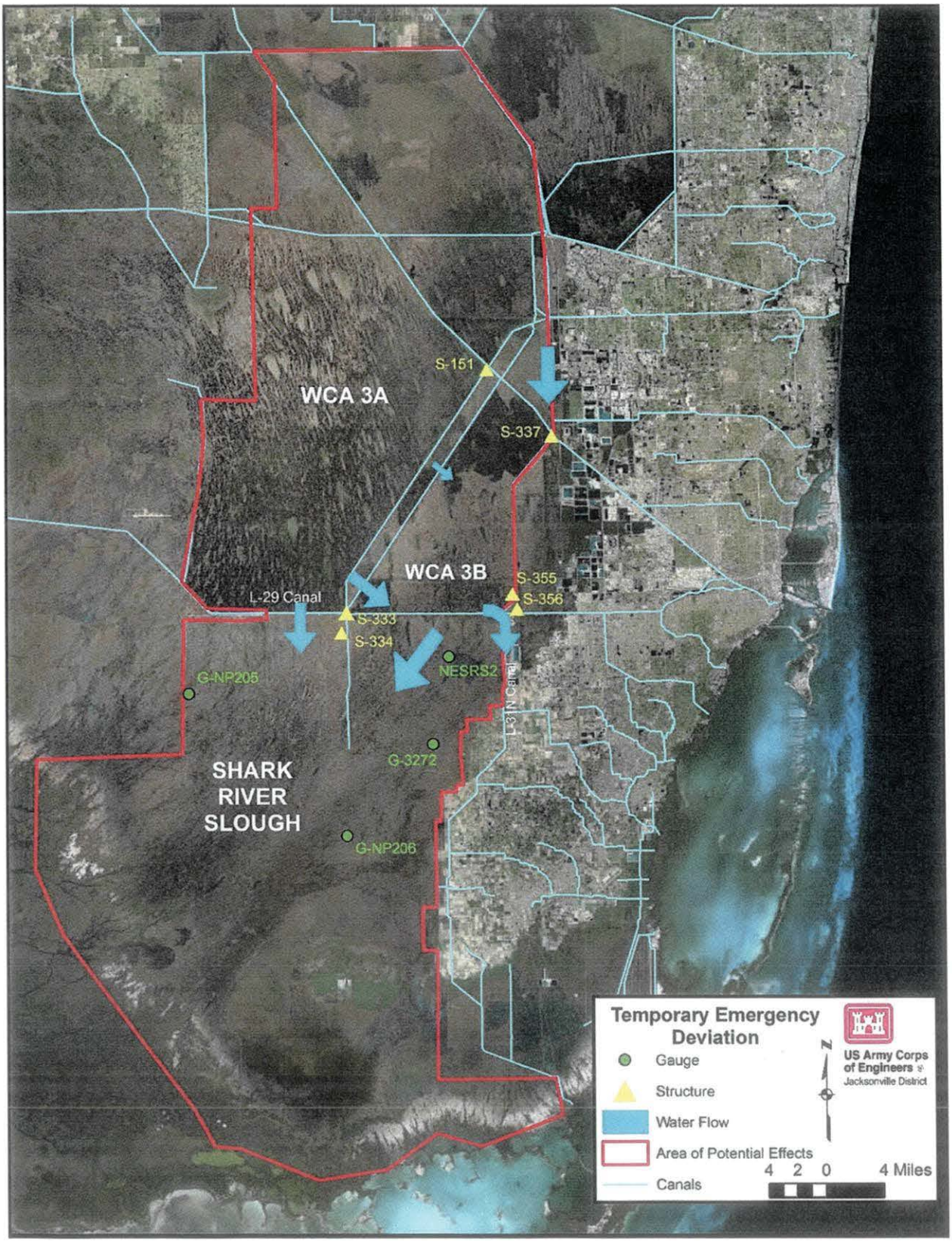
Based on modeling of the Proposed Action, flows to Northeast and Central Shark River Slough are expected to increase. Lower water levels are predicted in WCA 3A, Northwest ENP, and along the L31N and SDCS canals. Where water levels are anticipated to rise, modeling projected an approximate 3 to 5 inch rise in water level at gauge NESRS2, up to an approximate 1 inch rise in water levels at gauge NP205, and an approximate 1 to 2 inch rise at gauge NP206. Results of the modeling generally indicate higher water levels just south of the L-29 canal with progressively lower water stages as the flow moves south.

Based on the temporary nature and short duration (150 days or less) of the project, the Corps believes that this will have no adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places. Due to the nature of this emergency, the Corps is requesting an expedited consultation process as cited in 36 CFR Part 800.12(b)(2), and requests your concurrence on our determination of no adverse effect. I understand that the seven day consultation process is a shortened period and appreciate your assistance with this emergency. A supplemental National Environmental Policy Act (NEPA) document will be completed to supplement the EA and FONSI (as released 12 February 2016), providing additional discussion of the actions proposed as appropriate. If there are any questions, please contact Ms. Meredith Moreno at 904-232-1577 or e-mail at Meredith.a.moreno@usace.army.mil. Ms. Moreno will be available to assist you in anyway with this emergency consultation process.

Sincerely,

Jason Spinning
Acting Chief, Environmental Branch

Enclosure


WCA 3A
S-151
S-337
WCA 3B
S-355
S-356
L-29 Canal
S-333
S-334
NESRS2
G-NP205
L-67N Cnl
G-3272
SHARK
RIVER
SLOUGH
G-NP206
Temporary Emergency
Deviation
Gauge
Structure
Water Flow
Area of Potential Effects
Canals
US Army Corps
of Engineers
Jacksonville District
N
4 2 0 4 Miles

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

FEB 17 2016

Mr. Fred Dayhoff, Tribal Representative
NAGPRA, Section 106
Miccosukee Tribe of Indians of Florida
Post Office Box 440021
Tamiami Station
Miami, Florida 33144

Dear Mr. Dayhoff:

The U.S. Army Corps of Engineers, Jacksonville District (Corps), is studying the environmental effects associated with a temporary emergency deviation of the Water Control Plan to affect relief of high water levels within Water Conservation Area (WCA) 3A. The project is a result of acute rainfall in the South Florida Ecosystem which is causing severe impacts to natural resources. All areas of South Florida are inundated with water restricting the ability to safely move water to mitigate the effects of flooding. Immediate action is necessary to deviate from permitted water management practices to move flood water out of the WCAs, and subsequently provide opportunities to move more water south out of Lake Okeechobee, relieving pressure on the Caloosahatchee and St. Lucie Estuaries. As such, we are notifying your office of the project under 36 CRF 800.12(b) (Emergency Situations) and 36 CFR 800.12(b)(2) and request an expedited consultation process of seven (7) days.

Operations in the project area are currently governed by Increment 1 (G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy) which is a deviation to the 2012 Water Conservation Areas, Everglades National Park (ENP) and the ENP to South Dade Conveyance System (SDCS) Water Control Plan. The Corps is initiating an emergency deviation to the current operating limit constraint of 7.5 feet National Geodetic Vertical Datum (of 1929 NGVD) in the L-29 Canal for purposes of providing high water relief in WCA 3A and the SDCS. The proposed action is expected to mitigate for severe economic losses and impacts to listed species currently being experienced as a result of high water levels.

The Proposed Action, would release water from WCA 3A via the S-333 pump station into the L-29 Canal effectively raising water levels in that canal up to no more than 8.5 feet NGVD (see Enclosure). The temporary extent of this deviation is expected to be not more than 90 days from the date of implementation. There will be a meaningful (e.g. 60 day) recovery period once the L-29 constraint is returned to 7.5 feet NGVD, during which the water level would recede to stages typical of the recent hydrological conditions and the operational criteria under the current Water Control Plan, (Increment 1).

To the extent that the raised L-29 stage limit allows, S-333 discharges will be sent to Northeast Shark River Slough (NESRS). It is expected that if the L-29 stage limit is raised to 8.5 feet NGVD, initially there will be sufficient capacity for most, if not all, of S-333's full discharge. If the L-29 stage is below the raised L-29 stage limit (8.5 feet NGVD) with S-333 discharging at its' full capacity (1,350 cfs), the USACE may use S-356 to reduce the flow south and control the L-31N stage. In addition, if the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its maximum allowable gate opening (MAGO) limits, water from WCA-3A could be delivered through the manual route of S-151, S-337, and S-356, as long as the pumping rate at S-356 exceeds the discharge rate at S-335.

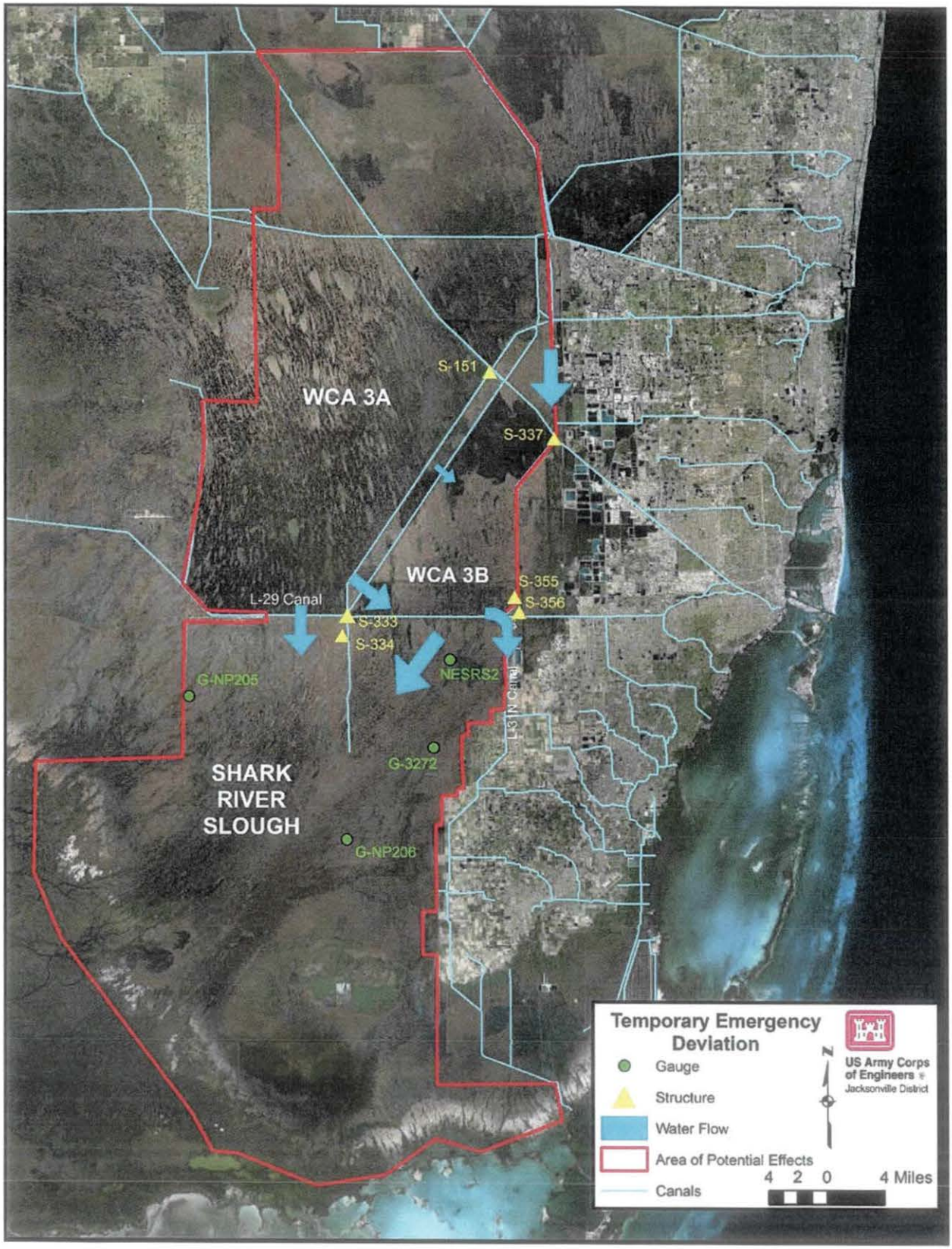
Based on modeling of the Proposed Action, flows to Northeast and Central Shark River Slough are expected to increase. Lower water levels are predicted in WCA 3A, Northwest ENP, and along the L31N and SDCS canals. Where water levels are anticipated to rise, modeling projected an approximate 3 to 5 inch rise in water level at gauge NESRS2, up to an approximate 1 inch rise in water levels at gauge NP205, and an approximate 1 to 2 inch rise at gauge NP206. Results of the modeling generally indicate higher water levels just south of the L-29 canal with progressively lower water stages as the flow moves south.

Based on the temporary nature and short duration (150 days or less) of the project, the Corps believes that this will have no adverse effects on historic properties listed or eligible for listing in the National Register of Historic Places. Due to the nature of this emergency, the Corps is requesting an expedited consultation process as cited in 36 CFR Part 800.12(b)(2), and requests your concurrence on our determination of no adverse effect. I understand that the seven day consultation process is a shortened period and appreciate your assistance with this emergency. A supplemental National Environmental Policy Act (NEPA) document will be completed to supplement the EA and FONSI (as released 12 February 2016), providing additional discussion of the actions proposed as appropriate. If there are any questions, please contact Ms. Meredith Moreno at 904-232-1577 or e-mail at Meredith.a.moreno@usace.army.mil. Ms. Moreno will be available to assist you in anyway with this emergency consultation process.

Sincerely,

Jason Spinning
Acting Chief, Environmental Branch

Enclosure


S-151
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S-355
S-356
L-29 Canal
S-333
S-334
NESRS2
G-NP205
L-67N Canal
G-3272
SHARK
RIVER
SLOUGH
G-NP206
Temporary Emergency
Deviation
Gauge
Structure
Water Flow
Area of Potential Effects
Canals
US Army Corps
of Engineers
Jacksonville District
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4 2 0 4 Miles

DEPARTMENT OF THE ARMY
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REPLY TO
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Planning and Policy Division
Environmental Branch

FEB 17 2016

Dr. Paul Backhouse, THPO
Seminole Tribe of Florida
Tribe Historic Preservation Office
30290 Josie Billie Highway
PMP 1004
Clewiston, FL 33440

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers, Jacksonville District (Corps), is studying the environmental effects associated with a temporary emergency deviation of the Water Control Plan to affect relief of high water levels within Water Conservation Area (WCA) 3A. The project is a result of acute rainfall in the South Florida Ecosystem which is causing severe impacts to natural resources. All areas of South Florida are inundated with water restricting the ability to safely move water to mitigate the effects of flooding. Immediate action is necessary to deviate from permitted water management practices to move flood water out of the WCAs, and subsequently provide opportunities to move more water south out of Lake Okeechobee, relieving pressure on the Caloosahatchee and St. Lucie Estuaries. As such, we are notifying your office of the project under 36 CRF 800.12(b) (Emergency Situations) and 36 CFR 800.12(b)(2) and request an expedited consultation process of seven (7) days.

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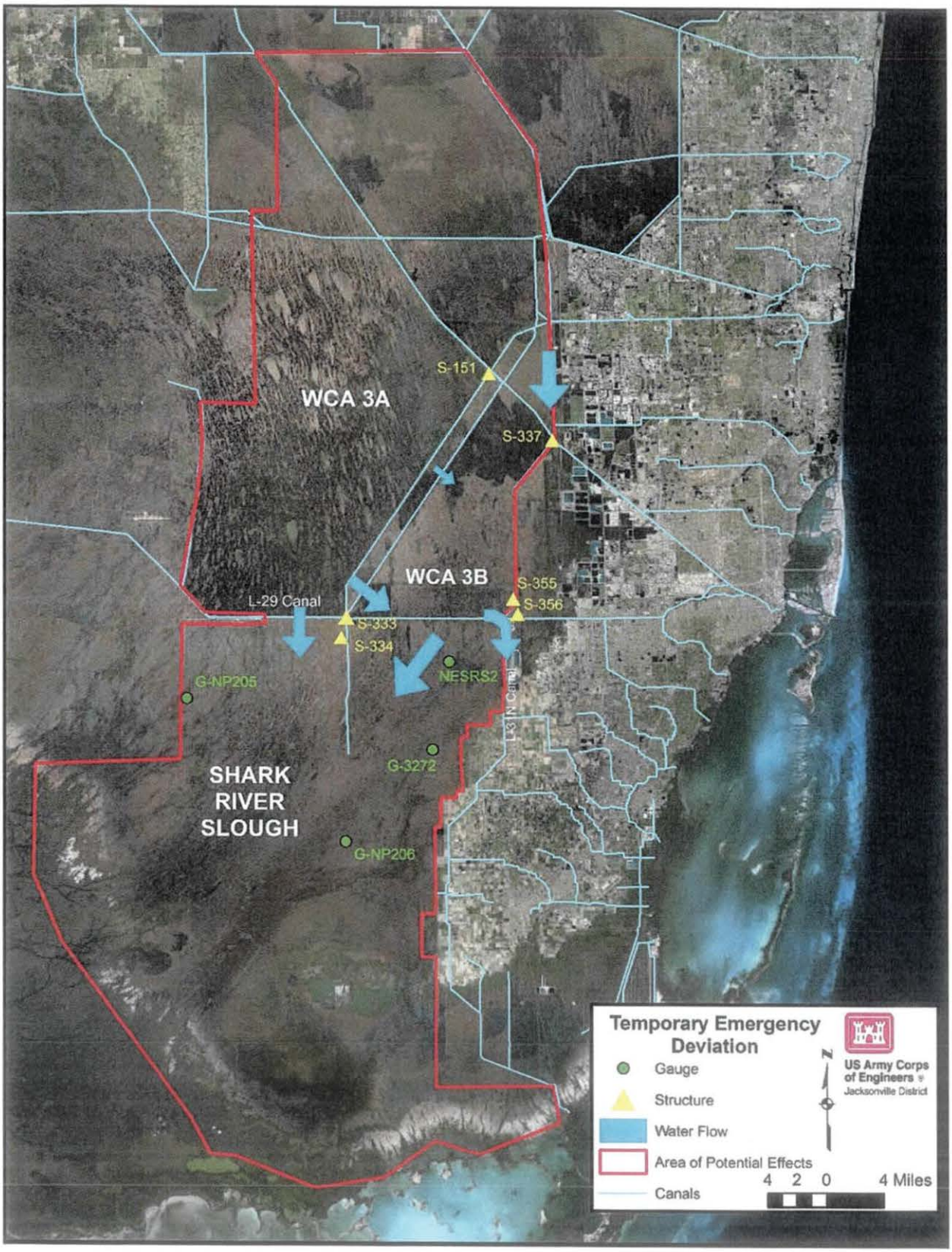
Sincerely,

Jason Spinning
Acting Chief, Environmental Branch

Enclosure


S-151
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S-356
L-29 Canal
S-333
S-334
NESRS2
G-NP205
L-31N Canal
G-3272
SHARK
RIVER
SLOUGH
G-NP206
Temporary Emergency Deviation
Gauge
Structure
Water Flow
Area of Potential Effects
Canals
US Army Corps of Engineers
Jacksonville District
N
4 2 0 4 Miles

Nasuti, Melissa A SAJ

From: Robbins, Rick - NRCS, Gainesville, FL <rick.a.robbins@fl.usda.gov>
Sent: Friday, February 19, 2016 9:09 AM
To: Nasuti, Melissa A SAJ
Cc: Weber, Tom - NRCS, Gainesville, FL
Subject: [EXTERNAL] RE: Farmland Protections Policy Act Request
Attachments: EPA_Everglades.zip

Hello Melissa,

Attached are the requested materials (cover letter, farmland map, AD-1006) for the Everglades Rehydration Project. I have completed the farmland analysis and there are a few areas of Unique Farmland soils. However, since this is for a temporary emergency situation, there would be no conversion of these soils. Regardless, I have completed the AD-1006.

Best,

Rick

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

-----Original Message-----
From: Nasuti, Melissa A SAJ [mailto:Melissa.A.Nasuti@usace.army.mil]
Sent: Thursday, February 18, 2016 2:59 PM
To: Robbins, Rick - NRCS, Gainesville, FL <rick.a.robbins@fl.usda.gov>
Subject: Farmland Protections Policy Act Request

Mr. Robbins,

The U.S. Army Corps of Engineers (Corps) is beginning preparation of a Supplemental Environmental Assessment (EA) for a temporary emergency deviation to alleviate high water levels in Water Conservation Area 3A (WCA 3A). Due to the very strong El Nino this dry season, WCA 3A has experienced unseasonably high water levels. In addition, the operational limitations of the current approved Water Control Plan severely limits releases at the southern boundary of WCA 3A. Therefore, the Jacksonville District is initiating a temporary deviation for 90 days to increase the operational trigger level in the L-29 Borrow Canal to elevation 8.5 feet, National Geodetic Vertical Datum 1929 between structure S-333 and S-334 and other necessary changes to the Central and Southern Florida Project operations that are required to support this change. These operational changes will allow for the full discharge capacity through S-333 helping to mediate the high water in WCA 3A. The other operational changes will mediate any concern with increased seepage from Everglades National Park into the South Dade Conveyance System.

The emergency deviation within the EA would occur within Broward and Miami-Dade Counties, Florida. Conversion of prime and unique farmland within the project area is not anticipated. The temporary deviation is expected to last a maximum of 90 days. The attached map shows the area of potential affect as well as symbols to represent the direction of increased flow. Also attached are shape files associated with the project map.

Please let me know if further information is needed for purposes of consultation and/or to ensure compliance under the Farmland Protections Policy Act. The Supplemental EA and Proposed Finding of No Significant Impact are expected to be released for public review the first week of March.

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

United States Department of Agriculture

NRCS

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

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

February 19th, 2016

Melissa Nasuti
U.S. Army Corps of Engineer
Planning Division – Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207

Important Farmland Assessment for the Rehydration of Everglades National Park Project in Broward and Miami-Dade Counties, Florida

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

Briefly, the USDA-NRCS is responsible for monitoring the conversion of Prime, Unique, or Locally Important Farmland to urban uses. Significant portions of this project area have not been mapped and are exempted from a Farmland Designation. Most areas remain in a native plant communities.

On the portion of the project area that has been soil mapped (see attached map), we have determined that there are a few delineations of Important Farmland soils (Soils of Unique Farmland status) within the scope of this project. Most of these areas are located along the eastern margin of the project area.

However, this project should not be impacted by this designation since this is a temporary situation and no conversion of Important Farmland soils will be impacted.

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

Regards,

Rick

Rick Robbins
USDA-NRCS
Soil Scientist
Gainesville, Florida

w/ AD-1006, and map attachments

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 2/18/16
Name Of Project Temporary Deviation to Alleviate High Water Levels	Federal Agency Involved U.S. Army Corps of Engineers
Proposed Land Use Rehydration of Everglades National Park	County And State Broward and Miami Dade Counties, Florida
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 2/18/16

Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply -- do not complete additional parts of this form).*	Yes ☑	No ☐	Acres Irrigated 25,450	Average Farm Size 21.5
Major Crop*(s)* Vegetables, fruit	Farmable Land In Govt. Jurisdiction Acres: 49,637	% 4.12	Amount Of Farmland As Defined in FPPA Acres: 27,076	% 2.2
Name Of Land Evaluation System Used Soil Productivity Index	Name Of Local Site Assessment System None		Date Land Evaluation Returned By NRCS 2/19/16	

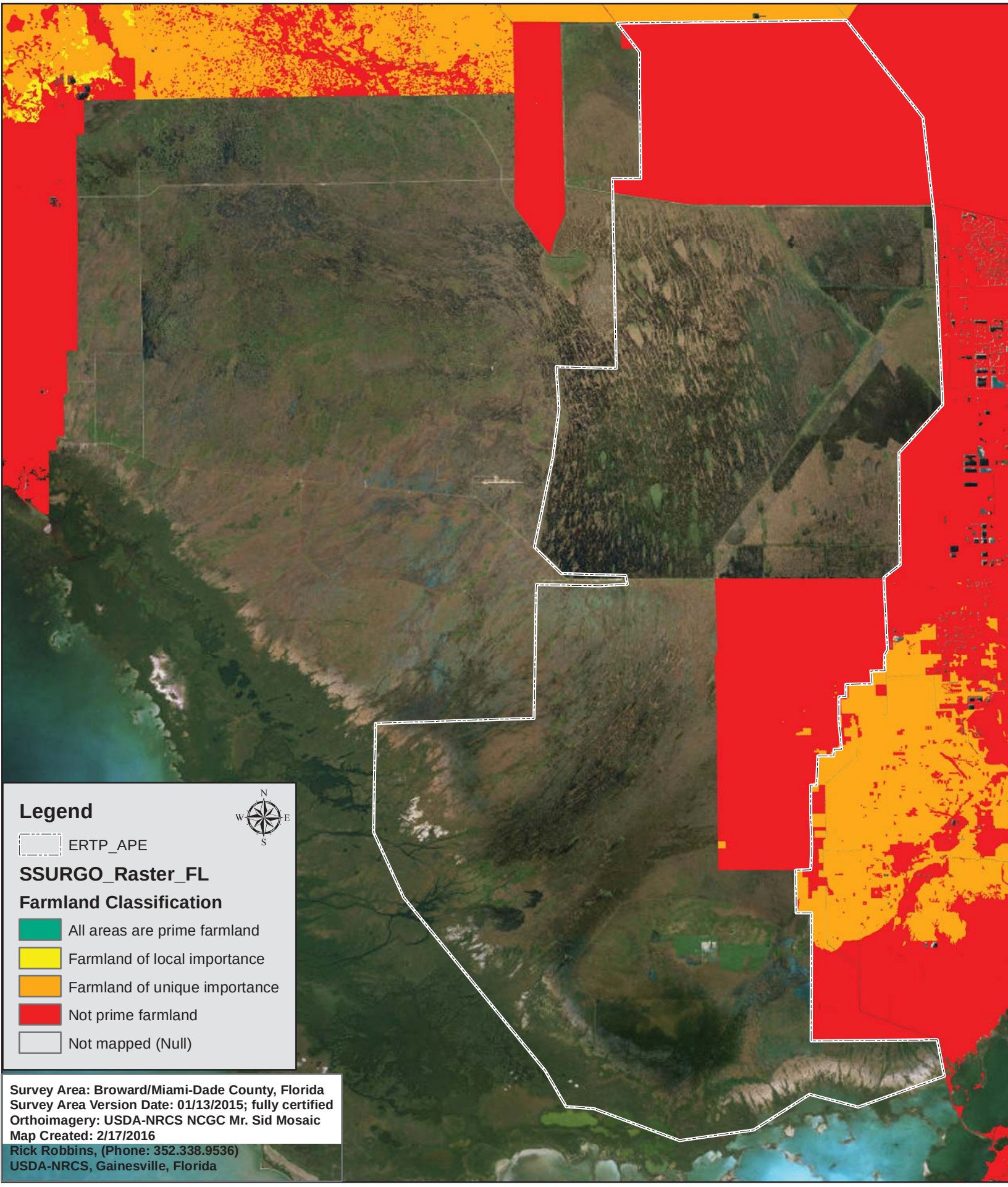
PART III *(To be completed by Federal Agency)*	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0.0	0.0	0.0	0.0
B. Total Acres To Be Converted Indirectly	0.0	0.0	0.0	0.0
C. Total Acres In Site	0.0	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	41.7			
B. Total Acres Statewide And Local Important Farmland	0.0			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.00000			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value				
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	30.1			

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

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

Reason For Selection:

Rehydration of Everglades Project: Broward/Miami-Dade



USDA NRCS
Natural Resources Conservation Service

Miccosukee Tribe of Indians
of Florida

February 12, 2016

Jennifer Reynolds, Lieutenant Colonel
U.S. Army Corps of Engineers
1400 Centrepark Blvd., Suite #750
West Palm Beach, FL 33401-7402

Lieutenant Colonel Reynolds:

The Miccosukee Tribe of Indians of Florida has been advised of the dire situation high water levels have created within the Greater Everglades and in Water Conservation Area-3A (WCA-3A). Based on the information provided through the pre-decisional consultation process, US ACE should immediately begin maximizing the release of water from WCA-3A through the proposed emergency action to raise water levels in the L-29 Canal and continue exploring all possible alternatives to maximize the release of water from the conservation areas and minimize the ecological and cultural impacts.

A full analysis of these actions must be undertaken and reported on in the National Environmental Policy Act (NEPA) supplemental analysis that will be conducted once relief is achieved. The Tribe further requests that the NEPA supplemental analysis includes a full examination of why this flood conditions has occurred and why flooding in WCA-3A continues to impact the Miccosukee homelands.

Respectfully,

James M. Erskine
Acting Water Resources Director

P.O. Box 440021, Tamiami Station, Miami, Florida 33144, (305) 223-8380, fax (305) 223-1011
Constitution Approved by the Secretary of the Interior, January 11, 1962

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

FEB 19 2016

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

Dear Mr. Williams:

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Supplemental Environmental Assessment (EA) for a Temporary Emergency Deviation to Alleviate High Water Levels in Water Conservation Area 3A (WCA 3A). An EA to support the emergency deviation was conducted on February 12th, 2016 with completion of a Finding of No significant Impact. The objective of the Supplemental EA is to provide further documentation of the potential environmental effects resulting from the alternatives considered and the action taken.

Due to the very strong El Nino this dry season, WCA 3A has experienced unseasonably high water levels. In addition, the operational limitations of the current approved Water Control Plan severely limits releases at the southern boundary of WCA 3A for the protection of the Cape Sable Seaside Sparrow. Therefore, the Jacksonville District initiated a temporary deviation for 90 days to increase the operational trigger level in the L-29 Borrow Canal from an elevation of 7.5 feet to 8.5 feet, National Geodetic Vertical Datum 1929, between structure S-333 and S-334 and other necessary changes to the Central and Southern Florida Project operations that are required to support this change. These operational changes will allow for the full discharge capacity through S-333 helping to mediate the high water in WCA 3A. The other operational changes will mediate any concern with increased seepage from Everglades National Park (ENP) into the South Dade Conveyance System.

The water management operating criteria relating to the action affects an area within the Central & Southern Florida Project located in south Florida and includes WCA 3, ENP, and adjacent areas. Features of the action are located in Broward and Miami-Dade Counties (**Figure 1**).

The U.S. Fish and Wildlife Service (USFWS) was contacted on February 11th 2016 for notification and to solicit comments regarding the action. The USFWS indicated support for the effort indicating that staff will support the expeditious consultation and conclusion of Section 7 responsibilities under the Endangered Species Act (ESA). Pursuant to the ESA, as amended, the Corps is requesting written confirmation of species or their critical habitat either listed or proposed for listing that may be present within the referenced project area upon receipt of this letter. The Corps has tentatively determined that the following list of threatened and endangered species may be present within the project area as illustrated in Tables 1 and 2.

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

Sincerely,

Jason Spinning
Chief, Environmental Branch

Enclosure

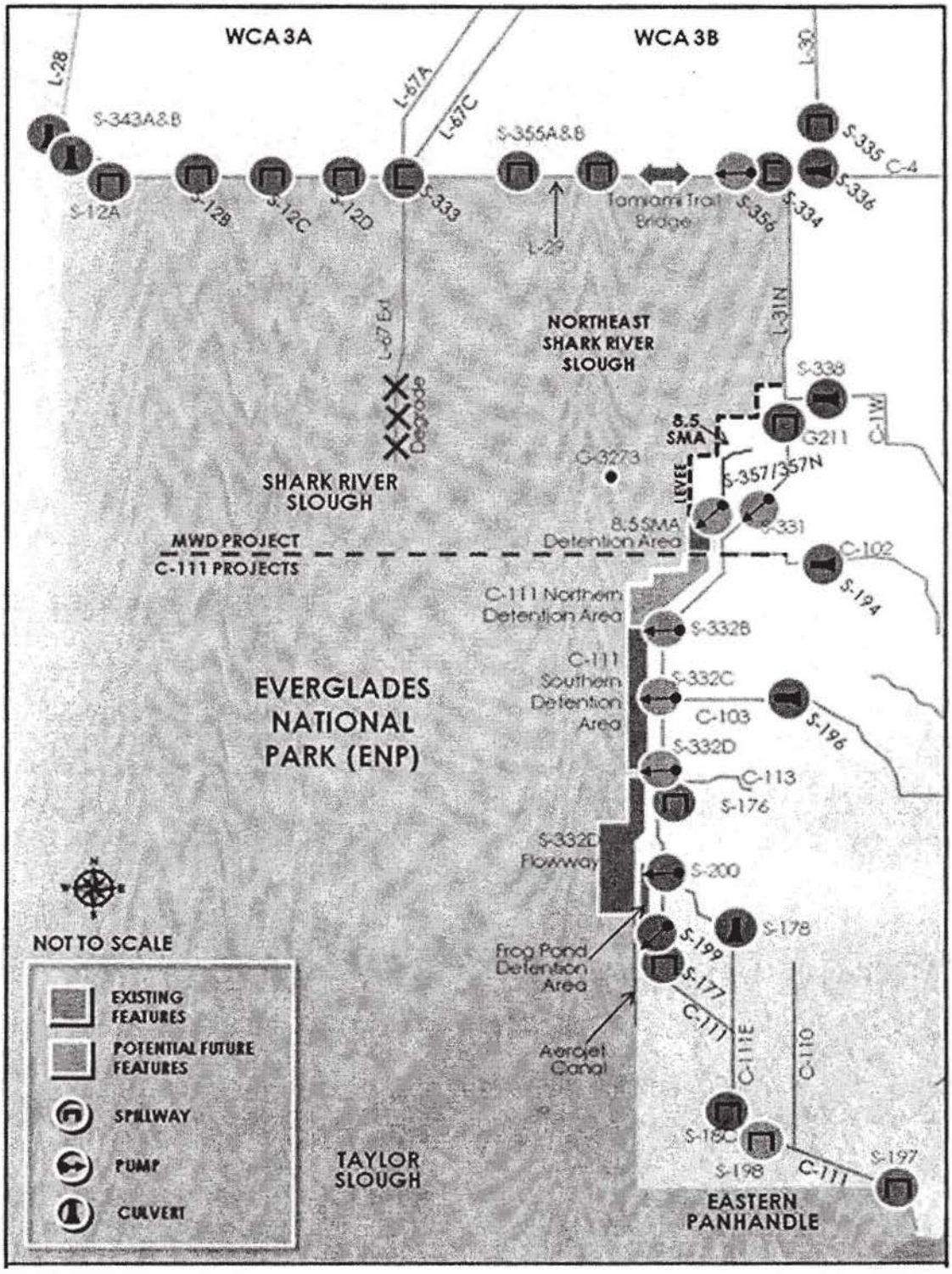


Figure 1. Project Area

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

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

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

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

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

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

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE
AH-TAH-THI-KI MUSEUM

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

February 22, 2016

Ms. Meredith Moreno
Archaeologist
Planning Division, Environmental Branch
U.S. Army Corps of Engineers - Jacksonville District
701 San Marco Boulevard
Jacksonville, Florida 32207-8175
Phone: (904) 232-1577
Email: meredith.a.moreno@usace.army.mil

Subject: Emergency Deviation from Water Control Plan
THPO#: 0029082

Dear Ms. Moreno:

Thank you for consulting with the Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) regarding the U.S. Army Corps of Engineers' proposed emergency deviation from the current operating constraint of the L-29 Canal to alleviate high water levels in Water Conservation Area 3A. While we appreciate the necessity of these emergency measures, we are unable to provide comments on the Corps' determination of effect at this time due to the limited review period and lack of a comprehensive assessment of cultural resources within the affected area. Thank you and we look forward to continued consultation throughout this emergency situation.

Respectfully,

Paul N. Backhouse, PhD., RPA
Ah-Tah-Thi-Ki Museum Director and Tribal Historic Preservation Officer

cc: Danny Tommie, Seminole Tribe of Florida
Jim Shore, Seminole Tribe of Florida
Anne Mullins, Seminole Tribe of Florida

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE
AH-TAH-THI-KI MUSEUM

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
AH-TAH-THI-KI MUSEUM

30290 JOSIE BILLIE HWY
PMB 1004
CLEWISTON, FL 33440

PHONE: (863) 983-6549
FAX: (863) 902-1117

Bradley Mueller, Seminole Tribe of Florida
Kim Taplin, U.S. Army Corps of Engineers - Jacksonville District

United States Department of the Interior

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

February 24, 2016

Jason Spinning
Acting Chief, Environmental Branch
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232

Service Federal Activity Code: 41420-2016-TA-0206
Date Received: February 22, 2016
Project: WCA-3A Temporary Emergency Deviation
County: Miami-Dade

Dear Mr. Spinning:

The U.S. Fish and Wildlife Service (Service) has reviewed the U.S. Army Corps of Engineers' (Corps) letter received on February 22, 2016, requesting confirmation of federally-listed species and their designated critical habitat and candidate species for listing that may be present within the action area of the Temporary Emergency Deviation to help alleviate high water levels in Water Conservation Area 3A (WCA 3A). The Service and Corps have previously consulted on similar actions affecting the same species, however, several changes have occurred since. The 'species list' is a National Environmental Policy Act (42 U.S. Code (U.S.C) § 4321) requirement for the environmental analysis. This species list is also provided in accordance with the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*). The project area lies within Broward and Miami-Dade Counties.

Project Description

Due to the very strong El Nino this dry season, WCA 3A has experienced unseasonably high water levels. Therefore, the Jacksonville District initiated a temporary deviation for 90 days to increase the operational trigger level in the L-29 Borrow Canal from an elevation of 7.5 feet to 8.5 feet, National Geodetic Vertical Datum 1929, between structure S-333 and S-334 and other necessary changes to the Central and Southern Florida Project (C&SF) operations that are required to support this change. These operational changes will allow for the full discharge capacity through S-333 helping to mediate the high water in WCA 3A. The other operational changes will mediate any concern with increased seepage from Everglades National Park (ENP) into the South Dade Conveyance System.

The Corps is preparing a Supplemental Environmental Assessment (EA) to evaluate the effects of the Temporary Emergency Deviation. This EA is expected to be complete by the end of February and the Service will review it and provide our concurrence if appropriate. The water

management operating criteria relating to the action affects an area within the C&SF Project located in south Florida and includes WCA 3, ENP, and adjacent areas. Features of the action are located in Broward and Miami-Dade Counties.

Threatened and Endangered Species

Several changes were made to the species list including the addition of some species and the status of several of the Candidate species and their critical habitat were updated (Table 1). A few small changes were also made to the State-listed species table (Table 2). Please incorporate the following updated Tables 1 and 2 into your EA and any future correspondence.

The complete species list provided in this correspondence concludes the statutory requirements set forth in 50 CFR §402.12(d) of the Act. As you are aware, verification of current accuracy of the species list is for a time period not to exceed 90 days as stated in 50 CFR §402.12(e) of the Act. The Service looks forward to reviewing the Supplemental EA regarding this action and will respond accordingly.

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

Sincerely yours,

Miles A. Meyer

for Donald (Bob) Progulske
Everglades Program Supervisor
South Florida Ecological Services Office

cc: electronic only
Corps, Jacksonville, Florida (Melissa Nasuti)

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

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

Crenulate lead plant	*Amorpha crenulata*	E
Deltoid spurge	*Chamaesyce deltoidea* spp. *deltoidea*	E
Garber's spurge	*Chamaesyce garberi*	T
Johnson's seagrass*	*Halophila johnsonii*	E, CH
Okeechobee gourd	*Cucurbita okeechobeensis* ssp. *okeechobeenis*	E
Small's milkpea	*Galactia smallii*	E
Tiny polygala	*Polygala smallii*	E
Big pine partridge pea	*Chamaecrista lineata keyensis*	Pr E
Blodgett's silverbush	*Argythamnia blodgettii*	Pr T
Cape Sable thoroughwort	*Chromolaena frustrata*	E, CH
Carter's small-flowered flax	*Linum carteri* var. *carteri*	E, CH
Everglades bully	*Sideroxylon reclinatum* spp. *austrofloridense*	C
Florida brickell-bush	*Brickellia mosieri*	E, CH
Florida bristle fern	*Trichomanes punctatum* spp. *floridanum*	E
Florida pineland crabgrass	*Digitaria pauciflora*	C
Florida prairie-clover	*Dalea carthagenensis floridana*	C
Florida semaphore cactus	*Consolea corallicola*	E, CH
Pineland sandmat	*Chamaesyce deltoidea pinetorum*	C
Sand flax	*Linum arenicola*	Pr E

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

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

Common Name	Scientific Name	Status
Mammals		
Everglades mink	*Mustela vison evergladensis*	T
Florida mouse	*Podomys floridanus*	SC
Birds		
Snowy plover	*Charadrius nivosus*	T
American oystercatcher	*Haematopus palliates*	SC
Brown pelican	*Pelecanus occidentalis*	SC
Black skimmer	*Rynchops niger*	SC
Least tern	*Sterna antillarium*	T
White-crowned pigeon	*Patagioenas leucocephala*	T
Least tern	*Sterna antillarum*	T
Limpkin	*Aramus guarauna*	SC
Little blue heron	*Egretta caerulea*	SC
Tricolored heron	*Egretta tricolor*	SC
Snowy egret	*Egretta thula*	SC
Reddish egret	*Egretta rufescens*	SC
White ibis	*Eudocimus albus*	SC
Roseate spoonbill	*Platalea ajaja*	T
Fish		
Mangrove rivulus	*Rivulus marmoratus*	SC
Invertebrates		
Florida tree snail	*Liguus fasciatus*	SC
Plants		
Pine-pink orchid	*Bletia purpurea*	T
Lattace vein fern	*Thelypteris reticulate*	E
Eatons spikemoss	*Selaginella eatonii*	E
Wright's flowering fern	*Anemia wrightii*	E
Tropical fern	*Schizaea pennula*	E
Mexican vanilla	*Manilla mexicana*	E

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

MAR 0 1 2016

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 (ESA), as amended, the U.S. Army Corps of Engineers (Corps) is hereby initiating consultation with the U.S. Fish and Wildlife Service (USFWS) for a Temporary Emergency Deviation to Alleviate High Water Levels in Water Conservation Area 3A (WCA 3A). An Environmental Assessment (EA) to support the emergency deviation was conducted on February 12, 2016 with completion of a Finding of No significant Impact. The objective of the Supplemental EA is to provide further documentation of the potential environmental effects resulting from the alternatives considered and the action taken.

Due to the very strong El Nino this dry season, WCA 3A has experienced unseasonably high water levels. In addition, the operational limitations of the current approved Water Control Plan severely limits releases at the southern boundary of WCA 3A. Therefore, the Corps initiated a temporary deviation for 90 days to increase the operational trigger level in the L-29 Borrow Canal from an elevation of 7.5 feet to 8.5 feet, National Geodetic Vertical Datum 1929, between structure S-333 and S-334 and other necessary changes to the Central and Southern Florida Project operations that are required to support this change. These operational changes will allow for the full discharge capacity through S-333 helping to mediate the high water in WCA 3A. The other operational changes will mediate any concern with increased seepage from Everglades National Park into the South Dade Conveyance System.

Pursuant to the ESA, the Corps has determined that the proposed action will have the following effects on federally listed species and critical habitat as illustrated in Table 1. We request your concurrence with our determinations pursuant to the ESA within 30 days of this letter.

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

Sincerely,

Jason Spinning
Acting Chief, Environmental Branch

Enclosure

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND EFFECTS DETERMINATION OF THE FEDERAL 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
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	T			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E			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. *okeechobeenis*	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. *floridanum*	E			X
Florida pineland crabgrass	*Digitaria pauciflora*	C			X
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C			X
Florida semaphore cactus	*Consolea corallicola*	E, CH			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; Candidate Species, Pr E = Proposed Endangered, Pr T = Proposed Threatened, Pr CH = Proposed Critical Habitat

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

** No effect to Critical Habitat as designations are outside project area.

TEMPORARY EMERGENCY DEVIATION TO ALLEVIATE HIGH WATER LEVELS IN WATER CONSERVATION AREA 3A

COMPLETE INITIATION PACKAGE

U.S. FISH AND WILDLIFE SERVICE

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TABLE OF CONTENTS

APPENDICES

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1.0 PROJECT AUTHORITY

The Central & Southern (C&SF) Florida Project was initially authorized by the Flood control Act of 1948, Public Law 80-858, approved June 30, 1948. The remaining works of the Comprehensive Plan were authorized by the Flood Control Act of 1954, Public Law 83-780, approved September 3, 1954.

2.0 LOCATION

The water management operating criteria relating to the Federal Action affects an area within the C&SF Project located in south Florida and includes Water Conservation Area 3 (WCA 3), Everglades National Park (ENP) and adjacent areas. Features of the Federal Action are located in Broward and Miami-Dade Counties (**FIGURE 1**).

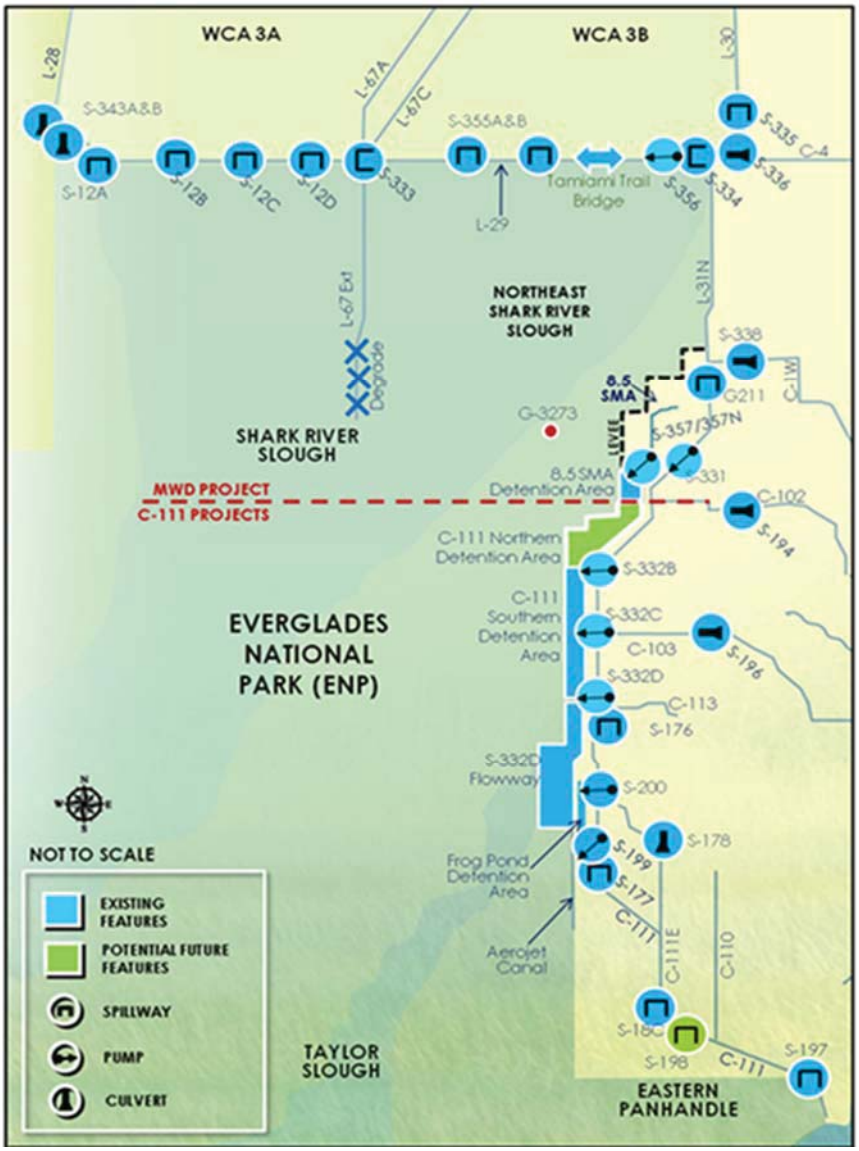

FIGURE 1. PROJECT LOCATION

3.0 PROJECT NEED OR OPPORTUNITY

The C&SF Project currently functions and was originally authorized to function as a multi-purpose water management system. The Congressionally-authorized purposes of the C&SF Project include flood control, agricultural irrigation, municipal and industrial water supply, preservation of fish and wildlife, water supply to ENP, preservation of ENP, prevention of saltwater intrusion, drainage and water control, groundwater recharge, recreation and navigation. Operations in the project area are currently governed by Increment 1 (G-3273 Constraint Relaxation/S-356 Federal Action and S-357N Operational Strategy [USACE 2015]) which is a deviation to the 2012 WCAs, ENP and the ENP to South Dade Conveyance System (SDCS) Water Control Plan (USACE 2012).

The highest rainfall on record has occurred within the South Florida Ecosystem during the month of January 2016 causing severe impacts to natural resources. All areas of South Florida are inundated with water, restricting the ability to safely move water to alleviate the effects of flooding. Immediate action is necessary to deviate from permitted water management practices to move flood water out of WCA 3A. The U.S. Army Corps of Engineers, Jacksonville District (Corps), initiated a temporary emergency deviation from the approved water control plan for purposes of alleviating high water conditions within the project area on 15 February 15 2016. There is an immediate threat and impact to valuable natural resources that underpin local economies. National Environmental Policy Act (NEPA) documentation to support the temporary emergency deviation was concluded on 12 February 2016 with completion of an emergency Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). The objective of the Supplemental EA and proposed FONSI is to provide further documentation of the potential environmental effects resulting from the alternatives considered and the action taken.

4.0 FEDERAL ACTION

The Federal Action will increase the operational trigger level in the L-29 Borrow Canal to elevation 8.5 feet, NGVD between structure S-333 and S-334 and include other necessary changes to C&SF Project operations that are required to support this change. To the extent that the raised L-29 Canal stage limit allows, S-333 discharges will be sent to Northeast Shark River Slough (NESRS). S-334 will only be used to the extent that is required to maintain the L-29 Canal stage below the temporary stage limit of 8.5 feet NGVD, while operating S-333 within its limits (maximum of 1,350 cfs). It is expected that if the L-29 stage limit is raised to 8.5 feet NGVD that initially there will be sufficient capacity for most if not all of S-333's full capacity. If the L-29 stage is below the raised L-29 stage limit with S-333 discharging at its' full capacity (1,350 cfs), the Corps may use S-356 to reduce the flow south and control the L-31N stage north of G-211. If the L-29 Canal stage peaks well below the 8.5 feet NGVD limit, with S-333 discharging at the maximum rate, water from WCA 3A could be delivered through the manual route of S-151, S-337, and S-356, as long as the pumping rate at S-356 exceeds the discharge rate at S-335. To provide some high water relief for WCA 3A, the S-152 structure will also be used to release water from WCA 3A into WCA 3B to the extent that the Trigger Stage (measured at Site 71) of 8.5 feet NGVD allows. Reference **Appendix A** for a complete description.

5.0 EFFECT DETERMINATIONS TO FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

Effects determinations for federally threatened and endangered species within the project area are listed within **TABLE 1**. These determinations are based on the short duration of the temporary emergency deviation and the generally beneficial nature of this action.

A regional-scale hydrologic sensitivity analysis has been performed by the South Florida Water Management District (SFWMD) to estimate the potential system response to the Federal Action. The position analysis uses the South Florida Water Management Model (SFWMM) to simulate 41 (1965-2005) one year simulations of the systems response to historic rainfall conditions. Each year of the simulation is initialized with observed antecedent hydrologic conditions, in this case January /February of 2016. The position analysis examined 7 El Nino years (1965-1966, 1972-1973, 1982-1983, 1987-1988, 1994-1995, 1997-1998, and 2002-2003) from the 41 one water year simulations since these years have the increased likelihood of occurring in 2015 and 2016. Analysis of the results are limited to the period from February to May, with emphasis on the relatively short duration (90 days or less) of the Federal Action. Refer to the following website for modeling assumptions and results: ftp://ftp.sfwmd.gov/pub/fkhatun/HighWater_Modeling/. Results from the position analysis were used to support the effects determinations within **TABLE 1** and are referenced in **Section 5.0**. Please note, when reviewing the results at the above mentioned website, the position analysis evaluated four alternatives, including the No Action Alternative, labeled as "BASE". The Federal Action is best represented as sensitivity simulation three or "SENS 3". **FIGURE 2** depicts the representative gages used in the position analysis and referenced in **Section 5.0**. Results from the position analysis will be summarized in the Supplemental EA and Proposed FONSI.

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND EFFECTS DETERMINATION OF THE FEDERAL 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
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	T			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E			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. *okeechobeenis*	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, CH			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; Candidate Species, Pr E = Proposed Endangered, Pr T = Proposed Threatened, Pr CH = Proposed Critical Habitat

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

** No effect to Critical Habitat as designations are outside project area.

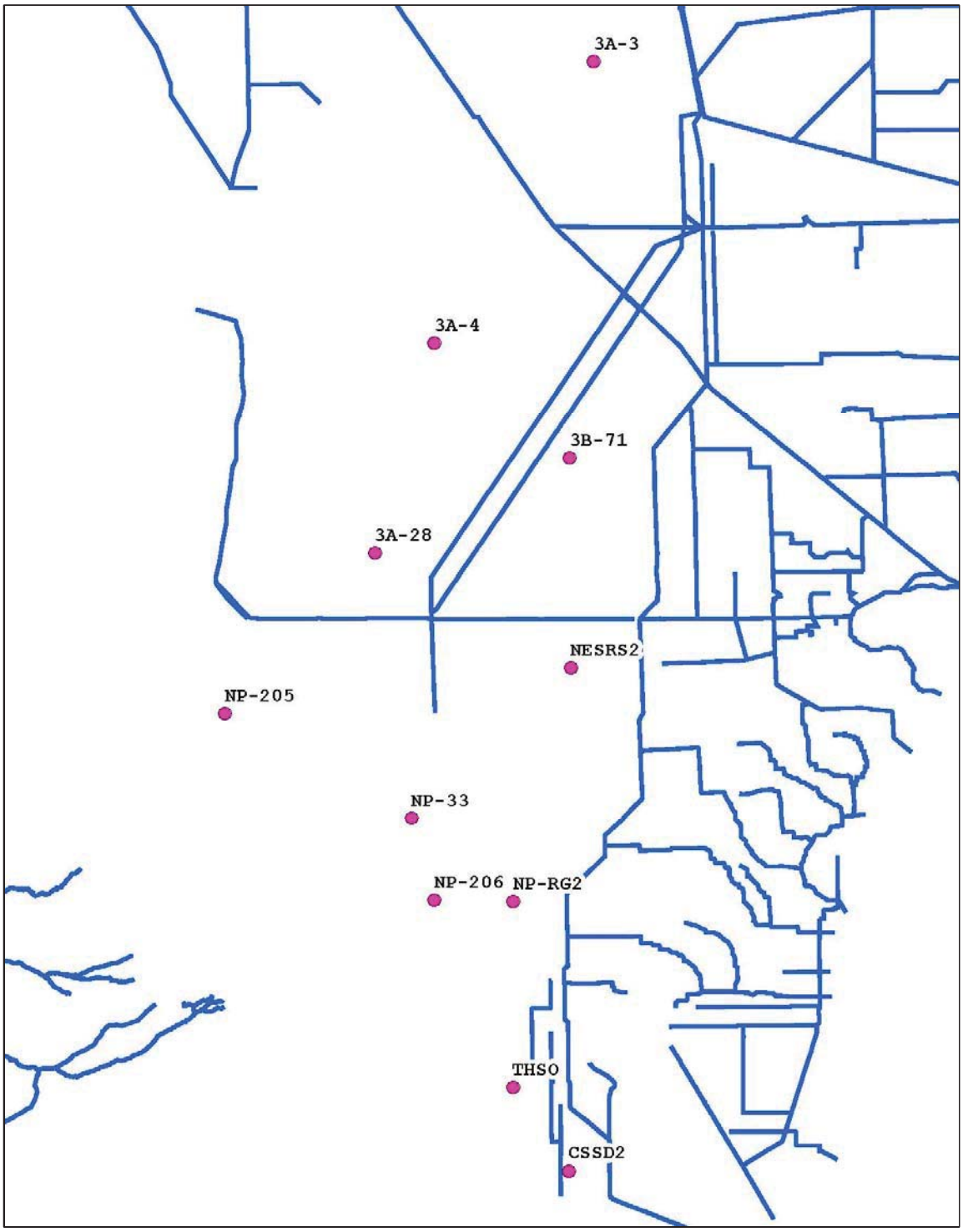

FIGURE 2. MAP OF REPRESENTATIVE GAGES USED IN POSITION ANALYSIS FOR WCA 3 AND ENP

5.1 Florida Panther and "No Effect Determination"

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

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

The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered to NESRS. A regional-scale hydrologic sensitivity analysis has been performed by the South Florida Water Management District (SFWMD) to estimate the potential system response to the Federal Action. Analysis of the results is limited to the period from February to May. Water level decreases within WCA 3A ranging from ~ 0.2 feet up to ~0.5 feet (as measured by the 3-gage average (Sites 63, 64, 65)) is projected with implementation of the Federal Action. S-333 is expected to be utilized to its full capacity (1350 cfs) for the majority of the dry season during the temporary emergency deviation. S-152 is not expected to be utilized to its full capacity (700 cfs) and will be used in conjunction with S-151 to release water from WCA 3A into WCA 3B, to the extent that the trigger stage (measured at Site 71 of 8.5 feet NGVD) allows. An approximate decrease in water levels of 1 to 5 inches at Site 71 in WCA 3B is projected from mid-March through mid-May (**FIGURE 2**). Increases in water levels are projected in NESRS, central SRS, and the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Where water levels are anticipated to rise, modeling projected an approximate 3 to 5 inch rise at site NESRS2, up to an approximate 1 inch rise at site NP-33, and an approximate 1 to 3 inch rise at site NP-RG2 (**FIGURE 2**). Lower water levels were projected in northwest ENP at Site NP-205 with a subsequent decrease in S-12 flows (**FIGURE 2**). A significant increase in total flow across Tamiami Trail is projected on the order of up to approximately 20% relative to base conditions. Water level increases are also projected in Taylor Slough. Modeling projected up to an approximate 1 to 5 inch rise at site THSO (**FIGURE 2**).

The temporary emergency deviation is not expected to have any effect on Florida panther or its habitat. Elimination or modification to panther habitat within WCA 3A and ENP is not expected as conversion of upland habitat is not proposed. The Florida panther is a wide-ranging species with the majority of sightings west of the project area. The Corps has determined that there would be no effect on this species from implementation of the Federal Action.

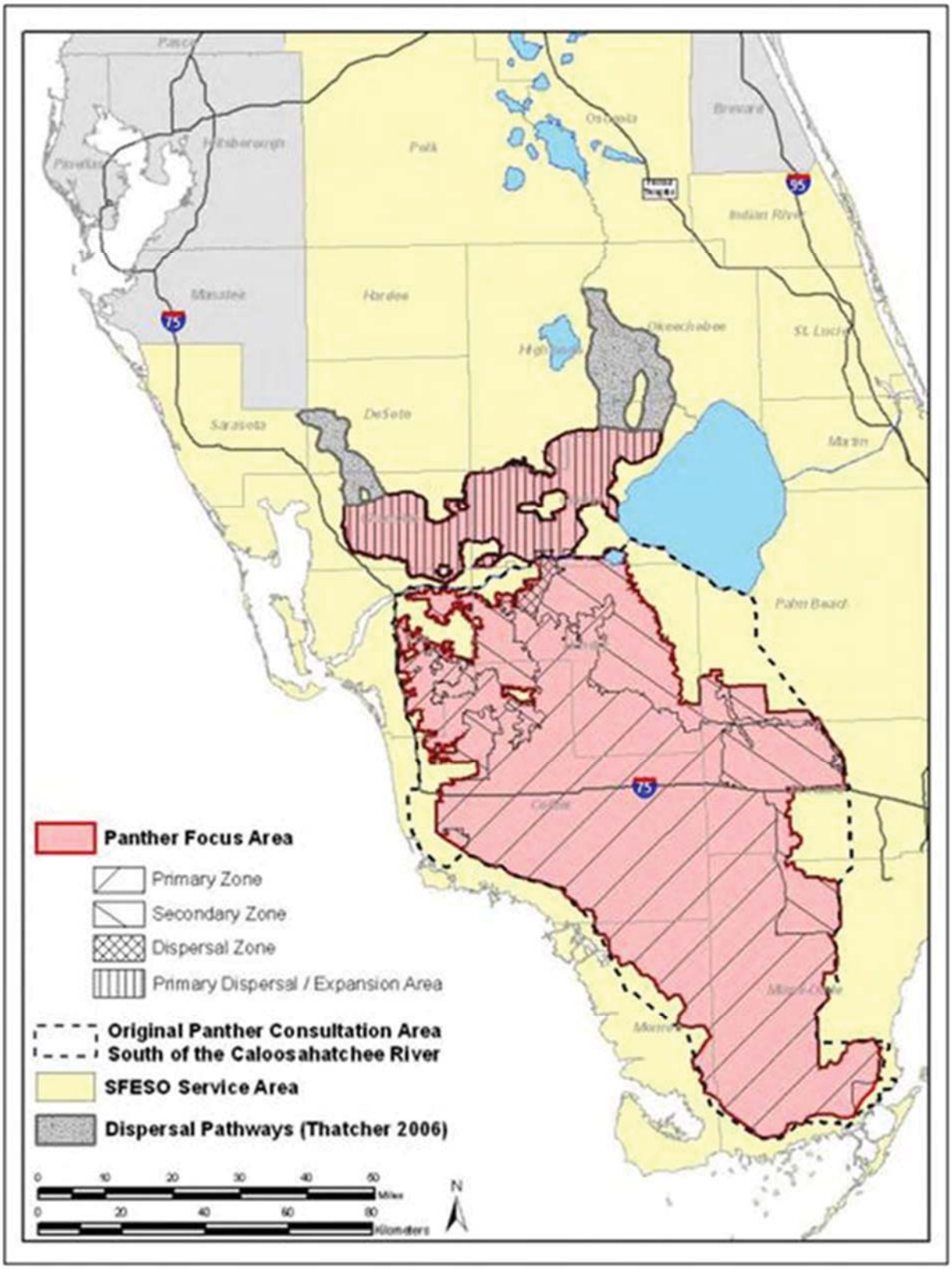

FIGURE 3. FLORIDA PANTHER ZONES IN SOUTH FLORIDA

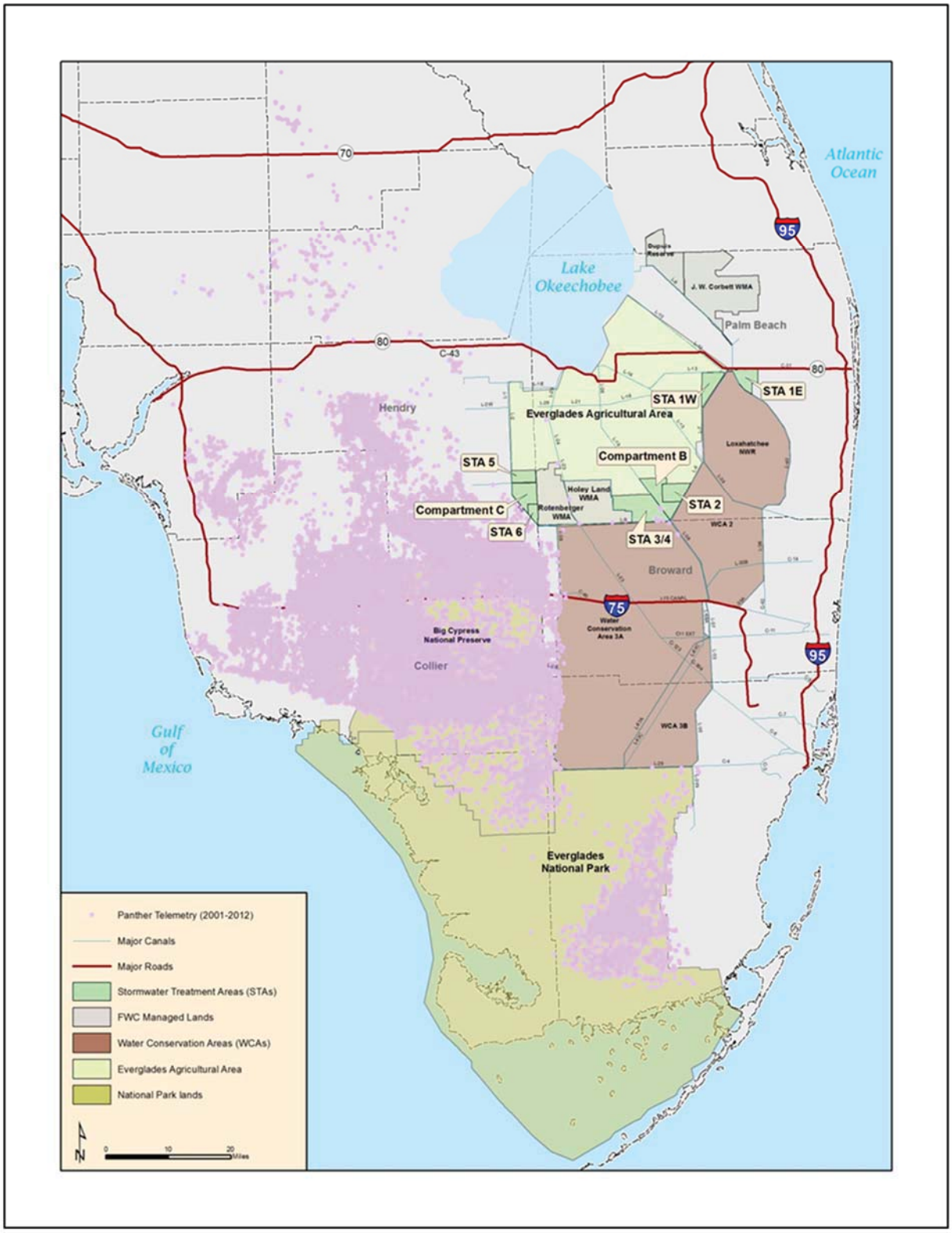

FIGURE 4. FLORIDA PANTHER TELEMETRY INFORMATION FROM 2002 TO 2012

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

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

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

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

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

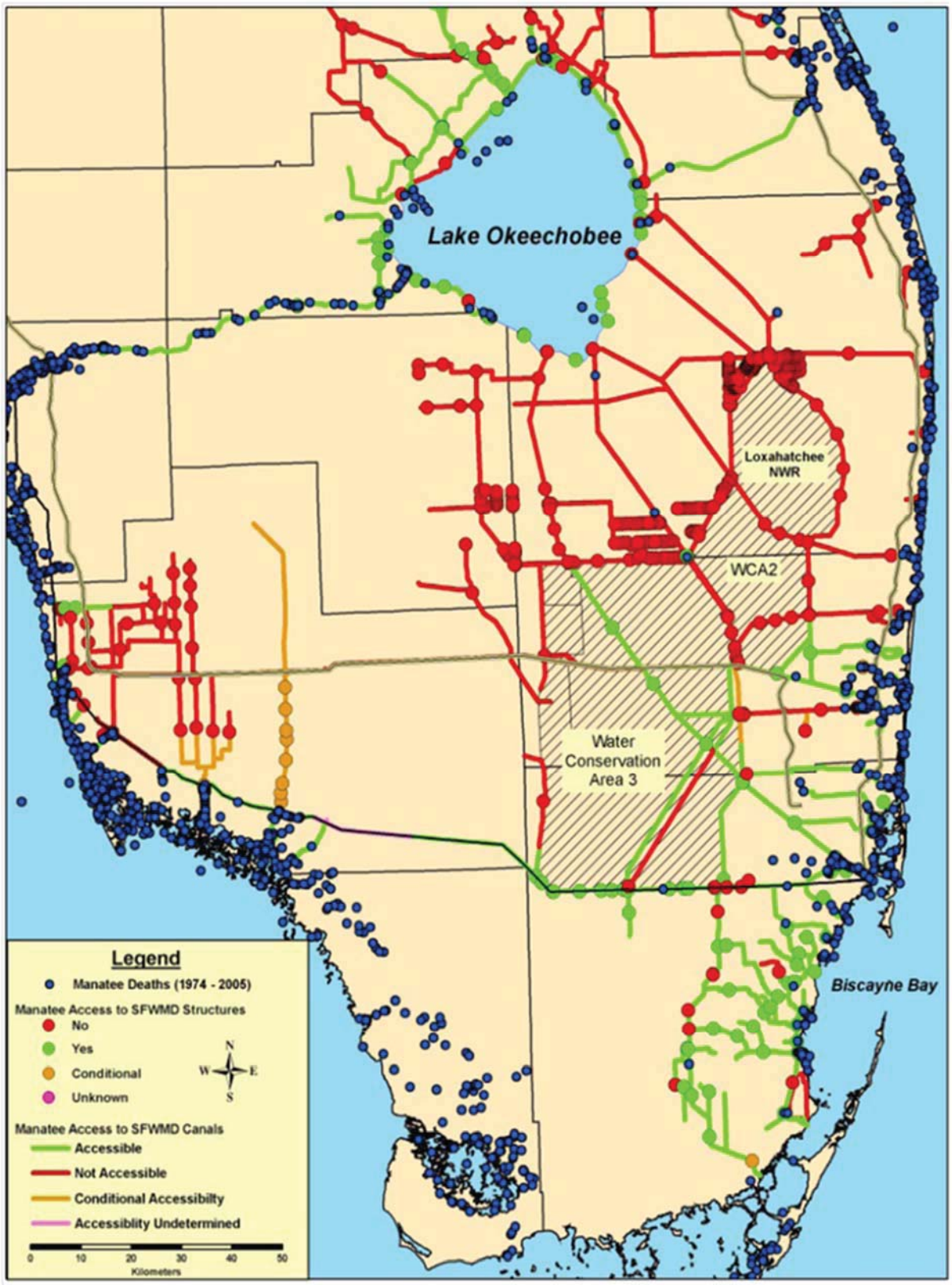

FIGURE 5. CANALS THAT FLORIDA MANATEES HAVE ACCESS TO WITHIN SOUTH FLORIDA

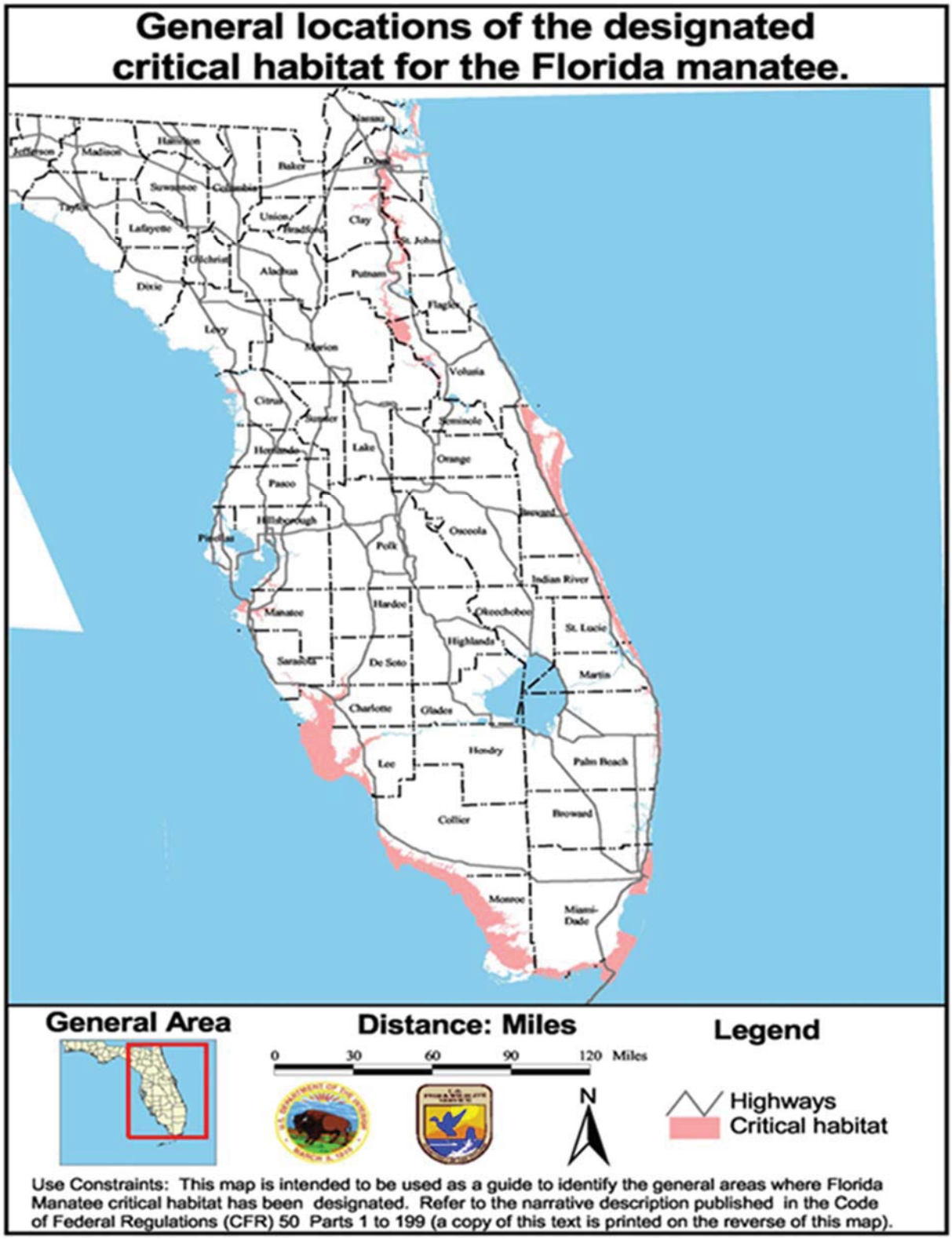

FIGURE 6. FLORIDA MANATEE CRITICAL HABITAT

The S-197 structure provides a gravity outlet for stormwater runoff for the SDCS during flood conditions and acts as a barrier to prevent saltwater intrusion into the freshwater wetlands. Under the Federal Action, modeling projected increased flows at S-18C and S-197 by approximately 31,000 and 4,000 acre feet respectively. S-197 discharges are projected to be relatively small, up to approximately 100 cfs.

Manatee Bay and Barnes Sound are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times relative to northeastern Florida Bay (Marshall 2014). In addition, these areas experience greater tidal flushing relative to northeastern Florida Bay. Potential salinity fluctuations due to implementation of the Federal Action would be temporary and spatially limited to near shore areas. Scouring of bottom sediments and significant increases in turbidity resulting in diminished light penetration through the water column and potential impacts to sea grasses within Manatee Bay and Barnes Sound are not expected. Sea grasses have an optimum salinity range of 24 to 35 practical salinity unit (psu), but can tolerate considerable short-term salinity fluctuations.

Temporary benefits to Florida Bay are anticipated under the Federal Action. Modeling predicted increases in monthly overland flows from southern ENP to Florida Bay at Transects 23B and 23C. Overland flow is predicted to be increased by ~4,000 acre-feet or more during the months of February, March, April and May. Based on the above information and the fact that the temporary emergency deviation will rely upon the Increment 1 monitoring plan (**See Section 6**), the Corps has determined that there would be no effect on the Florida manatee and its designated critical habitat from implementation of the Federal Action. The Corps will monitor existing salinity gages in Joe Bay, Long Sound, Manatee Bay, and Barnes Sound throughout the duration of the Federal Action. In addition, the Corps will continue to implement Periodic Scientists Calls as outlined within the 2011 Everglades Restoration Transition Plan (ERTP) Final EIS and will include assessment of conditions within the southern estuaries.

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

The Florida bonneted bat is Florida's largest bat, weighing approximately 1.1 to 2.0 ounces, with a 19 to 21 inch wingspan, and a body length of 5.1 to 6.5 inches. The species has dark brown fur and large broad ears that join together and slant forward over the eyes. Relatively little is known regarding the ecology and habitat requirements of this species. In general, bats will forage over ponds, streams and wetlands and require roosting habitat for daytime roosting, protection from predators and rearing of young (Marks and Marks 2008). Florida bonneted bats roost in tree cavities, rocky outcrops and dead palm fronds.

In residential communities, the bats roost in Spanish tile roofs, but have also been found in attics, rock or brick chimneys and fireplaces of old buildings (NatureServe 2009). Colonies are small, with the largest reported as just a few dozen individuals. The bat is a nocturnal insectivore and relies upon echolocation to navigate and detect prey. Females give birth to a single pup from June through September (Scott 2004); however limited data suggests that a female may undergo a second birthing season possibly in January or February.

The Florida bonneted bat is Florida's only endemic bat. The range of this species is limited to southern Florida, although this species was encountered in 2008 in two locations within the Kissimmee River Wildlife Management Area north of Lake Okeechobee. The Florida bonneted bat has only been documented in 12 locations within Florida, including Coral Gables, Homestead, Naples, Everglades City, and North Fort Myers. Seven of the locations are under public ownership with the Florida bonneted bat found in discrete and specific areas within Big Cypress National Preserve, Fakahatchee Strand Preserve State Park, Kissimmee River Wildlife Management Area, Babcock Ranch and Fred C. Babcock and Cecil M. Webb Wildlife Management Area. Florida bonneted bats roost in tree cavities, rocky outcrops and dead palm fronds. In residential communities, the bats roost in Spanish tile roofs, but have also been found in attics, rock or brick chimneys and fireplaces of old buildings (NatureServe 2009).

The USFWS has defined consultation areas and focal areas for the Florida bonneted bat in south Florida (**FIGURE 7**). The main action area falls within a defined focal area. At present, no active, natural roost sites are known within the main action area. All active, known roosts are bat houses. Impacts to potential roost sites are not anticipated under the Federal Action. Based on the 2013 Florida Bonneted Bat USFWS Consultation guidelines, the Corps has determined that implementation of the Federal Action may affect, but is not likely to adversely affect, this species.

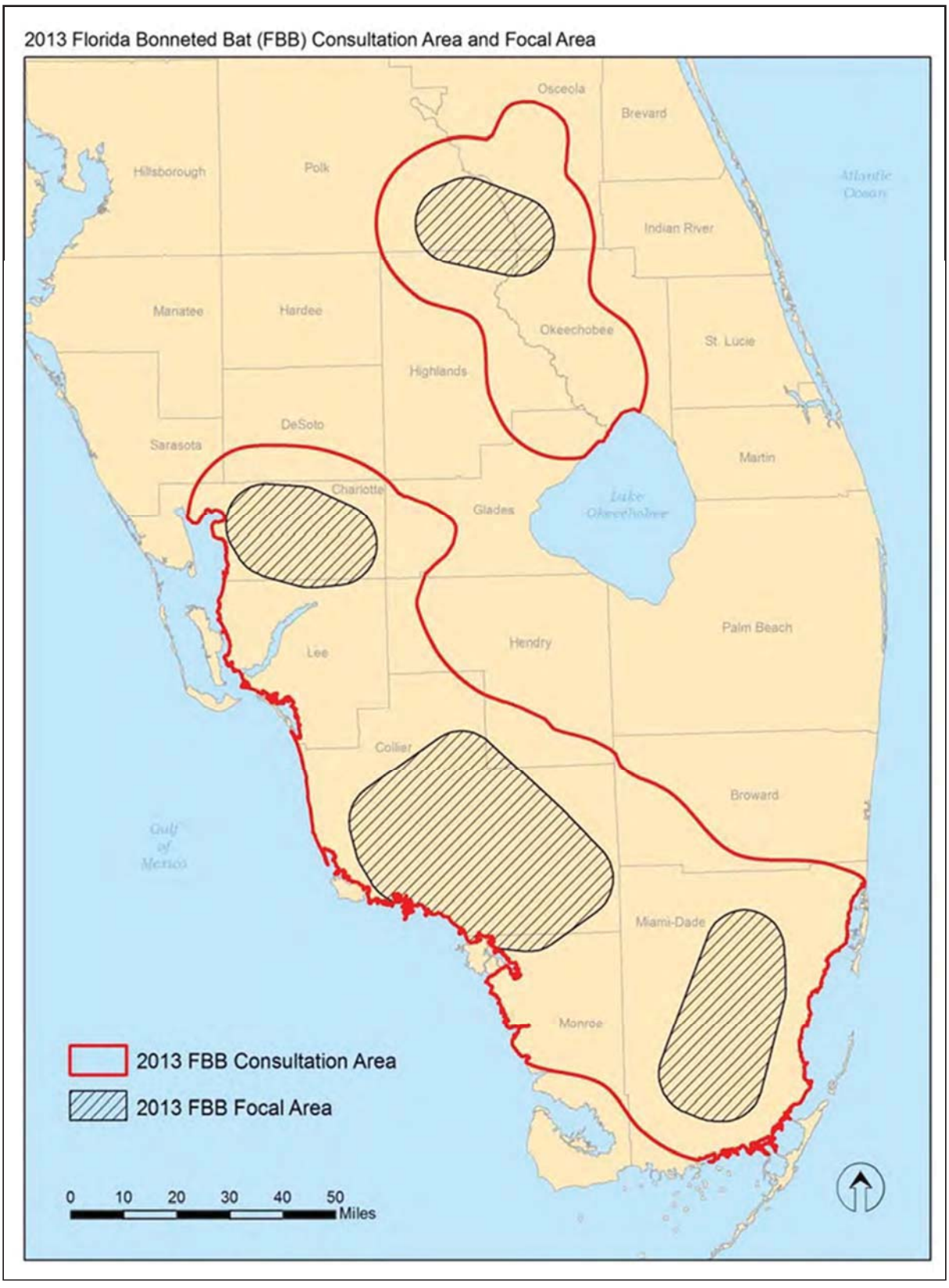

FIGURE 7. FLORIDA BONNETED BAT CONSULTATION AREA

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

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

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

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

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

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

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

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

Presently, the known distribution of the CSSS is restricted to two areas of marl prairies east and west of Shark River Slough in the Everglades region (within ENP and BCNP) and the edge of Taylor Slough in the Southern Glades Wildlife and Environmental Area in Miami-Dade County. ENP staff first undertook a comprehensive survey of the CSSS in 1981 to identify all areas where sparrows were present. This survey, hereafter referred to as the range-wide survey, resulted in the first complete range map for the CSSS (Bass and Kushlan 1982, Kushlan and Bass 1983). From the resulting range map, Curnutt et al. (1998) divided the CSSS into six separate subpopulations, labeled as A through F (**FIGURE 8**) with subpopulation A (CSSS-A) as the only subpopulation west of Shark River Slough (SRS).

Designated critical habitat for the CSSS includes areas of land, water, and airspace in the Taylor Slough vicinity of Collier, Dade, and Monroe counties, with the following components: those portions of ENP within T57S R36E, T57S R36E, T57S R37E, T58S R35E, T58S R36E, T58S R37E, T58S R35E, T58S R36E, T59S R35E, T59S R36E, T59S R37E. Areas outside of ENP

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

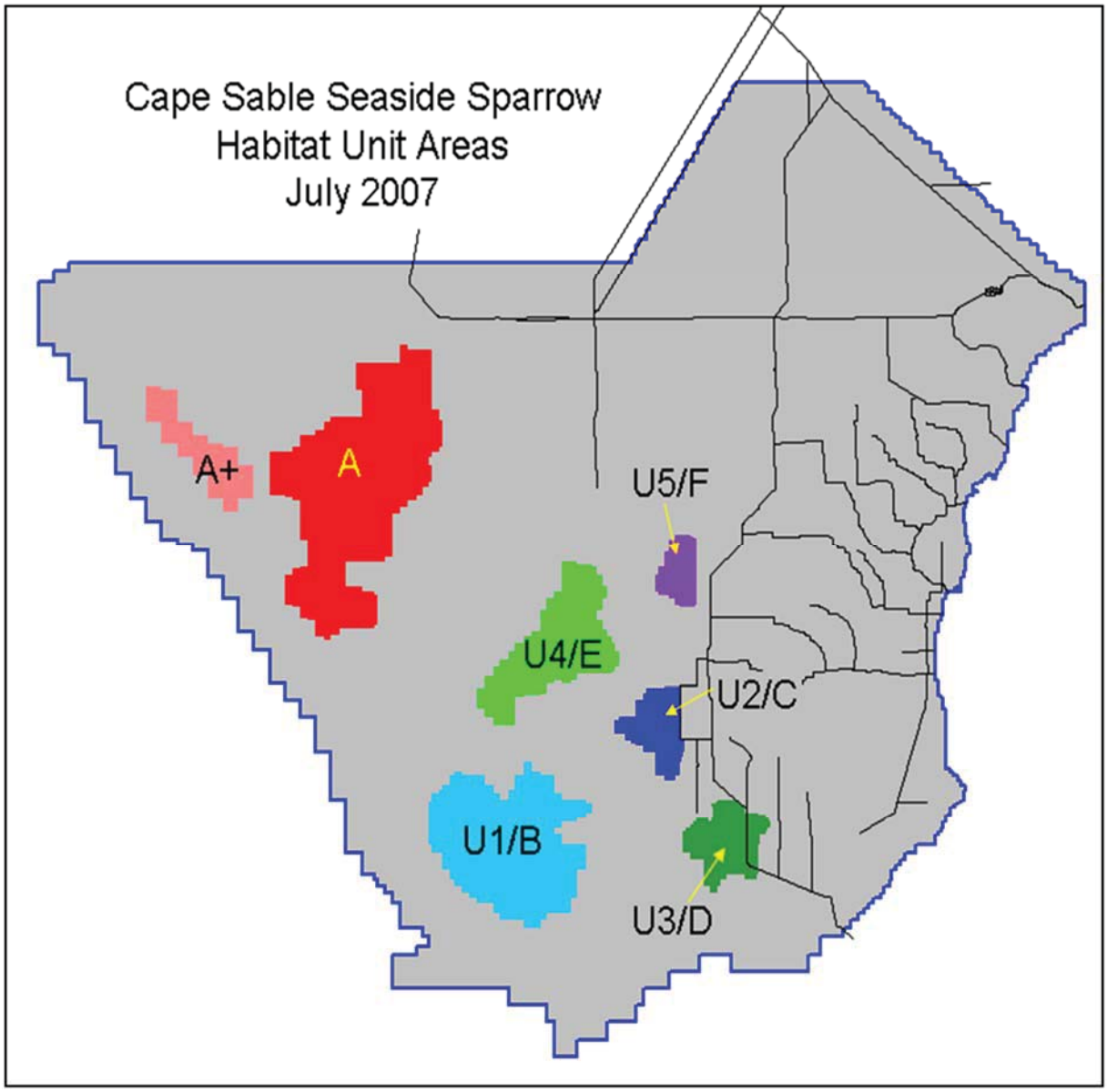

FIGURE 8. CAPE SABLE SEASIDE SPARROW SUBPOPULATIONS (A-F) AND DESIGNATED CRITICAL HABITAT UNITS (U1-U5)

Subpopulation A (CSSS-A) – The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered to NESRS. The Federal Action will increase the operational trigger level in the L-29 Borrow Canal from 7.5 feet NGVD up to an elevation of 8.5

feet NGVD between structure S-333 and S-334. It is important to note that ERTP closure periods on the S-12A, S-12B, S-343A, S-343B and S-344 structures, designed for protection of CSSS-A, remain in place throughout deviation. Modeling conducted by the SFMWD projected slightly lower water levels (approximately 1 to 2 inches) in northwest ENP at Site NP-205 and a subsequent decrease in S-12 flows up to approximately 500 cfs during the period of analysis from February to May (**FIGURE 2**). A significant increase in total flow across Tamiami Trail is projected on the order of up to approximately 20% relative to base conditions. Based upon the temporary nature of the Federal Action, the Corps has concluded that the Federal Action would have little, if any impact, on CSSS-A.

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

Subpopulation C (CSSS-C/Unit 2) – Habitat of varying suitability occurs within Unit 2. Long-hydroperiod marshes occur south of the S-332 pump station, while areas to the north are over drained and prone to frequent fires. The most recent fire occurred in March 2007 when the Frog Pond fire swept through this area. The habitat has yet to fully recover (Sah et al. 2008, Virzi et al. 2009). The variable habitat conditions are thought to be a consequence of the 1980 construction of the S-332 pump station, located at the boundary of ENP and Taylor Slough. Unit 2 holds relatively few CSSS. Recent research has indicated that within Unit 2, CSSS-C is suffering from the ill-effects of small population size including fewer breeding individuals, male-biased sex ratios, lower hatch rates, and lower juvenile return rates (Boulton et al. 2009a, Virzi et al. 2009). Through a reduction of seepage out of ENP, use of the S-332 Detention Areas has lessened the over-drying of potential sparrow habitat within Unit 2 (CSSS-C). Analysis of modeling results during the period from February to May, projected water level increases in the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2, an approximate 1 to 5 inch rise at site THSO, and a 1 to 6 inch increase at site CSS-D2 (**FIGURE 2**). Based upon the temporary nature of the Federal Action, the Corps has concluded that the Federal Action would have little, if any impact, on CSSS-C and is not expected to alter designated critical habitat within Critical Habitat Unit 2.

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

resulting in a sawgrass-dominated community interspersed with patches of muhly grass at higher elevations (Ross et al. 2003).

Federal Action water management operations may result in increased seepage to the L-31N Canal south of the S-331 pump station, prior to the construction and operation of the C-111 South Dade Project North Detention Area. Analysis of modeling results during the period from February to May, projected water level increases in the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2, an approximate 1 to 5 inch rise at site THSO, and a 1 to 6 inch increase at site CSS-D2 (**FIGURE 2**).

Pumping at S-332D may result in more water in the vicinity of Critical Habitat Unit 3. The Federal Action is not expected to alter the status of CSSS-D or its designated critical habitat due to the temporary nature of the action. It is important to the note that ERTP pump limitations on the S-332D structure remain in place throughout this deviation.

Subpopulation E (CSSS-E/Unit 4) - Located along the eastern edge of SRS, Critical Habitat Unit 4 encompasses approximately 66 km^2. The Rocky Glades separate Unit 4 and CSSS-E from the other eastern subpopulations. Unit 4 holds the second greatest number of sparrows among all subpopulations. This unit is expected to be affected by an altered hydroperiod that is too long to support marl prairie habitat requirements. Due to its location, Unit 4 is relatively well protected from the managed water releases that occur under current C&SF Project operation. Therefore, the Federal Action is not expected to alter the status of CSSS-E or its designated critical habitat due to the temporary nature of the action.

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

Increased water in NESRS or within the C-111 South Dade Project Area may potentially affect CSSS habitat by increasing hydroperiod. Since 1999, through deviations, IOP and ERTP, USFWS has always maintained that moving water to the east through the historical flow path into NESRS was the solution to improve nesting and habitat conditions for CSSS. The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered to NESRS. Implementation of the Federal Action is not expected to alter the physical and biological features essential to the nesting success and overall conservation of the subspecies due to the temporary nature of the action. In order to protect CSSS, structural closings implemented under 2006 IOP and preserved under 2012 ERTP will be retained under the Federal Action.

The action related hydrologic changes are expected to be temporary. Increased S-333 discharges are expected to be of a relatively short duration (90-days from date of implementation). There will be a meaningful (e.g. 60 day) recovery period once the L-29 constraint is returned to 7.5 feet NGVD, during which the water level would recede to stages typical of the recent hydrological conditions and the operational criteria under the current Water Control Plan, (Increment 1).

All regulatory monitoring requirements included in the 2009 C-111 Western Spreader Canal Project BO and 2010 ERTP BO will continue as mandated within those opinions. Under the Federal Action, S-199 will be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 3; stage at EVER4 below 2.36 feet NGVD. S-200 will also be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 3; stage at R3110 below 4.95 feet NGVD. The Corps will continue to rely upon the Increment 1 monitoring plan which includes a comparison of flows through the S-12 structures, and will continue to implement Periodic Scientist Calls as outlined within the 2011 ERTP Final EIS. The Corps has determined that the implementation of the Federal Action may affect, but is not likely to adversely affect, this subspecies.

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

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

Everglade snail kite habitat consists of freshwater marshes and the shallow vegetated edges of lakes where the apple snail (*Pomacea paludosa*), the Everglade snail kite's main food source, can be found. Snail kite populations in Florida are highly nomadic and mobile; tracking favorable hydrologic conditions and food supplies, and thus avoiding local droughts. Snail kites move widely throughout the primary wetlands of the central and southern portions of Florida. Snail kite nesting locations between 2001 and 2012 within south Florida are depicted in **FIGURE 9.** The Everglades snail kite is threatened primarily by habitat loss and destruction. Widespread drainage has permanently lowered the water table in some areas. This drainage permitted development in areas that were once Everglade snail kite habitat. In addition to loss of habitat through drainage, large areas of marsh are heavily infested with water hyacinth, which inhibits the Everglade snail kite's ability to see its prey.

The Everglade snail kite has a highly specialized diet typically composed of apple snails, which are found in palustrine, emergent, long-hydroperiod wetlands. As a result, the Everglade snail kite's survival is directly dependent on the hydrology and water quality of its habitat (USFWS 1999). Snail kites require foraging areas that are relatively clear and open in order to visually search for apple snails. Suitable foraging habitat for the Everglade snail kite is typically a

combination of low profile marsh and a mix of shallow open water. Shallow wetlands with emergent vegetation such as spike rush (*Eleocharis* spp.), maidencane, sawgrass, and other native emergent wetland plant species provide good Everglade snail kite foraging habitat as long as the vegetation is not too dense to locate apple snails. Dense growth of plants reduces the ability of the Everglade snail kite to locate apple snails and their use of these areas is limited even when snails are in relatively high abundance (Bennetts et al. 2006). Areas of sparse emergent vegetation enable apple snails to climb near the surface to feed, breathe, and lay eggs and thus they are easily seen from the air by foraging Everglade snail kites. Suitable foraging habitats are often interspersed with tree islands or small groups of scattered shrubs and trees which serve as perching and nesting sites.

Snail kite nesting primarily occurs from December to July, with a peak in February-June, but can occur year-round. Nesting substrates include small trees such as willow, cypress (*Taxodium* spp.), and pond apple, and herbaceous vegetation such as sawgrass, cattail, bulrush (*Scirpus validus*), and reed (*Phragmites australis*). Snail kites appear to prefer woody vegetation for nesting when water levels are adequate to inundate the site (USFWS 1999). Nests are more frequently placed in herbaceous vegetation during periods of low water when dry conditions beneath willow stands (which tend to grow to at higher elevations) prevent Everglade snail kites from nesting in woody vegetation (USFWS 1999). Nest collapse is rare in woody vegetation but common in non-woody vegetation, especially on lake margins (USFWS 1999). In order to deter predators, nesting almost always occurs over water (Sykes et al. 1995).

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

The persistence of the Everglade snail kite in Florida depends upon maintaining hydrologic conditions that support the specific vegetative communities that compose their habitat along with sufficient apple snail availability across their range each year (Martin et al. 2008). Historically, WCA 3A has been a critical component within the Everglade snail kites' wetland network for foraging and reproduction. High water levels during the wet season are important in maintaining quality wet prairie and emergent slough habitat (USFWS 2010). High water levels and extended

hydroperiods have resulted in vegetation shifts within WCA 3A, degrading Everglade snail kite critical habitat. This vegetation transition directly affects Everglade snail kites in several ways, most importantly by reducing the amount of suitable foraging and nesting habitat, and reducing prey abundance and availability. Wetter conditions reduce the amount of woody vegetation within the area upon which Everglade snail kites rely for nesting and perch hunting. In addition, prolonged hydroperiods reduce habitat structure in the form of emergent vegetation, which is critical for apple snail aerial respiration and egg deposition (Turner 1996, Darby et al. 1999). Drying events are essential in maintaining the mosaic of vegetation types needed by a variety of wetland fauna (Sklar et al. 2002), including the Everglade snail kite (USFWS 2010) and its primary food source, the apple snail (Karunaratne et al. 2006, Darby et al. 2008). However, little annual variation in water depths has occurred within WCA 3A since 1993, virtually eliminating the drying events necessary to maintain this mosaic. This is particularly apparent in southwestern WCA 3A, which has experienced excessive ponding in recent years.

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

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

Critical habitat for the Everglade snail kite was designated September 22, 1977 (42 FR 47840 47845) and includes areas of land, water, and airspace within portions of the St. Johns Reservoir, Indian River County; Cloud Lake Reservoir, St. Lucie, County; Strazzulla Reservoir, St. Lucie County; western portions of Lake Okeechobee, Glades and Hendry counties; Loxahatchee National Wildlife Refuge (WCA 1), Palm Beach County; WCA 2A, Palm Beach and Broward counties; WCA 2B, Broward County; WCA 3A, Broward and Miami-Dade counties; and ENP to

the Miami-Dade/Monroe County line (**FIGURE 10**). The designated area encompasses approximately 841,635 acres (340,598 hectares).

The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered to NESRS. S-333 is expected to be utilized to its full capacity (1350 cfs) for the majority of the dry season during the temporary emergency deviation. Analysis of modeling results performed by the SFWMD to estimate the potential system response to the Federal Action during the period from February to May projected water level decreases within WCA 3A ranging from ~ 0.2 feet up to ~0.5 feet (as measured by the 3-gage average (Sites 63, 64, 65)). Increases in water levels are projected in NESRS, central SRS, and the northern Rocky glades adjacent to S-332B & S-332 C with implementation of the Federal Action. Where water levels are anticipated to rise, modeling projected an approximate 3 to 5 inch rise at site NESRS2, up to an approximate 1 inch rise at site NP-33, and an approximate 1 to 3 inch rise at site NP-RG2 (**FIGURE 2**).

WCA 3A represents the largest and most consistently utilized portion of Everglade snail kite designated critical habitat. Over the past two decades, Everglade snail kites have shifted nesting activities to areas of higher elevation within WCA 3A in response to habitat degradation in traditional nesting areas resulting from prolonged high water levels. Nesting activity has shifted up the elevation gradient to the west, and has also moved south in response to recent increased drying rates, restricting current nesting to the southwest corner of WCA 3A. Temporary alleviation of extreme high water levels and prolonged inundation periods within WCA 3A may provide increased foraging opportunities and increased potential for nesting. Wetter conditions reduce the amount of woody vegetation within the area upon which Everglade snail kites rely for nesting and perch hunting. In addition, prolonged hydroperiods reduce habitat structure in the form of emergent vegetation, which is critical for apple snail aerial respiration and egg deposition.

A potential increase in hydroperiods within NESRS may provide an overall net benefit for Everglade snail kites and apple snail habitat. Increases in volume into NESRS provide an opportunity for improved vegetation, including expansion of sloughs and wet prairies, and contraction of sawgrass ridges. However, due to the short duration of the temporary emergency deviation, significant vegetation changes are not anticipated. Based on this information and the limited duration of the Federal Action, the Corps has determined that implementation of the Federal Action may affect, but is not likely to adversely affect this species and its designated critical habitat. The Corps will continue to rely upon the Increment 1 monitoring plan and will continue to implement Periodic Scientist Calls as outlined within the 2011 ERTP Final EIS.

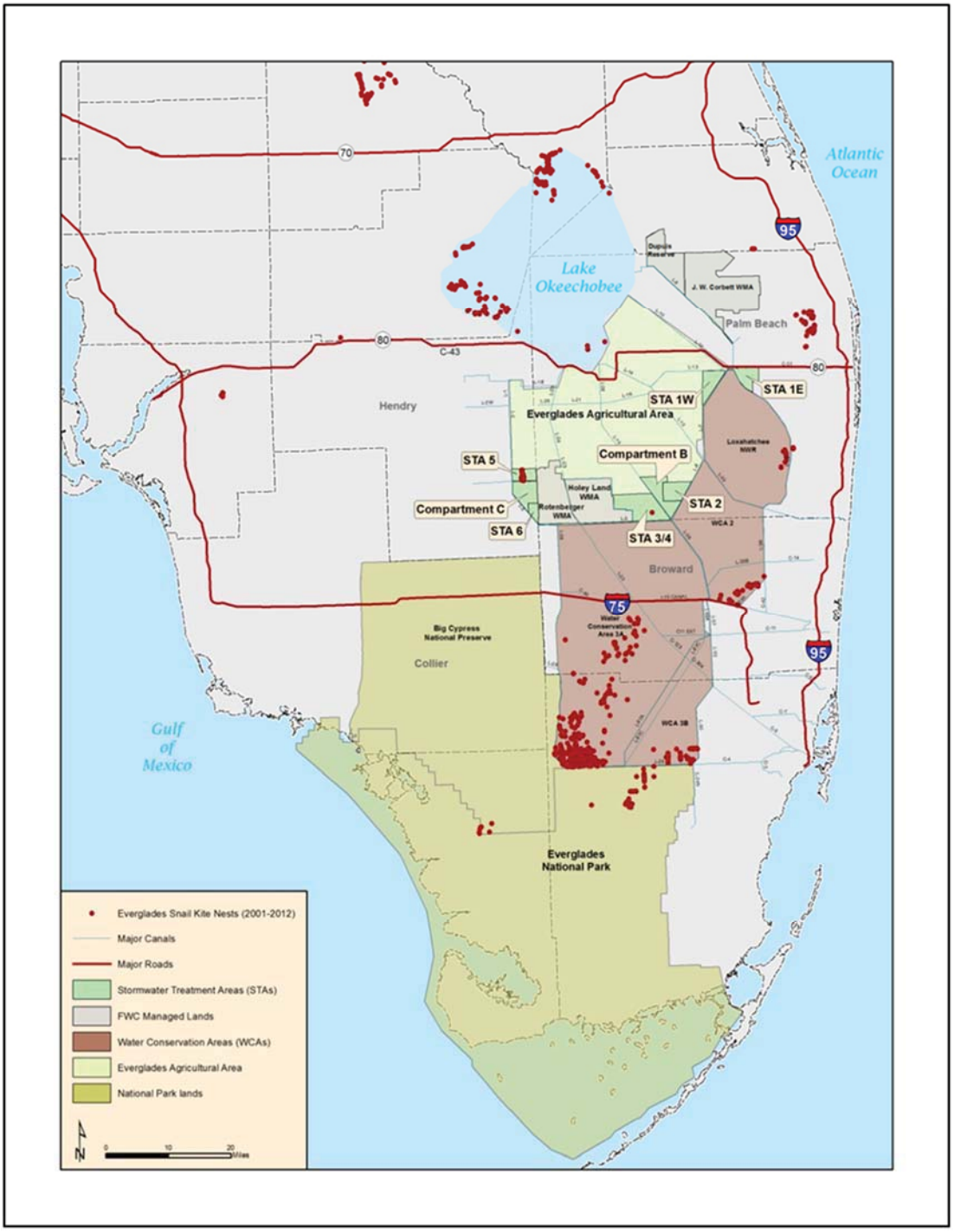

FIGURE 9. SNAIL KITE NESTING LOCATIONS BETWEEN 2001 AND 2012

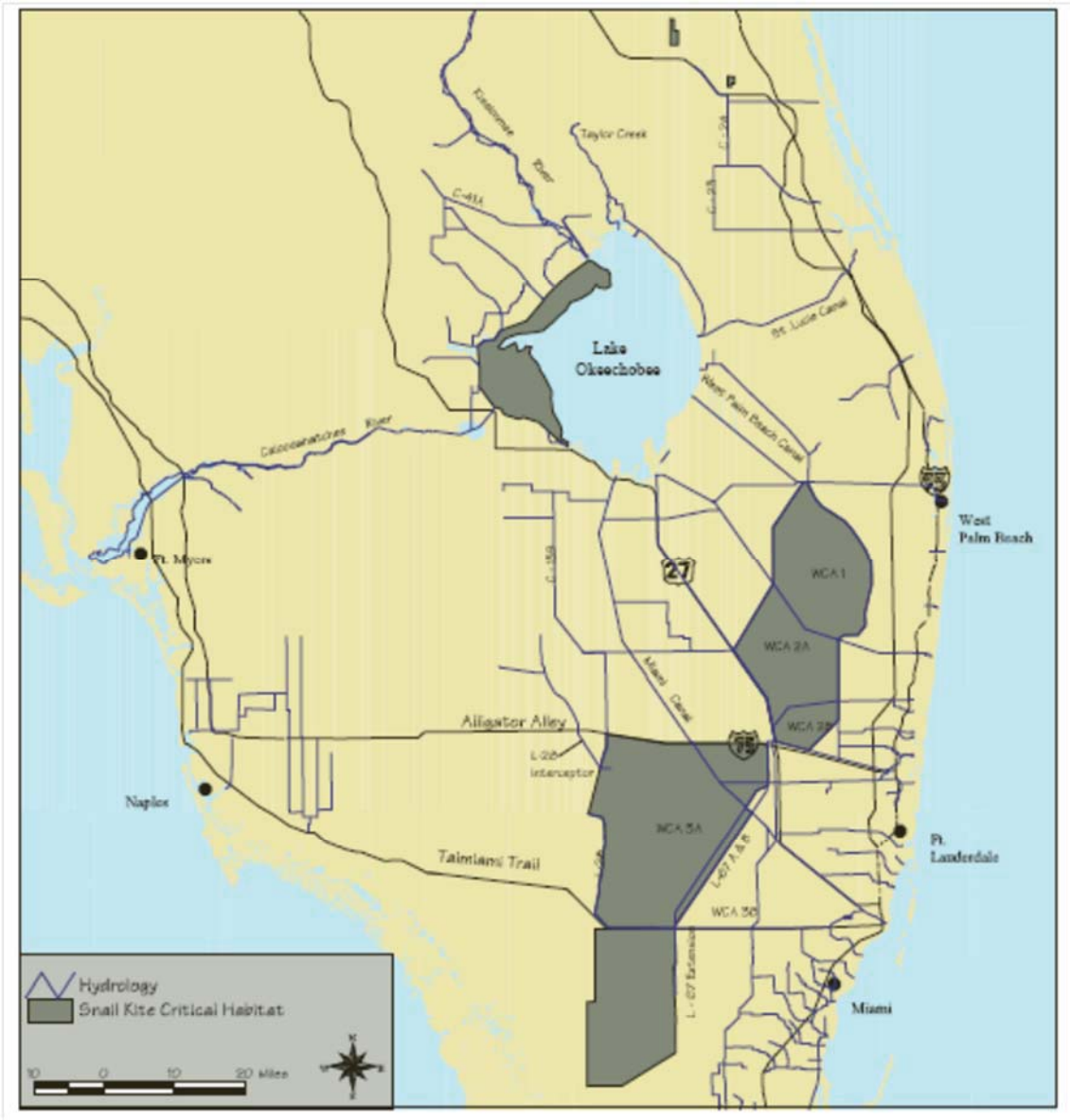

FIGURE 10. CRITICAL HABITAT FOR THE EVERGLADES SNAIL KITE

5.6 Piping Plover and "No Effect Determination"

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

5.7 Red-cockaded Woodpecker and "No Effect Determination"

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

5.8 Roseate Tern and "No Effect Determination"

A coastal species, the roseate tern nests on open sandy beaches away from potential predation and human disturbance. This species feeds in near shore surf on small schooling fishes. In southern Florida, the roseate tern's main nesting areas are located in the Florida Keys and the Dry Tortugas where they nest on isolated islands, rubble islets, and dredge spoils. Due to the lack of appropriate habitat within the project area, the Corps has determined that there would be no effect on this species from implementation of the Federal Action.

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

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

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

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

Herring and Gawlik 2007). During nesting, these areas must also be sufficiently close to the colony to allow wood storks to efficiently deliver prey to nestlings.

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

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

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

Wood stork nesting habitat consists of mangroves as low as 1 meter (3 feet), cypress as tall as 30.5 meters (100 feet), and various other live or dead shrubs or trees located in standing water (swamps) or on islands surrounded by relatively broad expanses of open water (Rodgers et al. 1997, Coulter et al. 1999). Wood storks nest colonially, often in conjunction with other wading bird species, and generally occupy the large-diameter trees at a colony site (Rodgers et al. 1995). **FIGURE 11** shows the locations of wood stork colonies throughout Florida. The same colony site will be used for many years as long as the colony is undisturbed and sufficient foraging habitat remains in the surrounding wetlands. However, not all wood storks nesting in a colony will return to the same

site in subsequent years (Kushlan and Frohring 1986). Natural wetland nesting sites may be abandoned if surface water is removed from beneath the trees during the nesting season (Rodgers et al. 1995). In response to this type of change to nest site hydrology, wood storks may abandon that site and establish a breeding colony in managed or impounded wetlands (Ogden 1991). Wood storks that abandon a colony early in the nesting season due to unsuitable hydrologic conditions may re-nest in other nearby areas (Borkhataria et al. 2004, Crozier and Cook 2004).

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

Breeding wood storks are believed to form new pair bonds every season. First age of breeding has been documented in 3 to 4-year-old birds but the average first age of breeding is unknown. Eggs are laid as early as October in south Florida and as late as June in north Florida (Rodgers 1990, USFWS 1999). A single clutch of two to five (average three) eggs is laid per breeding season but a second clutch may be laid if a nest failure occurs early in the breeding season (Coulter et al. 1999). There is variation among years in the clutch sizes, and clutch size does not appear to be related to longitude, nest data, nesting density, or nesting numbers, and may be related to habitat conditions at the time of laying (Frederick 2009, Frederick et al. 2009). Egg laying is staggered and incubation, which lasts approximately 30 days, begins after the first egg is laid. Therefore, the eggs hatch at different times and the nestlings vary in size (Coulter et al. 1999). In the event of diminished foraging conditions, the youngest birds generally do not survive.

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

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

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

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

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

The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered

to NESRS. Modeling projected water level decreases within WCA 3A ranging from ~ 0.2 feet up to ~0.5 feet (as measured by the 3-gage average (Sites 63, 64, 65)) with implementation of the Federal Action. An approximate decrease in water levels of 1 to 5 inches at Site 71 in WCA 3B is projected from mid-March through mid-May. Increases in water levels are projected in NESRS, central SRS, and the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Where water levels are anticipated to rise, modeling projected an approximate 3 to 5 inch rise at site NESRS2, up to an approximate 1 inch rise at site NP-33, and an approximate 1 to 3 inch rise at site NP-RG2 (**FIGURE 2**). A significant increase in total flow across Tamiami Trail is also projected on the order of up to approximately 20% relative to base conditions. Water level increases are also projected in Taylor Slough. Modeling projected up to an approximate 1 to 5 inch rise at site THSO (**FIGURE 2**).

Wood stork colonies exist within the main action area (**FIGURE 11**). Wood storks nest during the dry season, and rely on the drying wetlands to concentrate prey items in the ever-narrowing wetlands. However, frequent heavy rains during nesting can cause water levels to increase rapidly. The abrupt increases in water levels during nesting, termed reversals (Crozier and Gawlik 2004), may cause nest abandonment, re-nesting, late nest initiation and poor fledging success. A potential decrease in high water levels and prolonged periods of inundation in WCA 3A and a subsequent increase in hydroperiods within NESRS, may provide an overall net benefit for wood stork foraging suitability and nesting opportunities. Based on this information and the limited duration of the Federal Action, the Corps has determined that implementation of the Federal Action may affect but is not likely to adversely affect this species. The Corps will continue to rely upon the Increment 1 monitoring plan and will continue to implement Periodic Scientist Calls as outlined within the 2011 ERTP Final EIS.

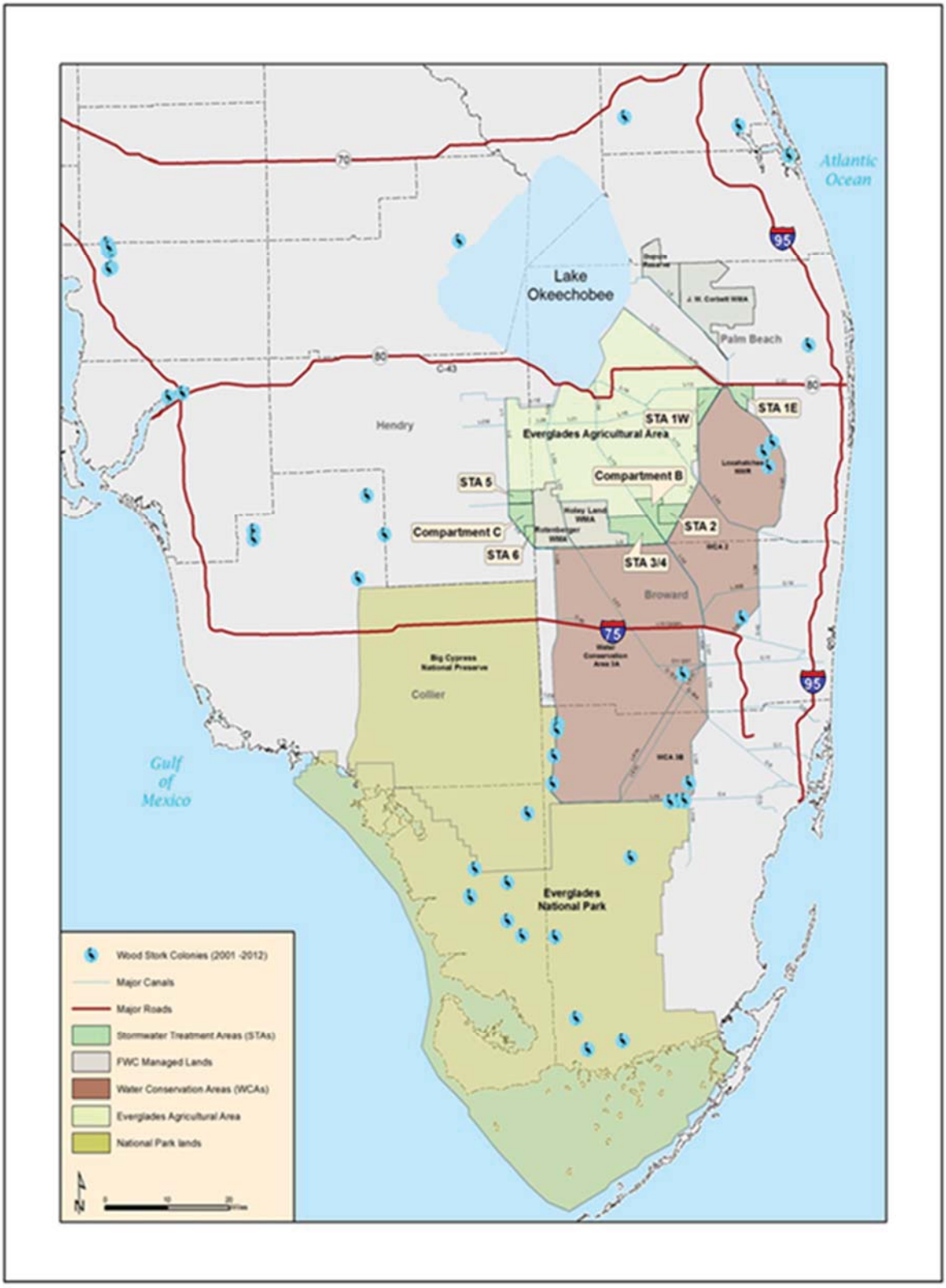

FIGURE 11. LOCATION OF WOODSTORK COLONIES IN SOUTH FLORIDA BETWEEN 2001 AND 2012

5.10 American Alligator and "No Effect Determination"

The American alligator is listed as threatened by the USFWS due to similarity of appearance to the American crocodile, an endangered species. A keystone species within the Everglades ecosystem, the American alligator is dependent on spatial and temporal patterns of water fluctuations that affect courtship and mating, nesting, and habitat use (Brandt and Mazzotti 2000). Historically, American alligators were most abundant in the peripheral Everglades marshes and freshwater mangrove habitats, but are now most abundant in canals and the deeper slough habitats of the central Everglades. Water management practices including drainage of peripheral wetlands and increasing salinity in mangrove wetlands as a result of decreased freshwater flows has limited occurrence of American alligators in these habitats (Craighead 1968, Mazzotti and Brandt 1994). Increased water deliveries to ENP may beneficially affect American alligator habitat. The Federal Action is expected to benefit WCA 3A by decreasing high water levels and prolonged periods of inundation. By reducing limitations on S-333, potentially more water will be delivered to NESRS. Elimination or modification of American alligator habitat is not expected under the Federal Action. The Corps has determined that there would be no effect on this species from the implementation of the Federal Action.

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

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

The American crocodile's critical habitat includes all land and water within the following boundary: beginning at the easternmost tip of Turkey Point, Dade County, on the coast of Biscayne Bay; then southeastward along a straight line to Christmas Point at the southernmost tip of Elliott Key; then southwestward along a line following the shores of the Atlantic Ocean side of Old Rhodes Key, Palo Alto Key, Anglefish Key, Key Largo, Plantation Key, Windley Key, Upper Matecumbe Key, Lower Matecumbe Key, and Long Key; then to the westernmost tip of Middle Cape; then northward along the shore of the Gulf of Mexico to the north side of the mouth of Little Sable Creek; then eastward along a straight line to the northernmost point of Nine-Mile Pond; then northeastward along a straight line to the point of beginning (**FIGURE 12**).

Under the Federal Action, modeling projected increased flows at S-18C and S-197 by approximately 31,000 and 4,000 acre feet, respectively. S-197 discharges are projected to be relatively small, up to approximately 100 cfs. Manatee Bay and Barnes Sound are relatively large bodies of water with open connections to Card Sound and the Atlantic Ocean. Waters within Manatee Bay and Barnes Sound have been documented to have shorter residence times relative to northeastern Florida Bay (Marshall 2014). In addition, these areas experience greater tidal flushing relative to northeastern Florida Bay. Potential salinity fluctuations due to implementation of the Federal Action would be temporary and spatially limited to near shore areas. Scouring of bottom

sediments and significant increases in turbidity resulting in diminished light penetration through the water column and potential impacts to sea grasses within Manatee Bay and Barnes Sound are not expected. Sea grasses have an optimum salinity range of 24 to 35 psu, but can tolerate considerable short-term salinity fluctuations.

Temporary benefits to Florida Bay are anticipated under the Federal Action. Modeling predicted increases in monthly overland flows from southern ENP to Florida Bay at Transects 23B and 23C. Overland flow is predicted to be increased by ~4,000 acre-feet or more during the months of February, March, April and May. Based on the above information and the fact that the temporary emergency deviation will rely upon the Increment 1 monitoring plan (**See Section 6**), the Corps has determined that there would be no effect on the American crocodile and its designated critical habitat from implementation of the Federal Action. The Corps will monitor existing salinity gages in Joe Bay, Long Sound, Manatee Bay, and Barnes Sound throughout the duration of the Federal Action. In addition, the Corps will continue to implement Periodic Scientists Calls as outlined within the 2011 ERTP Final EIS and will include assessment of conditions within the southern estuaries.

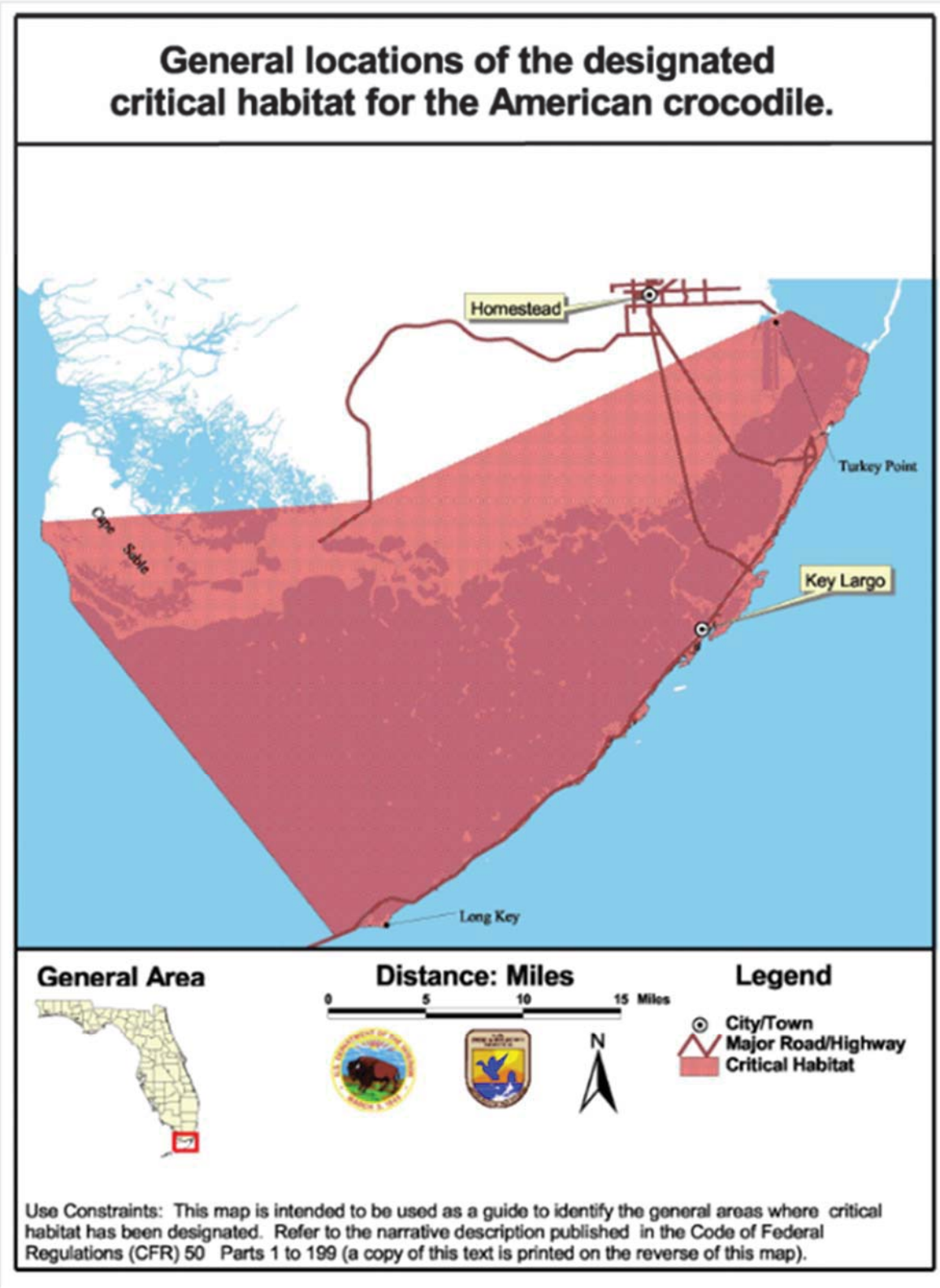

FIGURE 12. AMERICAN CROCODILE CRITICAL HABITAT

5.12 Eastern Indigo Snake and "No Effect Determination"

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

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

In south Florida, the Eastern indigo snake is thought to be widely distributed. Given their preference for upland habitats (Steiner et al. 1983), Eastern indigo snakes are not commonly found in great numbers in the wetland complexes of the Everglades region, even though they may be found in pinelands, tropical hardwood hammocks, and mangrove forests in extreme south Florida (Duellman and Schwartz 1958, Steiner et al. 1983). They prefer dry, well drained sandy soils, and commonly use burrows and other natural holes as dens. Steiner et al. (1983) also reported that Eastern indigo snakes inhabit abandoned agricultural land and human-altered habitats in south Florida which would include levees within the WCAs. The Federal Action is an operational plan that is expected to benefit WCA 3A by reducing high water levels and prolonged periods of inundation. The Federal Action is also expected to increase flows to NESRS. The temporary emergency deviation is not expected to have significant effects on the upland habitats preferred by this species. No construction is proposed. The Corps has determined that there would be no effect on this species from the implementation of the Federal Action.

5.13 Bartram's Hairstreak Butterfly and Florida Leafwing Butterfly and "May Affect Not Likely to Adversely Affect Determination"

Bartram's hairstreak butterfly occurs only within pine rocklands that retain its only known host plant, pineland cotton. 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.

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.

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades and Long Pine Key. These listed species have the potential to occur within the rocky glades surrounding the Frog Pond Detention Area as potentially suitable habitat is present. Analysis of modeling results performed by the SFWMD to estimate the potential system response to the Federal Action during the period from February to May projected water level increases in the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2 and projected up to an approximate 1 to 5 inch rise at site THSO. The Corps has determined that the implementation of the Federal Action may affect, but is not likely to adversely affect, these species.

5.14 Miami Blue Butterfly and "No Effect Determination"

The Miami blue is a small butterfly endemic to Florida. The Miami blue has a forewing length of 10 to 13 millimeters. Males and females are both bright blue dorsally, but females have an orange eyespot near their hind wing. Both sexes have a gray underside with four black spots. The Miami blue butterfly occurs at the edges of tropical hardwood hammocks, beachside scrub, and occasionally in rockland pine forests. Larval host plants include the seed pods of nickerbeans (*Caesalpinia spp.*), blackbeards (*Pithecellobium spp.*), and balloon vine (*Cardiospermum halicababum*), a non-native species. Adults feed on the nectar of Spanish needles (*Bidens pilosa*), cat tongue (*Melanthera aspera*), and other weedy flowers near disturbed hammocks. Primarily a south Florida coastal species, the Miami blue's historic distribution ranged as far north as Hillsborough County on the Gulf Coast and Volusia County on the Atlantic Coast and extended south to the Florida Keys and the Dry Tortugas (FWC 2013). The butterfly was thought to be extinct following Hurricane Andrew in 1992, but was observed in November 1999 at Bahia Honda State Park in the Florida Keys. More than 329 surveys conducted at locations in mainland Florida and the Keys have failed to detect other colonies of this species. The Corps has determined that the Federal Action would have no effect on the Miami blue Butterfly.

5.15 Schaus Swallowtail Butterfly and "No Effect Determination"

The Schaus swallowtail butterfly is a large dark brown and yellow butterfly originally listed as an endangered species because of population declines caused by the destruction of its tropical hardwood hammock habitat, mosquito control practices, and over-harvesting by collectors. Schaus swallowtail butterfly distribution is limited to tropical hardwood hammocks and is concentrated in the insular portions of Miami-Dade and Monroe counties, from Elliott Key in Biscayne National Park and associated smaller Keys to central Key Largo (USFWS 1999). It is estimated that remaining suitable habitat for this species is 43% of the historical suitable habitat in Biscayne National Park and 17 percent for north Key Largo. The decline has been attributed primarily to habitat destruction (USFWS 1999). Due to the lack of preferred subtropical hardwood

hammock habitat in the main action area, the Corps has determined that the Federal Action would have no effect on the Schaus swallowtail butterfly.

5.16 Stock Island Tree Snail and "No Effect Determination"

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

5.17 Crenulate Lead Plant and "No Effect Determination"

A perennial, deciduous shrub, the crenulate lead-plant is endemic to Miami-Dade County. Agricultural, urban and commercial development within Miami-Dade County have destroyed approximately 98-99% of the pine rockland communities where this species occurred, prompting the USFWS to list the crenulate lead-plant as endangered in 1985 (USFWS 1999). Other threats to the continued existence of this species include fire suppression, drainage and exotic plant invasion. Its present distribution is restricted to eight known locations within a 20-square mile area from Coral Gables to Kendall, Miami-Dade County. Four of the known sites are within public parks managed by the Miami-Dade County Parks Department (USFWS 1999). As the crenulate lead-plant is not known to occur within WCA 3A or ENP, the Corps has determined that the Federal Action will have no effect on this species.

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

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

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades and Long Pine Key. These listed plant species have the potential to occur within the rocky glades surrounding the Frog Pond Detention Area as potentially suitable habitat is present. Analysis of modeling results performed by the SFWMD to estimate the potential system response to the Federal Action during the period from February to May projected water level increases in the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2 and projected up to an approximate 1 to 5 inch rise at site THSO (**FIGURE 2**). The Corps has determined that the implementation of the Federal Action may affect, but is not likely to adversely affect, these species.

5.19 Okeechobee Gourd and "No Effect Determination"

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

5.20 Big Pine Partridge Pea, Blodgett's silverbush, Sand Flax and "May Affect Not Likely to Adversely Affect Determination"

Big Pine partridge pea, sand flax, and Blodgett's silverbush, are part of the imperiled pine rockland flora found only in the United States in extreme south Florida and the Lower Florida Keys. Big Pine partridge pea is currently found on two islands in the Florida Keys (Big Pine Key and Cudjoe Key), both of which part of the National Key Deer Refuge. Sand flax occurs in pine rocklands and adjacent disturbed areas in the Lower Florida Keys and Miami-Dade County. Blodgett's silverbush occurs primarily in pine rocklands, but also on the edges of hardwood hammock, coastal berm, and adjacent disturbed areas in the Florida Keys and Miami-Dade County.

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. These listed plant species have the potential to occur within the rocky glades surrounding the Frog Pond Detention Area as potentially suitable habitat is present. Analysis of modeling results performed by the SFWMD to estimate the potential system response to the Federal Action during the period from February to May projected water level increases in the northern Rocky glades adjacent to S-332B and S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2 and projected up to an approximate 1 to 5 inch rise at site THSO (**FIGURE 2**). The Corps has determined that the implementation of the Federal Action may affect, but is not likely to adversely affect, these species.

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

The Cape Sable thoroughwort is endemic to south Florida, and is a flowering perennial herb that is 8-40 inches tall. The Cape Sable thoroughwort was historically known from Monroe County, both on the Florida mainland and the Florida Keys, and in Miami-Dade County along Florida Bay. The current range of the species includes areas in ENP and five islands in the Florida Keys. It occurs throughout coastal rock barrens and berms and sunny edges of rockland hammock. The decline of the species is primarily the result of habitat loss from commercial and residential development, sea level rise, storms, competition from non-native plants, predation by non-native herbivores, and wildfires. Critical habitat for the species occurs in nine separate units across approximately 10,968 acres of Miami-Dade and Monroe Counties. The nine units are: 1) ENP, 2) Key Largo, 3) Upper Matecumbe Key, 4) Lignumvitae Key, 5) Lower Matecumbe Key, 6) Long

Key, 7) Big Pine Key, 8) Big Munson Island, and 9) Boca Grande Key. Seven of the nine units are currently occupied by the plant. The Federal Action is not expected to affect coastal rock barrens; therefore, the Corps has determined that the Federal Action will have no effect on this species or its designated critical habitat.

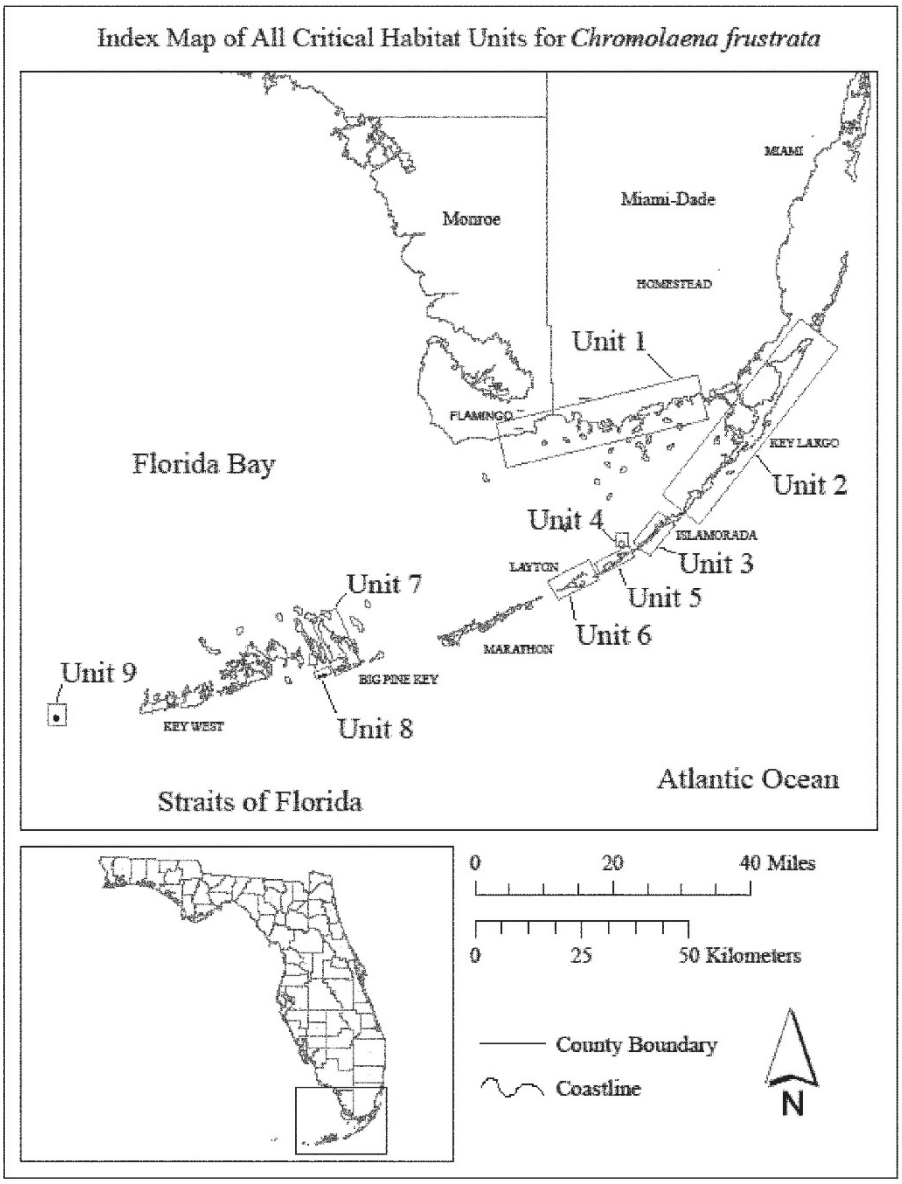

FIGURE 13. CAPE SABLE THOROUGHWORT CRITICAL HABITAT

5.22 Carters Small-Flowered Flax and Florida Brickell-Bush and "May Affect Not Likely to Adversely Affect Determination": Critical Habitat "No Effect Determination"

Carter's small-flowered flax and Florida brickell-bush are endemic to the pine rocklands of the Miami Rock Ridge in Miami-Dade County. Both species grow exclusively on the Miami Rock Ridge outside the boundaries of ENP (79 FR 52567; September 4, 204). Carter's small-flowered flax is an annual or short-lived perennial herb and was first collected between coconut Grove and

Cutler areas of Miami. It is currently found from R. Hardy Matheson Preserve southwest to Naranja/Modello, with a distance of approximately 27.3 km between the farthest locations.

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

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

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. The Corps has determined that the implementation of the Federal Action will have no effect on these species. These listed plant species have the potential to occur within the rocky glades surrounding the Frog Pond Detention Area. Analysis of modeling results performed by the SFWMD to estimate the potential system response to the Federal Action during the period from February to May projected water level increases in the northern Rocky glades adjacent to S-332B & S-332 C with implementation of the Federal Action. Modeling projected an approximate 1 to 3 inch rise at site NP-RG2 and projected up to an approximate 1 to 5 inch rise at site THSO (**FIGURE 2**). The Corps has determined that the implementation of the Federal Action may affect, but is not likely to adversely affect, these species. Critical habitat for the species has been designated; however designated critical habitat occurs outside the project area (**FIGURE 14** and **FIGURE 15**). The Corps has determined that the implementation of the Federal Action will have no effect on the designated critical habitat of these species.

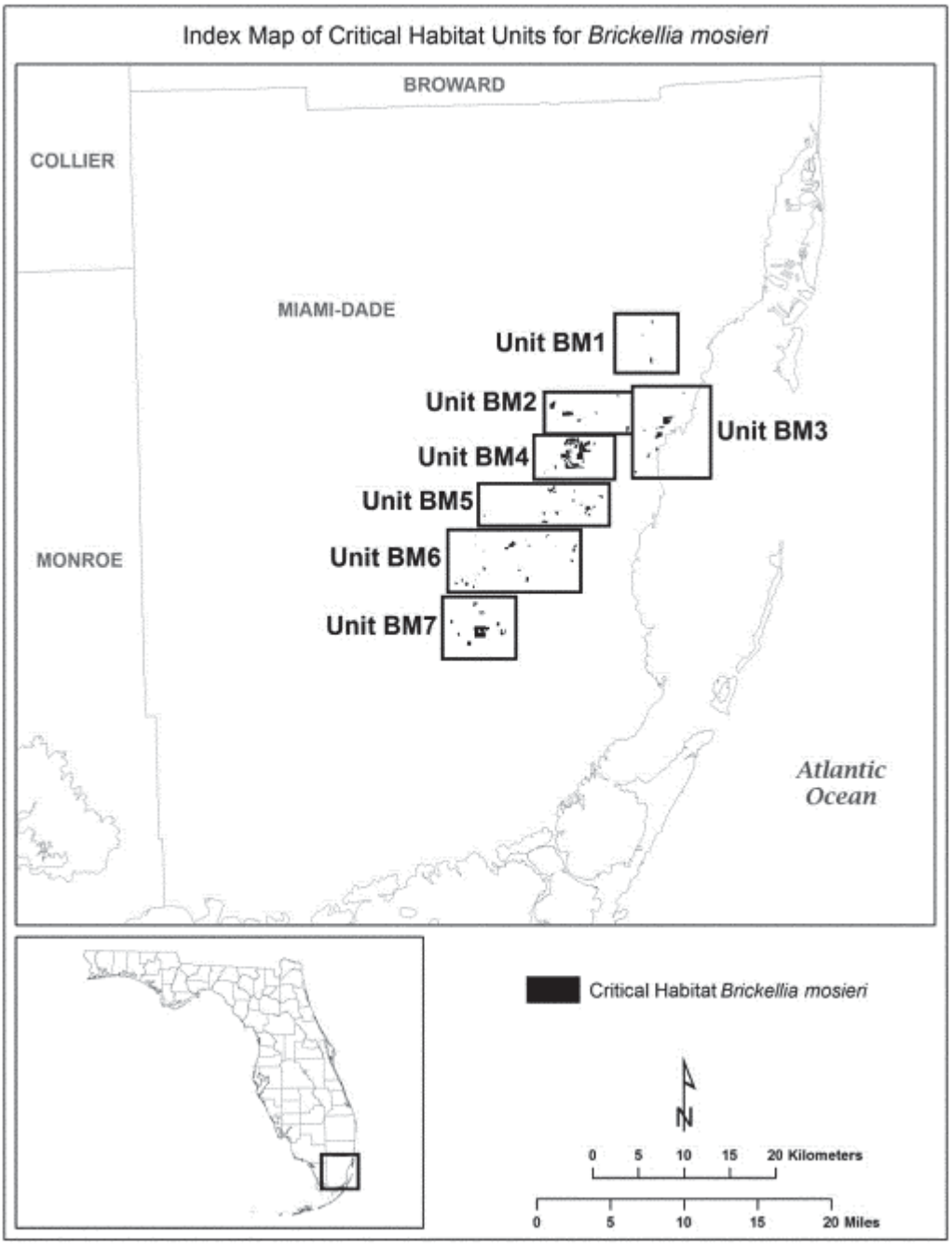

FIGURE 14. FLORIDA BRICKELL-BUSH CRITICAL HABITAT

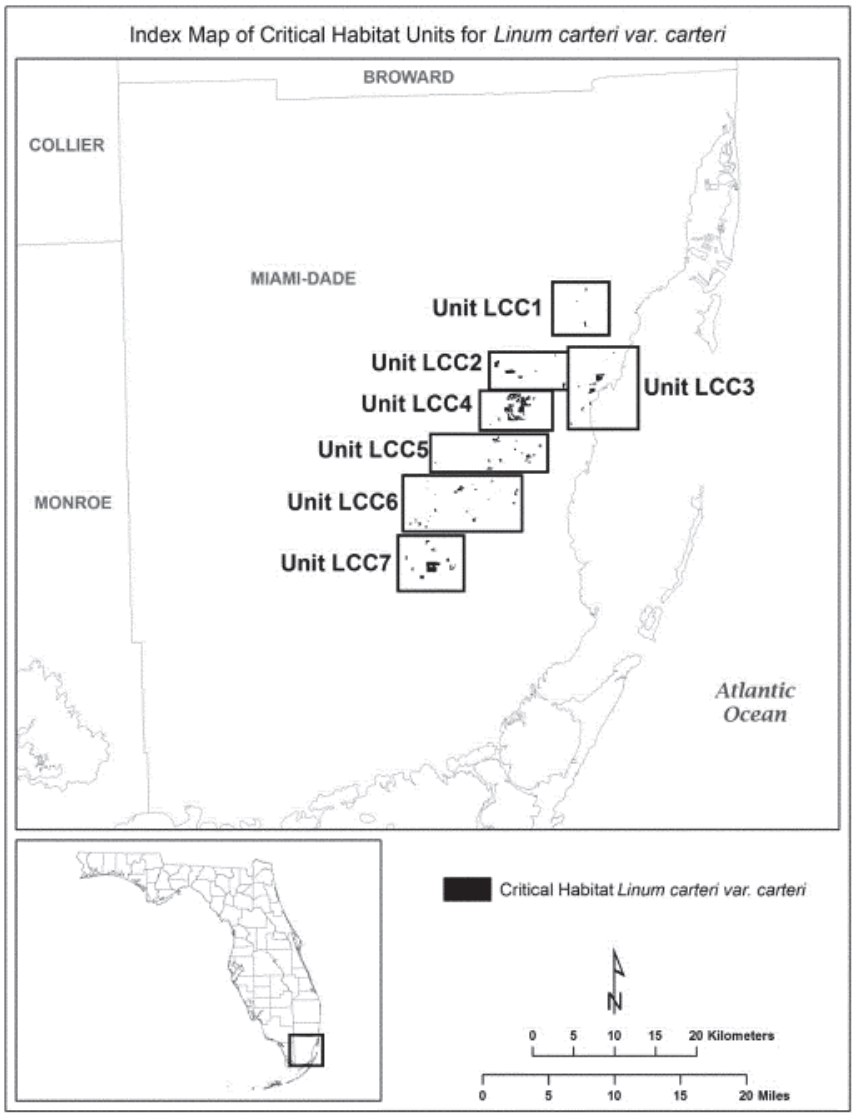

FIGURE 15. CARTERS SMALL-FLOWERED FLAX CRITICAL HABITAT

5.23 Florida Bristle Fern and "No Effect Determination"

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

Snapper Creek Hammock, which is located in R. Hardy Matheson Preserve. The four populations that constitute the Miami Dade County metapopulation are located in urban preserves managed by the County's Environmentally Endangered Lands Program and include Castellow Hammock Park, Hattie Bauer Hammock, Fuchs Hammock Preserve, and Meissner Hammock. Factors affecting the sub-species include habitat modification and destruction caused by human population growth and development.

Within the project area, pine rocklands occur on the Miami Rock Ridge and extend into the Everglades as Long Pine Key. Although potentially suitable habitat exists within the action area, the Corps has determined that the implementation of the Federal Action will have no effect on the sub-species. Systematic surveys completed in ENP over the years have not been able to find the Florida bristle fern (79 FR 61148; October 9, 2014).

5.24 Florida Semaphore Cactus and Critical Habitat and "No Effect Determination"

The Florida semaphore cactus is a prickly pear cactus endemic to the Florida Keys. Historically, the Florida semaphore cactus was known from Key Largo and Big Pine Key (Barnhardt 1935), but development has destroyed these populations. The only "wild' population remaining is located in a Nature Conservancy preserve in the middle Keys. Several out plantings by Fairchild Tropical Garden and the University of South Florida were made in the late 1990s. Fairchild Tropical Gardens planted less than 200 cacti on Key Largo and Big Pine Key, the majority of which have died. The University of South Florida planted 240 cacti on Big Pine Key, Upper Sugarloaf Key, No Name Key, Little Torch Key, Ramrod Key, and Cudjoe Key. At least 3/4 of cacti planted by the University of Florida have been lost to damage from the introduced exotic cactus moths (Lippencott 1990). Threats to the species include habitat destruction due to development, collection of the species by cactus enthusiasts, introduction of the exotic cactus moth (*Cactoblastis cactorum*), salt water intrusion, lack of genetic diversity, and pathogens. Designated critical habitat for the Florida semaphore cactus is found in Miami-Dade and Monroe Counties (**FIGURE 16**). Critical habitat is located outside the immediate project area. The Corps has determined that the Federal Action will have no effect on this species and its designated critical habitat.

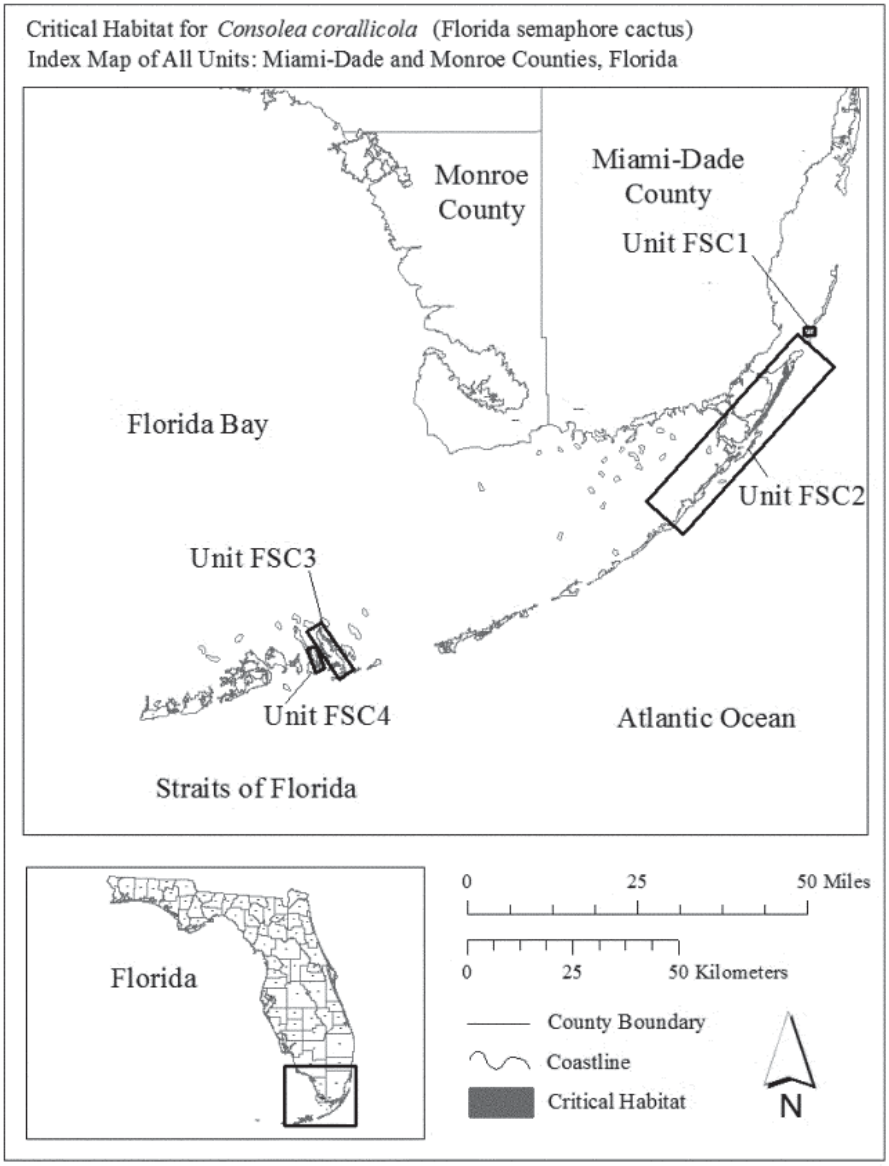

FIGURE 16. FLORIDA SEMAPHORE CACTUS CRITICAL HABITAT

6.0 EFFORTS TO ELIMINATE POTENTIAL IMPACTS ON LISTED SPECIES

All practicable means to avoid or minimize environmental effects were incorporated into the Federal Action. The monitoring plan developed for Increment 1 (G-3273 Constraint Relaxation/S-356 Federal Action and S-357N Operational Strategy) of the Combined Operating Plan for the operation of the water management infrastructure connected to the Modified Water Deliveries to ENP and C-111 South Dade Projects (USACE 2015), will be used during the temporary emergency deviation and is hereby incorporated by reference. Please refer to Appendix C of the EA and FONSI dated May 27, 2015 and prior correspondence (G-3273 Complete Initiation Package) submitted to the Service dated January 6, 2015 and January 22, 2015 for a copy of the monitoring plan. The monitoring plan includes hydrologic, ecologic, water quality and cultural resource components within NESRS, the SDCS, Manatee Bay and Barnes Sound, and Florida Bay. Monitoring information will be disseminated to Federal and state agencies, tribal members, and members of the general public by accessing the Increment 1 website:

(http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/G3273andS356PumpStationFieldTest.aspx).

Additional meetings (*i.e.* WCA 3 Periodic Scientist Calls as discussed within the ERTP Final EIS (USACE 2011) and/or workshops will continue to be conducted on an as-needed basis based upon ongoing or anticipated conditions within WCAs, ENP, and/or the SDCS. Additional monitoring tools not included within Appendix C of the Increment 1 Monitoring Plan, which are beneficial to the Federal Action include U.S. Geological Survey's (USGS) CSSS Viewer for purposes of monitoring water depths in CSSS habitats A through F. The Corps will continue to maintain ongoing communications with the USFWS throughout the duration of the temporary emergency deviation.

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8.0 LIST OF PREPARERS

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

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APPENDIX A – OPERATIONAL STRATEGY

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Operational Criteria for High Water Relief of WCA-3A (Protective Operational Criteria to Compensate for Sustained L-29 Stage of 8.5 feet NGVD)

To provide high water relief for WCA-3A it is possible to substantively increase the available discharge capacity through S-333 by raising the L-29 stage limit and by routing water along an eastern manually operated route (S-151, S-337, S-335, S-356, & G-211).

The following criteria are protective and implementable operational criteria to compensate for the sustained increased flow to Northeast Shark River Slough (NESRS) associated with raising the L-29 Stage Limit from 7.5 to 8.5 feet NGVD. It is expected that over the period when flows to NESRS are increased that the water level in NESRS and along the entire eastern boundary of Everglades National Park (ENP), will rise meaningfully.

The increased S-333 discharges associated with this action are expected to be of a relatively short duration. A fixed duration or target line (e.g. at or below the Zone A Regulation Schedule Line for WCA-3A) or a combination of both will need to be determined. There will be a meaningful (e.g. 60 day) recovery period once the L-29 constraint is returned to 7.5 feet NGVD, during which the water level would recede to stages typical of the recent hydrological conditions and the operational criteria of ERTP Increment 1. The lowered operational ranges will remain until this recovery period is completed. A fixed duration or target stages [e.g. being below the upper quartile (P75) at representative gages along the eastern boundary of ENP] or a combination of both will need to be determined. All structures will be operated within their design limits and Maximum Allowable Gate Limits (MAGO).

To the extent that the raised L-29 stage limit allows, S-333 discharges will be sent to Northeast Shark River Slough (NESRS). S-334 will be used to the extent that is required to maintain the L-29 stage below the current temporary stage limit. It is expected that the L-29 stage limit will be raised from 7.5 to 8.5 feet NGVD incrementally as high water issues are resolved with the vendors. Once the L-29 stage limit is raised above 8.3 feet NGVD that at least initially there will be sufficient capacity for all of S-333's full capacity. If the L-29 stage is below the raised L-29 stage limit with S-333 discharging at its' full capacity (1,350 cfs) the USACE may use S-356 to reduce the flow south through G-211 and control the L-31N stage north of G-211. In addition, if the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its MAGO limits, water from WCA-3A can be delivered through the manual route of S-151, S-337, and S-356.

The drainage (S-335 minus S-337) of the L-30 canal by S-335 will be reduced (below historical rate for comparable conditions) to free up capacity through G-211 and at the S-332B, S-332C, and S-332D detention areas and along the C-111 Canal. To provide compensating groundwater drainage the western reaches (S-336 to G-119 and G-119 to S-380) of the C-4 Canal will be lowered to the extent practical. Water passed through the L-30 Canal (water released by S-337) can and will be used if the available L-29, L-31N, and C-111 capacity exceeds the S-333's capacity. The SFWMD will continue to have the ability to detain or supply water from the L-30 Canal to smooth operations or respond to short term loss of downstream capacity. The drainage of the L-30 canal by S-335 discharges will be reduced until there is sufficient capacity to meet the primary objective of maximizing the discharge from WCA-3A or WCA-3A's condition becomes more normal, or WCA-3B conditions become acutely adverse, or the headwater (HW) stage rises to above the top of S-335's gate at 8.0 feet NGVD. If S-335's HW stage rises above 8.0 feet S-335 gate may be opened as necessary prevent flow over the top of the gate.

Should flow through S-334 be needed then flows will be maximized to the extent the following constraints allow. However, if the L-31N stage rises above the operation ranges prescribed below then S-334 discharges will be reduced to 250 cfs or less until the canal daily average stage returns to within the prescribed ranges. If the available capacity at S-332B, S-332C, and S-332D is insufficient to maintain the L-31N below the top of the lowered operational range for more than 24 hours then all S-334 flow will be ceased until the L-31N stage is lowered and maintained in the lowered operational range for 24 hours.

S-338 discharges will be maximized (e.g. 250 to 300 cfs) to the extent that downstream conditions allow. This includes operating S-148 with an open/close of 3.0/2.5 for S-148 flows of less than 700 cfs and with an open/close of 3.5/3.0 (lower half of the low range) for S-148 flow greater than 700 cfs.

G-211 will discharge to the extent practical to convey S-334 and S-335 discharges, and to maintain the L-31N with the 5.7/5.3 stage range prescribed by Column 2 operations.

S-331 will be operated to maintain S-331's HW using the standard ranges lowered by 0.2 feet (normal 4.3 to 4.8 and low from 3.8 to 4.3) with the remaining criteria unchanged.

S-332B and S-332C will be operated to maintain the L-31N's average daily stage between 4.6 and 4.3; which is 0.2 feet lower than the Column 2 ranges of 4.8 and 4.5 feet NGVD.

S-332D will be operated to discharge up to 250 cfs to S-332D's detention area and up to 325 cfs to the Southern Detention Area (SDA) through S-332DX1 to maintain the L-31N's average daily stage between 4.6 and 4.3 feet NGVD.

Discharge to tide through the C-102 Canal will be maximized to the extent that downstream conditions allow. The SFWMD will continue to have full operational flexibility to operate S-165 within the low range of 3.0 to 1.9 feet NGVD. It is acknowledged that without remote control of S-194 (manually operated structure) that changes to S-194 will occur less frequently.

Discharge to tide through the C-103 Canal will be maximized to the extent that downstream conditions allow. The SFWMD will continue to have full operational flexibility to operate S-167 within its low range of 3.0 to 1.9 feet NGVD and to operate S-179 between 2.0 and 1.5 feet NGVD. It is acknowledged that without remote control of S-196 (manually operated structure) that changes to S-196 will occur less frequently.

S-176 will be operated to maintain the L-31N average daily stage within the operational range. The amount of inflow from S-334/S-335 and discharge through S-176 will be adjusted to compensate for the available pumping capacity at S-332B, S-332C, and S-332D to 1) maintain the L-31N average daily stage within the operational range of 4.6 to 4.3 feet NGVD while facilitating S-334 flows. The SFWMD has complete discretion to increase pumping to proactively maintain the stage near the bottom of the range. The intention is to make full use of the available capacity at S-332B, S-332C, and S-332D while allowing normal maintenance. During period of higher than normal rainfall S-334 discharges will be reduced as required to assist S-332B, S-332C, and S-332D in maintaining the canal stage at the bottom of the range. Equitable use of S-332B, S-332C, and S-332D is based on having the net inflow (S-331 minus S-194 minus S-196 minus S-176) into the L-31N reach between S-331 and S-176 be comparable to the volume sent to the C-111 Canal.

S-199 will be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 3 (formerly known as Sub-Population D) ; stage at EVER4 below 2.36 feet NGVD.

S-200 will be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 2 (formerly known as Sub-Population C) ; stage at R3110 below 4.95 feet NGVD.

S-177 will be operated to maintain an average daily stage below 3.6 but no lower than 3.0 in the upstream reach of the C-111 Canal. The goal will be to maintain a fairly steady discharge through S-177 based on, but not limited to, the average daily/24-hour or instantaneous discharge from S-176 minus the flow through S-199. At times it will be necessary to discharge more than this amount due to rapid changes in the canal stage from rainfall and or increased inflow from S-176 and when S-199/S-200 are unavailable due to CSSS operation constraints.

S-18C will be fully open (gates out of the water) to maintain the Column 2 operational range of 2.25 to 2.0.

S-197 will be operated to maintain the S-18C's Daily Average HW between 2.6 and 2.3 feet NGVD with a daily discharge limit which does not exceed 400 cfs (half of the typical flow for a one third opening of S-197. This will result in discharges larger than those prescribed by the ERTP Increment 1 when WCA-3A is above the High Water Action Line (Case 3). S-197 discharge will be reduced as the stage declines towards 2.3 feet NGVD using S-176 and S-177 discharges as an indicator of inflows. S-197 shall be closed if S-18C HW fall below 2.3 feet NGVD. For the expected duration of this deviation (February through April) the stage of 2.3 represents a stage well above the historical median.

<u>Operational Changes for WCA-3B in Response to High Water in WCA-3A</u>

To provide some high water relief for WCA-3A the S-151 and S-152 structure will be used to release water from WCA-3A into WCA-3B to the extent that the Trigger Stage (measured at Site 71) of 8.5 feet NGVD allows. The preferred inflow route for WCA-3B is through S-152 but S-151 may be used if S-152 is unavailable. The operation of S-152 can be partially or fully open. If the Trigger stage is exceeded for more than 24 hours then all inflows shall be closed until the stage at Site 71 declines to below the Trigger Stage for more than 24 hours. If the stage in the L-29 allows the manually operated S-355A/S-355B will be opened to release water from WCA-3B with some minor back flow expected at times. The opening of S-355A/S-335B will likely extend past the L-29 Stage relaxation period. If the Site 71 constraint is raised and there is capacity available the L-30 canal may be lowered to provide groundwater drainage of WCA-3B.

Operational Flexibility Allowed (for all sections)

To address uncertainties, present or future system conditions, the following actions may be taken for any duration throughout the effect of the temporary deviation:

- Adjust stages within the applicable canal system +/- 0.5 feet to maximize and/or optimize conditions consistent with the purpose.
- Adjust gate openings, pump rates and/or flows as needed to maximize and/or optimize conditions consistent with the purpose.

TABLE A-1. OPERATING CRITERIA FOR TEMPORARY EMERGENCY DEVIATION: COMPARISON TO INCRMENT 1 AND 2012 WATER CONTROL PLAN

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Temporary Deviation for Increment 1	**Note**: Column 1 is the desired column to send releases to ENP. Column 2 would be used when constraints (such as but not limited to L-29, G-3273, or capacity in the SDCS) and considerations (such as but not limit to anticipated rainfall events, water quality, and other ecological benefits) exist. Transition to or from columns will be based on both current and anticipated conditions. **When WCA-3A stage is above the Increment 1 Action Line (Figure 1):** C-111 structures (S-332B, S-332C, S-332D, S-176, S-177, S-18C, S-194, and S-196) are operated according to the 2012 WCP Column 2 criteria. **When Hydraulic Testing for detention areas between S-331 and S-177:** Hydraulic testing is not to exceed one month duration and limits of keeping L-31N no lower than Column 2 (4.5 feet, NGVD) by S-332B, S-332C, S-332D or S-176. Hydraulic testing is not to exceed one month duration and limits of keeping C-111 Canal no lower than the C-111 Spreader Canal Western Project Preliminary Project Operating Manual off criteria for S-199 and S-200 (3.6 feet, NGVD), which is the same as the Column 1 and Column 2 gate closure criteria for S-177.		
Temporary Emergency Deviation	**Note:** The Temporary Emergency Deviation is to last for up to 90 days beginning February 12, 2016 followed by a 60 day recovery period. The purpose of the criteria is to compensate for the sustained increased flow to Northeast Shark River Slough (NESRS) associated with raising the L-29 Stage Limit from 7.5 to 8.5 feet NGVD. It is expected that over the period when flows to NESRS are increased that the water level in NESRS, and along the entire eastern boundary of ENP, will rise meaningfully.		
2012 Water Control Plan	S-333: G-3273 less than or equal to 6.8 feet, NGVD	Rainfall Plan target flow for S-333 (to NESRS). When WCA-3A is in Zone E1 or Zone A, maximum practicable through S-333 to NESRS. Note: If FDOT has no roadway subbase concerns S-333 will be closed when the tailwater is above 9.0 feet, NGVD. However, when FDOT has roadway subbase concerns, S-333 will be closed when the tailwater is above 7.5 feet, NGVD. However, upon completion of the Tamiami Trail Bridge Modification these concerns may no longer exist.	Rainfall Plan target flow for S-333 (to NESRS), plus as much of the remaining Rainfall Plan target flow that the S-12s cannot discharge to be passed through S-334 and subject to capacity constraints, which are 1,350 cfs at S-333, L-29 maximum stage limit, and canal stage limits downstream of S-334. When WCA-3A is in Zone E1 or Zone A, maximum practicable through S-333 to NESRS. Note: If FDOT has no roadway subbase concerns S-333 will be closed when the tailwater is above 9.0 feet, NGVD. However, when FDOT has roadway subbase concerns, S-333 will be closed when the tailwater is above 7.5 feet, NGVD. However, upon completion of the Tamiami Trail Bridge Modification these concerns may no longer exist.
	S-333: G-3273 greater than 6.8 feet, NGVD	Closed	Match S-333 with S-334 flows.

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Temporary Deviation for Increment 1	S-333	Water supply. S-333 releases to L-29/NESRS subject to S-333/S-356 priority as defined in 1) thru 4) below and S-334 Temporary Deviation. This includes L-29 constraint (L-29 stage limitations): Stop flows into L-29 Canal when the L-29 Canal stage (average of S-333 TW and S-334 HW) rises above 7.5 feet, NGVD. **1) Year-round when stage at G-3273 is below 6.8 and when WCA-3A stage is below the Increment 1 Action Line (Figure 1) (S-333 has priority; S-356 use is secondary to S-333 but S-356 can and should be used subject to L-29 stage limitations):** S-333 will be used to release up to the full rate prescribed by WCA-3A Regulation Schedule and the Rainfall Plan into NESRS subject only to the L-29 constraint. **2) Year-round when stage at G-3273 is above 6.8 and the WCA-3A stage is below the Increment 1 Action Line (Figure 1) (S-356 has limited priority over S-333):** S-333 will be used to release up to the full rate prescribed by the WCA-3A Regulation Schedule and the Rainfall Plan into NESRS subject to the L-29 constraint and an assured minimum available capacity of 250 cfs through S-356. If 250 cfs at S-356 is not possible due to the L-29 constraint, then S-333 releases will be reduced to allow S-356 to achieve the minimum available capacity of 250 cfs, if the S-356 capacity is needed to maintain the target stage range in L-31N. **3) When WCA-3A stage is above the Increment 1 Action Line (Figure 1) from 1 November through 14 July (S-333 has priority with no use of S-356):** S-333 makes maximum releases to NESRS subject to L-29 constraint, with no dependency or other constraints (S-334 Temporary Deviation). **4) When WCA-3A stage is above the Increment 1 Action Line (Figure 1) from 15 July through 31 October (S-333 has priority with no use of S-356):** S-333 makes maximum releases to NESRS subject only to L-29 constraint.	
Temporary Emergency Deviation	S-333	If the L-29 stage is below the raised L-29 stage limit with S-333 discharging at its' full capacity (1,350 cfs) the USACE may use S-356 to reduce the flow south and control the L-31N stage north of G-211. Note: To the extent that the raised L-29 stage limit allows, S-333 discharges will be sent to NESRS.	
2012 Water Control Plan	L-29 Borrow Canal	9.0* feet, NGVD * In order to raise the L-29 Borrow Canal above 7.5 feet, NGVD additional NEPA would need to be completed. Note: Refer to S-333 operations which address FDOT roadway subbase concerns.	
Temporary Emergency Deviation	L-29 Borrow Canal	L-29 Stage Limit raised to 8.5 feet NGVD.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-337	Water supply	Regulatory releases pursuant to WCA-3A Interim Regulation Schedule.
Temporary Emergency Deviation	S-337	If the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its MAGO limits, water from WCA-3A could be delivered through the manual route of S-151, S-337, and S-356 as long as the pumping rate at S-356 exceeds the discharge rate at S-335.	
2012 Water Control Plan	S-151	Water supply	Regulatory releases pursuant to WCA-3A Interim Regulation Schedule.
Temporary Emergency Deviation	S-151	If the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its MAGO limits, water from WCA-3A could be delivered through the manual route of S-151, S-337, and S-356 as long as the pumping rate at S-356 exceeds the discharge rate at S-335.	
2012 Water Control Plan	S-335	Water supply The intent is to limit the volume of water passed at S-335 to pre-ISOP conditions and not use S-332B, S-332C, or S-332D or other triggers to pass additional flows. Note: It is recognized that under these conditions operations of S-335 would be infrequent.	When making regulatory releases through S-151, limit S-335 outflows to not exceed inflows from the S-151/S-337 path. Use S-333/S-334 before S-151/S-337/ S-335
Temporary Emergency Deviation	S-335	S-335 discharges will be minimized with the western reaches (S-336 to G-119 and G-119 to S-380) of the C-4 Canal lowered to the extent practical. S-335 flows will be minimized to free up downstream capacity until WCA-3A condition becomes more normal, or WCA-3B conditions become acutely adverse, or the headwater (HW) stage rises to above the top of S-335's gate at 8.0 feet NGVD. If S-335's HW stage rises above 8.0 feet S-335 gate may be opened as necessary prevent flow over the top of the gate.	
2012 Water Control Plan	S-334	Water supply	Pass all or partial S-333 flows depending on stage at G-3273.

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Temporary Emergency Deviation	S-334	S-334 will only be used to the extent that is required to maintain the L-29 stage below the temporary stage limit of 8.5 feet while operating S-333 within its MAGO limits (maximum of 1,350 cfs). Should flow through S-334 be needed then flows will be maximized to the extent the following constraints allow. However, if the L-31N stage rises above the operation ranges prescribed below then S-334 discharges will be reduced to 250 cfs or less until the canal daily average stage returns to within the prescribed ranges. If the available capacity at S-332B, S-332C, and S-332D is insufficient to maintain the L-31N below the top of the lowered operational range for more than 24 hours then all S-334 flow will be ceased until the L-31N stage is lowered and maintained in the lowered operational range for 24 hours.	
2012 Water Control Plan	S-338	Open 5.8 feet, NGVD Close 5.5 feet, NGVD	Open 5.8 feet, NGVD Close 5.4 feet, NGVD
Temporary Emergency Deviation	S-338	S-338 discharges will be maximized (e.g. 250 to 300 cfs) to the extent that downstream conditions allow. Note: This includes operating S-148 with an open/close of 3.0/2.5 for S-148 flows of less than 700 cfs and with an open/close of 3.5/3.0 (lower half of the low range) for S-148 flow greater than 700 cfs.	
2012 Water Control Plan	G-211	Open 6.0 feet, NGVD Close 5.5 feet, NGVD Note: If S-331 pumping is limited and the G-211 tailwater rises above 5.3 feet, NGVD then close G-211.	Open 5.7 feet, NGVD Close 5.3 feet, NGVD Note: If S-331 pumping is limited and the G-211 tailwater rises above 5.3 feet, NGVD then close G-211.
Temporary Emergency Deviation	G-211	G-211 will discharge to the extent practical to convey S-334 discharges, and to maintain the L-31N with the 5.7/5.3 stage range prescribed by Column 2 operations	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-331 resulting from the 2011 8.5 SMA Project EA FONSI	"High Range": When LPG2 is less than 5.5 feet, NGVD, the "high range" applies and S-331 headwater will have no limit. "Intermediate Range": When LPG2 is between 5.5 and less than 6.0 feet, NGVD, the "intermediate range" applies and S-331 average-daily headwater will be maintained between 4.5 and 5.0 feet, NGVD to the extent allowable by downstream conditions. "Low Range": When LPG2 is at or above 6.0 feet, NGVD and S-357 constraints are limiting the ability of maintaining C-357 average-daily water level below 6.2 feet, NGVD, the "low range" applies and S-331 average-daily headwater will be maintained between 4.0 and 4.5 feet, NGVD to the extent allowable by downstream conditions and for a minimum of 24 hours. "Low Range Adjustment": When LPG2 is at or above 6.0 feet, NGVD and S-357 constraints are not limiting the ability of maintaining C-357 average-daily water level below 6.2 feet, NGVD, the "low range adjustment" applies and S-331 average-daily headwater will be maintained between 4.5 and 5.0 feet, NGVD to the extent allowable by downstream conditions. Additional Operating Information: 1. When operating near range limits operations may be adjusted to the nearest range without reaching the range. This allows a transition to the next projected range or to avoid rapid changes in operating ranges. 2. S-331 "Low Range" may be used instead of the "Low Range Adjustment" to further the understanding of the hydrology and hydraulics of the 8.5 SMA conditions during ideal or acceptable meteorological and climate conditions, in order to provide data to help define a long-term solution to issues related to the S-357 pump station or during times of construction. 3. If the USACE determines the use of the "Low Range" instead of the "Low Range Adjustment" reduces or prevents undesirable seepage effects within the flood mitigation area due to S-357 operations, then the "Low Range" will be used instead of the "Low Range Adjustment" until the undesirable seepage effects from S-357 are modified by other operational or structural changes. 4. Evaluation to use the "Low Range Adjustment" instead of the "Low Range" should be done on a daily basis. 5. The operational ranges may be changed immediately in response to the trigger stage. Note: If S-331 tailwater is above 6.0 feet, NGVD or the S-176 headwater is above 5.5 feet, NGVD then no pumping at S-331. Under normal conditions, pumping at S-331 should be limited to two pumps or less.	
Temporary Emergency Deviation	S-331 resulting from the 2011 8.5 SMA Project EA FONSI	S-331 will be operated to maintain S-331's HW using the standard ranges lowered by 0.2 feet (normal 4.3 to 4.8 and low from 3.8 to 4.3) with the remaining criteria unchanged.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-332B	Pumped up to 575 cfs* On 5.0 feet, NGVD Off 4.7 feet, NGVD *Pump to capacity if limiting conditions within the Sparrow habitat are not exceeded. There will be no overflow into ENP. Note: There are two 125-cfs pumps and one 75-cfs pump directed to the Southern Detention Area. The remaining two 125-cfs pumps are directed to the north seepage reservoir.	Pumped up to 575 cfs* On 4.8 feet, NGVD Off 4.5 feet, NGVD *Pump to capacity if limiting conditions within the Sparrow habitat are not exceeded. There will be no overflow into ENP. Note: There are two 125-cfs pumps and one 75-cfs pump directed to the Southern Detention Area. The remaining two 125-cfs pumps are directed to the north seepage reservoir.
	S-332B North Seepage Reservoir	The north reservoir is a 240-acre reservoir located to the north of the pump station with a weir discharging to the east. This seepage reservoir will have a normal maximum water depth of 2.0 feet. This 2.0 feet depth corresponds to 8.8 feet, NGVD at S-332B (North) tailwater. However, if USACE determines that a flood emergency exists similar to an event like the "No Name" storm, the depth of water would be increased to 4.0 feet, when possible.	
	S-332C	Pumped up to 575 cfs* On 5.0 feet, NGVD Off 4.7 feet, NGVD *Pump to capacity unless habitat conditions are not being achieved within the Rocky Glades. There will be no overflow into ENP.	Pumped up to 575 cfs* On 4.8 feet, NGVD Off 4.5 feet, NGVD *Pump to capacity unless habitat conditions are not being achieved within the Rocky Glades. There will be no overflow into ENP.
Temporary Emergency Deviation	S-332B & S-332C	S-332B and S-332C will be operated to maintain the L-31N's average daily stage between 4.6 and 4.3; Note: This elevation is 0.2 feet lower than the Column 2 ranges of 4.8 and 4.5 feet NGVD.	
2012 Water Control Plan	S-332D	Pump up to 500 cfs from 15 July (or the end of the breeding season, as confirmed by FWS) through 30 November; 325 cfs from 1 December through 31 January; and 250 cfs from 1 February through 14 July. On 4.85 feet, NGVD Off 4.65 feet, NGVD	Pump up to 500 cfs from 15 July (or the end of the breeding season, as confirmed by FWS) through 30 November; 325 cfs from 1 December through 31 January; and 250 cfs from 1 February through 14 July. On 4.7 feet, NGVD Off 4.5 feet, NGVD
Temporary Emergency Deviation	S-332D	S-332D will be operated to discharge up to 250 cfs to S-332D's detention area and up to 325 cfs to the Southern Detention Area (SDA) through S-332DX1 to maintain the L-31N's average daily stage between 4.6 and 4.3 feet NGVD.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-332DX1	Open when stage difference between RG4 and NTS18 exceeds 1.0 foot and CR2 stage is higher than NTS18 stage (Gage locations shown on ***Figure 7-7***). RG4 and CR2 typically have higher water levels than NTS18. Utilize RG4 water level gage located in northern portion of the SDA, NTS18 water level gage located in southern portion of the SDA, and CR2 water level gage located in ENP west of the SDA. Close when stage difference between RG4 and NTS18 is less than 0.25 feet or NTS18 stage is 0.75 feet greater than CR2 stage. ENP may make a recommendation to USACE to adjust the open/close criteria by + or – 0.5 feet.	
Temporary Emergency Deviation	S-332DX1	S-332D will be operated to discharge up to 250 cfs to S-332D's detention area and up to 325 cfs to the Southern Detention Area (SDA) through S-332DX1 to maintain the L-31N's average daily stage between 4.6 and 4.3 feet NGVD.	
2012 Water Control Plan	S-194	Open 5.5 feet, NGVD Close 4.8 feet, NGVD	Operated to maximize flood control discharges to coast Open 4.9 feet, NGVD Close 4.5 feet, NGVD
Temporary Emergency Deviation	S-194	Discharge to tide through the C-102 Canal will be maximized to the extent that downstream conditions allow. The SFWMD will continue to have full operational flexibility to operate S-165 within the low range of 3.0 to 1.9 feet NGVD. It is acknowledged that without remote control of S-194 (manually operated structure) that changes to S-194 will occur less frequently.	
2012 Water Control Plan	S-196	Open 5.5 feet, NGVD Close 4.8 feet, NGVD	Operated to maximize flood control discharges to coast Open 4.9 feet, NGVD Close 4.5 feet, NGVD
Temporary Emergency Deviation	S-196	Discharge to tide through the C-103 Canal will be maximized to the extent that downstream conditions allow. The SFWMD will continue to have full operational flexibility to operate S-167 and S-179 within their low ranges of 3.0 to 1.9 feet NGVD and 3.1 to 2.7 feet NGVD. It is acknowledged that without remote control of S-196 (manually operated structure) that changes to S-196 will occur less frequently.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-176	Open 5.0 feet, NGVD Close 4.75 feet, NGVD	Open 4.9 feet, NGVD Close 4.7 feet, NGVD
Temporary Emergency Deviation	S-176	S-176 will be operated to maintain the L-31N average daily stage within the operational range. The amount of inflow from S-334 and discharge through S-176 will be adjusted to compensate for the available pumping capacity at S-332B, S-332C, and S-332D to 1) maintain the L-31N average daily stage within the operational range of 4.6 to 4.3 feet NGVD while facilitating S-334 flows.	
2012 Water Control Plan	S-177	Open 4.2 feet, NGVD (see S-197 open) Close 3.6 feet, NGVD	
Temporary Emergency Deviation	S-177	S-177 will be operated to maintain an average daily stage below 3.6 feet, NGVD in the upstream reach of the C-111 Canal**.**	
2012 Water Control Plan	S-18C	Open 2.6 feet, NGVD Close 2.3 feet, NGVD	Open 2.25 feet, NGVD Close 2.0 feet, NGVD
Temporary Emergency Deviation	S-18C	S-18C will be fully open (gates out of the water) to maintain the Column 2 operational range of 2.25 to 2.0 feet, NGVD.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
2012 Water Control Plan	S-197	If S-177 headwater is greater than 4.1 feet, NGVD or S-18C headwater is greater than 2.8 feet, NGVD, open 3 culverts. If S-177 headwater is greater than 4.2 feet, NGVD for 24 hours or S-18C headwater is greater than 3.1 feet, NGVD; open 4 more culverts for a total of 7 culverts open. If S-177 headwater is greater than 4.3 feet, NGVD or S-18C headwater is greater than 3.3 feet, NGVD, then open 6 more culverts for a total of 13 culverts open. Close gates when all the following conditions are met: 1. S-176 headwater is less than 5.2 feet, NGVD and S-177 headwater is less than 4.2 feet, NGVD. 2. Storm has moved away from the basin 3. After Conditions 1 and 2 are met, keep the number of S-197 culverts open necessary only to match residual flow through S-176. All culverts should be closed if S-177 headwater is less than 4.1 feet, NGVD after all conditions are satisfied.	
Temporary Emergency Deviation	S-197	S-197 will be operated to maintain the S-18C's Daily Average HW between 2.6 and 2.4 feet, NGVD with a daily discharge limit which does not exceed the smaller of 1) the previous day's average pumping at S-331, 2) the previous day's average discharge through S-176, 3) the previous days average discharge through S-177, and 4) 400 cfs (half of the typical flow for a one third opening of S-197. This will result in discharges larger than those prescribed by the ERTP Increment 1 when WCA-3A is above the High Water Action Line (Case 3).	
2012 Water Control Plan	S-356	When conditions permit (i.e., G-3273 and L-29 constraints), discharges from S-356 will go into L-29. Pumping will be limited to the amount of seepage into L-31N in the reach between S-335 and G-211. A technical team will evaluate pumping limits and operations. The pumps will be operated accordingly.	When conditions permit (i.e., no S-334 regulatory releases and G-3273 and L-29 constraints), discharges from S-356 will go into L-29. Pumping will be limited to the amount of seepage into L-31N in the reach between S-335 and G-211. A technical team will evaluate pumping limits and operations. The pumps will be operated accordingly.
Temporary Emergency Deviation	S-356	If the L-29 stage is below the raised L-29 stage limit with S-333 discharging at its' full capacity (1,350 cfs) the USACE may use S-356 to reduce the flow south and control the L-31N stage north of G-211.In addition, if the L-29 stage peaks well below the 8.5 feet- NGVD limit, with S-333 discharging at the maximum rate allowed by its MAGO limits, water from WCA-3A could be delivered through the manual route of S-151, S-337, and S-356 as long as the pumping rate at S-356 exceeds the discharge rate at S-335.	
Temporary Emergency Deviation	***South Florida Water Management District (SFWMD) Operated structures :*** S-199 will be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 3 (formerly known as Sub-Population D) ; stage at EVER4 below 2.36 feet NGVD. S-200 will be operated with all available capacity until March 1, 2016 at which time the availability of the pumps will require compliance with the criteria for the Cape Cable Seaside Sparrow Critical Habitat Unit 3 (formerly known as Sub-Population D) ; stage at R3110 below	
Temporary Emergency Deviation	***Operational Changes for WCA-3B in Response to High Water in WCA-3A:*** To provide some high water relief for WCA-3A the S-151 and S-152 structure will be used to release water from WCA-3A into WCA-3B to the extent that the Trigger Stage (measured at Site 71) of 8.5 feet NGVD allows. The preferred inflow route for WCA-3B is through S-152 but S-151 may be used if S-152 is unavailable. The operation of S-152 can be partially or fully open with the expectation that S-152 will initially be fully opened and then could be partially closed when the stage at Site 71 approaches the Trigger Stage. If the Trigger stage is exceeded for more than 24 hours then all inflows shall be closed until the stage at Site 71 declines to below the Trigger Stage for more than 24 hours.	

Operational Document	Operational Component	Column 1: No WCA-3A Regulatory Releases to SDCS or SRS	Column 2: WCA-3A Releases to SDCS
Temporary Emergency Deviation	Operational Flexibility Allowed: To address uncertainties, present or future system conditions, the following actions may be taken for any duration throughout the effect of the temporary deviation: 1. Adjust stages within the applicable canal system +/- 0.5 feet to maximize and/or optimize conditions consistent with the purpose. 2. Adjust gate openings, pump rates and/or flows as needed to maximize and/or optimize conditions consistent with the purpose.		

Florida Fish and Wildlife Conservation Commission

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

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March 1, 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 #FL201602247561C, Department of the Army, Jacksonville District Corps of Engineers – Environmental Assessment (EA), Temporary Emergency Deviation to Alleviate High Water Levels in Water Conservation Area 3A (WCA 3A), Broward and Miami-Dade Counties, Florida

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, Florida Constitution.

Project Description

The highest rainfall on record has occurred within the South Florida Ecosystem during the month of January 2016 following already wet conditions in preceding months which has led to severe impacts to natural resources. Very strong El Nino conditions are forecasted to continue for the rest of the dry season, and additional rainfall is likely through the following wet season. All areas of South Florida are inundated, restricting the ability to safely move water to mitigate the effects of flooding. Water is currently being discharged from Lake Okeechobee to the east and west through the C-44 and C-43 canals to the St. Lucie and Caloosahatchee estuaries, respectively. There is an immediate need to relieve pressure on the Caloosahatchee and St. Lucie estuaries by moving water south out of Lake Okeechobee through the Water Conservation Areas (WCAs). This will require permission to deviate from established water management practices identified in the current approved Everglades National Park to South Dade Conveyance System Water Control Plan.

The U.S. Army Corps of Engineers (USACE), Jacksonville District, is initiating an emergency deviation from the approved Water Control Plan for the purpose of alleviating high water conditions within south Florida ecosystem. The emergency deviation is to the current operating limit constraint of 7.5 feet National Geodetic Vertical Datum of 1929 (NGVD) in the L-29 Canal and is being implemented for purposes of providing high water relief in Water Conservation Area 3A and the South Dade Conveyance System (SDCS).

The USACE's deviation releases water from WCA 3A via the S-333 structure into the L-29 Canal effectively raising water levels in the L-29 up to 8.5 feet NGVD. As a result of this deviation, flows to Northeast Shark River Slough (NESRS) are expected to increase, which we expect would reduce the need to send water east and west to the estuaries. The impacts of this deviation (increased S-333 discharges) are expected to continue for no more than 90-days from the date of implementation; however it may be necessary to extend the deviation to address impendent wet season conditions. The EA states that there will be a recovery period once the L-

29 constraint is returned to 7.5 feet NGVD, during which water levels are anticipated to recede to stages typical of the recent hydrological conditions and the operational criteria under the current Water Control Plan.

The USACE has been in coordination with other federal and state agencies and tribal representatives regarding the proposed actions in the EA. The EA and FONSI developed by the USACE includes the following three alternatives: Alternative A (No Action), which would continue the current Central and South Florida water management operations as defined in Increment 1 (G-3273 Constraint Relaxation/S-356 Field Test and S-357N Operational Strategy), which is a deviation to the 2012 WCAs, Everglades National Park (ENP) and the ENP to South Dade Conveyance System (SDCS) Water Control Plan; Alternative B (Relaxation of the L-29 Canal Constraint; SDCS), which would relax the 7.5 feet NGVD maximum operating limit in the L-29 Canal to 8.5 feet NGVD and would include lowered canal stages in the SDCS and increased pumping within southern Miami-Dade County; Alternative C (Relaxation of the L-29 Canal Constraint; SDCS; Use of S-152) is the same as Alternative B with the additional ability to utilize the structure (S-152) on the L-67A Levee to provide additional flows from WCA 3A.

The USACE has identified Alternative C as the preferred alternative. The operational strategy targeted is the incremental increase in S-333 discharges for a short period of time (up to 90 days) bringing the L-29 water level up to 8.5 feet NGVD. During this time, the S-334 will also be used but only to the extent that is required to maintain the L-29 stage below the stage limit of 8.5 feet while operating S-333 within its maximum allowable gate opening limits of 1,350 cubic feet per second.

The emergency deviation is expected to increase water deliveries from WCA 3A to ENP and Florida Bay for the benefit of natural resources. Potential reductions in high water levels and decreased periods of prolonged flooding are expected to provide temporary benefits to vegetation and fish and wildlife resources. Moving water south through ENP would also have the added ecological benefit of improving salinity conditions within Florida Bay. Temporary minor adverse impacts have the potential to occur within Manatee Bay and Barnes Sound due to increases in the frequency, duration, and volume of S-197 discharges; however, significant impacts are not expected. Potential environmental effects would be limited in spatial extent to the near shore areas of the southern estuaries.

Comments and Recommendations

The FWC has fish and wildlife and land management responsibilities for WCAs 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area. As a result of record amounts of precipitation across south Florida in January 2016, water levels within WCA 3A have increased to levels that are detrimental to area wildlife such as federally and state-listed wading birds and small- to large-sized mammals. Negative effects to wildlife under high water conditions include poor foraging habitat, reduced breeding efforts, and stranding on tree islands and levees. Critical wildlife habitat such as tree island vegetation can also be negatively affected by extended high water conditions. The proposed emergency deviation will allow water to move out of WCA 3A, which should help reduce adverse impacts to tree islands and their associated wildlife in WCA 3A, as well as lessen the detrimental long-term effects that prolonged high water levels would have on the essential foraging and nesting habitats of snail kites, wood storks, and state-listed wading bird species such as tricolored and little blue herons. The FWC supports this step forward in both coordination and action to help relieve extreme high water conditions in WCA 3A and to facilitate water movement south from Lake Okeechobee through the system, ultimately to Florida Bay.

FWC staff is committed to ensuring this deviation is successful and have dedicated resources to monitor conditions downstream of WCA 3A to identify any unanticipated negative effects to private property owners in addition to our other resource monitoring efforts. We appreciate that the USACE agrees to maintain open and cooperative communication with the U.S. Fish and Wildlife Service and the FWC during the emergency deviation. Additionally, FWC staff recognizes that the freshwater discharges utilizing the S-197 structure will be temporary in nature and we will continue to actively coordinate with the USACE for water management recommendations within the WCAs to help ensure protection for Florida's fish and wildlife resources.

We appreciate the opportunity to provide support for this emergency measure and we find this proposed deviation consistent with FWC's authorities under the Coastal Zone Management Act/Florida's Coastal Management Program. If you need further assistance, please do not hesitate to contact Jane Chabre 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 Mr. Michael Anderson in our West Palm Beach office at (561) 625-5122 or by email at michael.anderson@myfwc.com.

Sincerely,

Scott Sanders, Director
Office of Conservation Planning Services

ss/jdg/ma
ENV 1-3-2
WCA-3A Emergency Deviation EA_30487_030116

cc: Colonel Jason A. Kirk, USACE, Jason.A.Kirk@usace.army.mil
Melissa Nasuti, USACE, melissa.a.nasuti@usace.army.mil
Larry Williams, USFWS, larry_williams@fws.gov
Pedro Ramos, NPS, pedro_ramos@nps.gov
Ernie Marks, SFWMD, emarks@sfwmd.gov

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

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

MAR 0 1 2016

David Bernhart
National Marine Fisheries Service
263 13th Avenue South
St. Petersburg, Florida 33701-5505

Dear Mr. Bernhart,

The Jacksonville District, U.S. Army Corps of Engineers (Corps) is beginning preparation of a Supplemental Environmental Assessment (EA) for a Temporary Emergency Deviation to Alleviate High Water Levels in Water Conservation Area 3A (WCA 3A). An EA to support the emergency deviation was concluded on February 12th, 2016 with completion of a Finding of No Significant Impact (FONSI). The Corps initiated the emergency deviation on February 15th, 2016. The objective of the Supplemental EA is to provide further documentation of the potential environmental effects resulting from the alternatives considered and the action taken. In accordance with provisions of Section 7 of the Endangered Species Act, as amended, the Corps has reviewed potential project affects from implementation of the emergency deviation for those species under the purview of the National Marine Fisheries Service (NMFS).

Due to the very strong El Nino this dry season, WCA 3A has experienced unseasonably high water levels. In addition, the operational limitations of the current approved Water Control Plan severely limits releases at the southern boundary of WCA 3A for the protection of the Cape Sable Seaside Sparrow. Therefore, the Jacksonville District initiated a temporary deviation for 90 days to increase the operational trigger level in the L-29 Borrow Canal from an elevation of 7.5 feet to 8.5 feet, National Geodetic Vertical Datum 1929, between structure S-333 and S-334 and other necessary changes to the Central and Southern Florida Project operations that are required to support this change. These operational changes will allow for the full discharge capacity through S-333 helping to mediate the high water in WCA 3A. The other operational changes will mediate any concern with increased seepage from Everglades National Park (ENP) into the South Dade Conveyance System.

The water management operating criteria relating to the action affects an area within the Central & Southern Florida Project located in south Florida and includes WCA 3, ENP, and adjacent areas. Features of the action are located in Broward and Miami-Dade Counties (**Figure 1**). Species evaluated pursuant to the Endangered Species Act are identified within **Table 1**. The Corps has determined that based upon the information presented in the EA (FONSI dated February 12th, 2016) and Supplemental EA currently being prepared, the implementation of the emergency deviation will have no effect on listed species under NMFS purview.

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

Sincerely,

Jason Spinning
Chief, Planning and Policy Division

Enclosure

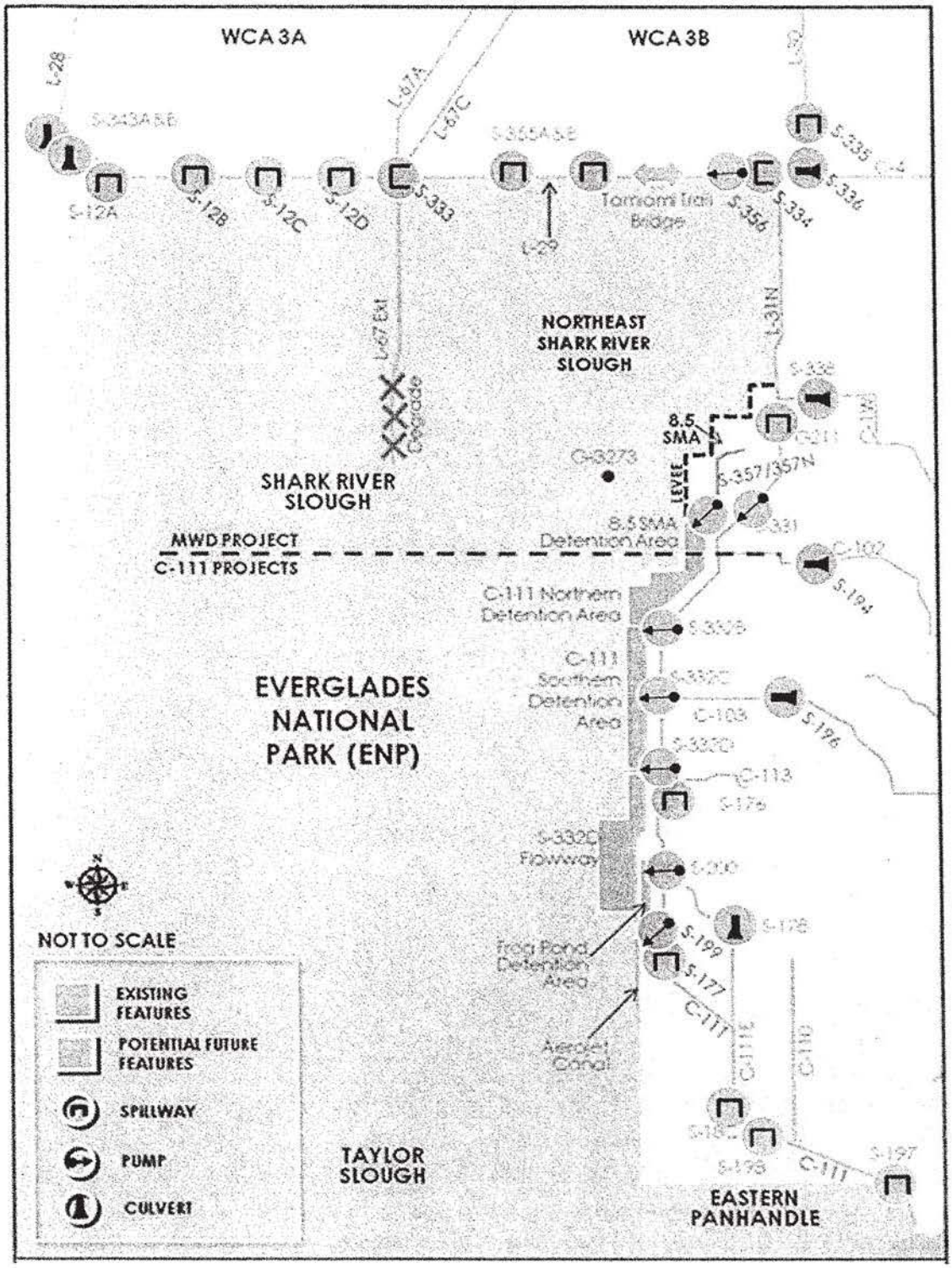


Figure 1. Project Area

TABLE 1. FEDERALLY THREATENED AND ENDANGERED SPECIES WITHIN THE PROJECT AREA AND EFFECTS DETERMINATION OF THE FEDERAL 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
Gopher tortoise	*Gopherus polyphemus*	C			X
Green sea turtle*	*Chelonia mydas*	E			X
Hawksbill sea turtle*	*Eretmochelys imbricate*	E			X
Kemp's Ridley sea turtle*	*Lipodochelys kempii*	E			X
Leatherback sea turtle*	*Dermochelys coriacea*	E			X
Loggerhead sea turtle*	*Caretta caretta*	T			X
Fish					
Smalltooth sawfish*	*Pristis pectinata*	E			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. *okeechobeenis*	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. *floridanum*	E			X
Florida pineland crabgrass	*Digitaria pauciflora*	C			X
Florida prairie-clover	*Dalea carthagenensis* var. *floridana*	C			X
Florida semaphore cactus	*Consolea corallicola*	E, CH			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; Candidate Species, Pr E = Proposed Endangered, Pr T = Proposed Threatened, Pr CH = Proposed Critical Habitat

* Marine species under the purview of the National Marine Fisheries Service (NMFS)

** No effect to Critical Habitat as designations are outside project area.

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

March 18, 2016

(Sent via Electronic Mail)

Colonel Jason A. Kirk, Commander
U.S. Army Corps of Engineers, Jacksonville District
701 Marco Boulevard
Jacksonville, FL 32207-8175

Dear Colonel Kirk:

NOAA's National Marine Fisheries Service (NMFS) reviewed the projects described in the public notice(s) listed below.

Based on the information in the public notice(s), the proposed project(s) would occur in the vicinity of essential fish habitat (EFH) designated by the South Atlantic Fishery Management Council or NMFS. Present staffing levels preclude further analysis of the proposed activities and no further action is planned. This position is neither supportive of nor in opposition to authorization of the proposed work.

CESAJ WCA-3A Deviation

Please note these comments do not satisfy your consultation responsibilities under section 7 of the Endangered Species Act of 1973, as amended. If the activity "may effect" listed species or critical habitat that are under the purview of NMFS, consultation should be initiated with our Protected Resources Division at the letterhead address.

Sincerely,

Pace Wilber (for)

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

Everglades Law Center
National Parks Conservation Association
Everglades Foundation
Audubon Florida
Sierra Club

March 18, 2016

Melissa Nasuti
U.S. Army Corps of Engineers Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019
Email: melissa.a.nasuti@usace.army.mil

Re: Environmental documents for temporary emergency deviation to alleviate high water levels in Water Conservation Area 3A available for 30-day public and agency review

Via electronic mail

Dear Ms. Nasuti:

We write in response to the request for public comment related to the temporary emergency deviation to alleviate high water levels in Water Conservation Area ("WCA") 3A. We strongly support the temporary emergency deviation. We further advocate for the continued implementation of measures that are consistent with the Modified Water Deliveries plan to expedite critical operational changes needed to realize our shared plan for Everglades restoration, and to move toward true multi-species, ecosystem-based management that allows for more appropriate, sustainable water levels and flows across south Florida ecosystems. We remain opposed to operations which lower S-18C and/or increase S-197 discharges, which are unrelated to the purpose of providing high water relief in WCA 3A, counter to restoration goals, are not reflected in the Modified Water Deliveries plan and which set a dangerous precedent.

As described in the Environmental Assessment ("EA") for the temporary emergency deviation, the emergency operational changes release water from WCA 3A via the S-333 pump station into the L-29 Canal and raise water levels in that canal up to no more than 8.5 feet 1929 NGVD, allowing for flows to Northeast Shark River Slough ("NESRS") to increase. *See* EA at page 1, A-3. In addition, structures along the levees dividing WCA 3A and WCA 3B, S-151 and S-152, provide an additional exit for water from WCA 3A by passing flows to WCA 3B. *See* EA at pages 1-2; A5. According to the EA (at page 4):

> Potential reductions in high water levels and decreased periods of prolonged flooding is expected to provide temporary benefits to vegetation and fish and wildlife resources, including Federally threatened and endangered species such as the Cape Sable Seaside Sparrow (Ammodramus maritimus mirabilis), Wood Stork (Mycteria americana) and Everglades snail kite (Rostrhamus sociabilis plumbeus). Prolonged periods of flooding eliminates foraging and nesting opportunities for wading birds. Moving water south, through ENP will also have the added ecological benefit of improving salinity conditions of Florida Bay.

The EA also acknowledges that moving excess water out of WCA 3A will help avoid "losses in tree islands as a result of high water levels [that] are expected to occur if the proposed action is not taken." EA at page 5 ("Loss of tree islands has the potential to impact cultural resources and culturally important ceremonies practiced by Native American Tribes within the project area.")

These operational changes represent important parts of what has long been proposed to accomplish restoration in the decades-old plans for Modified Waters Deliveries ("ModWaters") and the Comprehensive Everglades Restoration Plan ("CERP"). *See e.g.,* Modified Water Deliveries to Everglades National Park: G-3273 & S-256 Pump Station Field Test Fact Sheet (attached as Exhibit A); March 17, 2005 CRS Report for Congress: Everglades Restoration: Modified Water Deliveries Project at pages 3-4 ("Increased water flow to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.")(attached as Exhibit B); May 2015 Water Conservation Area 3A Decompartmentalization Physical Model Fact Sheet (attached as Exhibit C). By expediting – in this temporary emergency deviation – these long-needed and delayed actions to restore America's Everglades, Florida and the U.S. Army Corps of Engineers are also able to "mitigate for severe economic losses currently being experienced as a result of high water levels" in the central Everglades and Water Conservation Areas.

All indications are, at this point, that these operational changes are working both to reduce high water levels in WCA 3A and to move more water east and south through Northeast Shark River Slough – how water historically flowed and should flow in the Everglades – without adverse effects. With this emergency deviation, we have exceeded the flow capacity of the S-333 structure (1,350 cfs) without going above 8.2 feet in the L-29 canal. This shows the feasibility of moving more water east and south (as restoration would direct most water flows). Especially given the repeated short term water-related crises we have faced over the past few years in south Florida, this success also lends support to the urgency of working to expedite Everglades restoration, a multi-species management approach that recognizes the need to protect and restore all parts of the South Florida ecosystem.

We hope that the successes of this "emergency deviation" show that Everglades restoration, as envisioned in ModWaters and CERP, is the solution to the problems of water extremes in south Florida. We should accelerate our efforts to implement restoration; the temporary emergency deviation shows that increasing flows south and east south of Tamiami Trail – as envisioned in CERP – is feasible and in all of our best interests.

Sincerely,

Ansley Samson
Of Counsel
Everglades Law Center

Dawn Shirreffs
Senior Everglades Policy Advisor
Everglades Foundation

John Adornato III
Senior Regional Director
Sun Coast Regional Office
National Parks Conservation Association

Julie Hill-Gabriel
Director of Everglades Policy
Audubon Florida

Frank Jackalone
Senior Organizing Manager
Sierra Club

Exhibit A

MODIFIED WATER DELIVERIES TO ENP | G-3273 & S-356 Pump Station Field Testu

FACTS & INFORMATIONCu

MAY 2015

The G-3273 Constraint Relaxation and S-356 Pump Station Field Test is the critical first step to improve hydrologic conditions for Northeast Shark River Slough in Everglades National Park, while maintaining the multiple congressionally-authorized purposes of the Central and Southern Florida (C&SF) project. The C&SF project purposes include providing flood control; water supply for municipal, industrial and agricultural purposes; prevention of saltwater intrusion; water supply for Everglades National Park; and preservation of fish and wildlife.

The data collected during the incremental field test will be used to develop a comprehensive integrated water control plan for the operation of water management infrastructure associated with the Modified Water Deliveries to Everglades National Park (Mod Waters) and C-111 South Dade projects, while balancing the ecological restoration objectives for these projects.

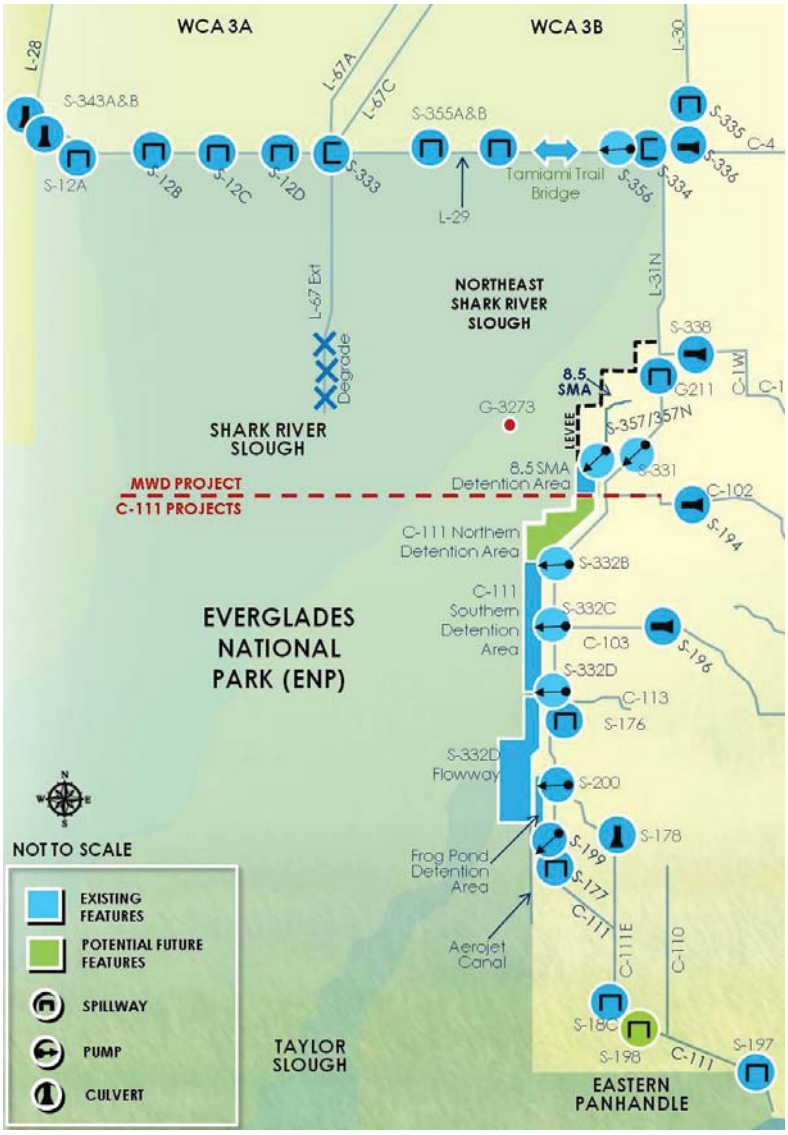
BACKGROUND

Restoring historic water flows and ecological viability to Everglades National Park is a complex endeavor that requires many projects to work in concert. x
x
The Mod Waters and C-111 South Dade projects provide critical infrastructure that will enable larger quantities of water to flow into the Park. The majority of construction for both these projects has been completed and construction of the remaining components are scheduled to be completed within the next few years. x
x
Currently operational constraints exist to mitigate for potential flooding risks to adjacent residential, commercial and agricultural lands, and impacts to endangered species. The relaxation of the G-3273 constraint and use of S-356 x (Increment 1), along with future acquisition of real estate interests south of the Tamiami Trail (necessary for Increment 2) will allow additional operational flexibility within the existing infrastructure. x
x
Since 1985, the G-3273 constraint has served as a trigger to cease S-333 discharges from flowing south into Northeast Shark River Slough when water levels reach 6.8 feet at G-3273 in eastern Everglades National Park. This has been used as a protective measure for residential areas to the east, particulary the 8.5 Square Mile Area. x
x
Since the majority of features for the Mod Waters project have been built, opportunities exist to begin relaxation of the G-3273 constraint and increase water deliveries to Northeast Shark River Slough.

FIELD TEST PURPOSE

Water management is a key element in restoring historic flows to Everglades National Park and an integrated water control plan is needed to operate infrastructure connected to both the Mod Waters and C-111 South Dade projects. x
x
In order to develop this integrated water control plan, known as the Combined Operating Plan, additional information is needed on how newly-operational project infrastructure integrates with the current water management system, and how to maximize ecological restoration objectives. x
x
Information collected through the Field Test will evaluate the effects of incremental increases in flows to Northeast Shark River Slough in Everglades National Park. This information includes: x

- x Ecological responses due to increased inflows and changes in distribution of water entering Everglades National Park
- x Potential effects on water quality entering Everglades National Parkx
- x Potential effects on changing water levels in Water Conservation Areas (WCA) 3A and 3B
- x Potential effects on levels of service for water supply and flood protection in Miami-Dade County
- x Potential effects on flood mitigation performance for the 8.5 Square Mile Area Flood Mitigation Project, a component of the Mod Waters project
- x Potential effects on water management operations
- x Potential effects on cultural resources for future increments.x



FIELD TEST STRUCTURES

The following structures and operational constraints will be incorporated into the test:x

- x The S-333 spillway, which releases water from WCA-3A to the L-29 Canal
- x The L-29 Canal that runs parallel to the Tamiami Trail, adjacent to Everglades National Park
- x The S-356 Pump Station located alongside the L-29 Canal
- x The G-3273 gage in eastern Everglades National Park
- x The components of the Mod Waters project, which includes the Tamiami Trail Modifications and 8.5 Square Mile Area Flood Mitigation projects
- x The components of the C-111 South Dade project, which includes the Northern and Southern Detention Areas.
- x S-197 will be operated as needed to mitigate potential risks to flood protection for areas in south Miami Dade County. S-197 operations will be reassessed once the C-111 South Dade Northern Detention Area is constructed and operable and/or upon completion of Increment 1.

FIELD TEST APPROACH

The field test will be conducted in three increments. x During the duration of the first two increments, data will be collected and analyzed; natural, agricultural and urban system responses to project operations will be assessed; and ecological monitoring will be maintained.

INCREMENT 1o

The first increment of the field test is scheduled to begin in summer 2015 and is planned for approximately two years, with a minimum duration of one year. It involves:

- x Maintaining the maximum operating limit for the L-29 Canal water level at 7.5 feet
- x Relaxing the maximum stage constraint (currently 6.8 ft) at the downstream G-3273 gage in Everglades National Parkx
- x Operating the S-356 pump station for control of seepage into the L-31N Canal
- x These operations will produce a small but important increase in the net flow of water into Northeast Shark River Slough

INCREMENT 2o

The second increment of the field test will be implemented for two years and is scheduled to begin in 2017. It involves:

- x Raising the maximum operating limit of the L-29 Canal, up to a maximum of 8.5 feet
- x Raising the L-29 Canal above 8 feet will be dependent on the acquisition of additional real estate within the Park and completion of the Northern Detention Area for the C-111 South Dade project

INCREMENT 3o

The information obtained from the first two increments will be used in the development of the Combined Operating Plan. This will serve as the water management plan for the southern portion of the Everglades ecosystem and includes:x

- x Water Conservations Areas 3A and 3B
- x Everglades National Park
- x South Dade Conveyance System, which includes the Mod Waters and C-111 South Dade projects.

FOR MORE INFORMATION

ONNA GEORGE
U.S. Army Corps of Engineers o
donna.s.george@usace.army.mil
904-232-1766

http://bit.ly/MWD_FieldTestDo

Exhibit B

Order Code RS21331
Updated March 17, 2005

Everglades Restoration: Modified Water Deliveries Project

Pervaze A. Sheikh
Analyst in Environmental and Natural Resources Policy
Resources, Science, and Industry Division

Summary

The Modified Water Deliveries Project (Mod Waters) is a controversial ecological restoration project in south Florida designed to improve water delivery to Everglades National Park. The implementation schedule of Mod Waters is of interest to Congress partly because its completion is required before the implementation of portions of the Comprehensive Everglades Restoration Plan. Concerns have been raised in hearings on the Administration's FY2006 budget request regarding the cost of implementing the project and the U.S. Army Corps of Engineers' authority to fund the project. Further, due to concerns regarding phosphorus pollution in the Everglades, Congress enacted a provision in the FY2004 and FY2005 Interior Appropriations Acts that conditions funding for Mod Waters on meeting state water quality standards. In addition, the use of eminent domain to acquire land for a flood control plan adjacent to the park has been controversial. Several landowners who were unwilling to sell their land obtained a ruling in federal court that prevented further land acquisitions in the area. The Corps appealed this decision, and Congress authorized a plan, which included land acquisition, in the Consolidated Appropriations Resolution for FY2003. This report provides background on Mod Waters and discusses issues relating to its current status, funding, and land acquisition needs. This report will be updated as warranted.

Most Recent Developments

The Modified Waters Deliveries Project (Mod Waters) is being implemented by the Department of the Interior and the U.S. Army Corps of Engineers in southern Florida. (See **Figure 1**.) For FY2006, the Administration has requested a total of $60 million for the project: $35 million through the Corps and $25 million through the Department of the Interior. The President's request for the Everglades has drawn attention because of a proposed change in the funding of Mod Waters. The request called for the Corps to broaden its role by jointly funding the project with the Department of Interior, which previously had solely funded the project. This proposal has raised a question: Is the Corps authorized to receive appropriations to work on the project? The Administration's

position appears to be for the Corps to pay for roughly two-thirds of the remaining $191 million required to complete the project during next four fiscal years (FY2006-FY2009).[1]

A provision in the Consolidated Appropriations Act for FY2005 (P.L. 108-447) conditions funding for Mod Waters on meeting state water quality standards. This provision cites provisions in the FY2004 Interior Appropriations Act, which states that funds appropriated for Mod Waters will be provided *unless* the Secretary of the Interior, Secretary of the Army, Administrator of the EPA, and Attorney General indicate in a joint report (to be filed annually until December 31, 2006) that water entering the A.R.M. Loxahatchee National Wildlife Refuge and Everglades National Park does not meet state water quality standards, and the House and Senate Committees on Appropriations respond in writing disapproving the further expenditure of funds.[2]

To help implement Mod Waters, Congress included a provision in the Consolidated Appropriations Resolution for FY2003 (Division F, Title I, §157 of P.L. 108-7) that authorizes the Corps to implement a flood protection plan (Alternative 6D) for the "8.5 Square Mile Area"(8.5 SMA) as *part* of Mod Waters. Three conditions are specified in the section authorizing implementation of Alternative 6D: (1) the Corps may acquire residential property needed to carry out Alternative 6D if the owners are first offered comparable property in the 8.5 SMA that will be provided with flood protection; (2) the Corps is authorized to acquire land from willing sellers in the flood-protected portion of the 8.5 SMA to carry out the first condition; and (3) the Corps and the nonfederal sponsor may carry out these provisions with funds provided under the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229; 16 U.S.C. §410r-8) and funds provided by the DOI for land acquisition for restoring the Everglades.

Background

The Modified Water Deliveries Project was authorized by the Everglades National Park Protection and Expansion Act of 1989 (P.L. 101-229) to improve water deliveries to Everglades National Park and, to the extent possible, restore the natural hydrological conditions within the park. The completion of Mod Waters is expected to be a central part of the Comprehensive Everglades Restoration Plan (CERP; Title VI, P.L. 106-541, the Water Resources Development Act of 2000 [WRDA 2000]).[3]

Mod Waters is expected to consist of structural modifications and additions to the Central and Southern Florida Project (C&SF Project) to improve the timing, distribution, and quantity of water flow to the Northeast Shark River Slough.[4] Increased water flow

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[1] U.S. Dept. of the Interior, News Release, "FY2006 Interior Budget Emphasizes Commitments, Cooperative Efforts, Performance and Fiscal Restraint," Feb. 7, 2005. Accessed March 14, 2005 at [http://www.doi.gov/news/05_News_Releases/050207a].

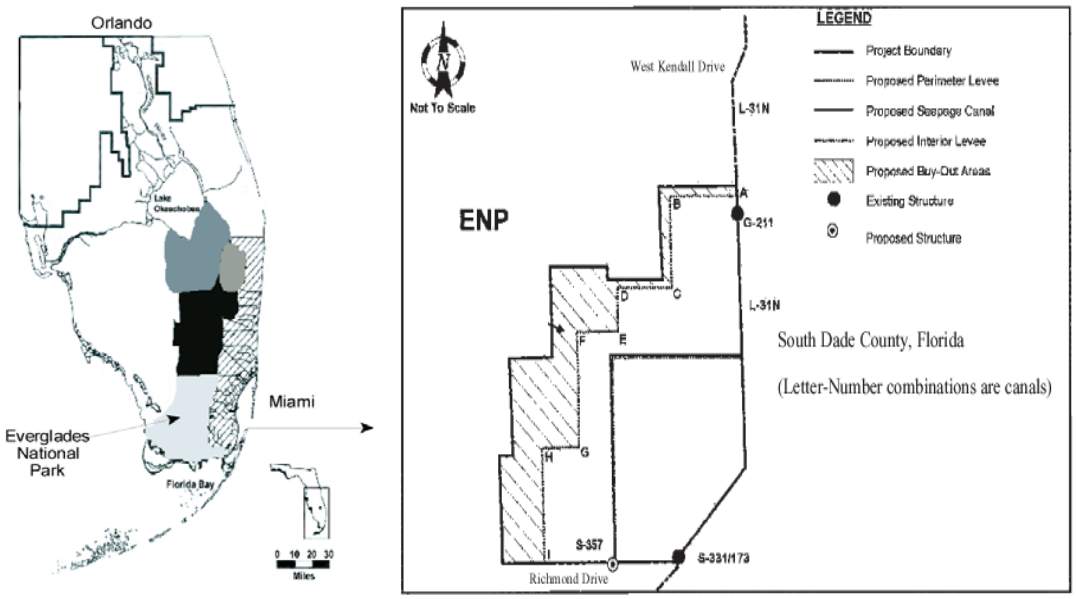
[2] For more information, see CRS Report RL32131, *Phosphorus Mitigation in the Everglades*, by Pervaze Sheikh and Barbara Johnson.

[3] For more information Florida Everglades restoration, see CRS Report RS20702, *South Florida Ecosystem Restoration and the Comprehensive Ecosystem Restoration Plan*, by Nicole Carter.

[4] Originally, the Corps was asked to alter water flow in the Everglades to control flooding, open (continued...)

to the Northeast Shark River Slough will increase water supplies in the park and is expected to improve the natural habitat and hydrology of a portion of the Everglades ecosystem.[5]

Figure 1. The 8.5 Square Mile Area in Southern Florida



Source: Adapted from the U.S. Army Corps of Engineers.

Mod Waters is expected to flood some residential and agricultural areas adjacent to the park. Legislation authorizing this project instructs the Secretary of the Army to determine if residential and agricultural areas within or adjacent to the 8.5 SMA will be flooded from the hydrological changes of Mod Waters (§104(a)). If these areas are under threat of flooding, the law mandates that a flood protection system must be developed for the area (§104(b)). To prevent flooding, several mitigation features have been developed. One of these features is called Alternative 6D, which is a plan for protecting residents in the 8.5 SMA from flood waters resulting from the project (discussed further below).

The importance of Mod Waters goes beyond its expected direct results. Legislation authorizing CERP provides that the Mod Waters must be completed before several CERP projects involving water flows on the east side of the park can receive appropriations (§601(b)(2)(D)(iv) of WRDA 2000).

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[4] (...continued)
land for agriculture, and provide water supplies to urban areas. The cornerstone of this effort was the Central and Southern Florida Project, which was authorized by the Flood Control Project Act of 1948 (ch. 771, 62 Stat. 1171). This project resulted in nearly 1,000 miles of canals, 720 miles of levees, and more than 200 water control structures (e.g., dikes, dams and pumping stations).

[5] For more details, see U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park and South Dade Canals (C-111) Projects* accessed on March 14, 2005, at [http://www.saj.usace.army.mil/dp/MWDC111.htm].

Issues Surrounding the Modified Water Deliveries Project

Three issues are being debated about the implementation of Mod Waters, including its estimated funding level, the relevance of its completion to overall restoration efforts in the Everglades, and the controversy surrounding land acquisition in the 8.5 SMA.

Funding. Rising project costs for Mod Waters led some critics to question its viability. The original cost of completing Mod Waters was estimated at $81.3 million in 1990.[6] The current estimated cost for completing the project is $398 million.[7] To date, approximately $192 million has been appropriated for constructing and implementing Mod Waters, and $206 million more is estimated to be needed to finish the project (i.e., FY2005-FY2009).[8] Some supporters of Mod Waters argue that changes in the implementation plan, the rising cost of land acquisition, and flood mitigation requirements have led to higher costs. This was reflected, according to some, in the changes in the 1992 General Design Memorandum, which were derived from improved modeling data and the project's need to be compatible with CERP.

Project Delays. Mod Waters was originally estimated to be completed by 1997, yet now some argue it is unclear as to when or even whether the project will be completed. The FY2006 Administration request indicates that funding will be requested through FY2009. Some argue that the delay in implementing Mod Waters jeopardizes implementation of CERP projects, causes further degradation within Everglades National Park, and will set a precedent for delays and deliberation regarding land acquisition activities when CERP projects are being implemented. Section 601(b)(2)(D)(iv) of WRDA 2000 provides that Mod Waters must be completed before appropriations can be made to construct other restoration projects in the east Everglades.

Land Acquisition in the 8.5 Square Mile Area. Implementation of Mod Waters was dependent on acquiring land in the 8.5 SMA. Land acquisition in this area was controversial because there were several unwilling sellers and the Corps had to exercise eminent domain to acquire the necessary lands.

The 8.5 SMA is a region adjacent to Everglades National Park of approximately 5,600 acres with a residential community of approximately 1,500 people. Due to its low topography (ranging from 5.0 to 8.5 feet NGVD[9]) and lack of drainage, parts of the 8.5 SMA frequently flood for several months during the rainy season (typically from May to October). With the implementation of Mod Waters, the Corps expected that most of the 8.5 SMA would flood. The Corps developed a flood mitigation plan in 1992 (the 1992

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[6] U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park*, General Design Memorandum, Jacksonville District, June 1992.

[7] U.S. Dept. of the Interior, *FY2006 Budget Justification, National Park Servic*e (Washington, DC, 2005).

[8] Of the total amount of funds already spent and estimated to complete Mod Waters, approximately $200 million is for land acquisitions and approximately $198 million is for construction, design, and monitoring, among other things.

[9] NGVD is the National Geodetic Vertical Datum, which is used to assess elevation relative to sea level.

General Design Report and EIS for Modified Water Deliveries to Everglades National Park [1992 Plan]). The 1992 Plan was expected to provide flood control for residents in the 8.5 SMA and allow for the implementation of Mod Waters. However, the 1992 Plan was later deemed "unworkable" by the superintendent of Everglades National Park, who claimed that it would not provide full flood protection for current and future residents in the 8.5 SMA.[10]

The Corps began to devise a new plan for Mod Waters and the 8.5 SMA in 1999, which considered several alternative plans, including the complete buyout of the 8.5 SMA. A new plan, referred to as Alternative 6D, was proposed by the Corps in 2000. This plan includes a perimeter levee, seepage canal, pump station, and storm water drainage for flood protection in the 8.5 SMA. Instead of a complete buyout of the 8.5 SMA, this plan proposed the acquisition of approximately 2,100 acres in the 8.5 SMA (39% of the total area) and the removal of 77 residential tracts (24 tenant-occupied tracts and 53 owner-occupied tracts) in the 8.5 SMA (13% of the total number of "residential areas" in the 8.5 SMA).[11] Properties of the remaining families would receive flood control.[12]

On February 23, 2001, some residents who are unwilling to sell their land in the 8.5 SMA filed a case against the Corps with two complaints. They asserted that the Corps does not have the authority to implement a plan that does not protect the entire 8.5 SMA from flooding, and that the Corps does not have the authority to exercise eminent domain or spend money to acquire their land through condemnation.[13] On July 5, 2002, a district judge adopted an earlier ruling by a federal magistrate that restricted the Corps from veering from its original mandate to protect the entire community from flooding, and prevented the Corps from acquiring land in the 8.5 SMA. The Corps appealed this decision to the U.S. Court of Appeals for the Eleventh Circuit on September 4, 2002, and Congress authorized implementation of the Alternative 6D plan in the Consolidated Appropriations Resolution for FY2003.

Some critics of land acquisition in the 8.5 SMA base their arguments on the same principles used to criticize the acquisition of the entire 8.5 SMA — that the federal government should not exercise eminent domain to remove unwilling sellers and that the federal government is obligated to protect all residential areas from floods under P.L. 101-229. Some critics also argue that there are several unwilling sellers in the area and that if condemnations proceed, delays due to litigation will be inevitable and will eventually

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[10] U.S. House Resources Subcommittee on National Parks and Lands, *Issues Regarding Everglades National Park and Surrounding Areas Impacted by Management of the Everglades*, oversight hearing, April 27, 1999, 106th Cong., 1st sess. (Washington, DC: GPO), Serial No. 106-24.

[11] A residential area contains either a fixed home, mobile home, or travel trailer.

[12] Details of the plan were taken from U.S. Army Corps of Engineers, *Modified Water Deliveries to Everglades National Park* and *Impact of Implementation of Recommended Plan Alternative 6D for the Comprehensive Everglades Restoration Plan*, accessed March 15, 2005 at [http://www.saj.usace.army.mil/dp/MWDC111.htm].

[13] Garcia vs. United States, No. 01-801-CIV-Moore, slip op. (D.S.D. FL. July 5, 2002).

harm the ecosystem.[14] Some supporters of acquiring land in the 8.5 SMA and implementing Alternative 6D argue that if this plan is not implemented, delays may be even longer in implementing Mod Waters and restoring the regional ecosystem, to the detriment of Everglades National Park.

The use of condemnation by the Corps to acquire lands is controversial. Some critics assert that the Corps should not use eminent domain to acquire lands in the 8.5 SMA from unwilling sellers, and that the Corps may not have the authority to use condemnation.[15] The Corps asserts that it has the authority to condemn lands if necessary, and furthermore that there are several willing sellers in the 8.5 SMA.[16]

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[14] Michael Grunwald, "Dispute Stalls Everglades Project," *Washington Post* (July 17, 2002): A21.

[15] A provision in the FY2005 Consolidated Appropriations Law (P.L. 108-447; §329), requires that no funds appropriated for acquiring lands may be expended for the filing of declarations of taking or complaints in condemnation without the approval of the House and Senate Committees on Appropriations. An exception to this provision is funds appropriated to implement the Everglades National Park Protection and Expansion Act of 1989, or to funds appropriated for federal assistance to the State of Florida to acquire lands for Everglades restoration purposes.

[16] The Corps asserts its power for condemnation is authorized under 40 U.S.C. §257 and 33 U.S.C. §591. This authority is extended to practices of flood control under 33 U.S.C. §701 according to the Corps. Personal communication with Barry Vorse, U.S. Army Corps of Engineers, on Sept. 7, 2002.

Exhibit C

WATER CONSERVATION AREA 3 DECOMPARTMENTALIZATION | Physical Model

FACTS & INFORMATION

MAY 2015

The Water Conservation Area 3 (WCA-3) Decompartmentalization (Decomp) and Sheetflow Enhancement Physical Model (DPM) is a field test that will be conducted along a 3,000- foot stretch of the L-67A and L-67C levees and canals in WCA-3A and 3B to determine how best to design and formulate plans for future decompartmentalization of WCA-3, as visualized in the Comprehensive Everglades Restoration Plan (CERP).

The DPM is designed to address scientific, water flow and water management uncertainties that require clarification prior to future planning and construction of Everglades restoration projects, authorized in the Water Resources Development Act of 2000.

PROJECT LOCATION

The DPM is located in Miami-Dade County along the southern end of the L-67A and L-67C canals within Water Conservation Area 3 (WCA-3).

PROJECT COMPONENTS

This project provides for the temporary installation and testing of the following DPM features:

- Installation of 10 60-inch culverts in L-67A Levee (S-152).
- A 3,000 -foot gap in the L-67C Levee with three 1,000-foot backfill treatments; no backfill, partial backfill and complete backfill using adjacent levee material.
- The S-152 structure will have a maximum combined flow of 750 cubic feet per second (cfs), with velocities up to 3 centimeters per second to allow for pulse releases between the L-67A and L-67C levees toward the various backfill treatments in the L-67C gap.
- De-construction will occur at the end of DPM testing period and the project area will be restored to pre-DPM conditions.

PROJECT STATUS

Installation of the DPM was completed in October 2013. The first operational testing period was conducted from November - December 2013, and the second operational testing period was conducted from November 2014 - January 2015.

Access through the L-67A canal will remain open during and after installation. Access through the northern portion of L-67C will be blocked until the model is decommissioned.

FOR MORE INFORMATION

NATALIE GARRETT
USACE project manager
(904) 232-1048
natalie.s.garrett@usace.army.mil