APPENDIX D.3

NATIONAL HISTORIC PRESERVATION ACT COMPLIANCE

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D.3 National Historic Preservation Act Compliance

This appendix contains pertinent correspondence related to the Combined Operational Plan (COP) and Section 106 of the National Historic Preservation Act (NHPA). A brief description of pertinent correspondence is provided below. Copies of the correspondence received, follow.

Section 106 of the NHPA Consultation Letters

- September 22, 2017: Invitation National Environmental Policy Act (NEPA) Cooperating Agency and initiation of Section 106 of the NHPA Miccosukee Tribe of Indians of Florida.
- September 22, 2017: Invitation NEPA Cooperating Agency and initiation of Section 106 of the NHPA Seminole Nation of Oklahoma.
- September 22, 2017: Invitation NEPA Cooperating Agency and initiation of Section 106 of the NHPA Seminole Tribe of Florida.
- October 13, 2017: Seminole Tribe of Florida response to consultation request.
- March 2, 2018: Meeting Minutes for Government to Government consultation with the Seminole Tribe of Florida regarding COP NEPA and Section 106 of the NHPA.
- March 21, 2018: Seminole Nation of Oklahoma response to initiation of Section 106 of the NHPA.
- April 2, 2018: Meeting Minutes for Government to Government consultation with the Seminole Nation of Oklahoma regarding COP NEPA and Section 106 of the NHPA.
- August 16, 2018: Email from Seminole Tribe of Florida regarding consideration of effects to cultural resources.
- September 10, 2018: Email from U.S. Army Corps of Engineers (USACE) to Seminole Tribe of Florida in response to August 16, 2018 email.
- May 21, 2019: Email to forward presentations from the May 17, 2019 meeting between to USACE, ENP, and the Seminole Tribe of Florida to discuss effects on tree islands and cultural resources.
- June 27, 2019: Letter from Seminole Tribe of Florida regarding Section 106 of the NHPA consultation on COP.
- July 31 2019: Letter from USACE to Everglades National Park (ENP) regarding the COP preliminary preferred alternative.
- July 31 2019: Letter from USACE to the Miccosukee Tribe of Indians of Florida regarding the COP preliminary preferred alternative.
- July 31 2019: Letter from USACE to the Florida State Historic Preservation Officer regarding the COP preliminary preferred alternative.

- July 31 2019: Letter from USACE to the Seminole Nation of Oklahoma regarding the COP preliminary preferred alternative.
- July 31 2019: Letter from USACE to the Seminole Tribe of Florida regarding the COP preliminary preferred alternative.
- July 31 2019: Letter from USACE to the Thlopthlocco Tribal Town regarding the COP preliminary preferred alternative.
- October 17, 2019: Email to forward presentation from the October 16, 2019 meeting between USACE, Seminole Tribe of Florida, and ENP to discuss effect on tree islands and cultural resources.
- November 21, 2019: Letter from USACE to ENP regarding the COP determination of effects.
- November 21, 2019: Letter from USACE to the Miccosukee Tribe of Indians of Florida regarding the COP determination of effects.
- November 21, 2019: Letter from USACE to the Florida State Historic Preservation Officer (SHPO) regarding the COP determination of effects.
- November 21, 2019: Letter from USACE to the Seminole Nation of Oklahoma regarding the COP determination of effects.
- November 21, 2019: Letter from USACE to the Seminole Tribe of Indians of Florida regarding the COP determination of effects.
- November 21, 2019: Letter from USACE to the Thlopthlocco Tribal Town regarding the COP determination of effects.
- December 20, 2019: Letter from SHPO concurring with the USACE's determination of no adverse effect.
- December 26, 2019: Email from Seminole Tribe of Florida requesting a 30-day extension to respond to the USACE's determination of no adverse effect.
- January 2, 2020: Email from USACE to Seminole Tribe of Florida granting a 30-day extension to respond to the USACE's determination of no adverse effect.
- January 24, 2020: Letter from Seminole Tribe of Florida regarding the USACE's determination of effects.

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

SEP 22 2017

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

Dear Chairman Cypress,

I would like to formally invite you and/or your representative to participate on the Project Delivery Team (PDT) for the Combined Operational Plan (COP) and via this letter I am formally initiating Government-to-Government consultation between the Miccosukee Tribe of Indians of Florida and the Jacksonville District, U.S. Army Corps of Engineers (Corps). The Corps is beginning preparation of a National Environmental Policy Act (NEPA) assessment for the COP. The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project to include flood control; water supply for agricultural irrigation, municipalities and industry; regional groundwater control and prevention of saltwater intrusion; enhancement of fish and wildlife; and recreation.

The COP will result in a comprehensive integrated water control plan for the operation of water management infrastructure associated with the MWD and C-111 South Dade Projects in Miami Dade County (Figure 1). Development of the COP will be informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 will also be utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

Water management operating criteria defined during development of the COP will be incorporated into the 2012 WCAs, ENP, and ENP to South Dade Conveyance System Water Control Plan following completion of NEPA. Development of the COP is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion which requires the Corps to proceed as scheduled, and as allowable by law, for completing NEPA analysis for the COP in 2019.

We intend to pursue an open and public process and recognize the obligations that the Corps has to the Miccosukee Tribe of Indians of Florida including consultation under NEPA and Section 106 of the National Historic Preservation Act (NHPA). Pursuant to Executive Order 13175, Section 106 of the NHPA (16 USC 470f) and its implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities, I would like to invite the Miccosukee Tribe of Indians of Florida to participate in Government-to-Government consultation and initiate coordination with the appropriate Tribal representative regarding potential effects to cultural resources as part of our obligation for continued coordination. Additionally, the Corps invites you or your designated staff to participate on the PDT that will be conducting the technical analyses and evaluations in support of COP. If you elect, please identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the PDT. We would also appreciate a response identifying any comments you may have within 30 days of the date of this letter. If you have any questions regarding this proposed action, please feel free to contact me or you may contact Mrs. Melissa Nasuti at (904) 232-1368 or melissa.a.nasuti@usace.army.mil.

Sincerely,

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

Enclosure

cc:
Fred Dayhoff, NAGPRA Representative, Consultant to Miccosukee Tribe of Indians of Florida, HC 61 SR 68 Old Loop Road, Ochopee, FL 34141
Kevin Donaldson, Real Estate Services, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144
Gene Duncan, Director Water Resources Department, Miccosukee Tribe of Indians of Florida, P.O. Box 440021, Tamiami Station, Miami, FL 33144

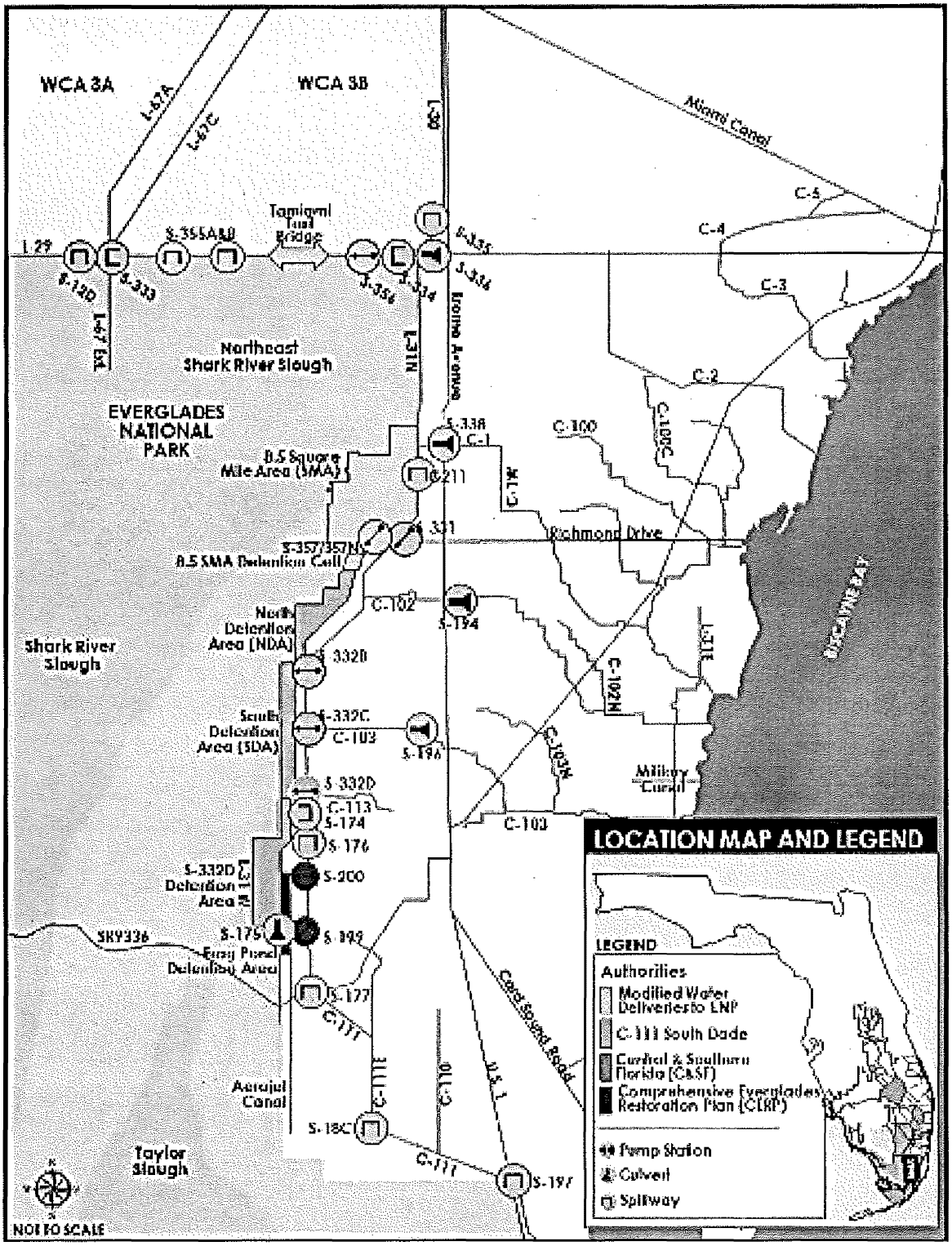

Figure 1. Project Area

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

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

SEP 22 2017

The Honorable Leonard Harjo
Chairman, Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, OK 74884

Dear Chairman Harjo,

I would like to formally invite you and/or your representative to participate on the Project Delivery Team (PDT) for the Combined Operational Plan (COP) and via this letter I am formally initiating Government-to-Government consultation between the Seminole Nation of Oklahoma and the Jacksonville District, U.S. Army Corps of Engineers (Corps). The Corps is beginning preparation of a National Environmental Policy Act (NEPA) assessment for the COP. The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project to include flood control; water supply for agricultural irrigation, municipalities and industry; regional groundwater control and prevention of saltwater intrusion; enhancement of fish and wildlife; and recreation.

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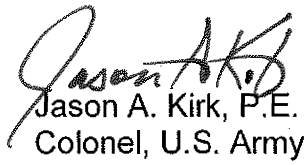
Water management operating criteria defined during development of the COP will be incorporated into the 2012 WCAs, ENP, and ENP to South Dade Conveyance

System Water Control Plan following completion of NEPA. Development of the COP is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion which requires the Corps to proceed as scheduled, and as allowable by law, for completing NEPA analysis for the COP in 2019.

We intend to pursue an open and public process and recognize the obligations that the Corps has to the Seminole Nation of Oklahoma including consultation under NEPA and Section 106 of the National Historic Preservation Act (NHPA). Pursuant to Executive Order 13175, Section 106 of the NHPA (16 USC 470f) and its implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities, I would like to invite the Seminole Nation of Oklahoma to participate in Government-to-Government consultation and initiate coordination with the Tribal Historic Preservation Office regarding potential effects to cultural resources as part of our obligation for continued coordination. Additionally, the Corps invites you or your designated staff to participate on the PDT that will be conducting the technical analyses and evaluations in support of COP. If you elect, please identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the PDT. We would also appreciate a response identifying any comments you may have within 30 days of the date of this letter. If you have any questions regarding this proposed action, please feel free to contact me or you may contact Mrs. Melissa Nasuti at (904) 232-1368 or melissa.a.nasuti@usace.army.mil.

Sincerely,



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

Enclosure

cc:

Mr. Theodore Isham, Seminole Nation of Oklahoma, Tribal Historic Preservation P.O. Box 1498, Seminole, OK 74868
Mr. Mickey Douglas, Seminole Nation of Oklahoma, Director Environmental Protection Office, P.O. Box 1498, Wewoka, OK 74884

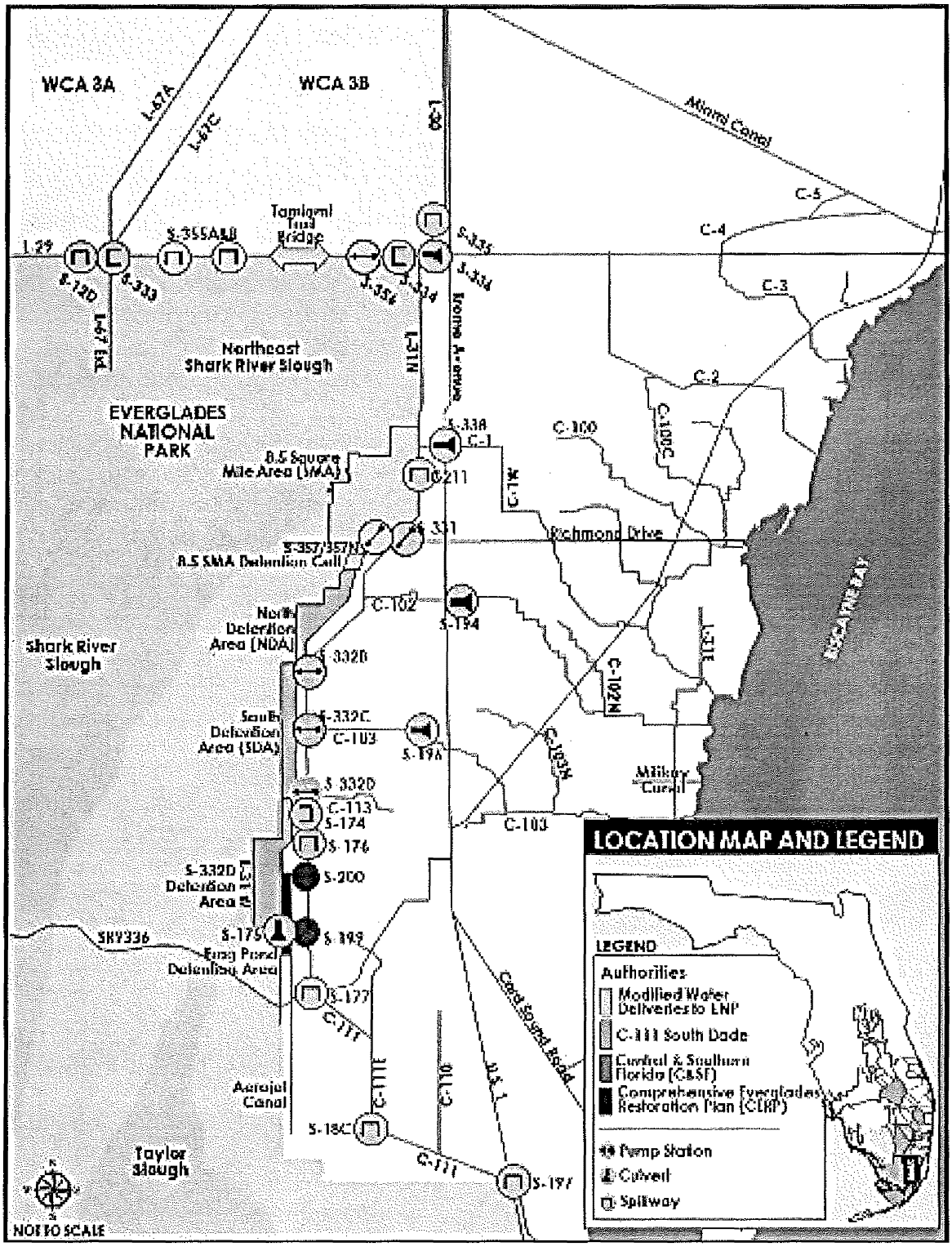


Figure 1. Project Area

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

REPLY TO
ATTENTION OF

SEP 2 2 2017

Planning and Policy Division
Environmental Branch

The Honorable Marcellus Osceola Jr.
Chairman, Seminole Tribe of Florida
6300 Stirling Road
Hollywood, FL 33024

Dear Chairman Osceola,

I would like to formally invite you and/or your representative to participate on the Project Delivery Team (PDT) for the Combined Operational Plan (COP) and via this letter I am formally initiating Government-to-Government consultation between the Seminole Tribe of Florida and the Jacksonville District, U.S. Army Corps of Engineers (Corps). The Corps is beginning preparation of a National Environmental Policy Act (NEPA) assessment for the COP. The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project to include flood control; water supply for agricultural irrigation, municipalities and industry; regional groundwater control and prevention of saltwater intrusion; enhancement of fish and wildlife; and recreation.

The COP will result in a comprehensive integrated water control plan for the operation of water management infrastructure associated with the MWD and C-111 South Dade Projects in Miami Dade County (Figure 1). Development of the COP will be informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 will also be utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

Water management operating criteria defined during development of the COP will be incorporated into the 2012 WCAs, ENP, and ENP to South Dade Conveyance System Water Control Plan following completion of NEPA. Development of the COP is also being pursued to address the mandated Reasonable and Prudent Alternative of the July 22, 2016 Everglades Restoration Transition Plan Biological Opinion which requires the Corps to proceed as scheduled, and as allowable by law, for completing NEPA analysis for the COP in 2019.

We intend to pursue an open and public process and recognize the obligations that the Corps has to the Seminole Tribe of Florida including consultation under NEPA and Section 106 of the National Historic Preservation Act (NHPA). Pursuant to Executive Order 13175, Section 106 of the NHPA (16 USC 470f) and its implementing regulations (36 CFR 800), and in consideration of the Corps' Trust Responsibilities and the Burial Resources Agreement with the Seminole Tribe of Florida, I would like to invite the Seminole Tribe of Florida to participate in Government-to-Government consultation and initiate coordination with the Tribal Historic Preservation Office regarding potential effects to cultural resources as part of our obligation for continued coordination. Additionally, the Corps invites you or your designated staff to participate on the PDT that will be conducting the technical analyses and evaluations in support of COP. If you elect, please identify the appropriate Tribal member(s) or person(s) who could represent the Tribe on the PDT. We would also appreciate a response identifying any comments you may have within 30 days of the date of this letter. If you have any questions regarding this proposed action, please feel free to contact me or you may contact Mrs. Melissa Nasuti at (904) 232-1368 or melissa.a.nasuti@usace.army.mil.

Sincerely,

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

Enclosure

cc:
Dr. Paul N. Backhouse, Ph.D., Seminole Tribe of Florida, Tribal Historic Preservation Officer, Ah Tah Thi Ki Museum, 30290 Josie Billie Hwy, PMB 1004, Clewiston, FL 33440
Cherise Maples, Director, Environmental Resource Management, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024
Manuel Tiger, Big Cypress General Council Office, Seminole Tribe of Florida, Council Representative, 31000 Josie Billie Highway, Clewiston, FL 33440

Joe Frank, Big Cypress Board Representative, Seminole Tribe of Florida, Inc., Big Cypress Board Office, 31000 Josie Billie Hwy., Clewiston, FL 33440
Jim Shore, General Counsel, Seminole Tribe of Florida, 6300 Stirling Road, Hollywood, FL 33024
Michelle Diffenderfer, Lewis, Longman and Walker, 515 N Flagler Drive, Suite 1500, West Palm Beach, FL 33401
Patricia Power, Bose Public Affairs Group, 2000 M Street, N.W., Suite 520, Washington, D.C. 20036
Stephen A. Walker, Lewis, Longman and Walker, 515 North Flagler Drive, Suite 1500, West Palm Beach, FL 33401

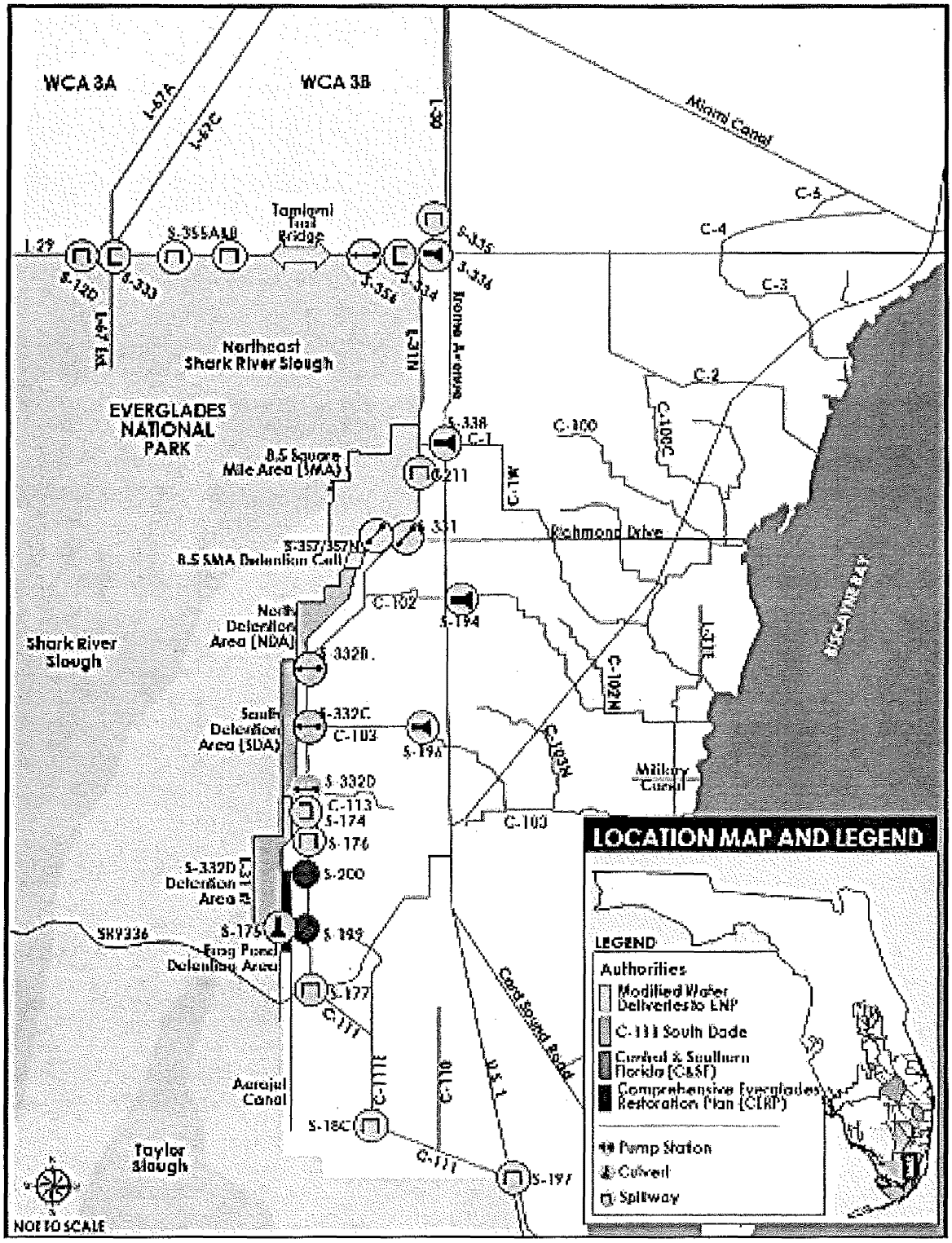


Figure 1. Project Area

From:	Nasuti, Melissa A CIV USARMY CESAJ (US)
To:	Moreno, Meredith A CIV USARMY CESAJ (US)
Subject:	FW: Combined Operational Plan Modified Water Deliveries and C-111 South Dade Projects, Miami-Dade County, FL
Date:	Friday, October 13, 2017 4:19:48 PM
Attachments:	image002.png image004.png

FYI
-----Original Message-----
From: Bradley Mueller [mailto:bradleymueller@semtribe.com]
Sent: Friday, October 13, 2017 1:08 PM
To: Nasuti, Melissa A CIV USARMY CESAJ (US) <Melissa.A.Nasuti@usace.army.mil>
Subject: [EXTERNAL] Combined Operational Plan Modified Water Deliveries and C-111 South Dade Projects, Miami-Dade County, FL

October 13, 2017

Ms. Melissa Nasuti

Planning & Policy Division

Department of the Army, Jacksonville District Corps of Engineers

PO Box 4970

Jacksonville, FL 32232-0019

Phone: 904-232-1368

Email: Melissa.A.Nasuti@usace.army.mil <mailto:Melissa.A.Nasuti@usace.army.mil>

Subject: Combined Operational Plan Modified Water Deliveries and C-111 South Dade Projects, Miami-Dade County, FL

THPO Compliance Tracking Number: 0030098

Dear Ms. Nasuti,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the Combined Operational Plan Modified Water Deliveries and C-111 South Dade Projects, Miami-Dade County, FL. The proposed undertaking area does fall within the STOF Area of Interest. Please continue to consult with us as the COP and the associated NEPA docuemtns ae developed. Regarding the offer to particpate on the Project Delivery Team, I will forward that on to the appropriate person. Thank you and feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller, MA, Compliance Supervisor

STOF-THPO, Compliance Review Section

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Office: 863-983-6549 ext 12245

Email: bradleymueller@semtribe.com <mailto:bradleymueller@semtribe.com>

SUBJECT:	Meeting Minutes – *Combined Operational Plan Government to Government Consultation with the Seminole Tribe of Florida*, 2 March, 9:00 – 10:00
ATTENDEES:	Steve Walker (Lewis Longman & Walker), Michelle Diffenderfer (Lewis Longman & Walker), Bernard Howard (STOF), Bradley Mueller (STOF), Gina Ralph (USACE), Melissa Nasuti (USACE), Meredith Moreno (USACE), and Ceyda Polatel (USACE)
PURPOSE:	To initiate Government to Government consultation between the Seminole Tribe of Florida (STOF) and the U.S. Army Corps of Engineers, Jacksonville District (Corps) on the Combined Operational Plan (COP).

Opening Remarks:

Meredith Moreno welcomed everyone to the meeting and explained that the purpose of this meeting is to initiate Government to Government consultation on COP, provide an overview of the project, and solicit comments/concerns from the STOF. Melissa Nasuti introduced herself as the lead biologist for COP and gave the rest of the presentation on COP. The purpose of the meeting was to provide the STOF with the COP scope, objectives, and describe the alternatives. COP has not been modeled yet, but the Corps will outline the anticipated modeling tools and the economic analysis of the alternatives. The Corps also will explain the underlying authority of COP, present a brief background, and detail the schedule.

COP Presentation:

COP is the final operational plan for the Modified Water Delivers (MWD) and the Canal 111 (C-111) South Dade (SD) Projects. The project is congressionally authorized as part of the Central and Southern Florida (C&SF) Project and will modify operations of previously constructed water control structures. The maps provided before the meeting show the location of the water control structures that may be included in the COP alternatives. The structures associated with the MWD Project are primarily located along the L-29 Canal/Tamiami Trail and near the 8.5 Square Mile Area. The C-111 SD Project structures are located on the eastern edge of Everglades National Park (ENP) and primarily deal with discharges to tide and providing seepage control to the communities on the edge of the ENP.

Operational field tests (Increment 1, Increment 1.1/1.2) were previously conducted to incrementally test changes in stages to the L-29 Canal. The Increment 2 field test was implemented March 1, 2018. These field tests were authorized under the MWD Project and previously consulted on with the STOF. Information from the field tests will result in an update to the 2012 Water Control Plan. Implementation of Increment 1.1/1.2, Increment 2 and COP are requirements of the 2016 Everglades Restoration Transition Plan (ERTP) Biological Opinion (BO). The COP scope includes raising the stage of the L-29 canal to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929. Under the incremental tests the Corps has raised the L-29 stage to 7.8 feet NGVD; however, the L-29 stage reached higher levels during Hurricane Irma. The G-3273 is a gage that shows how much water is coming into the Las Palmas (8.5 Square Mile Area) Community. The incremental tests relax the G-3273 constraint of 6.8 feet NGVD. The COP scope includes evaluating whether the constraint can be removed or if a different constraint should be implemented to protect the Las Palmas Community from flooding. Under COP, the Corps will evaluate how the S-356 pump station (which returns seepage on the eastern edge of ENP) should be

operated, how the S-197 pump station (which discharges to tide (*i.e.* Manatee Bay and Barnes Sound) should be operated, if there should be changes to the Rainfall Plan, and if the WCA-3A regulation schedule should be modified. The main COP objectives are to improve water deliveries into ENP; help restore the historic hydrologic conditions in Taylor Slough, Rocky Glades, and the eastern panhandle of ENP; protect the ecology of WCA 3A and ENP; minimize freshwater discharges; and consider Tribal interests and cultural concerns within WCA 3A and ENP.

Question (Q): [STOF] Will water levels in WCA 3A be lower as a result of COP?

Answer (A): [USACE] Right now the Corps does not know what the results of the alternatives would be. The models will analyze what the water levels in WCA 3A will be as a result of the alternatives. The Corps will also use the iModel which uses an inverse metric to determine water input (structural operations) based on WCA 3A water level targets.

The Corps did not perform hydrologic modeling for the incremental field tests; however, COP will use the Regional Simulation Model for the Glades and Lower East Coast Service Areas (RSM-GL) which simulates hydrology in WCA 3 and ENP. After the modeling is complete the Corps will have an output that shows water stages and hydroperiods of the alternatives. There will be two rounds of modeling before a recommended plan is chosen. The Corps also will conduct an economic analysis, largely within the C-111 SD Project area, that will show any economic damages associated with the alternatives.

The Corps will use ecological performance measures to rate the alternatives based on how they meet the goals of restoration. Performance measures include inundation patterns, ground water, salinity, and sheet flow. Ecological habitat suitability models of wading birds, alligators, fish, marl prairie, apple snails, fish, and crocodiles also will be utilized to weigh alternatives.

In order to develop the alternatives, the Corps first needed to identify the water control structures associated with MWD and C-111 SD that may need to be modified. Operational bookends were created that ranged from a total flood protection objective to a total environmental restoration objective. The no action alternative was defined as Increment 1.1/1.2 and Increment 2 was determined to be the middle of the road between total flood protection and total environmental restoration. For the first round of modeling the major items that differentiate these alternatives is the operation of S-356 (which manages seepage in L-67), the closure periods of the S-12s and S-344 related to the Cape Sable seaside sparrow, the priority of the structures utilized to dictate flows to Northeast Shark River Slough (i.e. the Action Line), the Rainfall Plan, and the operation of S-197. Alternatives also differ in terms of canal stages along the South Dade Conveyance System (SDCS).

The COP schedule is driven by the ERTP BO that says COP needs to be implemented by January 1, 2020. The modeling and alternative evaluations will be complete between March and September 2018. Meredith plans to initiate Section 106 and the Burial Resources Agreement after the first round of modeling is complete in June 2018. The Corps will select the TSP in November 2018, a draft Environmental Impact Statement (EIS) will be released for review in June 2019, and a final EIS will be released for review in October 2019.

<u>Questions/Comments:</u>

Q: [STOF] How does COP consider the effects of the EAA?

A: [USACE] SFWMD is planning the EAA and the Corps will only consult on the report once it has been submitted to the Assistant Secretary of the Army, so the Corps does not have the details of the EAA yet. Since COP will only be looking at the existing conditions of structures that are already built and operational, COP does not include the EAA. The EAA is still in the planning stage and construction is too far in the future. COP will be robust enough to take into consideration the new S-333N structure that SFWMD is building.

Q: [STOF] After the EAA is built will COP need to be changed or will the adaptive management cover the changes?

A: [USACE] The Water Control Plan will need to be updated when new structures/features are built that are considered under CERP

Q: [STOF] What does the June 2018 consultation for Section 106 and the Burial Resources Agreement mean?

A: [USACE] The Corps will not know the effects of the alternatives until the first round of modeling is complete. The Corps does not believe it would be helpful to discuss effects to cultural and burial resources until we have some idea of what the results of the modeling would be. The STOF can also add their input into the second round of modeling at this time.

Comment (C): [LL&W] This is a lot of information and the Corps' schedule does not allow for a lot of time. The STOF may need to bring a modeler to interpret the results for the Tribe.

C: [USACE] The Corps would have liked to have ERMD present at this meeting.

C: [LL&W/STOF] They were invited; however, they are very resource restricted.

C: [USACE] The Miccosukee Tribe have requested the Corps have a standing monthly meeting to discuss LOWP, Lake Okeechobee, WERP and COP. If the STOF is interested, the Corps can do the same for them.

C: [LL&W] The timeframe of COP creates issues because the ERTP PA will not be finalized.

C: [USACE] A determination of effects on ERTP will be issued within the next few months.

C: [LL&W] The STOF does not think there is enough information for ERTP to make a determination of effects. The Corps needs to do more research and have a new PA for COP.

C: [USACE] It is the Corps' perspective that all the items outlined in the PA have been provided. We need the Tribe's comments on the fieldwork report in order to finalize the report. Once the report is finalized the Corps will make a determination of effects. Section 106 does not specify that 100 percent of the area of potential of effects requires survey and COP will be coordinated as a new and separate Federal undertaking.

C: [LL&W] We understand the Corps' perspective and you will be receiving comments from the STOF soon. The project is complicated. The STOF needs more information on water quality, fish consumption, cultural rights, and erosion of tree islands.

Q: [LL&W] What are the water quality assumptions for COP?

A: [USACE] A full water quality analysis will be available as part of the EIS.

Q: [LL&W] How will the state regulate COP?

A: [USACE] The project falls under the Florida coastal management program; however, no permits are required. No new structures will be constructed, so no new permits are required.

POC:

Meredith A. Moreno, M.A., RPA
Lead Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
Office: 904-232-1577
Mobile: 904-861-9967

MORENO.MEREDITH.ASHLEY.1514043007

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DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=MORENO.MEREDITH.ASHLEY.1514043007
Date: 2018.03.20 08:28:38 -04'00'

From: Moreno, Meredith A CIV USARMY CESAJ (US)
To: "Theodore Isham"
Cc: Nasuti, Melissa A CIV USARMY CESAJ (US)
Subject: RE: Seminole Nation of Oklahoma Consultation on USACE Everglades Projects
Date: Thursday, March 22, 2018 8:31:00 AM

Good morning,

Please let if there is one hour that works best for you from the dates below:

Monday 2 April: Available from 9 am to 1pm
Thursday 5 April: Available from 9 am to 1 pm
Friday 6 April: Available from 11 am to 1 pm.

I will provide a webinar line/teleconference number for whichever day/time you choose.

Thank you,

Meredith A. Moreno, M.A., RPA
Lead Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
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-----Original Message-----
From: Theodore Isham [mailto:isham.t@sno-nsn.gov]
Sent: Wednesday, March 21, 2018 4:28 PM
To: Moreno, Meredith A CIV USARMY CESAJ (US) <Meredith.A.Moreno@usace.army.mil>
Subject: [Non-DoD Source] RE: Seminole Nation of Oklahoma Consultation on USACE Everglades Projects

Ms Moreno,
The Seminole Nation of Oklahoma still wishes to be updated and kept apprised of the study.
We would like to schedule a meeting, either face to face or via webinar like the you did with the Miccosukee

Theodore Isham
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Historic Preservation Officer
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-----Original Message-----
From: Moreno, Meredith A CIV USARMY CESAJ (US) [mailto:Meredith.A.Moreno@usace.army.mil]
Sent: Thursday, February 01, 2018 10:02 AM
To: Theodore Isham
Cc: Nasuti, Melissa A CIV USARMY CESAJ (US); King, Virginia E CIV USARMY CESAJ (US)
Subject: Seminole Nation of Oklahoma Consultation on USACE Everglades Projects

Good morning,

I am following up from a phone message I left last week, and it appears as you are still out of the office. The Corps recently contacted your office about consultation on two projects, the Central Everglades Planning Project (CEPP) South, and the Combined Operational Plan (COP) for the Modified Water Deliveries and Canal 111 (C-111) South Dade Projects. Both are ongoing Corps projects within the southeast portion of the Everglades. Our current action on CEPP is to validate an existing study that outlines the construction of pumps and the backfilling of canals to restore the eastern portion of the everglades to a more natural state.

COP is a water control plan that outlines how the Corps and other water managers can utilize existing structures to move water from impoundment areas to Everglades National Park and restore more historic water levels. Modeling is happening right now on both studies so that we can better understand the effects of water levels on tree islands and cultural resources within the project areas. The Corps recently had a webinar with the Miccosukee Tribe's environmental staff and had a detailed discussion on the modeling inputs, the use of certain water control structures, and potential alternatives that the Corps will be evaluating in an upcoming EA.

I understand from our biologist (Melissa Nasuti) that you requested a Government-to-Government meeting on COP, and I wanted to make sure we are providing the right information for you to have a good understanding of our projects. Please let me know what kind of information you would like (overview or detailed) and when you would like to schedule a meeting. We are still in the beginning stages of both studies and do not have specific information on potential effects yet, if you would like to hold off on meeting until more information is available please let me know. Either way, feel free to give me a call with any questions or to schedule a meeting to discuss any of our studies.

Kind regards,

Meredith A. Moreno, M.A., RPA
Archaeologist
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SUBJECT:	Meeting Minutes – *Combined Operational Plan Government to Government Consultation with the Seminole Nation of Oklahoma*, 2 April, 10:00 – 10:45
ATTENDEES:	Gina Ralph (USACE), Melissa Nasuti (USACE), Meredith Moreno (USACE), Brooke Hall (USACE), Donna George (USACE), Theodore Isham (SNO), Regita Leder (SNO)
PURPOSE:	To initiate Government to Government consultation between the Seminole National of Oklahoma (SNO) and the U.S. Army Corps of Engineers, Jacksonville District (Corps) on the Combined Operational Plan (COP).

Opening Remarks:

Meredith Moreno welcomed everyone to the meeting and explained that the purpose of this meeting is to initiate Government to Government consultation on the Combined Operational Plan (COP), provide a high level overview of the project scope, and a history of the project and everglades restoration. Melissa Nasuti introduced herself as the lead biologist for COP and gave the rest of the presentation on COP. The purpose of the meeting was to provide the SNO with the same information provided to the Miccosukee Tribe of Indians of Florida and the Seminole Tribe of Florida, including the COP scope, objectives, modeling tools, different operational alternatives, schedule, and answer any questions the SNO may have. With regards to the presentation, it was noted that there is a lot of detail on specific operations that may be adjusted as part of COP; however, the presentation can be tailored to provide the SNO with as much or as little detail as requested. Questions were welcomed during the presentation.

COP Presentation:

The first slide indicates how water is currently managed to move from Lake Okeechobee into Water Conservation 3A (WCA 3A), WCA 3B, and into Everglades National Park (ENP). COP is the final operational plan for the Modified Water Delivers (MWD) and the Canal 111 (C-111) South Dade (SD) Projects. Two fact sheets were provided prior to the meeting that explain each of the separate MWD and C-111 SD projects. COP will define the final operations of the constructed features of these projects. The structures associated with the MWD Project are primarily located along the L-29 Canal/Tamiami Trail and near the 8.5 Square Mile Area. The purpose of the MWD structures is to put water into Everglades National Park (ENP). The C-111 SD Project structures are located on the eastern edge of ENP and primarily deal with discharges to tide and providing seepage control to the communities on the edge of the ENP. As the MWD project provides more water into ENP, there is increased seepage of water in the developed communities on the edge of ENP. The C-111 SD detention areas and structures maintain a hydrologic ridge between the developed areas and ENP and ensures that water stays in the Park.

COP has been informed by previous incremental field tests. Operational field tests (Increment 1, Increment 1.1/1.2) were previously conducted to incrementally test changes in stages to the L-29 Canal. The intent is to raise stages is the canal in small steps to evaluate how the system responds. Information from the field tests will result in an update to the 2012 Water Control Plan.

Question (Q): [SNO] The purpose of the project appears to be to put ENP in a more natural state. Is that correct?

Answer (A): [USACE] Correct. There are a system of gages that define how much water is allowed in the system while still providing flood protection. The purpose of the final COP operational plan is to find a balance between water in ENP and the protection of infrastructure.

Implementation of the incremental field tests and COP are requirements of the 2016 Everglades Restoration Transition Plan (ERTP) Biological Opinion (BO). ERTP is the current water control plan that defines how the system is operated. Between 2014 and 2016, the U.S. Fish and Wildlife Service (USFWS) issued a jeopardy opinion for the Cape Sable Seaside Sparrow (CSSS). The BO was issued to protect the endangered CSSS, located within the eastern and western marl prairie of ENP. The general intent of the current project is to improve water deliveries to ENP while managing constraints. Constraints include the CSSS sub population habitat suitability, flood protection along the C-111 Canals, and flood mitigation for the Las Palmas Community (8.5 square mile area). Flood mitigation of the Las Palmas Community is measured at the G-3273 gage. The previous incremental tests relax the G-3273 constraint of 6.8 feet NGVD. The COP scope includes evaluating whether the constraint can be removed or if a different constraint should be implemented to protect the Las Palmas Community from flooding. COP will raise the stage of the L-29 canal which has been incrementally utilized to put more water in ENP. Under COP, the Corps will evaluate how the S-356 pump station (which returns seepage on the eastern edge of ENP) should be operated, how the S-197 pump station (which discharges to tide (*i.e.* Manatee Bay and Barnes Sound) should be operated, if there should be changes to the Rainfall Plan, and if the WCA-3A regulation schedule should be modified. The main COP objectives are to improve water deliveries into ENP; help restore the historic hydrologic conditions in Taylor Slough, Rocky Glades, and the eastern panhandle of ENP; protect the ecology of WCA 3A and ENP; minimize freshwater discharges; and consider Tribal interests and cultural concerns within WCA 3A and ENP.

COP will use the Regional Simulation Model for the Glades and Lower East Coast Service Areas (RSM-GL) which simulates hydrology in WCA 3 and ENP. After the modeling is complete the USACE will have an output that shows water stages and hydroperiods of the alternatives. There will be two rounds of modeling before a recommended plan is chosen. The USACE also will conduct an economic analysis, largely within the C-111 SD Project area, that will show any economic damages associated with the alternatives. The USACE will use ecological performance measures to rate the alternatives based on how they meet the goals of restoration. Performance measures include inundation patterns, ground water, salinity, and sheet flow. Ecological habitat suitability models of wading birds, alligators, fish, marl prairie, apple snails, fish, and crocodiles also will be utilized to weigh alternatives.

Q: [SNO] The Miccosukee have lands in WCA 3A and south of the WCA, what are their concerns in relation to the project?

A: [USACE] The Miccosukee have leased lands in WCA 3A and have a reservation on Tamiami Trail. The USACE consults with the Tribe to determine impacts to tree islands and the operation of structures. The Miccosukee have expressed concerns over the impoundment of water in WCA 3A which floods tree islands and a desire to put more water in ENP.

In order to develop the alternatives, the Corps first needed to identify the water control structures associated with MWD and C-111 SD that may need to be modified. Operational bookends were created that ranged from a total flood protection objective to a total environmental restoration objective. The no action alternative was defined as Increment 1.1/1.2 and Increment 2 was determined to be the middle of the road between total flood protection and total environmental restoration.

The COP schedule is driven by the ERTP BO that says COP needs to be implemented by January 1, 2020. The modeling and alternative evaluations will be complete between March and September 2018. Section 106 will be initiated after the first round of modeling is complete in June 2018. A comparison of the alternatives will be made after the second round of modeling is complete in October 2018. A Tentatively Selected Plan will be selected in November 2018, a draft Environmental Impact Statement (EIS) will be released for review in June 2019, and a final EIS will be released for review in October 2019.

Q: [SNO] When will be the next time you contact the tribes, when you initiate Section 106 consultation?

A: [USACE] The schedule is largely driven by the modeling schedule which is somewhat fluid; however, after the USACE receives the results of the first round of modeling, the USACE will have a better idea of what the effects of the alternatives are and reach out to the Tribe to get input. After the first round of modeling, the USACE will also use the iModel which uses an inverse metric to determine water input (structural operations) based on WCA 3A water level targets. The Tribe will have an opportunity to provide input into the iModel.

Q: [SNO] Will these discussions be face-to-face meetings?

A: [USACE] Typically the Miccosukee Tribe and Seminole Tribe of Florida prefer to have separate government-to-government consultations, but the USACE can ask the other Tribes if they would like to participate in a joint meeting.

Comment (C): [SNO] The Seminole Nation of Oklahoma is interested in the flora of the project area. There are traditional medical plants within the area. The SNO would like to request a list of flora within the project area to help identify Traditional Cultural Properties.

C: [USACE] There are performance measures that the USACE uses to maintain the ridge and slough landscape. There are species of interest that should be seen during an average wet and dry season.

C: [SNO] The SNO are not interested in threatened and endangered species, just a list vegetation.

C: [USACE] The USACE can provide current vegetation inventories and maps of species within WCA 3 and reach out to ENP to get information on current vegetation mapping efforts that are ongoing.

POC:

Meredith A. Moreno, M.A., RPA
Lead Archaeologist
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From:	Ralph, Gina P CIV USARMY CESAJ (US)
To:	Bradley Mueller
Cc:	Jed Redwine (jed_redwine@nps.gov); Moreno, Meredith A CIV USARMY CESAJ (US); George, Donna S CIV USARMY CESAJ (US); Paul Backhouse; Anne Mullins; Taplin, Kimberley A CIV USARMY CESAJ (US); "Julie L. Jennison (jjennison@llw-law.com)"; Del Bene, Penelope; "aramire@sfwmd.gov"; Berger, Brittany M CIV USARMY CESAJ (US); Nasuti, Melissa A CIV USARMY CESAJ (US)
Subject:	RE: Combined Operational Plan Consultation August 16, 2018
Date:	Monday, September 10, 2018 11:02:04 AM
Attachments:	G-3273_Inc3_COP_STOF_Summary_18_0816.docx
Importance:	High

Bradley/Paul,

Thank you for your email regarding the Combined Operational Plan (COP). We acknowledge your request to include cultural impacts within our analysis. As discussed at our August 16, 2018 Government to Government Consultation Meeting, we are using the Regional Simulation Model (RSM) to address hydrologic effects of different water management options on the human environment within Water Conservation Area 3A, Everglades National Park and the southern estuaries. The RSM is applied through subregional model implementations to provide a tool for the evaluation of alternative water resource management plan formulations. The RSM is composed of the Hydrologic Simulation Engine (HSE) and the Management Simulation Engine (MSE). The HSE is composed of the waterbodies, watermovers and hydrologic process modules. The MSE simulates the operation of the structures, implements water management rules and policies, and coordinates the regional canal system. Together, RSM simulates hydrologic effects of different water management scenarios. The RSM, however, is not the tool to "model" consideration of cultural impacts.

As also discussed during our August 16, 2018 Government to Government Consultation Meeting, the RSM tool can be used for subsequent analyses to predict potential effects on the human environment. RSM output can be used in conjunction with ecological performance metrics to understand how changes in hydrology may affect environmental conditions or parameters such as soil oxidation, slough vegetation, frequency of dry events and tree island condition to name a few. The RSM output can also be input into ecological planning tools to make predictions on how the changes in hydrology may affect fish and wildlife resources. Similar to these types of analyses, we are offering to work in conjunction with the Seminole Tribe of Florida to gain a more thorough understanding of how cultural values or areas of cultural significance may be affected by changes in hydrology as we move forward with Comprehensive Everglades Restoration Plan (CERP) implementation. Due to the COP timeframe, we are unclear whether this information will be available in time to inform COP alternatives, but this action could provide information relevant to future CERP projects. It is also important to note that these items would not be parameters that could be built into the RSM tool, but could be developed into a secondary analysis similar to how the ecological and environmental parameters are analyzed to better understand effects on the human environment. It is critically important that the THPO office work with our staff in the next few months to develop any appropriate parameters to ensure consideration in our analyses in accordance with the COP schedule.

The Tribe also requested that tree islands less than 1 acre in size to be incorporated into the analysis. At this time, we do not have systematically collected elevation information about small tree islands that matches the profile of information that we have collected for large tree islands; therefore, we are unable to immediately satisfy this request. We are, however, open to following up on this request by looking into our monitoring efforts to find an effective mechanism for collecting the necessary information to include small tree islands in future. One possible course of action for the immediate future could be the exploration of additional qualitative criteria for use of tree islands and/or the landscapes of the Everglades which are culturally relevant, and which can be identified as possible or not based on water depth conditions. Our sense is that pursuing this course of action would require us to form a collaborative working group to ensure that we understand and accurately reflect how shifts in water levels might affect culturally relevant uses. Staff from the Jacksonville District, U.S. Army Corps of Engineers and Everglades National Park are open to participating in this working group, but want to be clear that we cannot guarantee a specific outcome without further dialogue.

Finally, the Tribe requested that an Ethnographic Study be performed within the ERTP project area. Our cultural resources staff is currently writing a scope of work to conduct an ethnographic study of CERP project areas to

include Water Conservation Area 3 and Everglades National Park. The cultural resources staff will continue to coordinate the ethnographic scope with your office until funding becomes available. The Fiscal Year 2019 President's Budget does not include funding for this effort.

Please let me know if you have any questions and please let me know a timeframe for our next discussion of this topic. Once I understand your availability, I will coordinate a follow-up meeting. I have also attached a Draft meeting summary for your review. Please provide any comments to me by 9/18/18 and I will finalize.

Thank you,
Gina

Gina Paduano Ralph, Ph.D.
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-----Original Message-----
From: Bradley Mueller [mailto:bradleymueller@semtribe.com]
Sent: Tuesday, August 28, 2018 1:41 PM
To: Ralph, Gina P CIV USARMY CESAJ (US) <Gina.P.Ralph@usace.army.mil>
Cc: Jed Redwine (jed_redwine@nps.gov) <jed_redwine@nps.gov>; Moreno, Meredith A CIV USARMY CESAJ (US) <Meredith.A.Moreno@usace.army.mil>; George, Donna S CIV USARMY CESAJ (US) <Donna.S.George@usace.army.mil>; Paul Backhouse <PaulBackhouse@semtribe.com>; Anne Mullins <AnneMullins@semtribe.com>; Taplin, Kimberley A CIV USARMY CESAJ (US) <Kimberley.A.Taplin@usace.army.mil>; 'Julie L. Jennison (jjennison@llw-law.com)' <jjennison@llw-law.com>; Del Bene, Penelope <penelope_delbene@nps.gov>; 'aramire@sfwmd.gov' <aramire@sfwmd.gov>
Subject: [Non-DoD Source] Combined Operational Plan Consultation August 16, 2018

August 28, 2018

Ms. Gina Paduano Ralph, Ph.D.

Chief, Environmental Branch

Planning Division

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Gina.P.Ralph@usace.army.mil <mailto:Gina.P.Ralph@usace.army.mil>

Subject: Combined Operational Plan Consultation August 16, 2018

THPO Compliance Tracking Number: 0028534

Dear Ms. Ralph,

Thank you again for meeting with us on August 16th and consulting on the Combined Operational Plan. As agreed to during that consultation we are requesting that 1) the model currently used to evaluate alternatives be modified to include consideration of cultural impacts, 2) that impacts to tree islands of less than one acre in size be incorporated into the modeling, and 3) that a proposed ethnographic study of the ERTP project area be completed. We believe that a model that is sensitive to undertaking impacts on cultural resources benefits all concerned parties and are prepared to assist the USACE in this effort. Likewise, we feel that expanding the population of tree islands under consideration to include smaller islands can only make the modeling results more reflective of the real world and consequently more useful in the planning process. Lastly, the ability to consult on COP and other ERTP projects will be greatly aided by having access to the results of the ethnographic study. We look forward to continuing to consult with you on this. Please feel free to contact us with any questions or concerns.

Regards,

Paul N. Backhouse, Ph.D., RPA

Ah-Tah-Thi-Ki Museum Director and Tribal Historic Preservation Officer

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Clewiston, FL 33440

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From:	Redwine, Jed
To:	Moreno, Meredith A CIV USARMY CESAJ (US); Bradley Mueller; Penelope Del Bene; juancancel@semtribe.com; bernardhoward@semtribe.com; victoriamenchaca@semtribe.com; Dunn, Angela E CIV USARMY CESAJ (US); Paul Backhouse; Taplin, Kimberley A CIV USARMY CESAJ (US); Anne Mullins; Nasuti, Melissa A CIV USARMY CESAJ (USA)
Subject:	[Non-DoD Source] R3 Seminole tribe consultation
Date:	Tuesday, May 21, 2019 2:38:14 PM
Attachments:	20190521_Tree Islands_sem_tribe.pdf

Dear All,
Attached are the slides I presented last week at our meeting where we discussed round 3 of the combined operations plan.
We've completed the analysis for Alternative Q and the summary information has been inserted in this presentation. As expected, Alt Q generally performed between Alt N2 and Alt O. The performance shifts in southern WCA3 were a bit more that I expected, but certainly in the right direction.

Hope this helps facilitate our ongoing discussions. And be aware that due to subtle errors in round 2 simulations, I will be revisiting all of the alternatives from Round 2 forward, and will also conduct analysis on several of the sensitivity runs (particularly those that cut back deliveries to ENP, as that may lead to increasing inundation of some tree islands in WCA3).

Hope everyone is doing well. Please reach out if you have any questions, concerns, or suggestions for how to improve any aspect of this consultation.

Sincerely,

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From:	Bradley Mueller
To:	George, Donna S CIV USARMY CESAJ (US)
Cc:	Moreno, Meredith A CIV USARMY CESAJ (US); Jed Redwine (jed_redwine@nps.gov); Hall, Brooke A CIV USARMY CESAJ (USA); Anne Mullins; Juan Cancel; Paul Backhouse
Subject:	[Non-DoD Source] Modified Waters Deliveries – Combined Operational Plan Increment 3 Comments
Date:	Thursday, June 27, 2019 1:11:01 PM
Attachments:	image005.png

SEMINOLE TRIBE OF FLORIDA
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June 27, 2019

Ms. Donna S. George, P.E.
Senior Project Manager
Planning and Policy Division
Department of the Army
Jacksonville District Corps of Engineers
Email: Donna.S.George@usace.army.mil

Subject: Modified Waters Deliveries – Combined Operational Plan Increment 3 Comments
THPO Compliance Tracking Number: 0028534

Dear Ms. George,

The STOF greatly appreciates all of the efforts made by the USACE to consult with us regarding the Modified Water Deliveries (MWD) – Combined Operational Plan (COP) project, especially the most recent consultations concerning Increment 3. We also value the inclusion of Mr. Jed Redwine of the National Park Service in these discussions to assist us in understanding the projects potential impacts to tree islands within the area of potential effect. As you know, the Everglade's tree islands were and still are important places to the Native American populations of Florida. It is generally agreed that most of the tree islands of any reasonable size contain archaeological sites and many contain burial components. It is these cultural and burial resources that the STOF THPO is concerned about protecting from inundation that is anthropogenic in origin and not the result of naturally occurring weather events. The information provided most recently by the USACE and ENP concerning the hydrological impacts within the water conservation areas (WCA 3A, WCA 3B) and Everglade's National Park (Shark River Slough, etc.), suggest to us that anticipated water levels resulting from the project will not exceed those that likely occurred historically during the pre-drainage conditions of south Florida. This is encouraging. However, the STOF THPO and ERMD staffs are continuing to consult internally about this assessment and will be bringing in additional expertise to assist us in completing our analysis and providing the USACE with additional comments. We will also reach out to the USACE and the NPS for additional information and clarification of the modeling results as needed. We look forward to continuing the consultation with you on MWD - COP. Thank you and feel free to contact us with any questions or concerns.

Respectfully,

Bradley M. Mueller

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Planning and Policy Division
Environmental Branch

31 July 2019

Mr. Pedro Ramos
Superintendent
Everglades National Park
40001 State Road 9336
Homestead, Florida 33034-673

Re: Combined Operational Plan (COP)

Dear Mr. Ramos:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2, Increment 2, the 2016 Emergency Deviation, and the 2017 Emergency Deviation. The area of potential effects for these efforts and COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

As part of the current study, the COP alternatives were developed to maximize water deliveries into ENP, while maintaining preferred ecological conditions in WCA 3A and complying with flood protection and L-29 stage constraints. The baseline condition, or No Action Alternative, maintains the operations of Increment 1.2 in which the L-29 stage is held at 7.8 feet NGVD. The remaining alternatives (Alternative N2, Alternative O, and Alternative Q/Q+) show little variability due to the limited amount of water within the system; however, importantly for effects to cultural resources, the alternatives operate the L-29 canal up to 8.5 feet NGVD with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based

on real time monitoring of the US 41 road base and 8.5 Square Mile Are flood mitigation criteria. Alternative N2, O, and Q/Q+ are generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structure to better meet ecological targets.

The No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+, were evaluated using ecological performance measures. As discussed in previous consultation meetings, performance measures are numeric tools based on a set of indicators used in project planning to evaluate the degree to which proposed alternative plans are likely to meet ecological restoration objectives and to assess the success of implemented plans in meeting restoration objectives. Most performance measures were identified through the development of conceptual ecological models and their associated stressors and attributes of the natural system. For example, the Natural System Regional Simulation Model (NSRSM) is a surface water simulation model that provides an inference about the annual and interannual distribution of water depths in the predrainage ridge and slough landscape by simulating the historic hydrology and landscapes of south Florida, but with topography adjusted for modern peat subsidence. For the COP, performance measures were designed to evaluate the ecologic performance of the alternatives with regards to inundation patterns and duration, soil oxidation and dry-outs, and vegetation suitability.

The evaluation of the No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+ show minimal variations in performance. Because of the limited availability of water, any increase in water stages in ENP corresponds to a reduction of water stages in WCA3. Generally speaking, the Alternatives demonstrate an average annual reduction of water stages in southern WCA 3A, where water is artificially impounded due to the Tamiami Trail, of approximately 0.10 - 0.25 feet, and an average annual increase in water levels by 0.10 - 0.25 feet in Shark River Slough, which has been subject to peat loss and dry-outs as a result of over-drainage (Figure 2). Alternative Q+, which takes the best performing operations from each of the Alternatives, also includes a water regulation schedule that uses information from water stages, rainfall, potential evapotranspiration, and recent structure flows to predict upcoming weekly flow target volumes across Tamiami Trail; thus creating a more holistic approach to water deliveries within the APE and adaptively responding to current conditions in the system.

Based on the performance analysis, Alternative Q+ has been determined as the COP Preliminary Preferred Alternative to provide relief to the impounded areas of WCA 3A while providing the maximum decrease of dry-out risk in ENP and still operating within flood control and L-29 stage constraints. With regards to cultural resources, the analysis conducted in September 2017 for Increment 2 (L-29 canal stage maximum operation limit of 8.5 feet NGVD) showed the potential to produce slight water level increases in ENP and minor decreases in WCA 3A; however, significant changes from current conditions were not observed. While the modeling conducted for Increment 2 held the L-29 canal stage at 8.5 feet NGVD year-round, actual operations of Increment 2, like the Preliminary Preferred Alternative, would only allow the L-29 to operate above 8.3 feet NGVD for 90 days per calendar year; therefore, changes to water levels are expected to be less than those modeled. Current analysis of real-time operations since the implementation of Increment 2 (March 2018) shows an improvement in mimicking historic hydropatterns and natural annual fluctuations in water levels compared to previous operations (i.e. IOP and ERTP).

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Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

cc:
Penelope Del Bene, Chief, Cultural Resources, Everglades National Park, 40001 State Road 9336 Homestead, Florida 33034-6733

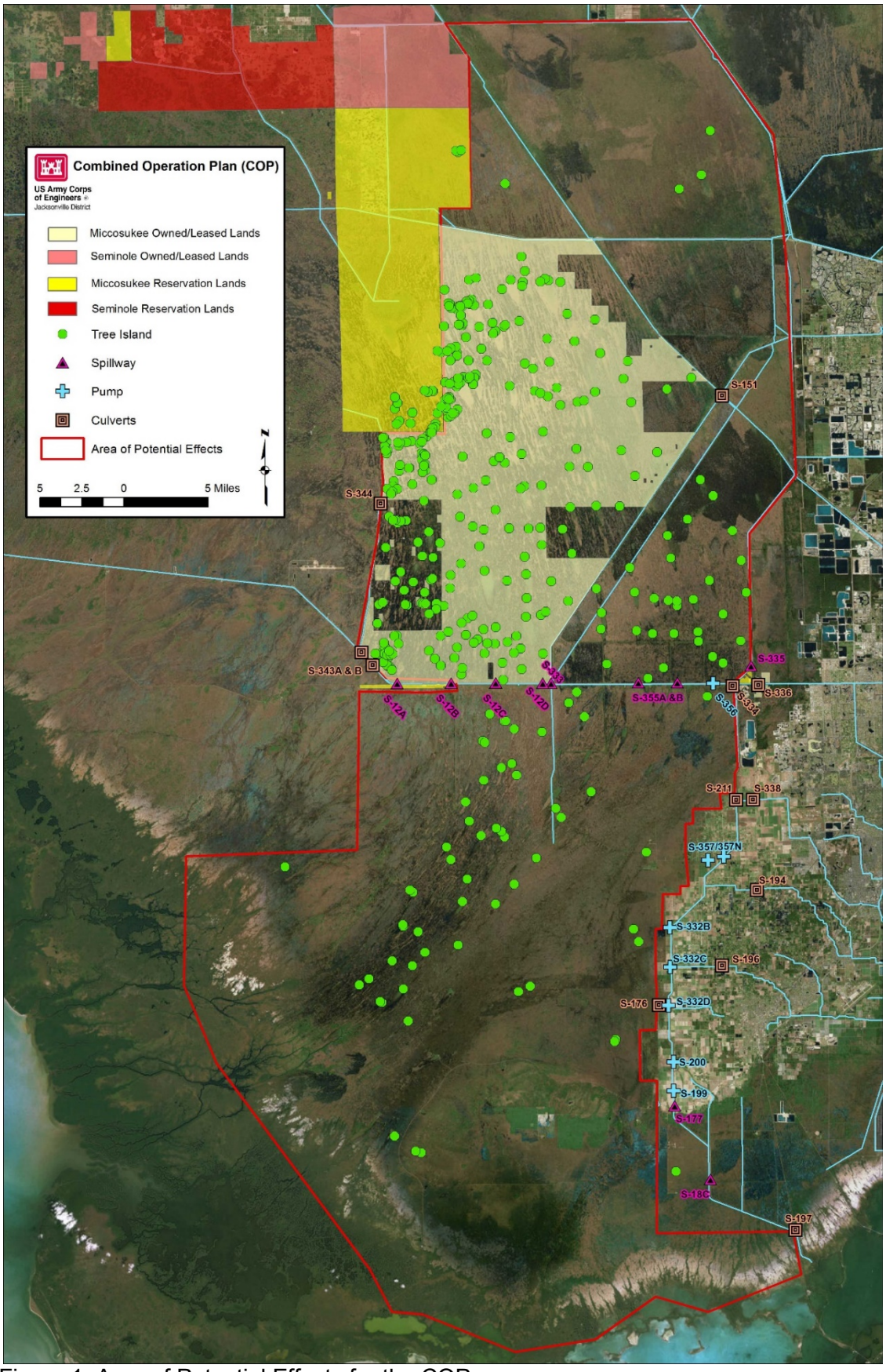
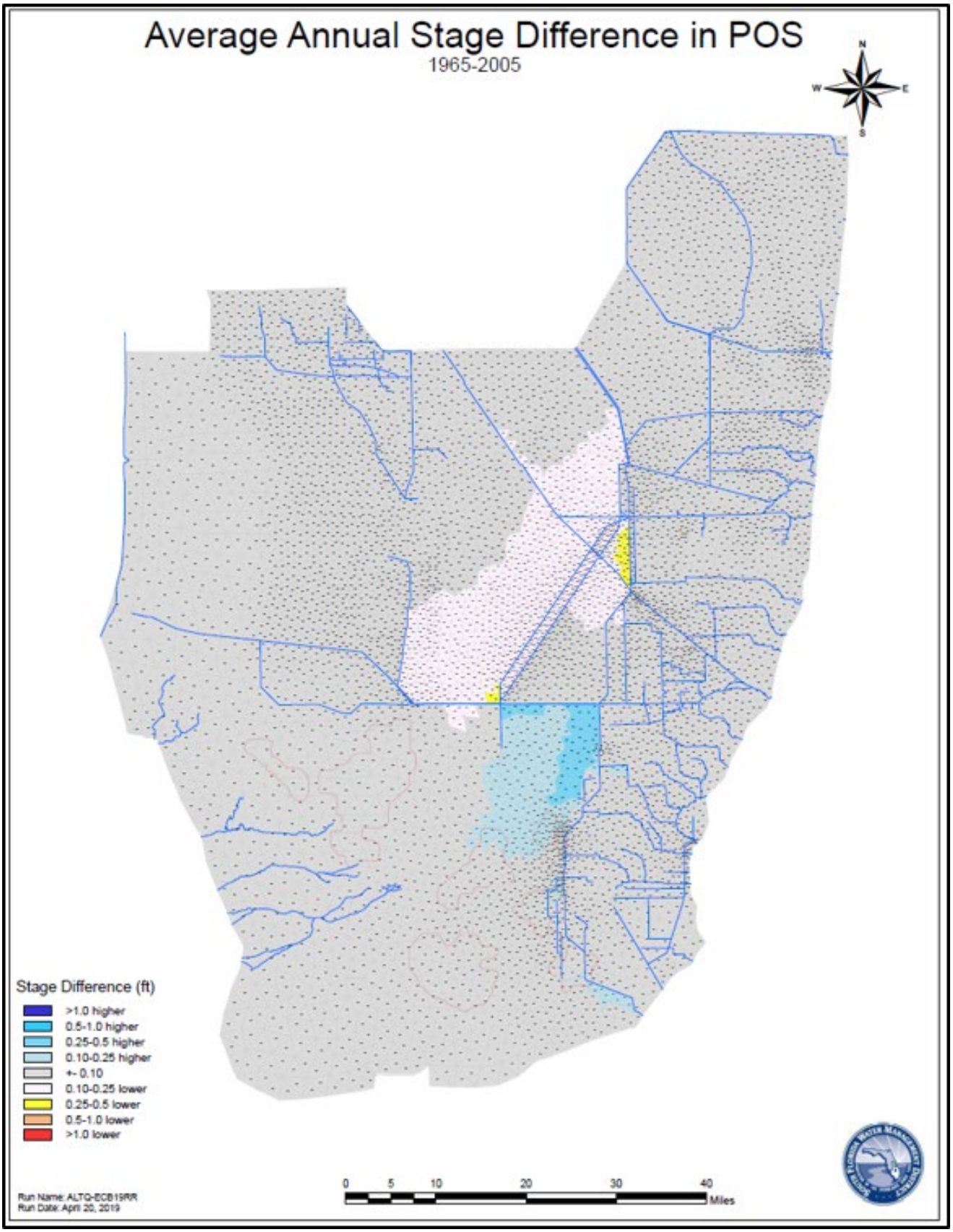


Figure 1. Area of Potential Effects for the COP.



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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

31 July 2019

Mr. Kevin Donaldson
NAGPRA/Section 106 Representative
Miccosukee Tribe of Indians of Florida
PO Box 440021
Tamiami Station
Miami, Florida 33144

Re: Combined Operational Plan (COP)

Dear Mr. Donaldson:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

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Alternative N2, O, and Q/Q+ are generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structure to better meet ecological targets.

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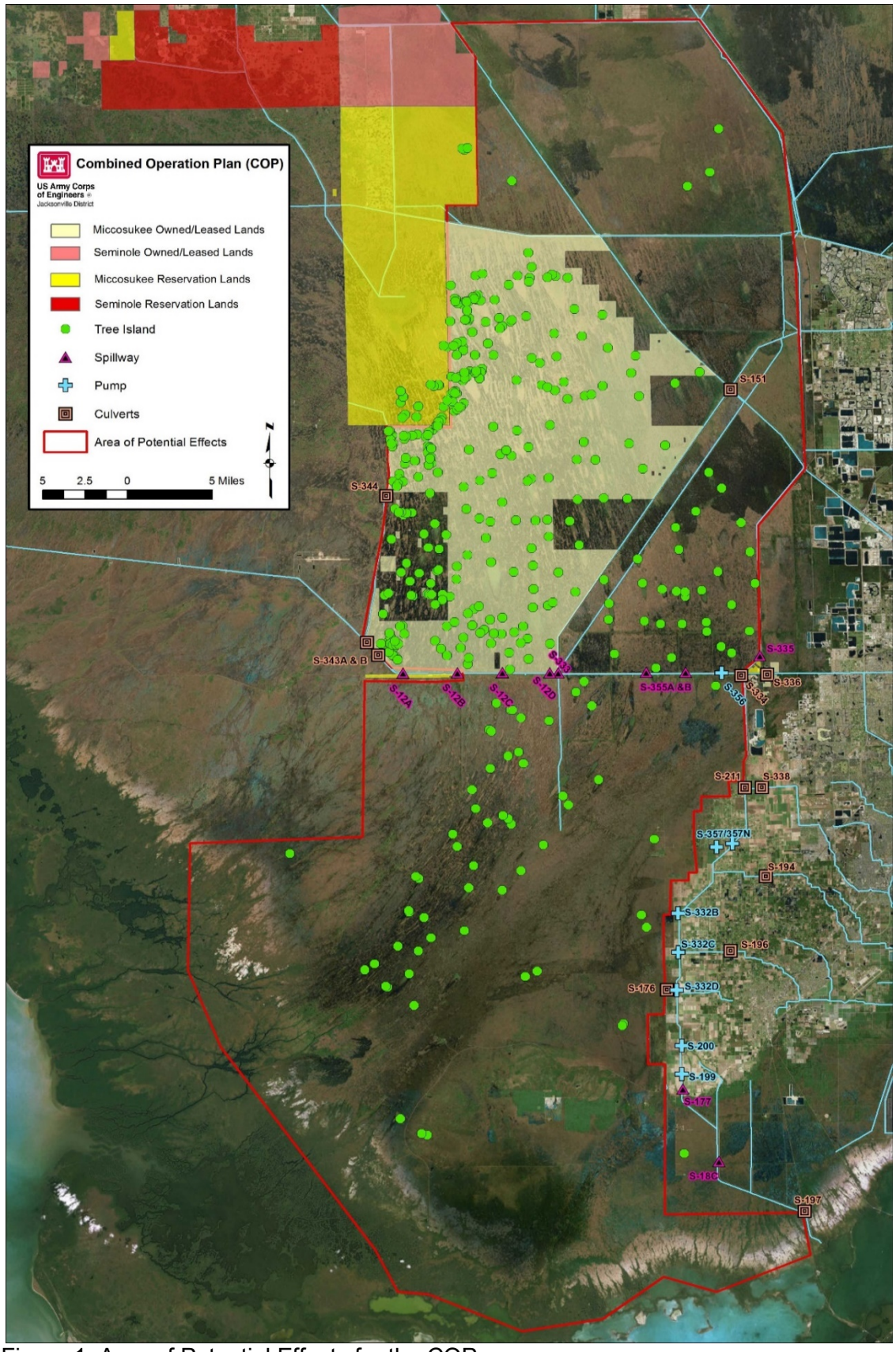
Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), and in consideration of the Corps' trust responsibility to the Miccosukee Tribe of Indians of Florida, the Corps kindly requests your comments and/or concerns on the COP Preliminary Preferred Alternative prior to making a determination of effects on historic properties. The Corps is available to provide further details on the analysis at an in-person meeting or teleconference if requested. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure



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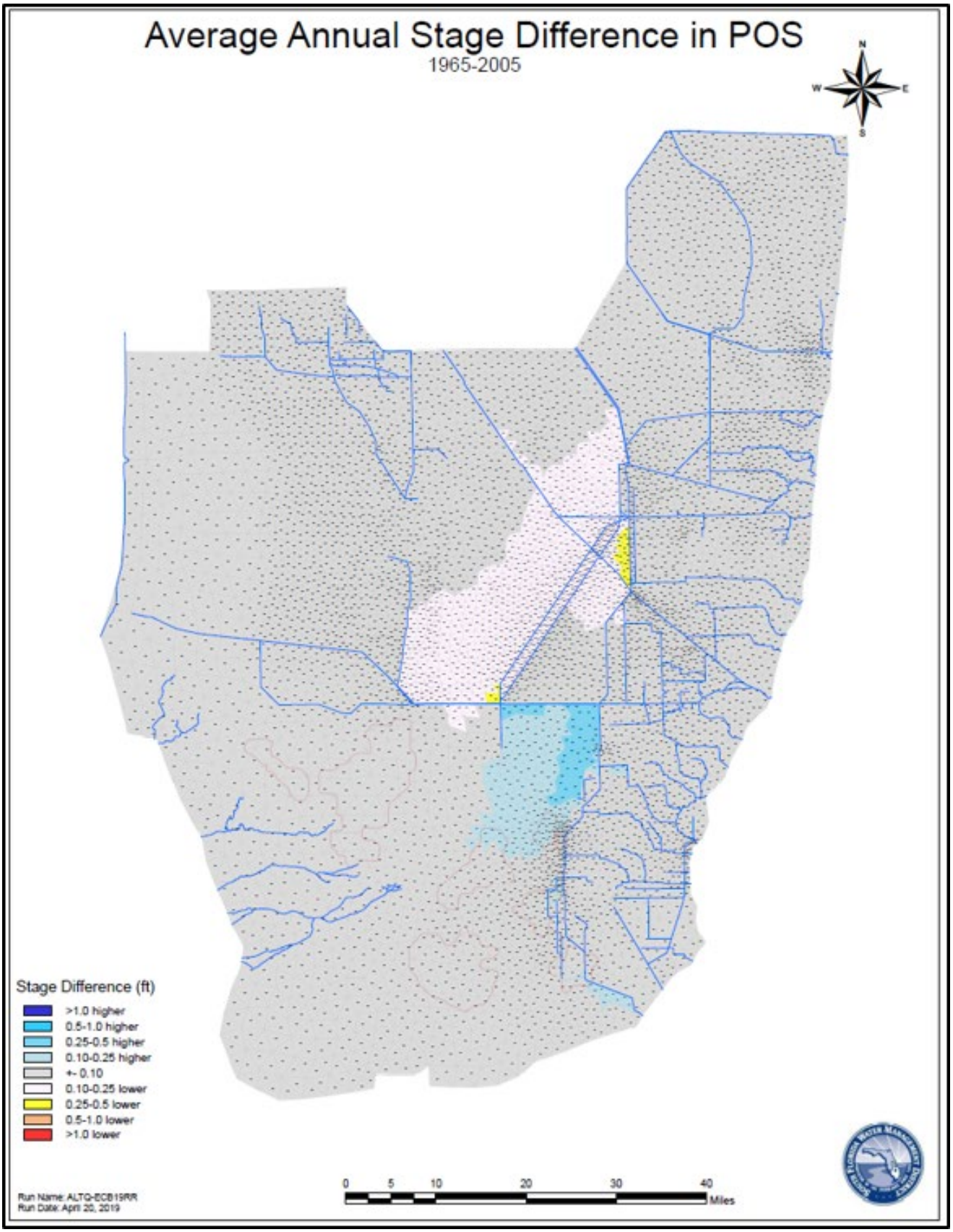

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

31 July 2019

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

Re: Combined Operational Plan (COP)

Dear Dr. Parsons:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1 (DHR No.: 2015-1617), Increment 1.1 and 1.2 (DHR No.: 2015-1617), Increment 2 (DHR No.: 2016-5159), the 2016 Emergency Deviation (2016-0610; 2016-1524), and the 2017 Emergency Deviation (2017-3146-B). The area of potential effects for these efforts and COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

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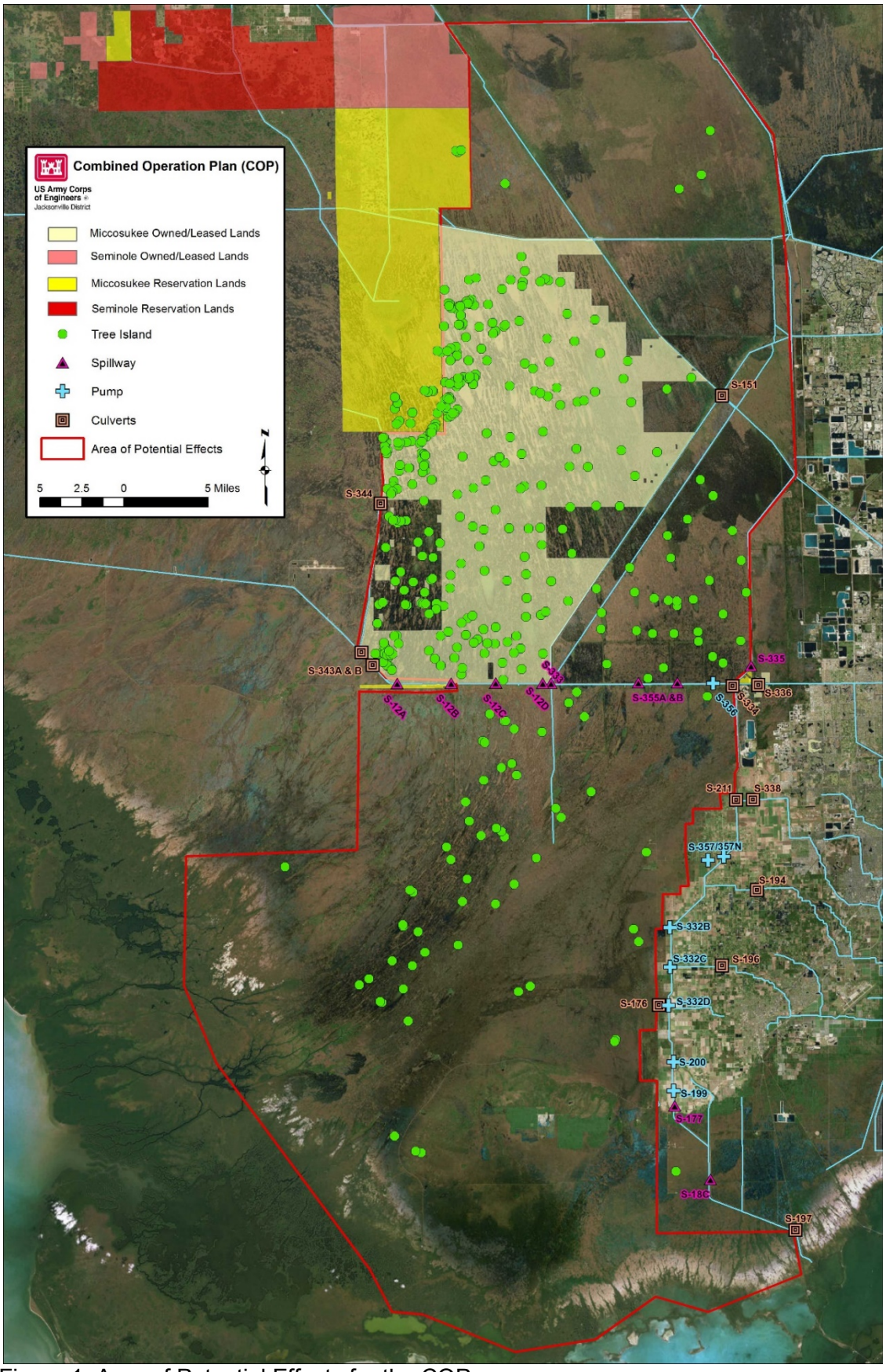
Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure



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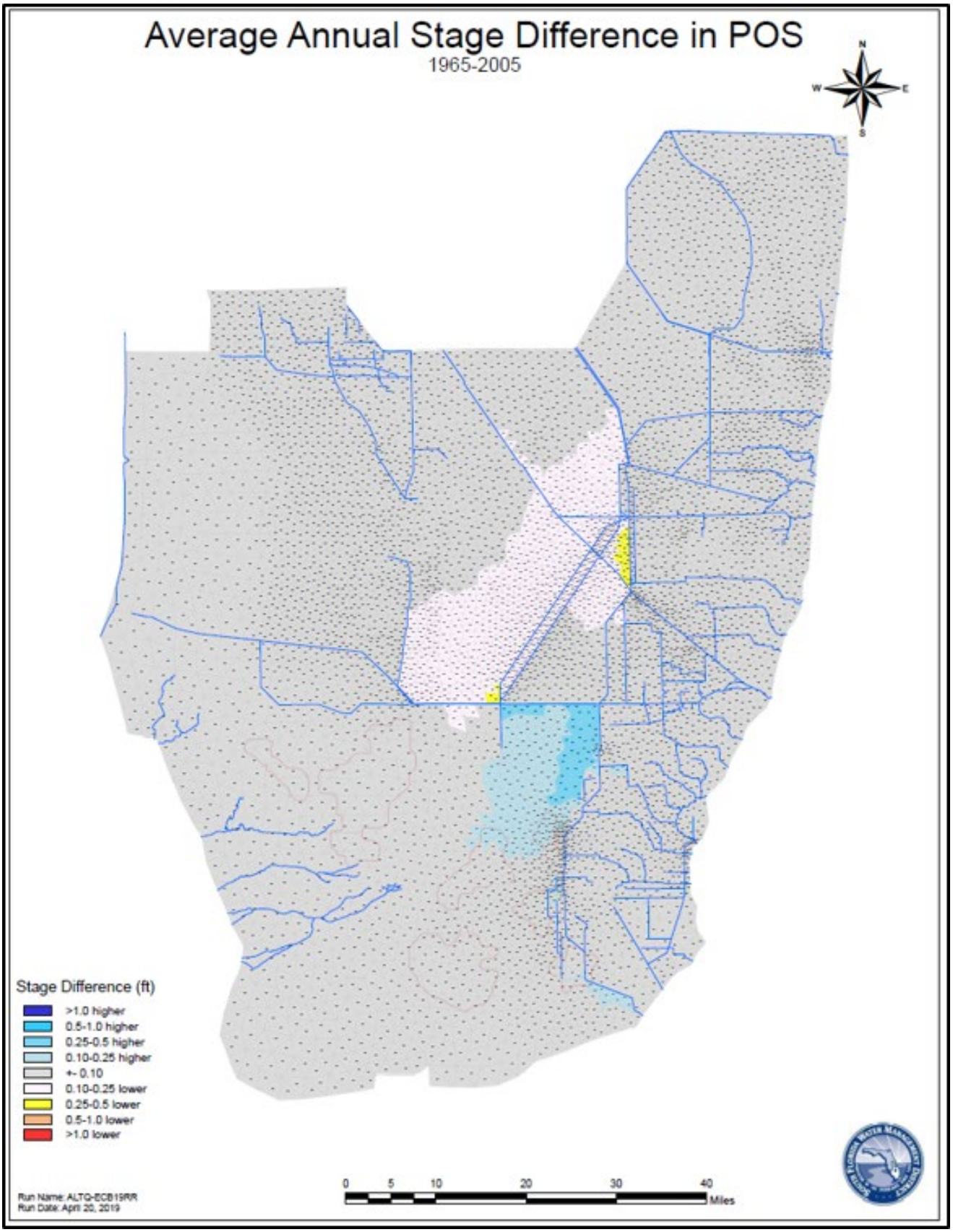

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

Planning and Policy Division
Environmental Branch

31 July 2019

Mr. Theodore Isham
Historic Preservation Officer
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, Ok 74884

Re: Combined Operational Plan (COP)

Dear Mr. Isham:

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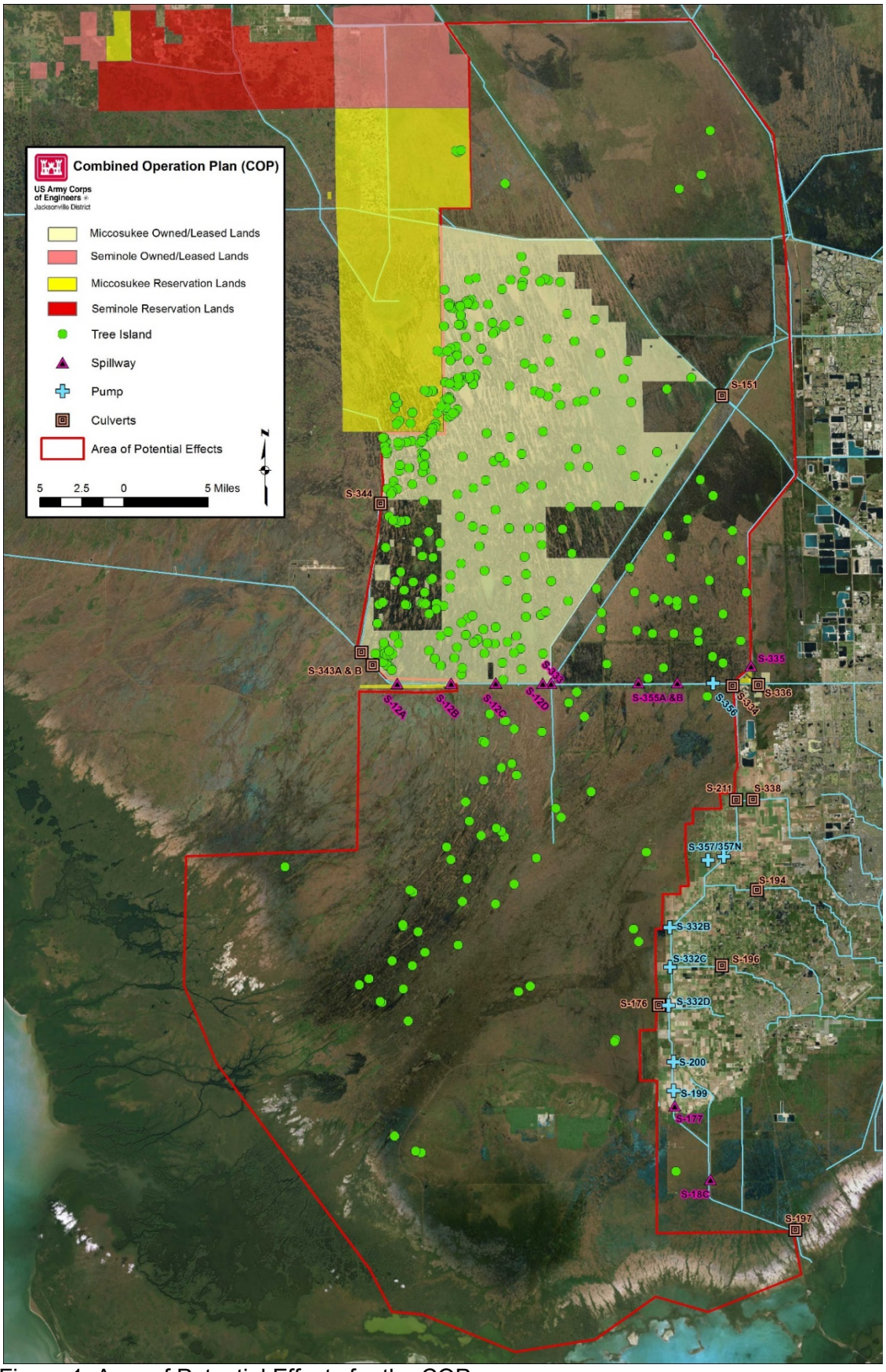
Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure



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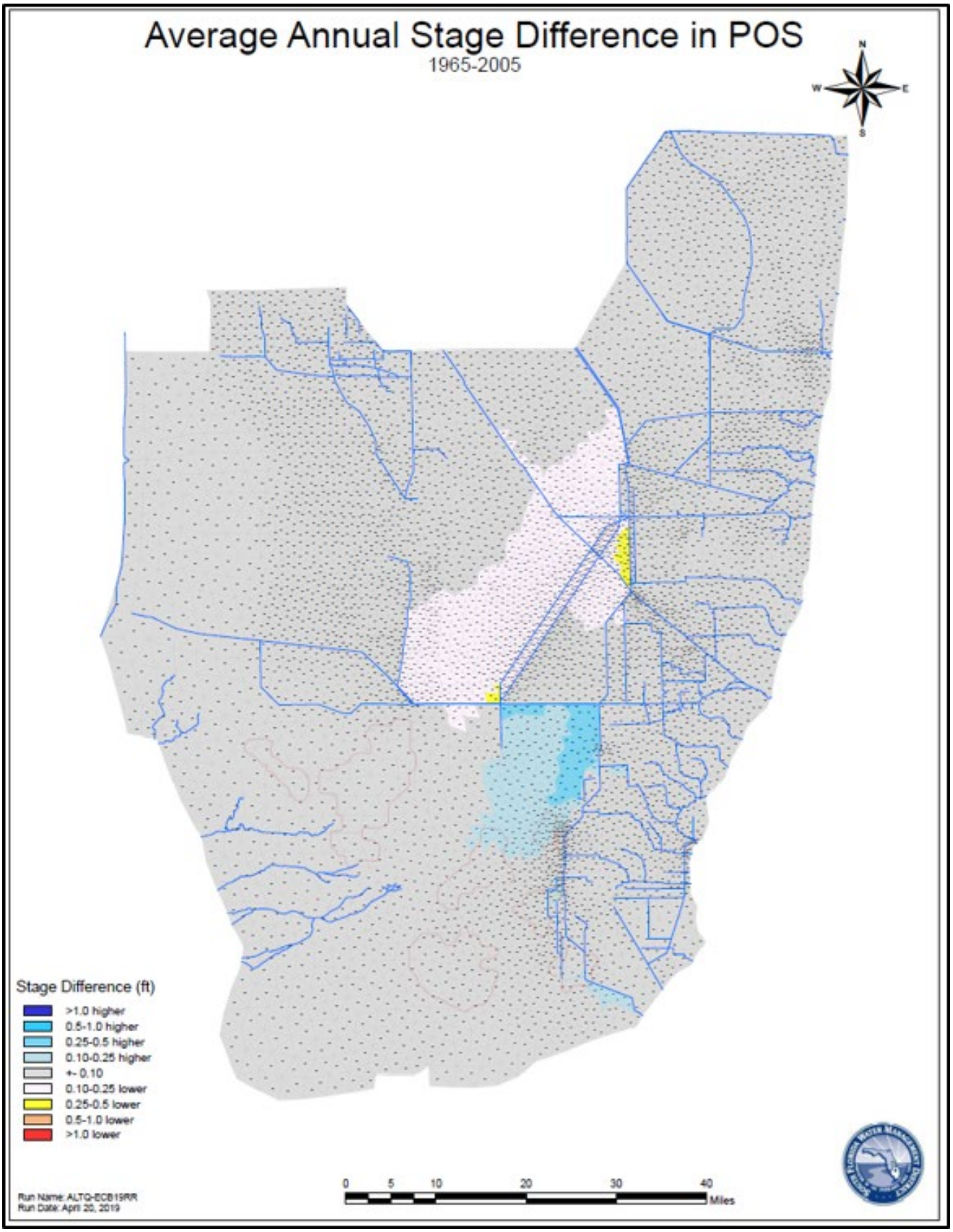

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DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

31 July 2019

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

Re: Combined Operational Plan (COP)

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2 (STOF No.: 0028534-16), Increment 2 (STOF No.: 0028534), the 2016 Emergency Deviation (STOF Nos: 0029082 and 0029122), and the 2017 Emergency Deviation (STOF No.: 0029879). The area of potential effects for these efforts and COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

As part of the current study, the COP alternatives were developed to maximize water deliveries into ENP, while maintaining preferred ecological conditions in WCA 3A and complying with flood protection and L-29 stage constraints. The baseline condition, or No Action Alternative, maintains the operations of Increment 1.2 in which the L-29 stage is held at 7.8 feet NGVD. The remaining alternatives (Alternative N2, Alternative O, and Alternative Q/Q+) show little variability due to the limited amount of water within the system; however, importantly for effects to cultural resources, the alternatives operate the L-29 canal up to 8.5 feet NGVD with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Are flood mitigation criteria. Alternative N2, O, and Q/Q+ are generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structure to better meet ecological targets.

The No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+, were evaluated using ecological performance measures. As discussed in previous consultation meetings, performance measures are numeric tools based on a set of indicators used in project planning to evaluate the degree to which proposed alternative plans are likely to meet ecological restoration objectives and to assess the success of implemented plans in meeting restoration objectives. Most performance measures were identified through the development of conceptual ecological models and their associated stressors and attributes of the natural system. For example, the Natural System Regional Simulation Model (NSRSM) is a surface water simulation model that provides an inference about the annual and interannual distribution of water depths in the predrainage ridge and slough landscape by simulating the historic hydrology and landscapes of south Florida, but with topography adjusted for modern peat subsidence. For the COP, performance measures were designed to evaluate the ecologic performance of the alternatives with regards to inundation patterns and duration, soil oxidation and dry-outs, and vegetation suitability.

The evaluation of the No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+ show minimal variations in performance. Because of the limited availability of water, any increase in water stages in ENP corresponds to a reduction of water stages in WCA3. Generally speaking, the Alternatives demonstrate an average annual reduction of water stages in southern WCA 3A, where water is artificially impounded due to the Tamiami Trail, of approximately 0.10 - 0.25 feet, and an average annual increase in water levels by 0.10 - 0.25 feet in Shark River Slough, which has been subject to peat loss and dry-outs as a result of over-drainage (Figure 2). Alternative Q+, which takes the best performing operations from each of the Alternatives, also includes a water regulation schedule that uses information from water stages, rainfall, potential evapotranspiration, and recent structure flows to predict upcoming weekly flow target volumes across Tamiami Trail; thus creating a more holistic approach to water deliveries within the APE and adaptively responding to current conditions in the system.

Based on the performance analysis, Alternative Q+ has been determined as the COP Preliminary Preferred Alternative to provide relief to the impounded areas of WCA 3A while providing the maximum decrease of dry-out risk in ENP and still operating within flood control and L-29 stage constraints. With regards to cultural resources, the analysis conducted in September 2017 for Increment 2 (L-29 canal stage maximum operation limit of 8.5 feet NGVD) showed the potential to produce slight water level increases in ENP and minor decreases in WCA 3A; however, significant changes from current conditions were not observed. While the modeling conducted for Increment 2 held the L-29 canal stage at 8.5 feet NGVD year-round, actual operations of Increment 2, like the Preliminary Preferred Alternative, would only allow the L-29 to operate above 8.3 feet NGVD for 90 days per calendar year; therefore, changes to water levels are expected to be less than those modeled. Current analysis of real-time operations since the implementation of Increment 2 (March 2018) shows an improvement in mimicking historic hydropatterns and natural annual fluctuations in water levels compared to previous operations (i.e. IOP and ERTP). While still not restorative of historic water levels, the COP Preliminary Preferred Alternative is likely to continue to help prevent conditions of prolonged periods of inundation within WCA 3A and provide minor beneficial effects on tree islands within ENP. Prolonged periods of inundation result in negative impacts to tree islands, which are intrinsically connected to archaeological sites in the Everglades. By reintroducing more historic hydroperiods into over-drained portions of ENP, natural hydrologic conditions that promoted the formation of tree islands will help to stabilize the existing soil matrix and prevent future erosion, oxidation, or subsidence. Improved hydroperiods within ENP have the potential to aid in the restoration of tree islands and stabilize associated cultural resources. Previous analysis of Increment 2 and current modeling of the Preliminary Preferred Alternative indicated that water levels are expected to be within the range of levels experienced as a result of past operations and considerable less than those experienced prior to drainage. Tree islands that have not been subject to seasonal inundation historically will not be inundated as a result of the COP Preliminary Preferred Alternative. Inundation of tree islands is not expected within ENP.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments and/or concerns on the COP Preliminary Preferred Alternative prior to making a determination of effects on historic properties. The Corps is available to provide further details on the analysis at an in-person meeting or teleconference if requested. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

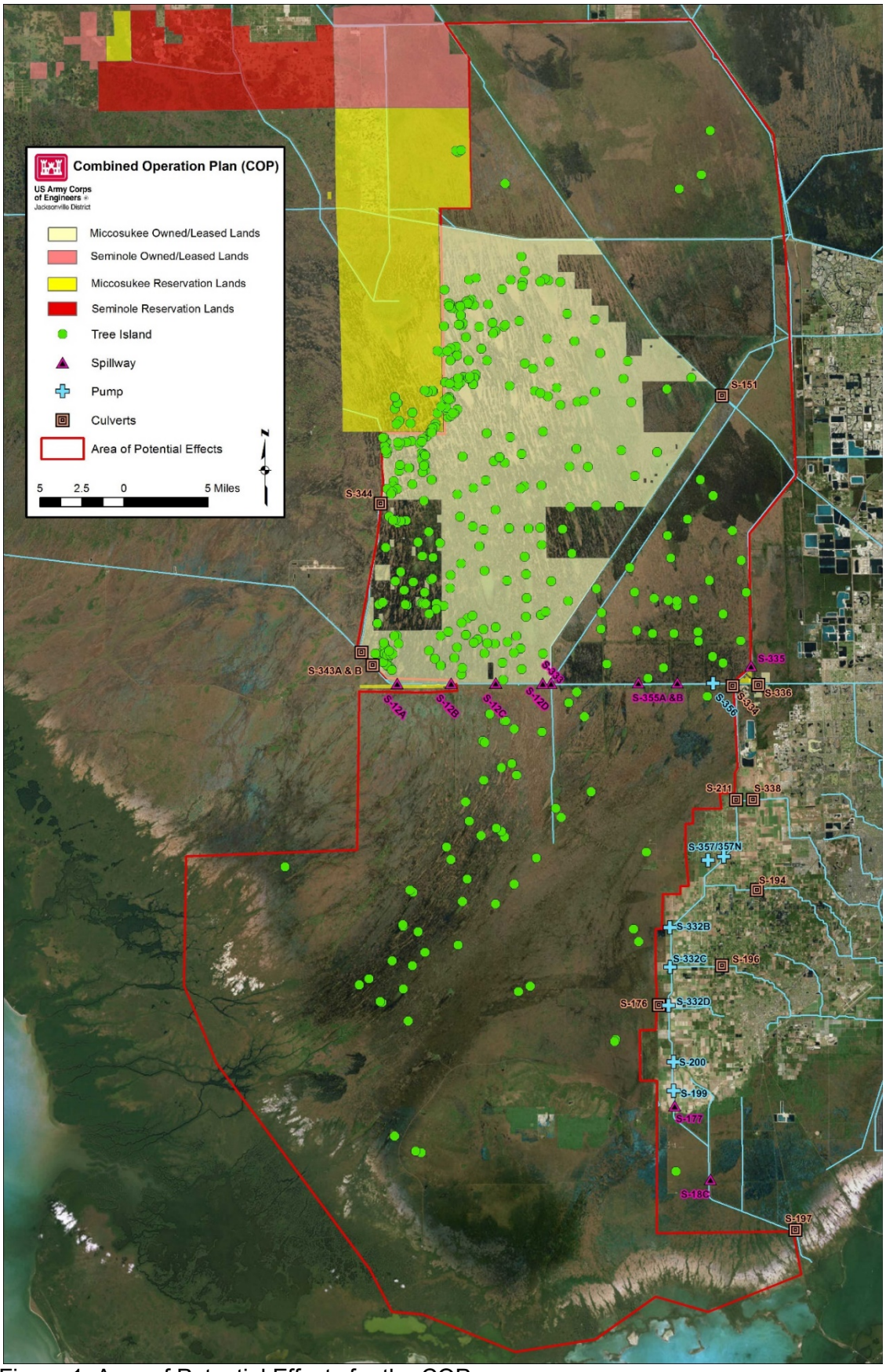


Figure 1. Area of Potential Effects for the COP.

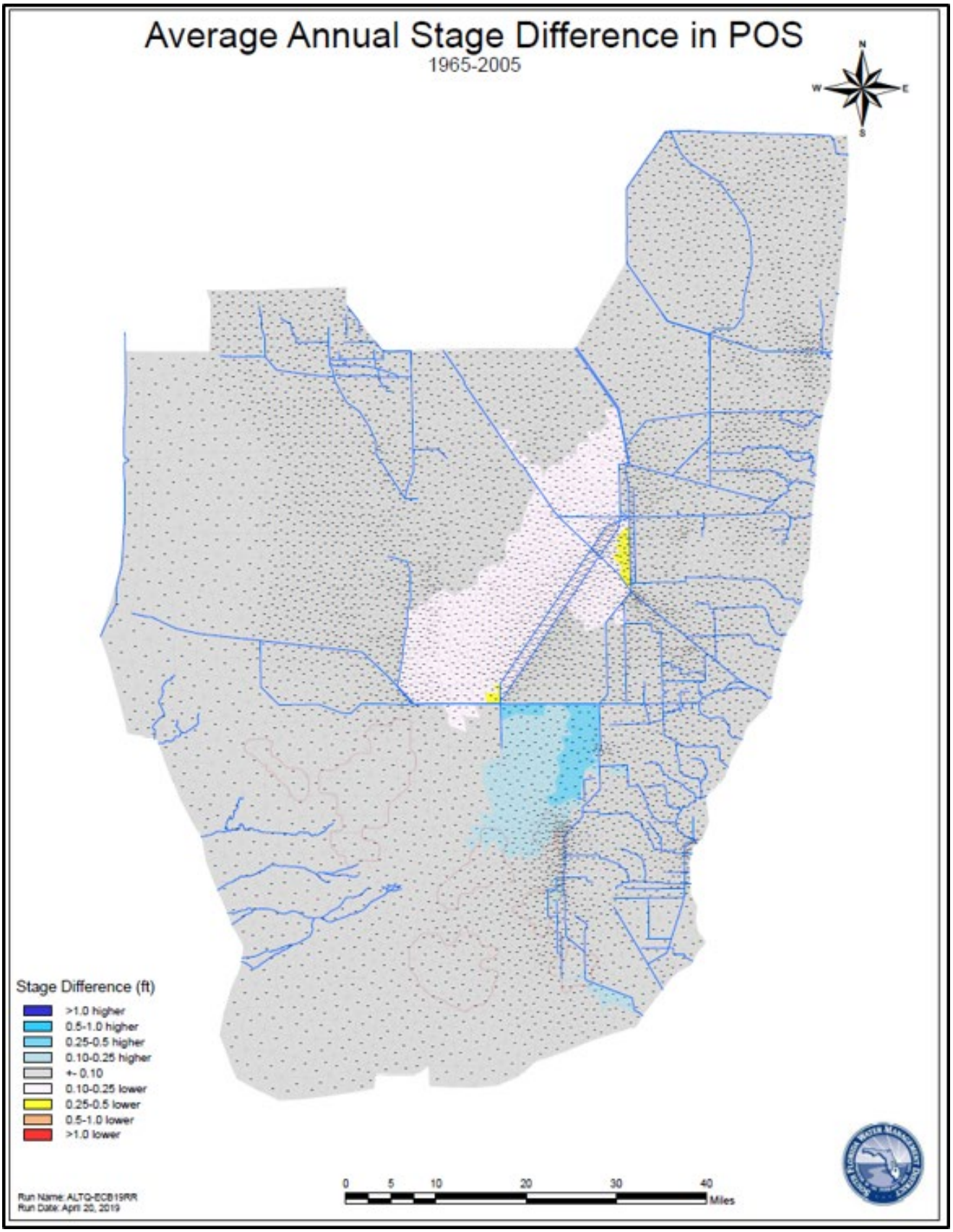


Figure 2. Average annual stage difference between the No Action Alternative and Alternative Q.

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

Planning and Policy Division
Environmental Branch

31 July 2019

Ms. Jane Maylen
Acting Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
PO Box 188
Okemah, OK 74859

Re: Combined Operational Plan (COP)

Dear Ms. Maylen:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3A to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted on determinations of no adverse effect to historic properties for the incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2, Increment 2, the 2016 Emergency Deviation, and the 2017 Emergency Deviation. The area of potential effects for these efforts and COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

As part of the current study, the COP alternatives were developed to maximize water deliveries into ENP, while maintaining preferred ecological conditions in WCA 3A and complying with flood protection and L-29 stage constraints. The baseline condition, or No Action Alternative, maintains the operations of Increment 1.2 in which the L-29 stage is held at 7.8 feet NGVD. The remaining alternatives (Alternative N2, Alternative O, and Alternative Q/Q+) show little variability due to the limited amount of water within the system; however, importantly for effects to cultural resources, the alternatives operate the L-29 canal up to 8.5 feet NGVD with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Are flood mitigation criteria. Alternative N2, O, and Q/Q+ are generally consistent with current operations of the system under

Increment 2, with small adjustments to the operability of individual water control structure to better meet ecological targets.

The No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+, were evaluated using ecological performance measures. As discussed in previous consultation meetings, performance measures are numeric tools based on a set of indicators used in project planning to evaluate the degree to which proposed alternative plans are likely to meet ecological restoration objectives and to assess the success of implemented plans in meeting restoration objectives. Most performance measures were identified through the development of conceptual ecological models and their associated stressors and attributes of the natural system. For example, the Natural System Regional Simulation Model (NSRSM) is a surface water simulation model that provides an inference about the annual and interannual distribution of water depths in the predrainage ridge and slough landscape by simulating the historic hydrology and landscapes of south Florida, but with topography adjusted for modern peat subsidence. For the COP, performance measures were designed to evaluate the ecologic performance of the alternatives with regards to inundation patterns and duration, soil oxidation and dry-outs, and vegetation suitability.

The evaluation of the No Action Alternative, Alternative N2, Alternative O, and Alternative Q/Q+ show minimal variations in performance. Because of the limited availability of water, any increase in water stages in ENP corresponds to a reduction of water stages in WCA3. Generally speaking, the Alternatives demonstrate an average annual reduction of water stages in southern WCA 3A, where water is artificially impounded due to the Tamiami Trail, of approximately 0.10 - 0.25 feet, and an average annual increase in water levels by 0.10 - 0.25 feet in Shark River Slough, which has been subject to peat loss and dry-outs as a result of over-drainage (Figure 2). Alternative Q+, which takes the best performing operations from each of the Alternatives, also includes a water regulation schedule that uses information from water stages, rainfall, potential evapotranspiration, and recent structure flows to predict upcoming weekly flow target volumes across Tamiami Trail; thus creating a more holistic approach to water deliveries within the APE and adaptively responding to current conditions in the system.

Based on the performance analysis, Alternative Q+ has been determined as the COP Preliminary Preferred Alternative to provide relief to the impounded areas of WCA 3A while providing the maximum decrease of dry-out risk in ENP and still operating within flood control and L-29 stage constraints. With regards to cultural resources, the analysis conducted in September 2017 for Increment 2 (L-29 canal stage maximum operation limit of 8.5 feet NGVD) showed the potential to produce slight water level increases in ENP and minor decreases in WCA 3A; however, significant changes from current conditions were not observed. While the modeling conducted for Increment 2 held the L-29 canal stage at 8.5 feet NGVD year-round, actual operations of Increment 2, like the Preliminary Preferred Alternative, would only allow the L-29 to operate above 8.3 feet NGVD for 90 days per calendar year; therefore, changes to water levels are expected to be less than those modeled. Current analysis of real-time operations since the implementation of Increment 2 (March 2018) shows an improvement in mimicking historic hydropatterns and natural annual fluctuations in water levels compared to previous operations (i.e. IOP and ERTP).

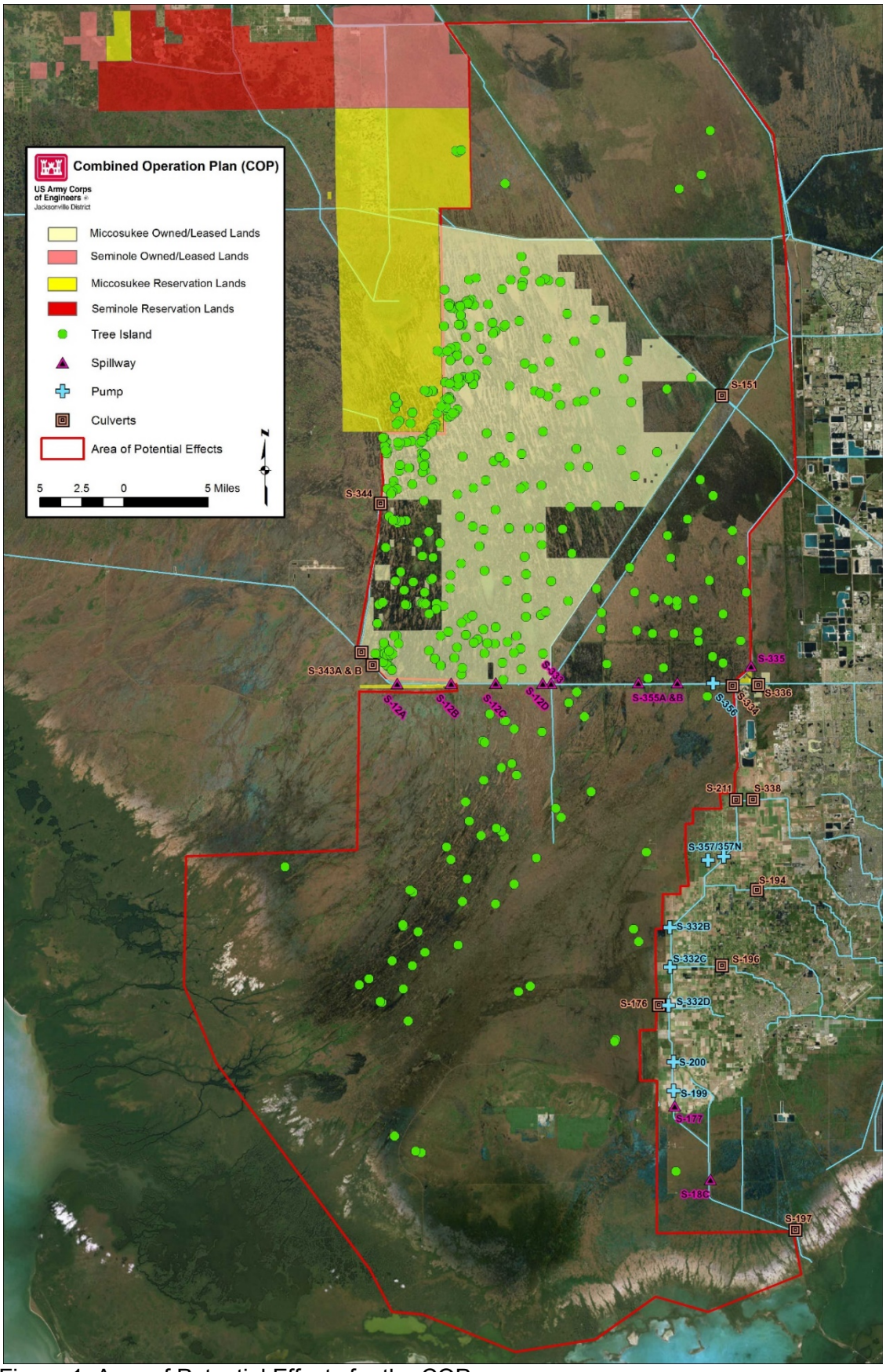
While still not restorative of historic water levels, the COP Preliminary Preferred Alternative is likely to continue to help prevent conditions of prolonged periods of inundation within WCA 3A and provide minor beneficial effects on tree islands within ENP. Prolonged periods of inundation result in negative impacts to tree islands, which are intrinsically connected to archaeological sites in the Everglades. By reintroducing more historic hydroperiods into over-drained portions of ENP, natural hydrologic conditions that promoted the formation of tree islands will help to stabilize the existing soil matrix and prevent future erosion, oxidation, or subsidence. Improved hydroperiods within ENP have the potential to aid in the restoration of tree islands and stabilize associated cultural resources. Previous analysis of Increment 2 and current modeling of the Preliminary Preferred Alternative indicated that water levels are expected to be within the range of levels experienced as a result of past operations and considerable less than those experienced prior to drainage. Tree islands that have not been subject to seasonal inundation historically will not be inundated as a result of the COP Preliminary Preferred Alternative. Inundation of tree islands is not expected within ENP.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments and/or concerns on the COP Preliminary Preferred Alternative prior to making a determination of effects on historic properties. The Corps is available to provide further details on the analysis at a webinar/teleconference if requested. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure



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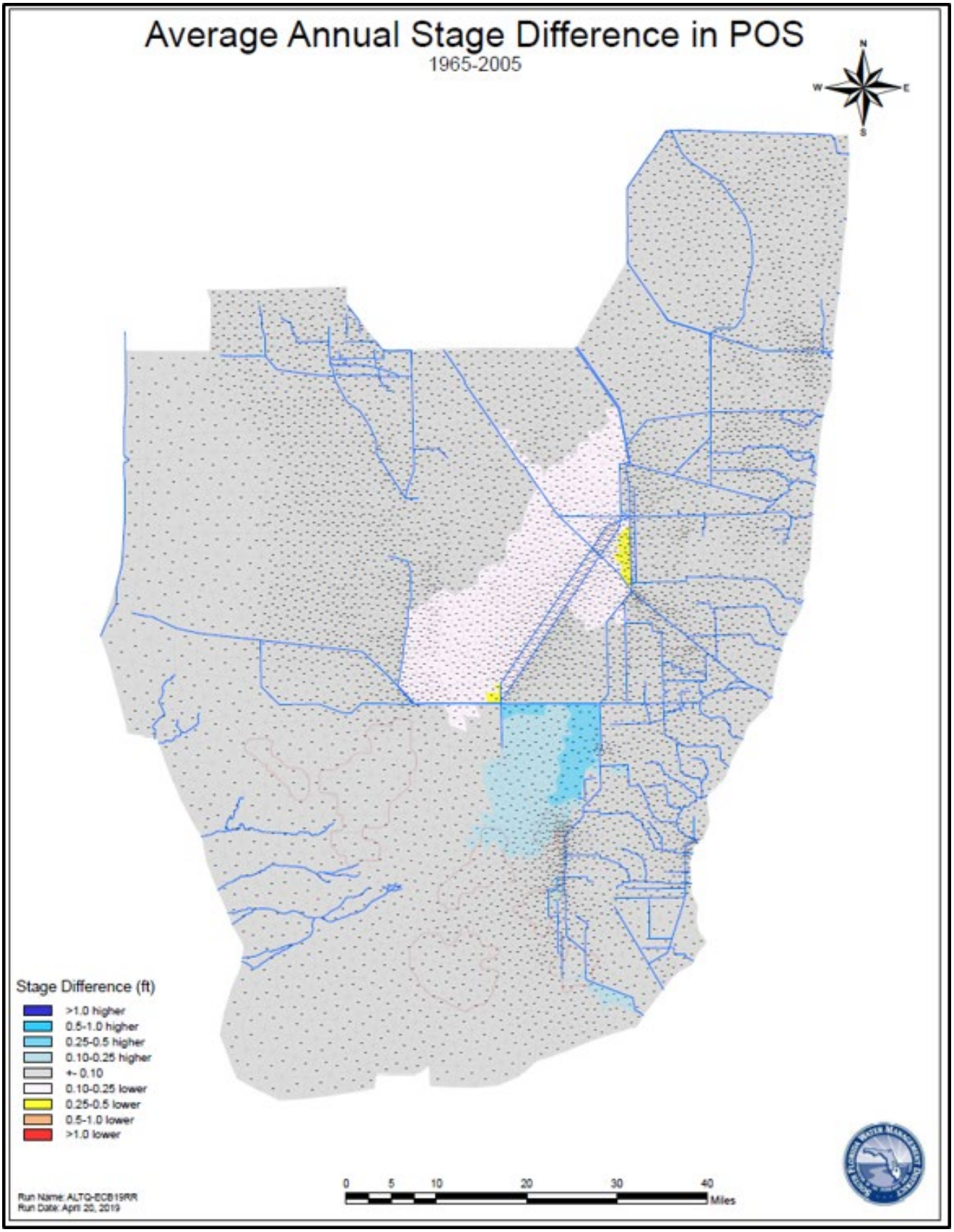


Figure 2. Average annual stage difference between the No Action Alternative and Alternative Q.

From: Moreno, Meredith A CIV USARMY CESAJ (US)
To: Bradley Mueller; Victoria Menchaca
Cc: Kent Loftin (kloftin@synint.com); David Echeverry; "Del Bene, Penelope"; Jed Redwine (jed_redwine@nps.gov)
Subject: October 16 presentation
Date: Thursday, October 17, 2019 8:21:00 AM
Attachments: COP STOF Presentation_2019 October 16.pdf

Brad,

Thanks for meeting with the Corps and ENP yesterday to discuss COP. Attached is the presentation. Please let me know if you need any more detail, modeling data, or higher resolution graphics.

Thanks!

Meredith A. Moreno, M.A., RPA
Lead Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
Office: 904-232-1577
Mobile: 904-861-9967

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

Planning and Policy Division
Environmental Branch

21 November 2019

Mr. Pedro Ramos
Superintendent
Everglades National Park
40001 State Road 9336
Homestead, Florida 33034-673

Re: Combined Operational Plan (COP)

Dear Mr. Ramos:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the MWD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2, Increment 2, the 2016 Emergency Deviation, and the 2017 Emergency Deviation. The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria. The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets.

The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

To supplement previous investigations, the cultural resources analysis of the Preferred Alternative utilized existing real-time data and water levels from the Everglades Depth Estimation Network (EDEN) using mapped elevations of 394 tree islands in WCA 3 and ENP to determine effects of the Preferred Alternative (ALTQ+). Using the EDEN, the daily water surface of WCA 3 and ENP during the 41-year period of record (January 1, 1965 through December 31, 2005) was compared with the tree island elevations to understand which tree islands have been historically inundated. Of the 394 tree islands mapped within the APE, a total of 38 tree islands and a corresponding 32 known cultural resources have not been inundated during the 41-year period of record and analyzed using data collected from the EDEN network and the COP hydrologic modeling. The hydrologic model run was utilized to predict anticipated water levels in the APE as a result of the Preferred Alternative. Each of the 38 tree islands that have not been inundated during the period of record were correlated to the closest modeled gage to determine predicted effects of water levels. The existing condition (Increment 1.1/1.2) and the Preferred Alternative modeled period of record results were averaged by month and compared to observed water elevations at each gage and corresponding tree islands; comparisons were also made to modeled water level averages for ERTP, Increment 1, and Increment 2. Results of this analysis determined that the Preferred Alternative will cause slight decreases in water levels in central and southern WCA 3 and slight increases in northern ENP (Shark River Slough) and eastern ENP (Taylor Slough); however, tree islands that were not inundated during the period of record will not be subject to inundation as a result of the COP.

In addition to modeled data, the L-29 canal stage and observed water elevations and all 394 mapped tree islands were reviewed using the available EDEN data (January 1, 1999 to August 21, 2019). This data was utilized to understand water elevations at all tree islands when the L-29 canal stage is at or above 8.3 feet NGVD and to compare previous operational strategies (Interim Operating Plan, ERTP, and the MWD Incremental field tests) to those observed during Increment 2 which is the closest approximation to the Preferred Alternative based on the stage of the L-29 canal. While variations in the weather may be the largest impetus between variations in yearly average water elevations, this line of investigation demonstrated that tree islands in WCA 3 and ENP have been subject to conditions within the recent past that may be experienced under the Preferred Alternative. Additionally, the fluctuations in water levels experienced from 2018 to 2019 under Increment 2 are more representative of the natural water fluctuations that are vital to tree island survival, and therefore, maintenance of structural integrity of cultural resources found on tree islands (Figure 2).

The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative.

The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

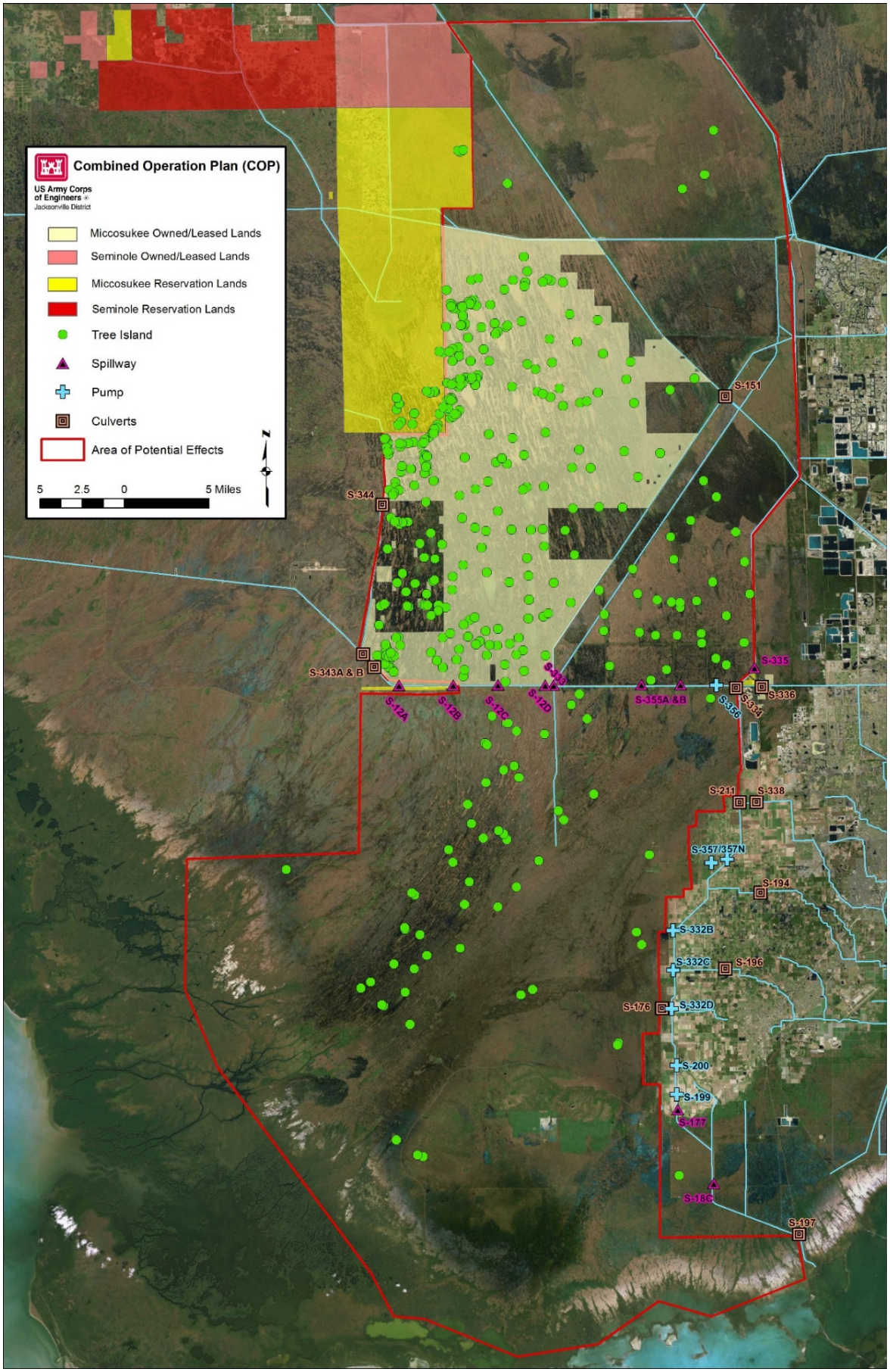
Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

cc:
Penelope Del Bene, Chief, Cultural Resources, Everglades National Park, 40001 State Road 9336 Homestead, Florida 33034-6733



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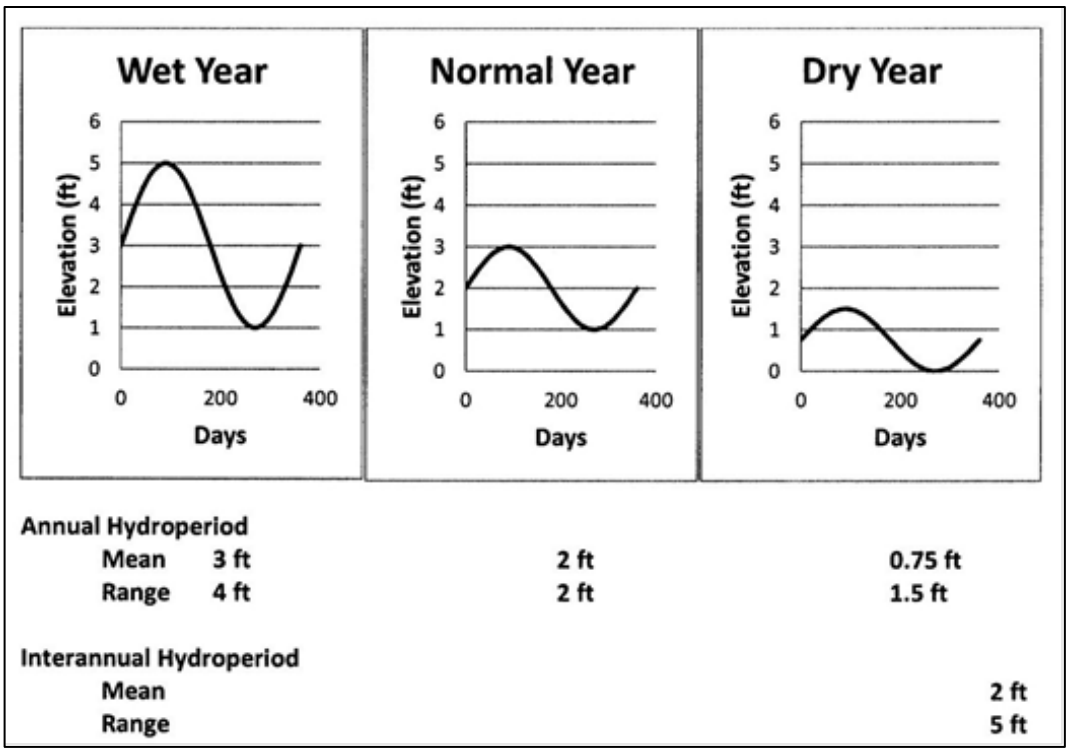


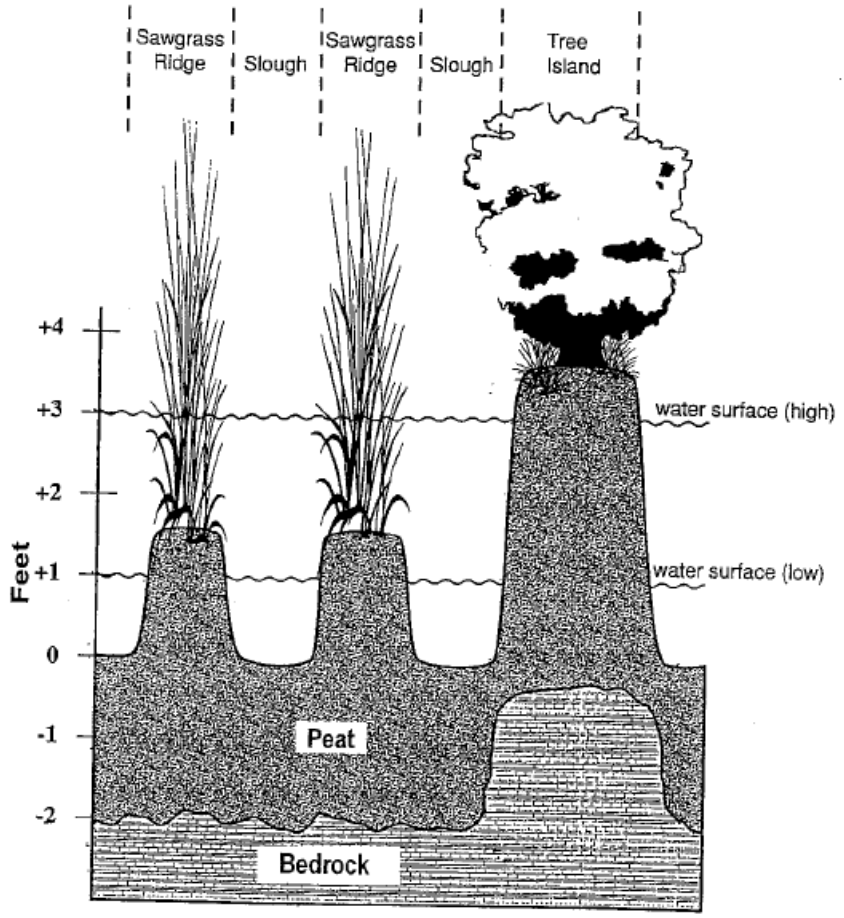


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
S-331	Operating range from 3.5 to 5.0 feet, NGVD, dependent on LPG-2 stage condition (when LPG-2 > 5.5 feet, NGVD); when LPG-2 < 5.5, minimum operating range is 5.0 feet, NGVD	Operating Range from 4.5 to 5.0 feet, NGVD (14 Feb to 31 July). Operating Range from 4.3 to 4.6 feet, NGVD (01 Aug to 01 Jan), with transition operations. May be used to assist with 8.5 SMA flood mitigation when G-3273 > 7.5 feet, NGVD and LPG-2 > 6.7 feet, NGVD for more than the maximum flood mitigation criteria.
S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

21 November 2019

Mr. Kevin Donaldson
NAGPRA/Section 106 Representative
Miccosukee Tribe of Indians of Florida
PO Box 440021
Tamiami Station
Miami, Florida 33144

Re: Combined Operational Plan (COP)

Dear Mr. Donaldson:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the MWD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2, Increment 2, the 2016 Emergency Deviation, and the 2017 Emergency Deviation. The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria.

The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets. The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

To supplement previous investigations, the cultural resources analysis of the Preferred Alternative utilized existing real-time data and water levels from the Everglades Depth Estimation Network (EDEN) using mapped elevations of 394 tree islands in WCA 3 and ENP to determine effects of the Preferred Alternative (ALTQ+). Using the EDEN, the daily water surface of WCA 3 and ENP during the 41-year period of record (January 1, 1965 through December 31, 2005) was compared with the tree island elevations to understand which tree islands have been historically inundated. Of the 394 tree islands mapped within the APE, a total of 38 tree islands and a corresponding 32 known cultural resources have not been inundated during the 41-year period of record and analyzed using data collected from the EDEN network and the COP hydrologic modeling. The hydrologic model run was utilized to predict anticipated water levels in the APE as a result of the Preferred Alternative. Each of the 38 tree islands that have not been inundated during the period of record were correlated to the closest modeled gage to determine predicted effects of water levels. The existing condition (Increment 1.1/1.2) and the Preferred Alternative modeled period of record results were averaged by month and compared to observed water elevations at each gage and corresponding tree islands; comparisons were also made to modeled water level averages for ERTP, Increment 1, and Increment 2. Results of this analysis determined that the Preferred Alternative will cause slight decreases in water levels in central and southern WCA 3 and slight increases in northern ENP (Shark River Slough) and eastern ENP (Taylor Slough); however, tree islands that were not inundated during the period of record will not be subject to inundation as a result of the COP.

In addition to modeled data, the L-29 canal stage and observed water elevations and all 394 mapped tree islands were reviewed using the available EDEN data (January 1, 1999 to August 21, 2019). This data was utilized to understand water elevations at all tree islands when the L-29 canal stage is at or above 8.3 feet NGVD and to compare previous operational strategies (Interim Operating Plan, ERTP, and the MWD Incremental field tests) to those observed during Increment 2 which is the closest approximation to the Preferred Alternative based on the stage of the L-29 canal. While variations in the weather may be the largest impetus between variations in yearly average water elevations, this line of investigation demonstrated that tree islands in WCA 3 and ENP have been subject to conditions within the recent past that may be experienced under the Preferred Alternative. Additionally, the fluctuations in water levels experienced from 2018 to 2019 under Increment 2 are more representative of the natural water fluctuations that are vital to tree island survival, and therefore, maintenance of structural integrity of cultural resources found on tree islands (Figure 2).

The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative. The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

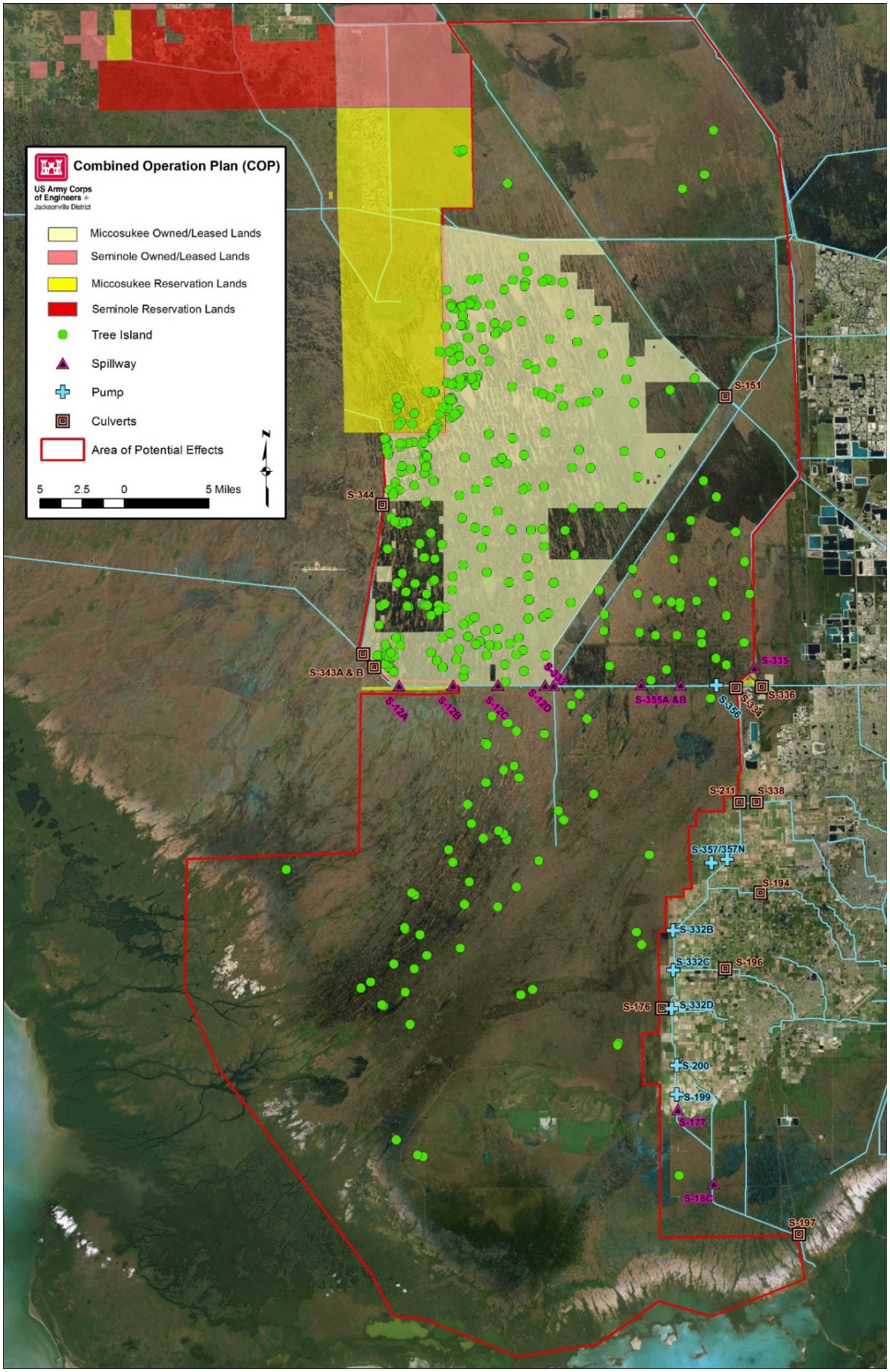
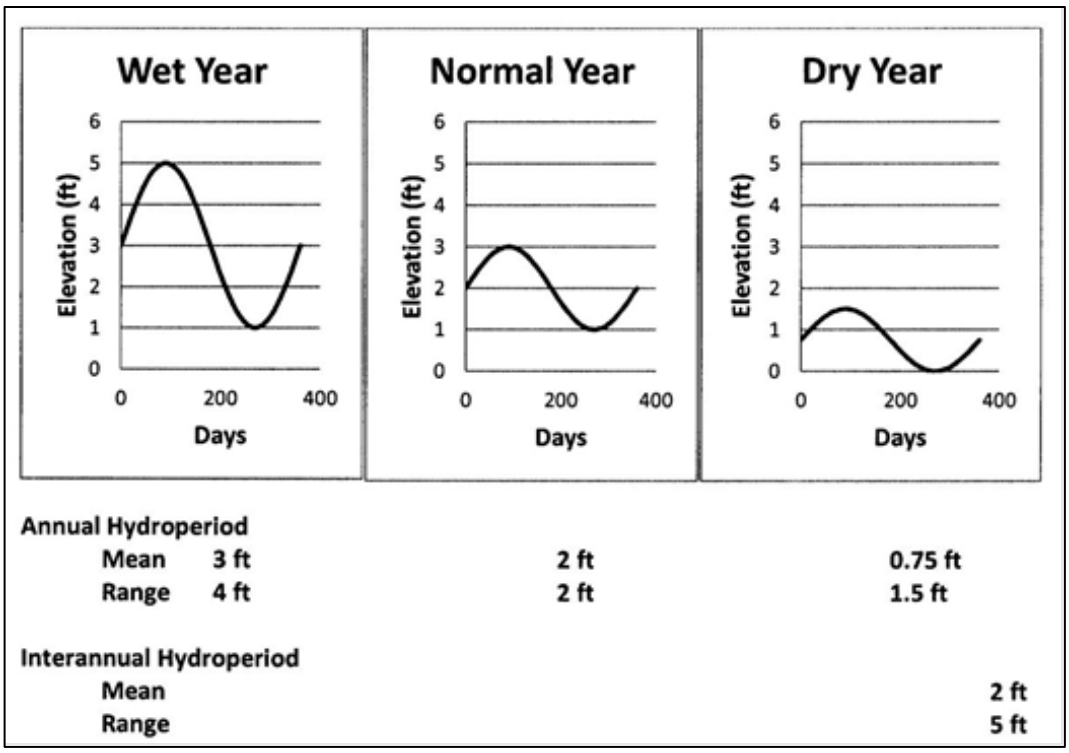


Figure 1. Area of Potential Effects for the COP.



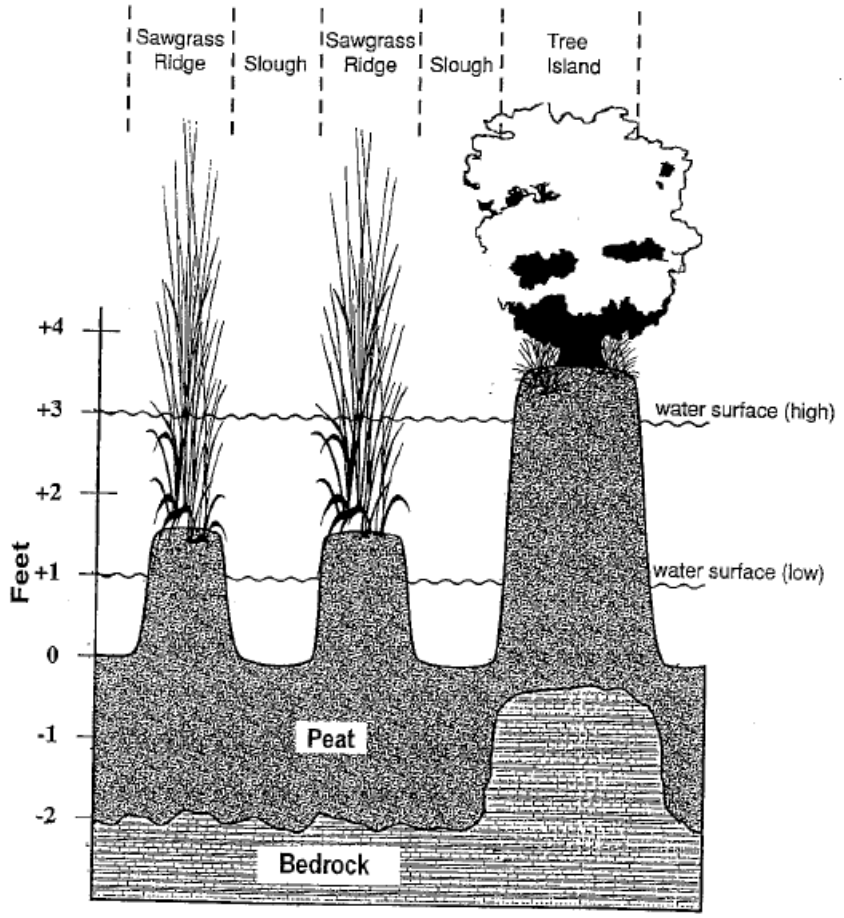


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
S-331	Operating range from 3.5 to 5.0 feet, NGVD, dependent on LPG-2 stage condition (when LPG-2 > 5.5 feet, NGVD); when LPG-2 < 5.5, minimum operating range is 5.0 feet, NGVD	Operating Range from 4.5 to 5.0 feet, NGVD (14 Feb to 31 July). Operating Range from 4.3 to 4.6 feet, NGVD (01 Aug to 01 Jan), with transition operations. May be used to assist with 8.5 SMA flood mitigation when G-3273 > 7.5 feet, NGVD and LPG-2 > 6.7 feet, NGVD for more than the maximum flood mitigation criteria.
S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

21 November 2019

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

Re: Combined Operational Plan (COP)

Dear Dr. Parsons:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the MWD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1 (DHR No.: 2015-1617), Increment 1.1 and 1.2 (DHR No.: 2015-1617), Increment 2 (DHR No.: 2016-5159), the 2016 Emergency Deviation (2016-0610; 2016-1524), and the 2017 Emergency Deviation (2017-3146-B). The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria.

The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets. The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

To supplement previous investigations, the cultural resources analysis of the Preferred Alternative utilized existing real-time data and water levels from the Everglades Depth Estimation Network (EDEN) using mapped elevations of 394 tree islands in WCA 3 and ENP to determine effects of the Preferred Alternative (ALTQ+). Using the EDEN, the daily water surface of WCA 3 and ENP during the 41-year period of record (January 1, 1965 through December 31, 2005) was compared with the tree island elevations to understand which tree islands have been historically inundated. Of the 394 tree islands mapped within the APE, a total of 38 tree islands and a corresponding 32 known cultural resources have not been inundated during the 41-year period of record and analyzed using data collected from the EDEN network and the COP hydrologic modeling. The hydrologic model run was utilized to predict anticipated water levels in the APE as a result of the Preferred Alternative. Each of the 38 tree islands that have not been inundated during the period of record were correlated to the closest modeled gage to determine predicted effects of water levels. The existing condition (Increment 1.1/1.2) and the Preferred Alternative modeled period of record results were averaged by month and compared to observed water elevations at each gage and corresponding tree islands; comparisons were also made to modeled water level averages for ERTP, Increment 1, and Increment 2. Results of this analysis determined that the Preferred Alternative will cause slight decreases in water levels in central and southern WCA 3 and slight increases in northern ENP (Shark River Slough) and eastern ENP (Taylor Slough); however, tree islands that were not inundated during the period of record will not be subject to inundation as a result of the COP.

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The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative. The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

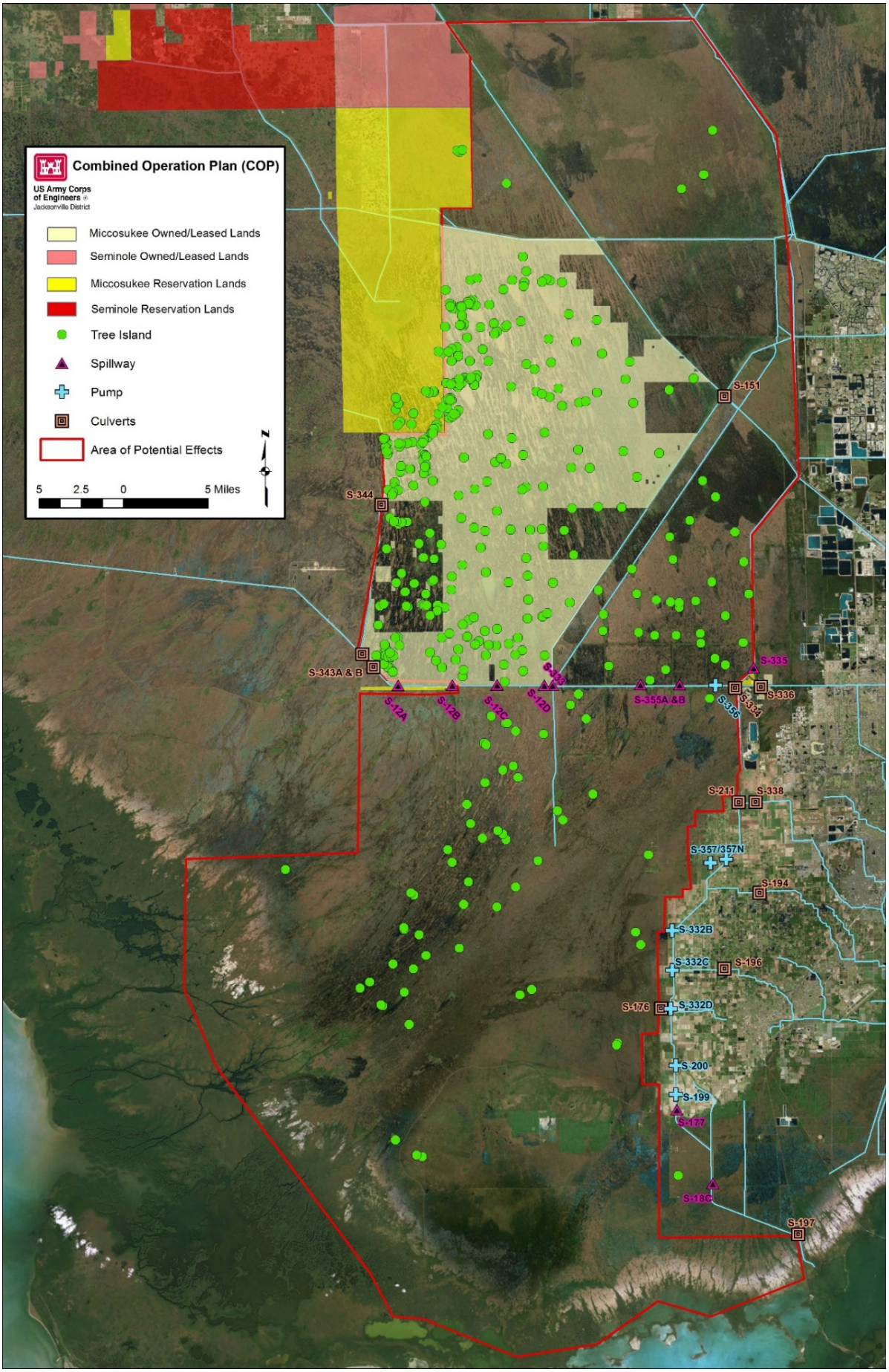
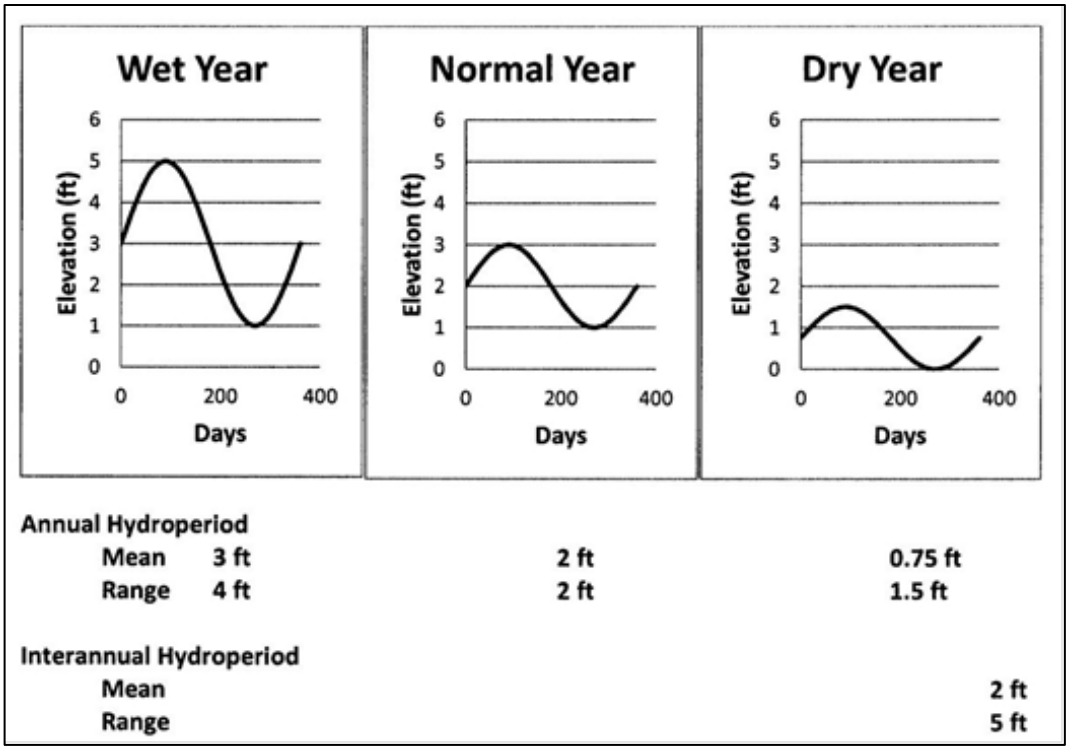


Figure 1. Area of Potential Effects for the COP.



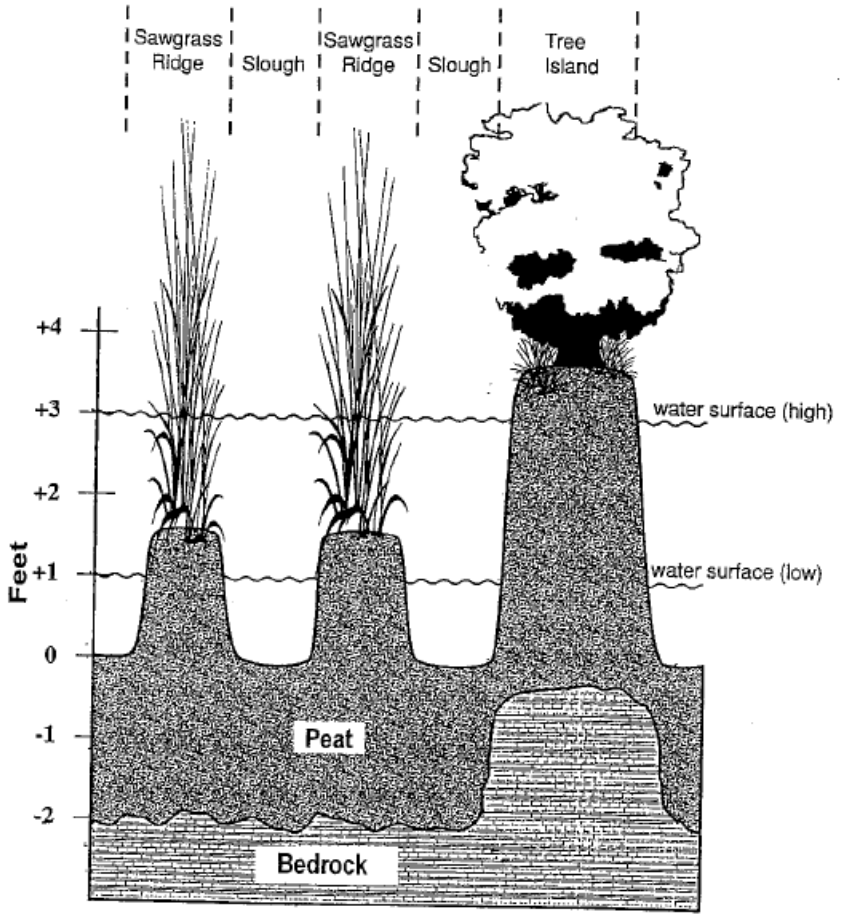


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
S-331	Operating range from 3.5 to 5.0 feet, NGVD, dependent on LPG-2 stage condition (when LPG-2 > 5.5 feet, NGVD); when LPG-2 < 5.5, minimum operating range is 5.0 feet, NGVD	Operating Range from 4.5 to 5.0 feet, NGVD (14 Feb to 31 July). Operating Range from 4.3 to 4.6 feet, NGVD (01 Aug to 01 Jan), with transition operations. May be used to assist with 8.5 SMA flood mitigation when G-3273 > 7.5 feet, NGVD and LPG-2 > 6.7 feet, NGVD for more than the maximum flood mitigation criteria.
S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

Planning and Policy Division
Environmental Branch

21 November 2019

Mr. Theodore Isham
Historic Preservation Officer
Seminole Nation of Oklahoma
PO Box 1498
Wewoka, Ok 74884

Re: Combined Operational Plan (COP)

Dear Mr. Isham:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the WMD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]). The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria. The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets.

The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

To supplement previous investigations, the cultural resources analysis of the Preferred Alternative utilized existing real-time data and water levels from the Everglades Depth Estimation Network (EDEN) using mapped elevations of 394 tree islands in WCA 3 and ENP to determine effects of the Preferred Alternative (ALTQ+). Using the EDEN, the daily water surface of WCA 3 and ENP during the 41-year period of record (January 1, 1965 through December 31, 2005) was compared with the tree island elevations to understand which tree islands have been historically inundated. Of the 394 tree islands mapped within the APE, a total of 38 tree islands and a corresponding 32 known cultural resources have not been inundated during the 41-year period of record and analyzed using data collected from the EDEN network and the COP hydrologic modeling. The hydrologic model run was utilized to predict anticipated water levels in the APE as a result of the Preferred Alternative. Each of the 38 tree islands that have not been inundated during the period of record were correlated to the closest modeled gage to determine predicted effects of water levels. The existing condition (Increment 1.1/1.2) and the Preferred Alternative modeled period of record results were averaged by month and compared to observed water elevations at each gage and corresponding tree islands; comparisons were also made to modeled water level averages for ERTP, Increment 1, and Increment 2. Results of this analysis determined that the Preferred Alternative will cause slight decreases in water levels in central and southern WCA 3 and slight increases in northern ENP (Shark River Slough) and eastern ENP (Taylor Slough); however, tree islands that were not inundated during the period of record will not be subject to inundation as a result of the COP.

In addition to modeled data, the L-29 canal stage and observed water elevations and all 394 mapped tree islands were reviewed using the available EDEN data (January 1, 1999 to August 21, 2019). This data was utilized to understand water elevations at all tree islands when the L-29 canal stage is at or above 8.3 feet NGVD and to compare previous operational strategies (Interim Operating Plan, ERTP, and the MWD Incremental field tests) to those observed during Increment 2 which is the closest approximation to the Preferred Alternative based on the stage of the L-29 canal. While variations in the weather may be the largest impetus between variations in yearly average water elevations, this line of investigation demonstrated that tree islands in WCA 3 and ENP have been subject to conditions within the recent past that may be experienced under the Preferred Alternative. Additionally, the fluctuations in water levels experienced from 2018 to 2019 under Increment 2 are more representative of the natural water fluctuations that are vital to tree island survival, and therefore, maintenance of structural integrity of cultural resources found on tree islands (Figure 2).

The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative.

The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

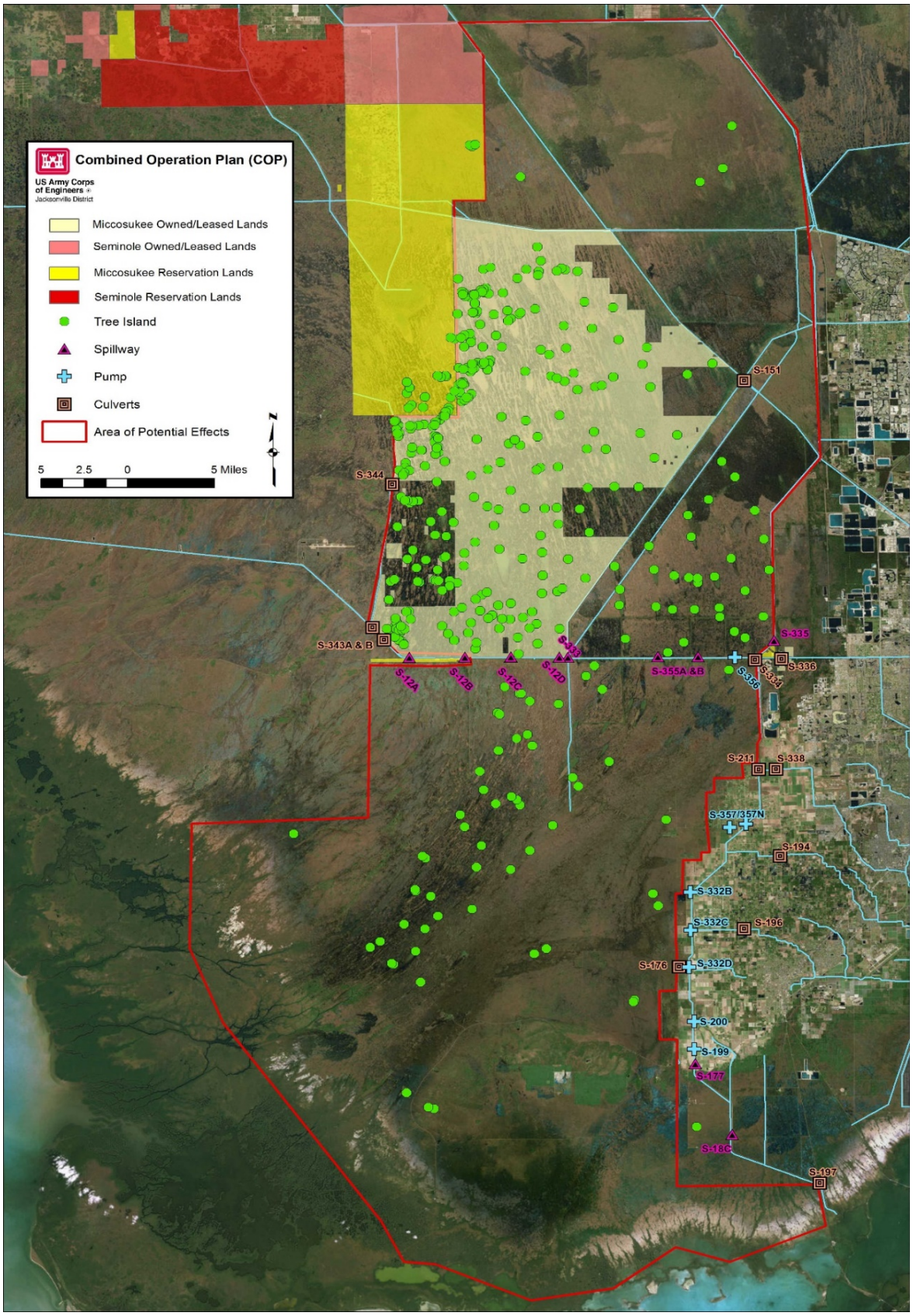
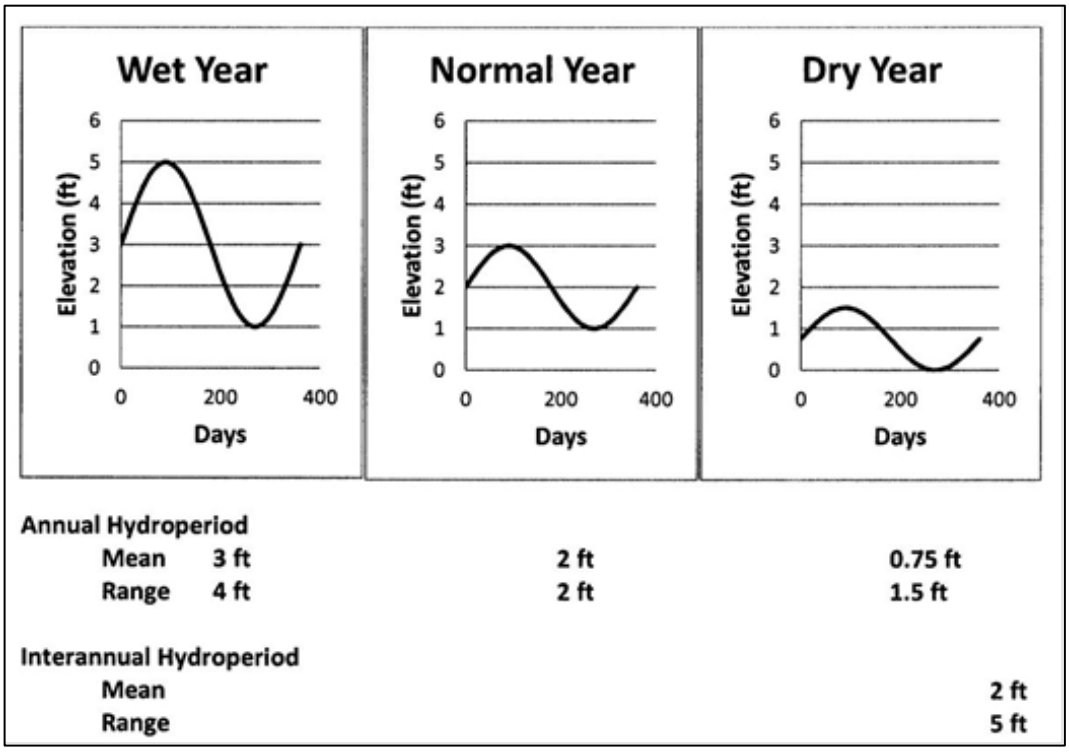


Figure 1. Area of Potential Effects for the COP.



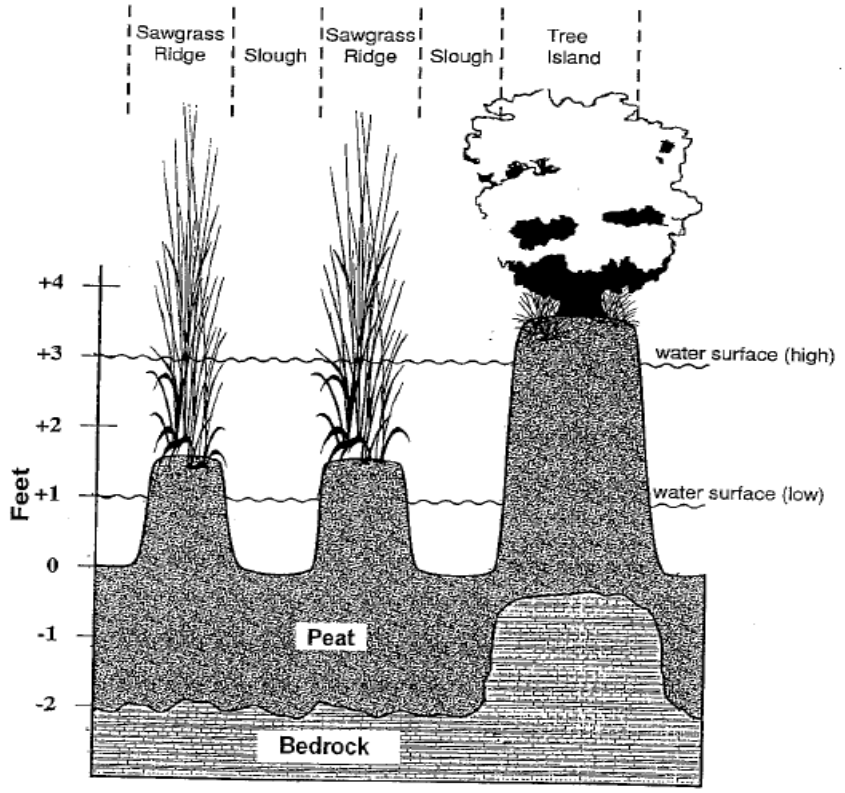


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
S-331	Operating range from 3.5 to 5.0 feet, NGVD, dependent on LPG-2 stage condition (when LPG-2 > 5.5 feet, NGVD); when LPG-2 < 5.5, minimum operating range is 5.0 feet, NGVD	Operating Range from 4.5 to 5.0 feet, NGVD (14 Feb to 31 July). Operating Range from 4.3 to 4.6 feet, NGVD (01 Aug to 01 Jan), with transition operations. May be used to assist with 8.5 SMA flood mitigation when G-3273 > 7.5 feet, NGVD and LPG-2 > 6.7 feet, NGVD for more than the maximum flood mitigation criteria.
S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FL 32207-8915

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

21 November 2019

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

Re: Combined Operational Plan (COP)

Dear Dr. Backhouse:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the MWD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]), including: Increment 1, Increment 1.1 and 1.2, Increment 2, the 2016 Emergency Deviation, and the 2017 Emergency Deviation. The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria.

The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets. The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

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In addition to modeled data, the L-29 canal stage and observed water elevations and all 394 mapped tree islands were reviewed using the available EDEN data (January 1, 1999 to August 21, 2019). This data was utilized to understand water elevations at all tree islands when the L-29 canal stage is at or above 8.3 feet NGVD and to compare previous operational strategies (Interim Operating Plan, ERTP, and the MWD Incremental field tests) to those observed during Increment 2 which is the closest approximation to the Preferred Alternative based on the stage of the L-29 canal. While variations in the weather may be the largest impetus between variations in yearly average water elevations, this line of investigation demonstrated that tree islands in WCA 3 and ENP have been subject to conditions within the recent past that may be experienced under the Preferred Alternative. Additionally, the fluctuations in water levels experienced from 2018 to 2019 under Increment 2 are more representative of the natural water fluctuations that are vital to tree island survival, and therefore, maintenance of structural integrity of cultural resources found on tree islands (Figure 2).

The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative. The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

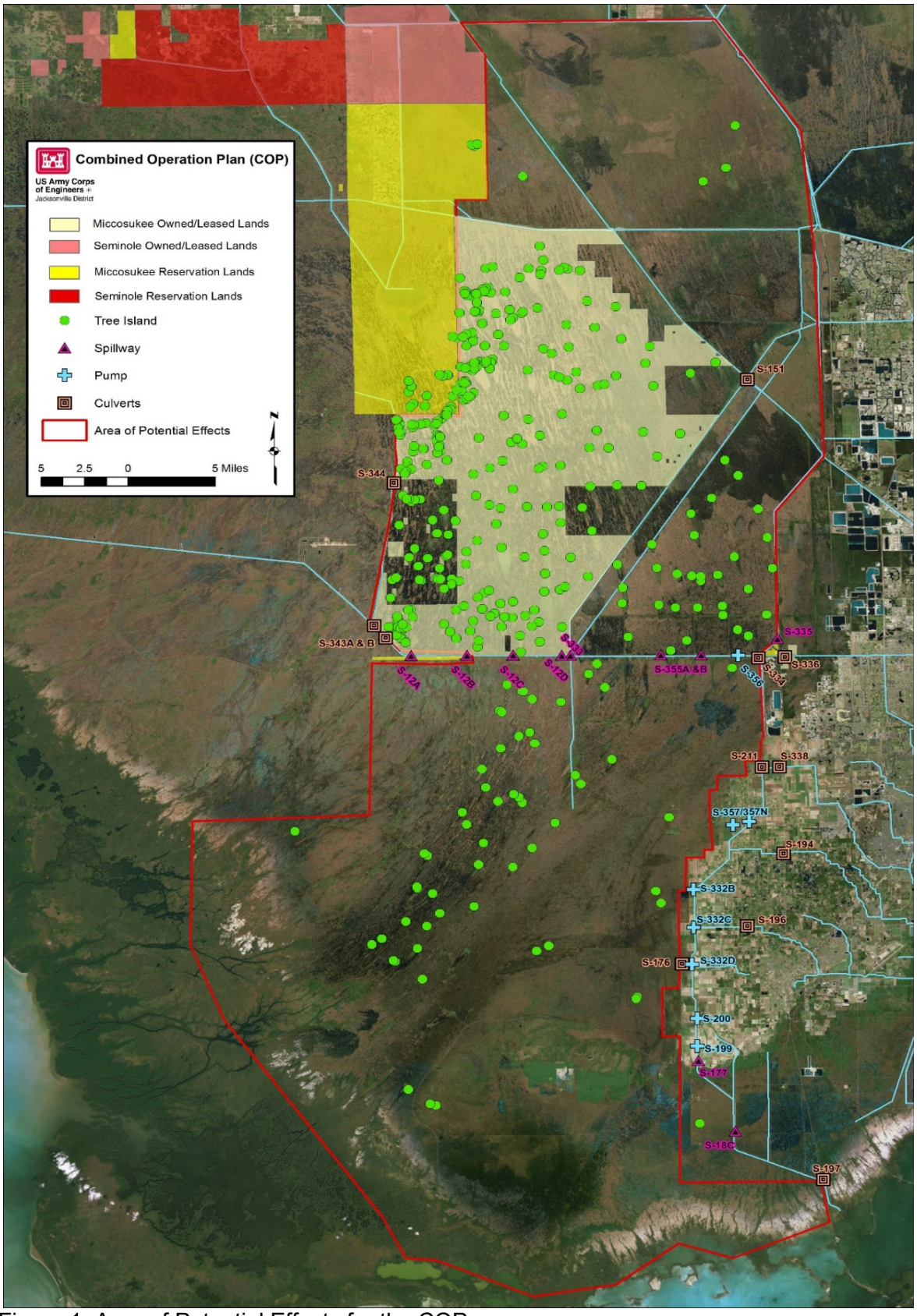
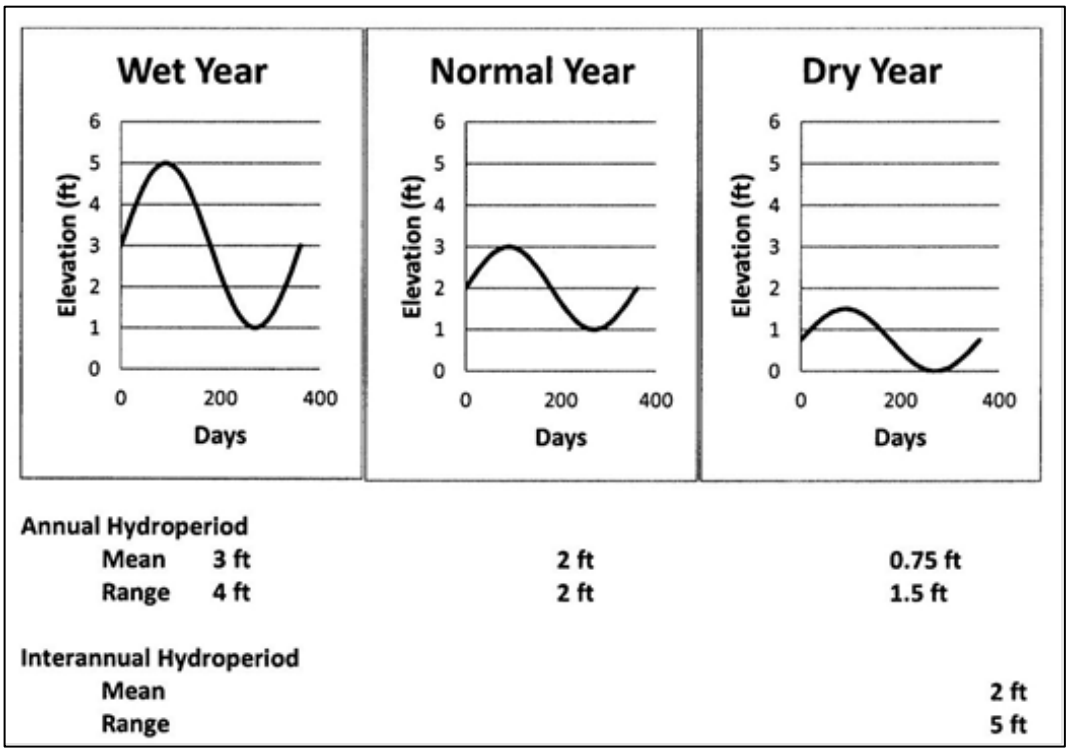


Figure 1. Area of Potential Effects for the COP.



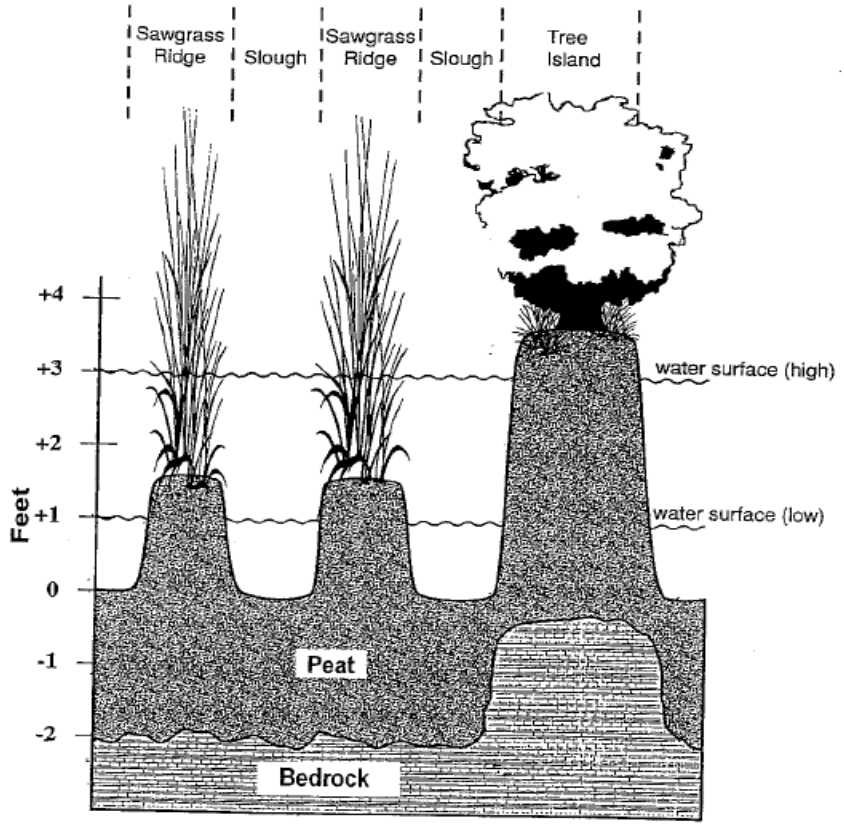


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
S-331	Operating range from 3.5 to 5.0 feet, NGVD, dependent on LPG-2 stage condition (when LPG-2 > 5.5 feet, NGVD); when LPG-2 < 5.5, minimum operating range is 5.0 feet, NGVD	Operating Range from 4.5 to 5.0 feet, NGVD (14 Feb to 31 July). Operating Range from 4.3 to 4.6 feet, NGVD (01 Aug to 01 Jan), with transition operations. May be used to assist with 8.5 SMA flood mitigation when G-3273 > 7.5 feet, NGVD and LPG-2 > 6.7 feet, NGVD for more than the maximum flood mitigation criteria.
S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

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

Planning and Policy Division
Environmental Branch

21 November 2019

Ms. Jane Maylen
Acting Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
PO Box 188
Okemah, OK 74859

Re: Combined Operational Plan (COP)

Dear Ms. Maylen:

The U.S. Army Corps of Engineers, Jacksonville District (Corps) is studying the environmental effects of the Combined Operational Plan (COP) as part of an environmental impact statement (EIS). The purpose of the COP is to define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposes of the Central and Southern (C&SF) Project. Development of the COP has been informed by a series of operational field tests previously conducted under the authority of the MWD Project that include relaxation of the Gage-3273 (G-3273) constraint and raising the maximum operating limit in the L-29 Canal up to 8.5 feet National Geodetic Vertical Datum (NGVD) of 1929 (i.e. Increment 1, Increment 1.1 and Increment 1.2, and Increment 2). Information gained from water management actions (deviations) taken by the Corps in response to unseasonable high water levels within the Water Conservation Areas (WCAs) in 2016 and 2017 has also been utilized to inform development of the COP. Implementation of the COP is anticipated to improve water deliveries from WCA 3 to ENP through Northeast Shark River Slough and improve hydrologic conditions in Taylor Slough, the Rocky Glades, and the eastern panhandle of ENP.

The Corps previously consulted with your office on determinations of no adverse effect to historic properties for the WMD incremental field tests which were deviations from the 2012 water control plan (Everglades Restoration Transition Plan [ERTP]). The area of potential effects (APE) for these efforts and the COP include WCA 3 and ENP (Figure 1). The field tests and COP do not add additional volumes of water into the area of potential effects, but are designed to redistribute the existing water budget to mimic historical flows and timing, and restore natural hydrologic conditions to the extent practicable within the project constraints.

The COP final array of alternatives, the preliminary analysis of effects to cultural resources as a result of these alternatives, and a request for information or concerns related to cultural resources was coordinated with your office in a letter dated July 31, 2019. Potential effects to cultural resources from the Preferred Alternative (ALTQ+) would generally be a result of raising the L-29 Canal Stage maximum operation limit from 7.8 feet, NGVD to 8.5 feet, NGVD, with the constraint that the L-29 may only be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US 41 road base and 8.5 Square Mile Area flood mitigation criteria. The Preferred Alternative is generally consistent with current operations of the system under Increment 2, with small adjustments to the operability of individual water control structures (Table 1) to better meet ecological targets.

The Preferred Alternative demonstrates an average annual reduction of water stages in southern WCA 3, where water is artificially impounded due to the Tamiami Trail, of approximately +/- 1.2 inches up to 6 inches. The Preferred Alternative also demonstrates an average annual increase in water levels by +/- 1.2 inches up to 6 inches in Shark River Slough, which has been subject to severe fires, peat loss, and dry-outs as a result of over-drainage. These conditions are within the range of water levels experienced throughout the period of record and considerably less than those experienced pre-drainage.

To supplement previous investigations, the cultural resources analysis of the Preferred Alternative utilized existing real-time data and water levels from the Everglades Depth Estimation Network (EDEN) using mapped elevations of 394 tree islands in WCA 3 and ENP to determine effects of the Preferred Alternative (ALTQ+). Using the EDEN, the daily water surface of WCA 3 and ENP during the 41-year period of record (January 1, 1965 through December 31, 2005) was compared with the tree island elevations to understand which tree islands have been historically inundated. Of the 394 tree islands mapped within the APE, a total of 38 tree islands and a corresponding 32 known cultural resources have not been inundated during the 41-year period of record and analyzed using data collected from the EDEN network and the COP hydrologic modeling. The hydrologic model run was utilized to predict anticipated water levels in the APE as a result of the Preferred Alternative. Each of the 38 tree islands that have not been inundated during the period of record were correlated to the closest modeled gage to determine predicted effects of water levels. The existing condition (Increment 1.1/1.2) and the Preferred Alternative modeled period of record results were averaged by month and compared to observed water elevations at each gage and corresponding tree islands; comparisons were also made to modeled water level averages for ERTP, Increment 1, and Increment 2. Results of this analysis determined that the Preferred Alternative will cause slight decreases in water levels in central and southern WCA 3 and slight increases in northern ENP (Shark River Slough) and eastern ENP (Taylor Slough); however, tree islands that were not inundated during the period of record will not be subject to inundation as a result of the COP.

In addition to modeled data, the L-29 canal stage and observed water elevations and all 394 mapped tree islands were reviewed using the available EDEN data (January 1, 1999 to August 21, 2019). This data was utilized to understand water elevations at all tree islands when the L-29 canal stage is at or above 8.3 feet NGVD and to compare previous operational strategies (Interim Operating Plan, ERTP, and the MWD Incremental field tests) to those observed during Increment 2 which is the closest approximation to the Preferred Alternative based on the stage of the L-29 canal. While variations in the weather may be the largest impetus between variations in yearly average water elevations, this line of investigation demonstrated that tree islands in WCA 3 and ENP have been subject to conditions within the recent past that may be experienced under the Preferred Alternative. Additionally, the fluctuations in water levels experienced from 2018 to 2019 under Increment 2 are more representative of the natural water fluctuations that are vital to tree island survival, and therefore, maintenance of structural integrity of cultural resources found on tree islands (Figure 2).

The COP Preferred Alternative has the potential for negligible to minor long term beneficial effects for tree islands in the chronically inundated portions of southern WCA 3. Inundation of tree islands in ENP will not be observed as a result the Preferred Alternative. The reduction of water levels within WCA 3 is likely to aid in reducing future tree island degradation due to prolonged inundation and high water depths, and thereby, aid in the preservation of cultural resources by allowing stabilizing growth to occur on the tree islands. Increases of water into Shark River Slough and Taylor Slough, may enable the promotion of peat accretion by potentially reducing soil oxidation; thereby stabilizing the existing soil matrix and prevent future erosion, oxidation, or subsidence of cultural resources.

In summary, the COP Preferred Alternative does not add additional volumes of water into WCA 3 or ENP, thereby allowing the Corps to use previous research conducted as part of previous water control plans and the current line of study to make a determination of effects to cultural resources. The COP Preferred Alternative shows minimal difference in variations to water levels, the COP is not expected to cause inundation of tree islands that have not experienced inundation on a seasonal basis, and the alternatives show projected water elevations at tree islands that are less than those experienced at the tree islands pre-drainage; therefore, the Corps has determined that the COP Preferred Alternative poses no adverse effect to historic properties within the APE.

Pursuant to Section 106 of the National Historic Preservation Act (16 USC 470) and it's implementing regulations (36 CFR 800), the Corps kindly requests your comments on the determination of no adverse effect to historic properties listed or eligible for listing in the National Register of Historic Places. If there are any questions or comments, please contact Ms. Meredith Moreno at (904) 232-1577 or by e-mail at Meredith.A.Moreno@usace.army.mil.

Sincerely,

Angela E. Dunn
Chief, Environmental Branch

Enclosure

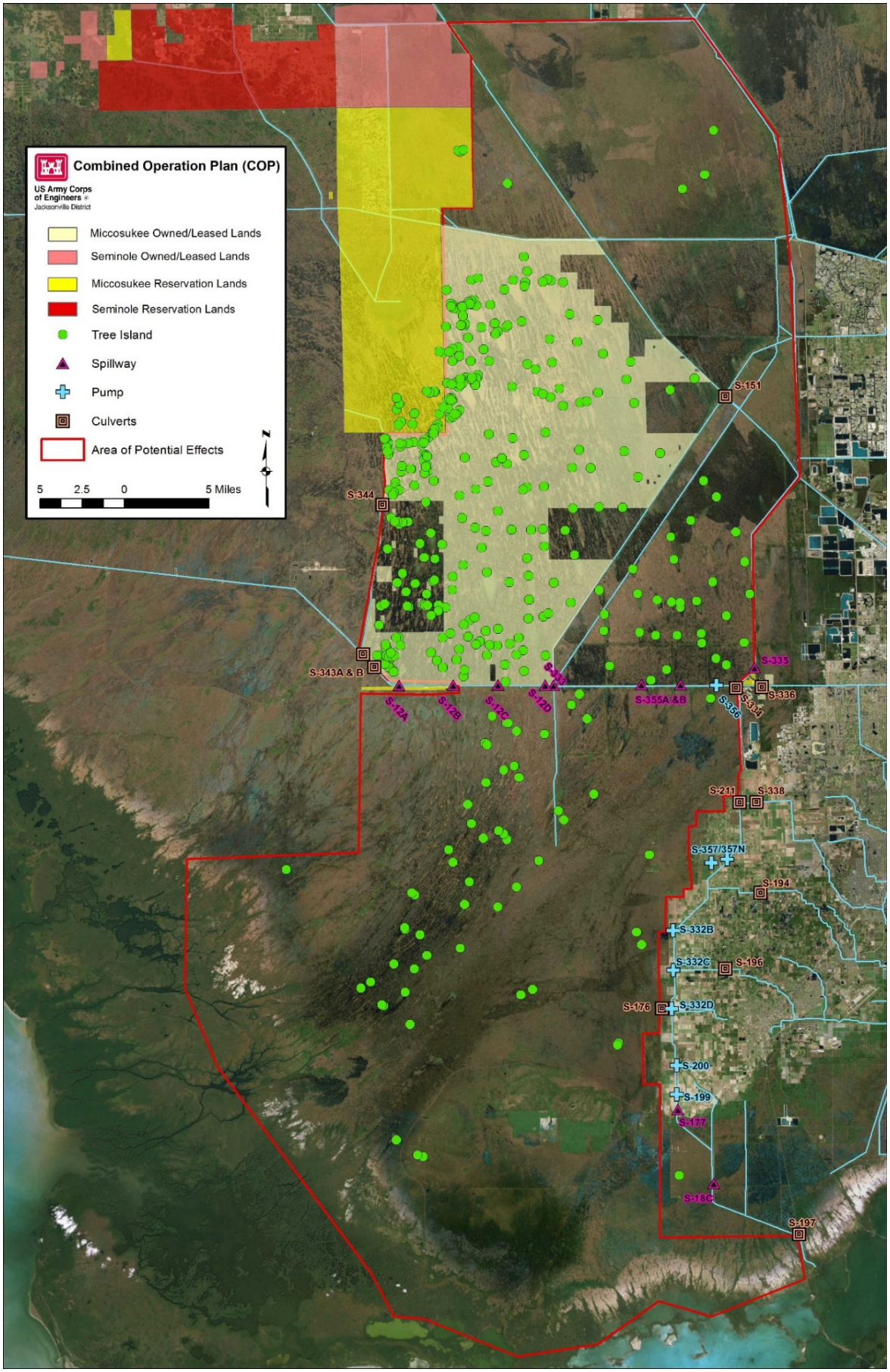
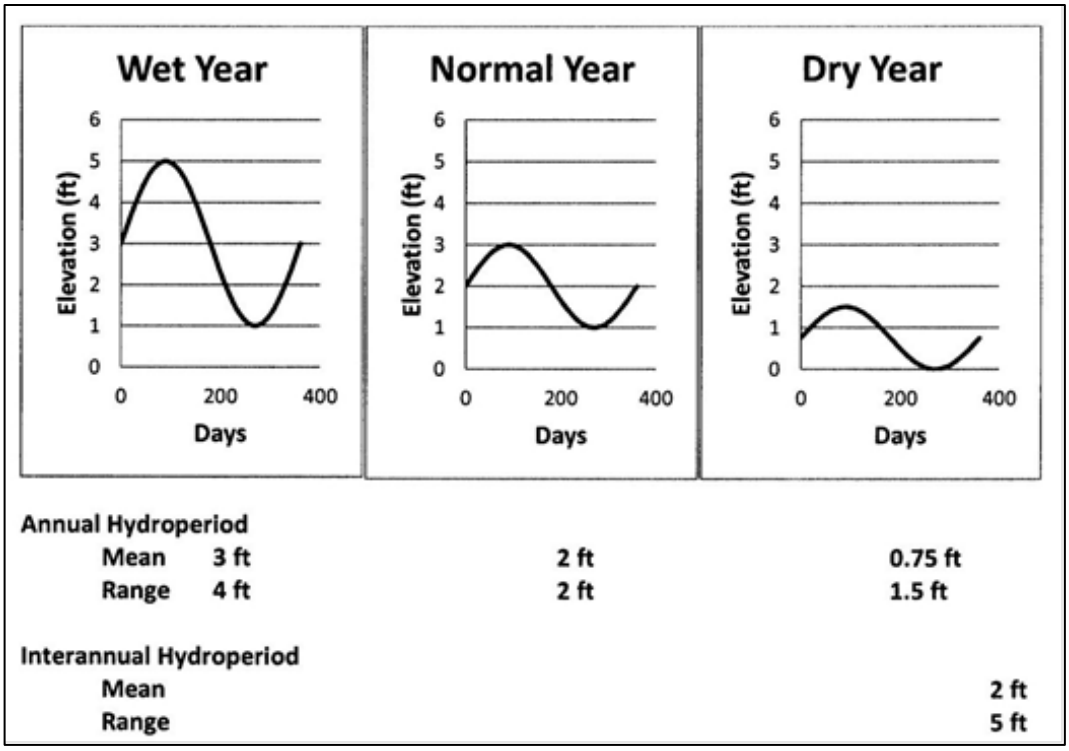


Figure 1. Area of Potential Effects for the COP.



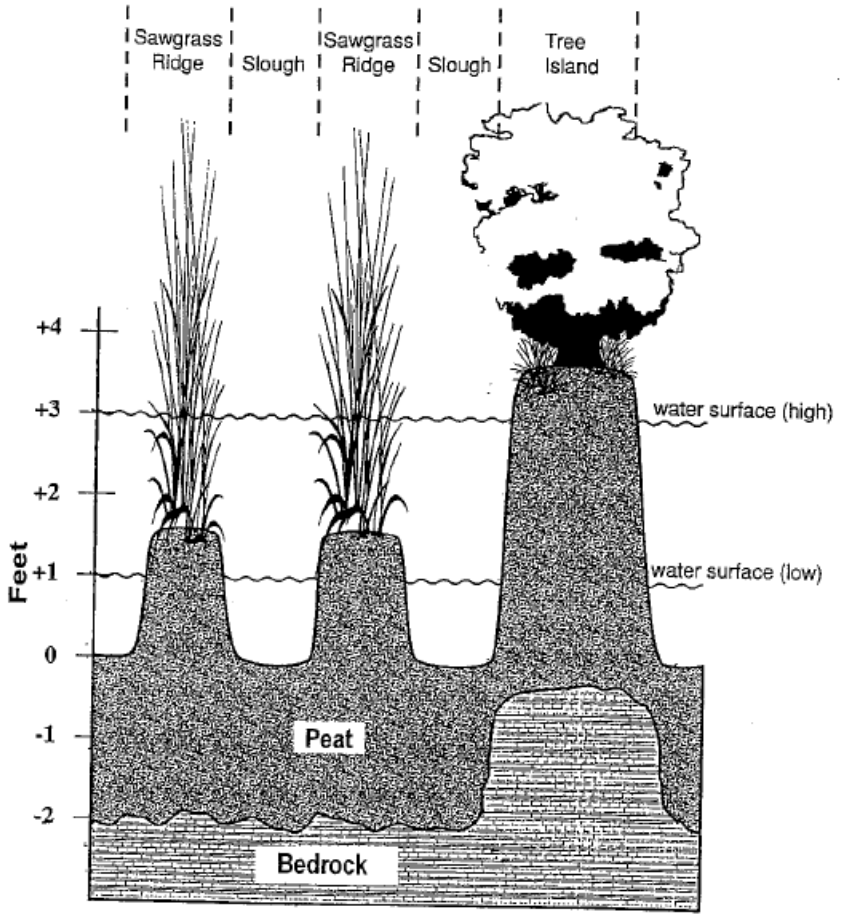


Figure 2. Idealized predrainage annual water level fluctuations over a wet-dry cycle in the Everglades (Top); estimated annual fluctuation of water levels and average elevation of landscape elements in predrainage ridge and slough landscape (Bottom).

Structures	Existing Condition (Increment 1.2 with completed C-111 SD construction)	Preferred Alternative Alt Q+
L-29 Canal	7.8 ft, NGVD	8.5 ft, NGVD with FDOT Constraint. L-29 may be operated above 8.3 feet, NGVD for 90 days per calendar year, with the opportunity to increase based on real time monitoring of the US41 Subbase (interim until TTNS construction) and 8.5 SMA flood mitigation criteria. And consideration of increased low-water stages within WCA 3Aincluding along Western L-29 Canal between S-12A and S-333.
G 3273	Relax constraint (previously 6.8 ft, NGVD)	Constraint Removed
Rainfall Plan	1985 Rainfall Plan as modified in 2012 WCP	Tamiami Trail Flow Formula, or TTFF (derived equation fit to optimum performance signal in ALT O; depends on: stage in WCA-3A and ENP; Tamiami Trail structure flows; WCA-3A contributing basin Rainfall; and ET). TTFF adjustments for ENP drought years and water quality considerations will be developed through Adaptive Management Plan
S-356	Operating Range from 5.5 to 5.8 feet, NGVD (under Condition 1 & 2)	Operating Range 5.5 to 5.8 feet, NGVD. Priority over S-333 except when WCA3A is above the EHWL
ESA	New S-12s Operational Window (closed 01 OCT – 14 JUL, subject to high-water exit strategy in OCT-NOV); S-343A/B and S-344 closed 01 OCT – 14 JUL	Maintain 2016 ERTP Closures for S-12A, S-12B, S-343A, and S-343B. S-344 open when WCA-3A > Zone A (no seasonal closures at S-344) Removal of S-332D Seasonal Pump Restrictions during December
Inc. 1 Action Line	Increment 1 Action Line: 10.0 feet to 10.75 feet NGVD	No Action Line
EHW Action Line	No EHW Action Line	COP EHWL: Varies Seasonally from 11.0 feet to 12.0 feet NGVD (tiered operations for releases to SDCS and S-197)
S-333	Operated per WCA-3A Regulation Schedule (2012 WCP), including priority to NESRS. Additional increase governed by L-29 stage.	Operated per TTFF targets.
S-334/S335	Operating Range for Flood Control is 6.5 to 7.5 feet, NGVD May be used to provide Supplemental Deliveries to Taylor Slough, Florida Bay, and Manatee Bay (up to 250 cfs)	Operating range for Flood Control is 6.5 to 7.5 feet, NGVD S-334 Operated above EHWL if available capacity in SDCS; short-term availability in accordance with FDOT constraints Further reduce Column 2 discharges as compared to the field test; S-335 operations suspended when TW stage equals or exceeds 6.1 feet NGVD To supplement flows toward Taylor Slough and downstream systems from 01 Aug through 14 Feb, S335 should: Release up to 400 cfs when S335 HW stages are 5.3 to 5.5 feet, NGVD Release up to full capacity when S335 HW stages are 5.5 to 6.5 feet, NGVD • Subject to HW constraint at S-176 May be Subject to Pennsuco stage limit
C-111 SD (S-332B/C/D)	Maintain local flood risk management Slightly Lower canal elevations than 2012 WCP, consistent with Increment 1.1 and 1.2 after completed C-111SD construction: 4.2 to 4.8 ft, NGVD Stage Constraint in NDA/SDA: 2.5 ft, NGVD	Informed by SFWMD 2016-2017 SD Investigations with CSSS seasonal constraints Similar to Increment 1.1 and 1.2: 3.8 to 4.8 ft, NGVD with seasonal variability (minor decrease from 2012 WCP) No Stage Constraint in NDA/SDA
Taylor Slough	Up to 250 cfs for up to 8 weeks of the year	Up to 300 cfs
S-357	S-357 discharges into C-111SD NDA. Dependency on S-331 to provide 8.5 SMA flood mitigation, with S-357 as secondary. Operations maintain consistency with Increment 1.1 and 1.2 following assumed operation of the C-111 South Dade NDA: C-357 range 3.5-6.0 ft, NGVD (limit to 500 cfs)	Operating range of Increment 2: 2.3 to 6.0 ft, NGVD; No limit (575 cfs) S-357 is Primary water control structure for flood mitigation in the 8.5 SMA. S-331 can be used to support S-357 to ensure 8.5 SMA flood mitigation.
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S-197	Increased low-volume discharges, based on S-18C HW, S-176/S-177 flows; Moderate to High flows dependent on S-177/S-18C HW stage: Level 1 discharges limited to 500 cfs; Level 2 and Level 3 discharges unchanged from 2012 WCP	S-18C to trigger opening of S-197 Level 1. When S-18C HW > 2.7 ft NGVD, open S-197 up to 200 cfs; Level 2. When S-18C HW > 2.9 ft NGVD, operate S197 up to 800 cfs; Level 3. When S-18CHW > 3.3 ft, operate S197 up to 2400 cfs; When S-331 is operating below S-331 normal operating range to assist in providing drainage to 8.5SMA then up to 200cfs can be routed to S-197 as long as S-18C HW > 2.3 ft.

Table 1. Operational Criteria of the Existing Condition and Preferred Alternative.

FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Angela E. Dunn
Chief, Environmental Branch
Corps of Engineers, Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207-8915

December 20, 2019

RE: DHR Project File No.: 2019-4392B, Received by DHR: November 25, 2019
Combined Operational Plan (COP)

Dear Ms. Dunn:

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

As described by the Corps, the proposed undertaking, known as the Combined Operational Plan (COP), will define operations for the constructed features of the Modified Water Deliveries (MWD) to Everglades National Park (ENP) and Canal 111 (C-111) South Dade Projects, while maintaining the congressionally authorized purposed of the Central and Southern (C&SF) Project. Development of the COP was based on a series of operational field tests previously conducted under the authority of the MWD Project. The Corps consulted with our office for those field tests (Increment 1, Increment 1.1, Increment 1.2, and Increment 2). The field tests and COP do not add additional volumes of water to the area of potential effect, but are designed to redistribute the existing water budget to mimic historic flows and timing, and restore natural hydrologic conditions to the extent possible within the project constraints.

Based on the information provided in the Corps letter and the supporting presentation, our office concurs with the Corps determination of no adverse effect to historic properties listed, or eligible for listing, in the NRHP.

If you have any questions, please contact me by email at *Jason.Aldridge@dos.myflorida.com,* or by telephone at 850-245-6344.

Sincerely,

Jason Aldridge
Deputy State Historic Preservation Officer
for Compliance and Review

From: Moreno, Meredith A CIV USARMY CESAJ (US)
To: Victoria Menchaca
Cc: THPO Compliance; Dunn, Angela E CIV USARMY CESAJ (USA)
Subject: RE: USACE Combined Operational Plan, Multiple Counties FL
Date: Thursday, January 02, 2020 2:15:00 PM

Hi Victoria,

The Corps has no issue with the Seminole Tribe taking an additional 30-days to provide a response to the above referenced determination of effects letter. As discussed, the Corps will schedule a webinar on January 15 or 16 to answer any additional questions on the COP.

Thank you,

Meredith A. Moreno, M.A., RPA
Lead Archaeologist
Planning Division, Environmental Branch
Jacksonville District, US Army Corps of Engineers
Office: 904-232-1577
Mobile: 904-861-9967

-----Original Message-----
From: Victoria Menchaca [mailto:VictoriaMenchaca@semtribe.com]
Sent: Thursday, December 26, 2019 1:13 PM
To: Moreno, Meredith A CIV USARMY CESAJ (US) <Meredith.A.Moreno@usace.army.mil>
Cc: THPO Compliance <THPOCompliance@semtribe.com>
Subject: [Non-DoD Source] USACE Combined Operational Plan, Multiple Counties FL

December 26, 2019

Meredith A. Moreno, M.A., RPA

Lead Archaeologist

Planning Division, Environmental Branch

Jacksonville District, US Army Corps of Engineers

Office: 904-232-1577

Mobile: 904-861-9967

Subject: USACE Combined Operational Plan, Multiple Counties FL

THPO #: 0028534

Dear Ms. Moreno,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the effects determination for the USACE Combined Operational Plan. We would respectfully like to ask for a 30-day extension to respond to this determination of effects letter.

Sincerely,

Victoria L. Menchaca, MA, Compliance Review Specialist

STOF-THPO, Compliance Review Section

30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Office: 863-983-6549 ext 12216

Email: victoriamenchaca@semtribe.com

Web: www.stofthpo.com

From:	Victoria Menchaca
To:	Dunn, Angela E CIV USARMY CESAJ (USA)
Cc:	Moreno, Meredith A CIV USARMY CESAJ (US); Juan Cancel; Anne Mullins; Paul Backhouse; Victoria Menchaca; Stacy Myers; Bradley Mueller
Subject:	[Non-DoD Source] Combined Operational Plan Preferred Alternative Section 106 Consultation Comments
Date:	Friday, January 24, 2020 9:02:53 AM
Attachments:	image002.png

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

TRIBAL HISTORIC
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA
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MUSEUM WEBSITE: WWW.AHTAHTHIKI.COM

January 24, 2020

Angela E. Dunn
Environmental Branch Chief
Planning & Policy Division
Jacksonville District
Office: 904.232.2336
Email: Angela.E.Dunn@usace.army.mil

Subject: Combined Operational Plan Preferred Alternative Section 106 Consultation Comments
THPO Compliance Tracking Number: 0028534

Dear Ms. Dunn,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the Combined Operational Plan and for taking the time to discuss the undertaking with us during the January 16th conference call/webinar. The proposed undertaking falls within the STOF Area of Interest. After carefully considering the information you have provided over the past several months we do not feel that there is currently sufficient information for us to comment on the USACE's determination of effects to cultural resources within the Area of Potential Effect (APE).

We are especially concerned that there is a lack of adequate sampling of the various types and range of sizes of tree islands found within the APE. We are also concerned that the current sample size is not statistically significant given the total number of tree islands that exist within the APE. Additionally, it is our position that the significance of all tree islands are not equal and thus cannot be treated as one resource.

The STOF stands willing to work constructively with the USACE to help identify the types of information the Tribe would need to assist it in making these difficult assessments. We look forward to continuing this discussion.

Respectfully,

Paul N. Backhouse, Ph.D., RPA
Senior Director, Heritage and Environment Resources Office,
Tribal Historic Preservation Officer
30290 Josie Billie Hwy, PMB 1004
Clewiston, FL 33440
Email: PaulBackhouse@semtribe.com