



2021 INTEGRATED FINANCIAL PLAN

SOUTH FLORIDA ECOSYSTEM RESTORATION TASK FORCE

EVERGLADESRESTORATION.GOV

2021 Integrated Financial Plan

PURPOSE

In the Water Resources Development Act of 1996, Congress directed the South Florida Ecosystem Restoration Task Force to prepare an Integrated Financial Plan (IFP) for the restoration, preservation, and protection of the South Florida Ecosystem. The purpose of the IFP is to provide detailed information about the federal, state, Tribal, and local restoration projects that contribute towards the accomplishment of the vision, goals, subgoals, and objectives of the Task Force strategy for restoration of the South Florida Ecosystem and America's Everglades. The IFP is compiled and prepared annually by the Department of the Interior's Office of Everglades Restoration Initiatives (OERI) and is updated and posted on the South Florida Ecosystem Restoration Task Force website: www.EvergladesRestoration.gov.

BACKGROUND

The overall premise of restoration is that the ecosystem must be managed from a broader system-wide perspective. Rather than dealing with issues independently, the challenge is to seek out the interrelationships that exist between all the components of the ecosystem. The same issues that are critical to the natural environment – getting the water right and restoring, preserving, and protecting diverse habitats and species – are equally necessary in maintaining a quality built environment and lifestyle for south Florida's residents and visitors.

The success of this comprehensive approach depends upon the coordination and integration of hundreds of individual restoration projects carried out by various agencies and restoration partners at all levels of government with the input of many stakeholders. Each agency brings its own authority, jurisdiction, capabilities, and expertise to the overall initiative and applies them through their respective individual programs, projects, and activities.

CRITERIA AND ASSUMPTIONS

The IFP is the compilation of project specific information provided to the OERI on an annual basis by the federal, state, local, and Tribal restoration partners and the members of the Task Force, Working Group, and Science Coordination Group. It is important to note that the cost estimating protocols, fiscal year cycles, time frames, and methodologies used by each member varies. As such, the IFP reflects criteria and assumptions specific to that reporting entity and does not follow a single format. Specific criteria and assumptions for each project are annotated with footnotes.

The following criteria and assumptions apply to all of the project financial information, as provided, in this 2021 IFP:

- Federal agencies and the South Florida Water Management District (SFWMD) operate and report appropriations, budgets, and related financial activities on an October 1 to September 30 fiscal year, while other State of Florida agencies operate and report on a July 1 to June 30 fiscal year.
- The U.S. Army Corps of Engineers (USACE), in seeking project authorization, utilizes current year dollars in developing detailed cost estimates for authorizing documents. The costs reflected in this document were derived in the following manner. These costs are escalated using current Office of Management and Budget (OMB) inflation indices.

- Reporting agencies presume future levels of Congressional and State of Florida appropriations to develop project completion schedules. If the actual appropriations vary from presumed future levels, then project completion schedules and estimated project costs may change.
- Federal project execution is contingent upon Administration policy and priorities and is also subject to available Congressional appropriations.
- The Project Summary Table and IFP do not include operational costs or agency programmatic costs that would be incurred regardless of the restoration initiative. For example, the National Park Service costs to operate and maintain Everglades National Park, U.S. Fish and Wildlife Service costs to provide for Endangered Species Act consultation, and USACE costs to operate and maintain water delivery infrastructure are not included herein.
- The Project Summary Table and IFP do not include the costs of infrastructure improvements in existing urban areas including but not limited to redeveloping declining urban areas, wastewater and stormwater management system construction and improvements, schools, roadways, utilities, and light rail.
- The Project Summary Table and IFP do not include any costs or future resource needs projected for environmental and system-wide monitoring programs (for example, the \$100 million funded over 10 years for the Comprehensive Everglades Restoration Plan (CERP) monitoring programs is not included).
- The Project Summary Table and IFP do not include any post-construction operations and maintenance costs in the total financial requirement, except where stated in individual project sheets or footnoted in the Project Summary Table.

CERP

For projects where a decision document has not yet been initiated, an estimated cost was derived from the CERP “Yellow Book” (1999) and escalated to current day dollars. It is important to note that the original project estimates acknowledged that the final methodology to reach the goal would vary and that the actual real estate footprint was still an unknown.

The Project Implementation Report (PIR) is the primary decision document used to obtain approval and/or authorization of CERP projects. Project cost estimates are revised and updated during the PIR development. Once a PIR is approved, the PIR, or the authorizing legislation, defines the estimated project cost.

For pilot projects, a Pilot Project Design Report (PPDR) is completed instead of a PIR and contains similar cost information to that in a PIR.

Foundation, Critical, and State Projects

Other previously authorized Central & Southern Florida (C&SF) projects including C-111 (South Dade); West Palm Beach Stormwater Treatment Area (STA) 1 East/C-51 West; the Everglades and South Florida Ecosystem Restoration (E&SF) Critical Restoration Projects; Kissimmee River Restoration; and Herbert Hoover Dike rehabilitation have been reported in 2019 dollars.

Projects initiated by the State of Florida are reported as shown in the examples below:

- a) Lake Okeechobee Watershed Protection Plan (LOWPP) – The current LOWPP assumes that the cost for non-CERP features will be primarily borne by the SFWMD and the State of Florida, while CERP costs are eligible for up to fifty percent cost share with the federal

government. It is important to note that the SFWMD expedited a portion of the CERP Lake Okeechobee Watershed Restoration Project (specifically the Lakeside Ranch Stormwater Treatment Area) ahead of federal authorization in order to achieve environmental benefits earlier. In general, non-CERP costs include dispersed water management projects, phosphorus source control projects, Hybrid Wetland Treatment Technology projects, local government initiatives, implementation of Best Management Practices throughout the entire Lake Okeechobee watershed, and ongoing in-lake restoration activities, monitoring, research, and exotics removal.

In accordance with the Northern Everglades and Estuaries Protection Program (NEEPP; Section 373.4595, F.S.), beginning March 1, 2020 and every 5 years thereafter, the LOWPP must be updated by the SFWMD to ensure that it is consistent with the state's adopted Lake Okeechobee Basin Management Action Plans (BMAPs). Accordingly, the five-year LOWPP Update was published by the SFWMD in 2020. The goals of the LOWPP Update are (1) to produce a streamlined tool to assist decision makers and legislators needing to focus resources and (2) to identify the challenges/needs in subwatersheds and basins within the Lake Okeechobee Watershed to help focus priorities and projects to meet the water quality and quantity goals of the NEEPP for the Lake Okeechobee watershed.

- b) Long Term Plan - Cost estimates are updated as each project progresses through the design process. Each updated cost estimate is reported as the present-day value at the time the estimate is performed.

Goals	SP Project Number	Project Name	Lead Agency	Financial Requirement	Appropriated thru FY 2020	Measurable Output	Primary Objective	Secondary Objective(s)	Pg #
Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
GOAL 1. GET THE WATER RIGHT									
1.A.1		SURFACE WATER STORAGE PROJECTS				ACRE-FT.			
	1101	C&SF: CERP Indian River Lagoon-South [C-23/C-24/C-25/North Fork and South Fork Storage Reservoirs (UU P1 & UU P2), and C-44 Basin Storage Reservoir (B)] (CERP Project WBS #02 & # 07)	USACE/SFWMD	\$4,040,361,000	\$934,690,000	130,000	1.A.1	1.B.1 /2.A.3	17
	1102	C&SF: CERP Everglades Agricultural Area Storage Reservoirs (G P1 & G P2) See Project 1103	USACE/SFWMD	TBD	TBD	360,000	1.A.1		26
	1103	C&SF: CERP Central Everglades Planning Project (CEPP)	USACE/SFWMD	\$5,035,228,000	\$136,834,000		1.A.1	1.A.3	27
	1104	C&SF: CERP Lake Okeechobee Watershed Restoration(A, W; OPEs: LOWQTF, LOTSD, LIRS) (CERP Project WBS # 01 and 02)	USACE/SFWMD	\$2,614,941,000	\$49,375,000	272,823	1.A.1	1.B.1/2.A.3	29
	1105	C&SF: CERP North Lake Belt Storage Area (XX P2) (CERP Project WBS # 25)	USACE/SFWMD	\$744,236,000	\$0	90,000	1.A.1		34
	1106	C&SF: CERP Palm Beach County Agriculture Reserve Reservoir (VV P1) (CERP Project WBS # 20)	USACE/SFWMD	\$200,016,000	\$1,377	20,000	1.A.1		36
	1107	C&SF: CERP Site 1 Impoundment (M P1) a/k/a Site 1 Impoundment (Fran Reich Preserve) (CERP Project WBS # 40)	USACE/SFWMD	\$379,099,000	\$83,472,000	13,280	1.A.1	2.A.3	37
	1109	C&SF: CERP Caloosahatchee River (C-43) West Basin Storage Reservoir and Caloosahatchee Watershed (CERP Project WBS # 04 and 05)	USACE/SFWMD	\$1,048,857,000	\$175,067,000	170,000	1.A.1		41
	1110	C&SF: CERP Central Lake Belt Storage Area (S); Flows to Eastern Water Conservation Ares (EEE - previously WBS #23).	USACE/SFWMD	\$1,448,836,000	\$0	190,000	1.A.1	1.B.1	47
	1115	C&SF: CERP Loxahatchee River Watershed Restoration - Part 1(X)(Y)(GGG)(K P1) (OPE) (CERP Project WBS # 17)	USACE/SFWMD	\$884,861,000	\$22,377,000	46,000	1.A.1		49
	1116	C&SF: CERP Broward County Water Preserve Areas (WPA)(R) (Q) (O) [Broward County WPA - C-9 Impoundment (R) and Western C-11 Diversion Impoundment and Canal (Q) and Water Conservation Areas 3A and 3B Levee Seepage Management (O)] (CERP Project WBS # 45)	USACE/ SFWMD	\$1,324,488,000	\$457,819,000	11,648	1.A.1	2.A.3	54
	2100	Allapattah Flats/Ranch	FDEP	Footnote 1	Footnote 1	32,000	1.A.1	2.A.1	122
		Completed Projects							
	1111	E&SF: Critical Projects - Ten Mile Creek Water Preservation Area	USACE/SFWMD	\$49,886,050	\$49,886,050	6,000	1.A.1	2.A.3	316
		Inactive/ On Hold/ Closed Projects							
	1112	Taylor Creek Reservoir - Expedited Project - The SFWMD is implementing as part of Northern Everglades Project	SFWMD	\$3,685,505	\$3,685,505	32,000	1.A.1		406
	1113	C&SF: CERP Water Preserve Area Conveyance (XX P1) (CERP Project WBS # 49)	USACE/SFWMD	\$227,451	\$227,451	90,000	1.A.1		407
	1114	C&SF: CERP Everglades National Park Seepage Management (V) (FF) (BB) (U) (CERP Projects WBS # 27 and # 43)	USACE/SFWMD	\$2,703,000	\$2,703,000	11,500	1.A.1		408
1.A.2		ALTERNATIVE WATER STORAGE SYSTEMS PROJECTS				BGD			
	1201	C&SF: CERP Lake Okeechobee Aquifer Storage and Recovery (GG P1, GG P2, GG P3) (CERP Project WBS # 03)	USACE/SFWMD	\$2,489,554,000	\$0	1.000	1.A.2		57
	1204	C&SF: CERP PBC Agriculture Reserve Aquifer Storage & Recovery -- Part 2 (VV P2) (CERP Project WBS # 21)	USACE/SFWMD	\$96,266,000	\$0	0.075	1.A.2		59
	1205	C&SF: CERP C-43 Basin Aquifer Storage and Recovery (ASR) (D P2) Caloosahatchee River Aquifer Storage and Recharge Project (C-43ASR) (CERP Project WBS # 05)	USACE/SFWMD	\$459,369,000	\$287,000	0.220	1.A.2		61
		Completed Projects							
	1203	C&SF: CERP ASR Regional Study (CERP Project WBS # 44)	USACE/SFWMD	\$25,200,000	\$25,200,000		1.A.2		319
		Inactive/ On Hold/ Closed Projects							
	1200	C&SF: CERP North Palm Beach County - Part 2 (LL) (K P2) (CERP Project WBS # 18)	USACE/SFWMD	\$370,269,000	\$0	0.220	1.A.2		411
	1202	C&SF: Hillsboro ASR Phase 2 (M P2) (CERP Project WBS # 22)	USACE/SFWMD	\$222,827,000	\$0	0.150	1.A.2		413
	1206	Seminole Tribe Brighton Reservation Aquifer Storage and Recovery (ASR) Pilot Project	SFWMD/STOF	\$450,000	\$450,000		1.A.2		415
	1207	Taylor Creek Aquifer Storage and Recovery (ASR) Project	SFWMD	\$850,000	\$850,000		1.A.2		417

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Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
	1208	Fisheating Creek Feasibility Study	SFWMD/State of Florida	\$792,921	\$792,921		1.A.2		419
1.A.3.		MODIFY IMPEDIMENTS TO SHEETFLOW PROJECTS				MILES MODIFIED			
	1300	C&SF: C-111 (South Dade)	USACE/SFWMD	\$476,911,000	\$313,250,000	4.75	1.A.3	3.B.1	63
	1301	C&SF: CERP WCA-3 Decompartmentalization and Sheetflow Enhancement (AA) (QQ P1 & QQ P2) (SS) (ZZ) (CERP Projects WBS # 12, # 13 and # 47)	USACE/SFWMD	\$316,181,000	\$32,565,000	240	1.A.3		67
	1306	Kissimmee River Restoration Project	USACE/SFWMD	\$841,258,000	\$798,970,000	44	1.A.3	2.A.3	71
	1307	U.S. DOI Modified Water Deliveries to Everglades National Park (Footnote 3)	NPS	\$418,850,530	\$407,285,231	11	1.A.3	2.A.3	75
	1309	Tamiami Trail Modifications: Next Steps (f/k/a Tamiami Trail 2 or Enabling Northeast Shark River Slough Restoration SFO –“support for others” (DOI))	DOI/USACE	\$104,050,000	\$104,050,000	3.3	1.A.3		82
	1310	C&SF: CERP Southern CREW Project Addition/ Imperial River Flowway (also CERP OPE) Southern CREW	USACE/SFWMD	\$78,774,000	\$0		1.A.3	2.A.3	87
	1520	Long-Term Plan for Achieving Everglades Water Quality Goals for Everglades Protection Area Tributary Basins 82	SFWMD	Footnote 1	Footnote 1		1.B.1	1.A.3	112
		Completed Projects							
	1305	Kissimmee Prairie Ecosystem	FDEP/ SFWMD	Footnote 1	Footnote 1	39.3	1.A.3	2.A.1	374
		Inactive/ On Hold/ Closed Projects							
	1302	C&SF: CERP Florida Keys Tidal Restoration (OPE) (CERP Project WBS # 31)	USACE/SFWMD	\$22,606,000	\$1,396,000	0.6	1.A.3		421
	1303	E&SF: Critical Projects Southern CREW Project Addition/ Imperial River Flowway (also CERP OPE) Southern CREW	USACE/SFWMD	\$78,774,000	\$1,377,000		1.A.3	2.A.3	423
	1308	E&SF: Critical Projects Tamiami Trail Culverts Additional Water Conveyance Structures under Tamiami Trail (Formerly Project ID 1400)	USACE/SFWMD	\$3,575,000	\$3,575,000	16	1.A.3		425
		OTHER RELATED HYDROLOGY PROJECTS							
	1409	C&SF: CERP Seminole Tribe Big Cypress Reservation Water Conservation Plan (CERP Project WBS # 96)	USACE/STOF	\$145,573,000	\$0				88
	1419	C&SF: CERP Lake Okeechobee Regulation Schedule (LORS)	USACE/SFWMD	TBD	\$0				90
	1420	C&SF: CERP Modify Holey Land Wildlife Management Area Operation Plan (DD) (CERP Project WBS # 15)	USACE/SFWMD	\$0	\$0				91
	1421	C&SF: CERP Modify Rotenberger Wildlife Management Area Operation Plan (EE) (CERP Project WBS # 16)	USACE/SFWMD	\$0	\$0				92
	1422	C&SF: CERP Modifications to Southern L-31N and C-111 (OO) F/k/a Operational Modification to Southern Portion of L-31N and C-111 (OO)	USACE/SFWMD	\$0	\$0				93
	1437	C&SF: CERP PLA /Information and Data Management	USACE/SFWMD	PLA Budget	PLA Budget				94
	1438	C&SF: CERP PLA/Interagency Modeling Center	USACE/ SFWMD	PLA Budget	PLA Budget				95
	1439	C&SF: CERP PLA/Environmental and Economic Equity	USACE/SFWMD	PLA Budget	PLA Budget				97
	1441	C&SF: CERP PLA /Restoration Coordination and Verification (RECOVER)	USACE/ SFWMD	PLA Budget	PLA Budget				99
	1442	C&SF: CERP Program Management	USACE/SFWMD	\$914,910,000	\$462,937,000				102
		Completed Projects:							
	1406	E&SF: Critical Projects - East Coast Canal Structures (C-4)	USACE/SFWMD	\$3,737,000	\$3,737,000				322
	1416	C&SF: CERP L-31N (L-30) Seepage Management Pilot F/k/a L-31N Seepage Management Pilot (CERP Project WBS # 36)	USACE/SFWMD	\$8,111,135	\$8,111,135				323
	1418	C&SF: CERP Lake Okeechobee Aquifer Storage and Recovery Pilot Lake Okeechobee ASR Pilot [Kissimmee River ASR (KRASR); Port Mayaca ASR (PMASR)] (CERP Project WBS # 32)	USACE/SFWMD	\$23,339,466	\$23,339,466				326
	1423	C&SF:CERP Hillsboro Aquifer Storage and Recovery Pilot A/k/a Hillsboro ASR (CERP Project WBS # 34)	USACE/SFWMD	\$3,142,413	\$3,142,413				329

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	1425	E&SF: Critical Projects - Seminole Reservation Big Cypress Water Conservation Plan	USACE	\$61,670,000	\$61,670,000				331
	1428	Indian River Lagoon Restoration Feasibility Study	USACE/SFWMD	\$6,150,000	\$6,150,000				336
		Inactive/ On Hold/ Closed Projects							
	1401	Biscayne Bay Feasibility Study	USACE/M-DADE	\$2,550,036	\$2,550,036				427
	1403	C&SF: CERP Broward County Secondary Canal System (CC) (CERP Project WBS # 24)	USACE/SFWMD	\$32,379,000	\$62,000				428
	1408	C&SF: CERP Loxahatchee National Wildlife Refuge Internal Canal Structures (KK) (CERP Project WBS # 14)	USACE/SFWMD	\$14,818,000	\$49,000				429
	1411	C&SF: CERP C-43 Aquifer Storage and Recovery Pilot F/k/a Caloosahatchee (C-43) River ASR Pilot (CERP Project WBS # 33)	USACE/SFWMD	\$7,427,000	\$3,256,000				430
	1412	C&SF: CERP WCA 2B Flows to Everglades National Park (YY) (CERP Project WBS # 48)	USACE/SFWMD	\$158,254,000	\$284,000				433
	1417	C&SF:CERP Lake Belt (In-Ground Reservoir) Technology - Pilot (CERP Project WBS # 35)	USACE/SFWMD	43,118,000	\$1,919,000				434
	1426	C&SF: CERP Florida Bay Florida Keys Feasibility Study (CERP Study)	USACE/SFWMD	\$6,500,000	\$6,127,000				435
	1431	C&SF: CERP Southwest Florida Feasibility Study (CERP Study)	USACE/SFWMD	\$17,000,000	\$16,621,000				437
	1435	C&SF: CERP C-4 Control Structures (I) (CERP Project WBS # 46)	USACE/SFWMD	\$6,509,000	\$113,000				439
	1436	Permanent Forward Pumps - Expedited Project -The SFWMD is implementing as part of Northern Everglades Project	SFWMD	\$135,000,000	\$135,200,000				440
	1440	C&SF: CERP PLA/Master Recreation Plan (MRP)	USACE/SFWMD	PLA Budget	PLA Budget				441
Sub-Goal 1.B GET THE WATER QUALITY RIGHT									
1.B.1		STORMWATER TREATMENT AREA (STA) PROJECTS				ACRES			
	1500	C&SF: CERP Big Cypress/L-28 Interceptor Modifications (CCC) (CERP Project WBS # 10)	USACE/SFWMD	\$101,035,000	\$5,952,000	1,900	1.B.1		104
	1502	C&SF: CERP Miccosukee Tribe Water Management Plan (OPE) (CERP Project WBS # 90)	USACE/ Miccosukee Tribe	\$52,807,000	\$0	900	1.B.1		106
	1505	C&SF: CERP Caloosahatchee Backpumping with Stormwater Treatment (DDD) (CERP Project WBS # 06)	USACE/SFWMD	\$134,563,000	\$0	5,000	1.B.1		107
	1515	Lakeside Ranch STA - Expedited Project - The SFWMD is implementing as part of Northern Everglades Project	SFWMD	\$131,000,000	\$123,943,164	2,700	1.B.1		108
	1520	Long-Term Plan for Achieving Everglades Water Quality Goals for Everglades Protection Area Tributary Basins	SFWMD	\$3,200,000,000	\$2,876,950,000	57,000	1.B.1		112
	1101	C&SF: CERP Indian River Lagoon-South [C-23/C-24/C-25/North Fork and South Fork Storage Reservoirs (UU P1 & UU P2), and C-44 Basin Storage Reservoir (B)] (CERP Project WBS #2 & # 07)	USACE/SFWMD	Footnote 1	Footnote 1	9,000	1.A.1	1.B.1/2.A.3	17
	1104	C&SF: CERP Lake Okeechobee Watershed (A, W; OPEs: LOWQTF, LOTSD, LIRS) (CERP Project WBS # 01 and 02)	USACE/SFWMD	Footnote 1	Footnote 1	12,000	1.A.1	1.B.1/2.A.3	29
	1110	C&SF: CERP Central Lake Belt Storage Area (SP1 & SP2) (EEE) (CERP Project WBS # 26)	USACE/SFWMD	Footnote 1	Footnote 1	640	1.A.1	1.B.1	47
		Completed Projects							
	1506	E&SF: Critical Projects - Lake Okeechobee Water Retention/ Phosphorus Removal	USACE/SFWMD	\$28,507,526	\$28,507,526	940	1.B.1		337
	1513	C&SF: West Palm Beach Canal STA-1E / C-51 West	USACE/SFWMD	\$368,091,000	\$368,091,000	6,500	1.B.1		339
	1514A	State Expedited project includes Everglades Agricultural Area (EAA) Stormwater Treatment Areas (STAs) Expansion	SFWMD	\$335,583,167	\$335,583,167	18,000	1.B.1		341
		Inactive/ On Hold/ Closed Projects							
	1518	C&SF: CERP Henderson Creek/Belle Meade Restoration (OPE) (CERP Project WBS # 93)	USACE/FDEP	\$10,908,000	\$128,000	10	1.B.1		442
	1519	C-43 Water Quality Treatment and Test Project	SFWMD	\$41,274,015	\$41,274,015	1,335	1.B.1		443
1.B.2.		TOTAL MAXIMUM DAILY LOAD (TMDL) PLAN DEVELOPMENT				Completed Plans			
	1600	Total Maximum Daily Load (TMDL) for South Florida	FDEP	TBD	TBD		1.B.2		114
OTHER RELATED WATER QUALITY PROJECTS									
	1706	Phosphorus Source Controls Programs for Basins Tributary to the Everglades	SFWMD	Footnote 2	\$31,834,512				115

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	1722	Lake Okeechobee Protection Plan	SFWMD	\$860,400,000	\$449,045,474				117
	1725	C&SF: CERP - Lake Trafford Restoration	USACE/SFWMD	\$29,296,000	\$0				120
		Completed Projects:							
	1700	Chapter 298 Districts/Lease 3420 Improvements	SFWMD	\$24,115,521	\$24,115,521				345
	1702	E&SF: Critical Projects - Lake Trafford Restoration	USACE/SFWMD	\$2,662,763	\$2,662,763				346
	1703	E&SF: Critical Projects - Western C-11 Water Quality Treatment	USACE/SFWMD	\$18,495,000	\$18,495,000				348
	1705	Everglades National Park Water & Wastewater	NPS	\$18,965,000	\$18,965,000				349
	1708	Lake Okeechobee Sediment Removal Feasibility Study and Pilot	SFWMD	\$955,069	\$955,069				350
	1709	Lake Okeechobee Tributary Sediment Removal Pilot	SFWMD	\$440,000	\$440,000				351
	1713	S-5A Basin Runoff Diversion Works	SFWMD	\$14,233,758	\$14,233,758				352
	1714	Seminole Tribe Best Management Practices for the Big Cypress Reservation	STOF	\$4,779,000	\$4,779,000				353
	1715	Seminole Tribe Best Management Practices for the Brighton Reservation	STOF	\$374,000	\$374,000				355
	1716	Seminole Tribe Comprehensive Surface Water Management System for the Brighton Reservation	STOF	\$15,818,000	\$15,818,000				357
	1717	Seminole Tribe Water Conservation Project for Big Cypress Reservation	STOF	\$60,000,000	\$60,000,000				358
	1719	STA-1 Inflow and Distribution Works	SFWMD	\$12,679,955	\$12,679,955				360
	1723	Hybrid Wetland Treatment Technology	FDACS	\$24,484,000	\$24,484,000				361
	1724	Local Cost-Share Projects with Martin County	SFWMD/State of Florida/Martin County	\$8,947,809	\$8,947,809				363
		Inactive/ On Hold/ Closed Projects							
	1701	C&SF: CERP Comprehensive Integrated Water Quality Feasibility Study (CERP Study)	USACE/FDEP	\$8,100,000	\$735,000				445
	1707	Floridan Aquifer Restoration	NRCS	\$900,000	\$900,000				449
Goal 2 Restore Preserve and Protect Natural Habitats and Species									
Sub-Goal 2.A. RESTORE, PRESERVE AND PROTECT NATURAL HABITATS									
2.A.1.		HABITAT PROTECTION LAND ACQUISITION PROJECTS				ACRES			
		State Acquisitions							
	2181	Adams Ranch	FDEP	TBD	\$1,603,510	7,128	2.A.1		121
	2100	Allapattah Flats/Ranch (Footnote 4)	FDEP	TBD	\$0	40,363	2.A.1		122
	2101	Atlantic Ridge Ecosystem (Footnote 4)	FDEP/SFWMD	TBD	\$7,572,756	16,283	2.A.1		123
	2104	Belle Meade	FDEP	TBD	\$41,620,038	28,810	2.A.1		124
	2105	Big Bend Swamp/Holopaw Ranch	FDEP	TBD	\$11,782,500	59,132	2.A.1		125
	2107	Bombing Range Ridge	FDEP	TBD	\$20,352,608	41,465	2.A.1		126
	2108	Caloosahatchee Ecoscape	FDEP	TBD	\$1,948,038	18,497	2.A.1		127
	2109	Catfish Creek	FDEP	TBD	\$9,444,266	13,198	2.A.1		128
	2112	Corkscrew Regional Ecosystem Watershed	FDEP	TBD	\$93,714,310	73,365	2.A.1		129
	2114	Coupon Bight/ Key Deer/ Big Pine Key	FDEP	TBD	\$31,537,877	3,373	2.A.1		130
	2115	Cypress Creek/Trail Ridge	SFWMD	TBD	\$25,027,417	32,639	2.A.1		131
	2183	Devil's Garden	FDEP	TBD	\$14,775,000	82,508	2.A.1		132

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Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
	2117	East Coast Buffer(Footnote 4) Natural Lands	FDEP/SFWMD	TBD	\$102,990,022	48,108	2.A.1		133
	2118	Estero Bay	FDEP	TBD	\$69,418,260	14,358	2.A.1		134
	2120	Fakahatchee Strand	FDEP	TBD	\$25,701,463	80,332	2.A.1		135
	2121	Fisheating Creek	SFWMD/FDEP	TBD	\$101,929,463	176,876	2.A.1		136
	2122	Florida Keys Ecosystem	FDEP	TBD	\$101,520,644	13,632	2.A.1		137
	2187	Half Circle L Ranch	SFWMD	TBD	\$0	11,269	2.A.1		138
	2126	Kissimmee - St. Johns Connector	FDEP	TBD	\$0	9,463	2.A.1		139
	2129	Lake Wales Ridge Ecosystem/ Henscratch Ranch	FDEP	TBD	\$33,772,139	14,310	2.A.1		140
	2134	Miami-Dade County Archipelago	FDEP	TBD	\$23,717,314	884	2.A.1		141
	2135	Model Lands (Footnote 4)	SFWMD/M-DADE	TBD	\$0	54,458	2.A.1		142
	2138	North Fork St Lucie River (Footnote 4)	FDEP/SFWMD	TBD	\$5,567,581	3,714	2.A.1		143
	2139	North Key Largo Hammocks	FDEP	TBD	\$84,208,654	5,415	2.A.1		144
	2142	Okeechobee Battlefield	FDEP	TBD	\$3,217,250	211	2.A.1		145
	2143	Osceola Pine Savannas	FDEP	TBD	\$310,000	6,357	2.A.1		146
	2144	Pal-Mar (Footnote 4)	FDEP/SFWMD	TBD	\$82,240,259	39,146	2.A.1		147
	2145	Panther Glades	FDEP	TBD	\$75,049,836	60,007	2.A.1		148
	2147	Lake Marion Creek and Reedy Creek/Lake Hatchineha Watershed	SFWMD	TBD	\$12,339,666	43,322	2.A.1		149
	2186	Pine Island Slough Ecosystem	FDEP	TBD	\$0	21,583	2.A.1		150
	2148	Pineland Site Complex	FDEP	TBD	\$1,751,874	206	2.A.1		151
	2178	Ranch Reserve	SFWMD	TBD	\$39,286	2,217	2.A.1		152
	2151	Shingle Creek	SFWMD	TBD	\$5,217,670	7,704	2.A.1		153
	2152	Six Mile Cypress Land Acquisition	SFWMD	TBD	\$36,909,895	2,193	2.A.1		154
	2154	South Savannas	FDEP/SFWMD	TBD	\$20,902,290	6,046	2.A.1		155
	2180	Ten Mile Creek Natural Lands	SFWMD	TBD	\$2,042,586	240	2.A.1		156
	2190	Triple Diamond	FDEP	TBD	\$4,200,000	7,991	2.A.1		157
	2158	Twelve Mile Slough	SFWMD	TBD	\$11,000,000	15,835	2.A.1		158
	2184	Florida Communities Trust Lands, State Park Lands and State Wildlife Mgmt Areas	FDEP	TBD	\$655,617,027	256,196	2.A.1		159

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Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
		Completed Projects: Greater than 90% completed							
	2102	Babcock Ranch	FDEP	\$350,000,000	\$350,000,000	73,542	2.A.1		364
	2106	Biscayne Coastal Wetlands (Footnote 4)	SFWMD/M-DADE	\$524	\$524	1,995	2.A.1		365
	2110	Cayo Costa	FDEP	\$29,002,346	\$29,002,346	1,954	2.A.1		366
	2111	Charlotte Harbor Estuary/ Flatwoods/Cape Haze	FDEP	\$21,366,454	\$21,366,454	12,305	2.A.1		367
	2172	Cypress Creek/Loxahatchee	SFWMD	\$64,630,767	\$64,630,767	4,374	2.A.1		368
	2116	Dupuis Reserve	SFWMD	\$23,016,601	\$23,016,601	21,878	2.A.1		369
	2123	Frog Pond	FDEP/SFWMD	\$20,005,367	\$20,005,367	2,484	2.A.1		370
	2124	Indian River Lagoon Blueway	FDEP	\$49,387,018	\$49,387,018	2,301	2.A.1		371
	2125	Juno Hills /Dunes	FDEP	\$41,892,718	\$41,892,718	590	2.A.1		372
	2176	Jupiter Ridge	FDEP	\$23,099,950	\$23,099,950	280	2.A.1		373
	1305	Kissimmee Prairie Ecosystem	FDEP	\$21,953,790	\$21,953,790	38,282	2.A.1		374
	2127	Kissimmee River (Lower Basin)	SFWMD	\$177,870,261	\$177,870,261	75,617	2.A.1		375
	2128	Kissimmee River (Upper Basin)	SFWMD	\$86,156,014	\$86,156,014	38,591	2.A.1		376
	2130	Sumica (previously Lake Walk-In-Water)	SFWMD	\$3,950,000	\$3,950,000	4,009	2.A.1		377
	2131	Loxahatchee River Land Acquisition	SFWMD	\$19,738,769	\$19,738,769	1,915	2.A.1		378
	2132	Loxahatchee Slough Land Acquisition	SFWMD	\$74,447,218	\$74,447,218	13,099	2.A.1		379
	2137	Nicodemus Slough	SFWMD	\$1,894,501	\$1,894,501	2,231	2.A.1		380
	2141	Okaloacoochee Slough	FDEP/ SFWMD	\$20,570,673	\$20,570,673	35,201	2.A.1		381
	2146	Paradise Run	SFWMD	\$4,908,582	\$4,908,582	3,841	2.A.1		382
	2149	Rookery Bay	FDEP	\$49,832,068	\$49,832,068	18,721	2.A.1		383
	2150	Rotenberger/Holey Land Tract	FDEP	\$20,119,775	\$20,119,775	79,170	2.A.1		384
	2155	Southern Glades (Footnote 4) Natural Lands	SFWMD/M-DADE	\$5,046,000	\$5,046,000	34,093	2.A.1		385
	2156	Southern Golden Gate Estates (Save Our Everglades)- Picayune Strand (Footnote 4)	FDEP	Project costs in project ID 2307	\$0	55,051	2.A.1		386
	2153	South Fork St. Lucie River Land Acquisition (Footnote 4)	SFWMD	Project costs in project ID 1101	\$0	184	2.A.1		387
	2157	Tibet-Butler Preserve	SFWMD	\$3,601,900	\$3,601,900	439	2.A.1		388
	2160	Water Conservation Areas 2, and 3	SFWMD	\$26,166,104	\$26,166,104	709,618	2.A.1		389
	2161	Yamato Scrub	FDEP	\$25,932,850	\$25,932,850	217	2.A.1		390
		Federal Acquisitions							
	2161	A.R. M. Loxahatchee National Wildlife Refuge	USFWS	TBD	\$119,000	147,392	2.A.1		160
	2163	Big Cypress National Preserve Addition	NPS	TBD	\$75,206,737	146,117	2.A.1		161
	2164	Big Cypress National Preserve (Footnote 3)	NPS	TBD	\$222,155,000	574,449	2.A.1		162
	2165	Biscayne National Park	NPS	TBD	\$31,851,000	172,971	2.A.1		163
	2166	Crocodile Lake National Wildlife Refuge	USFWS	TBD	\$13,093,000	7,100	2.A.1		164
	2194	Everglades and Dry Tortugas National Parks	NPS	TBD	\$24,000,000	1,464,072	2.A.1		165
	2182	Everglades Headwaters NWR & Conservation Area (previously Tiger Cattle Company Ranch)	FWS	TBD	\$4,430,000	2,230	2.A.1		166

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	2167	Everglades National Park Expansion	NPS	TBD	\$97,678,000	109,504	2.A.1		167
	2169	Florida Panther National Wildlife Refuge	USFWS	TBD	\$10,682,000	61,573	2.A.1		168
	2168	Florida Keys National Wildlife Refuge Complex	USFWS	TBD	\$32,669,000	415,433	2.A.1		169
	2170	Hobe Sound National Wildlife Refuge	USFWS	TBD	\$135,000	1,130	2.A.1		170
	2171	J.N. "Ding" Darling National Wildlife Refuge	USFWS	TBD	\$9,705,000	10,255	2.A.1		171
	2185	Lake Wales Ridge National Wildlife Refuge	USFWS	TBD	\$268,000	3,384	2.A.1		172
2.A.2.		CORAL REEF PROTECTION PROJECTS				% Reef Protected			
	2200	South Florida Ecosystem Restoration Planning and Projects	NOAA	Footnote 2	\$70,071,000	20	2.A.2		173
2.A.3		IMPROVE NATURAL AREAS HABITAT QUALITY PROJECTS				ACRES			
<p>Note - The April 1999 USACE C&SF Project Comprehensive Review Study Final Integrated Feasibility Report and Programmatic Environmental Impact Statement included an extensive environmental evaluation of habitat units that would be improved through implementation of the CERP projects. Table 7-18 in that publication identifies in detail which projects are anticipated to achieve this objective. However, appropriate measures by project are currently being developed through the establishment of interim goals. There are some projects included in our tracking matrix that exemplify how this objective will be achieved.</p>									
	2302	C&SF: CERP Lakes Park Restoration OPE (CERP Project WBS # 94)	USACE/Lee Co.	\$881,000	\$881,000	60	2.A.3		177
	2303	C&SF: CERP Restoration of Pineland and Hardwood Hammocks in C-111 Basin (OPE) (CERP Project WBS # 92)	USACE	\$1,170,000	\$0	50	2.A.3		180
	2304	A.R.M. Loxahatchee NWR Prescribed Fire program	USFWS	Footnote 2	\$1,794,000	TBD	2.A.3		181
	2305	Loxahatchee Impoundment Landscape Assessment (LILA)	USFWS	Footnote 2	\$4,028,000	TBD	2.A.3		183
	2307	C&SF: CERP Picayune Strand Restoration (f/k/a Southern Golden Gate Estates Hydrologic Restoration) (OPE) (CERP Project WBS # 30)	USACE/SFWMD	\$642,265,000	\$566,493,444	55,000	2.A.3		186
	2308	C&SF: CERP PLA / Adaptive Assessment and Monitoring	USACE/SFWMD	\$164,814,000	\$137,151,000	TBD	2.A.3		189
	2309	C&SF: CERP Biscayne Bay Coastal Wetlands (FFF) (OPE) (CERP Project WBS # 28) (Formerly project ID 1410)	USACE/SFWMD	\$272,718,000	\$130,775,000	1,695	2.A.3		192
	2310	C&SF: CERP C-111 Spreader Canal (WW) (Formerly Project ID 1517) (CERP Project WBS # 29)	USACE/SFWMD	\$197,247,000	\$24,713,000	TBD	2.A.3		195
	2312	C&SF: CERP Biscayne Bay and Southeastern Everglades Ecosystem Restoration	USACE/SFWMD	Footnote 2	\$302,074	TBD	2.A.3		198
	1101	C&SF: CERP Indian River Lagoon--South [C-23/C-24/C-25/North Fork and South Fork Storage Reservoirs (UU P1 & UU P2), and C-44 Basin Storage Reservoir (B)] (CERP Project WBS # 07)	USACE/SFWMD	Footnote 1	Footnote 1	99,781	1.A.1	1.B.1/2.A.3	17
	1104	C&SF: CERP Lake Okeechobee Watershed (A) (W) (OPEs: LOWQTF, LOTSD, LIRS) (CERP Project WBS # 01)	USACE/SFWMD	Footnote 1	Footnote 1	3,730	1.A.1	1.B.1/2.A.3	29
	1107	C&SF: CERP Site 1 Impoundment (M P1) [a/k/a Site 1 Impoundment (Fran Reich Preserve)] (CERP Project WBS # 40)	USACE/SFWMD	Footnote 1	Footnote 1	114	1.A.1	2.A.3	37
	1111	E&SF: Critical Projects - Ten Mile Creek	USACE/SFWMD	Footnote 1	Footnote 1	2,740	1.A.1	2.A.3	316
	1116	C&SF: CERP Broward County (WPA) Water Preserve Areas (R) (Q) (O) [Broward County WPA - C-9 Impoundment (R) and Western C-11 Diversion Impoundment and Canal (Q) and Water Conservation Areas 3A and 3B Levee Seepage Management (O)] (CERP Project WBS # 45) (Formerly Project ID 1501)	USACE/SFWMD	Footnote 1	Footnote 1	4,633	1.A.1	2.A.3	54
	1303	E&SF: Critical Projects - Southern CREW	USACE	Footnote 1	Footnote 1	4,090	1.A.3	2.A.3	423
	1306	Kissimmee River Restoration Project	USACE/SFWMD	Footnote 1	Footnote 1	27,000	1.A.3	2.A.3	71
	1307	Modified Water Deliveries to Everglades National Park (Footnote 3)	NPS	Footnote 1	Footnote 1	109,000	1.A.3	2.A.3	75
	3902	C&SF: CERP Wastewater Reuse Technology Pilot (CERP Project WBS # 37) (Formerly Project ID 3802)	USACE/SFWMD	Footnote 1	Footnote 1	3,500	3.C.2	2.A.3	479
OTHER NATURAL HABITAT AND SPECIES PROJECTS									
	2402	South Florida Multi-Species Recovery Plan	USFWS	\$386,112,000	\$47,309,032				200
	2403	WCA-2A Regulation Schedule Review	USACE	TBD	\$0				202

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		COMPLETED PROJECTS							
	2300	C&SF: CERP Strazzulla Wetlands (OPE) (CERP Project WBS # 39)	USACE/SFWMD	\$497,866	\$497,866	3,335	2.A.3		391
	2306	C&SF: CERP Acme Basin B Discharge (OPE) (CERP Project WBS # 38)	USACE/SFWMD	\$5,497,000	\$5,497,000	365	2.A.3	3.C.2	392
	2404	C&SF: Manatee Pass Gates	USACE/SFWMD	\$17,355,000	\$17,355,000				394
		Inactive/ On Hold/ Closed Projects							
	2301	C&SF: CERP Winsberg Farms Wetland Restoration (OPE) (CERP Project WBS # 91)	USACE/PBCWUD	\$16,736,000	\$3,833,780	114	2.A.3	3.C.2	450
	2311	C&SF: S-169/Nine Mile Canal Basin	USACE/SFWMD	\$13,600,000	\$1,200,000				452
Sub-Goal 2.B. CONTROL INVASIVE PLANT AND ANIMAL SPECIES									
2.B.1 PREVENT THE INTRODUCTION OF INVASIVE EXOTIC SPECIES									
	2501	Detector Dog Teams and High-Risk Areas (2506, 2505, 2508 combined)	FDACS	TBD	\$8,213,380		2.B.1		203
	2502	Fruit Fly Survey and Detection	FDACS	TBD	\$4,000,000		2.B.1		204
	2503	Florida Fish and Wildlife Conservation Commission's Nonnative Fish and Wildlife Program (Combines 2612, 2702, 2706,2806, 4206 and 4207)	FWC	TBD	\$10,827,992		2.B.1		205
	2509	Enhancement of Fruit Fly Immature Stage ID and Taxonomy	FDACS	TBD	\$534,107		2.B.1		213
		Completed Projects							
	2507	Effects of Exotic Fish on Everglades Structure and Function: Risk Assessment	NPS/USGS	TBD	\$0		2.B.1		396
		Inactive/ On Hold/ Closed Projects							
	2500	Brown Marmorated Stink Bug	FDACS	TBD	\$423,127		2.B.1		454
	2504	Exotic Psyllids and Liberibacter species	FDACS	TBD	\$58,460		2.B.1		455
2.B.2 ERADICATE INVASIVE EXOTIC SPECIES BY IMPLEMENTING EARLY DETECTION AND RAPID RESPONSE									
	2601	Early Detection of New Exotic Fish Species in Adjacent Canals Vital Sign	NPS	TBD	\$40,000		2.B.2		214
	2604	Cooperative Agricultural Pest Survey	FDACS	TBD	\$3,114,830		2.B.2		216
	2605	An Integrated Early Detection, Rapid Response, Management, and Monitoring Program for Everglades Invasive Reptiles and Amphibians	UF/FWC/SFWMD	TBD	\$2,117,190		2.B.2		217
	2609	MDFR Rapid Response and Invasive Species Removal	Miami-Dade County	TBD	\$2,402,400		2.B.2		220
	2610	Develop and Implement a FWS Invasive Species Strike Team (ISST)	USFWS	\$35,000,000	\$15,175,000		2.B.2		222
	2611	Giant African Land Snail Eradication Program	FDACS	TBD	\$17,819,160		2.B.2		224
	2613	Corridors of Invasiveness Vital Sign	NPS	TBD	\$169,368		2.B.2		225
	2614	Fruit Fly Eradication Methods Development	FDACS	TBD	\$255,779		2.B.2		227
	2616	Early Detection Rapid Response	ECISMA	TBD	\$228,130		2.B.2		228
	2617	Conehead Termite Eradication Program	FDACS	TBD	\$173,766		2.B.2		229
	2618	Impacts of Recent Fish Invasions on Native Fish Diets in the Shark River Slough: Repetition of Diet Study from 1977 to 1995	NPS	TBD	\$74,248		2.B.2		230
		Inactive/ On Hold/ Closed Projects							
	2602	Mexican Red Bellied Squirrel Eradication on the Islands in Biscayne National Park	NPS	TBD	\$25,917		2.B.2		456
	2603	Development of comprehensive fish monitoring programs in Everglades National Park	NPS	TBD	\$0		2.B.2		457
	2606	Metagenomic survey in south Florida waters	USDA/APHIS	TBD	\$72,000		2.B.2		459
	2607	Development of eDNA for Nile Monitor detection and removal	USDA/APHIS	TBD	\$76,000		2.B.2		460
	2608	Burmese python eDNA development and application	USDA/APHIS	TBD	\$91,000		2.B.2		461

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2.B.3	CONTAIN THE SPREA OF INVASIVE EXOTIC SPECIES								
	2702	Argentine black-and-white tegu (<i>Salvator merianae</i>) interdiction	FWC/NPS/USGS	TBD	\$125,660		2.B.3		231
	2705	BICY Exotic Reptile Control	BICY	TBD	\$2,250,000		2.B.3		234
		Inactive/ On Hold/ Closed Projects							
	2701	Population suppression and biology of Black spiny-tailed Iguanas <i>Ctenosaura similis</i>	USDA/APHIS	TBD	\$25,500		2.B.3		462
	2703	Improve probability of detection and removal of pythons and other invasive reptiles	UF/SFWMD/USGS	TBD	\$125,000		2.B.3		463
	2704	Feral Swine Impacts and Control	USDA/APHIS	TBD	\$625,000		2.B.3		465
	2707	Tegu trap and lure evaluation	USDA/APHIS	TBD	\$27,500		2.B.3		466
	2708	Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (<i>Boa constrictor</i> spp.) at the Charles Deering Estate at Cutler in Miami-Dade County, Florida	Miami-Dade County	TBD	\$11,060		2.B.3		467
	2709	Development and Evaluation of Biological Control Agents for Invasive Species Threatening the Everglades and other Natural and Managed Systems	USDA/ARS	TBD	\$725,000		2.B.3		472
2.B.4	REDUCE THE POPULATIONS OF WIDELY ESTABLISHED INVASIVE EXOTIC SPECIES AND MAINTAIN AT LOWEST FEASIBLE LEVELS								
	2802	Enhanced Mitigation Techniques for Control of Cactus Moth	FDACS	TBD	\$848,250		2.B.4		235
	2805	Expansion of Asian Citrus Psyllid Biocontrol	FDACS	TBD	\$4,143,887		2.B.4		236
	2807	Everglades Complex of Wildlife Management Areas (Everglades & Francis S. Taylor, Holey Land, and Rotenberger)	FWC	TBD	\$7,759,301		2.B.4		237
	2808	Native Tree and Shrub Planting/Maintenance	FWC	TBD	\$1,103,605		2.B.4		239
	2809	Conservation Land Acquisition and Management	Miami-Dade EEL	TBD	\$206,895,865		2.B.4		242
	2810	Invasive Exotic Control Program	USFWS	TBD	\$35,282,237		2.B.4		245
	2811	Python and Invasive Species Removal Authorized Agent Program for South Florida National Parks	NPS	TBD	\$37,912		2.B.4		247
	2812	Lionfish assessment and control in South Florida National Parks	NPS	TBD	\$70,250		2.B.4		249
	2814	Digital Aerial Sketch Mapping (DASM)	NPS	TBD	\$351,000		2.B.4		251
	2815	Invasive Animal Research	USDA/APHIS	TBD	\$268,000		2.B.4		252
	2818	C&SF:CERP Melaleuca Eradication and Other Exotic Plants (OPE) (CERP Project WBS # 95)	USACE	TBD	\$9,229,988		2.B.4		254
	2819	Everglades National Park Exotic Vegetation Management	NPS	TBD	\$692,864		2.B.4		256
	2820	Hole-in-the-Donut	NPS	TBD	\$79,781,788		2.B.4	2.A.3	259
	2822	Invasive Exotic Plant Control in Terrestrial and Aquatic Natural Systems	SFWMD	TBD	\$108,729,000		2.B.4		260
	2823	Invasive Species Research and Information Exchange	SFWMD	TBD	\$2,945,000		2.B.4		262
	2824	Biological Control of Invasive Weeds (Air Potato and Brazilian Pepper)	USDA	TBD	\$1,398,914		2.B.4		264
	2832	Iguana Control in Biscayne National Park	NPS	TBD	\$3,100		2.B.4		265
	2833	Exotic Plant Control in Biscayne National Park	NPS	TBD	\$60,000		2.B.4		267
		COMPLETED PROJECTS							
	2817	Thermal Infra-Red Detection of Burmese Pythons	USDA/APHIS	\$23,500	\$23,500		2.B.4		397
	2828	Melaleuca Quarentine Facility	USDA/ARS	\$7,100,000	\$7,100,000		2.B.2		398
	2830	Estero Bay Aquatic Preserve and Buffer Reserve Enhancement and Exotic Removal Project	FDEP	\$587,600	\$587,600		2.B.2		399
	2831	SFWMD Python Removal Program	SFWMD	\$532,323	\$532,323		2.B.2		400
		Inactive/ On Hold/ Closed Projects							
	2804	Enhanced Mitigation Techniques for the Control of Several Whitefly Species	FDACS	TBD	\$395,933		2.B.4		473
	2816	Genetic analyses of invasive reptiles in Florida	UF	TBD	\$18,000		2.B.4		474

Goals	SP Project Number	Project Name	Lead Agency	Financial Requirement	Appropriated thru FY 2020	Measurable Output	Primary Objective	Secondary Objective(s)	Pg #
Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
	2821	Aquatic and Upland Invasive Plant Management	FWC	TBD	\$307,120,000		2.B.4		475
	2825	BICY Long-term Exotic Plant Maintenance and Control	BICY	TBD	\$2,650,000		2.B.4		476
	2826	Mitigating the Ecological and Cultural Effects of Laurel Wilt in the Everglades	USDA/APHIS	TBD	\$135,379		2.B.4		478
GOAL 3. FOSTER COMPATIBILITY OF THE BUILT AND NATURAL SYSTEM									
Sub-Goal 3.A. USE AND MANAGE LAND COMPATIBLE WITH RESTORATION									
3.A.1 FLORIDA PARK, RECREATION AND OPEN SPACE LANDS PROJECTS						Acres			
	3200	Florida Keys Overseas Heritage Trail (Formerly Project ID 3301)	FDEP	TBD	\$37,477,100	TBD	3.A.1		268
	3202	Florida Greenways and Trails Program (Formerly Project ID 3100)	FDEP/ OGT	\$4,500,000	\$1,363,372	10,000	3.A.1		272
3.A.2 AGRICULTURE LANDS CONSERVATION MANAGEMENT PROJECTS						Acres			
	3300	Technical Assistance to Seminole and Miccosukee Indian Reservations	NRCS	\$15,000,000	\$1,532,252	107,000	3.A.2		275
	3301	2008 and 2014 Farm Bill	NRCS	TBD	\$20,237,828	TBD	3.A.2		276
3.A.3 INCREASE COMMUNITY UNDERSTANDING OF RESTORATION PROJECTS									
	3502	C&SF: CERP PLA/Public Outreach	USACE	PLA Budget	PLA Budget		3.A.3		277
	3503	SFWMD Outreach Program	SFWMD	Footnote 2	\$21,360,134		3.A.3		279
Sub-Goal 3.B FLOOD PROTECTION COMPATIBLE WITH ECOSYSTEM RESTORATION									
3.B.1 FLOOD PROTECTION COMPATIBLE WITH ECOSYSTEM RESTORATION PROJECTS									
	1300	C&SF: C-111 (South Dade)	USACE/SFWMD	Footnote 1	Footnote 1		1.A.3	3.B.1	63
COMPLETED PROJECTS									
	3600	C-4 Canal Bank Improvements	SFWMD	TBD	\$11,468,880		3.B.1		401
3.B.2 HERBERT HOOVER DIKE REHABILITATION									
	3700	Herbert Hoover Dike Rehabilitation	USACE	\$1,799,507,000	\$1,606,175,000		3.B.2		281
Sub-Goal 3.C PROVIDE SUFFICIENT WATER RESOURCES FOR BUILT AND NATURAL SYSTEMS									
3.C.1 WATER RESOURCE DEVELOPMENT PROJECTS						MG			
	3800	Regional Water Supply Plans (Formerly Project ID 3704)	SFWMD	\$39,395,000	\$0		3.C.1		285
3.C.2 INCREASE VOLUME OF WATER RESOURCE PROJECTS						MGD			
	3900	C&SF: CERP South Miami-Dade County Reuse (BBB) (CERP Project WBS # 98) (Formerly Project ID 3800)	USACE/M-DADE	\$770,800,000	\$0	131	3.C.2		288
	3901	C&SF: CERP West Miami-Dade County Reuse (HHH) (CERP Project WBS # 97) (Formerly Project ID 3801)	USACE/M-DADE	\$858,317,000	\$0	100	3.C.2		290
Inactive/ On Hold/ Closed Projects									
	3902	C&SF: CERP Wastewater Reuse Technology Pilot (CERP Project WBS # 37) (Formerly Project ID 3802)	USACE/SFWMD	\$49,073,000	\$1,876,000		3.C.2	2.A.3	479
3.C.3 ALTERNATIVE WATER SUPPLY PROJECTS						MGD			
	4000	Alternative Water Supply Grant (Formerly Project ID 3900)	SFWMD	\$220,167,807	\$16,998,128	TBD	3.C.3		291
OTHER BUILT AND NATURAL SYSTEM COMPATIBILITY PROJECTS									
	4101	BMPs for Agriculture	NRCS	\$160,278,000	\$136,338				293
	4102	Monitoring of Organic Soils in the Everglades	NRCS	\$1,236,000	\$36,000				294
	4103	Soil Survey Update for the Everglades Agricultural Area	NRCS	\$2,100,000	\$0				295
	4104	Soil Survey Update for Everglades National Park, Big Cypress National Preserve and Water Conservation Areas	NRCS	\$16,000,000	\$35,000				296
	4105	C&SF: CERP Flow to Northwest and Central WCA -3A (II) (RR) (CERP Project WBS # 11)	USACE/SFWMD	\$53,515,000	\$66,000				297

Goals	SP Project Number	Project Name	Lead Agency	Financial Requirement	Appropriated thru FY 2020	Measurable Output	Primary Objective	Secondary Objective(s)	Pg #
Column 1	Column 2	Column 3	Column 4	Column 7	Column 8	Column 9	Column 10	Column 11	Col. 12
		Completed Projects							
	4100	E&SF: Critical Projects - Keys Carrying Capacity Study	FDCA/USACE	\$4,493,067	\$4,493,067				404
Sub-Goal 3.D REDUCE INVASIVE EXOTICS SPECIES PATHWAYS ORIGINATING FROM THE BUILT ENVIRONMENT									
3.D.1	INCREASE AWARENESS OF THE IMPACTS OF INVASIVE EXOTIC SPECIES ON SOUTH FLORIDA'S ENVIRONMENT, ECONOMY, CULTURE AND HUMAN HEALTH								
	4200	Environmentally Endangered Lands Volunteer Workdays	Miami-Dade EEL	TBD	\$995,000		3.D.1		298
	4202	Zoo Miami/Miami-Dade County Invasive Species Outreach and Educational Programs	Miami-Dade EEL	TBD	\$180,947		3.D.1		300
	4203	Public Outreach Projects to Support Prevention, EDRR, and Containment Efforts (Includes Project ID 4204 and 4205)	UF	\$1,000,000	\$237,500		3.D.1		302
	4208	SWF CISMA	SWFCISMA	TBD	\$0		3.D.1		310
	4209	ECISMA Outreach	ECISMA	TBD	\$172,947		3.D.1		312
		Inactive/ On Hold/ Closed Projects							
	4201	Everglades Non-Native Fish Round Up	NPS	TBD	\$10,619		3.D.1		481
3.D.2	CONTINUE EXISTING AND DEVELOP NEW PARTNERSHIPS THAT FOCUS ON REDUCING PATHWAYS								
	4300	"Travelers Don't Pack a Pest" Targeted Marketing	FDACS	TBD	\$2,690,480		3.D.2		313
	4301	ECISMA	ECISMA	TBD	TBD		3.D.2		314
		Inactive/ On Hold/ Closed Projects							
	4302	HABITATTITUDE	USFWS	TBD	TBD		3.D.2		484

Project Specific Footnotes:

The following information is project specific and is provided in reference to its appearance as a numbered notation on the project summary table:

¹ This is a multiple objective project, funding is listed under the primary objective.

² Available funding through project completion is not provided on the project sheet due to the uncertainty of the annual Federal and State appropriations processes. For the purposes of calculating Goal subtotals for all projects, only the dollars appropriated to date have been used for this project.

³ Consistent with authorizing Big Cypress legislation.

⁴ The cost information for this project reflects the adjusted total cost information provided on the project sheet.

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*DETAILED
INTEGRATED
FINANCIAL PLAN
PROJECT SHEETS*

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Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Indian River Lagoon – South (IRL-S) C-23/C-24/C-25 Northfork and Southfork Storage Reservoirs (UU P1 & UU P2) and C-44 Basin Storage Reservoir (B)

Project ID: 1101 (CERP Project WBS # 07)

Lead Agency: USACE / SFWMD

Authority: WRDA 2000; WRDA 2007; (“C-44 Basin Storage Reservoir (B)” was a WRDA 2000 Initially Authorized Project; uncompleted portions of the original C&SF project were de-authorized in WRDA 2007 when the broader IRL-S project was authorized for construction)

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 Secondary: 2-A.3, 1-B.1, and 1-B.2

Measurable Output(s):

- 130,000 acre-feet reservoir storage (12,000 acres of above-ground storage)
(C-23/24 N: 43,920 ac-ft; C-23/24 S: 48,900 ac-ft; C-44: 33,150 ac-ft; C-25: 5,176 ac-ft)
- 9,000 acres of manmade wetlands (C-23/24: 2,363 acres; C-44: 6,000 acres; C-25: 142 acres)
 - 122 metric tons/yr. phosphorus expected load reduction
 - 475 metric tons/yr. nitrogen load expected reduction
- 99,781 acres of habitat improvement/restoration and additional water storage
 - Mosaic: 95,230 acres natural upland/wetlands habitat
 - Allapattah: 42,348 acres
 - Palmar: 17,143 acres
 - Cypress Complex: 32,639 acres
 - North Fork: 3,100 acres (flood plain preservation)
 - Aquatic Habitat: 4,551 acres in St. Lucie River and Estuary
 - Benthic: 2,650 acres
 - Submerged: 922 acres aquatic vegetation restoration
90 acres artificial submerged vegetation habitat
- 889 acres or more of oyster habitat (muck removal at 1.8 ft = 7.9 M yd²)

April 1999 (Restudy) Project Synopsis: Included above-ground reservoirs with a combined storage capacity of approximately 349,400 acre-feet located in the C-23/C-24/C-25/Northfork and Southfork basins in St. Lucie and Martin Counties, as well as an above-ground reservoir with a total storage capacity of approximately 40,000 acre-feet located in the C-44 Basin in Martin County. The initial design of the reservoirs in the C-23/C-24/C-25 Basins assumes 39,000 acres (water levels up to 8 feet above grade) and 9,350 acres (water levels up to 4 feet above grade). The initial design of the reservoir in the C44 basin assumes 10,000 acres (water levels up to 4 feet above grade). Features are to capture runoff and provide water quality improvement including reduced loading of nutrients, pesticides and runoff pollutants.

Current Project Synopsis: This project is located in Martin, St. Lucie, and Okeechobee counties.

The C-44 storage area feature was one of the initially authorized projects for implementation in WRDA 2000 and was recommended by the Chief of Engineers in August 2004. Plans and specifications for the C-44 Reservoir and STA were also part of the SFWMD early start work.

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Since that time, the combined cost for the IRL-S project was estimated at \$1.365 billion when the entire project was authorized for construction in WRDA 2007, dependent on appropriations from Congress. Based on the feasibility study and the PIR, and further refinements, the entire IRL-S project is expected to include the following components:

- Construction and operation of an additional 12,000 acres of above-ground storage and their connecting canals, control structures, levees and pumps to capture water from the C-44, C-23, C-24 and C-25 canals.
- Construction and operation of three new stormwater treatment areas to reduce sediment, phosphorus, and nitrogen going to the St. Lucie River estuary and the lagoon. STAs are planned for each of the basins: C-44 basin (1), C-23/24 basin (2) and C-25 basin (1) reducing damaging effects of watershed runoff
- Restoration of the upland/wetland mosaic with ditch plugging, berm construction, and periodic fire maintenance at three locations.
- Redirection of water from the C-23/24 basin to the Northfork of the St. Lucie River attenuating freshwater flows to the estuary.
- Muck removal from the north and south forks of the St. Lucie River and the middle estuary reducing nutrients (nitrogen and phosphorus). Oyster shell, reef balls, and artificial submerged aquatic vegetation near muck removal sites will be added for habitat improvement.

Current Status: The USACE completed the first major construction contract for the C-44 Reservoir and Stormwater Treatment Area (RSTA) component of the project in July 2014. The SFWMD completed the C-44 pump station in November 2018 and the C-44 STA in March 2021. The USACE awarded the construction contract for the C-44 reservoir in September 2015 and is scheduled for completion in September 2021. The USACE awarded a construction contract in August 2019 for the armoring of the intake canal banks, scheduled for completion in September 2022. The USACE and SFWMD will conduct operational testing and monitoring for all of the completed features of the C-44 RSTA for up to two years after completion of the C-44 reservoir. During the reporting period, the USACE continued design of the C-23/C-24 STA and C-23/C-24 North Reservoir. Cultural resources surveys were also collected for the C-23/C-24 STA and C-23/C-24 South Reservoir. The USACE is scheduled to issue the construction contract for the C-23/C-24 STA in 2021 and for the C-23/C-24 North Reservoir in 2023.

Est. Cost: \$ 4,040,361,000

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Project Schedule:

2011 C-44 reservoir construction initiated with Contract 1 (canals, roads, culverts, and bridge work)
 2014 C-44 Contract 1 completed; C-44 STA construction initiated
 2015 Construction of C-44 Reservoir and C-44 Pump Station initiated
 2016 C-44 System Discharge of the C-44 STA completed
 2019 C-44 Pump Station completed; C-44 ICBS construction initiated
 2021 C-44 STA completed
 2021 C-44 Reservoir completed and C-23/24 STA construction initiated
 2022 C-44 ICBS construction completed; C-23/C-44 Interconnect construction initiated
 2023 C-23/24 North Reservoir construction initiated
 2024 C-23/24 South Reservoir construction initiated
 2025 C-23/C-44 Interconnect construction completed
 2026 C-23/24 STA construction completed; C-25 Reservoir and STA construction initiated
 2028 C-23/24 North Reservoir construction completed
 2030 C-23/24 South Reservoir construction completed
 2032 C-25 Reservoir and STA construction completed
 2035 Allapattah complex construction begins
 2035 Muck removal & artificial habitat construction begins
 2038 North fork land acquisition (flood plain) begins
 2038 Palmar complex construction begins
 2041 Cypress Creek / Trail Ridge complex construction begins

Detailed Project Budget Information (rounded):

IRL-S	Investment Thru FY 2020
USACE	\$368,515,000
SFWMD	\$566,175,000
Total	\$934,690,000



Aerial photo of C-44 Reservoir Embankment facing east (February 2020).

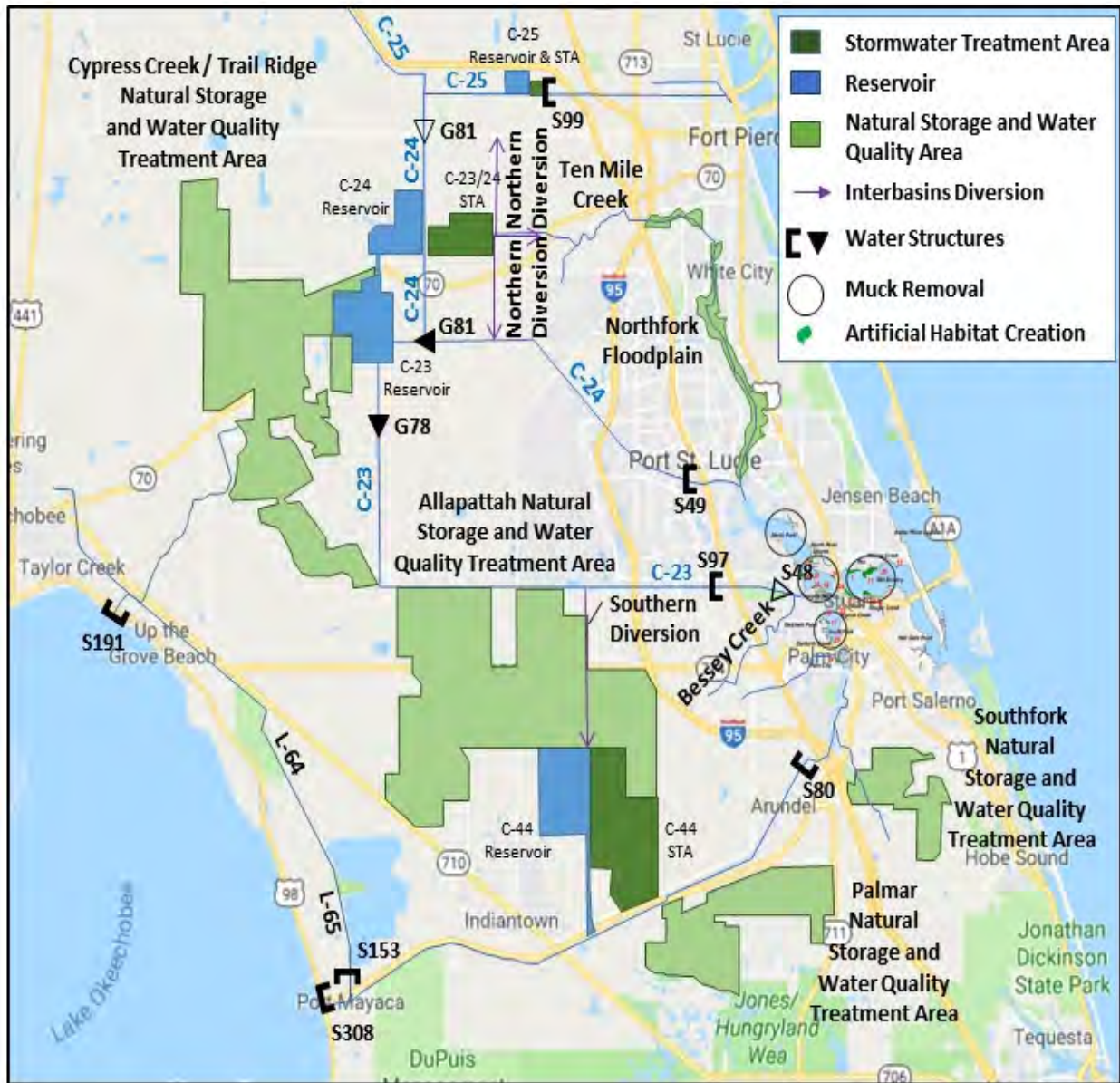
Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Cost estimate and current project status includes information summarized from the *Central and Southern Florida Project Indian River Lagoon – South Final Integrated Project Implementation Report (PIR) and Environmental Impact Statement (EIS)* (2004) and is updated to reflect current price levels in October 2019 dollars; along with the authorization in WRDA 2007. Current status was provided by the project manager. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:





Southern view of the C-44 STA discharge canal, the C-44 System Discharge Structure S-404, and the C-44 Canal.



Southern view of the C-44 STA southbound collection canal from the north east corner of Cell 2.



Southern view of the completed C-44 Pump Station.



A view of the eastern embankment construction of the C-44 Reservoir.

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Project Name: C&SF: CERP Everglades Agricultural Area Storage Reservoirs (G P1 & G P2)
a/k/a Everglades Agricultural Area Storage Reservoirs - East & West
Project ID: 1102 (includes 1103) (WBS # 08 and WBS# 09)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (only Phase 1 'G P1'-"Initially Authorized Project"); Phase 2 not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.1

April 1999 (Restudy) Project Synopsis: Runoff from the Everglades Agricultural Area (EAA), Miami and North New River Canal Basins and regulatory releases from Lake Okeechobee is to be pumped into the reservoirs. Additionally, it provides for canal conveyance capacity increases for the Miami, North New River, Bolles, and Cross Canals. The reservoir(s) will have a storage capacity of approximately 360,000 acre-feet located in the EAA in western Palm Beach County. The initial design for the reservoir(s) assumed 60,000 acres, and was divided into three equally sized compartments (1, 2, and 3), with water level fluctuation up to 6-feet above grade:

- 1) Discharges used to meet Everglades Agricultural Area irrigation demands only.
- 2) Discharges used to meet environmental demands as a priority; and can be used to supply a portion of agricultural demands in cases where there is no environmental demand.
- 3) Discharges used to meet environmental demands.

Current Project Synopsis: The project, authorized in the WRDA 2018, provides conveyance, water storage, and treatment capacity south of Lake Okeechobee in the EAA to further reduce damaging discharges to the Northern Estuaries and deliver additional flow to the central Everglades, consistent with the Comprehensive Everglades Restoration Plan (CERP) goals. The project will reduce high-volume discharges from Lake Okeechobee and improve the quality of oyster and submerged aquatic vegetation habitat in the Northern Estuaries. In the central Everglades, the project will improve seasonal hydroperiods and freshwater distribution, improve sheetflow patterns and surface water depths and durations, reduce soil subsidence, reduce the frequency of peat fires, reduce the decline of tree islands, reduce salt water intrusion, restore more natural water level responses to rainfall, and protect cultural and archeological resources and values.

Project features to be operated and maintained include: an above ground reservoir, a stormwater treatment area, and conveyance features.

The EAA Reservoir and other project features were moved under Central Everglades Planning Project (CEPP) in WRDA 2020. They are included in the CEPP EAA Phase of the project.

Hyperlinks: <https://www.saj.usace.army.mil/SFWMDEAAReservoir/>

Contact: Christyn Figueroa, Project Manager, Ecosystem Projects Section, Programs and Project Management Division, USACE, Christyn.D.Figueroa@usace.army.mil

Leslye Waugh, Lead Project Manager, SFWMD
(561) 682-6483, lwaugh@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Central Everglades Planning Project (CEPP)
Project ID: 1103
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 and WRDA 2016
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1

Secondary: 1-A.3

Measurable Output(s): Improve the quantity, quality, timing and distribution of water flows to the Northern Estuaries; the central Everglades including Water Conservation Area (WCA) 3 and Everglades National Park (ENP), in order to restore the hydrology, habitat and functions of the natural system.

April 1999 (Restudy) Project Synopsis:

The CEPP project was a part of the National Pilot Program for Feasibility Studies which will provide an opportunity to test principles that have been outlined in the USACE *Recommendations for Transforming the Current Pre-Authorization Study Process* (January 2011).

CEPP encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the Everglades Agricultural Area, the Water Conservation Areas; Everglades National Park, the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast. Utilizing the Incremental Adaptive Restoration approach recommended by the National Research Council and new information gained to date, the project will be composed of increments of project components that were identified in the CERP Comprehensive Review Study (Yellow Book), reducing the risks and uncertainties associated with project planning and implementation.

CEPP includes increments of the following components that were part of the Yellow Book Plan:

- Everglades Agricultural Storage Reservoirs (G)
- Flow to Northwest and Central Water Conservation Area 3A (II)
- Water Conservation Area 3 Decompartmentalization and Sheet flow Enhancement (AA and QQ)
- L-31N Improvements for Seepage Management and S-356 Structures (V and FF)
- Everglades Rain-Driven Operations (H)

Current Project Synopsis:

The project was kicked off November 2011. CEPP was authorized in WRDA 2016. CEPP was modified by the CEPP Post-Authorization Change Report (PACR) that was approved in WRDA 2018. The purpose of the Central Everglades Planning Project is to improve the quantity, quality, timing, and distribution of water flows to the central Everglades (WCA 3 and ENP). The project area for the CEPP encompasses the Northern Estuaries (St. Lucie River and Indian River Lagoon and the Caloosahatchee River and Estuary), Lake Okeechobee, a portion of the Everglades Agricultural Area, the Water Conservation Areas; ENP, the Southern Estuaries (Florida Bay and Biscayne Bay), and the Lower East Coast. The project beneficially affects more than 1.5 million acres in the project area.

Project features to be operated and maintained include: pump stations, water control structures, levees, berms, canals, and mitigation areas.

Current Status: The Chief of Engineer's Report, or Chief's Report, for CEPP was signed by Lt. Gen. Thomas Bostick, USACE Commander and Chief of Engineers, in December 2014. The project was authorized in the Water Resources Development Act of 2016.

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The CEPP South Validation Report was signed by BG Holland, Commander South Atlantic Division, USACE, and the CEPP South Phase Project Partnership Agreement (PPA) fully executed in July 2020. Construction of the CEPP South Phase S-333N Gated Spillway was completed by the SFWMD in March 2021 consistent with the executed PPA. CEPP South Phase, Contract-1 was awarded September 2020 and Notice to Proceed (NTP) provided to the contractor in October 2020. The S-356E Pump Station/S-334E Gated Spillway, S-355W Gated Spillway, and new L-67D Levee/L-67C Levee Removal are in the Engineering Design Phase. The Old Tamiami Trail Road removal project is currently under construction by the SFWMD. The CEPP North Phase project is currently in the process of developing the Validation Report. The CEPP North Phase design has begun preliminary investigations including survey, geotechnical data and preliminary hydraulic modelling. The CEPP EAA Phase was approved in WRDA 2020 and a PPA was executed in April 2021. The Inflow/Outflow and Seepages Canals north of the stormwater treatment area (STA) and the STA are under construction by the SFWMD. The conveyance canals improvements (Miami Canal and North New River Canal) to move water from Lake Okeechobee to the EAA Reservoir are under design by the SFWMD. The design of the Inflow/Outflow Canal and Seepage Canal north of the Reservoir is complete and the contract is scheduled to be awarded in September 2021. The EAA Reservoir and Pump Station are under design.

Est. Cost of Project: \$5,035,228,000

Project Schedule:

Aug 2014	Publish in Federal Register
Dec 2014	Chief of Engineers Report
May 2019	CEPP South Validation Report
Jul 2020	CEPP South PPA
Apr 2021	CEPP EAA PPA

Detailed Project Budget Information (rounded):

CEPP	Investment Thru FY 2020
USACE	\$84,098,000
SFWMD	\$52,736,000
TOTAL	\$136,834,000

Hyperlinks:

<http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/CentralEvergladesPlanningProject.aspx>

Contact: Christyn Figueroa, Project Manager, Ecosystem Project Section, Programs and Project Management Division, USACE, Christyn.D.Figueroa@usace.army.mil
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Brenda Mills, Project Manager, SFWMD BMills@sfwmd.gov
Alexandra Serna, Project Manager CEPP North, SFWMD asernasa@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is based on original project design updated to reflect current price levels in October 2019 dollars. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Project 1103 C&SF: CERP Everglades Planning Project Page 2 of 2

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Project Name: C&SF: CERP Lake Okeechobee Watershed Restoration Project (A) (W) (GG)
(OPEs: LOWQTF, LOTSD, LIRS)
[North of LOW Storage Reservoir (A), Taylor Creek/Nubbin Slough Storage and Treatment Area (W), Lake Okeechobee Aquifer Storage and Recovery (GG), OPEs: LOW Water Quality Treatment Area (LOWQTF), LOW Tributary Sediment Dredging (LOTS), Lake Istokpoga Regulation Schedule Modification (LIRS)]

Project ID: 1104 (CERP Project WBS # 01 and WBS #02)

Lead Agency: USACE / SFWMD

Authority: WRDA 2000 (*Initially Authorized Project – “W”*); WRDA 2000 (*Programmatic Authority < \$25 M*) - OPEs: LIRS, LOTSD; other components not authorized.

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1

Secondary: 1-B.1, 2-A.3

Measurable Output(s):

- 272,823 acre-feet storage capacity in the Lake Okeechobee Watershed (202,500 LOW; 55,000 Taylor Creek Nubbin Slough, 4,375 OPEs; 1,984 Taylor Creek Reservoir)
- 12,000-acre stormwater treatment area
- 3,730 acres of habitat restoration (primarily wetlands)
- 74 metric tons/year average reduction of phosphorus going into Lake Okeechobee

April 1999 (Restudy) Project Synopsis: The Restudy initially included each of the following separate elements:

North of Lake Okeechobee Storage Reservoir (A) - Initial design was an above-ground reservoir with total storage capacity of approximately 201,250 acre-feet in a 17,500-acre reservoir (water levels fluctuating up to 11.5 feet above grade) and a 2,500-acre stormwater treatment area to be located in the Kissimmee River Region, north of Lake Okeechobee. The location was anticipated to be in Glades, Highlands, or Okeechobee Counties. The final size, depth and configuration to be determined through more detailed planning, land suitability analyses, and design determined by an evaluation of degraded water bodies within the watersheds of the storage/treatment facility for appropriate pollution load reduction targets, and other water quality restoration targets for the watershed.

Taylor Creek/Nubbin Slough Storage and Treatment Area (W) - One of the ten Initially Authorized Projects identified in the Water Resources Development Act (WRDA) 2000, the initial design includes a 5,000-acre above-ground reservoir (water levels fluctuating up to 10 feet above grade) with a storage capacity of approximately 50,000 acre-feet and a 5,000-acre stormwater treatment area with 20,000 acre-feet capacity in the Taylor Creek/Nubbin Slough Basin to attenuate flows and reduce the amount of nutrients flowing to the lake.

Lake Okeechobee Aquifer Storage and Recovery (GG) - Includes a series of aquifer storage and recovery wells adjacent to Lake Okeechobee with a capacity of one billion gallons per day and associated pre- and post- water quality treatment in Glades and Okeechobee Counties. The initial design assumes 200 wells, each with the capacity of 5 million gallons per day with 8- ultra-filtration water quality pre-treatment facilities and aeration for post-treatment. Based on information from existing aquifer storage and recovery facilities, it is assumed that recovery of aquifer-stored water would have no adverse effects on water quality conditions in Lake Okeechobee. In fact, some level of nutrient load reduction may occur as a result of aquifer storage, which would be a long-term benefit to in-lake water quality conditions.

Lake Okeechobee Watershed Water Quality Treatment Facilities (LOWQTF) – Includes two reservoir-assisted stormwater treatment areas and the plugging of select local drainage ditches. The initial design of these reservoir-assisted stormwater treatment areas assumes a 1,775-acre facility in the S-154 Basin in Okeechobee County and a 2,600-acre facility in the S-65D sub-basin of the Kissimmee River Basin in Highlands and Okeechobee Counties. The plugged drainage ditches will result in restoration of approximately 3,500 acres of wetlands throughout the Lake Okeechobee watershed basin. The other portion of this feature includes the purchase of conservation easements within four key basins of Lake Okeechobee to restore the hydrology of isolated wetlands by plugging the connection to drainage ditches and the diversion of canal flows to adjacent wetlands. Sites range from an individual wetland to an entire sub-basin and are located within the lower Kissimmee River Basins (S-65D, S-65E, and S-154) and Taylor Creek/Nubbin Slough Basin (S-191).

Lake Okeechobee Tributary Sediment Dredging (LOTSD) (OPE) - The purpose is to remove phosphorous from canals located in areas with the most intense agriculture in the watershed that contribute to excessive phosphorus loading to Lake Okeechobee by dredging sediments from 10 miles of primary canals within an 8-basin area in the northern watershed of Lake Okeechobee. The initial design assumes the dredged material will contain approximately 150 tons of phosphorus. A partnership with local landowners will be pursued for disposal of the material on uplands.

Lake Istokpoga Regulation Schedule (LIRS) (OPE) - Develops a plan to address water resource problems in the Lake Istokpoga Basin, a natural lake located in Highlands County, and a tributary of both Lake Okeechobee and the Kissimmee River. The focus is to create a balance between environmental needs, water supply and flood control in the basin.

Current Project Synopsis: The project area covers a portion of the Lake Okeechobee watershed in Florida. It includes four major drainage basins: Fisheating Creek, Indian Prairie, Taylor Creek/Nubbin Slough, and a portion of the Lower Kissimmee pools defined by structures S-65D and S-65E, totaling approximately 920,000 acres that drain into Lake Okeechobee. The study area includes the project area, along with Lake Okeechobee and the Caloosahatchee and St. Lucie estuaries, totaling approximately 1,450,000 acres. The project purposes are to:

- Improve quantity, timing, and distribution of flows into Lake Okeechobee to maintain ecologically desired lake stage ranges more often.
- Reduce large freshwater releases from Lake Okeechobee to improve the salinity regime and the quality of oyster, submerged aquatic vegetation (SAV), and other estuarine community habitats in the Northern Estuaries.
- Increase the spatial extent and functionality of aquatic and wildlife habitat within Lake Okeechobee and the surrounding watershed.
- Increase availability of the water supply to the existing legal water users of Lake Okeechobee commensurate with improving Lake Okeechobee ecology.

Since the original CERP planning that was completed in 1999, new studies, policy guidance, data collection, pilot projects, and improvements in hydrologic systems modeling capabilities allowed for refining the knowledge base and approach in ecosystem restoration. Based on these changes, the LOWRP now recommends portions of the following three components of the CERP with the focused purposes:

- North of Lake Okeechobee Storage Reservoir (CERP component A): Detain water in Lake Okeechobee during wet periods for later use during dry periods.
- Lake Okeechobee Aquifer Storage and Recovery (ASR) (CERP component GG): (1) Provide additional regional storage while reducing both evaporation losses and the amount of land removed from current land use that would normally be associated with construction and operation of aboveground storage features; (2) increase the lake's water storage capability to better meet regional water supply demands for agriculture, lower east coast urban areas, and the Everglades; (3) manage a portion of regulatory releases from the lake primarily to improve Everglades hydropatterns, and to meet supplemental water supply demands of the lower east coast; (4) reduce harmful regulatory discharges to the St. Lucie and Caloosahatchee estuaries; and (5) maintain and enhance the existing level of flood protection.
- Lake Okeechobee Watershed Water Quality Treatment Facilities (OPE): Attenuate peak flows before flowing into Lake Okeechobee, and restore wetlands in the Lake Okeechobee watershed that have been ditched and drained for agricultural water supply and flood control.

NOTE: Water quality features like STAs are not included Component A, in part, to USACE policies that have evolved since authorization of the CERP. Only the storage component was carried forward. Water quality features like RASTAs are not included in the LOWWQTF OPE component, in part, to USACE policies that have evolved since authorization of the CERP. Instead, as described in the OPE Component, the project uses wetland restoration to restore the hydrology of selected isolated and riverine wetlands in the watershed. The LOTSD OPE was removed from consideration as part of LOWRP as it is also primarily a water quality project. The PDT removed the LIRS OPE from LOWRP due to the complexity of including this in a SMART planning study along with the CERP components that were kept and the necessity to integrate this component with operational elements of the Kissimmee Basin. The Taylor Creek portion of the Lake Okeechobee Water Retention Phosphorus Removal project (Project) has been transferred to the sponsor (SFWMD) who accepted the project and assumed O&M Authority by letter dated 2 May 2011. The Nubbin Slough portion of the Project was completed and transferred to the sponsor for operation and maintenance at the end of FY 2012.

The LOWRP Recommended Plan presented in the Final PIR/EIS consists of the following components:

- A wetland attenuation feature (WAF) (dark blue polygon) with a static storage volume of approximately 46,000 acre-feet (ac-ft);
- 80 aquifer storage and recovery (ASR) wells [including watershed ASR wells (red circles) and wetland attenuation ASR wells (yellow circles)] with a theoretical storage volume of approximately 448,000 ac-ft per year assuming recharge over the entire year;
- Wetland restoration sites (green polygons) Paradise Run (approximately 3,600 acres) and Kissimmee River-Center (approximately 1,200 acres)
- Recreational facilities at multiple sites in the WAF and wetland restoration sites

The LOWRP will improve the quantity, timing and distribution of water entering Lake Okeechobee, provide for better management of lake water levels, reduce undesirable regulatory releases to the Caloosahatchee and St. Lucie estuaries, improve system-wide operational flexibility, and will restore portions of the historic Kissimmee River channel and floodplain.



LOWRP TSP features.

Current Status: The United States Army Corps of Engineers (USACE), Jacksonville District, in partnership with the South Florida Water Management District (SFWMD), submitted the Final PIR/EIS to HQUSACE for Policy and Legal review in December 2019. The State & Agency Review of the Final PIR/EIS and Draft Report of the Chief of Engineers were completed in November 2020. The USACE is currently exploring modification of the Recommended Plan to remove the WAF and associated 25 co-located ASR wells while targeting inclusion for authorization in a potential WRDA 2022.

The USACE and SFWMD executed a PPCA in January 2021 covering construction of the 55 watershed ASR wells and the wetland features. The State of Florida has allocated \$400M towards execution of design and construction effort for those covered features. The SFWMD is currently executing advance planning and field work and preliminary design activities. The SFWMD in coordination with the USACE has developed an ASR Science Plan detailing methodology to answer uncertainties in ASR implementation as detailed in the recommendations of the National Academies of Science during review of the 2015 CERP ASR Regional Study. The Science Plan was posted to the SFWMD website in June 2021.

Est. Cost: \$2,614,941,000

Project Schedule:

May 2022 Report of Chief of Engineers
 October 2022 Feasibility Report to Congress

Detailed Project Budget Information (rounded):

Lake Watershed	Okeechobee	Investment Thru FY 2020
USACE		\$21,034,000
SFWMD		\$28,341,000
TOTAL		\$49,375,000

Hyperlink: <http://www.saj.usace.army.mil/LOWRP>

Contact: E. Timothy Gysan, Senior Project Manager, Ecosystem Branch, USACE
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 James Hourican, Senior Project Manager, Ecosystem Branch, USACE
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 Elizabeth Caneja, Lead Project Manager, SFWMD
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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is updated to reflect current price levels in December 2020 dollars. Estimated project costs are fully funded estimates as of December 2020. Investment costs are through FY19 (Sept. 2019) and sponsor verified and approved in kind credit through 4th quarter FY19.



Project 1104 C&SF: CERP Lake Okeechobee Watershed Page 5 of 5

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP North Lake Belt Storage Area (XX P2)
Project ID: 1105 (CERP Project WBS # 25)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1

Measurable Output(s): 90,000 acre-feet reservoir

April 1999 (Restudy) Project Synopsis: Includes canals, pumps, water control structures, and an in-ground storage reservoir with a total capacity of approximately 90,000 acre-feet located in Miami-Dade County within an area proposed for rock mining. The initial design of the reservoir assumed 4,500 acres (water level fluctuating from ground level to 20-feet below grade). A subterranean seepage barrier will be constructed around the perimeter to enable drawdown during dry periods, to prevent seepage losses, and to prevent water quality impact due to the high transmissivity of the Biscayne Aquifer in the area.

Current Project Synopsis: The purpose of this project is to capture and store a portion of the stormwater runoff from the C-6, western C-11 and C-9 Basins. The stored water will be used to maintain stages during the dry season in the C-9, C-6, C-7, C-4 and C-2 canals and to provide fresh water deliveries to Biscayne Bay to aid in meeting salinity targets. Runoff is pumped and gravity fed into the in-ground reservoir from the C-6 (west of Florida's Turnpike), western C-11, and C-9 basins. Outflows from the facility will be directed into the C-9 Stormwater Treatment Area/Impoundment for treatment prior to delivery to the C-9, C-7, C-6, C-4 and C-2 canals.

This project adheres to the original concept outlined in the Restudy. However, a pilot test of this component will be conducted prior to final design to determine construction technologies, storage efficiencies, impacts upon local hydrology, and water quality effects. If necessary, additional stormwater treatment areas will be constructed adjacent to the in-ground reservoir.

Current Status: This project has not yet begun.

Est. Cost: \$ 744,236,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

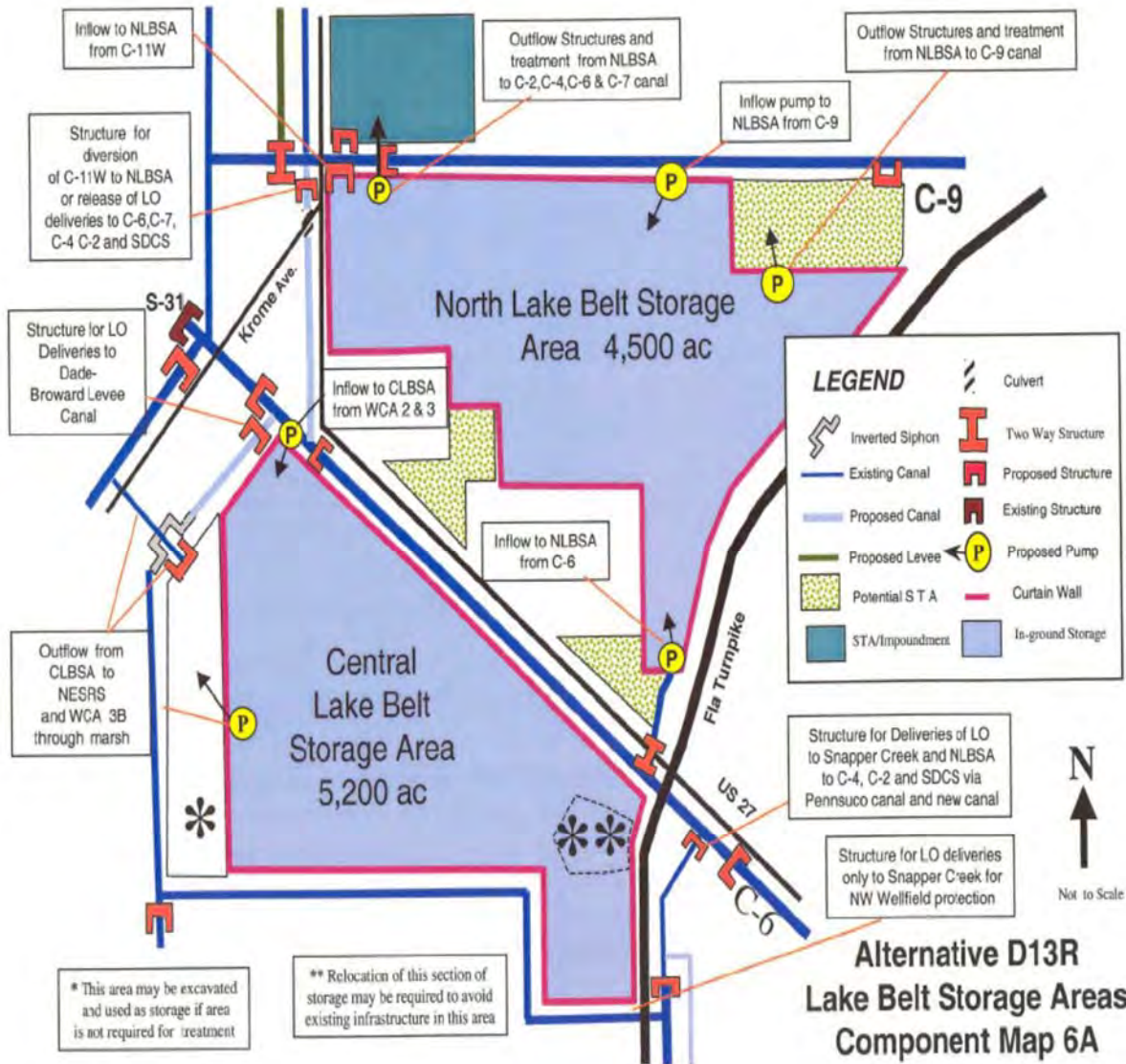
North Lake Belt	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
TOTAL	\$0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Palm Beach County Agriculture Reserve Reservoir (VV P1)
Project ID: 1106 (CERP Project WBS # 20)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.1

Measurable Output(s): 20,000 acre-feet reservoir

April 1999 (Restudy) Project Synopsis: Includes an above-ground reservoir with a total storage capacity of approximately 20,000 acre-feet located in the western portion of the Palm Beach County (PBC) Agriculture Reserve. The initial design assumes a 1,660-acre reservoir (with water levels fluctuating up to 12-feet above grade). Facilities will be filled during the wet season with excess water from the western portions of the Lake Worth Drainage District and possibly from Acme Basin B. Water will be returned to the Lake Worth Drainage District Canals to help maintain canal stages during the dry-season. If water is not available in the reservoir or the associated ASR wells (Part 2), existing rules for water delivery to this region will be applied.

Current Project Synopsis: The purpose of this feature is to supplement water supplies for central and southern Palm Beach County by capturing and storing excess water currently discharged to the Lake Worth Lagoon. These supplemental deliveries will reduce demands on Lake Okeechobee and Loxahatchee National Wildlife Area. It is assumed that this facility could also be designed to achieve water quality improvements in downstream receiving waters, depending upon pollutant loading conditions in the watershed.

The reservoir portion (part 1) is planned to work with the ASR (part 2 WBS #21 discussed on the next page).

Current Status: This project has not yet begun.

Est. Cost.: \$ 200,016,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

PBC Agriculture Reserve Reservoir	Investment Thru FY 2020
USACE	\$0
SFWMD	\$1,377
TOTAL	\$1,377

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Site 1 Impoundment (M P1)
Site 1 Impoundment (Fran Reich Preserve)
Project ID: 1107 (CERP Project WBS # 40)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Initially Authorized Project*); WRDA 2007
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 Secondary: 2-A.3

Measurable Output(s):

- 13,280 acre-feet reservoir storage
- 114 acres of restored wetland and upland habitat

April 1999 Project Synopsis: The purpose of this project is to supplement water deliveries to the Hillsboro Canal by capturing and storing excess water currently discharged to the Intra-coastal Waterway. These supplemental deliveries will reduce demands on Lake Okeechobee and Loxahatchee National Wildlife Refuge. The impoundment pool will also provide groundwater recharge, reduce seepage from adjacent natural areas, and prevent saltwater intrusion by releasing impounded water back to the Hillsboro Canal when conditions dictate. Some measure of flood protection may also be provided along with water quality improvement.

The project contained in the Restudy was titled *Site 1 Impoundment and Aquifer Storage and Recovery (M)* and included an above-ground reservoir and a series of aquifer storage and recovery wells. The reservoir was estimated with a total storage capacity of approximately 15,000 acre-feet located in the Hillsboro Canal Basin in southern Palm Beach County. The initial design of the reservoir assumed 2,460 acres (water levels fluctuating up to 6 feet above grade). Water from the Hillsboro Canal will be pumped into the reservoir during the wet season or periods when excess water is available and released back to help maintain canal stages during the dry-season.

Associated aquifer storage and recovery wells (separate project) include a total capacity of approximately 150 million gallons per day and associated pre- and post- water quality treatment. An initial design of the aquifer storage and recovery facility assumed 30 well clusters, each with a capacity of five million gallons per day with chlorination for pre-treatment and aeration for post-treatment; sourcing water from the surficial ground water adjacent to the reservoir.

Current Project Synopsis: The original Restudy project has since been divided into two parts. The first part is known as *Site 1 Impoundment (M P1) (a/k/a Fran Reich Preserve)* (CERP Project WBS #40), this project, relates to the reservoir portion. The second part, known as the *Hillsboro ASR (M P2)* (CERP Project WBS #22) relates to the aquifer storage and recovery wells portion, and is reported separately.

The reservoir, located adjacent to the Arthur R. Marshall Loxahatchee National Wildlife Refuge in southwestern Palm Beach County will provide water storage considered essential to restoring Everglades historic health and viability. A Tentatively Selected Plan (TSP) for this project (the reservoir) was identified and the Alternative Formulation Briefing (AFB) held in August 2004. The TSP includes a 1,800-acre project footprint with a 1,600-acre 8 foot deep, above-ground impoundment (13,280 acre-feet capacity) and includes an inflow pump station, discharge gated culvert, emergency overflow spillway, and seepage control canal with associated structures.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

A revised final PIR received a signed Chief of Engineer’s Report in December 2006. The reservoir project was authorized for construction in WRDA 2007 for \$80,840,000, subject to appropriations. The project has been sub-divided further into two phases:

- 1) Phase 1 - D-525N (L-40 modifications) and miscellaneous features; and
- 2) Phase 2 - the impoundment features.

Current Status: The USACE will construct the reservoir in Phases through two separate construction contracts. The Corps awarded the contract for Phase 1 in August 2010 for the amount of \$44.1M using funding from the American Recovery and Reinvestment Act. The Corps issued a notice to proceed on October 20, 2010. The original contractor was terminated in July 2012. A completion contractor was procured in January 2013 for \$47.8M and completed construction in January 2016. The USACE transferred the Phase 1 project to the SFWMD in December 2016.

Phase 2 is no longer supported by SFWMD due to a significant cost increase for Phase 2. Therefore, Phase 2 construction is currently not programmed for implementation.

Est. Cost: \$ 379,099,000

Project Schedule:

- 2010 Construction began on Phase 1
- 2016 Construction physically complete on Phase 1
- TBD Construction began on Phase 2
- TBD Construction physically complete on Phase 2.

Detailed Project Budget Information (rounded):

Site 1 Impoundment	Investment Thru FY 2020
USACE*	\$74,955,000
SFWMD	\$8,517,000
Total	\$83,472,000

*Includes \$2,919,000 in DOI funds.

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

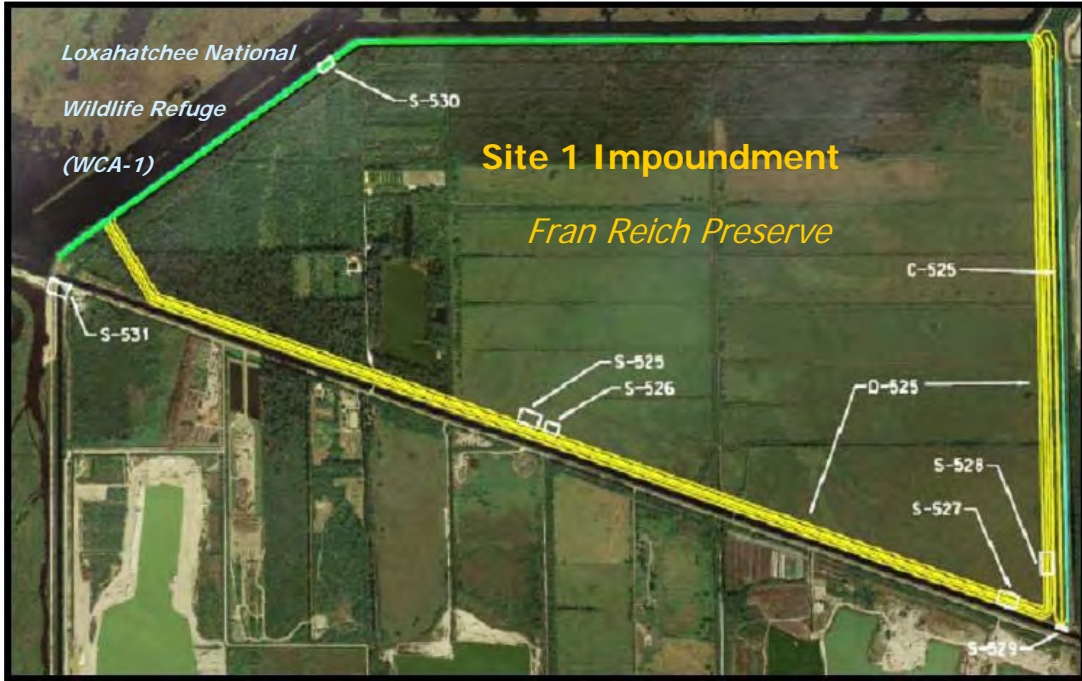
Contact: Steve.A.Baisden Senior Project Manager, Everglades Division, USACE
Stephen.A.Baisden@usace.army.mil

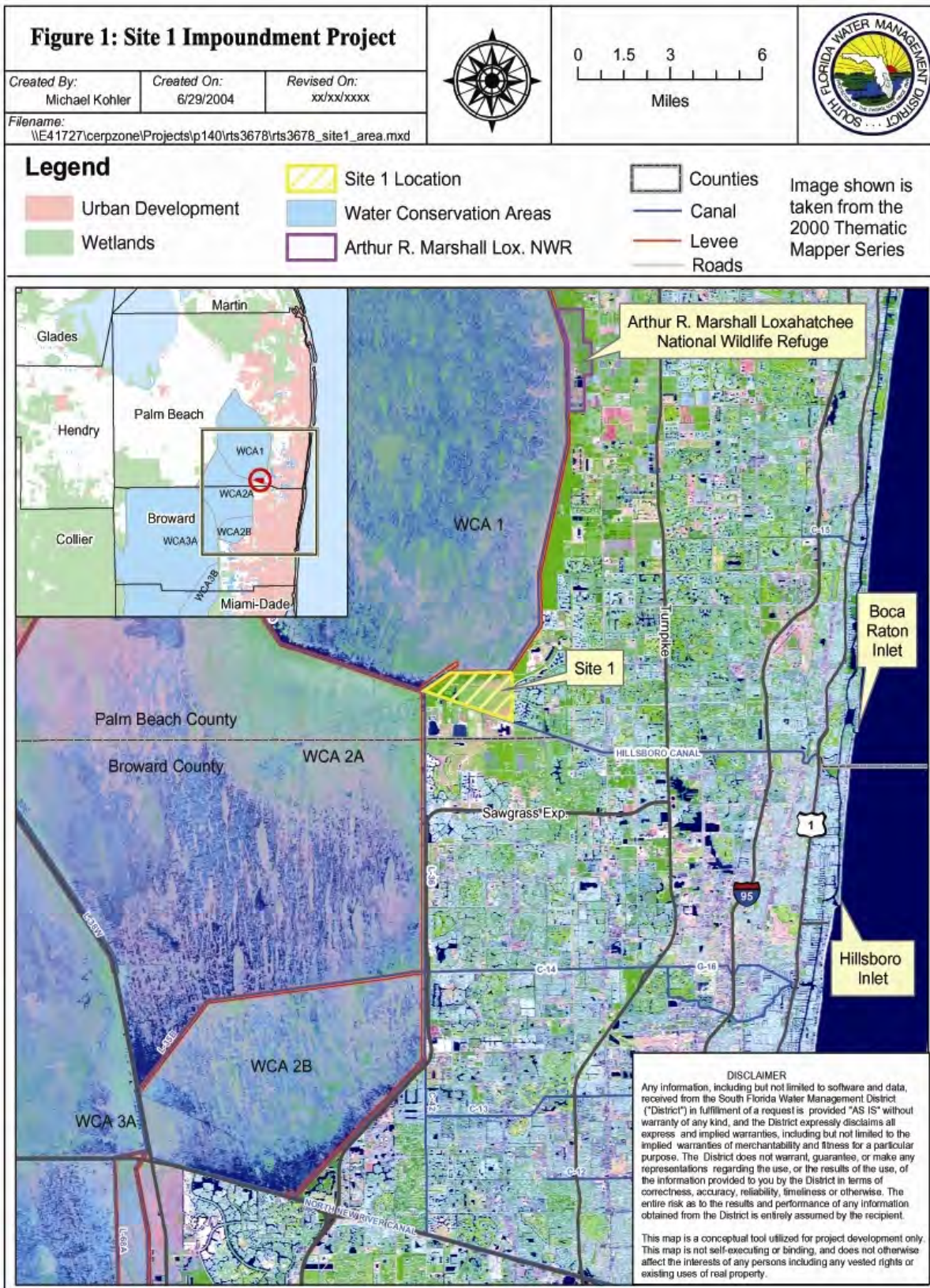
Matt Morrison, Project Manager, Everglades Restoration, SFWMD
mjmorris@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 and sponsor verified and recorded in kind credit through 4th quarter FY19. Current project status includes information summarized from Final PIR/EA (rev. 2006) and authorization in WRDA 2007.

Project 1107 C&SF: CERP Site 1 Impoundment Page 2 of 4

Additional Information:





Project Name: C&SF: CERP Caloosahatchee River (C-43) West Basin Storage Reservoir and Caloosahatchee Watershed (D P1)
[F/k/a C-43 Basin Storage Reservoir—Part 1; currently 2 PIRs: Caloosahatchee River (C-43) West Basin Storage Reservoir (PIR #1) and Caloosahatchee Watershed (PIR#2)]

Project ID: 1109 (CERP Project WBS # 04 and 05)

Lead Agency: USACE / SFWMD

Authority: C-43 Western Basin Reservoir authorized in WRRDA 2014

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.1

Measurable Output(s): 170,000 acre-feet storage

April 1999 (Restudy) Project Synopsis: Excess runoff from the C-43 Basin and Lake Okeechobee flood control discharges will be pumped into the initially proposed above-ground reservoir(s) with a total storage capacity of approximately 170,000 acre-feet. The initial design of the reservoir(s) assumed 20,000 acres (water levels fluctuating up to 8 feet above grade). Water from the reservoir will be injected into aquifer storage and recovery well field with a capacity of approximately 220 million gallons per day and associated pre- and post- water quality treatment located in the C-43 Basin in Hendry, Glades, or Lee Counties for long-term storage. Estuarine demands not met by basin runoff and the aquifer storage and recovery wells will be met by Lake Okeechobee as long as the lake stage is above a pre-determined level.

Current Project Synopsis: As part of the US Army Corps of Engineers (USACE) planning process, alternative plans were reviewed. The Caloosahatchee (C-43) Basin Storage Reservoir and Aquifer Storage and Recovery (ASR) project (originally component D in the Yellow Book) have been divided into two projects: The latter portion is now a separate project designated D P2 (part 2), previously USACE WBS #5. In 2007, D P1 (part 1), represented here, was further subdivided into two distinct Project Implementation Reports (PIRs):

- (1) **Caloosahatchee River (C-43) West Basin Storage Reservoir (WBSR)** will capture excess C-43 Basin runoff and regulatory releases from Lake Okeechobee and release water to the Caloosahatchee Estuary when needed helping to restore the Caloosahatchee estuarine and riverine ecosystems by improving hydrologic conditions with improved water delivery and by improving water quality by reducing salinity and nutrient impacts of runoff. To achieve this goal, the team identified two key objectives: (1) provide additional water to the estuary to augment low or no flows over Structure S-79 during the dry season/dry periods, and (2) reduce damaging peak flows to the estuary by capturing and storing excess basin run-off and Lake Okeechobee releases during high flow conditions.
- (2) **Caloosahatchee Watershed** will address further water storage needs for the Caloosahatchee Estuary as well as water quality, water management, and ecological restoration challenges; while also ensuring that agricultural water supply requirements and flood attenuation are not negatively impacted. The project will build on the state's Caloosahatchee River Watershed Protection River Plan (January 2009). Goals include: (1) Identify, evaluate, and implement methods and/or means of further decreasing dependency upon water releases from Lake Okeechobee, without disrupting water supply needs in the basin; (2) Identify, evaluate and implement methods and/or means to restore the Estuary by storing and releasing water flows in a more natural manner; and (3) Identify, evaluate and implement methods and/or means to enhance basin water quality.

Current Status:

- (1) *Caloosahatchee River (C-43) West Basin Storage Reservoir (WBSR) 2007 PIR* addresses formulation, evaluation, and justification of a separable reservoir project in the lower basin. Following the *Memorandum for Record Land Valuation and Crediting Policy – CERP Projects* (July 2009), the PIR was updated with an addendum based on the latest policy decision and a re-assessment of alternative cost estimates, including the real estate re-evaluation and was finalized by HQ. A Chief’s Report was completed in March 2010. The Record of Decision (ROD) and submission to Congress occurred in April 2011. The project was authorized in the Water Resources Reform and Development Act (WRRDA) 2014. As a state expedited project, the South Florida Water Management District (SFWMD) designed a reservoir at the Berry Groves site, and final plans and specifications were completed in 2008. The plan includes a 170,000 acre-foot storage reservoir with a 1500 cfs pump capacity.
- (2) The design and construction of the project is being performed by the non-federal sponsor, the SFWMD. The SFWMD will design/construct the reservoir project, two pump stations, and the perimeter canal. The SFWMD will construct the project in 6 contracts: 1. Pre-Loading of soils; 2. S-476 195 cfs pump station; 3. S-470 1500 cfs pump station; 3a. Site Clearing; 3b. Access Roads; and 4. embankments and associated structures. The sixth and final contract was awarded in March 2019. Construction is scheduled to be complete in July 2024.
- (3) The most recent certified cost (February 2019) is a Category 3, meaning the total project cost is projected to exceed the authorized cost plus inflation prior to completion of the construction phase and the project cost increases are forecast to exceed 20 percent of the total authorized cost as provided in Section 902 of the Water Resources Development Act (WRDA) of 1996. In March 2019, the project went through the Cost Control Board (CCB) process and was directed to submit a Post-Authorization Change Report (PACR) to Congress to request an increase the authorized cost for the project. The Jacksonville District completed the PACR and the Director's Report was signed in July 2020. An increased project cost was authorized in WRDA 2020.
- (4) *Caloosahatchee Watershed Draft Project Management Plan (PMP)* was sent to the SFWMD in November 2008 for comment. However, cost estimates and a schedule associated with the modeling were in flux with policy questions remaining from the overall C-43 WBSR PIR split. PMP adjustments include narrowing scope to river and estuary restoration, addressing the savings clause, the modeling plan and identification of the base conditions. Internal review, local sponsor review and full interagency PDT involvement is ongoing. A final PMP was completed in September 2010. Initiation of the PIR has been delayed.

Est. Cost:

Caloosahatchee River (C-43) West Basin Storage Reservoir: \$1,048,571,000

Caloosahatchee Watershed: \$ 287,000

Total: \$1,048,857,000

Project Schedule:

Caloosahatchee River (C-43) West Basin Storage Reservoir:

2015 Start construction.

2024 Storage reservoir construction completed.

Caloosahatchee Watershed:

TBD

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

Caloosahatchee River (C-43) West Basin Storage Reservoir	Investment Thru FY 2020
USACE*	\$40,197,000
SFWMD	\$134,870,000
Total	\$175,067,000

*Includes \$27,504,000 in DOI funds.

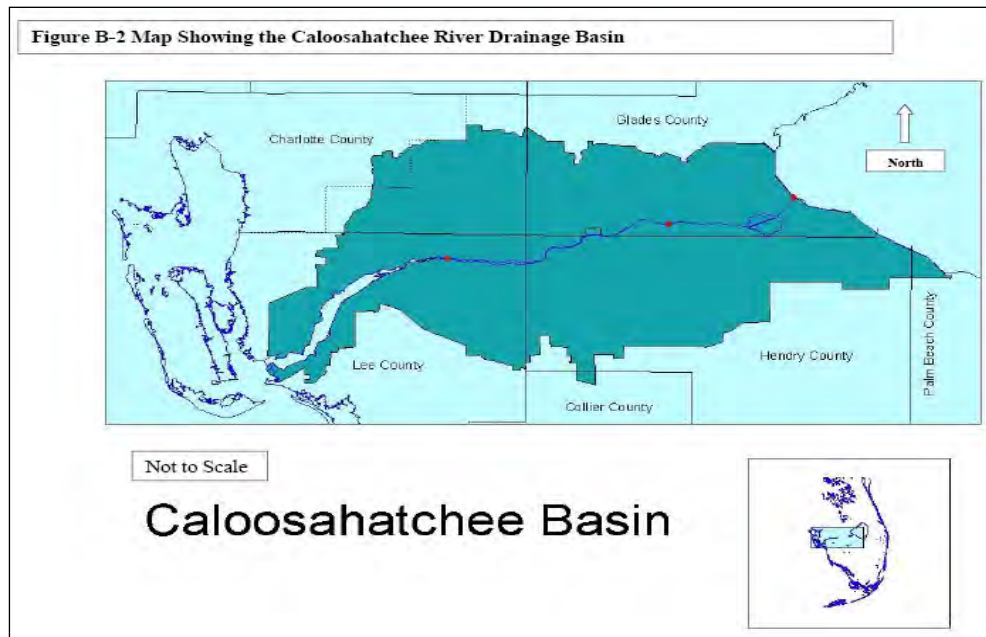
Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

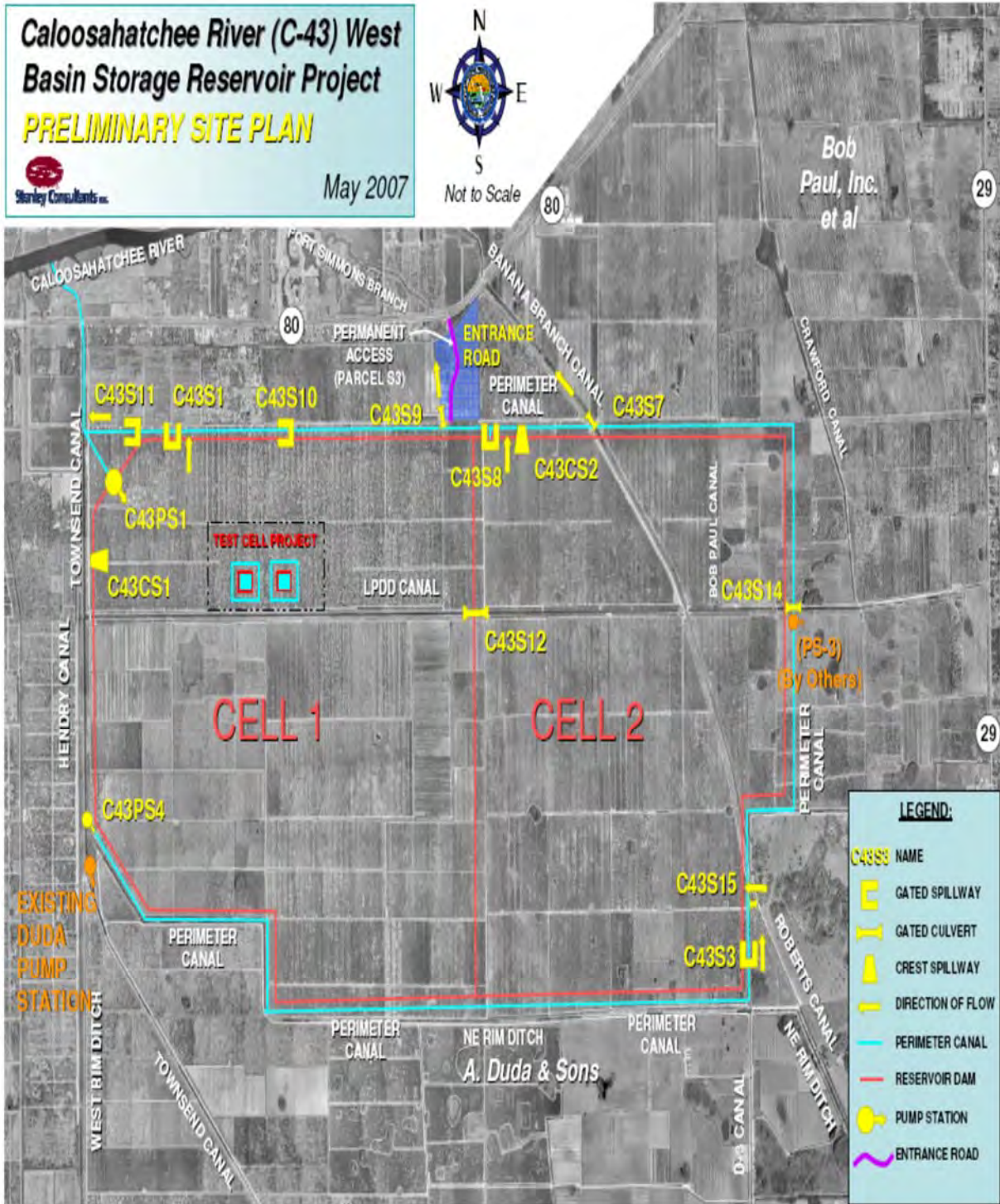
Contact: Allison Joura, Project Manager, Programs and Project Management Division, USACE
Allison.M.Joura@usace.army.mil

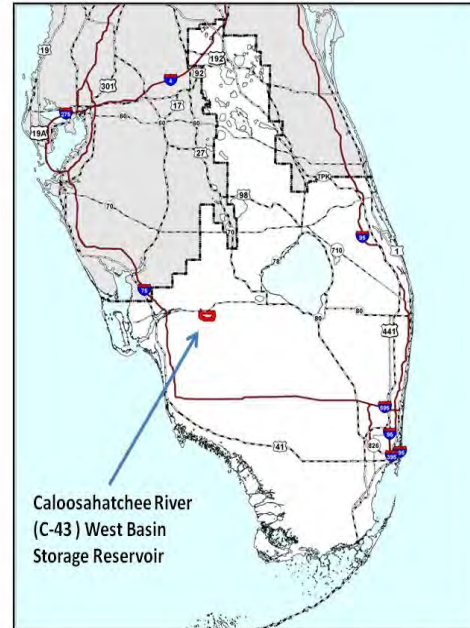
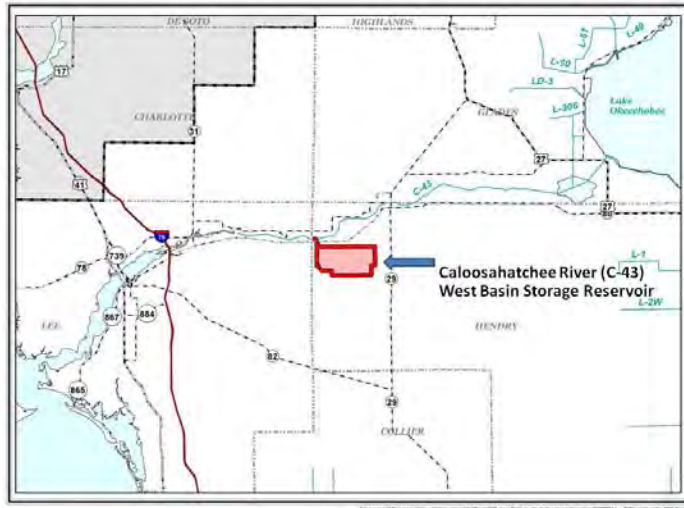
Joanna Weaver, Project Manager, SFWMD
joweaver@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 and sponsor verified and approved in kind credit through 4th quarter FY19. Schedule is updated based on SFWMD’s current construction schedule.

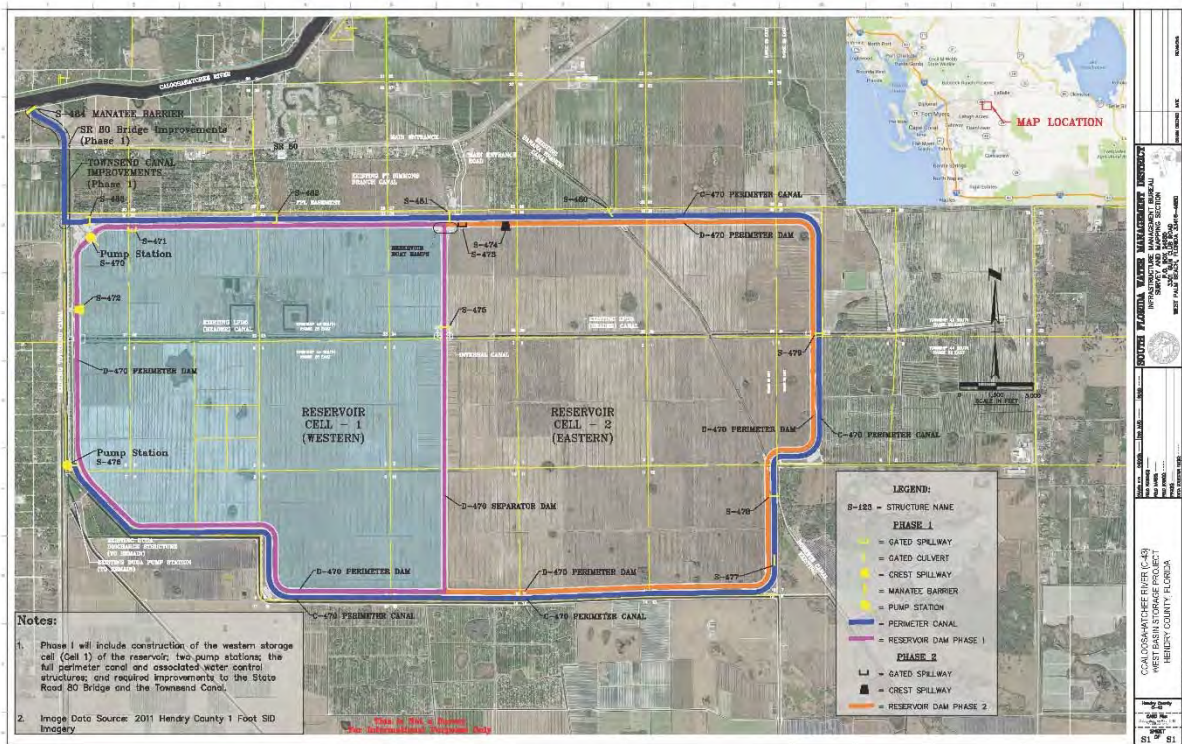
Additional Information:







Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021



Current schematic of the Caloosahatchee River (C-43) West Basin Storage Reservoir showing the phasing of the construction.

Project Name: C&SF: CERP Central Lake Belt Storage Area (S P1 & S P2) (EEE)
Project ID: 1110 (CERP Project WBS # 26): Central Lake Belt Storage Area (S); Flows to Eastern Water Conservation Areas (EEE - previously WBS #23)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 Secondary: 1-B.1

Measurable Output(s):

- 190,000 acre-feet storage
- 640 acres stormwater treatment area

April 1999 (Restudy) Project Synopsis:

S and EEE: Includes pumps, water control structures, a stormwater treatment area of 640 acres (water level fluctuating up to 4-feet above grade), and a combination above-ground and in-ground storage reservoir of 5,200 acres (water level fluctuating from 16-feet above to 20-feet below grade) with a total storage capacity of approximately 190,000 acre-feet located in Miami-Dade County. A subterranean seepage barrier will be constructed around the perimeter to enable drawdown during dry periods and to prevent seepage losses. A pilot will address potential impacts to the county's Northwest Wellfield during construction and/or operation.

Excess water from Water Conservation Areas 2 and 3 will be diverted into the L-37, L-33, and L-30 Borrow Canals, running along the eastern boundaries of the Water Conservation Areas, and pumped into the Central Lake Belt Storage Area. Water supply deliveries will be pumped through an STA prior to discharge to the Everglades via the L-30 Borrow Canal and a reconfigured L-31N Borrow Canal. A structure will be provided on the Snapper Creek Canal to provide regional system deliveries when water from the Central Lake Belt Storage Area is not available to: (1) Northeast Shark River Slough, (2) Water Conservation Area 3B, and (3) to Biscayne Bay through Snapper Creek Canal at Florida's Turnpike, improving hydropatterns in that order, if available.

Current Project Synopsis: The purpose of the feature is to store excess water from Water Conservation Areas 2 and 3 and to provide environmental water supply deliveries to: (1) Northeast Shark River Slough, (2) Water Conservation Area 3B, and (3) to Biscayne Bay, in that order, if available. It is assumed that water diverted from WCAs 2 and 3 is of adequate quality to return to the Everglades Protection Area and Biscayne Bay. Final configurations and treatment requirements were to come from a Water Preserve Areas Feasibility Study.

Though drafted, the study scope became too large, so projects are being revisited separately.

Current Status: This project has not yet begun.

Est. Cost: \$1,448,836,000

Project Schedule: TBD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

Central Lake Storage Reservoir (S)	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Flows to Eastern Water (EE)	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Loxahatchee River Watershed Restoration - Part 1(X)(Y)(GGG)(K P1)
(OPE)
Project ID: 1115 (CERP Project WBS # 17)
Lead Agency: USACE / SFWMD
Authority: WRDA 2020
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 (*Reservoir*)

Measurable Output(s): 46,000 acre-feet reservoir

April 1999 (Restudy) Project Synopsis: Projects elements were listed separately in the original concept as outlined in the Restudy (below):

1. and 2. Water Preserve Areas / L-8 Basin (K and GGG): A combination above-ground and in-ground reservoir with a total storage capacity of approximately 48,000 acre-feet located immediately west of the L-8 Borrow Canal, north of the C-51 Canal in Palm Beach County. Other construction features include aquifer storage and recovery wells with a capacity of 50 million gallons per day and associated pre- and post- water quality treatment to be constructed in the City of West Palm Beach (Lake Mangonia), a series of pumps, water control structures, and canal capacity improvements in the M Canal. The initial design assumed a 1,800-acre reservoir with 1,200 usable acres (water level fluctuating from 10-feet above grade to 30-feet below grade).

3. C-17 Back-pumping and Treatment: Back-pumping facilities and a stormwater treatment area with a total storage capacity of approximately 2,200 acre-feet located in northeastern Palm Beach County. The initial design for the stormwater treatment area assumed 550 acres (water level fluctuating up to 4-feet above grade).

4. C-51 Back-pumping and Treatment: Back-pumping facilities and a stormwater treatment area with a total storage capacity of approximately 2,400 acre-feet located in Palm Beach County. The initial design for the stormwater treatment area assumed 600 acres in size (water level fluctuating up to 4-feet above grade).

5. Lake Worth Lagoon Restoration (OPE): Sediment removal and trapping within the C-51 Canal, as well as sediment removal or trapping within a 2.5-mile area downstream of the confluence of the C-51 Canal and the Lake Worth Lagoon, located in Palm Beach County. A prototype project will be conducted to determine if the Lagoon sediments will either be removed or trapped.

6. Pal-Mar and J.W. Corbett Wildlife Management Area Hydro-pattern Restoration (OPE): Water control structures, canal modifications and the acquisition of 3,000 acres located between Pal-Mar and the J.W. Corbett Wildlife Management Area in Palm Beach County.

Current Project Synopsis: During the plan formulation process, the six CERP elements listed above and identified in the Yellow Book (1999) were combined into a single project. WRDA 2000 authorized the preparation of a PIR for the project.

The overall project area of 730 square miles is located in northeastern portions of Palm Beach County and Southern Martin County. The project purpose is to capture and store excess water that is currently discharged to the Lake Worth Lagoon and the Loxahatchee Estuary. L-8 Basin drainage will be captured in the L-8 Canal and routed to the L-8 reservoir during the wet season to reduce inland drainage and

damaging pulses of freshwater to the coast. During the dry season the stored water will be routed around Grassy Waters Preserve to the Loxahatchee Slough and then on to the Loxahatchee River to restore a hydrologic regime more natural to the region. Stored water will also be routed to the City of West Palm Beach for water supply which will reduce the reliance on Grassy Waters Preserve.

As a result of the FSM completed in 2004, two of the six separable features were removed from the project scope: C-51 and C-17 Pumping and Treatment. This decision was made due to lack of stakeholder support and insufficient available real estate in the area. Since the FSM, SFWMD has been modeling project components to develop an array of alternatives. Selection of the Tentatively Selected Plan was performed in June 2010, but approval was dependent upon receipt and review of the Alternative Formulation Briefing (AFB) document. In August 2010, the AFB was completed and submitted by South Florida Water Management District (SFWMD) for USACE review. During the course of the previous study efforts and identification of a draft TSP, several of the project components were screened out. The C-17 and C-51 back-pumping and treatment components were screened out because the volume of water required large land areas for treatment, which were not available in the nearby highly urban area. The Lake Worth Lagoon component was screened out because it required flow modifications that would be provided by the C-17 and C-51 back-pumping. The L-8 Reservoir was removed from further consideration as it is now included in the State's Restoration Strategies for achieving water-quality standards. The Pal-Mar J.W. Corbett WMA Hydropattern Restoration (OPE) and the Water Protection Areas/L-8 Basin (K & GGG) are project components that remain. The previous efforts did not consider several CERP ASR components proposed for the LRWRP study area: L-8 and C-51 Basin ASR (part of Component K), C-51 Regional Groundwater ASR (Component LL), and Palm Beach County Agricultural Reserve Reservoir and ASR (Component VV). The renewed/current effort is considering ASR technology as a potential measure for providing additional water storage within the watershed. Completed ASR pilot tests have demonstrated that the ASR technology will work for ecosystem restoration purposes.

Early constructed elements of Flowway 1 (G-160, G-161, M-canal widening) will also be evaluated. In addition, the planning process will examine a suite of alternatives associated with various other flowways and components with respect to providing beneficial flows to the Loxahatchee River, achieving hydro-pattern restoration.

Current Status: In October 2013, SFWMD purchased Mecca Farms to help restore Loxahatchee River flows. The planning for the Loxahatchee River Watershed Restoration Project was re-initiated in 2016. The plan being recommended would deliver 91% of dry-season flows to the Loxahatchee River and provide 8,100 watershed and 414 estuary annual habitat units over the future without project. The Chief's Report was signed on April 8, 2020 and subsequently authorized in WRDA 2020.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Est. Cost: \$884,861,000

Project Schedule:

2008 C-51 & L-8 Phase 1 (PBA) construction completed.
2016 SMART planning initiated
2019 SMART planning complete
2020 Congress authorize project
TBD Project design begins

Detailed Project Budget Information (rounded):

Loxahatchee Watershed Restoration	Investment Thru FY2020
USACE	\$10,534,000
SFWMD	\$11,843,000
Total	\$22,377,000

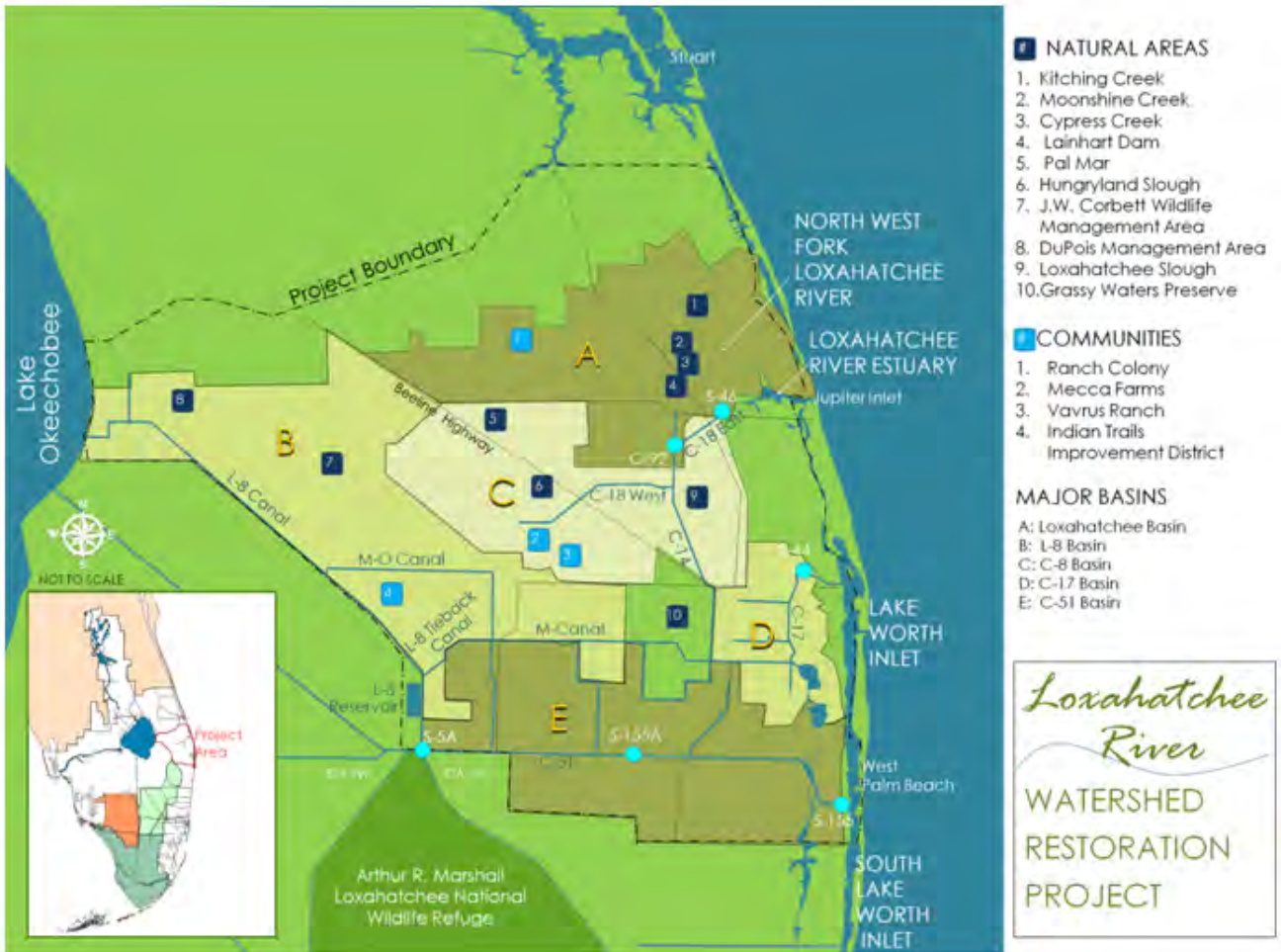
Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

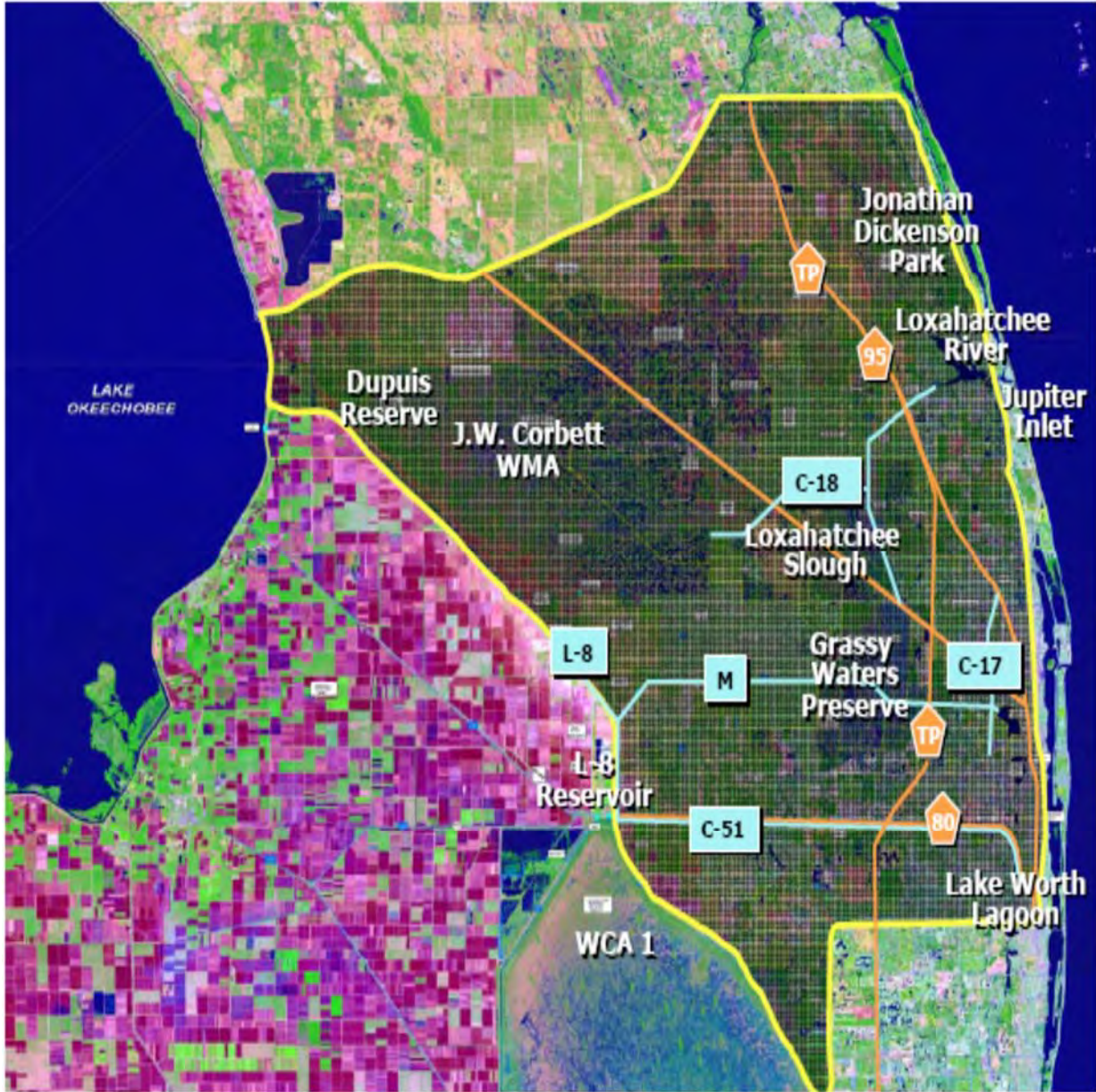
Contact: **Kyle Keer**, Senior Project Manager,
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Beth Kacvinsky, Regional Project Manager, SFWMD
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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sep, 2019) and sponsor requested in kind credit through 4th quarter FY19 for the Project Implementation Reports efforts.

Additional Information:





Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Broward County Water Preserve Areas (R) (Q) (O)
[A/k/a Broward County WPAs [Broward County WPA - C-9 Impoundment (R) and
Western C-11 Diversion Impoundment and Canal (Q) and Water Conservation Areas
3A and 3B Levee Seepage Management (O)]

Project ID: 1116 (CERP Project WBS # 45)

Lead Agency: USACE / SFWMD

Authority: WRDA 2000 (Initially Authorized Projects -3); WRRDA 2014

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 Secondary: 2-A.3

Measurable Output(s):

- 11,648 acre-feet total storage (2,808 acres of impoundment)
- 4,633 acres of natural area

April 1999 (Restudy) Project Synopsis: The original concept included canals, levees, water control structures, and a stormwater treatment area (STA)/impoundment with a total storage capacity of 6,400 acre-feet located in western Broward County. The initial design of a STA/impoundment assumed 1,600 acres (water level fluctuating up to 4 feet above grade). Detailed design of this feature will address appropriate pollution load reduction targets necessary to protect receiving waters. The STA was subsequently deleted from the concept.

The C-11 and Seepage Management Area components are to divert and treat runoff from the western C-11 Basin presently discharged into Water Conservation Area 3A, and control seepage from Water Conservation Areas 3A and 3B by improving groundwater elevations. Runoff in the western C-11 Canal Basin that was previously back-pumped into Water Conservation Area 3A through the S-9 pump station will be diverted into the C-11 Impoundment and then into either the North Lake Belt Storage Area, the C-9 Stormwater Treatment Area/Impoundment, or Water Conservation Area 3A after treatment, as applicable. The C-9 component is to capture flows diverted from the C-11 Basin via releases from the C-11 Impoundment, enhance the groundwater recharge within the basin, and provide seepage control for Water Conservation Area 3 and buffer areas to the west.

Current Project Synopsis: As specified in the EIS/PIR (2012) the project consists of three components:

- **C-11 Impoundment** will direct runoff from the western C-11 drainage basin into an impoundment in lieu of pumping untreated runoff via the S-9 pump station into the WCA 3A. When water is not available in the impoundment to perform these functions, S-381 will be opened to allow seepage water to recharge the basin and prevent excessive dry outs. In addition, seepage will be collected and returned to the impoundment area. The western C-11 Impoundment and Canal together with the Water Conservation Areas 3A and 3B Levee Seepage Management feature include 4,633 acres of natural area, canals, levees, water control structures, and an impoundment with a total storage capacity of 4,592 acre-feet located in western Broward County (with an initial design that assumes 1,068 acres and water levels fluctuating up to 4.3 feet above grade).
- **WCA 3A/3B Levee Seepage Management system** will focus on seepage reduction by allowing higher water levels in the L-33 and L-37 borrow canals.

- **C-9 Impoundment:** This component will include canals, levees, water control structures and an impoundment having a total capacity of 7,056 acre-feet located in the western C-9 Basin in Broward County (initial design assumes 1,641 acres and water level fluctuating up to 4.3 feet above grade) to pump runoff from the western C-9 drainage basin and diverted water from the western C-11 basin into the impoundment and assist in reducing seepage from the WCA 3A/3B Levee Seepage Management.

Current Status: The Final Project Implementation Report (PIR) signed by the District Engineer in June 2007; the EIS/PIR was revised in 2012. The project was authorized by WRRDA 2014.

The Project Partnership Agreement (PPA) was executed in FY17. The first construction contract (Mitigation Area A Berm) of the C-11 component was awarded in September 2017 and was completed in November 2018. Work on plans & specification, cultural resources clearances, water quality permits, real estate certifications, and environmental monitoring on the remaining portions of C-11 component will be complete in Q2 of FY22 and could be awarded as early as Q4 FY22 if funding is available; award of the SMA component is scheduled for 2026, and award of the C-9 component is scheduled for 2029.

Est. Cost: \$1,324,488,000

Project Schedule:

2016	PPA execution and construction contract award on C-11 component (Mitigation Area A Berm)
2022	Construction contract award on C-11 Impoundment
2026	Construction contract award on SMA WCA 3A & 3B
2029	Construction contract award on C-9 Impoundment

Detailed Project Budget Information (rounded):

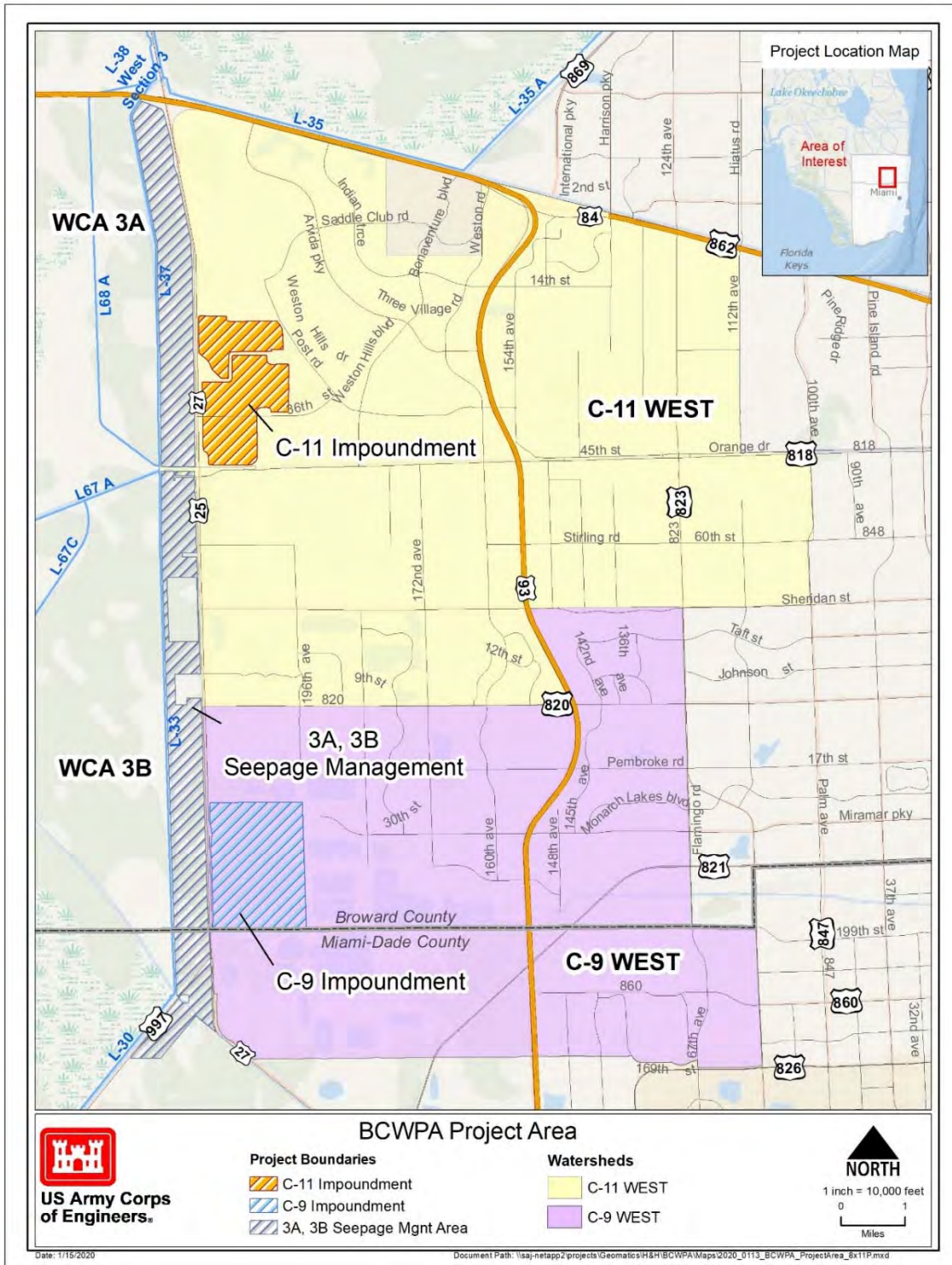
Broward County Water Preserve Area	Investment Thru FY 2020
USACE*	\$87,505,000
SFWMD	\$370,314,000
Total	\$457,819,000

*Includes \$43,969,000 in DOI funds.

Contact: Allison Joura, Project Manager, Programs and Project Management Division, USACE
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 Elizabeth Caneja, Project Manager, Policy and Coordination Division, SFWMD
ecaneja@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Lake Okeechobee Aquifer Storage and Recovery (GG)
(GG Pt. 1, GG Pt. 2, GG Pt. 3)
Project ID: 1201 (CERP Project WBS # 03)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): 1 billion gallons/per day of ASR wells

April 1999 (Restudy) Project Synopsis: Includes a series of aquifer storage and recovery wells adjacent to Lake Okeechobee with a capacity of one billion gallons per day and associated pre- and post- water quality treatment in Glades and Okeechobee Counties. The initial design assumes 200 wells, each with the capacity of 5 million gallons per day with 8- ultra-filtration water quality pre-treatment facilities and aeration for post-treatment. Based on information from existing aquifer storage and recovery facilities, it is assumed that recovery of aquifer-stored water would have no adverse effects on water quality conditions in Lake Okeechobee. In fact, some level of nutrient load reduction may occur as a result of aquifer storage, which would be a long-term benefit to in-lake water quality conditions.

Current Project Synopsis: The purpose of this project is to:

- 1) Provide additional regional storage while reducing both evaporation losses and the amount of land removed from current land use (e.g. agriculture) normally associated with construction and operation of above-ground storage reservoirs; Increase the lake's water storage capability to better meet regional water supply demands for agriculture, Lower East Coast urban areas, and the Everglades;
- 2) Manage a portion of regulatory releases from the Lake primarily to improve Everglades hydro patterns and to meet supplemental water supply demands of the Lower East Coast;
- 3) Reduce harmful regulatory discharges to the St. Lucie and Caloosahatchee estuaries; and
- 4) Maintain and enhance the existing level of flood protection.

Operation assumes that after treatment, water from Lake Okeechobee will be injected into the upper Floridan Aquifer when the climate-based inflow model forecasts lake levels significantly above those desirable for the littoral zone (shoreline ecosystem). Water in the aquifer may be returned to the lake, post-aeration treatment, when the level falls during a dry season.

Current Status: This component has been incorporated into the Lake Okeechobee Watershed Restoration Project (1104 Project WBS #01 and #02). LOWRP utilized the findings from the LOW ASR pilot (WBS #32) completed in 2015.

Est. Cost: \$ 2,489,554,000

Project Schedule:

TBD Construction begins.
TBD Construction completed.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

LOW ASR	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Hyperlink: <https://www.saj.usace.army.mil/Missions/Environmental/Ecosystem-Restoration/Aquifer-Storage-and-Recovery-ASR-Regional-Study/>

Contact: E. Timothy Gysan, Senior Project Manager, Ecosystem Branch, Programs and Project Management Division, USACE
Earl.T.Gysan@usace.army.mil

Elizabeth Caneja, Lead Project Manager, SFWMD
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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP PBC Agriculture Reserve Aquifer Storage & Recovery (VV P2)

Project ID: 1204 (CERP Project WBS # 21)

Lead Agency: USACE / SFWMD

Authority: Not authorized

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): 75 million gallons per day ASR wells (*0.075 billion gallons per day*)

April 1999 (Restudy) Project Synopsis: Includes the companion aquifer storage and recovery (ASR) wells, with a capacity of 75-million gallons per day and associated pre- and post- water quality treatment located adjacent to the associated reservoir (Part 1). The initial design of the wells assumes 15 well clusters, each with a capacity of 5- million gallons per day as well as chlorination for pre-treatment and aeration for post-treatment. The source of water to be injected is expected to be surficial ground water, adjacent to the reservoir.

Current Project Synopsis: The purpose of this project is to supplement water supplies for central and southern Palm Beach County by capturing and storing excess water currently discharged to the Lake Worth Lagoon. These supplemental deliveries will reduce demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge. It is assumed that this facility could also be designed to achieve water quality improvements in downstream receiving waters, depending upon pollutant loading conditions in the watershed. These supplemental deliveries will reduce demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge.

The wells will pump water into the aquifer during the wet season and will pump water from the aquifer to the Lake Worth Drainage District canals to help maintain canal stages during the dry season. If water is not available in the associated reservoir (Part 1) or the aquifer storage and recovery wells, existing rules for water delivery to this region will be applied.

Current Status: This project has not begun.

Est. Cost: \$ 96,266,000

Project Schedule: TBD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

PBC Agriculture ASR	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Project Name: C&SF: CERP C-43 Basin Aquifer Storage and Recovery (D P2)
Caloosahatchee River Aquifer Storage and Recharge Project (C-43ASR)
Project ID: 1205 (CERP Project WBS # 05)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.2

Measurable Output(s): 220 million gallons a day of ASR wells (*0.220 billion gallons per day*)

April 1999 (Restudy) Project Synopsis: Initially described with an above-ground reservoir(s) with a total storage capacity of approximately 160,000 acre-feet and aquifer storage and recovery wells with a capacity of approximately 220 million gallons per day and associated pre- and post- water quality treatment was to be located in the C-43 Basin in Hendry, Glades, or Lee Counties. The original design of the reservoir(s) assumed 20,000 acres (water levels fluctuating up to 8 feet above grade). Excess runoff from the C-43 Basin and Lake Okeechobee flood control discharges will be pumped into the proposed reservoir. Water from the reservoir will be injected into the aquifer storage and recovery well field for long-term storage. Any estuarine demands, not met by basin runoff and the aquifer storage and recovery wells, will be met by Lake Okeechobee as long as the lake stage is above a pre-determined level.

Current Project Synopsis: The original Caloosahatchee (C-43) Basin Storage Reservoir and Aquifer Storage and Recovery (ASR) project (component D in CERP) has since been divided into two separate projects. This latter ASR portion is now a distinct project (D P2); and is described apart from its prior association with Caloosahatchee River (C-43) West Basin Storage Reservoir (USACE WBS #4 and Task Force #1109). The purpose of the ASR feature is to capture C-43 Basin runoff and releases from Lake Okeechobee. Facilities will be designed for water supply benefits, some flood attenuation, to provide environmental water supply deliveries to the Caloosahatchee Estuary, and water quality benefits to reduce salinity and nutrient impacts of runoff to the estuary. It is assumed that, depending upon the location of the facility and pollutant loading conditions within the watershed, the facility could be designed to achieve significant water quality improvements, consistent with appropriate pollution load reduction targets.

Current Status: This project has not begun.

Est. Cost: \$ 459,369,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

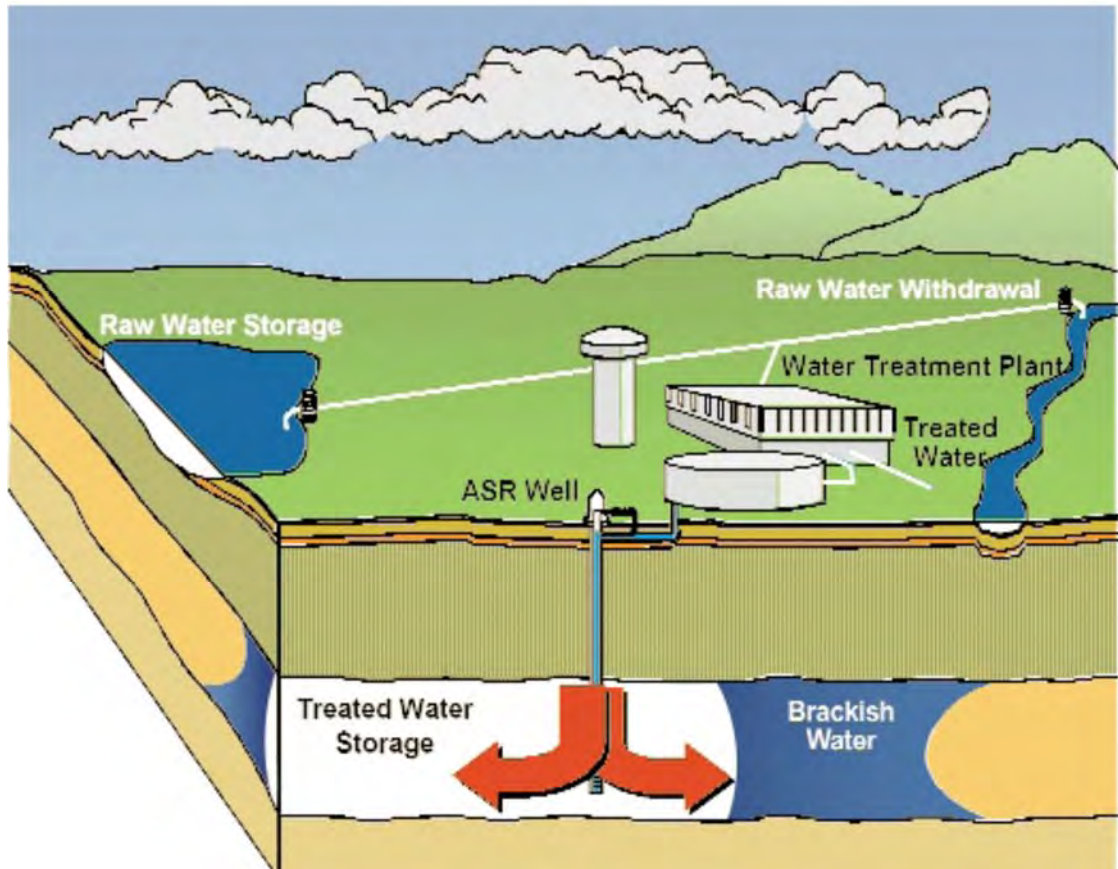
C-43 Basin ASR	Investment Thru FY 2020
USACE	\$287,000
SFWMD	\$0
Total	\$287,000

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: C-111 (South Dade)
Project ID: 1300
Lead Agency: USACE / SFWMD
Authority: Flood Control Act of 1948 (modified Flood Control Act 1962), the Everglades National Park (ENP) Expansion Act 1989; WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.3 **Secondary:** 3-B.1

Measurable Output(s): 4.75 miles total length impediments removed

Project History: Originally authorized as an addition to the C&SF Project (1948) with the Flood Control Act of 1962, the C-111 Project has been further modified by authorization of the ENP-South Dade Conveyance System (1968) and the ENP Expansion Act of 1989.

The 1996 Water Resources Development Act (WRDA) required the Federal government and the Non-Federal sponsor to amend the project's cost share agreement for the C-111 project as approved and described in the Canal 111 (C-111), South Dade County, Florida, Final Integrated General Reevaluation Report and Environmental Impact Statement completed May of 1994 (1994 GRR). A supplement to the 1994 GRR was completed in 2002 and in 2004 an addendum, updating the supplement, was produced to satisfy US Army Corps of Engineers (USACE) Headquarters' (HQ) concerns regarding real estate and water quality. Neither the 2002 supplemental nor the 2004 addendum have been approved. Coordination with USACE HQ resulted in guidance directing the District to amend the cost share agreement prior to completion of a Post Authorization Change Report (PACR). The amendment to the Project Cooperation Agreement was signed on 14 August 2014 and changed the cost sharing to 50/50 between the USACE and the non-federal sponsor. A Limited Reevaluation Report to document design refinements and all remaining construction features was signed on 7 December 2016. A Feasibility Cost Sharing Agreement to prepare a PACR on replacing S-332B and S-332C pump stations and associated operations and maintenance cost sharing was executed on 16 February 2018.

Current Project Synopsis: This basin includes 100 square miles of agricultural lands in the Homestead/Florida City area and the entire Taylor Slough basin within ENP. The C-111 discharges into Florida Bay at its downstream terminus thru S-197. Because of extreme porosity in this area of the Biscayne Aquifer, canal water levels directly impact water levels in adjacent areas.

Modifications to the existing water management system are to restore historic freshwater flows in Taylor Slough and are expected to help reverse the deterioration of Florida Bay. The 1994 GRR recommended creating operational capability with flexibility to provide restoration of the ecological integrity of Taylor Slough and the eastern panhandle areas of the Everglades and maintaining flood mitigation for the agricultural interests adjacent to the C-111.

The project includes structural modifications: canals, levees, pump stations and replacement of a bridge; non-structural modifications to increase natural flow and hydro patterns; and the removal of approximately 4.75 miles of total length impediments. Features address the objectives of restoring historic hydrologic conditions, protection of natural values associated with ENP, elimination of damaging freshwater flows to Manatee Bay/Barnes Sound, and to maintain current levels of flood risk reduction for the C-111 basin east of L-31N and C-111. A hydraulic ridge will be created via a collection of features/activities limiting the amount of seepage leaving ENP lands. A series of pump structures will provide control for this ridge by pumping directly into a retention/detention zone adjacent to ENP lands which can also be utilized for temporary storage of excess flood water.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

The 1994 GRR recommended five pump stations ((S-332A, S-332B, S-332C, S-332D, and S-332E), located adjacent to the L-31N levee and C-111 canals, each pump station having a pumping capacity of 300-cfs.

The pump stations would pump water into the retention/detention zone; addressing the objective of maintaining flood control capacity while creating the hydraulic ridge between ENP and the canal which would help restore the ecosystem within Taylor Slough. In addition, approximately 5 miles of the L-31W Canal would be backfilled to prevent the canal from draining water out of the park, Canal 109 and Canal 110 were to be backfilled, the Taylor Slough Bridge replaced, the C-111 Spoil Mound removed, and a Spreader Canal created. Since that time, S-332A and S-332E has been taken out of the project.

Construction began in 1996. A land exchange of 1,000 acres between ENP and SFWMD was approved by Congress and executed 2005. A completed PMP for the C-111 (South Dade) project was revised in October 2007 and last updated in March 2019.

Current Status: To date the following have occurred: pump stations S-332B, S-332C, and S-332D have been constructed, the North and South Detention Areas with internal flowway berms have been constructed, the Taylor Slough Bridge has been replaced, Canal 109 has been backfilled, and parts of the C-111 Spoil Mound have been removed. A command and control center was also constructed for the purpose of reducing long term operations and maintenance costs.

All planned construction features are complete and have been transferred to the SFWMD. A PACR for the replacement of interim pumps stations S-332B and S-332C has been prepared and submitted to the USACE HQ for approval and with the intent of including it in the next WRDA for authorization.

Est. Cost: \$476,911,000

Project Schedule:

1994	Start
2021	Finish

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

C-111 (South Dade)	Investment Thru FY 2020
USACE*	\$157,507,000
SFWMD	\$155,743,000
Total	\$313,250,000

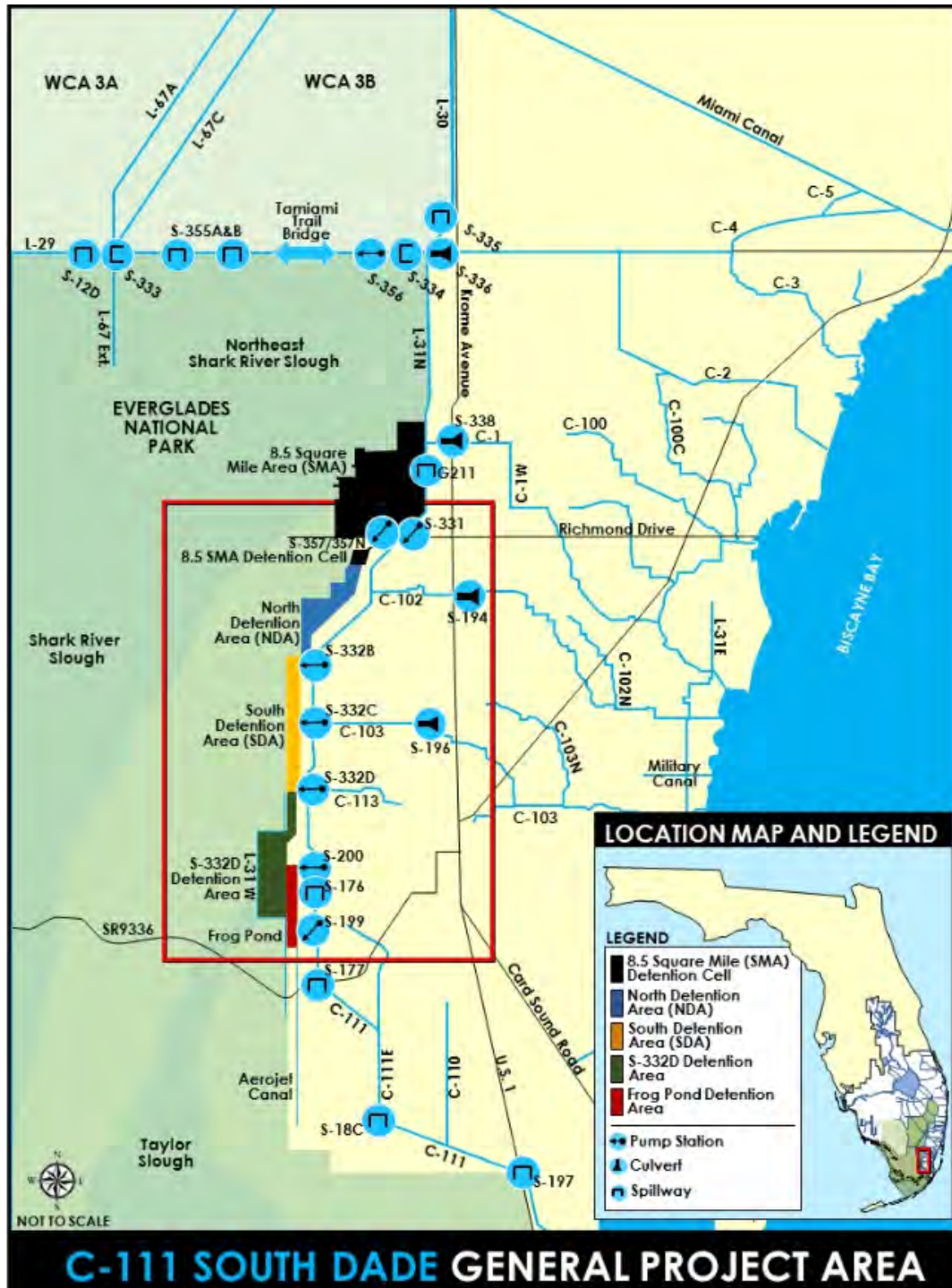
*Includes \$5,801,000 in DOI funds.

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

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Source: Project history and synopsis are summarized from the *Central and Southern Florida Project Final Integrated General Reevaluation Report and Environmental Impact Statement Canal 111 (C-111) South Dade County, Florida*. Current status summarized and the updated PMP (2013) and information provided from the project manager. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.



Project Name: C&SF: CERP WCA 3 Decompartmentalization and Sheetflow Enhancement (AA) (QQ P1 & QQ P2) (SS) (ZZ)
WCA 3 Decompartmentalization and Sheetflow Enhancement Part 1 and Part 2 (DECOMP) [raise and Bridge East Portion of Tamiami Trail and Fill Miami Canal within Water Conservation Area 3 (QQ), North New River Improvements (SS); Restoring Eastern Everglades Flow Path and Restoring Western Everglades Flow Path]; and Water Conservation Area 3A/3B Flows to Central Lake Belt Storage (ZZ)]

Project ID: 1301 (CERP Project WBS # 12, WBS # 13, and WBS #47)

Lead Agency: USACE / SFWMD

Authority: WRDA 2000 (*only 'QQ P1' and 'SS' – were Initially Authorized Projects*);
Other components not authorized

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.3

Measurable Output(s): 240 miles of impediments removed

April 1999 (Restudy) Project Synopsis: The Water Conservation Area (WCA) 3 Decompartmentalization and Sheetflow Enhancement project includes the following components:

- AA:** Construction of additional S-345 conveyance structures (through L-67A and L-67C levees and borrow canals), to improve flow of water from WCA3A to 3B.
- QQ Phase 1:** Raise and bridge (*using ten 100-foot box culvert bridges*) the eastern portion of Tamiami Trail and to completely backfill the Miami Canal within WCA-3.
- SS:** North New River Improvements, as needed to improve the discharge capability of an expanded/improved North New River Canal and to compensate for any water conveyance capacity lost via removal of the Miami Canal.
- QQ Phase 2:** Remove the remaining sheetflow obstructions, i.e., L-67A borrow canal (by filling in the southern 7.5 miles), L-68A, L-67C, L-29, L-288 tieback levees and borrow canals (formerly WBS #13).
- ZZ:** Pumps, water control structures, canals around conveyance improvements adjacent to WCA 2 and 3 in Broward County. As stages in WCA 2 B, 3A or 3B exceed target depths, excess water will also be transported to the Central Lake Belt Storage Area.

Current Project Synopsis: The natural flow of water volume, direction, speed and depth create the unique characteristics of the Everglades ecosystem. Decompartmentalization entails removing constructed canals, levees and other barriers that impede the natural sheetflow of water into and through the historic Everglades and restoring a more natural water flow. The primary impediment to the natural flow of water through WCA-3A is the Miami Canal, separating WCA-3A north from WCA-3A south.

Because of scientific and ecological uncertainties, and dependence upon the Modified Water Deliveries Project (per WRDA 2000), the project was envisioned to be completed in three project implementation reports (PIRs). PIR 1 and 2 would focus on those features described in the Restudy Decomp project Part 1 (Restudy - AA, SS, and QQ P1 - WBS #12), which were conditionally authorized, and PIR 3 would cover those identified in Part 2 ((Restudy - QQ P2/WBS #13).

PIR 1 (Miami Canal portion of QQ P1 and SS) includes WCA-3 and extends as far north as the southern end of Lake Okeechobee and as far south as the Tamiami Trail within Broward and Miami-Dade counties. Potential modifications to the Miami Canal and the North New River Canal will be analyzed.

Concurrent with PIR #1, a temporary field-scale test will be implemented to investigate the effective design of features for restoring sheet flow and for removing barriers to habitat connectivity in Water Conservation Area 3. The field test - also known as the Decomp Physical Model (DPM) - is important because there are critical questions regarding design and effectiveness of decompartmentalization features that cannot be answered with current computer simulation models. The physical model will gather data to better understand the hydrological and ecological effects associated with different types of canal and levee modifications to maintain the landscape characteristics of the Everglades.

The DPM includes installation and interim operations associated with the following features: ten controllable gated culverts within the L-67A Levee (S-152), degradation of 3,000 linear feet of the L- 67C levee and three, 1,000 ft backfill treatments in the L-67C canal (no backfill, partial backfill, and complete backfill).

PIR 2 (Tamiami Trail portion QQ - P1 and AA) focuses on modifying eastern sections of Tamiami Trail to improve water flows.

PIR 3 (QQ - P2) includes backfilling the southern 7.5 miles of L-67A borrow canal, removal of the L-68A, L-67C; degradation of western portions of L-29 below WCA 3A, L-28, and L-28 Tieback Levees and Borrow Canals; and elevating the western portion of Tamiami Trail south of WCA 3A.

An adaptive management strategy will be developed for the overall project, including formation of an interagency adaptive management team. Sequencing with the Modified Water Deliveries, C-111 South Dade, and CERP projects (e.g., L-31N Seepage Management Pilot, ENP Seepage Management, Broward County Water Preserve Areas, and Everglades Agricultural Area) is critical because of inter-relationships.

Current Status:

PIR 1

PIR 1 was suspended in 2010, the PDT documented the work to date, and its restoration features were incorporated into the Central Everglades Planning Project (CEPP), authorized in WRRDA 2016. Refer to the CEPP section of this document for additional details. Per the 2018 IDS, the Decomp Phase II is scheduled to begin in 2021. Update to reflect that the goal is to remove/restore or have a plan to incorporate the DPM into C&SF by 31-December-2021.. Construction was completed on the DPM in October 2013. The DPM was successfully operated November - December 2013 (FY14), November - December 2014 (FY15), November 2015 - January 2016 (FY16), and October 2016 - January 2017 (FY17). Phase I testing ended in January 2017. Phase II testing with extended testing periods commenced in January 2018 and is scheduled to run through 2021. Information gained will be documented and used to guide future restoration efforts.

Est. Cost: \$316,181,000

Project Schedule:

2013	Install and Operate DECOMP Physical Model
2015	Decommission Physical Model
TBD	Construction of Features included in CEPP

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

DECOMP	Investment Thru FY 2020
USACE	\$22,461,000
SFWMD	\$10,104,000
Total	\$32,565,000

Hyperlinks: <https://www.saj.usace.army.mil/Missions/Environmental/Ecosystem-Restoration/Decomp-Physical-Model-DPM/>

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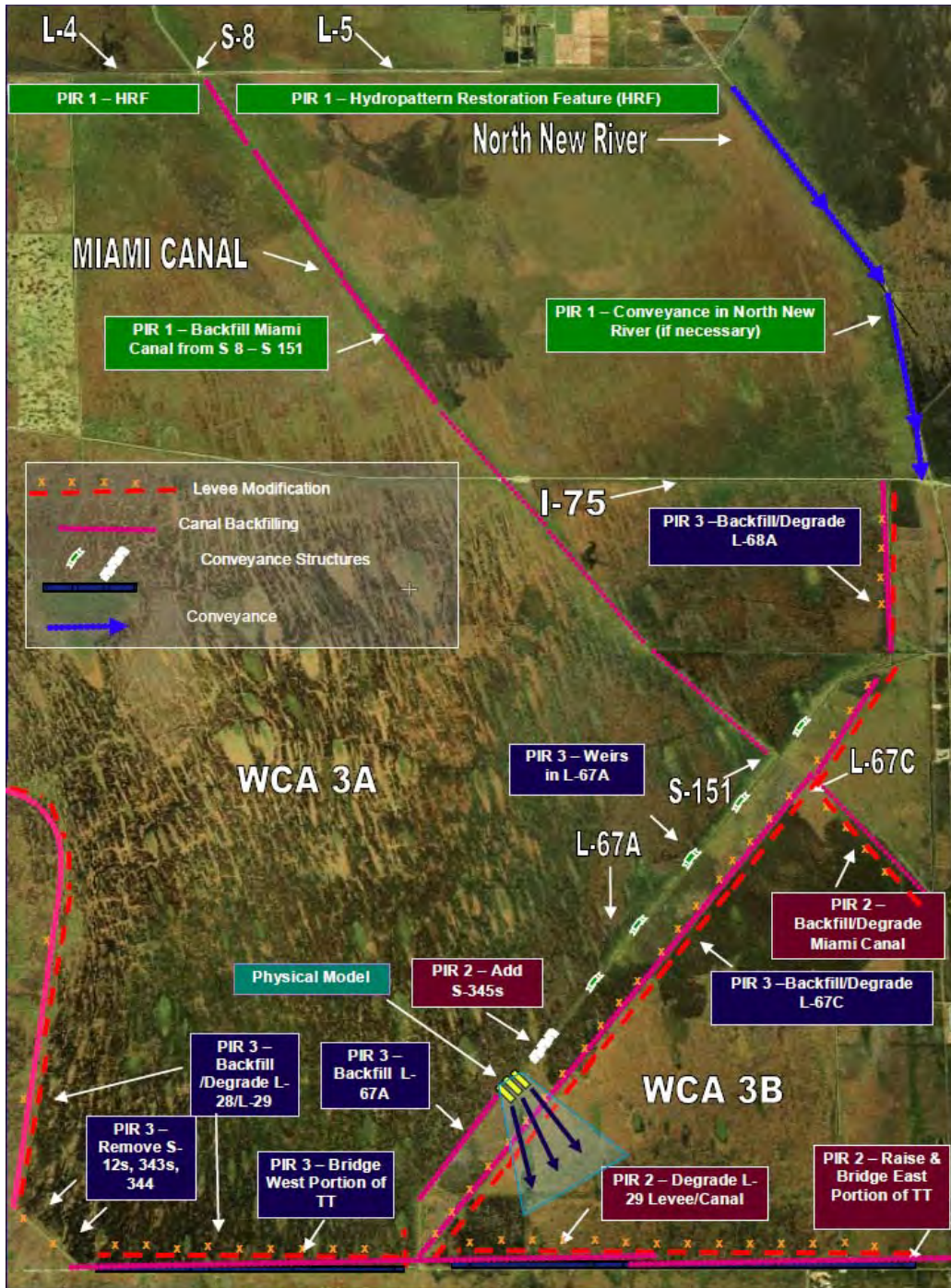
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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:

For wetlands in the footprint of the DECOMP Project, and downstream into the southern estuaries, the objective restoration: Given the nature of irreversible constraints in modern south Florida, true restoration is an ecosystem that, as closely as possible, is a self-regulating system that has recovered the ecological functions, relationships and physical and biological components that defined the pre-drainage ecosystem. Defining characteristics include the extent of naturally connected and inter-related wetland landscapes, uninterrupted marsh and slough “sheet flow”, low levels of nutrients in freshwater wetlands, numerous and healthy tree islands and solution “holes”, resilience of plant community mosaics, an abundance of large aquatic vertebrates exemplified by otters, storks, ibis and alligators, and high levels of downstream, estuarine productivity.

Although a “new” Everglades will be smaller than the pre-drainage system -- the DECOMP project will have been successful when the new system no longer acts like a set of managed, disconnected wetlands—but, rather responds to the recovery of these defining characteristics by functionally and organizationally behaving, both in space and time, as the wild Everglades system.



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Project Name: Kissimmee River Restoration (KRR)
Project ID: 1306
Lead Agency: USACE / SFWMD
Authority: WRDA 1986 Section 1135 (PL 99-662); WRDA 1988 Section 46 (PL 100-676);
WRDA 1990 (Section 116 (h) (PL 101-640); **WRDA 1992** Section 101 (8) (PL 102-580)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.3 Secondary: 2-A.3

Measurable Output(s):

- 27,000 acres of floodplain wetlands improved
- 44 miles of meandering river channel restored
- 22 miles of backfilling of Canal 38
- 9 miles of new river channel

Project History: The *Central and Southern Florida Project Comprehensive Review Study* (Restudy) noted that the WRDA 1992 (section 101) authorized remaining portions of the Kissimmee River Restoration (lower basin ecosystem) and construction of the Kissimmee River Headwaters Revitalization project (upper basin creating a more natural physical environment in the lower Kissimmee River Basin. The project included backfilling the 30-foot deep Canal 38 and restoring flow to over 43 miles of presently isolated river channel to restore an estimated 27,000 acres of floodplain wetlands and associated fish and wildlife resources. The project would also provide more natural seasonal flow to Lake Okeechobee.

Current Project Synopsis: As the headwaters of the Everglades system, the health of the 3,000-square-mile Kissimmee River stretching from Orlando to Lake Okeechobee in central Florida is crucial to the health of the South Florida ecosystem. That health will be assured by the reestablishment of more natural flow. Several alternative plans were reviewed, as part of the USACE planning process, to address the lower basin and the Recommended Plan was identified in the 1992 Chief's Report. The Recommended Plan, authorized in WRDA 1992, included a follow up study to address the Kissimmee River Headwaters Revitalization. That study which included structural features and a new regulation schedule for S-65 was authorized in WRDA 1996.

The plan involves reestablishing historic hydrologic conditions, recreating the historical river/floodplain connectivity, recreating the historic mosaic of wetland plant communities, and restoring the historic biological diversity and functionality. The plan components include: modifying the operation lakes Kissimmee, Hathcineha, and Cypress via a new regulation schedule for Structure 65; enlargement of Canals 36 and 37; backfilling 22 miles of Canal 38; excavation of nine miles of new river channel; removal of two water control structures and locks; and land acquisition [Lower Basin Land Acquisition (SFWMD 68,332 acres) and Upper Basin Land Acquisition (SFWMD 36,763 acres)]. The project will restore the ecological integrity of the historical Kissimmee River/floodplain ecosystem by recreating 40 square miles of the river/floodplain ecosystem, including re-establishing flow to 43 miles of contiguous meandering river channel and 27,000 acres of wetlands.

A comprehensive evaluation program for tracking the environmental response to the plan is in place to gauge the success of meeting goals for ecological integrity for the river and the floodplain. This program predicts and tracks resulting ecological changes that are expected, including changes in hydrology, water quality, and major biological communities such as plants, invertebrates, fish, and birds. Evaluation research is required to be continued by the SFWMD for at least 5 years following implementation of post construction operations, including the Headwaters Revitalization Schedule for Lake Kissimmee, (projected for 2025), or until environmental responses stabilize.

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The following project features have been completed: Canal 38 Reach 1 backfilling (2001), Canal 35 maintenance dredging (2001), Structure 65 enlargement (2001), Structure 65A gate extension (2001), Canal 36 widening (2003), U.S. Highway 98 bridge openings (2004), Structure 84 spillway addition (2007), Radio tower (2007), Structure 65DX2 grade control structure (2007), Canal 38 reach 4A backfilling (2007), Structure 68 spillway addition (2009), Canal 38 Reach 4B backfilling (2009), Structure 65DX2 Retrofit, Istokpoga Boat Ramp (2010), Structure 68A spillway (2011), Structure 65DX1 Modifications (2011), Oxbow Excavation and Embankment (2012), Reaches 2 and 3 Oxbow Excavation (2012), Canal 37 Enlargement and Miscellaneous Features (2012), Structure 67 Erosion Repairs (2012), Structure 65D Boat Ramp (2013), CSX Railroad Bridge (2013), Canal 37 Enlargement and Miscellaneous Features (2013), River Acres Supplemental Works (2015), Structure 65EX1 Spillway (2015), the MacArthur Ditch Backfilling (2016), Canal 38 Reach 3 Backfill and Bass Embankment Degrade (2016), and C-37 Embankment Armoring (2019).

Current Status: The SFWMD has acquired 99% of the 102,061 acres of land needed to fully implement the Headwaters Schedule and complete the restoration. The USACE has reestablished the natural flow in 30 of 44 miles of historic river channel (~22 miles in 2019-21, 4 miles reconnected in 2009, 4 miles in 2007 and 14 miles in 2001). A total of 27,000 acres of floodplain are physically restored and several species, including the Ring-necked Duck, American Avocet and Black-necked Stilt, have returned to the Kissimmee after an absence of 40 years. The USACE has completed backfill of 22 miles of the Canal 38 (lower basin) to date.

The USACE in coordination with the SFWMD is developing a phased implementation approach for post construction operations including developing an updated Environmental Assessment for implementation of the Headwaters Revitalization Schedule in 2025. The first phase of operations is scheduled for implementation in spring 2022. Post restoration monitoring is scheduled to begin after implementation of the full Headwaters Revitalization Schedule in 2025. A Post Authorization Change Report was approved by Congress in 2019 authorizing the USACE to credit the SFWMD, as the non-federal sponsor, for the cost of in-kind activities that are integral to achieving project benefits, which were outside USACE’s credit authority as part of the Water Resources Development Act of 1992.

Est. Cost: \$ 841,258,000

Project Schedule:

1994	Start
1999	Construction begun
2021	Scheduled Completion

Detailed Project Budget Information (rounded):

KRR	Investment THRU FY 2020
USACE	\$402,504,000
SFWMD	\$396,467,000
TOTAL	\$798,970,000

Hyperlinks:

http://www.saj.usace.army.mil/Portals/44/docs/FactSheets/Kissimmee_FS_April2016_web.pdf

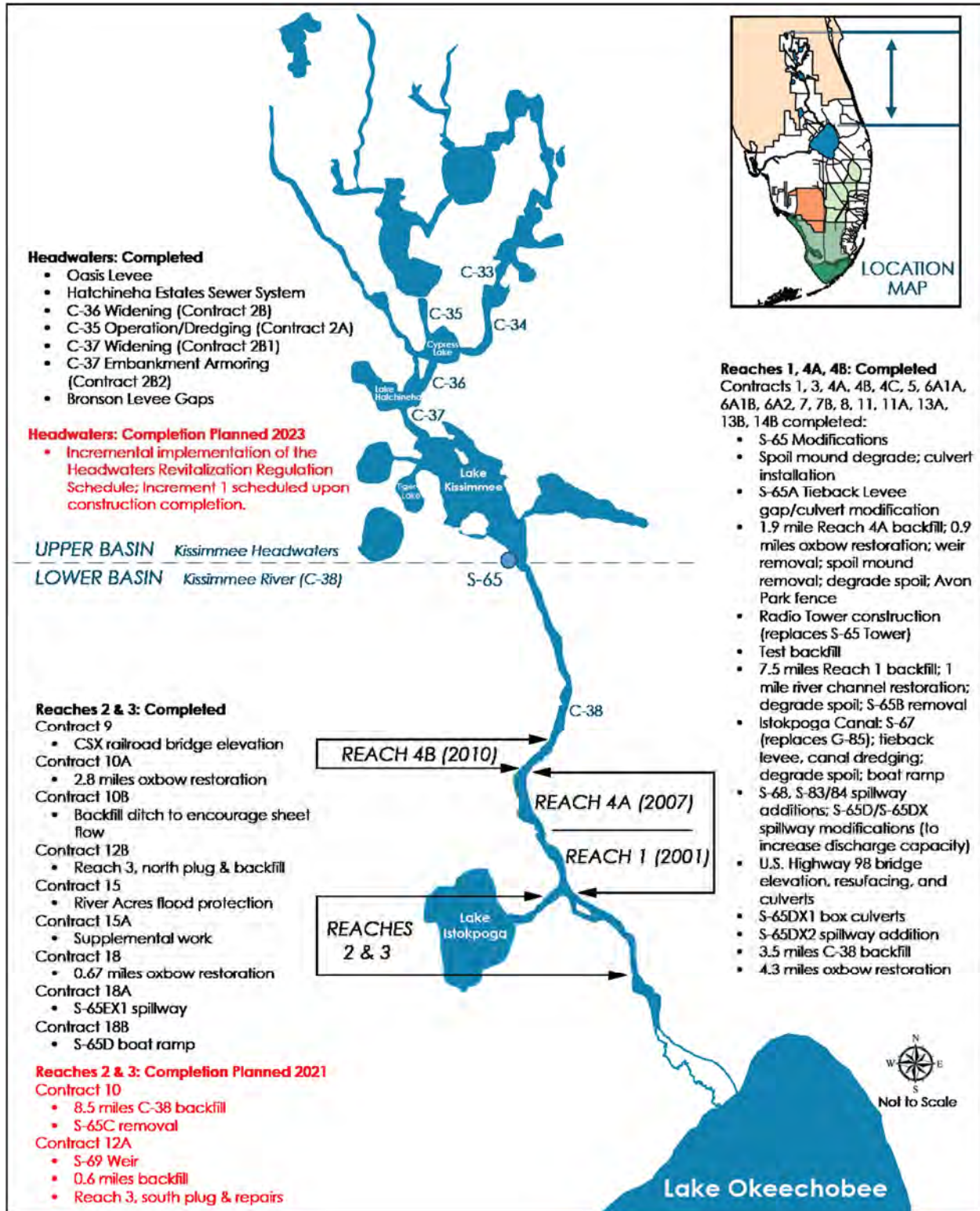
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Source: Project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Current status information was provided by the project manager. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.





Information for the 2021 Integrated Financial Plan
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Project Name: U.S. DOI Modified Water Deliveries to Everglades National Park
Mod Waters (MWD)
Project ID: 1307
Lead Agency: National Park Service
Authority: Everglades National Park Protection and Expansion Act of 1989 (Public Law 101-229)
Funding Source: DOI

Strategic Plan Goal(s) Addressed: **Primary:** 1-A.3 **Secondary:** 2-A.3, supports 3-B.1

Measurable Output(s):

- 11 miles of impediments removed
[Tamiami Trail (11 miles)]
- 109,000 acres of habitat acquired and improved
- Over 800,000 acres of wetlands enhanced by operational improvements facilitated by the project (large portions of WCA3A and Eastern Everglades National Park).

New Developments since last report: All construction components of both the Modified Water Deliveries (MWD) to Everglades National Park (ENP) project and the complementary C-111 South Dade project are now complete and operating. After four years of incremental operational testing of the new infrastructure the Combined Operations Plan was implemented in August 2020. Project features are functioning appropriately. NE Shark Slough is shifting vegetation towards longer hydroperiod adapted plants and ENP+WCA3A had the second best wading bird breeding year in the past 8 decades (2018 was best year, 2021 was close second) – suggesting that the new infrastructure is enabling significant improvements to ecological conditions across the Gulf Coast of ENP during years of above-average rainfall.

Project Background: In 1989, Congress approved the Everglades National Park Protection and Expansion Act for the purpose of modifying the Central and Southern Florida (C&SF) Project to improve water deliveries to ENP, and to take steps to restore the Park's natural hydrologic condition.

Hydrological improvements are crucial to restoring ecosystem productivity in the southern Everglades and maintaining adequate freshwater inflow to downstream estuaries along the Gulf of Mexico and Florida Bay. Addressing the effects of the Tamiami Trail (U.S. 41) is a major component. The roadway was built in the 1920s so vehicles could travel between two of the earliest centers of population growth in southern Florida, Tampa and Miami. Decades later, restoration agencies identified the Tamiami Trail as one of the most serious threats to the health of the Everglades, as it acts like a dam stopping water flows from moving south. The MWD project authorized the U.S. Army Corps of Engineers (USACE), in consultation with the US Department of the Interior (DOI), to construct modifications of the C&SF Project water management system and related operational changes and “to the extent practicable, take steps to restore the natural hydrological conditions within the park” improving water deliveries to ENP.

The project design in the USACE 1992 General Design Memorandum (GDM) and Environmental Impact Statement (EIS), *Modified Water Deliveries to Everglades National Park, Central and Southern Florida Project for Flood Control and Other Purposes*, and subsequent supplements, specify the construction of structural features with the intended purpose of restoring conveyance between Water Conservation Areas (WCAs) north of ENP and the Shark River Slough, the dominant overland drainage feature of ENP, covering more than 10% of the surface area of ENP. The combined features can be operated to improve conditions for more than 800,000 acres of habitat, aid in the recovery of threatened and endangered species, and lay a foundation for future restoration efforts under the CERP.

In the 1992 GDM, the MWD project consists of four major components. All are necessary and work together to restore flows from WCA-3A to WCA-3B and under Tamiami Trail to the historic headwaters of the Northeast Shark River Slough in the Everglades Expansion Area:

- (1) **Flood Mitigation for 8.5 Square Mile Area (8.5 SMA):** a residential and agricultural area directly adjacent to expansion boundary in East Everglades, and tribal residential areas along U.S. 41;
- (2) **Conveyance and Seepage Control Features (CSCF):** facilitate flow through the system from WCA 3A to WCA-3B and limit seepage eastward from WCA-3B and ENP, including the re-establishment of the historic Shark River Slough flow ways;
- (3) **Tamiami Trail Modifications (TTM):** facilitate water flow beyond the road south into ENP; and
- (4) **Project Implementation Support (PIS):** includes monitoring and operational changes, an experimental program, development of a final water control plan, and raising Osceola and Tigertail Camps.

All of the 109,504 acres of land have been acquired in the East Everglades, including three commercial airboat operators and two radio tower facilities. Since completion of the 1992 GDM, scientific investigations identified revised ecosystem restoration requirements and potential design problems associated with some 1992 features. These requirements, in turn, resulted in the completion of supplemental NEPA documents for the 8.5 SMA component (July 2000) and the Tamiami Trail Modifications (TTM) component (January 2006, August 2008).

Historically, the project has been funded through the National Park Service (NPS) in the DOI as part of the NPS annual construction appropriations. Total appropriations through FY2018 to the NPS for the MWD project amount to \$418,850,530 and no additional appropriations are expected occur.

Current Status: All construction components of this project are completed and have been turned over to the SFWMD (the local sponsor). Operational testing and continues. The COP EIS is complete and signed on August 20, 2020. The EIS is approximately 2,500 pages in length (including appendices). USACE in Jacksonville reports no planned spending on the project for FY21. The project is considered closed, except for approximately ~\$1.3 M set aside due to pending litigation from one construction contractor.

Tamiami Trail Modifications (TTM):

The 1 mile bridge was transferred to the Florida Department of Transportation, with official notification on 1/26/2018. All spending on construction for this component is complete. Follow up activities occurring through Tamiami Trail next steps project.

Conveyance and Seepage Control (CSC):

This project component is considered complete. No funds are budgeted for this component in future years.

8.5 Square Mile Area (8.5 SMA):

This project component is complete and all features have been turned over to the SFWMD. This component provides flood mitigation to the 8.5 SMA developed area, to remove any adverse groundwater seepage impacts from the restoration of flows into the adjacent NE Shark River Slough wetlands.

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Performance concerns in this area are being addressed by a follow-up SFWMD construction project (<https://www.sfwmd.gov/news-events/news/sfwmd-governing-board-approves-curtain-wall-miami-dade-county>).

Project Implementation Support (PIS):

This project component continues and is budgeted through FY20. The public process for developing the EIS is complete.

Ecological Monitoring/NPS project support:

Ecological monitoring of the specific effects of this project is expected to extend through FY24. Ecological monitoring began in the fall of 2015 as the incremental testing of the conveyance and seepage facilities began. This project component is focused on verifying the expectation that the MWD project elicits a positive ecological response that trends in the direction of restoration of the historically expansive wetlands that occurred across ENP prior to regional drainage. This component of the project is on track for completion in 2024.

Est. Cost: \$418,850,530

Project Schedule: Start 1990, Finish 2020

Detailed Project Budget Information (agency appropriations to date and rounded*):

Components	Total Budgeted over entire project	Total spent over duration of project thus far
8.5 SMA S357N	\$176,296,855	\$176,542,514
Conveyance and Seepage Control (CSC)	\$34,195,663	\$34,157,230
Tamiami Trail Modifications (TTM)	\$135,932,944	\$135,912,951
Project Implementation Support	\$58,112,141	\$57,407,691
Ecological Monitoring/NPS project support	\$9,400,958	\$3,264,845
Total	\$413,938,561	\$407,285,231

Information on spending for FY20 is not yet available from USACE.

Ecological Monitoring/NPS project support spending through FY20 summarized, is on track for completion in 2024, USACE has neither budgeted nor spent funds on this project in FY 2021. An estimated \$1.3 M in 8.5 SMA S357N funds are being retained due to threat of litigation by a contractor who was constructing elements of the S357 pump station.

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>
(project is identified as the G-3273 and S-356 Pump Station Field Test)

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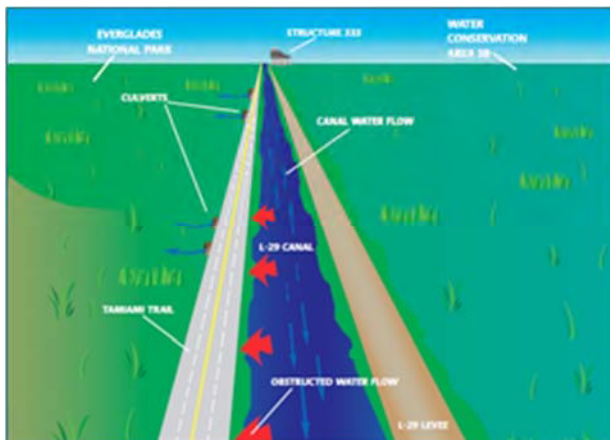
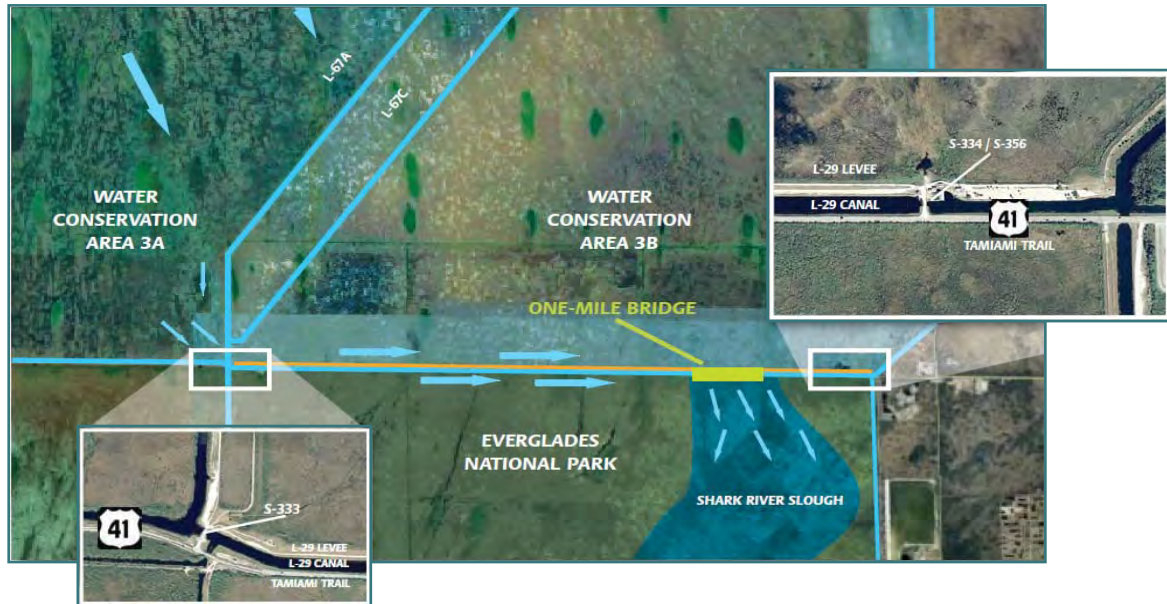
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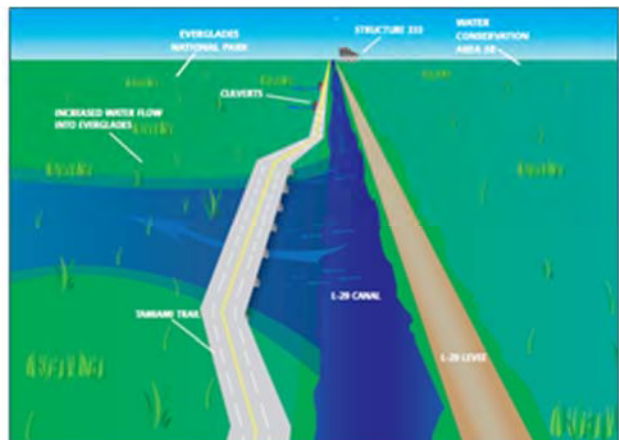
Source: Current status information and expenditure calculation were provided by the project managers. Cost estimate information is updated to reflect current budget approved and agreed to between USACE and DOI.

Additional Information:

TAMIAMI TRAIL MODIFICATIONS

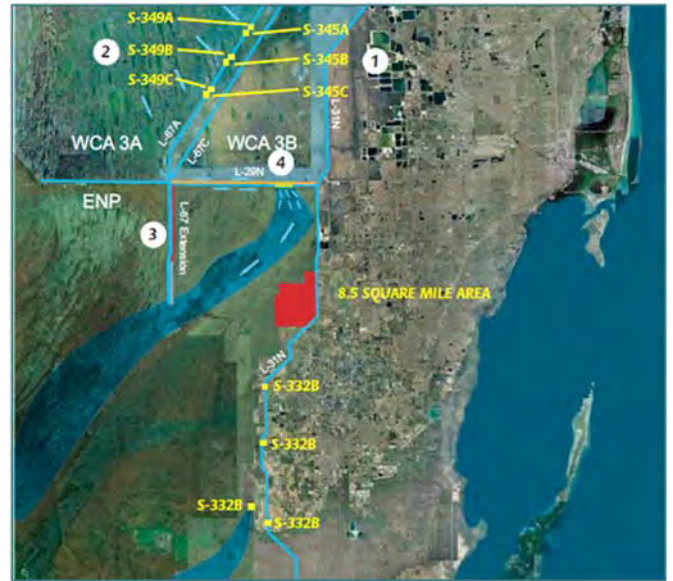
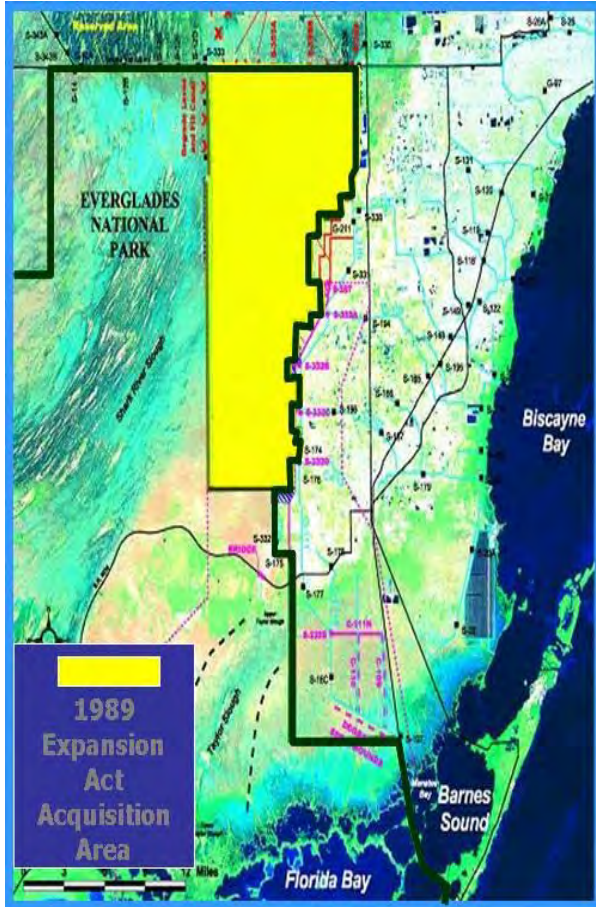


Pre-project condition of Tamiami Trail

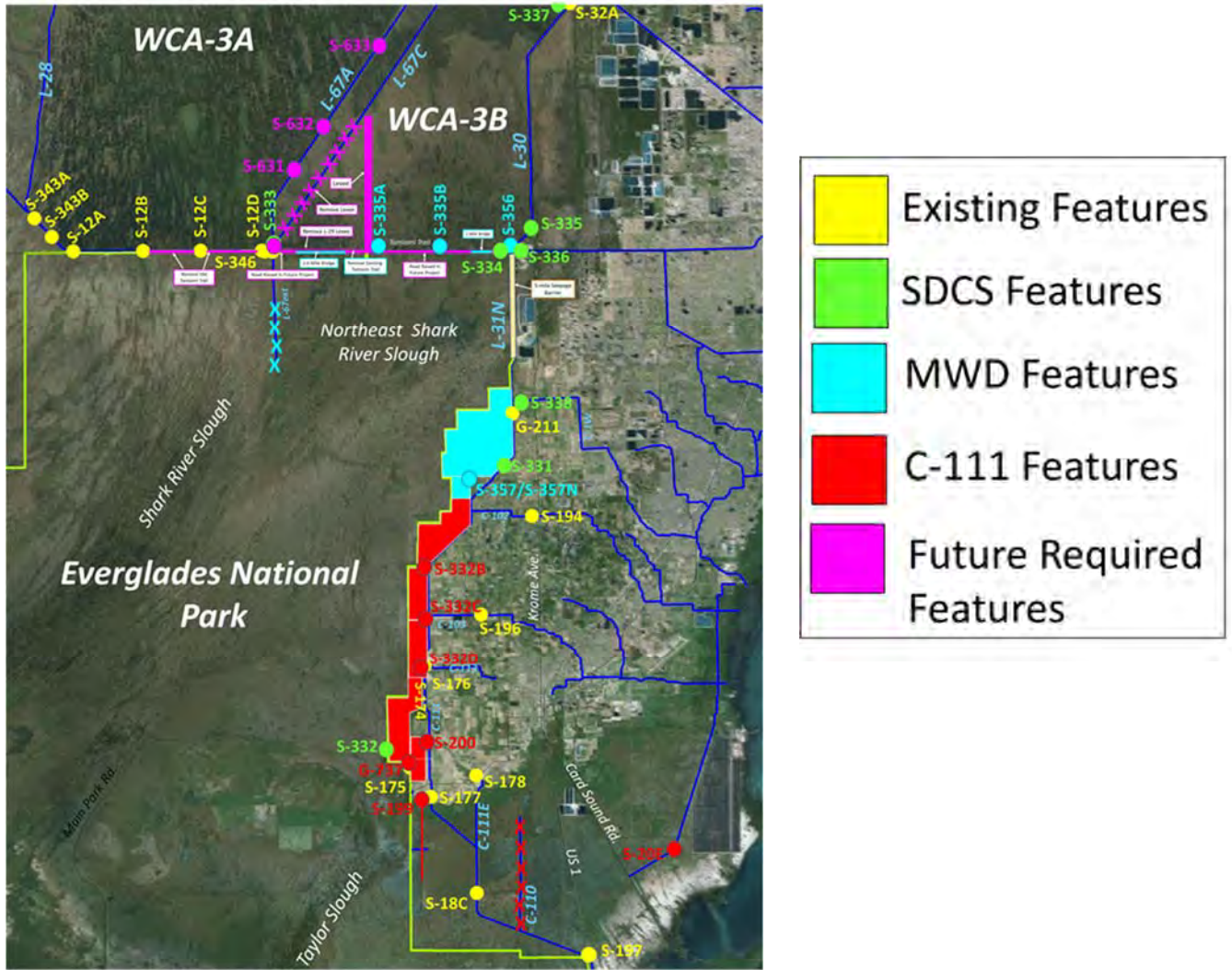


Current water flow with completed bridge

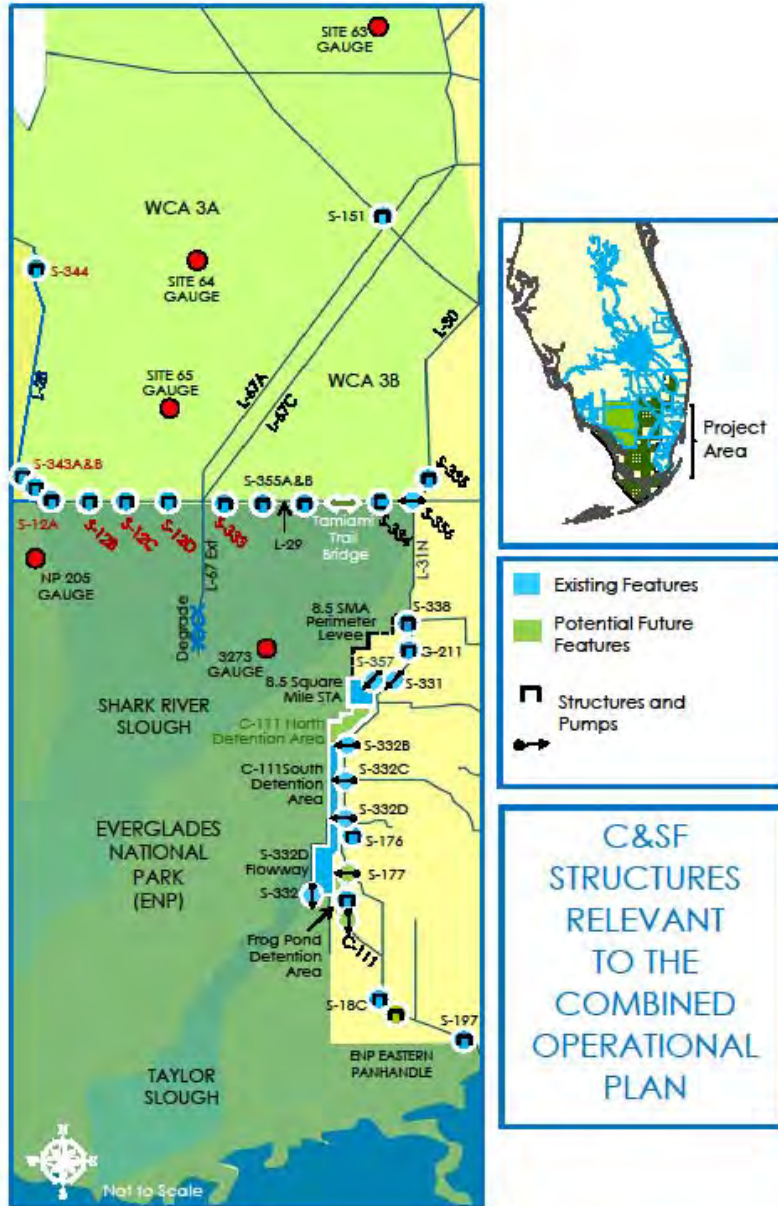
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Southeast Florida – Everglades and Adjacent Urban Areas



Map of the lower Water Conservation Areas, Everglades National Park, and south Miami-Dade County, showing the Modified Water Deliveries, C-111, and related water management features.



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Project Name: Tamiami Trail Modifications: Next Steps Project
Project ID: 1309
Lead Agency: DOI/NPS
Authority: H.R. 1105: Omnibus Appropriations Act of 2009 (P.L. 111-008, dated March 11, 2009)
Funding Source: DOI

Strategic Plan Goal(s) Addressed: 1-A.3

Measurable Output(s):

- 3.3 miles of bridging between S-333 and S-334 (10.7-mile section of Tamiami Trail)
- Elevation of the remaining 7-mile roadway to allow L-29 Canal stages to be raised consistent with the 9.7' design high water.
- Completion of an EIS and ROD that authorized the increased bridging and road raising needed to restore 107,600 acres of wetlands in NESRS and ultimately reconnect WCA-3 to Everglades National Park
- The EIS includes the justification for acquisition of the remaining commercial properties in NESRS. This \$25 million was approved by Congress in 2012
- Authorization by Congress in 2012 to construct the "Next Steps" Project
- Completion of the first phase of the project – the western 2.3-mile bridges in 2019
- Initiation of second phase construction – raising the 7 mile roadway, adding six small bridges, and stormwater management improvements in 2021

Project Synopsis: The 2009 Omnibus Appropriations Act (March 10, 2009) directed the NPS to evaluate bridging alternatives to the Tamiami Trail (10.7-mile eastern section), beyond what was authorized by the US Army Corps of Engineers 2008 Limited Reevaluation Report (Modified Water Deliveries Project), in order to "restore more natural water flow to Everglades National Park (ENP) and Florida Bay and for the purpose of restoring habitat within the Park and the ecological connectivity between the Park and the Water Conservation Areas."

The 2009 Omnibus Act directed the Army Corps of Engineers to immediately construct the 2008 LRR plan – a 1-mile bridge and the remaining road elevated to allow stages in the L-29 Canal to be raised from the current 7.5-foot elevation to elevations consistent with the revised design high water of 8.5 feet. Passage of the 2009 Omnibus Act was an acknowledgement that construction of the 1-mile bridge with 1-foot road elevation was only the first step, albeit an important one, to restoration of flows and ecological conditions in ENP.

Current Project Synopsis: The Final EIS was completed with publication of the Notice of Availability on December 20, 2010. The Record of Decision was published in the Federal Register on April 26, 2011. The Key finding in the FEIS/ROD is that an additional 5.5 miles of bridging and raising the balance of the 10.7-mile highway corridor are necessary to achieve the 2009 Omnibus Appropriations Act's restoration objectives. On December 23, 2011, Congress passed the Consolidated Appropriations Act of 2012 (Public Law 112-74) which authorized construction of the "Next Steps" project.

Phase 1: In 2013, the National Park Service committed \$7.5 million in federal funds toward the project design. The remaining Federal share has been allocated from a \$20 million FHWA TIGER Grant and NPS Federal Lands Transportation Funds (FLTP). In 2012, the NPS Director instructed Everglades National Park, in collaboration with the NPS Denver Service Center (DSC), to initiate the planning and design work for one of the four bridges authorized by Congress as a first phase in implementation of the project. The 2.6-mile bridge is located on the west side of the project corridor. In response to the NPS directive, DSC contracted a consulting engineer to assist with the work needed to complete the initial design work associated with this bridge. In addition, in August 2013, the Florida Department of Transportation (FDOT) agreed to provide \$90 million towards the construction of this feature. A Memorandum of Agreement (MOA) and Highway Easement Deed have been executed with the FDOT. The project was awarded in May 2016 and construction began in the summer of 2016.

Phase 1. Cost Estimate: Original Estimate; \$144,195,000 for construction and \$3,280,000 for planning. Final Construction Cost was \$73,201,000.

Current Status:

The single 2.6-mile western bridge was replaced by two bridges and a within corridor down ramp to provide access to Everglades Safari Park. This modified Phase 1 plan was completed in April 2019 and included two western bridges totaling 2.3 miles and 0.9 miles of elevated roadway.

Phase 2: In late 2017, the NPS began working with our Phase 1 partners from the FDOT and FHWA, to discuss options for the TTNS Phase 2 project. In February 2018 the Federal Highway Administration, and the Florida Department of Transportation each completed preliminary engineering studies and cost estimates of the eastern Tamiami Trail roadway modifications needed to accommodate the higher water levels anticipated under the CERP. In July 2018 the NPS convened an interagency Value Analysis/Choosing by Advantages workshop to recommend a path forward for completing the Tamiami Trail Next Steps Project. The team reevaluated the benefits expected by the original recommended plan (5.5 miles of additional bridging) the current Phase 1 plan (a total of 3.3-miles of bridging) and several additional EIS bridging alternatives. The team determined that the TTNS project benefits could be largely achieved by raising the remaining 6.5-miles of remaining roadway, adding six smaller bridges with 60-72 feet of opening each, replacing the remaining roadway culverts in-kind, and adding stormwater swales. These recommendations are documented in a report entitled *Tamiami Trail Next Steps Phase II Roadway and Conveyance Improvements, Value Analysis Final Report* dated September 28, 2018.

In October 2018, as traffic was about to be routed onto the TTNS phase 1 bridges, Governor Rick Scott announced that the State of Florida would contribute \$43.5 million to design and construct the TTNS phase 2 project. In December 2018, the NPS completed a NEPA reassessment of this recommended phase 2 plan, which was documented in a report entitled: *Confirmation of Previous Analyses of the Tamiami Trail Next Steps Final EIS, Addressing Modifications to the Authorized Plan, Based on Recommendations from a 2018 Phase 2 Value Analysis Workshop*. Also in December 2018, the NPS submitted a grant application for \$60 million to the FHWA's Nationally Significant Federal Lands and Tribal Projects (NSFLTP) Program to provide matching federal funding to complete this project. In June 2019, the NPS received notification that the FHWA grant application was approved.

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An October 2019 VA workshop recommended several additional modifications to the Phase 2 plan: replacing the six proposed 72-foot wide culverts with 60-foot wide slab bridges, enlarging the swale system treatment capacity by 50% to meet the Outstanding Florida Water (OFW) designation for ENP, adding three turning lanes to improve traffic safety at the Coopertown and Gator Park commercial sites, the Airboat Association, and adding a new access lane, diagonal parking, retaining walls, and wider shoulders for improved safety at the Miccosukee Tigertail Camp.

Phase 2. Cost Estimate: Original Estimate; \$100,000,000 for construction and \$3,500,000 for planning. Current Project Cost is \$53,000,000 for construction with the award of a fully executed contract in September 2020.

Total Project Budget Information (rounded): (000s)

Bridge and Roadway Construction	\$60,000	NSFLTP
	\$40,000	FDOT
Project Planning for Phase 2	\$3,500	FDOT
DSC and EVER Project Staff	\$550	FLTP
Total	\$104,050	

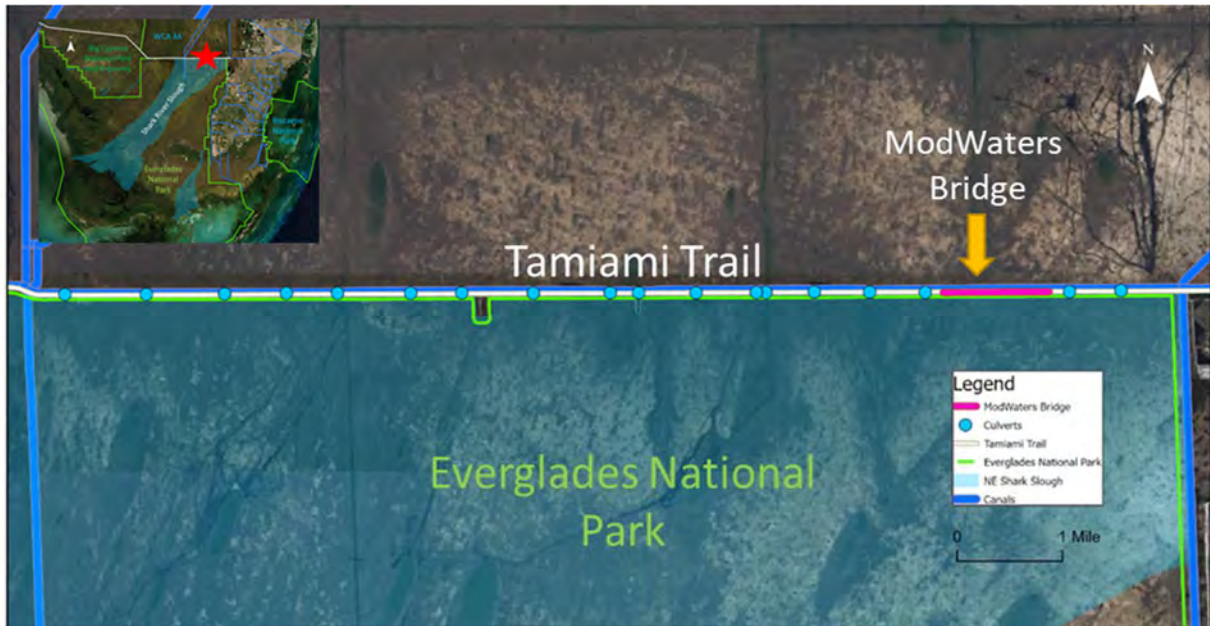
Hyperlink: <http://www.nps.gov/ever/naturescience/nessrestoration.htm>

Contact: Robert Johnson, Department of the Interior
robert_johnson@contractor.nps.gov

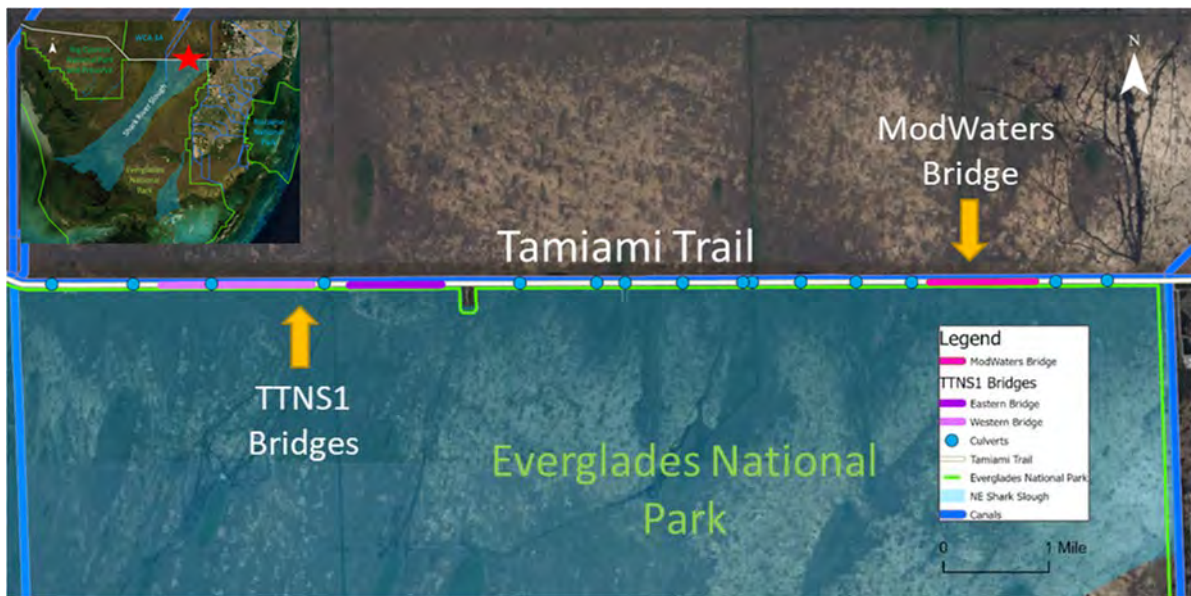
Sources: Tamiami Trail Modifications: Next Steps Final Environmental Impact Statement, December 2010
Memo-to-File, Tamiami Trail Modifications: Next Steps Project-Adequacy of National Environmental Policy Act Documentation, May 2014
Memo-to-File, Tamiami Trail Modifications: Next Steps Project Phase 2 - Memorandum to File National Environmental Policy Act Documentation, April 2020

Current Status:

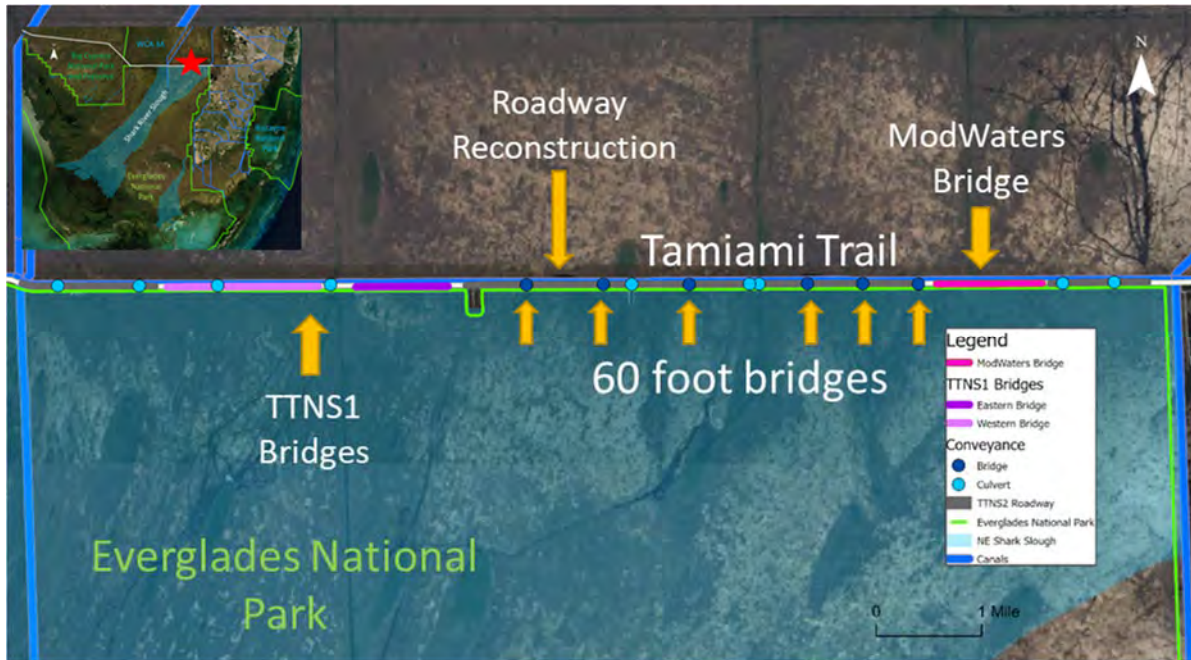
The conceptual design was completed and FDOT posted the RFP in March 2020. FDOT selected General Asphalt Jones Benitez Joint Venture (GAJV) as the contractor with the lowest responsive bid (\$53M) for the TTNS2 project in August 2020. Design for two of the three segments of roadway has been completed as of July 2021, however early construction efforts started in April 2021. The construction is expected to be complete in Summer of 2024.



Tamiami Trail water conveyance after Modified Water Deliveries Project. One mile bridge on eastern side.



Tamiami Trail water conveyance after Phase 1 of the Tamiami Trail Next Steps Project. Two bridges on west side, approximately 2.3 miles of bridging for a total of 3.3 miles of bridges.



Tamiami Trail water conveyance after Phase 2 of the Tamiami Trail Next Steps Project. Reconstruction of 7 miles of existing roadway, construction of 6-60 foot bridges, and replacement of 7 culverts with larger culverts.

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Project Name: C&SF: CERP Southern CREW Project Addition/ Imperial River Flowway
Project ID: 1310
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State
Strategic Plan Goal(s) Addressed: **Primary** 1-A.3 **Secondary:** 2-A.3

Measurable Output(s): 4,090 acres of restored wetlands (*proposed footprint*)

April 1999 (Restudy) Project Synopsis: The *Central and Southern Florida Project Comprehensive Review Study* (Restudy) included an (OPE) under Programmatic Authority for the acquisition and restoration of 4,670 acres of land, replacement of the Imperial Bonita Estates Bridge on the Imperial River, and replacement of the Kehl Canal Weir in southern Lee County, adjacent to Corkscrew Sanctuary; clearing and snagging on Imperial River, Estero River and Halfway Creek, reconnection of Spring Creek and Halfway Creek under U.S. I-75, and replacement of the Imperial Bonita Estates bridge.

WRDA 2000 approved this project as part of the Plan (CERP), but with the limitation that the Southern Corkscrew regional ecosystem “watershed addition should be accomplished outside of the scope of the Plan”.

Current Project Synopsis: The same as the Restudy.

Current Status: Portions of this project are currently being pursued under a different program. Please see Project ID 1303.

Est. Cost: \$78,774,000

Project Schedule: The CERP project has not begun.

Detailed Project Budget Information (rounded):

CERP Southern CREW Project Addition/ Imperial River Flowway	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Contact:

Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source:

Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

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Project Name: C&SF: CERP Seminole Big Cypress Reservation Water Conservation Plan (OPE)
Project Name: 1409 (CERP Project WBS # 96)
Lead Agency: USACE / Seminole Tribe of Florida
Authority: Not authorized.
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other supports 3-A.4 and 3-B.1

Measurable Output(s): Plan to reduce phosphorus level.

April 1999 Project Synopsis: Legislative funding limits of the Critical Projects program (see E&SF Critical Projects sheet) prevented inclusion of the 'east' portion and had only allowed only the 'west' portion of this project to be nominated as a Critical Project. With uncertainty around funding the remaining 'east' portion, the "combined" project was recommended as an OPE in the CERP. The Restudy included construction of water control, management, and treatment facilities to improve the quality of water and runoff from phosphorus generating agricultural sources within the Reservation.

Current Project Synopsis: The proposed comprehensive watershed management system is designed to achieve environmental restoration on the Seminole Big Cypress Reservation located in Hendry County, north of the Big Cypress Preserve, and the Everglades Protection Area. The overall plan has been divided into east and west portions, each of which can provide independent benefits. In addition, the project will reduce flood damage and promote water conservation. The removal of pollutants will be achieved using natural treatment processes in pretreatment cells and water storage areas. A phosphorus level of 50 ppb is the goal; also the level to be achieved by STAs in the Everglades Construction Project.

Should design performance levels for phosphorus become more stringent, this project has sufficient flexibility to incorporate additional alternative technology.

Current Status: The Project Cooperation Agreement (PCA) between the STOF and the Corps was executed in 2005. Construction of the east conveyance canal system (2003), Basin 1 (2008), and Basin 4 (2013) is complete. Basin 2 construction contract was awarded September 2013. Construction completed in 2016. An Engineering Documentation Report and associated National Environmental Policy Act (NEPA) documentation has been approved to remove Basin 3 from the federally authorized project. In addition, an amendment to the Project Cooperation Agreement (PCA) to remove the feature from the project was executed.

Est. Cost: \$ 145,573,000

Project Schedule: TBD.

Detailed Project Budget Information (rounded):

Seminole Big Cypress Reservation WCP	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

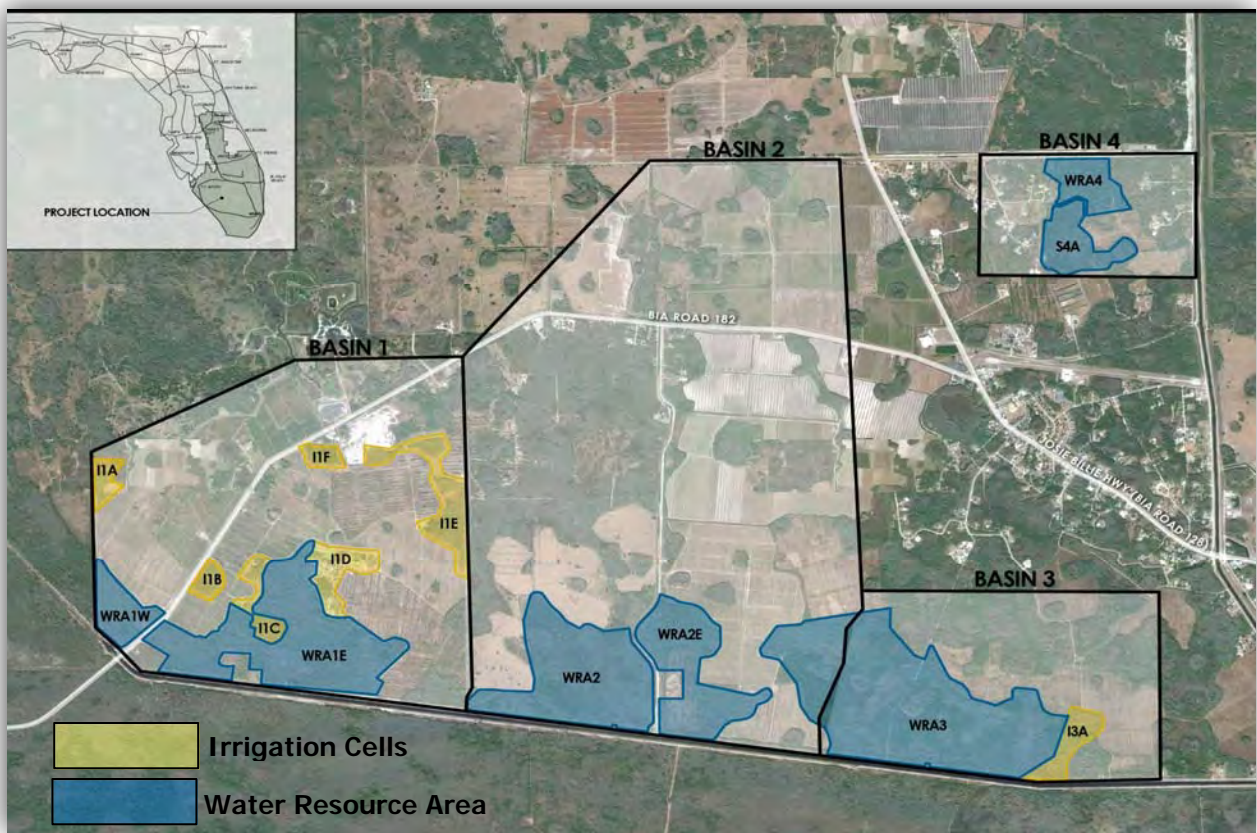
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Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Cherise Maples, Interim Director of Environmental Resource Management Department, Seminole Tribe of Florida (954) 965-4380, cmaples@semtribe.com

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019).



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Program Name: Infrastructure
Project Name: C&SF: CERP Lake Okeechobee Regulation Schedule) (F)
Project ID: 1419
Lead Agency: USACE / SFWMD
Authority: No Congressional action is required
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other - supports 1-A.1

Measurable Output(s): Water management change

April 1999 (Restudy) Project Synopsis: The Lake Okeechobee Regulation Schedule will be modified in order to take advantage of the additional storage facilities identified in the construction features. Two additional zones will be added to the schedule. The first zone will trigger discharges to the north of Lake Okeechobee reservoir and the Everglades Agricultural Area reservoir. The second higher zone will trigger the Lake Okeechobee aquifer storage and recovery facilities to begin injecting water from the Lake. Climate based forecasting will be used to guide management decisions regarding releases to the storage facilities.

It is anticipated that all flood control releases through the C-43 and C-44 Canals will be eliminated with the exception of emergency zone A. Zone A levels are expected to be similar to the levels that occur in the current regulation schedule Run 25, however, the number of times that the Lake is above zone A is expected to be dramatically reduced.

Current Project Synopsis: Currently, the Lake is being operated according to the Lake Okeechobee Regulation Schedule (LORS) 2008 until repairs to the Herbert Hoover Dike (HHD) are complete in 2022. The goal of the LORS 2008 is to operate Lake Okeechobee at lower pool elevation while repairs to Herbert Hoover Dike are completed. The Lake Okeechobee System Operating Manual (LOSOM) effort kick-offed in October 2018. The LOSOM effort is re-evaluating Lake Okeechobee operations to coincide with the completion of HHD rehabilitation in 2022. The goal of the LOSOM effort is to incorporate flexibility in Lake Okeechobee operations, while balancing the congressionally authorized project purposes for flood control, water supply, recreation, navigation, environmental effects to fish and wildlife, and cultural and recreational resources. The LOSOM effort is also considering the future Comprehensive Everglades Restoration Plan (CERP) infrastructure that will provide additional flexibility in the C&SF system. The LOSOM objectives are to manage risk to public health and safety, life and property; Continue to meet authorized purposes for navigation, recreation and flood control; Improve water supply performance; and Enhance ecology in Lake Okeechobee, northern estuaries and across the south Florida system. The result of the LOSOM effort will be a new water control plan (schedule and operational guidance) for Lake Okeechobee and the accompanying National Environmental Policy Act (NEPA) documentation in late 2022 to coincide with the rehabilitated Herbert Hoover Dike. The current LORS 2008 and the LOSOM are considered non-CERP intervening activities. The first phase of the CERP LORS component (F) will commence based on completion of the EAA reservoir. The second phase would be completed based on north of Lake Okeechobee storage construction.

Est. Cost: TBD (C&SF O&M)
Schedule: Completion in late November 2022
Regulation Schedule revisited when appropriate as other facilities come on-line.
Hyperlink: <https://www.saj.usace.army.mil/LOSOM/>
Contact: Tim Gysan, Senior Project Manager, Ecosystems Branch, Programs and Project Management Division, USACE, Earl.T.Gysan@usace.army.mil
Source: Original project descriptions summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*.

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Project Name: C&SF: CERP Modify Holey Land Wildlife Management Area Operation Plan (DD)
Project ID: 1420 (CERP Project WBS # 15)
Lead Agency: USACE / SFWMD
Authority: No Congressional action is required
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 2-A.3

Measurable Output(s): Operational changes and water deliveries TBD

April 1999 (Restudy) Project Synopsis: Several operational components were recommended after evaluation on a regional scale using the South Florida Water Management Model, to analyze regional hydrologic effects. More detailed planning will be necessary to develop the optimum modifications to the C&SF project. Costs to implement these features were not estimated. Most measures will be implemented in association with related construction features and it is assumed costs will be borne by the appropriate affected utilities.

Current Project Synopsis: Water deliveries made to Holey Land from the Rotenberger Wildlife Management Area or from Stormwater Treatment Area 3/4 if Rotenberger flows are insufficient. The deliveries are assumed to be of acceptable water quality. Modification to the current operating plan and rules for Holey Land Wildlife Management Area will be made to implement rain-driven operations for this area to improve the timing and location of water depths within this wildlife management area.

Current Status: This project has not begun and it will be implemented in the future using existing authorizations.

Est. Cost: \$0 (*no budget*)

Project Schedule: TBD

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*.

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Project Name: C&SF: CERP Modify Rotenberger Wildlife Management Area Operation Plan (EE)
Project ID: 1421 (CERP Project WBS # 16)
Lead Agency: USACE / SFWMD
Authority: No Congressional action is required
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 2-A.3

Measurable Output(s): Operational changes and water deliveries TBD

April 1999 (Restudy) Project Synopsis: Several operational components were recommended after evaluation on a regional scale using the South Florida Water Management Model, to analyze regional hydrologic effects. More detailed planning will be necessary to develop the optimum modifications to the C&SF project. Costs to implement these features were not estimated. Most measures will be implemented in association with related construction features and it is assumed costs will be borne by the appropriate affected utilities.

Current Project Synopsis: These new operational rules are intended to improve the timing and location of water depths within the Rotenberger Wildlife Management Area. Modification to the current operating plan for the Rotenberger Wildlife Management Area will be made to implement rain-driven operations for this area as needed. Water deliveries are made to the Rotenberger Area from Stormwater Treatment Area 5.

The water deliveries are assumed to be of acceptable water quality.

Current Status: This project has not begun and it will be implemented in the future using existing authorizations.

Est. Cost: \$0 (*no budget*)

Project Schedule: TBD

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*.

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Program Name: Infrastructure
Project Name: C&SF: CERP Modifications to Southern L-31N and C-111 (OO)
[F/k/a *Operational Modification to Southern Portion of L-31N and C-111 (OO)*]
Project ID: 1422
Lead Agency: SFWMD / USACE
Authority: No Congressional action is required
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 3-B.1

Measurable Output(s): Modified operations

April 1999 (Restudy) Synopsis: Modifications to the operations of the C-111 project, currently under construction, will be made to the southern portion of L-31N Borrow Canal and C-111. These operational modifications will be made to improve deliveries to Everglades National Park and decrease flood risk of adjacent agricultural areas in the Lower East Coast Service Area.

Current Status: The first part of the operational changes are being implemented in conjunction with the Combined Operational Plan (COP) analysis component associated with the C-111 (South Dade) and Modified Water Deliveries to Everglades National Park projects (MWD). The balance of changes will be implemented in coordination with other CERP implementation.

Est. Cost: \$ 0 budget

Schedule: *Implement as part of C-111 (South Dade) project (Task Force ID #1300).*

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*.

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Program Name: C&SF: CERP PLA/Information and Data Management
Program ID: 1437
Lead Agency: USACE / SFWMD
Authority: Design Agreement

Strategic Plan Goal(s) Addressed: Other – Program Support

April 1999 (Restudy) Program Synopsis: While not specifically described in the Restudy, the CERP Master Program Management Plan (MPMP) called for the creation of a shared data network. The MPMP directed implementation of these activities under the guidance of the Program Controls Management Plan.

Current Program Synopsis: The Design Coordination Team (DCT) recommended the creation of a Program Management Plan (PMP) for CERP Information and Data Management (IDM). The Corporate Review Group (CRG) and the Project Review Board (PRB) approved this concept. The initial Information and Data Management PMP (February 26, 2002) included the functional areas of GIS and engineering data. Responsibility for these areas of infrastructure, World Wide Web services and electronic document management moved to Information and Data Management with the adoption of a revised PMP in 2007.

Under this program, the South Florida restoration effort operates a common information system used to collaborate during the planning, engineering, construction, and post-construction phases of the program. This common information system is accessible, upon request, to all Program/Project Delivery Team (PDT) members in the performance of their current and future roles. Much of this data is also made available to the public as projects move out of the developmental stage and into design and construction. Sharing information by all participating agencies increases efficiency, avoids duplication, and provides reliable short term and long term repositories for CERP data.

The data Quality Assurance and Oversight function, responsible for the quality of scientific data collected for the entire CERP program, was also incorporated into Information & Data Management with the 2007 PMP. The QAOT manages the QASR manual which lays out the protocols and procedures for environmental data gathering activities for the implementation of CERP. Efforts in 2011 concentrated on methods for collecting ecological and biological data and culminated with the development of CGM 40 for Project Level Monitoring Plans effective April 2, 2012. Biennial Quality Assurance Reports (QAR), compile QA information for CERP projects and programs and were released in 2009, 2011, and 2013, and 2015 covering data sampled for a two year period from May 1 to April 30. The QAOT's PMP is updated in conjunction with the IDM PMP.

Current Status: IDM Programmatic activity is currently a combination of information services and systems that support the project and program level activities of CERP and other South Florida restoration programs. The IDM program developed a database for monitoring data from the CERP program specifically for data that cannot be stored in the SFWMD's DBHydro database. The IDM program ensures that data are appropriately stored for the life of the CERP.

The Quality Assurance Oversight Team (QAOT) is preparing the Biennial Quality Assurance Reports (QAR), compiling QA information for CERP projects and programs, for release in 2021 covering data sampled from May 1, 2018 to April 30, 2020. The QAOT's PMP is updated annually in conjunction with the IDM PMP.

Detailed Project Budget Information: *Funding is part of the overall Program-Level Activities budget.*

Contact: Matthew Morrison, Project Manager, SFWMD mjmorris@sfwmd.gov
Pam Lehr, QAOT Co-Chair, SFWMD plehr@sfwmd.gov

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Program Name: C&SF: CERP PLA/Inter-Agency Modeling Center (IMC)
Program ID: 1438
Lead Agency: USACE / SFWMD
Authority: Master Program Management Plan

Strategic Plan Goal(s) Addressed: Other – Program Support

Measurable Output(s): Critical models and modeling results.

April 1999 (Restudy) Program Synopsis: While the authority for the IMC Program Management Plan (PMP) was not specifically mentioned in the Water Resources Development Act of 2000 it is implicit in the Design Agreement between the Department of the Army and the South Florida Water Management District; and in the Master Program Management Plan that the modeling needs of CERP implementation must be met in a sufficient and adequate manner.

Current Program Synopsis: Good program and project management require unique and complex modeling to execute CERP implementation. System-wide computer models are important tools used to simulate South Florida hydrology and water management, and to evaluate the system-wide performance of the Plan.

A collaborative state and federal interagency effort, the Interagency Modeling Center (IMC), was established in 2003 to provide a centralized pool of resources and expertise to promote greater efficiency and consistency in the hydrologic and ecologic modeling that supports CERP planning. It provides, coordinates, and oversees the modeling needs and efforts for CERP both at the Program Coordination level, such as modeling that will be needed for the MISP scheduling updates, and at the project level for individual project analyses. Modeling needs for individual project analyses are addressed by Project Delivery Teams (PDTs) and consultants but are coordinated through the IMC to insure consistency with the regional model, for model selection, and appropriate application of project-level models.

Since its inception, the IMC has performed thousands of regional model simulations to support CERP projects and RECOVER evaluations; and has responded to hundreds of requests from CERP projects for review of modeling strategies, scopes of work and reports of project-level model applications. In addition, IMC modelers provide liaison services to PDTs and RECOVER to facilitate their interaction with the IMC.

The primary regional models covering most of the CERP domain are the South Florida Water Management Model (SFWMM) and the Regional Simulation Model (RSM). Other sub-regional models are often used in conjunction with the SFWMM when finer detail for a portion of the CERP domain is needed, or when the project falls outside the domain of the SFWMM.

The RSM encompasses a family of next generation regional and sub-regional models that have been applied to certain basins/watersheds to provide more accurate representations of performance under the CERP. The Natural System Regional Simulation Model (NSRSM) has been released and is a superior representation of the pre-drainage system. NSRSM has been presented to RECOVER as an additional tool for the understanding of pre-drainage hydrology in south Florida with the intention that this tool will replace the Natural System Model (NSM) in the near future.

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Current Status: Version 7.0 of the SFWMM was released in 2016. This version of the model is being updated to extend the period of record through 2016, update land use, topography, and enhance the model code. A POR extension to encompass the years 1965 through 2016 was completed in 2020 for the RSM –BN and RSM-GL regional models. RSM model updates focusing on system conceptualization and post processing tools are ongoing to improve model performance. Additional updates will be performed as required for planning and evaluation of CERP projects.

Sub-regional implementations of the RSM has been successfully completed for several projects like DECOMP and CEPP. Project-level modeling will continue to be coordinated by the IMC to insure consistency with regional models and for appropriate model applications. Ecological models, which have been under development outside of the IMC, will continue to be implemented in the IMC to facilitate the evaluation of ecological response to CERP projects.

Detailed Project Budget Information: *Funding is part of the overall Program-Level Activities budget.*

Contact: Jaime Graulau-Santiago, Engineering Division, USACE
Jaime.A.Graulau@usace.army.mil

Clay Brown, Senior Engineer, SFWMD
Mcbrown@sfwmd.jotero@sfwmd.gov

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Program Name: C&SF: CERP PLA/Environmental and Economic Equity (EEE)
Program ID: 1439
Lead Agency: USACE / SFWMD
Authority: Executive Order E012898 (1994)

Strategic Plan Goal(s) Addressed: Other – Program Support

The 1994 Executive Order 12898 directed Federal agencies to make “Achieving Environmental Justice” part of their missions; and requires these agencies to identify and address adverse environmental effects of their programs, policies, and activities on minority and low-income populations, U.S. territories, Commonwealths, and Indian tribes.

April 1999 (Restudy) Program Synopsis: Not specifically described in the *Central and Southern Florida Project Comprehensive Review Study* (Restudy).

Current Program Synopsis: Economic Equity and Environmental Justice are integrated into restoration efforts. Federal laws and executive orders (EO) directed Federal agencies to promote economic equity and environmental justice through fair treatment of all persons regardless of color, creed, belief, or national origin; and to ensure that no group of people, including racial, ethnic, or tribal groups bear a disproportionate share of the negative environmental impacts resulting from industrial, governmental operations, or execution of Federal actions or local programs or policies.

In WRDA 2000, Congress specifically recognized the importance of ensuring that small business concerns, including those owned or controlled by socially and economically disadvantaged individuals and persons with limited English proficiency, are provided with assistance and educational opportunities to review, comment on, and participate in the development and implementation of the CERP. This law also recognized the importance of ensuring to the maximum extent practicable that public outreach and assistance, and educational opportunities are provided to all and every citizen of South Florida including low-income populations and minority populations. The U.S. Army Corps of Engineers District Jacksonville, Florida, under its Environmental and Economic Equity and Outreach program, has targeted efforts to ensure that these opportunities are provided to realize Everglades Ecosystem restoration benefits to both the natural and human systems, and to ensure the complete success of the CERP.

The USACE and SFWMD co-chair the Environmental and Economic Equity Program, which supports mitigation of adverse socio-economic, socio-ecological, and environmental effects that may result from CERP. The Environmental and Economic Equity Program Management Plan (PMP) states six objectives. One objective is to provide relevant, timely, valid and reliable socio-economic and environmental justice baseline data for system-wide and project specific assessments. Baseline data will include, but not be limited to, demographic, economic, water use, conservation and land use data.

The USACE’s environmental justice mission, embodied in its environmental and economic equity and outreach program, sees this guiding principle as critical to the long-term success of the Federal Government continuing responsibility to ensure that civil works projects are implemented in ways that do not result in disproportionate impacts on any community(s); and to assure that All Americans, including the unique cultural and ethnic diversity of South Florida’s populations, live in “safe, healthful and aesthetically and culturally pleasing surroundings.”

The Project Delivery Team (PDT) technical efforts had identified, assessed, and addressed potential negative impacts of socio-economic, socio-ecological and environmental effects on the people of South Florida, including low-income and minority populations. More than fifteen CERP and CERP-related contracts, valued at over \$40 million (2007 prices), were awarded to socially and economically

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disadvantaged firms between 2004 and 2009. In addition, the USACE participated in over 70 business outreach events in South Florida to educate newly qualifying companies about contracting processes and opportunities with the USACE and other Federal agencies.

The 2007 PMP was reviewed by both USACE and SFWMD but was not budgeted for in subsequent fiscal years. The PMP emphasizes meaningful participation by local communities, as well as collection of data, to support resulting analyses and mitigation of any adverse impacts on the human environment.

Current Status: The project has been put on hold since FY 2008, due to budget restrictions. Both USACE and SFWMD work to engage the economically disenfranchised by providing information via web, www.evergladesrestoration.gov, <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/> and www.sfwmd.gov that are 508 compliant, as well as public meeting forums in a variety of accessible locations.

Detailed Project Budget Information: *Funding is part of the overall Program-Level Activities budget.*

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jennifer Leeds, Program Manager, SFWMD
jleeds@sfwmd.gov

Program Name: C&SF: CERP PLA/REstoration COordination and VERification (RECOVER)
Program ID: 1441
Lead Agency: USACE / SFWMD
Authority: WRDA 2000; Master Program Management Plan (USACE and SFWMD 2000a); Design Agreement between the Department of the Army and the South Florida Water Management District for the Design of Elements of the Comprehensive Plan for the Everglades and South Florida Ecosystem Restoration Project (USACE and SFWMD 2000b); Programmatic Regulations for the Comprehensive Everglades Restoration Plan; Final Rule (DOD 2003)

Strategic Plan Goal(s) Addressed: All - Program Support

Measurable Output(s):

- CERP Conceptual Ecological Models (CEMs)
- System-wide Monitoring and Assessment Plan (MAP)
- Online publication of the *Scientific and Technical Knowledge Gained in Everglades Restoration (1999-2009)* document
- Hydrologic, Ecological/Biological and Water Quality Performance Measures
- System Status Report (http://www.evergladesplan.org/pm/ssr_2009/ssr_main.aspx)
- CERP Adaptive Management Strategy
- CERP Adaptive Management Implementation Guide
- Recommendations for CERP Interim Goals and Interim Targets
- System-wide evaluations of individual CERP projects or groups of projects and refinements of the Plan and the existing and future without project condition
- Identification and evaluation of operational modifications to improve system-wide performance during plan formulation
- Reviews of project-level performance measures for consistency with system-level hydrologic, ecological and water quality performance measures
- Identification of improvements for project performance that will improve its system-wide performance
- Maintenance of the most current version of the Plan
- Maintenance of the most current version of the existing and future without project conditions
- Assessment and identification of opportunities for operational modifications to improve system-wide performance
- System-wide Operating Manual
- Identification of opportunities for refinements to the CERP
- Climate Change Study
- Committee on Independent Scientific Review of Everglades Restoration Progress (CISRERP) coordination

April 1999 (Restudy) Program Synopsis: The RECOVER team will be established to provide system-wide evaluation and analyses and to implement the AA&M program. The RECOVER team represents the evolution of the multi-disciplinary interagency Restudy Team that formulated the Plan. CERP is science-based and it is the role of RECOVER to ensure that science continues to guide implementation of the Plan. RECOVER is designed to organize and provide the highest quality scientific and technical support during CERP implementation including assessment of whether the goals and objectives of the CERP are being met.

RECOVER conducts scientific and technical evaluations and assessments for improving the CERP's ability to restore, preserve and protect the south Florida ecosystem while providing for the region's other water-related needs including water supply and flood protection. This will determine how to refine the Plan in the future.

Current Program Synopsis: RECOVER links science and the tools of science in three broad missions of system-wide assessment, evaluation and planning and integration. RECOVER has a 3-part mission:

Assessment - to physically measure, through monitoring, and interpret actual responses in the natural and human systems as the CERP projects are implemented

Evaluation - to work with project delivery teams to evaluate (through predictive modeling) and maximize the contribution made by each project to the system-wide performance of the CERP

Planning and Integration - to identify potential improvements in the design and operation of the CERP, consistent with the CERP objectives, and to strive for consensus regarding scientific and technical aspects of the CERP.

RECOVER encompasses all the CERP projects and works with the project delivery teams to relate system-wide goals and objectives to project design and performance as well as incorporates information obtained during project plan formulation into the Plan. At the program level, RECOVER maintains a system-wide focus as it evaluates and assesses the performance of CERP, develops refinements and improvements in the design and operations of the Plan, and reviews the effects that other projects may have on the performance of the CERP. RECOVER continues to operate throughout the entire duration of the restoration process, continuously seeking improvements to the Plan as system-wide monitored responses direct the CERP Adaptive Management process.

RECOVER accomplishes its activities through a partnership amongst the following twelve federal, state and local agencies, and tribal governments: the U.S. Army Corps of Engineers, the South Florida Water Management District, U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, U.S. Geological Survey, National Park Service, Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, Florida Department of Agriculture and Consumer Services, Florida Department of Environmental Protection and Florida Fish and Wildlife Conservation Commission. RECOVER also provides opportunities for the public and stakeholders to participate in the review and refinement of RECOVER work products.

The CISRERP, in their 2010 Biennial Review, concluded that the foundation for Adaptive Management has been laid for CERP and the theory now needs to be put into practice. Further, CISRERP found that research efforts are providing a sound basis for critical decision making, but the effectiveness of the linkages between science and decision making should be examined by CERP leadership.

The System Status Report (SSR) is a comprehensive report that evaluates current monitoring data to determine if the goals and objectives of the Comprehensive Everglades Restoration Plan (CERP) are being met. The SSR incorporates data collected by the Restoration Coordination and Verification (RECOVER) Monitoring and Assessment Plan (MAP) program for CERP, data from CERP projects, and data provided by RECOVER partners. The report evaluates data from different system-wide geographic regions, including Lake Okechobee, the Northern Estuaries, Greater Everglades and Southern Coastal Systems. The SSR identifies findings associated with the monitoring that are both important to assessing the progress of the restoration effort and considers whether adaptive management actions are beneficial.

The Adaptive Management Integration Guide was finalized in 2011 to provide technical guidance on how to integrate adaptive management activities within projects and program implementation efforts. Coordination workshops occurred on how to develop AM plans for projects and better integration of system-wide science in project and program management. Phase 1 is development of a program-level AM plan to fill gaps between existing documents to illustrate how key uncertainties are being addressed and how new information informs current and future management decision.

CGM 56 Integrating Adaptive Management into CERP Program and Project Management was approved by the DCT in February 2011. This CGM provides guidance on how to integrate adaptive management into Project Implementation Reports (PIR). This CGM complements the Adaptive Management Integration Guide and assists the Project Delivery Teams (PDTs) to apply adaptive management to address uncertainties that inhibit PIR development.

Current Status: In 2020, the RECOVER team produced the 2020 Interim Goals and Interim Targets Report. The report provides an evaluation of restoration success of the Comprehensive Everglades Restoration Plan (CERP) by tracking performance in restoration and ability to provide for other water-related needs of the region, including water supply and flood risk management. Interim Goals and Interim Targets provide a basis for reporting progress and major scientific findings to policymakers and the public, and both are primary tools used to implement adaptive management strategies. The RECOVER team also developed two new RECOVER performance measures, the Lake Okeechobee Stage Performance Measure and the Northern Estuaries Salinity Envelope Performance Measure. The performance measures are evaluation tools that will be used to assess the impact and effectiveness of the CERP. The RECOVER Team continued updates to the conceptual ecological models and hypothesis clusters, as part of the Science Integration effort outlined in the RECOVER Five Year Plan. Progress was also made on the Everglades Vulnerability Assessment, a second task under the Science Integration effort. Core tasks, including PDT support and MAP contract management, are on-going. PDT support provided by RECOVER included WERP TSP Review, the BBESEER PM Consistency Review, and DPM/CEPP AM Plan.

Detailed Project Budget Information: *Funding is part of the overall Program-Level Activities budget.*

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Danette Goss, Senior Project Manager, Programs and Project Management Division, USACE, Danette.b.goss@usace.army.mil

Phyllis Klarmann, SFWMD pklarmann@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)* and WRDA 2000. Additional information provided from the Monitoring and Assessment Plan (2009) and the RECOVER team.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Program Management
Project ID: 1442
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – Program Support

Measurable Output(s):

April 1999 (Restudy) Synopsis: The scope of the recommended Comprehensive Plan warrants a management approach that is programmatic in nature. This “program” will require a management structure that is integrated into both the Corps and the local sponsor’s executive, managerial, and technical staffs. The program’s resources must be based on a sound strategy for implementation that includes identification of system-wide efforts, assigns responsibility for component development, and provides a projection of budget, funding, schedules and manpower requirements supported by appropriate agreements for local cooperation. This management strategy will provide the conceptual framework for Federal, State, local, tribal, and private efforts to protect and restore the south Florida ecosystem.

Current Project Synopsis: The Master Program Management Plan and the Design Agreement have provided additional details in regards to the CERP Program Management, but it is still in-line with what was presented in the Restudy.

Current Status: Initial program guidance was published in August 2000 in the Master Program Management Plan (MPMP). The MPMP is regarded as the baseline program guidance document for the implementation of the CERP program. In the WRDA 2000, Congress approved the Plan and required promulgation of the Programmatic Regulations to ensure that the goals and purposes of the CERP are achieved. The Programmatic Regulations require the development of program coordination processes and products such as the Master Implementation Sequencing Plan (MISP), Pre-CERP Baseline, Guidance Memoranda, Interim Goals and Interim Targets, and Initial CERP Update.

Since the initial MPMP, the USACE and SFWMD program managers have made decisions on a wide array of issues that directly affect execution of the program and have jointly translated their decisions into specific Guidance Memoranda. Efforts have also included work on the Pre-CERP Baseline, Interim Goals and Interim Targets. While Program Coordination was a large part of the initial CERP start-up effort, it continues to be significant because as projects move into the design construction phases, the guidance necessary for those phases is being developed and refined. In 2005, the MISP was completed in accordance with South Florida Ecosystem Restoration Programmatic Regulations. The MISP defined the order in which CERP projects would be planned, designed, and constructed. Building on recommendations in the Committee on Independent Scientific Review of Everglades Restoration Progress 2006 Report to Congress, while the MISP was being updated, it was incorporated into an overall schedule for restoration known as the Integrated Delivery Schedule (IDS).

In addition, there are several CERP Program level activities that support or assist the planning and execution of the projects. These efforts include Restoration Coordination and Verification (RECOVER), the Interagency Modeling Center, the Information and Data Management Program (includes Quality Assurance Oversight Team), and Public Outreach. All of these programs continue to provide support and guidance to the projects and the overall program.

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Est. Cost: \$914,910,000

Project Schedule: On-going

Detailed Project Budget Information (rounded):

	Investment Thru FY 2020
USACE	\$268,138,000
DOI	\$0
SFWMD	\$194,799,000
Total	\$462,937,000

Hyperlink: N/A

Contact: Michael Collis, Senior Program Manager, Programs and Project Management Division, USACE, Michael.J.Collis@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Cost estimate information is updated to reflect current price levels in October 2019 dollars.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP: Western Everglades Restoration Project (FKA Big Cypress - L-28 Interceptor Modifications) (CCC)
Project ID: 1500 (CERP Project WBS # 10)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-B.1

Measurable Output(s): Additional Stormwater Treatment Area, removal of additional canals and levees

April 1999 Project Synopsis: This feature includes modification of levees and canals, water control structures, pumps, and stormwater treatment areas with a total storage capacity of 7,600 acre-feet located within and adjacent to the Miccosukee and Seminole Indian Reservations in Collier and Hendry Counties. The initial design of the stormwater treatment areas assumed a total acreage of 1,900 acres (water level fluctuating up to 4-feet above grade). Conceptual sizes of the stormwater treatment areas were based on interim phosphorus concentration targets in the conceptual plan for the Everglades Construction Project.

Current Project Synopsis:

WERP is an aquatic ecosystem restoration (AER) study within CERP that takes a “systems approach” to restoration problems associated with the federal C&SF flood control project in the western basin of the Everglades watershed. The purpose of WERP is to reestablish sheet flow from the northern portion of the study area, across the Seminole Tribe of Florida Big Cypress Reservation, through the Miccosukee tribal area, and into the Big Cypress National Preserve and along historic flow paths toward the southern coast of Florida. This aligns with the CERP purposes of improving the quality, quantity, timing, and distribution of fresh water in the Everglades. WERP includes the following five integrated CERP components. Specific sections of the authorized CERP report, the Yellow Book, are noted in parentheses:

- Big Cypress/L-28 Interceptor Modification (CERP 9.1.6.1, CCC)
- Aquifer Storage & Recovery (ASR)(CERP 9.1.3.1, D)
- Flows to Central WCA-3A (CERP 9.1.7.1, RR)
- Decompartmentalization of Water Conservation Area-3 (WCA-3)(CERP9.1.7.2, QQ)
- Seminole Tribe Big Cypress Water Conservation Plan (CERP 9.1.6.2, OPE), part of this plan was constructed in the Big Cypress Reservation Critical Project; WERP will not seek to complete that construction. WERP addresses over drainage in the area, which supports the objectives of this component and does not conflict with its authorization.

The extent and location of the study area allows the PDT to consider dependent components of the C&SF flood control system that are causing AER problems in this region. The WERP study area is ~1,200 square miles. The L-1 Canal marks the northern boundary. The L-2 canal, Stormwater Treatment Area (STA) 5/6, and the eastern boundary of the Miccosukee Tribe of Indians of Florida Reservation are eastern boundary. A natural watershed boundary marks the western edge of the study area. The southern boundary encompasses portions of US Highway 41, Loop Road, and a southern Miccosukee Tribe of Indians of Florida Reservation area (Figure 1).

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Data provided should be as of June 30, 2021

WERP is considered the major portion of CERP that ‘finally’ addresses the Tribes’ concerns. There is significant risk of public and Tribal outcry and controversy if WERP becomes delayed or descoped in such a way that ongoing impacts of the C&SF system on the Tribes gets deferred for future study. USACE and the NFS are working closely with the Seminole Tribe of Florida (STOF) and the Miccosukee Tribe of Indians of Florida (MTF) during WERP with expanded Government to Government consultation to promote information sharing and communication throughout the study in order to address C&SF impacts directly affecting the Tribes.

Current Status: Development of the Project Implementation Report is underway. This study began in August 2016 and the team is working to identify a Tentatively Selected Plan (TSP). A waiver to extend the study schedule from 36 months to 48 months was approved in January 2018. A second exemption is currently under review for additional time and budget to complete the PIR. The TSP is scheduled for February 2022 with a Chief’s Report signed in February 2023.

Est. Cost: \$ 101,035,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

BC L-28	Investment Thru FY 2020
USACE	\$4,934,000
SFWMD	\$1,018,000
Total	\$5,952,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Stephen A. Baisden, PE, PMP, Senior Project Manager, Programs and Project Management Division, USACE, Stephen.A.Baisden@usace.army.mil
Melinda Parrott, Lead Project Manager, SFWMD

MParrott@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 9 Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19. Estimate information is updated to reflect current price levels in October 2019 dollars.

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Project Name: C&SF: CERP Miccosukee Tribe Water Management Plan (OPE)
Project ID: 1502 (CERP Project WBS # 90)
Lead Agency: USACE / Miccosukee Tribe
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-B.1

Measurable Output(s): 900-acre constructed wetland

April 1999 (Restudy) Project Synopsis: Converts 900 acres of tribally owned cattle pasture into a wetland retention /detention area on the Miccosukee Tribe's Alligator Alley Reservation and includes a pump station, levees, trenches and culverts to create the inflow and outflow facilities for the retention/detention area to filter out harmful nutrients contained in stormwater runoff before entering the Everglades Protection Area.

Current Project Synopsis: The Miccosukee Tribe Water Management Plan pertains to constructing a managed wetland on the Tribe's Reservation in western Broward County. It would also provide water storage capacity and water quality enhancement for tribal reservation waters, which discharge from tribal lands downstream into the Everglades Protection Area. The project was sized to treat the nutrient inputs of the Miccosukee Tribal lands and adheres to the original concept outlined in the Restudy

Current Status: This project has not begun. This plan is being analyzed as a part of the Western Everglades PIR.

Est. Cost: \$ 52,807,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Miccosukee Tribe WMP	Investment Thru FY 2020
USACE	\$0
Miccosukee Tribe	\$0
Total	\$0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

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Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Caloosahatchee Back-pumping with Stormwater Treatment (DDD)
Project ID: 1505 (CERP Project WBS # 06)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-B.1

Measurable Output(s): 5,000-acre STA with a total capacity of 20,000 acre-feet

April 1999 (Restudy) Project Synopsis: This feature includes pump stations and a stormwater treatment area with a total capacity of approximately 20,000 acre-feet located in the C-43 Basin in Hendry and Glades Counties. The initial design of the stormwater treatment area assumed 5,000 acres (water level fluctuating up to 4 feet above grade).

Current Project Synopsis: The purpose of this project is to capture excess C-43 Basin runoff, which will be used to augment regional system water supply. The feature will operate after estuary and agricultural/urban demands have been met in the basin and when water levels in the C-43 Storage Reservoir exceed 6.5 feet above grade. Lake Okeechobee must also be considered to have available storage. When these conditions are met, a series of pump stations will back pump excess water from the reservoir and the C-43 Basin to Lake Okeechobee after treatment through a stormwater treatment area.

Current Status: The project has not begun.

Est. Cost: \$ 134,563,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Caloosahatchee Back-pumping with Stormwater Treatment	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Water Quality and Hydrology
Project Name: Lakeside Ranch STA - SFWMD is implementing as part of the Northern Everglades and Estuaries Protection Program
Project ID: 1515
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source: Lake Okeechobee Trust Fund

Strategic Plan Goal(s) Addressed: 1.B.1 Get the water quality right

Measurable Output(s): STA on 2,700-acre property

Project Synopsis: In 2007, the Florida legislature enacted and, in 2016, amended the Northern Everglades and Estuaries Protection Program (NEEPP; Section 373.4595, Florida Statutes), which expanded the Lake Okeechobee Protection Act to the entire Northern Everglades system, including the Lake Okeechobee Watershed as well as the Caloosahatchee and St. Lucie rivers and estuaries. The original plan identified five construction projects north of Lake Okeechobee, including the Lakeside Ranch STA, as expedited projects. In response to Governor DeSantis' Executive Order 19-12 to expedite improvement to regional water quality, Lakeside Ranch STA (Phase II/III) was also identified as a priority project. Phase I and Phases II/III are included as Basin Management Action Plan (BMAP) projects (SFWMD-04 and CA-03, respectively) in the FDEP BMAP 2020 Update.

Accordingly, the SFWMD is expediting this Lake Okeechobee Watershed construction project under NEEPP. It is a portion of Taylor Creek/Nubbin Slough Storage and Treatment Area and involves construction of a 2,700-acre STA, adjacent to Lake Okeechobee. The original (2010) design document estimated that this project, once fully completed, will provide approximately to 19 metric tons of total phosphorus (TP) reduction. Removing this phosphorus will help improve the lake's water quality. The initial Phase I portion of the project (919-acre northern STA and S-650 pump station) has been completed and operational since 2012. Phase II (788-acre southern STA) has been completed and operational since 2019. Phase III involves the construction of the S-191A pump station completion is expected by in August 2021.

Current Status:

This project has been divided into three phases, Phases I, II and III:

- Phase I: STA-North and canal improvements, S-650 pump station
 - STA-N under normal operation
 - S-650 under normal operation
- Phases II/III: STA-South and S-191A pump station
 - STA-S under normal operation
 - S-191A under construction

Total Estimated Project Cost: \$131,000,000

Project Schedule: Start Date: October 2005
Finish Date: August 2012 for Phase I – Northern STA and S-650 Pump Station; January 2019 for Phase II – Southern STA; and August 2021 for Phase III – S-191A Pump Station

Information for the 2021 Integrated Financial Plan
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Detailed Project Budget Information (rounded):

Lakeside Ranch STA	Expenditures Fiscal Year 2005-06 thru 2019-20
SFWMD	\$123,943,164
Total	\$123,943,164

Contact: Robert Shuford Stacey Ollis, SFWMD





Lakeside Ranch Phase I – Northern STA and S-650 Pump Station



Lakeside Ranch Phase II – South.Southern STA



Lakeside Ranch Phase III – S-191A Pump Station

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Long-Term Plan for Achieving Water Quality Goals for Everglades Protection Area Tributary Basins
Project ID: 1520
Lead Agency: South Florida Water Management District
Authority: Florida’s Everglades Forever Act (EFA)

Strategic Plan Goal(s) Addressed: 1.B.1 **Secondary:** 1.A.3

Measurable Output(s): 57,000 acres of Everglades Stormwater Treatment Areas (STAs) were constructed by 2012 with additional STA expansions. 105,000 acre-feet of flow equalization basins (FEBs) have been constructed and an additional 11,000 acre-feet will be completed by 2025 under the Restoration Strategies Program to achieve compliance with a Water Quality Based Effluent Limit (WQBEL) for total phosphorus in discharges from Everglades STAs to the Everglades Protection Area. Since inception through April 2021, the STAs have retained approximately 3,089 metric tons of phosphorus from entering the Everglades.

As of April 2021, SFWMD’s Best Management Practice (BMP) program (see Project ID: 1706), implemented on approximately 474,000 acres of land in the Everglades Agricultural Area (EAA), reduced phosphorus loads by 59 percent compared to historic levels before the program began. This exceeds the 25 percent TP load reduction required by law. Since the BMP program began through April 2021, cumulatively the BMP program has prevented 4,282 metric tons of phosphorus from leaving the EAA. Just west of the EAA, in the 170,000-acre C-139 Basin, a BMP program has been in place since 2002. In November 2010, the program requirements were enhanced to better control the nutrients in runoff. Since 2010, the actual mass of phosphorus discharged from the basin has achieved state requirements to maintain TP levels in discharges at or below historic levels.

Project Synopsis: The Long-Term Plan for Achieving Water Quality Goals for Everglades Protection Area Tributary Basins (Long-Term Plan) was developed to achieve compliance with water quality standards in the Everglades Protection Area, including the phosphorus criterion established in Rule 62-302.540. The original 40,000 acres of Everglades STAs, which were completed by 2006 and increased to 57,000 acres by 2012, have been continuously improved with structural and vegetative enhancements and STA optimization research. In 2013, the Florida Legislature modified the EFA and redefined the Long-Term Plan to include the Restoration Strategies (RS) Regional Water Quality Plan, as defined in Section 373.4592(13), F.S. The February 1994 cost estimate for implementation of the original 40,000 acres of STAs was \$468.6 million, however, STA acreage has been significantly increased beyond what was envisioned in 1994 and will be further expanded with the implementation of the Restoration Strategies Plan. The cost estimates below reflect all Long-Term Plan costs, including Restoration Strategies Plan expenditures.

Current Status: To date, 73,000 acres of Everglades STAs and 105,000 acre -feet of FEBs are being operated as part of the state’s comprehensive efforts to meet the Everglades water quality goals. The implementation of the Restoration Strategies Regional Water Quality Plan will add significant new project features at an estimated cost of \$880 million.

Cost Estimate: Approximately \$3.2 billion

Expenditures by SFWMD:

	Expenditures Fiscal Year 1991-1992 thru 2019-20
Long-Term Plan	\$2,876,950,000 ⁽¹⁾

⁽¹⁾ Costs include land acquisition, design, construction, operations and maintenance, monitoring, vegetation management, source control regulatory programs, STA and Everglades research, program management and debt service payments; costs do not include those incurred by the USACE to construct and repair STA-1E.

Hyperlink: www.sfwmd.gov/sta

Contacts: Jose Otero, SFWMD



Re-configuration of STA 1W outflow canal at G-310 pump station.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Water Quality
Project Name: Total Maximum Daily Load (TMDL) for South Florida
Project ID: 1600
Lead Agency: Florida Department of Environmental Protection
Authority: 403.067, F.S.

Strategic Plan Goal(s) Addressed: 1.B.2

Measurable Output(s): Basin Assessments; Identification of Impaired Waters; Collection of Supplemental Data; Development of Total Maximum Daily Loads (TMDLs), Basin Management Action Plans (BMAPs), and Implementation Plans; Verification that Water Quality (WQ) Standards have been met.

Project Synopsis: The Florida Department of Environmental Protection (DEP) adopts water quality standards based on the waterbody classification (i.e., its designated use, such as drinking water supply or recreational water) and type (such as a lake, stream, spring, or estuary). After setting the criteria, the DEP collects water quality data through its own monitoring programs and in collaboration with municipalities and other agencies and monitoring groups. DEP assesses this data against the applicable water quality criteria to determine which waterbodies are considered impaired. On pathway to restore these impaired waters involves establishing scientifically-based restoration goals (i.e., the TMDLs). These goals set limits to the amount of pollutants that may be present in a waterbody to be considered healthy. Implementation of the TMDL is the next step in the process and to meet these restoration goals. TMDL implementation can include coordination among local stakeholders to develop plans to achieve reductions in pollutant loading (e.g., BMAP) or setting appropriate permit limits for discharges. Once the plan is implemented, progress of water quality restoration is monitored until water quality standards are achieved.

Current Status: The DEP is continuing to make progress in the development of Site-Specific TMDLs to identify impaired waters and has developed key BMAPs within the greater Everglades region. Since 2008, the department has completed and adopted by rule TMDLs identifying needed reductions for nutrients and/or to address low dissolved oxygen (DO) levels in the St Lucie-Loxahatchee Basin (including the Estuary, North Fork, South Fork, C-44, C-24, C-23 canals, and Bessey Creek), and for nutrients in the estuarine portion of the three waterbodies that comprise the estuarine portion of the Caloosahatchee (below the Franklin Locks), and for fecal coliforms in Trout Creek (Caloosahatchee Basin) and Ten Mile Creek (St Lucie-Loxahatchee Basin), the Southwest Fork of the Loxahatchee River (St. Lucie-Loxahatchee Basin), and the North Fork of the St. Lucie River (St. Lucie-Loxahatchee Basin). In addition, five TMDLs were adopted in the Charlotte Harbor Basin (DO TMDL for Coral Creek-East Branch, plus fecal coliform TMDLs for Gottfried Creek and the North Prong of Alligator Creek), and nutrient TMDLs for both impaired sections of the Sanibel Slough. One TMDL was adopted in the Everglades Basin (West Palm Beach Canal Fecal Coliform TMDL). Seven TMDLs were completed for nutrients, DO, unionized ammonia, or fecal coliforms in the Everglades West Coast Basin (one for Cocohatchee River Estuary, one for the Gordon River, three for Hendry Creek, one for the Imperial River, and one for Lake Trafford). A fecal coliform TMDL was adopted for the E-1 Canal in the Lake Worth Lagoon Basin. In 2012, the DEP adopted TMDLs to address high fecal coliforms concentrations in 20 water bodies located in the Southeast Coast region of the state, ranging from St Lucie County to Miami-Dade. The DEP is finalized the rulemaking for DO TMDLs in the upper Caloosahatchee River tributaries (Townsend Canal, Long Hammock Creek, Lake Hicpochee, C-19 Canal, and S-4 Basin) in 2020. US EPA Region 4 approved the Caloosahatchee Tributary TMDLs on February 27, 2020.

Hyperlink: <https://floridadep.gov/dear/water-quality-evaluation-tmdl>

Contact: Ken Weaver, Division of Environmental Assessment & Restoration

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 Data provided should be as of June 30, 2021

Program Name: Long-Term Plan for Achieving Everglades Water Quality Goals (Long-Term Plan)
Project Name: Phosphorus Source Control Programs for Basins Tributary to the Everglades
Project ID: 1706
Lead Agency: South Florida Water Management District (SFWMD)
Authority: Everglades Forever Act (EFA)
Funding Source: State - Long-Term Plan funds, which include Everglades Agricultural Privilege tax

Strategic Plan Goal(s) Addressed: 1.B

Measurable Output(s): Mandatory Best Management Practices (BMP) Program Compliance Results; Updates on Implementation of Basin Specific Water Quality Improvement Plans; Reporting on the Long-term Compliance Permit requirements.

Project Synopsis: As a result of the EFA, SFWMD is responsible for complying with the requirements of specific FDEP-issued permits. One such requirement is implementation of the District’s Source Control Programs, including BMPs, in the Southern Everglades tributary basins. The Source Control Programs are primarily made up of regulations developed to decrease TP loads into the Everglades STAs from the Everglades Agricultural Area (EAA) and C-139 Basins [also referred to as Everglades Construction Project (ECP) Basins] by issuing BMP plans approved under permits to reduce TP in discharges to the STAs. The EAA Source Control Program was fully implemented in 1996. The C-139 Basin Regulatory Source Control Program was initially implemented in 2002. Rule amendments to optimize water quality improvement efforts in the C-139 Basin became effective in November 2010. For the remaining tributary basins (also referred to as Non-ECP Basins), the source control program is a combination of regulatory and cooperative efforts. Water Quality Improvement Plans were developed for each of the other tributary basins to ensure that all basins discharging directly to the Everglades meet state water quality standards. These strategies include BMPs, regulatory stormwater management programs, public outreach, and public works projects. These programs and the associated funding are mandated by the EFA, including the Long-Term Plan.

Current Status: During WY2021, BMPs in the EAA resulted in a 59% reduction in TP when compared to pre-program discharges, exceeding the 25% statutory requirement. Overall, the SFWMD BMP program has prevented approximately 4,282 MT of TP from entering the Everglades for the period from WY1996–WY2021. For the twelfth consecutive year, BMPs in the C-139 Basin complied with the requirement of maintaining historical TP loads. Additionally, SFWMD continues to work closely with FDEP and other local, state, federal, and tribal governments on other non-CERP programs to restore and protect the South Florida Ecosystem.

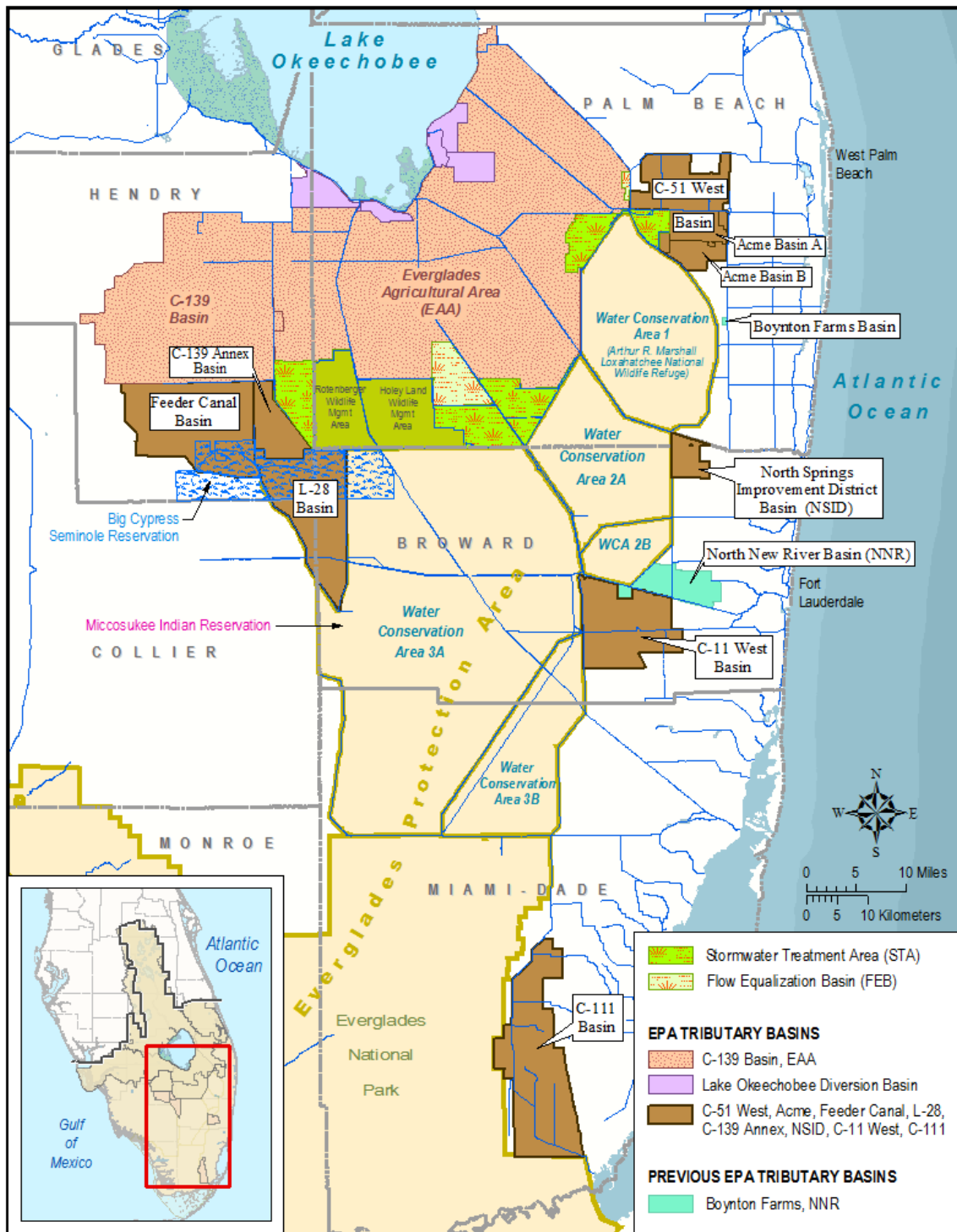
Project Schedule:

Start Date: March 1998
 Finish Date: N/A - This is an ongoing mandated regulatory program with no end date.

Total Estimated Project Cost: Ongoing

	Expenditures Fiscal Year 1999-2000 thru 2019-20
SFWMD	\$31,834,512
Total	\$31,834,512

Contact: Stacey Ollis, SFWMD



User Name: oleskova Remedy Ticket: 141710 Map Produced: 9/28/2021 4:54:07 PM Doc Path: \\atl.fl.uswd.gov\DFSRoot\datatier_gis\project\EV\Gis\2022\1\01_04\map\SE\ev\gls\Site\Orig\Pgm\Trib\impl\map\Basins_11\2021.mxd

Program Name: Lake Okeechobee Restoration: Water Quantity and Water Quality
Project Name: Lake Okeechobee Watershed Protection Plan
Project ID: 1722
Lead Agency: South Florida Water Management District
Funding Source: State of Florida Appropriation

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Improve the health of Lake Okeechobee through phosphorus load reductions and increased water storage. Water quality objectives are based on Total Maximum Daily Loads (TMDLs) established by the FDEP, while storage targets are aimed at achieving appropriate water levels in Lake Okeechobee and salinities within the St. Lucie and Caloosahatchee estuaries, established by the SFWMD. For Lake Okeechobee, the TMDL for phosphorus is 140 MT/year (105 MT from the watershed and 35 MT from atmospheric deposition).

As outlined in the Lake Okeechobee Watershed Construction Project - Phase II Technical Plan (LOWCP - P2TP; SFWMD et al. 2008), the magnitude of storage needed in the Lake Okeechobee Watershed is estimated from 900,000 to 1,300,000 ac-ft depending on assumptions regarding delivery and storage volumes south of Lake Okeechobee. It is important to note that this goal was not in addition to existing projects, but an overall goal that may be met through a combination of existing and future projects such as alternative water storage on public and private lands, large above-ground reservoirs, and/or aquifer storage and recovery facilities. Overall, it is evident that the Lake Okeechobee Watershed still needs significantly more storage, on the order of several hundred thousand ac-ft or more.

Project Synopsis: For more than two decades, restoration efforts have been under way to improve the water quality and hydrology of the Lake Okeechobee Watershed through implementation of a suite of projects and programs. The reductions due to the dairy buyout, FDEP dairy technology-based rule and implementation of the 40E-61 rule, and other early initiatives leveled-off in the 1990s. As a result, in 2000, the Florida legislature passed the Lake Okeechobee Protection Act (LOPA), which requires the coordinating agencies—SFWMD, FDACS, and FDEP—to work together to address TP loading and exotic species control. The Lake Okeechobee and Estuary Recovery (LOER) Plan, announced in October 2005, was migrated into this program. LOPA was amended in 2007 to expand restoration efforts to include the St. Lucie and Caloosahatchee River Watersheds, currently known as the Northern Everglades and Estuaries Protection Program (NEEPP) [Section 373.4595, Florida Statutes (F.S.)], which also included a water storage component/goal to address not only the water quality but also the quantity, timing and distribution of water to the Northern Everglades natural system. NEEPP was further amended in 2016 to strengthen NEEPP provisions for implementing the state’s BMAPs and further clarify the roles and responsibilities, coordination, implementation, and reporting efforts among the coordinating agencies. NEEPP includes Watershed Protection Programs for each of the three Northern Everglades watersheds—the Lake Okeechobee Watershed, Caloosahatchee River Watershed, and St. Lucie River Watershed—to promote a comprehensive, interconnected watershed approach to protecting the lake and its downstream receiving waters.

Under NEEPP, the Lake Okeechobee Watershed Protection Program consists of the Lake Okeechobee Watershed Protection Plan (LOWPP), the Lake Okeechobee Basin Management Action Plan (BMAP), the Exotic Species Control Program, and the Lake Okeechobee Internal Phosphorus Management Program. The LOWPP was initially developed in 2004 (SFWMD et al. 2004) and has been subsequently updated in 2007 (SFWMD et al. 2007), 2008 (SFWMD et al. 2008), 2011 (SFWMD et al. 2011), 2014 (SFWMD et al. 2014), and most recently in 2020 (SFWMD 2020). The goals of the LOWPP Update are to (1) produce a streamlined tool to assist decision makers and legislators needing to focus resources and (2) identify the challenges/needs in subwatersheds and basins within the Lake Okeechobee Watershed to help focus

priorities and projects to meet the water quality and quantity goals of the NEEPP for the Lake Okeechobee Watershed. The plan has two primary components: The Lake Okeechobee Watershed Construction Project (LOWCP), and the Lake Okeechobee Research and Water Quality Monitoring Program (RWQMP). Development of the Lake Okeechobee Construction Project was done in two phases. The initial phase (Phase I) focused on implementation of projects in LOW priority basins S-191, S-154, and Pools D and E in the Lower Kissimmee River. Phase II of the LOWCP, the Lake Okeechobee Watershed Construction Project – Phase II Technical Plan was developed for inclusion in the 2008 update of the LOWPP and was the basis for the initial Lake Okeechobee BMAP (FDEP 2014), the overarching water quality restoration plan for Lake Okeechobee.

The LOWCP – P2TP expanded upon Phase I identifying regional construction projects, along with on-site measures, practices, and regulations intended to prevent or reduce pollution at its source, such as agricultural and urban BMPs, and Environmental Resource Permitting needed to achieve the TMDL target established for the lake. In addition, it includes other projects for increasing water storage north of Lake Okeechobee to achieve healthier lake levels and reduce harmful discharges to the Caloosahatchee and St. Lucie rivers and estuaries. The LOWPP also contains the RWQMP, which is being used by the Coordinating Agencies to focus future efforts in monitoring and research where gaps are identified in the LOWPP and to focus on modifications to the Lake Okeechobee BMAP, as appropriate, using lessons learned in areas where monitoring results demonstrate improvements within the watershed.

Current Status: On March 1, 2021, the NEEPP Annual Progress Report for Lake Okeechobee was published by SFWMD in the 2021 SFER – Volume I, Chapter 8B (www.sfwmd.gov/sfer), in accordance with Subsection 373.4595(6), F.S. To aid in further integration with the state’s Northern Everglades BMAP updates, an annual review for the Lake Okeechobee Watershed Protection Plan was also initiated by SFWMD, also reported in Chapter 8B. Overall, the annual Northern Everglades WPP reviews are intended to maintain transparency and accountability in FDEP’s BMAP process and for assisting to progressively move towards the achievement of the state’s TMDLs.

Total Estimated Project Cost: \$860.4M

Project Cost Data Source Includes: Expenses through FY2019-20, plus FY2018-19 consumable budget as of 6/11/2019, FY2019-20 Tentative Budget (Draft), plus planned (unfunded) Dispersed Water Management projects through 2030.

Project Schedule:

Start Date: 2000
 Finish Date: TBD

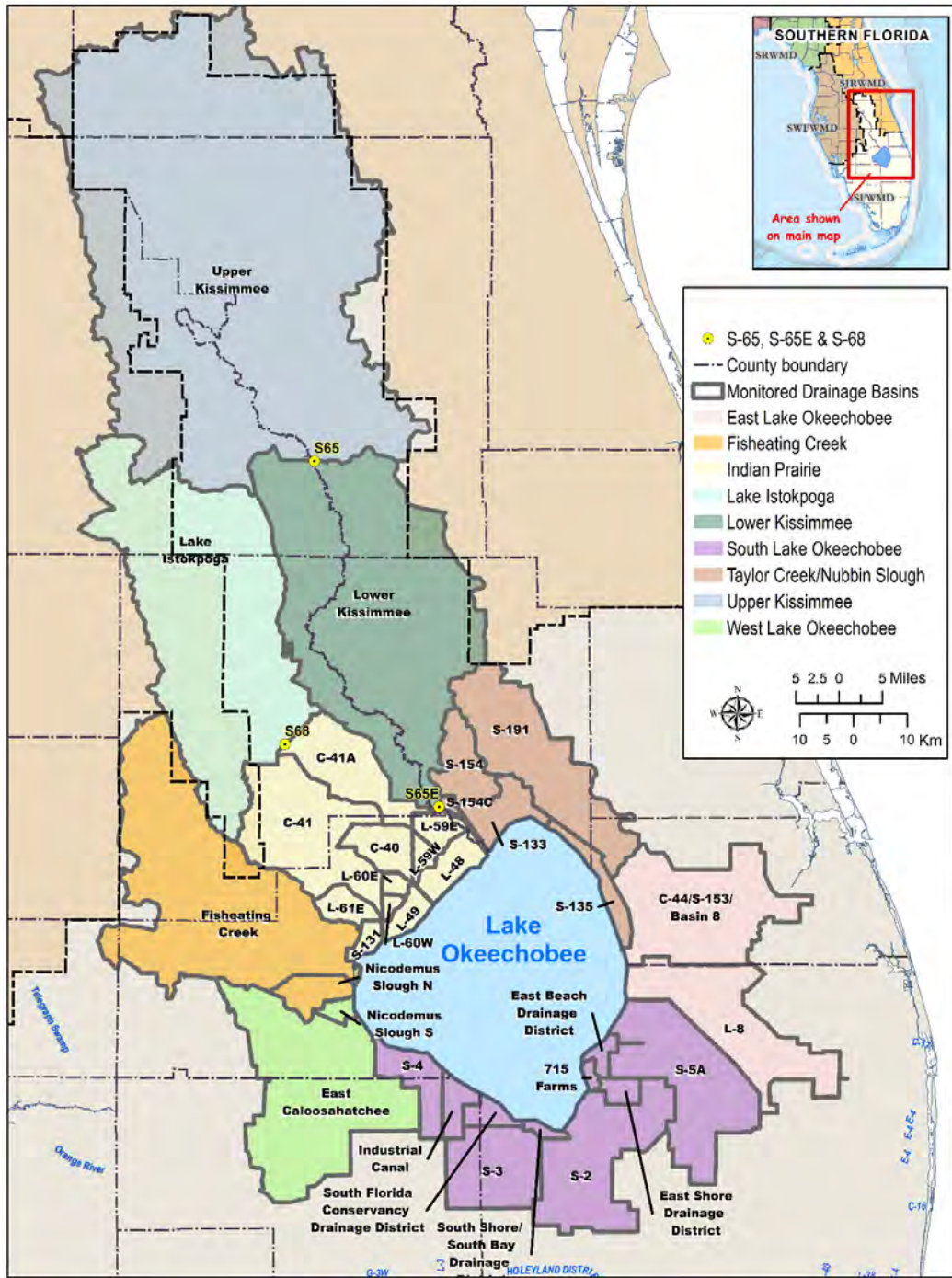
Expenditures by SFWMD (1000s):

	Expenditures Fiscal Year 1999-2000 thru 2017-20
Federal	\$5,121,448
State	\$304,723,514
Other	\$139,200,512
Total	\$449,045,474

Expenditures Data Source: Budget Bureau Database - Includes all Lake Okeechobee (I) Program expenditures from LGFS and SAP for Fiscal Years 1999 thru 2020, excluding Lake Okeechobee Regulation Schedule/Operations (IO). Does not include expenditures for CERP Projects in the Lake Okeechobee Watershed which are reported in the CERP Program (P). Includes expenditures for the Lakeside Ranch STA.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Hyperlink: www.sfwmd.gov/northerneverglades
 Contact: Stacey Ollis, SFWMD



Lake Okeechobee Watershed

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Lake Trafford Restoration
Project ID: 1725
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): 2.85 million cubic yards of organic sediments removed

April 1999 (Restudy) Project Synopsis: Lake Trafford, the largest lake south of Lake Okeechobee with a surface area of approximately 1,494 acres, is located in north Collier County. The project is described in the *Central and Southern Comprehensive Review Study (1999)* as an OPE, utilizing one or more 14-inch portable cutter dredges to accomplish lake-wide organic sediment removal.

Current Project Synopsis: Same as Restudy.

Current Status: Portions of this project are currently being pursued under a different program. Please see Project ID 1702.

Est. Cost: \$29,296,000

Project Schedule: The CERP project has not begun.

Detailed Project Budget Information (rounded):

	Investment Thru FY 2020
USACE	\$0
SFWMD	\$0
TOTAL	\$0

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Adams Ranch
Project ID: 2181
Lead Agency: Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 7,128 Acres

Project Synopsis: The Adams Ranch Florida Forever project includes a portion of one ownership to be considered for less than-fee-simple acquisition totaling 7,128 acres in southern Osceola County. About 5.2 miles of the western boundary of the project abuts the southeastern boundary of Three Lakes Wildlife Management Area. The northwestern boundary fronts Lake Marian for 1.3 miles. The project stretches east through the center of the entire Adams Ranch holding, which is bracketed to the north and south with Adams Ranch, Inc. property and bounded on the east by Peavine Road. Avon Park Air Force Range and Bombing Range Ridge Florida Forever project are no more than 10 miles to the west of the project. The Mills Ranch and Escape Ranch Conservation Easements lie approximately 3.5 miles to the east. Kissimmee Prairie Preserve State Park is approximately 8.5 miles to the south.

One of the primary concepts of this project is the protection of the way of life for the ranch, which is managed in a way that has historically allowed for the continued protection of an important and biodiverse assemblage of imperiled vertebrate wildlife. Another stated goal of the project is to provide for continued buffering of the Three Lakes Wildlife Management Area from development, avoiding fragmentation of the landscape and allowing for the continuation of proper management on a landscape scale through prescribed fire, maintenance of hydrological regimes, and other appropriate strategies.

This project meets the Florida Forever goals of increasing protection of biodiversity by acquiring 81 acres of Priority 1 habitat and 6,140 acres of Priority 2 habitat, and preserving 10,618 acres of habitat for such rare species as the eastern indigo snake and the bald eagle. Another Florida Forever goal is to increase the acreage of landscape linkages and conservation corridors, by contributing to a 200,000-acre mosaic of protection areas that includes the adjoining Three Lakes Wildlife Management Area. Other Florida Forever goals are to protect waters and wetlands of the state, and the Adams Ranch will preserve 762 acres of floodplain, 5,811 acres that would help protect surface waters, and 2,598 acres of functioning wetlands. Some 10,979 acres of the proposal help recharge the aquifer.

Cost: Project size 7,128. 852 acres have been acquired at a cost of \$1,603,510.
6,276 acres remain to be acquired

Project Schedule:
Start Date: 1997
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
State*	1,603,510
Local	
Federal	
Total	1,603,510

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Allapattah Flats
Project ID: 2100
Lead Agency: Department of Environmental Protection/South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Secondary: 1.A.1

Measurable Output(s): Target 40,363 Acres

Project Synopsis: The Allapattah Flats/Ranch project covers 40,363 acres in western Martin County. The site is dominated by poorly drained flatwoods soils, which are saturated for much of the wet season. Historically, this area was a flatwoods matrix, interspersed with depression marshes and wet prairies. With the exception of the four northern sections that drain to Canal-23, the entire site drains slowly to the southeast to the South Fork of the St. Lucie River. Over the past 30 years, the project area has undergone a change in land use from native range grazing to improved pasture, sod farms, and row crops. Most of the understory has been cleared and planted in non-native pasture grasses. Most of the depression marshes remain; however, most of the wet prairies have been drained and the extreme western boundary. There is good species diversity and many large trees remain.

Restoration of Allapattah Flats will play a key role in the effort to reduce flows from C-23 into the St. Lucie Estuary. Regional attenuation facilities, or Water Preserve Areas, are proposed which would store discharges into the St. Lucie Estuary. After acquisition, about 8,000 acres of the project adjacent to C-23 would be converted to a reservoir to provide approximately 32,000 acre-feet of water storage. Estimates indicate that this would reduce wet season stormwater flows into the estuary by 39%. It is estimated that an additional 14% reduction in discharge to the estuary could be achieved by not draining the property. Completely eliminating stormwater discharges is not possible; however, significant reductions could probably be made by blocking existing drainage ditches.

The Florida Fresh Water Fish and Wildlife Commission would be the lead manager for the non-reservoir areas. The District will take the lead on all hydrologic restoration efforts.

Cost: Project size 40,363.
 21,865 acres have been acquired at a cost of \$63,023,838
 18,498 acres remain to be acquired.

Project Schedule:

Start Date: 1997
 Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
State*	18,836,230
Local	15,323,384
Federal	28,864,224
Total	63,023,838
Adjusted Total**	0

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 1101 in Goal 1. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Atlantic Ridge Ecosystem
Project ID: 2101
Lead Agency: Florida Department of Environmental Protection/South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 16,283 Acres

Project Synopsis: The project area is located in southern Martin County, between I-95 and U.S. 1. The project area includes approximately 16,002 acres, which is extremely diverse ecologically. It contains large areas of forested sloughs and high quality flatwoods, as well as one of the largest remaining islands of coastal scrub. The current land use is mostly cattle grazing on unimproved pasture with intense agriculture and residential development occurring around the edges of the project area. However, the project also contains extensive wetland and upland systems. Currently, none of this project is in public ownership.

The purpose of this project is to conserve and protect the high quality habitats and to protect water quality of the South Fork of the St. Lucie River and the North Fork of the Loxahatchee River. The project area forms the headwaters to these rivers and the extensive wetland systems provide a source of groundwater base flow to both rivers. This project will conserve and protect significant habitat for endangered and threatened species such as the Florida scrub jay, the Florida sandhill crane, and the Florida scrub lizard. The area is extremely important for aquifer recharge and water supply to the coastal portion of Martin County.

Cost: Total: Project size 16,283.
5,905 acres have been acquired at a cost of \$41,597,324
Land Acquisition: 10,378 acres remaining to be acquired.

Project Schedule:

Start Date: 1995
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
State*	35,094,095
Local	6,503,229
Total	41,597,324
Adjusted Total**	7,572,756

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects. 247.34 acres plus 100 acres of the Atlantic Ridge Ecosystem and South Fork of the St. Lucie projects respectively, are currently being managed as part of Halpatokee Park (Martin County).

** A portion of the acres and costs on this project overlaps with Project ID 1101 in Goal 1. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Belle Meade
Project ID: 2104
Lead Agency: Florida Forever
Authority: CARL Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 28,810 Acres

Project Synopsis: This area of 28,810 acres includes some of the most extensive examples of mature old-growth hydric pine flatwoods in southwest Florida not within other CARL projects. The hydrology of the hydric pine flatwoods and dwarf cypress communities within the project is relatively intact. Three archaeological sites have been recorded within the project boundaries, and additional sites may be present. The area is vulnerable to changes in the timing and amount of water flowing through it. Residential and commercial development spreading from Naples threatens it.

Cost: Project size 28,810 acres.
19,600 acres have been acquired at a cost of \$41,620,038
9,210 acres remaining to be acquired.

Project Schedule:

Start Date: 1993
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	41,620,038
Tribal	
Local	
Other	
Total	41,620,038

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: **Big Bend Swamp/Holopaw Ranch**
Project ID: 2105
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 59,132 Acres

Project Synopsis: Many kinds of wildlife reside in the expanses of palmetto prairies, pine flatwoods, and cypress swamps in Osceola County. The Big Bend Swamp project will acquire certain rights from landowners to maintain a link of natural lands between the Bull Creek and Three Lakes Wildlife Management Area, and help the ensure survival of caracara, red-cockaded woodpeckers, sandhill cranes, and other wildlife that require these large natural areas.

Cost: Project size is 59,132** acres.
6,450 acres have been acquired at a cost of \$11,782,500.
52,682 acres remaining to be acquired.

Project Schedule:

Start Date: 2000
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	11,782,500
Tribal	
Local	
Other	
Total	11,782,500

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: **Bombing Range Ridge**
Project ID: 2107
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 41,465 Acres

Project Synopsis: Public acquisition of the 41,465 acre Bombing Range Ridge project will conserve and protect significant habitat for native species and endangered and threatened species. Additionally, public acquisition will provide areas, including recreational trails for natural resource based recreation.

Cost: Project size 41,465 acres.
9,031 acres acquired at a cost of \$20,352,608.
32,434 acres remaining to be acquired

Project Schedule:

Start Date: 1998
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	20,352,608
Tribal	
Local	
Other	
Total	20,352,608

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Caloosahatchee Ecoscape
Project ID: 2108
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 18,497 acres

Project Synopsis: The project encompasses a mosaic of wet prairie, cypress basin and dome swamp, mesic flatwoods, wet flatwoods, depressional marshes and scrub. Clearing and drainage from improved pasture development or farming have impacted the majority of the natural communities on the site. Despite the disturbed plant communities, the project provides important habitat for a variety of listed wildlife species. Most of the land is within the Barron Water Control District and canals have altered the natural hydrology to the extent that no significant natural water resources remain. Eleven archaeological sites are known from the project area; some with material dated to the archaic period.

Cost: Project size 18,497 acres.
3,180 acres acquired at a cost of \$1,948,038
15,317 acres remaining to be acquired

Project Schedule:

Start Date: 1998
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	1,948,038
Tribal	
Local	
Other	
Total	1,948,038

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Catfish Creek
Project ID: 2109
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 13,198 Acres

Project Synopsis: Catfish Creek is a diverse natural area extending over high scrub ridges, interspersed with lakes, next to the pristine shore of Lake Pierce. Natural communities include sandhill, scrub, scrubby flatwoods, mesic flatwoods, xeric hammock, bottomland hardwood forest, basin swamp, sandhill upland lake, wet flatwoods, blackwater stream, seepage slopes, and floodplain swamp, all are in excellent condition. The tract harbors at least 18 state listed rare plant and animal species. Rare or endangered animals include the bald eagle, wood stork, gopher tortoise, and scrub jay.

Cost: Total: Project size 13,198 acres.
4,422 acres have been acquired at a cost of \$9,444,266
8,777 acres remain to be acquired.

Project Schedule:

Start Date: 1990
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	9,444,266
Tribal	
Local	
Other	
Total	9,444,266

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Corkscrew Regional Ecosystem Watershed (CREW)
Project ID: 2112
Lead Agency: Florida Department of Environmental Protection/South Florida Water Mgmt District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 73,365 Acres

Project Synopsis: CREW covers 73,365 acres in Lee and Collier counties and is located at the top of the western Big Cypress watershed. It conveys surface water to private, state, and federally protected natural areas, including Corkscrew Swamp Sanctuary, Florida Panther National Wildlife Refuge, and the Everglades National Park. The area supports populations of at least two species of rare and endangered orchids and includes an unusual stand of dwarf bald cypress. Land management will be carried out the SFWMD and the Florida Fish and Wildlife Commission under contract with the SFWMD.

Hydrologic restoration of CREW will restore and protect important habitat for the Florida panther and black bear and will protect the quality of water delivered to Corkscrew Swamp Sanctuary, Florida Panther National Wildlife Refuge, ENP, and Estero Bay. NOTE: Lee County has agreed to cost share this project by purchasing properties equaling the \$10,000,000 appropriated. These properties have been turned over to SFWMD for management.

Cost: Project size is 73,365 acres.
30,877 have been acquired for a cost of \$93,714,310.
42,488 acres remaining to be acquired.

Project Schedule:

Start Date: 1991
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	5,414,629
State*	55,247,181
Tribal	
Local	33,052,500
Other	
Total	93,714,310

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This total includes Critical CREW project lands.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Coupon Bight/Key Deer/Big Pine Key
Project ID: 2114
Lead Agency: Florida Department of Environmental Protection
Authority: CARL Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 3,373 Acres

Project Synopsis: The project encompasses virtually all of the undeveloped land between the Coupon Bight Aquatic Preserve and the National Key Deer Refuge on Big Pine Key. It includes the only significant sources of freshwater in the lower Keys which are critical to the survival of the endangered Key Deer. The Pine Rocklands are the best remaining anywhere. The project is habitat for 24 FNAI special plant species and 41 FNAI listed animal species.

Cost: Project size 3,373 acres.
1,576 acres have been acquired at a cost of \$31,537,877.
1,797 acres remaining to be acquired

Project Schedule:

Start Date: 1985
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	31,537,877
Tribal	
Local	
Other	
Total	31,537,877

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Cypress Creek/Trail Ridge Land Acquisition
Project ID: 2115
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 32,639 Acres

Project Synopsis: Cypress Creek/Trail Ridge is in southwestern St. Lucie County. The project gets its name from a large forested wetland system that once extended along the entire eastern edge of the Orlando Ridge south of Indian River County, through Allapattah Flats, and drained into the South Fork St. Lucie River. The Cypress Creek portion is also a CARL project.

Cost: Project size is 32,639 acres.
5,169 acres have been acquired at a cost of \$25,027,417.
27,470 acres remaining to be acquired.

Project Schedule:

Start Date: 1997
Finish Date: Upon Completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	20,349,615
Tribal	
Local	4,677,802
Other	
Total	25,027,417

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Devil's Garden
Project ID: 2183
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 82,508 acres

Project Synopsis: The Devil's Garden project is located in Hendry and Collier Counties, and is approximately 82,508 acres. This vast project is being proposed to fill a gap in a corridor that will provide a large landscape for the federally endangered Florida panther. There are numerous records of panther use of the property for several years as well as numerous other rare and threatened plants and animals.

Cost: Total: 82,508 acres needed.
5,528 acres have been acquired at a cost of \$14,775,000.
76,980 acres remaining to be acquired.

Project Schedule:

Start Date: 2002
Finish Date: When completed

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State	14,775,000
Tribal	
Local	
Other	
Total	14,775,000

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: East Coast Buffer- Natural Lands
Project ID: 2117
Lead Agency: Florida Department of Environmental Protection/South Florida Water Management District/U.S. Department of the Interior
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 48,108 Acres

Project Synopsis: The East Coast Buffer/Water Preserve Areas project involves acquisition of land located along the eastern side of the Everglades Protection Area in western Palm Beach, Broward, and Miami-Dade Counties. Most of the lands in this project area are undeveloped and include a considerable amount of wetland habitat. Current land uses include very low intensity development, pastureland, and limestone mining. The original East Coast Buffer footprint was based on a land suitability analysis which selected lands primarily on the basis of those needed for controlling seepage from the Everglades.

In addition, these lands are needed to implement several components of the Everglades Restoration Plan developed under the C&SF Project Comprehensive Review Study (CERP). The overall purposes of the CERP projects are to: (1) hold more water in the system by controlling seepage from the Everglades; (2) capture, store, and clean up excess stormwater currently lost to tide; (3) provide a buffer between the urban area and the Everglades; and (4) protect and conserve wetlands and habitat values outside the remaining Everglades. Restoration benefits include improved water supply for restoring hydropatterns of the Everglades, improved water quality and preservation of wetland habitat.

The project acres under the Florida Forever/SOR program are directed toward the purchase of natural lands acquired for their conservation, preservation value --high quality flood plains, wetlands and uplands that continue providing recreation, water resource protection, and wildlife habitat for future generations. Acres used or to be used for construction of facilities, such as STAs, reservoirs, and impoundments for Critical Restoration Projects (CRP) and Comprehensive Everglades Restoration Plan (CERP) initiatives have been removed from the Natural Lands project boundary.

Cost: Project size is 48,108 acres.
17,583 have been acquired at a cost of \$145,592,776.
30,525 acres remaining to be acquired.

Project Schedule: Start Date: 1994 Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	66,169,330
State*	75,289,446
Local	4,134,000
Total	145,592,776
Adjusted Total	102,990,022

This project is no longer on the Florida Forever –BOT list (66,809 acres). The total federal grant for the East Coast Buffer/ Water Preserve Area was \$72,614,143.

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 1101 in Goal 1. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Estero Bay
Project ID: 2118
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 14,358 Acres

Project Synopsis: Much of the Estero Bay Project is comprised of wetlands fronting Estero Bay (mangrove swamp, salt marsh, and salt flats). These communities provide nutrients to the Bay, contributing substantially to its biological productivity. The Bay, one of the most productive estuaries in the State, supports a diversity of wildlife, including the federally endangered bald eagle. These communities provide an important nutrient for the Bay, thus contributing to biological productivity. The wetlands are in a natural condition and help maintain high quality of water in the Estero Bay Aquatic Preserve. The project also includes the largest remaining block of rosemary scrub in southwest Florida. Several archaeological sites attributed to the Calusa Indians and their prehistoric ancestors are known to be within the project area. The project is threatened by the rapid residential development in the area.

Cost: Project size 14,358 acres.
9,392 acres have been acquired at a cost of \$69,418,260.
4,966 acres to be acquired

Project Schedule:

Start Date: 1985
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	59,220,290
Tribal	
Local	10,197,970
Other	
Total	69,418,260

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name Fakahatchee Strand (Picayune Strand- Fakahatchee)
Project ID: 2120
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 80,332 Acres

Project Synopsis: Fakahatchee Strand is located in Collier County. Of the subtropical swamps in South Florida, Fakahatchee Strand is perhaps the most significant, being the richest in orchids and other rare tropical plants. It is the most critical to the survival of the Florida panther, and the most important for the mangrove swamps of the Ten Thousand Islands. The project area is probably the best example of the strand swamp found in the United States. It is linked hydrologically to the Everglades system and is important to the estuarine ecosystem of the Ten Thousand Islands.

Cost: Project size 80,332.
62,921 acres have been acquired at a cost of \$25,701,463
17,411 acres remaining to be acquired

Project Schedule:

Start Date: 1980
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	25,701,463
Tribal	
Local	
Other	
Total	25,701,463

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Fisheating Creek Ecosystem
Project ID: 2121
Lead Agency: Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 176,876 Acres

Project Synopsis: Fisheating Creek, the only free-flowing tributary to Lake Okeechobee, is an extensive riverine swamp flowing through Glades County and emptying into the Lake. The total project area is 176,876 acres. Currently, none of this acreage is in public ownership. The project area contains relatively undisturbed upland and wetland habitats that serve as habitat for the endangered Florida Panther and a number of threatened species, including the Florida black bear, the bald eagle, the Florida scrub jay, and the Florida sandhill crane. The federally listed wood stork and state listed white ibis are known to use the area.

This acquisition will preserve the water quality and critical habitat of this large watershed. Additionally, the acquisition will provide both hydrologic and water quality benefits for Lake Okeechobee, located downstream. When states in Lake Okeechobee are high, Fisheating Creek serves as an important feeding area for wading birds, which typically use the lake marshes. Restoration requirements would be minimal if any, as most of the property remains in a natural state.

Cost: Project size 176,876 acres.
59,910 acres have been acquired at a cost of \$101,929,463.
116,966 remaining to be acquired

Project Schedule:

Start Date: 1999
Finish Date: Upon completion

Detailed Project Budget Information

Expenditures Thru 2020	
Federal	
State*	101,929,463
Tribal	
Local	
Other	
Total	101,929,463

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.
Breakdown of Fisheating Creek total acres acquired is 59,910.07 - 9,879.80 fee, 50,030.27 conservation easement*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Florida Keys Ecosystem
Project ID: 2122
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 13,632 Acres

Project Synopsis: This project, in conjunction with the Complete National Key Deer Refuge proposal, includes the remaining 15,336 acres of tropical hardwood hammocks and pine rocklands of significant size and quality remaining in the Florida Keys from southern Key Largo to Sugarloaf Key.

Cost: Project size 13,632 acres.
4,282 acres have been acquired at a cost of \$101,520,644.
9,350 acres remaining to be acquired

Project Schedule:

Start Date: 1992
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	101,520,644
Tribal	
Local	
Other	
Total	101,520,644

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: **Half Circle L Ranch**
Project ID: 2187
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1.

Measurable Output(s): Target 11,269 Acres

Project Synopsis: Located in Collier & Hendry Counties the project is approximately 11,269 acres. There are two owners and sponsored by Turrell and Associates. The project is proposed for fee simple acquisition. FNAI ranks the biological conservation priority for the project as medium high. The project is located within primary habitat zones for the Florida panther and the Florida Black bear, and compliments ongoing conservation efforts in the region.

Cost: Total: 11,269 acres needed.
11,269 acres remaining to be acquired.

Project Schedule:

Start Date: 2003
Finish Date: when completed

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State	
Tribal	
Local	
Other	
Total	0

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Kissimmee-St. Johns Connector**
Project ID: 2126
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 9,463 Acres

Project Synopsis: Encompassing the watersheds of the Kissimmee and St. Johns Rivers, the Kissimmee-St. Johns Connector project will provide an approximately 9,463 acre hydrological and habitat connection. Though most of the area has been farmed and ranched for years many of the natural communities are in fair condition. Portions of the project provide habitat for Florida sandhill crane, crested caracara, hard ferns and numerous other plants and animals. The project is proposed primarily as a less-than-fee simple acquisition.

The project lies in northeastern Okeechobee and southwestern Indian River counties. It is contiguous with the Ordway-Whittell Kissimmee Prairie Sanctuary (OWKPS) to the west and the Fort Drum Marsh Conservation Area to the east. Kissimmee Prairie Preserve State Park lies immediately to the west of the OWKPS.

Cost: Project size 9,463 acres.
9,463 acres remaining to be acquired.

Project Schedule:

Start Date: 2001
End Date: TBD

Detailed Project Budget Information

Expenditures Thru 2020	
Federal	
State	
Total	0

***This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Lake Wales Ridge Ecosystem/ Henscratch Ranch**
Project ID: 2129
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 14,310 Acres

Project Synopsis: The proposed refuge was authorized in November 1992 and would comprise 16,096 acres in Osceola and Polk Counties. The area forms the headwaters boundary between the Kissimmee River basin and the Peace River basin. It is the oldest terrestrial ecosystem in the southeast region of the US, and is probably the most threatened ecosystem in South Florida due to citrus conversion, residential housing construction, and commercial development. It supports 24 species of endangered, threatened, and candidate plant species as well as four threatened or endangered animal species.

Cost: Project size 14,310 acres.
10,858 acres acquired at a cost of \$33,772,139.
3,452 acres remaining to be acquired.

Project Schedule:

Start Date: 1992
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	7,120,000
State*	26,652,139
Tribal	
Local	
Other	
Total	33,772,139

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**The SFWMD Henscratch Ranch project falls within the boundary of the Lake Wales Ridge project. Acres acquired and dollars spent are included in the reported Lake Wales Ridge numbers.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Miami Dade County Archipelago
Project ID: 2134
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 884 Acres

Project Synopsis: This project includes 884 acres in Miami-Dade County and contains some of the most outstanding examples of rockland hammock that remain in Miami-Dade County, as well as the best remaining examples of the highly endangered pine rockland natural community outside of Everglades National Park. The Miami Rockridge Pinelands sites located within the County's urban development boundary are considered upland and developable. All sites are zoned residential, agricultural, or general use. The trees and endemics are also sensitive to adjacent development and agricultural activities.

Cost: Project size 884 acres.
535 acres have been acquired at a cost of \$23,717,314.
349 acres remaining to be acquired

Project Schedule:

Start Date: 1994
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	11,717,314
Tribal	
Local	12,000,000
Other	
Total	23,717,314

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Model Lands Basin Acquisition
Project ID: 2135
Lead Agency: South Florida Water Management District and Miami-Dade County
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 54,458 acres

Project Synopsis: The Model Lands project is located in Miami-Dade County and encompasses the lands between US 1 and Biscayne National Park. The project area of 54,458 acres includes a variety of habitats, both freshwater and estuarine. Lands within the project were identified in the Restudy as necessary for treatment of stormwater from the north and L-31E Canal prior to releasing it to tide or into other project lands to the south. Most of the project lands will be included in the Biscayne Bay Coastal Wetland and C-111 North Spreader Canal, CERP projects. The SFWMD and Miami-Dade County partner in the acquisition and management of lands for the project. The northern portions of the project and the areas near canals, roads, and other areas of disturbance are heavily infested with Australian Pine and Brazilian Pepper. The majority of the project area is undisturbed fresh and saltwater wetlands. These lands form a contiguous habitat corridor with Everglades National Park, Southern Glades SOR project, Biscayne National Park, Crocodile Lakes National Wildlife Refuge, and John Pennekamp State Park.

Cost: Project size is 54,458 acres.
 17,624 acres acquired at a cost of \$46,767,681
 36,834 acres remaining to be acquired.

Project Schedule: Start Date: 1994
 Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	12,130,900
Tribal	
Local	34,636,781
Other	
Total	46,767,681
Adjusted Total	0

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.
 ** A portion of the acres and costs on this project overlaps with Project ID 1416 and 2310. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: North Fork St. Lucie River
Project ID: 2138
Lead Agency: Florida Department of Environmental Protection/South Florida Water Mgmt District
Authority: Florida Forever/Save Our Rivers (SOR)/CERP

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 3,714 Acres

Project Synopsis: This 3,714 acre project includes a stretch of the North Fork approximately 6 miles long, extending from the White City bridge to Canal 24. This project will extend the boundary of the existing publicly owned St. Lucie River Aquatic preserve. More than 80 percent of the project area is comprised of wetlands within the river floodplain. In addition to the river floodplain, this project includes 175 acres of high quality uplands habitat such as high hammock, pine flatwoods, and sand pine scrub.

The purpose of this project is to preserve the floodplain habitat and to protect the water quality of the St. Lucie River from the rapidly encroaching urban development. Floodplain wetlands help decrease current velocities in the river, thereby attenuating flood waters. This action also facilitates recharge of the surficial aquifer and filters out nutrients, pollutants and suspended solids. This stretch of the river is classified as an Outstanding Florida Water. Boating, fishing and canoeing are actively pursued on this part of the river.

Cost: Project size 3,714 acres.
1,784 acres have been acquired at a cost of \$5,567,581.
1,930 acres remaining to be acquired

Project Schedule:

Start Date: 1988
Finish Date: Upon completion

Detailed Project Budget Information

Expenditures Thru 2020	
Federal	
State*	4,471,692
Tribal	
Local	1,095,889
Other	
Total	5,567,581

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Hyperlink: <http://www.dep.state.fl.us/stland/oes/carlmain.htm>

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: North Key Largo Hammocks
Project ID: 2139
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 5,415 Acres

Project Synopsis: The hammocks of north Key Largo form the largest stand of West Indian tropical forest in the United States. This rapidly disappearing forest, which is called Rockland forest, supports a wide diversity of rare plant and animal species. Degraded water quality is becoming an increasing issue in Florida Bay and the Florida Keys, as natural lands are converted to residential housing and commercial development. The project area has over 10 miles of shoreline that directly influences the adjacent waters of John Pennekamp Coral Reef State Park. As in other parts of the Keys, development seriously threatens this area.

Cost: Project size 5,415 acres.
3,577 acres have been acquired at a cost of \$84,208,654.
1,838 acres to be acquired

Project Schedule:

Start Date: 1983
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	84,208,654
Tribal	
Local	
Other	
Total	84,208,654

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Hyperlink: <http://www.dep.state.fl.us/stland/oes/carlmain.htm>

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Okeechobee Battlefield
Project ID: 2142
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 211 Acres

Project Synopsis: The Okeechobee Battlefield project represents a portion of one of the last battles of the Second Seminole Indian war. The 211-acre project consists of improved pasture and freshwater marsh, and provides the backdrop for a yearly reenactment of the battle. The site is home to bald eagles, and offers potential habitat for the crested caracara and wood stork. The evaluation team visited the project on September 24, 2001.

The project is situated adjacent to U.S. Highway 441/98 along the northeastern rim of Lake Okeechobee, approximately five miles southeast of the town of Okeechobee in southern Okeechobee County. There are no adjacent or close by conservation lands in the FNAI database, however South Florida Water Management District lands Paradise Run and Kissimmee River are approximately 8 and 12 miles to the west, respectively. St. Lucie County's Bluefield Ranch and St. Lucie Pinelands are approximately 8.5 miles to the east, and 12 miles to the northeast, respectively.

Cost: Project size is 211 acres.
145 acres have been acquired at a cost of \$3,217,250
66 acres remaining to be acquired.

Project Schedule:

Start Date: 2001
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	3,217,250
Total	3,217,250

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Osceola Pine Savannas
Project ID: 2143
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 6,357 Acres

Project Synopsis: The project covers an area of old beach ridges and intervening swales, with high-quality, longleaf pine flatwoods interrupted by cypress strands, cypress domes, and wet prairies. There are also extensive dry prairies and patches of oak or sand pine scrub, all of which are natural communities of the Kissimmee Prairie. Six FNAI-listed animals occur on the site, including sandhill crane, wood storks, and crested caracara.

Cost: Project size 6,357** acres.
1,333 acres have been acquired at a cost of \$310,000
5,024 acres remaining to be acquired.

Project Schedule:

Start Date: 1995
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	310,000
Total	310,000

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Pal-Mar
Project ID: 2144
Lead Agency: Florida Department of Environmental Protection/South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)/CERP

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 39,146 Acres

Project Synopsis: Pal-Mar is located in Palm Beach and Martin Counties, east of the J.W. Corbett Wildlife Management Area and west of Jonathan Dickinson State Park. The total project encompasses 35,760 acres, including some of the highest quality pine flatwoods in southern Florida in an ecotone between pine flatwoods and the treeless Everglades. It also includes high quality prairie and savanna habitat.

The primary purpose of this project is to conserve and protect environmentally unique lands that contain native, relatively unaltered flora and fauna. Acquisition of this project will form an extensive wildlife corridor connecting Jonathan Dickinson State Park, Pal-Mar, J.W. Corbett Wildlife Management Area, and DuPuis Reserve. By protecting native flatwoods, prairies, and marshes, this project will protect critical habitat for at least four endangered bird species, including the Florida sandhill crane and Everglades snail kite, and for the endangered Florida panther.

Cost: Project size 39,146 acres.
31,667 acres have been acquired at a cost of \$119,830,428.
7,479 acres remaining to be acquired

Project Schedule:

Start Date: 1992
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	3,650,931
State*	85,112,151
Tribal	
Local	31,067,346
Other	
Total	119,830,428
Adjusted Total	82,240,259

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 1101 in Goal 1. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Panther Glades
Project ID: 2145
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 60,007 acres

Project Synopsis: The area consists of a landscape mosaic of forested uplands interspersed among forested wetland communities. The ecosystem encompassed by the project is a large landscape and watershed in south-central Hendry County that includes portions of both the Big Cypress and Kissimmee Billy Strand. The Panther Glades project is important to many wildlife species, particularly those that require extensive areas of habitat to maintain viable populations.

Cost: Project size 60,007.
21,724 acres have been acquired at a cost of \$75,049,836.
38,283 acres remaining to be acquired

Project Schedule:

Start Date: 2001
Finish Date: Upon completion

Detailed Project Budget Information (dollars in thousands)

	Expenditures Thru 2020
Federal	
State*	75,049,836
Tribal	
Local	
Other	
Total	75,049,836

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration, Habitat and Species
Project Name: Lake Marion Creek and Reedy Creek/Lake Hatchineha Watershed
Project ID: 2147
Lead Agency: Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 43,322 Acres

Project Synopsis: This 43,322-acre project is located at the headwaters of the Kissimmee-Okeechobee-Everglades ecosystem in Polk and Osceola Counties. The project area includes a substantial portion of Reedy Creek and Lake Marion Creek drainage basins. The land contains large expanses of endangered scrub, mesic and wet flatwoods, hydric hammock, and floodplain forest, including habitat for several threatened and endangered plants and animals. The SFWMD in partnership with Polk County has acquired 12,915 acres. SFWMD is the lead land manager.

The primary purpose of this project is to preserve this watershed which is a critical link in the restoration of the Kissimmee-Lake Okeechobee-Everglades ecosystem. Reedy Creek is the headwater drainage for Lake Russel and Cypress Lake. Peak Discharges from major storm events are modified and stored within the swamp and provide year-round base flow to these downstream lakes. The Lake Marion Creek portion of the project is of critical importance to the recharge of the Floridan Aquifer. Lake Marion serves as the headwaters to lake Marion Creek, which combines with Snell and Horse Creeks to provide a constant supply of high-quality water to Lake Hatchineha, which in turn discharges to Lake Kissimmee, and eventually the Kissimmee River and Lake Okeechobee. All three of these water bodies are primary components of the SFWMD's water management system.

Cost: Project size 43,322 acres.
12,907 have been acquired for \$12,339,666.
30,415 acres remaining to be acquired.

Project Schedule:

Start Date: 1996
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State	11,503,617
Tribal	
Local	836,049
Other	
Total	12,339,666

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration, Water Quality, Habitat and Species,
Project Name: **Pine Island Slough Ecosystem**
Project ID: 2186
Lead Agency: Department of Environmental Protection/South Florida Water Management District
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 21,583 Acres

Project Synopsis: The Pine Island Slough Ecosystem project consists of approximately 49,583 acres in Osceola and Indian River Counties, Florida. About 21,583 acres are within the South Florida Ecosystem boundary. This landscape - intact ecological upland and wetland habitat - is reminiscent of the kind of landscape that once dominated Central Florida in pre-European settlement times. It is contiguous with the Kissimmee Prairie Preserve State Park, which is noted for its high quality resource values, and the project's acquisition would allow for the protection of and management of additional high ecological quality habitats in an area of Florida with significant vertebrate wildlife, hydrological values and other important natural resource attributes.

Cost: Project size 21,583*.
21,583 acres remain to be acquired.

Project Schedule:

Start Date: TBD
Finish Date: TBD

Detailed Project Budget Information (dollars in thousands)

	Expenditures Thru 2020
Federal	
State	
Tribal	
Local	
Total	0

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Pineland Site Complex
Project ID: 2148
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 206 Acres

Project Synopsis: This internationally significant archaeological site was inhabited by the Calusa for over a thousand years, and includes substantial midden mounds, a burial mound, remnants of an Indian-engineered canal, and buried deposits containing organic remains. Natural habitats within the project area include tidal saltern, a tidal creek, intertidal shoreline, and a large tract of mangrove wetland. Ponds on the site are important to white ibis, egrets, herons, and wood stork.

Cost: Project size 206 acres.
57 acres have been acquired at a cost of \$1,751,874.
149 acres to be acquired

Project Schedule:

Start Date: 1996
Finish Date: Upon completion

Detailed Project Budget Information

Expenditures Thru 2020	
Federal	
State*	1,355,000
Tribal	
Local	396,874
Other	
Total	1,751,874

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Ranch Reserve
Project ID: 2178
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 2,217Acres

Project Synopsis: The project consists of four cattle ranches on the Osceola Plain west of and above the St. Johns River marshes. Mesic flatwoods interrupted by depression marshes cover about 40 percent of the project area. Swamps and hammocks make up much of the remaining natural communities. At least 24 FNAI-listed animals are known or reported from the project, including red-cockaded woodpeckers and one of the best populations of sandhill cranes in Florida.

Cost: **Project size:** 2,217** acres.
67 acres have been acquired at a cost of \$39,286
2,150 acres remaining to be acquired

Project Schedule:

Start Date: 1997
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	39,286
Tribal	
Local	
Other	
Total	39,286

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Shingle Creek
Project ID: 2151
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 7,704 Acres

Project Synopsis: Shingle Creek Swamp is located in southern Orange and northern Osceola counties. It is a major receiving body for stormwater runoff from areas south and southwest of Orlando. The Orange County portion of the swamp is more than 1.5 miles wide, and is dominated by Cypress, Loblolly Bay, and Red Maple. Shingle Creek itself was channelized in the 1920s and it borders the eastern edge of the swamp. Most of the floodplain in Osceola County is intact, but adjacent uplands, which historically were wiregrass/longleaf pine-dominated systems, have been cleared and planted as improved pasture. As mitigation for the Orlando Beltway Southern Connector, a hydrologic restoration plan was implemented in 1995, which equalizes water levels and sheetflow across the Orange County portion of Shingle Creek Swamp. Osceola County in partnership with SFWMD has acquired an additional 194 acres within the project, granting the District a conservation easement for funding \$2,666,174 of the land acquisition cost.

Cost: Project size 7,704.
2,750 acres have been acquired at a cost of \$5,217,670.
4,954 acres remaining to be acquired

Project Schedule:

Start Date: 1987
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State	5,217,670
Tribal	
Local	
Total	5,217,670

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Six Mile Cypress
Project ID: 2152
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 2,193 Acres

Project Synopsis: Six Mile Cypress Slough is located in Lee County southeast of the City of Fort Myers. It extends from State Road 82 southwesterly for approximately nine miles to Ten Mile Canal. The Slough averages 1,500 feet in width, and consists of Cypress swamps, interspersed with numerous open ponds. It is ringed with pine flatwoods, transitional hardwoods, wet prairies, and stands of Melaleuca. The total project size is 1,966 acres.

Cost: Project size 2,193.
854 acres have been acquired at a cost of \$36,909,895.
1,339 acres remaining to be acquired

Project Schedule:

Start Date: 1987
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	2,097,521
Tribal	
Local	34,812,374
Other	
Total	36,909,895

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: South Savannas
Project ID: 2154
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 6,046 Acres Acquired

Project Synopsis: The Savannas forms a chain of marshes and lakes that separate the inland pine flatwoods from the coastal scrub on the Atlantic Ridge in St. Lucie and Martin Counties. The State has acquired most of the lands within the project through the CARL program. The District in partnership with Martin County acquired ownership of a single 77-acre tract and transferred title to the property to the State of Florida in 1999. It is now and will continue to be managed by the Department of Environmental Protection as the Savannas Preserve.

Cost: Project size: 6,046 acres.
5,182 acres have been acquired at a cost of \$20,902,290.
864 acres remaining to be acquired.

Project Schedule:

Start Date: 1981
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	19,902,290
Tribal	
Local	1,000,000
Other	
Total	20,902,290

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Ten Mile Creek-Natural Lands
Project ID: 2180
Lead Agency: Department of Environmental Protection/South Florida Water Mgmt District
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 240 Acres

Project Synopsis:

The ten mile creek natural areas are those areas of the 10 Mile Creek project that are outside of the levee footprint of the reservoir. These areas include small pockets of hammock vegetation along 10 Mile Creek, an oxbow island north of the reservoir, and the Gordy Road Recreation Area (managed by St. Lucie County under a 50 year lease) east of the 10 Mile Creek STAs.

Cost: Project size 240.
184 acres have been acquired at a cost of \$2,042,586.
56 acres remain to be acquired.

Project Schedule:

Start Date: 1998
Finish Date: Upon completion

Detailed Project Budget Information

	Expenditures Thru 2020
State*	1,792,586
Local	250,000
Federal	
Total	2,042,586

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Habitat and Species
Project Name: Triple Diamond
Project ID: 2186
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 7,991 Acres

Project Synopsis: The acquisition of this project would preserve significant dry prairie, important in the long-term protection of this endemic natural community and the rare species that it supports, as well as provide recreational and research opportunities. Additionally, preserving this intact and well-managed landscape would be for the protection and management of thousands of acres of additional high quality habitats in an area of Florida known for its rare vertebrate wildlife, globally imperiled natural communities, and significant hydro- logical values. This project is bordered on the north by the Kissimmee River Prairie Preserve State Park. Other public lands in the near vicinity include Avon Park Air Force Range, Bombing Range Ridge, and the Kissimmee River to the west and Fort Drum Marsh Conservation Area and Blue Cypress Conservation Area to the east. The Kissimmee-St. Johns River Connector Florida Forever Project is also located within 7 miles to the east of the property. Triple Diamond, along with existing conservation lands, would contribute to a large, contiguous landscape-sized protection area of more than 200,000 acres.

Cost: Project size 7,991 acres.
1,992 acres have been acquired at a cost of \$4,200,000.
5,999 acres remaining to be acquired.

Project Schedule:

Start Date: 1995
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	4,200,000
Total	4,200,000

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**Dollars contributed by Polk County

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Habitat and Species
Project Name: Twelve Mile Slough
Project ID: 2158
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 15,835 Acres

Project Synopsis: This site contains 15,835 acres in Hendry County and is tributary to the much larger and regionally significant Okaloacoochee Slough. It contains a mosaic of uplands and wetlands, as well as improved pasture areas which appear to be reverting to native range. Based on a 1993 FGFWFC report, this single-owner tract provides habitat for the endangered Florida panther. Significant restoration on the site is necessary to correct overdrainage of the wetland communities.

Restoration and protection is important because the Twelve Mile Slough is a headwater tributary to Okaloacoochee Slough, which supplies a major source of water for Fakahatchee Strand State Preserve and Big Cypress National Preserve. Surface water storage in the numerous wetlands provides for ground-water recharge of the underlying surficial aquifer and provides surface water supply to the Caloosahatchee River.

Cost: Project size: 15,835 acres.
7,796 acres have been acquired at a cost of \$11,000,000.
8,039 acres remaining to be acquired.

Project Schedule:

Start Date: 1998
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	
State*	11,000,000
Tribal	
Local	
Other	
Total	11,000,000

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Florida Communities Trust Lands, State Park Lands and State Wildlife Mgmt Areas
Project ID: 2184
Lead Agency: Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 256,196 Acres

Project Synopsis: The Florida Communities Trust administers two state land acquisition grant programs that provide funding to local governments and eligible non-profit organizations to acquire parks, open space, greenways and projects supporting Florida's seafood harvesting and aquaculture industries. The source of funding for Florida Communities Trust comes from Florida Forever proceeds. Florida Communities Trust assists communities in strengthening local comprehensive plans through the competitive criteria in two grant programs, the Parks and Open Space Florida Forever Grant Program and the Stan Mayfield Working Waterfronts Florida Forever Grant Program.

The Parks and Open Space Florida Forever grant program assists the Department of Community Affairs in helping communities meet the challenges of growth, supporting viable community development and protecting natural resources and open space. The program receives 21 percent, or \$63 million of the total \$300 million Florida Forever appropriation.

The creation of the Stan Mayfield Working Waterfronts Florida Forever grant program by the 2008 Florida Legislature acknowledges the importance of the traditional seafood harvesting and aquaculture industries in Florida. The program receives 2.5 percent, or \$7.5 million of the total \$300 million Florida Forever appropriation.

Florida Communities Trust projects play a significant role in improving the quality of life of Florida's residents. The local and regional parks funded by the Trust's Parks and Open Space grant program also help to promote economic growth and revitalization in local communities through nature based tourism. To learn more about Florida's industries and how Florida Communities Trust fits into the state's economic fabric, please visit the Enterprise Florida website.

Cost: Project size is 256,196 acres.
244,595 acres have been acquired at a cost of \$655,617,027.
11,601 acres remaining to be acquired.

D Detailed Project Budget Information

	Expenditures Thru 2020
Federal	8,745,402
State*	360,114,992
Tribal	
Local	286,756,632
Other	
Total	655,617,027

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: A.R. M. Loxahatchee National Wildlife Refuge (includes WCA 1)
Project Number: 2161
Lead Agency: U.S. Fish and Wildlife Service
Authority: Migratory Bird Conservation Act of 1929

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 147,392 Acres

Project Synopsis: The Arthur R. Marshall Loxahatchee NWR was established in 1951 through an agreement between the South Florida Water Management District and the U.S. Fish and Wildlife Service under the Migratory Bird Conservation Act of 1929. Acquisition is for the purposes of providing buffer to the refuge, Everglades habitats, water recharge and storage, and for habitat protection. Increasing population growth is rapidly changing the landscape, converting farmland to residential neighborhoods. Acquisition support both refuge wildlife management goals as well as CERP restoration goals.

Cost: Total project size 147,392* acres.
143,954 acres have been acquired at a cost of \$119,000.
3,438 acres remaining to be acquired.

Project Schedule:

Start Date: 1955
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	119,000
SFWMD	
Total	119,000

*The total size of the ARM Loxahatchee NWR is 145,567. 141,324 of these acres are state-owned and leased to the USFWS for management. The state-owned acres are Water Conservation Area.

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: **Big Cypress National Preserve Addition**
Project ID: 2163
Lead Agency: National Park Service
Authority: Public Law 100-301

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 146,117 acres

Project Synopsis: On April 29, 1988, Public Law 100-301 established the Big Cypress National Preserve (BCNP) Addition. At that time, I-75 was being designed in such a way as to improve the natural water flow to Everglades National Park, which had been disrupted by State Road 84 (commonly known as Alligator Alley). This provided an opportunity to enhance protection of Everglades National Park, to promote protection of the endangered Florida panther, and to provide for public recreational use and enjoyment of public lands by expanding the BCNP to include those lands adjacent to Interstate 75 in Collier County north and east of the Preserve, west of the Broward County line, and south of the Hendry County line.

The purpose of the Federal acquisition is to provide significant public benefits by limiting development pressures on lands which are important both in terms of fish and wildlife habitat supporting endangered species and of wetlands which are the headwaters of the Preserve. Additionally public ownership of the lands adjacent to the Preserve would enhance the protection of the Everglades National Park while providing recreational opportunities and other public uses currently offered by the Big Cypress.

The Act provided for expansion of the Big Cypress by 146,117 acres, of which approximately 32,557 acres have been acquired by the State of Florida. The authorizing legislation allows the Secretary of the Interior to purchase lands within the preserve boundaries and stipulates that no improved property, as defined by the Act, nor oil and gas rights, shall be acquired without the consent of the owner, unless that property is subject to, or threatened with, uses which are, or would be, detrimental to the purposes of the Preserve. The NPS will acquire the remaining private lands, excluding qualifying exempt property, using fair market value appraisals, consistent with the enabling Act.

Cost: Project size 146,117 acres.
144,461 acres have been acquired at a cost of \$75,206,737.
1,656 acres remaining to be acquired.

Project Schedule:
Start Date: 1989
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	51,820,000
State*	23,386,737
Total	75,206,737

All acquisitions will be consistent with authorizing Big Cypress Legislation.

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Brian Coleman

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: **Big Cypress National Preserve**
Project ID: 2164
Lead Agency: National Park Service
Authority: Public Law 93-440

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 574,449 acres

Project Synopsis: On October 11, 1974, Public Law 93-440 established the Big Cypress National Preserve in order to assure the preservation, conservation, and protection of the natural, scenic, hydrologic, floral and faunal, and recreational values of the Big Cypress Watershed. The total size of the original Preserve is 574,449 acres. The State of Florida donated 186,340 acres to establish the Big Cypress. The Federal government has acquired all but 845 acres of the remaining 388,109 acres in the original Preserve boundaries. The authorizing legislation allows the Secretary of the Interior to purchase lands within the Preserve boundaries and stipulates that no improved property, as defined in the Act, nor oil and gas rights, shall be acquired without the consent of the owner, unless that property is subject to, or threatened with, uses which are, or would be, detrimental to the purposes of the Preserve.

The 179 privately owned tracts are scattered throughout the Preserve. The National Park Service will acquire those tracts, excluding qualifying exempt property, using fair market value appraisals consistent with the Act.

Cost: Project size 574,449 acres.
573,623 acres have been acquired at a cost of \$222,155,000
826 acres remaining to be acquired.

Project Schedule:

Start Date: 1974
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	180,622,000
State*	41,533,000
Total	222,155,000

All Acquisitions will be consistent with authorizing Big Cypress Legislation.

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Hyperlink: N/A
Contact: Brian Coleman

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Biscayne National Park
Project ID: 2165
Lead Agency: National Park Service
Authority: Public Law 96-287
Funding Source:

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 172,971 acres

Project Synopsis: This project includes acquisition of three Ragged Keys (326 acres), one tract of submerged lands only (20 acres) and two on-shore tracts (36 acres) in Biscayne National Park. The Ragged Keys are five islands immediately adjacent to the most popular use area in the park, Boca Chita Key. Two islands were acquired through 1999. Two of the three islands remaining to be acquired are natural habitat on the islands and in the surrounding shallows. Least terns nest on land and endangered sea turtles nest on the shoreline. Both nesting sites are greatly disturbed by overflow public use of the area and developers for resort and recreational facilities have repeatedly targeted the islands. A total of 382 acres remains to be acquired.

Cost: Project size 172,971 acres.
170,977 acres have been acquired at a cost of \$31,851,000.
1,994 acres remaining to be acquired

Project Schedule:

Start Date: 1968
Finish Date: Open

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	31,851,000
SFWMD	
Total	31,851,000

Contact: Brian Coleman

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Crocodile Lake National Wildlife Refuge
Project Number: 2166
Lead Agency: U.S. Fish and Wildlife Service
Authority: Endangered Species Act of 1973

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 7,100 acres

Project Synopsis: Crocodile Lake National Wildlife Refuge was established on April 2, 1980 to preserve mangrove wetlands, tropical West Indian hardwood hammocks and open water areas on Key Largo, which are critical feeding and nesting habitat for the endangered American crocodile. The Refuge is within the designated Critical Habitat for the species and contains one-third of all crocodile nests found in Florida. The Refuge consists of about 5,300 acres of mangrove swamp, 1,200 acres of upland hardwood hammock, and 300 acres of open water. The uplands are vegetated with the last remaining remnants of unspoiled West Indian Hardwoods in the United States. The Refuge is inhabited by a number of other endangered or threatened species, most notably the eastern indigo snake, the bald eagle, the Key Largo woodrat, the Key Largo cottonmouse, and the Schaus swallowtail butterfly. The major threat to this habitat is conversion of the uplands to residential or commercial developments. The crocodile has little tolerance to human activities. Wetlands areas are less threatened, but severe alteration and damage has occurred.

Cost: Project size 7,100 acres.
6,702 acres have been acquired at a cost of \$13,093,000
398 acres remaining to be acquired

Project Schedule:

Start Date: 1979
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	13,093,000
SFWMD	
Total	13,093,000

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Everglades and Dry Tortugas National Parks
Project ID: 2194
Lead Agency: US Department of the Interior
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 1,464,072 Acres

Project Synopsis: In 1928 landscape architect Ernest Coe began a concentrated effort to designate a "Tropical Everglades National Park." His persistence paid off when he and others persuaded Congress to designate the Everglades as a national park in 1934. It took park supporters another 13 years to acquire land and secure funding. In 1947, Marjory Stoneman Douglas would publish *The Everglades: River of Grass*, a work that would come to greatly influence the public perception of the oft-misunderstood region. That same year, Everglades National Park officially opened, marking the first large-scale attempt to protect the area's unique biology. Today, the park comprises a vast wetland wilderness unlike any other in the world.

National Park Service conservation of marine resources in south Florida began when Fort Jefferson National Monument was established in 1935 to include the surrounding water, submerged land, and a series of keys. In 1992 it was redesignated Dry Tortugas National Park and its purposes expanded. The park now protects significant nesting areas for seabirds, habitat for endangered and threatened sea turtles, and sensitive portions of the Florida Keys coral reef ecosystem.

The creation of these national park system units has underscored both the need for and the public interest in preserving south Florida ecosystem resources. The presence of numerous national wildlife refuges and marine sanctuaries as well as state, local, and private protected areas are also evidence of this support. Yet, even though much of the region has been set aside, the ecosystem remains threatened. Combating nutrient-rich (nitrate-contaminated) water, interrupted hydrology, decreased water supply, exotic plants, and mercury contamination cannot be done successfully at the park level alone. Instead, combined and integrated efforts at the federal, state, county, and local levels are necessary.

Cost: Project size is 1,464,072.
1,463,737 acres have been acquired at a cost of \$24,000,000.
335 acres remaining to be acquired.

Project Schedule:

Start Date: 1947
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	22,000,000
SFWMD	2,000,000
Total	24,000,000

Contact: Brian Coleman

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Everglades Headwaters NWR & Conservation Area (previously Tiger Cattle Company Ranch)
Project ID: 2182
Lead Agency: U.S. Fish and Wildlife Service
Authority: Land and Water Conservation Fund (LWCF)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 2,230 Acres

Project Synopsis: The proposal is comprised of two large, impressive, basin marshes (making up approximately 20 percent of the site's landcover), along with scattered depression marshes, dry prairie, mesic flatwoods, and mesic hammock and remnant upland natural communities, imbedded in a matrix of extensive areas of improved pasture (approximately 50 percent). The basin marshes are oriented north/south through the middle third of the site and most of the remaining natural areas occur adjacent to these marshes. Improved pastures make up most of the eastern and western thirds of the property. A network of relatively shallow ditches/canals and roads have altered hydrology to some extent. Currently, family and friends utilize the land for recreation and wildlife viewing. There is no hunting lease on the property. While the largest marsh and some of the flatwoods have burned recently, prescribed burning apparently is not used on a regular basis.

Acquiring the conservation easement over the Tiger Cattle Company Ranch fulfills Florida Forever goals of increasing the number of acres protected with alternatives to fee-simple acquisition; increasing the number of acres of preserved Strategic Habitat Conservation Areas; creating significant landscape linkages by helping connect the preserved lands of the Kissimmee Prairie Preserve State Park, the Kissimmee-St. Johns River Connector Florida Forever project and the Pine Island Slough Florida Forever project; and protecting 733 acres of surface-water protection.

Cost: Project size 2,230 acres. 2,128 acres acquired at a cost of \$4,430,000.
49 acres remaining to be acquired.

Project Schedule:

Start Date: 2009
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
State*	
Local	
Federal	4,430,000
Total	4,430,000

Contact: Bill Miller

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Everglades National Park Expansion
Project ID: 2167
Lead Agency: National Park Service
Authority: Everglades National Park Protection and Expansion Act of 1989 (Public Law 101-229)
Funding Source:

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 109,504 acres

Project Synopsis: In 1989, Congress authorized the addition to Everglades National Park involving approximately 109,504 acres of an area known as Northeast Shark Slough and the East Everglades. The act also directed the Army Corps of Engineers to modify water management structures to allow the sheetflow of water and extend the hydroperiod to more closely resemble the historic Everglades. The East Everglades Addition is necessary to limit further losses suffered by the Park due to habitat destruction outside former boundaries and to restore natural water-flow patterns that are critical to the ecological integrity and long-term viability of Park resources. The acquisition of the East Everglades Addition lands and completion of the Modified Water Deliveries to Everglades National Park project are the most significant efforts underway to restore water deliveries to Shark Slough, the principal watershed in the Park. These hydrologic improvements are crucial to restoring ecosystem productivity in the southern Everglades and maintaining adequate freshwater inflow to the downstream estuaries along the Gulf of Mexico and Florida Bay.

Cost: Project size 109,504 acres.
108,805 acres have been acquired at a cost of \$97,678,000
699 acres remaining to be acquired

Project Schedule:

Start Date: 1990
Finish Date: **TBD**

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	81,406,000
State*	16,272,000
Total	97,678,000

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Hyperlink: N/A
Contact: Brian Coleman

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Florida Panther National Wildlife Refuge (includes Ten Thousand Islands refuge)*
Project Number: 2169
Lead Agency: U.S. Fish and Wildlife Service
Authority: Endangered Species Act of 1973 (Florida Panther); P.L. 100-696 (Ten Thousand Islands)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 61,573 acres

Project Synopsis: The Florida panther is one of the most endangered mammals in the Nation, with less than 80 individuals inhabiting the Big Cypress-Everglades region. The target lands are valuable for flood water retention, water purification, and aquifer recharge, while providing high quality habitat for a wide variety of flora and fauna in addition to the panther. Most of the area is relatively inaccessible and is one of the few remaining retreats for the Florida black bear. The area is diverse and interesting botanically containing rare orchids, large oaks, cypress, maples, cabbage palms and a diversity of tropical trees which form a dense canopy. The increasing human population in South Florida with its consequent urban expansion is jeopardizing the area's ecological integrity. Thus essential habitat for the survival of the Florida panther is being threatened by conversion for agricultural projects, residential development, oil field activities, lumbering and road construction. A preliminary project proposal has been developed for expansion of the Florida Panther Refuge. The ecosystem within the target boundary is absolutely essential to the survival of the Florida panther.

Cost: Project size 61,573 acres.
61,563 acres have been acquired at a cost of \$10,682,000
10 acres remaining to be acquired.

Project Schedule:

Start Date: 1989
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	10,233,000
SFWMD	449,000
Total	10,682,000

*Acres and expenditures reported for the Florida Panther NWR also includes parcels acquired in the Cape Romano/Ten Thousand Islands NWR.

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Florida Keys National Wildlife Refuge (includes National Key Deer, Great White Heron, Key West refuges)
Project Number: 2168
Lead Agency: U.S. Fish and Wildlife Service
Authority: Endangered Species Act (Key Deer), Executive Order 7993 (Great White Heron), Executive Order 923 (Key West)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 415,433 acres*

Project Synopsis: Acquisitions are to protect and maintain habitat extensively used by the endangered key deer. Preservation of the major habitats for this deer through acquisition contributes to the overall faunal diversity of Florida. Negotiations have been successful and with the availability of funding, acquisition of about 500 acres (30 willing sellers) within the refuge boundary would be possible. No Name and Big Pine Keys are the two most extensively used keys in the deer's range. Other rare, endangered and 'special emphasis' species are also found here. The greatest threat to key deer habitat is habitat modifications by land clearing. Residential development is rapidly proceeding as demand increases for the dwindling supply of acreage that will support construction. Unfortunately, this same land is prime deer habitat. An observable consequence of the residential development of these lands is the incidence of deer kills by vehicle traffic. An expansion of the Refuge to acquire a system of no-development corridors assure the continued existence of habitat for deer movement throughout the island.

Cost: Project size 415,433 acres.
410,948 acres have been acquired at a cost of \$32,669,000.
4,485 acres remaining to be acquired.

Project Schedule:

Start Date: 1960
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	32,669,000
SFWMD	
Total	32,669,000

*Acres and expenditures reported for the Florida Keys NWR also includes parcels acquired in the National Key Deer Refuge, Great White Heron NWR and Key West NWR. Ownership of lands in the Key West NWR have never been under private ownership. They have been transferred between federal agencies.

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: **Hobe Sound National Wildlife Refuge**
Project Number: 2170
Lead Agency: U.S. Fish and Wildlife Service
Authority: Endangered Species Act of 1973

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 1,130 Acres

Project Synopsis: Hobe Sound National Wildlife Refuge was established in 1969 and presently includes 1,027 acres of coastal sand dunes, mangrove and sand pine-scrub habitat. The primary objective of the refuge is to maintain habitat for some of the most productive nesting areas of the endangered leatherback, green and threatened loggerhead sea turtles. Hobe Sound provides habitat and protection to eight plant and animal species listed as federal threatened or endangered. The South Florida Ecosystem Plan highlights the importance of beaches to sea turtles. One of the Plan's objectives is to prevent the further decline of candidate, threatened, and endangered species and prevent further degradation of their habitats. This project is supported by the State and local governments, the public and conservation groups, with no known opposition. There are many willing sellers of high priority habitat. Nonprofit conservation groups are involved in this project.

Cost: Total project size 1,130 acres.
1,035 acres have been acquired at a cost of \$135,000
95 acres remaining to be acquired.

Project Schedule:

Start Date: 1968
Finish Date: TBD

Detailed Project Budget Information

Expenditures Thru 2020	
Federal	135,000
SFWMD	
Total	135,000

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: J.N. "Ding" Darling National Wildlife Refuge (includes Caloosahatchee, Island Bay, Matlacha Pass & Pine Island refuges)
Project Number: 2171
Lead Agency: U.S. Fish and Wildlife Service
Authority: Migratory Bird Conservation Act; Executive Order 3299; Executive Order 943

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 10,255 acres

Project Synopsis: The J.N. "Ding" Darling National Wildlife Refuge was established in 1945 and is located in Lee County, Florida on Sanibel Island. The island is 12 miles long and is fringed with mangrove trees, shallow bays and white sandy beaches. Tourism and seasonal residential development threatened to envelop the islands private lands until a growth plan was instituted. Caloosahatchee NWR is located in Fort Myers and acquisition of lands here is necessary for the protection of the endangered West Indian Manatee. Island Bay NWR is located in the Cape Haze area of Charlotte County and includes portions of three islands. All wetlands are protected by Federal or State ownership. Matlacha Pass NWR's acquisition boundary includes all islands, wetlands and uplands lying south of the north boundary line of Township 44 South, crossing the Caloosahatchee River and running southerly and easterly to Bunch Beach. Pine Island NWR generally lies between the western boundary of Pine Island and the Coastal Islands of Cayo Coats, North Captiva and Sanibel.

Cost: Project size 10,255 acres*.
7,588 acres have been acquired at a cost of \$9,705,000
2,667 acres remaining to be acquired.

Project Schedule:

Start Date: 1945
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	9,705,000
SFWMD	
Total	9,705,000

*Acres and expenditures reported for the J. N. "Ding" Darling NWR also includes parcels acquired in the Caloosahatchee NWR, Matlacha Pass NWR and Pine Island NWR. Ownership of lands in the Caloosahatchee NWR and Matlacha Pass NWR have never been under private ownership. They have been transferred between federal agencies.

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Lake Wales Ridge National Wildlife Refuge
Project Number: 2185
Lead Agency: U.S. Fish and Wildlife Service

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 3,384 acres

Project Synopsis: The Lake Wales Ridge NWR is managed as part of the Pelican Island NWR complex located about 80 miles away. The Refuge was established in 1994 as the first Refuge designated for the recovery of endangered and threatened plants. The Refuge contains 23 listed plants, at least four listed animals, and more than 40 endemic invertebrates. The Refuge is part of a network of scrub preserves owned by the state of Florida, The Nature Conservancy, Archbold Biological Station, two water management districts and Polk and Highland Counties.

The refuge is composed of four tracts within Polk and Highlands Counties. Because of the potential impact to the plants and animals, the refuge has not been opened to the public. However, this Refuge is an exciting place where researchers from Archbold Biological Station have conducted important ecological studies. Per acre, the Refuge has a very high density of listed species. The Snell Creek tract, located within the SFWMD, contains one of the last remaining tracts of undisturbed sandhill in northern Polk County.

Cost: Total project size 3,384 acres.
147 acres have been acquired at a cost of \$268,000.
3,237 acres remaining to be acquired.

Project Schedule:
Start Date: 1945
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020
Federal	268,000
SFWMD	
Total	268,000

Contact: Susan C. Trokey, Realty Specialist FWS, susan_trokey@fws.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: NOAA South Florida Program
Project Name: South Florida Ecosystem Restoration Planning and Projects
Project ID: 2200
Lead Agency: NOAA NMFS/SEFSC and OAR/AOML
Authority: Magnuson Stevens Fisheries Wildlife Conservation Act, Marine Mammal Protection Act, NMSA (16 U.S.C. §§ 1431 *et seq.*), FKNMSPA (PL 101-605), and Executive Order 13089 (Coral Reef Protection)
Funding Source: NOAA and USACE

Strategic Plan Goal(s) Addressed: Goal 2, Restore, Preserve, and Protect Natural Habitats and Species, Subgoals 2A, Restore, Preserve, and Protect Natural Habitats; and 2B, Control Invasive Exotic Plant and Animal Species. Objective 2-A.2, Protect 20% of the Coral Reefs.

Measurable Output(s): NOAA supports South Florida Ecosystem Restoration by (1) providing physical, water quality, and biological data for Florida Bay and Biscayne Bay as part of the CERP Monitoring and Assessment Plan; (2) monitoring selected indicator species in the ecosystem (common forage/prey species, important commercial species and corals) to assess the effects of CERP implementation; (3) developing and applying habitat suitability models; (4) analyzing species and community attributes in relation to freshwater inflow and salinity; (5) determining estuarine and coastal marine mammal population health and status (6) performing ecosystem services analyses and ecological risk assessments for coastal south Florida; (7) contributing to the activities and products of the South Florida Task Force Invasive Exotic Species (IES) Action Framework Team; and (8) carrying out activities to address the habitat-quality-improvement goals of NOAA's Biscayne Bay Habitat Focus Area.

Project Synopsis: An ongoing NOAA program initiated in FY1996 includes research, monitoring and modeling components, as well as education and outreach. NOAA scientists and managers are contributing members of multi-agency groups addressing South Florida Ecosystem Restoration issues and opportunities at several levels, including the Task Force, the Working Group, the Science Coordination Group, CERP RECOVER's Leadership Group, RECOVER's Southern Coastal Systems Monitoring and Assessment Team, the Biscayne Bay Regional Restoration Coordination Team, and NOAA's Biscayne Bay Habitat Focus Area. NOAA publishes its South Florida research results in scientific journals, contributes to the South Florida Ecosystem Restoration Task Force Biennial Assessment Report and RECOVER's System Status Report, and presents scientific findings about South Florida at scientific symposia. The program includes three NOAA line offices: National Ocean Service (NOS), National Marine Fisheries Service (NMFS) and Oceanic and Atmospheric Research (OAR), as well as Florida Sea Grant. NOAA NOS manages the Florida Keys National Marine Sanctuary and has stewardship and oversight responsibilities for coastal waters downstream from CERP's hydrologic restoration efforts, including the coral reef tract. NOAA's Biscayne Bay Habitat Focus Area, declared in FY2015 and sponsored locally by the NMFS Southeast Fisheries Science Center (SEFSC) and OAR's Atlantic Oceanic and Atmospheric Administration (AOML), encompasses Biscayne Bay and its parallel coral reef tract out to the shelfbreak and adds to NOAA's stewardship opportunities with South Florida coastal ecosystems. (See separate Biscayne Bay HFA NOAA Project Sheet for specific goals and more about supporting activities). NOAA's Integrated Ecosystem Assessments also are applied to South Florida and relate to restoration goals. AOML is currently interacting with NOS to expand knowledge of the Florida Keys National Marine Sanctuary integrated ecosystem and to transfer that knowledge to resource managers, policy makers and stakeholders. A suite of indicators have been developed via an expert workshop, followed by qualitative and quantitative selection, to represent sections of the Sanctuary's ecological and socioeconomic condition, and are presented at https://www.aoml.noaa.gov/esr_fknms/. Illustrated on the website are status and trends of a subset of key indicators representing Human Activities, Ecosystem Services, Habitat, Living Resources, Sanctuary Waters and Maritime Archaeological Resources.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Current Status: NOAA continues monitoring and assessment projects in Florida Bay and Biscayne Bay as part of the CERP Monitoring and Assessment Plan. Biscayne Bay monitoring is collaborative with the National Park Service, and Florida Bay monitoring is a cooperation of SEFSC and AOML. AOML and SEFSC scientists are involved in NOAA Integrated Ecosystem Assessments, which contribute resources to understanding the ecosystem services of South Florida’s natural systems and the economic and social ramifications of their improved status with restoration actions in CERP or, alternatively, their continued degradation. NOAA representatives serve on Task Force and CERP science-related planning and working teams. Multiple management, coordination, and research activities by the co-lead agencies, SEFSC and AOML, support the Biscayne Bay HFA, which has contributed to a better understanding of sources of nutrients contributing to water quality degradation and generated new information about the smalltooth sawfish, an endangered species now known to occur in Biscayne Bay.

Cost: Total: FY21 \$0.491M NMFS SEFSC
 \$0.730M AOML
 \$0.240M USACE

Project Schedule:

Start Date: 1997
 Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal (NOAA)	54,412,000
State	2,888,000
Other (Corps)	12,771,000
Total	70,071,000

Note: 2015-2019 NOAA figures include new funding for the Biscayne Bay Habitat Focus Area, which is described in a separate project documentation sheet.

Contact: Joan Browder 305-297-1153; Christopher Kelble 305-361-4330

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: NOAA Habitat Blueprint Initiative
Project Name: Biscayne Bay Habitat Focus Area
Project ID: Supplemental to 2200
Lead Agency: NOAA NMFS/SEFSC and OAR/AOML
Authority: Magnuson Stevens Fisheries Wildlife Conservation Act, Marine Mammal Protection Act, NMSA (16 U.S.C. §§ 1431 *et seq.*), FKNMSPA (PL 101-605), and Executive Order 13089 (Coral Reef Protection)
Funding Source: NOAA

Strategic Plan Goal(s) Addressed: Goal 2, Restore, Preserve, and Protect Natural Habitats and Species, Subgoals 2A, Restore, Preserve, and Protect Natural Habitats; and 2B, Control Invasive Exotic Plant and Animal Species

Measurable Output(s): Following 5 years (2015-2019) of funding in a competitive grant program associated with the NOAA Habitat Blueprint Initiative and Habitat Focus Areas, activities and products of the grantee, Miami Waterkeeper (MWK), are generating positive activity toward supporting and protecting Biscayne Bay water quality. As part of a larger collective effort, A Biscayne Bay Water Management Advisory Board was recently created. In March 2020, the Miami City Commission and the City of Coral Gables both passed ordinances to limit fertilizer use within their cities, which will reduce the flow of excess nutrients to the bay and alleviate water quality problems. MWK's Biscayne Bay project entitled "Reducing Land-based Sources of Pollution through Community Engagement" influenced these decisions. Other local municipalities are considering similar ordinances. Scientific publications originating with the NOAA Biscayne Bay HFA through local NOAA HFA sponsors AOML and SEFSC provided information on nutrient pathways to the bay and the algal composition of blooms after disturbance that helped inform the MWK effort. AOML's pilot watershed study in the Coral Gables Waterway led to funding for a subsequent intensive study by Florida International University and other investigators of the nutrient sources contributing to in-stream and downstream pollution in that waterway. Three continuing Biscayne Bay HFA projects at SEFSC include 1) an investigation of the historical and current presence of smalltooth sawfish (*Pristis pectinata*) in the Biscayne Bay HFA-bounded area, 2) an updated comprehensive list of invasive species in that area, and 3) a "living shoreline" beach stabilization demonstration project on the SEFSC Bear Cut property. The sawfish investigation began with a compilation of historic records, including those in local newspapers and those reported to the International Sawfish Encounter Database (ISED) at the University of Florida. The project expanded into a cooperative effort with the Urban Shark team at the University of Miami that resulted in expansion of an acoustical array from fewer than 10 to a present 40 acoustic recorders that are part of the FACT network <https://myfwc.com/research/saltwater/telemetry/fact/> and read tags of a variety of marine species. Four years of data from the expanding array are yielding new knowledge about the contemporary presence of smalltooth sawfish in the area bounded by the Biscayne Bay HFA. A comprehensive invasive species list that includes species on all known agency lists for the area, as well as species from a personal collection (T.L. Jackson, SEFSC, pers. comm.) of 30 years of records from trade magazines, newspapers, other media sources, and personal communications, was completed and presented to Biscayne National Park to help meet agency mandates for an update of the official Park list. This comprehensive, updated list may serve the needs of other agencies that developed the original lists but have not had the resources to update them. The sea oats and buttonwoods planted as a living shoreline beach demonstration project have undergone rapid growth and appear to have increased the resiliency of the beach dune zone at SEFSC to withstand future hurricane or other strong wind events.

Project 2200 South Florida Ecosystem Restoration Planning and Projects Page 3 of 4

Project Synopsis: In FY15, NOAA declared Biscayne Bay and parallel coral reef and shelf waters as the Biscayne Bay Habitat Focus Area (HFA), thereby expanding its intensive stewardship of South Florida coastal ecosystems. In-kind and other support has been provided to the Biscayne Bay HFA by the two local lead NOAA entities, the Southeast Fisheries Science Center (SEFSC) of the NOAA National Marine Fisheries Service (NMFS) and the Atlantic Oceanographic and Meteorological Center (AOML) of the NOAA Office of Oceanic and Atmospheric Research (OAR). Other NOAA funding has been provided to a grant recipient each year to support HFA goals. These goals, as described in the Biscayne Bay HFA Implementation Plan, are all habitat-related and, abbreviated, are as follows: 1) understanding and recommending ways to reduce threats to water quality; 2) maintaining, increasing, and improving spatial and temporal distribution of freshwater inflow; 3) protecting and improving habitat of protected, fishery, and supporting species; and 4) acquiring bay-related economic and socioeconomic information and using it, along with ecological information, in education and outreach efforts, leading policy makers and the public to increase appreciation of Biscayne Bay and actively support its health. A hydrodynamic and water quality model (EFDC: Environmental and Fluid Dynamics Code) is under development for Biscayne Bay. The present application focuses on the Coral Gables Waterway and the bay area downstream. The model is a component of AOML's contribution to the Biscayne Bay HFA. The Biscayne Bay HFA is one of 10 NOAA HFAs that are part of the NOAA NMFS Habitat Blueprint Initiative and are administered by the NOAA NMFS Office of Habitat Conservation (OHC) as a collaboration of NOAA line offices <https://www.habitatblueprint.noaa.gov/>.

Current Status: The Biscayne Bay Habitat Focus Area is ongoing, with work on the four goals of its implementation plan in progress, although funding through grant opportunities is no longer available. Emphasis is on Goals 1 and 4, collecting information about factors driving eutrophication of the bay and using the information to improve bay water quality by affecting policy and management. While the five years of NOAA grant support have ended, efforts by local NOAA sponsors SEFSC and AOML continue.

Project Schedule:

Start Date: 2015
Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures through 2020
Federal (NOAA)	\$525,000
Total	\$525,000

Note: funding for the Biscayne Bay Habitat Focus Area for 2017 through 2019 NOAA are included in Project ID 2200 South Florida Ecosystem Restoration Planning and Projects.

Contact: Joan Browder 305-297-1153; Christopher Kelble 305-361-4330

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Lakes Park Restoration (OPE)
Project ID: 2302 (CERP Project WBS # 94)
Lead Agency: USACE / Lee County
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/County

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): 40-acre marsh flowway, 11 acres of uplands, 9 acres of littoral zone

April 1999 Project Synopsis: Includes the construction of a 40-acre marsh/flow way in an abandoned rock mine, removal of exotic vegetation, and planting native vegetation on 11 acres of uplands and 9 acres of littoral zone. This feature is located in the Lee County Lakes Regional Park, upstream of Estero Bay.

Current Project Synopsis: The purpose of this feature is to enhance surface water runoff quality by creating a meandering flowway with shallow littoral zones to enhance pollution removal and oxygen content, removing aquatic and upland exotic infestation while allowing public access into upland areas of improved native habitat. The restoration will provide immediate habitat and water quality benefits at Lakes Park and improve downstream conditions in Hendry County and the Estero Bay Aquatic Preserve. The project adheres to the original concept described in the Restudy. In addition, water quality is being impacted by the growing number of birds using the area as a rookery.

Current Status: Federal efforts on this project were discontinued in 2008. Lee County, working with SFWMD, retrofitted two control structures to stop saltwater intrusion and constructed detention areas to improve water quality along the eastern edge of the park, upstream of the control structures (Phase I and Phase II). Lee County has moved forward with the design and permitting for an additional treatment area consisting of a 40-acre filter marsh and flowway (Phase III): to address the offsite stormwater issues. Construction of the filter marsh and the flowway is pending.

Est. Cost: \$881,000

Project Schedule: TBD by Sponsor

Detailed Project Budget Information

Lakes Park Restoration	Investment Thru FY2020
Federal USACE	661,000
Lee County	220,000
Total	881,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional

Information: Lakes Park is located east of Cape Coral in Lee County, just west of Highway 41. Lee County has developed this area as a regional park with a bathing area along shores of mining pits developed as lakes. The pits capture runoff from the surrounding developed area (commercial, industrial, and residential), and county monitoring has indicated a decline in water quality in the lakes. The lakes are infested with hydrilla, and adjacent uplands and islands are covered with exotic plant species such as Australian pine and Brazilian pepper.

Adjacent to the developed area, the remaining natural habitat contains pine flatwoods with some cypress heads. This project is expected to restore surface water runoff quality by creating a meandering 40-acre flow way with shallow littoral zones and removing aquatic and upland exotic vegetation. The littoral zone will be harvested periodically to remove excess nutrients from the system. Exotic vegetation will be removed and replaced with native vegetation.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Restoration of Pineland and Hardwood Hammocks in C-111 Basin (OPE)
Project ID: 2303 (CERP Project WBS # 92)
Lead Agency: USACE
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/Miami-Dade County

Strategic Plan Goal(s) Addressed: Primary: 2-A.3

Measurable Output(s): 50 acres pine rockland and tropical hardwood hammock improved

April 1999 Project Synopsis: Includes restoring south Florida slash pine and hardwood hammock species on a 200-foot wide strip on each side of two miles of SR9336 from the C-111 Canal to the L-31W Borrow Canal (approximately 50 acres) and the establishment of 2, one-acre hammocks in low-lying areas on each side of the road located in Miami-Dade County.

Current Project Synopsis: The project is located in south Miami-Dade County, just east of Everglades National Park (ENP), along State Road 9336 in the area known as the Frog Pond. Eighty percent of the Frog Pond was used for agricultural purposes and farmers plowed the cap rock to create soil for tomato farming. The Frog Pond has since been purchased by the SFWMD as part of the C-111 (South Dade) project to restore the Taylor Slough portion of the Everglades. This project will provide some water quality treatment for runoff passing through the hammocks and demonstrate the techniques required to re-establish native conifer and tropical hardwood forests on land that has been rock plowed.

This project adheres to the original concept described in the Restudy.

Current Status: This project has not begun.

Est. Cost: \$ 1,170,000

Project Schedule: TBD

Detailed Project Budget Information

Restoration of Pineland and Hardwood	Investment thru FY2020
USACE	0
SFWMD	0
Total	0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

The Program Name: Infrastructure
Project Name: A.R.M. Loxahatchee NWR Prescribed Fire Program
Project ID: 2304
Lead Agency: USFWS Arthur R. Marshall Loxahatchee National Wildlife Refuge

Strategic Plan Goal(s) Addressed: 2.A.3

Measurable Output(s):

Acres of habitat improved including contribution to the reduction of hazardous fuels, with a secondary benefit of invasive exotic plant reduction.

During Fiscal Year 2021 the Arthur R. Marshall Loxahatchee National Wildlife Refuge conducted four prescribed burns on the Refuge for 19,823 acres.

Project Synopsis:

Fire is a natural part of the Everglades ecosystem. The prescribed fire program at the Arthur R. Marshall Loxahatchee National Wildlife Refuge tries to closely replicate the natural fire occurrence pattern at the refuge. The natural fire season at the refuge is typically from May through September, as the rainy season brings lightning to the refuge. Prescribed fire helps to improve habitats by reducing fuel loads and mimicking natural fire frequencies and intensities appropriate. The overall result will be an improvement in wildlife habitat on the refuge.

Project Status:

Successful burning on the Refuge is dependent on weather conditions and water levels so accomplishments can vary from one year to the next depending on conditions.

Expected Accomplishments: We are planning on burning approximately 40,000 acres in FY 2022.

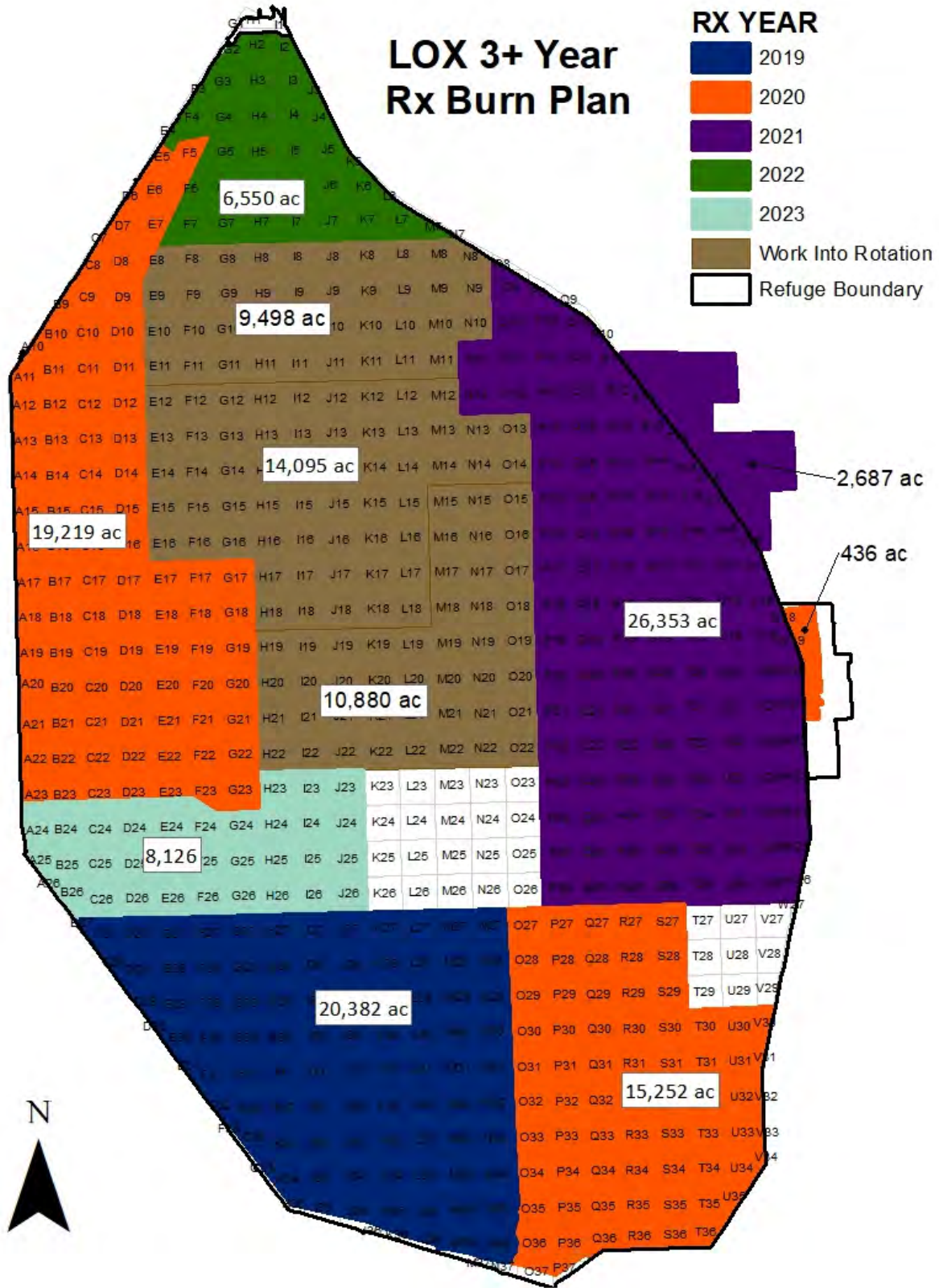
Project Schedule:

Start Date 2002
Finish Date: recurring

Detailed Project Budget Information

	Expenditures thru 2021
Federal	1,794,000
Total	1,794,000

Contact: Tom Ledbetter, Fire Management Officer, Loxahatchee NWR
thomas_ledbetter@fws.gov 561-735-6036 (Desk) 561-413-8547(Cell)



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Infrastructure
Project Name: Loxahatchee Impoundment Landscape Assessment (LILA)
Project ID: 2305
Lead Agency: SFWMD / USFWS A.R.M. Loxahatchee NWR

Strategic Plan Goal(s) Addressed: 2.A.3

Measurable Output(s): Reports outlining quantitative targets for CERP performance measures.

Project Synopsis: The objective of LILA (Loxahatchee Impoundment Landscape Assessment) is to support CERP by defining hydrologic regimes that sustain a healthy Everglades Ridge and Slough ecosystem and reduce uncertainty in predicting the ecosystem response. LILA will address the effects of water depth, hydro period, and flow rate on wading birds, tree islands, marsh plant communities, marsh fishes and invertebrates, and peat soils. In addition, LILA supports refuge and CERP public outreach by providing opportunities to observe ongoing investigations and results. It provides educational opportunities through on-site demonstrations, kiosks as well as a scientific forum for the discussion of restoration strategies.

Project Current Status: During the 2020-2021 reporting period, scientists and engineers associated with the LILA project completed or continued several important studies including: ridge and slough vegetation response, non-native apple snail competition, tree island soil microbiome, herpetofaunal monitoring, all to better understand the ecological role of water depth variability in the Everglades. Many of these studies resulted in manuscripts published in scientific journals and were presented at various conferences including the Greater Everglades Ecosystem Restoration conference. The SFWMD also invested in a new pump control system that adds capacity to hydrologic control at the site as well as improves site safety.

Project Schedule:

Start Date: 2002
Finish Date: recurring

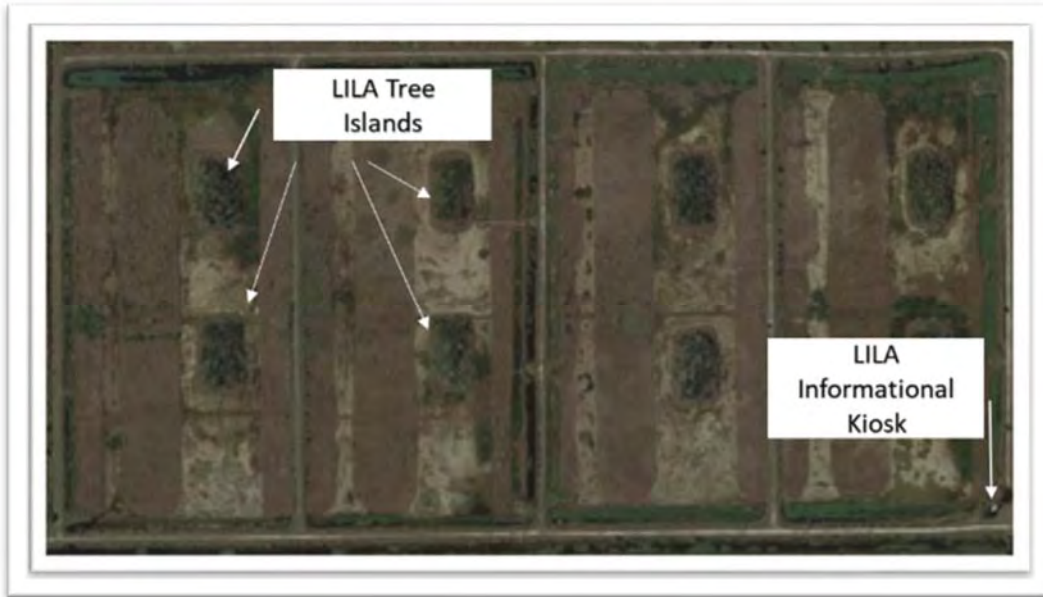
Detailed Project Budget Information

	Expenditures 2010 - 2020
Federal *	10,000
State	4,018,000
Total	4,028,000

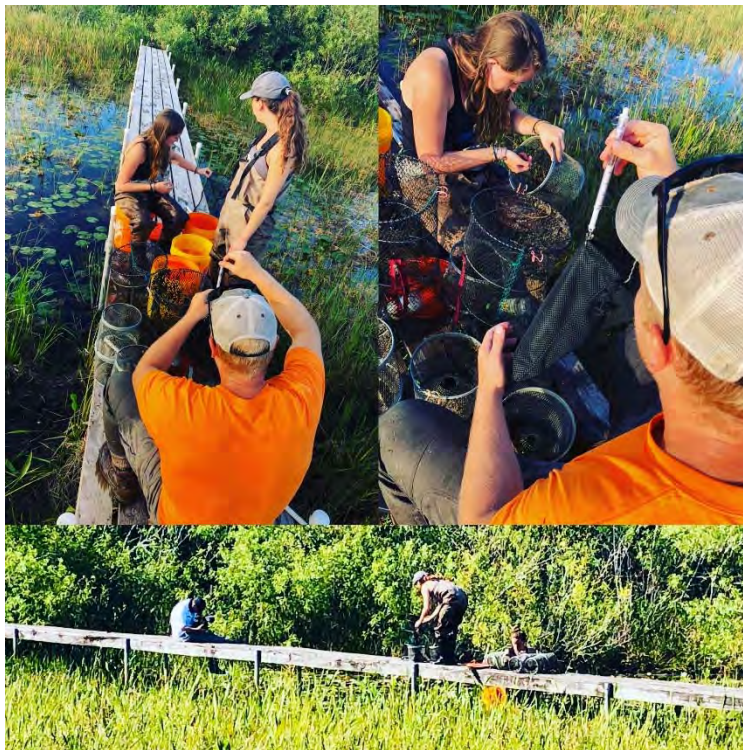
*\$1,900,000 is contribution of land 64 acres

Hyperlink: <https://www.sfwmd.gov/sites/default/files/documents/quickfactslila.pdf>

Contact: Rolf E. Olson, rolf_olson@fws.gov



LILA Impoundments, Arthur R. Marshall Loxahatchee NWR.



Graduate students collecting and weighing aquatic herpetofauna within the LILA sloughs. Photo credit: Eric Cline.



LILA scientists installing tree bands to measure the growth rate (diameter) of trees as the experimental LILA tree islands experience flooding. Photo credit: Kelsey Pollack.

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Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Picayune Strand Restoration
(F/K/A Southern Golden Gate Estates Hydrologic Restoration)
Project ID: 2307 (CERP Project WBS # 30)
Lead Agency: USACE / SFWMD
Authority: WRDA 2007
Funding Source: Corps/State

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): 55,000 acres wetlands restored

April 1999 (Restudy) Project Synopsis: Involves the restoration of natural water flow across 85 square miles in western Collier County that were drained in the early 1960s in anticipation of extensive residential development. This subsequent development dramatically altered the natural landscape, changing a healthy wetland ecosystem into a distressed environment. Implementation of the restoration plan would also improve the water quality of coastal estuaries by moderating the large salinity fluctuations caused by freshwater point discharge from the Faka-Union Canal at the Port of the Islands. The plan would also aid in protecting the City of Naples' eastern Golden Gate well field by improving groundwater recharge.

The project includes a combination of spreader basins, canal plugs, road removal, and pump stations located in the Western Basin and Big Cypress, south of I-75 and north of US 41 between the Belle Meade Area and the Fakahatchee Strand State Preserve in Collier County.

Current Project Synopsis: The plan will restore and enhance over 55,000 acres of wetlands in the former Southern Golden Gate Estates, now Picayune Strand State Forest, and in adjacent natural areas and public lands by reducing over-drainage. Implementation of the restoration plan will also improve the water quality of coastal estuaries by moderating the large salinity fluctuations caused by the freshwater point discharge from the Faka Union Canal.

The project significantly increases the size and improves the major wetland ecosystems in adjacent lands including the Fakahatchee Strand State Preserve, Florida Panther National Wildlife Refuge, and Collier Seminole State Park; benefiting threatened and endangered species communities such as the Florida panther and the red cockaded woodpecker. In addition, the project provides public access and recreational opportunities. Features include a combination of spreader basins, tie-back levees, numerous canal plugs, miles of road removal, and several pump stations located in the Western Basin and Big Cypress, south of I-75 and north of US 41, between the Belle Meade Area and the Fakahatchee Strand State Preserve in Collier County.

In 2003, the state of Florida identified this effort as a state expedited project. A PIR was completed in 2004 and the Report of the Chief of Engineers was signed September 15, 2005. The Assistant Secretary of the Army (ASA) completed a review and referred the project to Congress by letter dated April 2, 2007 and it was authorized for construction in WRDA 2007 for \$375,330,000, dependent upon appropriation funding from Congress.

Current Status: The initial phase of the project, plugging of the northern two miles of the Prairie Canal, was completed by South Florida Water Management District (SFWMD) in 2007 and successfully reduced drainage of the adjacent Fakahatchee Strand State Preserve and restored habitat for threatened and endangered species as part of the early-start work.

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Benefits are already being realized as native vegetation is quickly covering the plugged areas and very few nuisance or exotic plant species have been observed. Ospreys and wading birds have been observed foraging in the area as were beneficial surface water flows during the wet seasons.

In August 2009, the SFWMD Governing Board approved the Master Agreement, and Amendment 2 to the Design Agreement and addressed Land Valuation and Crediting Policy for CERP projects in general. The Project Partnership Agreement (PPA) for the Picayune Strand Restoration project was executed August 13, 2009.

Federal construction was implemented by the U.S. Army Corps of Engineers and initiated with the October 2009 award of the Merritt Pump Station and Road Removal Contract. The cost for the first federally funded CERP project component was \$53 Million with \$40M in American Recovery and Reinvestment Act (ARRA) funds. Merritt Pump Station completed construction on September 17, 2014 and started the one year testing period on October 1, 2014. Merritt Pump Station was transferred to SFWMD in May 2016.

The Faka Union Pump Station & Road Removal contract was awarded in October 2010 for approximately \$79M and is the largest of the three Pump Stations planned for construction. Construction of Faka Union Pump Station started in January 2011 and was completed in January 2016. The project was transferred to SFWMD January 2018.

The construction contract for the Miller Pump Station & Road Removal was awarded in September 2013 for approximately \$76M. Construction of Miller Pump Station started in February 2014 and was completed in June 2018. The project has been transferred to SFWMD for OMRR&R in January 2020.

The construction contract for the Manatee Mitigation features was awarded by SFWMD in April 2015 for approximately \$3.1M. Construction of the Manatee Mitigation features started in May 2015 and was completed in June 2016.

The Southwestern Protection feature modeling was completed in 2020. Two contracts were awarded in September 2020: a design build for the Conveyance Features (culverts under US-41 and CR-92) and the levee. Construction for the levee started in January 2021; construction completion scheduled for October 2023. The design for the Conveyance Features started in November 2020 with Final design in December 2021. Conveyance Feature construction start scheduled for January 2022 and completion in October 2022.

The Miller Tram and Road Removal contract was awarded in September 2019. The contract will remove and regrade the roads west of Miller Canal and south of the tie-back levee to undisturbed grade. Construction completion scheduled for October 2022.

The East-West Merritt Canal plugging was completed in June 2021. All canals east fo Faka Union Canal have been plugged. Additionally, the northern 3-miles of the Faka Union Canal have been plugged. The remaining canals will be plugged after the completion of the levee construction.

Est. Cost: **\$642,265,000**

Project Schedule:

2004 PIR completed.
2006 Prairie Canal expedited state construction begun.
2009 Merritt USACE construction began.
2010 Faka-Union USACE construction began.
2013 Miller construction began.

Project 2307 C&SF: CERP Picayune Strand Restoration Page 2 of 3

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2014	Merritt construction physically completed.
2015	Faka-Union construction physically completed.
2015	Manatee Mitigation feature construction began.
2016	Limited Reevaluation Report scheduled to be approved.
2016	Manatee Mitigation feature physically completed.
2018	Miller construction physically completed.
2020	East-West Merritt Canal plugged.

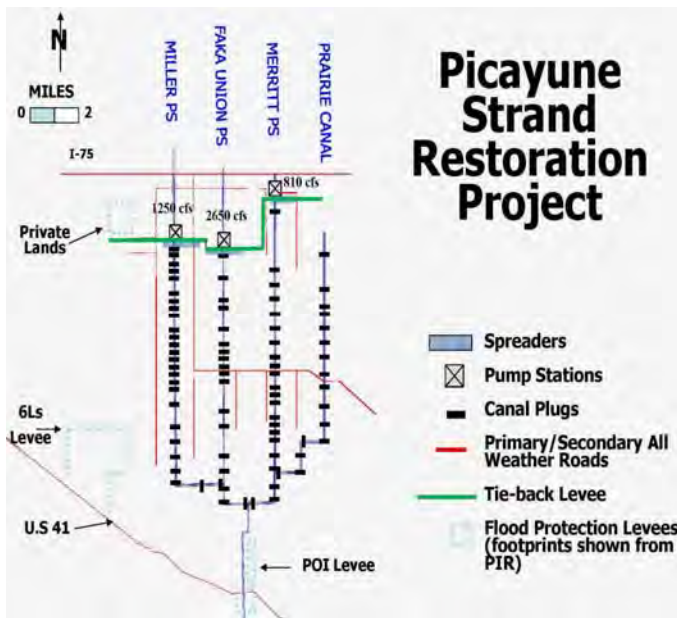
Detailed Project Budget Information)

	Investment thru FY 2020
USACE*	\$395,039,908
SFWMD	\$171,453,535
Total	\$642,265,000

*Includes \$38,085,000 in DOI funds.

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>
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Source: Original project description summarized from the Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999). Detailed information is summarized from the Final Integrated Project Implementation Report and Environmental Impact Statement (PIR/EIS). Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.



Project 2307 C&SF: CERP Picayune Strand Restoration Page 3 of 3

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Program Name: C&SF: CERP Adaptive Assessment and Monitoring Program (AA&M)
Project ID: 2308
Lead Agency: USACE / SFWMD
Authority: Design Agreement; WRDA 1996, WRDA 2000 (*Initially Authorized Project*)

Strategic Plan Goal(s) Addressed: supports 2-A.3

Measurable Output(s): System-wide/Regional Monitoring and Assessment Plan (MAP),
Biennial System Status Report

April 1999 (Restudy) Project/Program Synopsis: A rigorous Adaptive Assessment and Monitoring (AA&M) program was included as an essential feature of the Plan and implementation of the AA&M program will ensure the Plan's overall success. New information about the natural system, that is learned from monitoring and from measuring responses to implementation of Plan components, can be used to increase the ultimate level of success of the overall restoration program. Specifically, AA&M utilizes a focused, system-wide/regional monitoring and assessment plan (MAP) to measure how well each component of the Plan accomplishes its goals and objectives. Data from monitoring is assessed and reported biennially in system status reports (SSRs), providing a status on the Everglades and South Florida ecosystem and information critical to refinement of the Plan as well as its individual components through adaptive management. AA&M was authorized under WRDA 2000.

The AA&M program is rooted in science and includes comprehensive monitoring and assessment, development of conceptual models, performance measures, and scientific peer review.

Current Project/Program Synopsis: The AA&M Program is designed to provide system-wide and regional monitoring and assessment that ensures CERP goals and objectives will be met throughout implementation of the Plan. AA&M-related activities include: (1) implementing a system-wide monitoring and assessment plan (MAP) (2) conducting annual assessments by synthesizing MAP and CERP project data; (3) developing performance measures; (4) developing and refining the conceptual ecological models; (5) coordinating peer reviews; and (6) resolving scientific/technical issues. The goal of the AA&M program is to increase the probability of restoration success by recognizing that modifications will be made to the Plan and its components in the future; based upon new information garnered from the AA&M program.

The CERP is also being planned, implemented, and refined using the principles of adaptive management (AM). AM was mandated by the Water Resources Development Act of 2000 and the CERP Programmatic Regulations (2003). AM is an iterative and deliberate process of applying principles of scientific investigation to both design and implementation in order to better understand the ecosystem and reduce key uncertainties; AM seeks to continuously refine program/project design and operation. To address uncertainties, and to improve the performance of CERP, AM addresses the challenges inherent in predicting and restoring large-scale complex ecosystems by replacing dependencies on numerical models and traditional planning guidelines with using a "learning-by-doing" approach to decision-making.

This approach takes that learning and applies it to: (1) reducing uncertainties and guiding management decision-making; (2) transferring lessons from one project to another or among project phases in order to refine alternatives and enhance restoration success; (3) using physical models/field testing to test hypotheses and the outcomes of management decisions; and (4) incorporating flexibility and versatility into project design and implementation.

Information for the 2021 Integrated Financial Plan
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Monitoring and Assessment Plan (MAP): The Monitoring and Assessment Plan (MAP) is the primary tool by which the RECOVER program will assess the performance of the Plan. Over a three-year period, a team of federal, state, tribal governments, local agencies and stakeholders, interest groups, and the public developed the MAP in 2004. The MAP was revised in 2009. The overarching goal for implementation of the MAP is to have a single, integrated, system-wide monitoring and assessment plan that will be used and supported by all participating agencies and tribal governments as the means of tracking and measuring the performance of the CERP. As the primary tool by which RECOVER assesses Plan performance, monitoring determines if ecosystem responses are desirable; if progress is being made toward Interim Goals and Interim Targets; and whether refinement of the Plan is needed. In 2011, the MAP underwent analysis for priority given a target budget constraint. Although the MAP 2009 continues to be implemented in this limited capacity, another evaluation is scheduled in FY20 and a MAP update in FY21.

System Status Report (SSR): The SSR provides estimates of pre-CERP conditions of ecosystem indicators monitored by the MAP, in conjunction with data from other sources. The SSR also identifies potential management actions that may be necessary to adjust CERP to achieve its goals and objectives. Data is assessed biennially to establish pre-CERP reference conditions and ultimately to determine whether the goals and objectives of the Plan are being met. An SSR was produced in 2007, 2009, 2012, an interim update, and 2014 and 2019. In 2019 a Report Card providing a quick look at the ecological health of the everglades was also developed along with the SSR.

Current Status:

The MAP continues to be implemented based on funding and implementation priorities. . Core tasks, including MAP contract management, are on-going. There are currently ongoing monitoring efforts with eight Economy Acts and ten Cooperative Extension Studies Units.

Est. Cost: \$164,814,000

Detailed Project Budget Information)

	Investment thru FY 2020
USACE	\$87,719,000
SFWMD	\$49,432,000
Total	\$137,151,000

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

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Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)* and WRDA 2000. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19. Additional information provided from the Monitoring and Assessment Plan (2011) and the RECOVER team.



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Project Name: C&SF: CERP Biscayne Bay Coastal Wetlands (FFF) (OPE)
Project ID: 2309 (CERP Project WBS # 28)
Lead Agency: USACE / SFWMD
Authority: 2014 WRRDA
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 2.A.3

Measurable Output(s): 1,695 acres of restored wetlands

Saltwater wetlands, acres of lift = 1,242

Freshwater wetland, acres of lift = 453

Sensitivity analysis provides a range from 453 to 1,219, depending upon seepage rate used for the calculation. (*Lower number is used in the final CBEEM analysis*).

April 1999 (Restudy) Project Synopsis: Includes pump stations, spreader swales, stormwater treatment areas, flow ways, levees, culverts, and backfilling canals located in southeast Miami-Dade County and covers 13,600 acres from the Deering Estate at C-100C, south to the Florida Power and Light Turkey Point power plant, generally along L-31E. The component Biscayne Bay Coastal Canals as modeled in D-13R and the Critical Project on the L-31E Flowway Redistribution are smaller components of the Biscayne Bay Coastal Wetlands feature.

Current Project Synopsis: The proposed project will replace lost overland flow and partially compensate for the reduction in groundwater seepage by redistributing, through a spreader system, available surface water entering the area from regional canals. The goal is to improve the ecological health of Biscayne Bay (including freshwater wetlands, tidal creeks and near-shore habitat) by adjusting the quantity, quality, timing, and distribution of freshwater entering Biscayne Bay and Biscayne National Park. The primary means to accomplish this goal is through the redistribution of freshwater flow and the expansion and restoration of wetlands adjacent to southwestern Biscayne Bay (in Miami-Dade County) and to maintain sustainable biological communities. Potential sources of water will be identified and evaluated to determine their ability to provide the target flows.

The project will capture, treat, and redistribute freshwater runoff from the watershed into Biscayne Bay, creating more natural water deliveries, expanding spatial extent and connectivity of coastal wetlands, and providing improved recreational opportunities. The proposed changes for freshwater flow are expected to restore or enhance freshwater wetlands, tidal wetlands, and near shore bay habitat. Diversion of canal discharges into coastal wetlands is expected not only to reestablish productive nursery habitat all along the shoreline, but also to reduce the abrupt freshwater discharges that are physiologically stressful to fish and benthic invertebrates in the bay near canal outlets. Improving salinity distribution near the shoreline with sustained lower-than-seawater salinities in tidal wetlands can help to reestablish productive nursery habitat for shrimp and shellfish.

The project incorporates features at three locations: Deering Estate, the Cutler Wetlands, and the L-31E Flow way/North Canal. (1) Deering Estate - construction of an extension of the C-100A Spur Canal, a pump station, a discharge pipe, a spreader structure and a freshwater wetland; (2) Cutler Wetlands - construction of a pump station, an open conveyance channel, a discharge structure and spreader canal, culverts and mosquito control ditch plugs; (3) L-31 East Flow-way - construction of five pump stations, an inverted siphon, several flap-gated culverts and a spreader canal to manage water flows from the C-102, C-103 and the L-31E canals to nearby saltwater wetland areas; and (4) various recreation features, all as

Project 2309 C&SF: CERP Biscayne Bay Coastal Wetlands Page 1 of 3

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generally described in the Central and Southern Florida Project, Comprehensive Everglades Restoration Plan, Biscayne Bay Coastal Wetlands Phase I Final Integrated Project Implementation Report and Environmental Impact Statement, dated July 2011, revised March 2012, and approved by the Acting Commander, U.S. Army Corps of Engineers on May 2, 2012 (hereinafter the "PIR"); and approved by the Chief of Engineers on May 2, 2012. The Record of Decision and subsequent transmission to Congress occurred in September 2012. BBCW was authorized in WRRDA 2014.

Current Status:

A project partnership agreement has been executed between the Corps and SFWMD. SFWMD constructed the Deering Estates and four L-31E Flow-way culverts. SFWMD also acquired a portion of the lands required for construction of all BBCW project components. USACE led construction of L-31E Flow Way features is underway; the final construction contract for these features is scheduled for award in FY20. Construction completion of the L-31E components is scheduled for 2022. The non-federal sponsor will lead the design/construction of the remaining Cutler Wetlands features with an anticipated construction completion in 2022.

The Corps and SFWMD kicked off efforts for the Phase 2 Project Implementation Report in FY20.

Est. Cost: \$ 272,718,000 (Phase 1)

Project Schedule:

2010 Phase 1 state expedited construction began.
 2021 Phase 1 state expedited construction expected to be physically complete.
 2020 Phase 2 PIR start
 2023 Phase 2 PIR completion

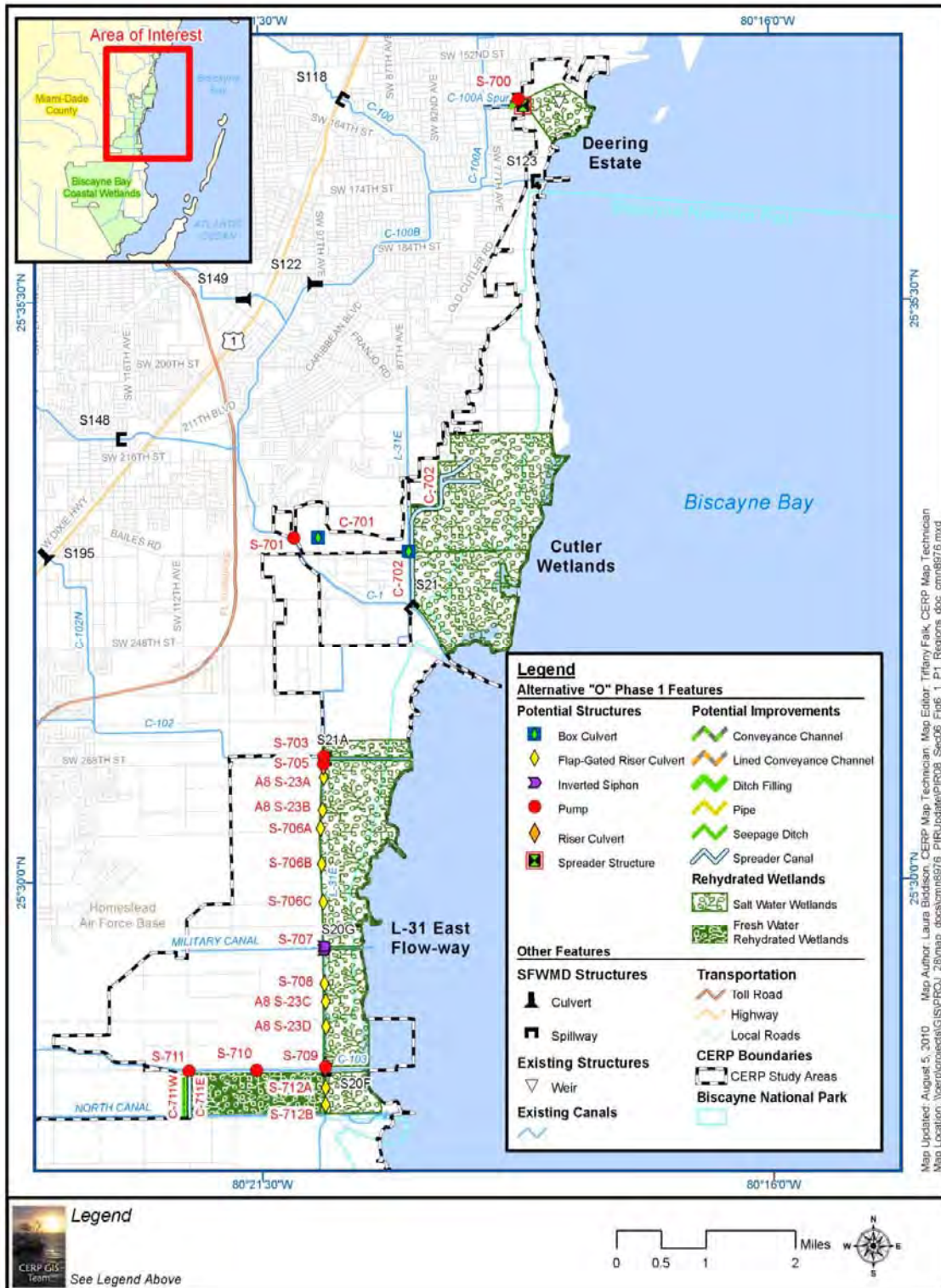
Detailed Project Budget Information

Biscayne Bay Coastal Wetlands	Investment thru FY2020
USACE	\$34,336,000
SFWMD	\$96,439,000
Total	\$130,775,000

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

Contact: Marie Huber, Project Manager, USACE
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 Leslye Waugh, Project Manager, SFWMD
lwaugh@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19. Current status information summarized from draft PIR and AFB briefing documentation.



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Program Name Infrastructure
Project Name: C&SF: CERP C-111 Spreader Canal (WW)
C-111 Spreader Canal - Western Project (PIR 1) and Eastern Project (PIR 2)
Project ID: 2310 (CERP Project WBS # 29)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Initially Authorized Project*), WRRDA 2014 (*Western Project*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): Increased Flows to Florida Bay via Taylor Slough – acreage TBD
590-acre Frog Pond and Aerojet Canal detention areas (with pump stations)

April 1999 (Restudy) Project Synopsis: The purpose of the project is to reduce wet season flows in C-111, improve deliveries to Model Lands and Southern Glades and decrease potential flood risk in the lower south Miami-Dade area.

This is to be accomplished by constructing a spreader canal, to evenly distribute water currently lost to tide via the existing canal. Features include construction, removal or modifications of: levees, canals, pump stations, water control structures, and stormwater treatment area. The feature enhances the C&SF C-111 (South Dade) project initial design that pumps water from the C-111 Canals into a retention/detention zone. Pump station S332E will be enlarged, the canal extended under U.S. Highway 1 and Card Sound Road, and the southern reach of the C-111 canal will be filled in and structures S-18C and S-197 will be removed.

Current Project Synopsis: C-111 N Spreader Canal (WW) is one of the initially authorized projects under WRDA 2000. Past dredging of the C-111 canal redirected water flows to the east, reducing flow through Taylor Slough into the northern Florida Bay impacting fisheries and ecology. A Project Management Plan (PMP) aimed to reduce water loss through the canal system and restore flows was initially approved in March 2002. As part of the Corps planning process, alternative plans were reviewed and this project will be implemented via two Project Implementation Reports (Western PIR and Eastern PIR).

Western PIR – The Western PIR plan includes a 590-acre Frog Pond detention area with a 225 cfs pump station, and an Aerojet Canal detention area with a 225 cfs pump station. Together these features will create a mound of groundwater to the south and west, which will prevent groundwater seepage out of Everglades National Park (ENP). Preventing seepage will improve the quantity, timing and distribution of water delivered to Florida Bay via Taylor Slough -- returning coastal zone salinity levels in western Florida Bay to levels as close as possible to pre-drainage scenario model runs by restoring upstream water levels in eastern Everglades National Park. Hydroperiods and hydroperiods within wetlands of the Southern Glades and Model Lands will be improved by construction of a new water control structure in the lower C-111 Canal, incremental operational changes at existing structure S-18C, changes in operations at the existing S-20 structure, construction of a plug at existing structure S-20A, and installation of ten earthen plugs in the C-110 Canal. This will also support historical vegetation patterns.

The Tentatively Selected Plan (TSP) for PIR 1 was recommended in October 2007. An Alternative Formulation Briefing was held in April 2008 and a Civil Works Review Board was held in December 2009. The Final PIR/EIS was published February 2011. A Chief's Report was signed on January 30, 2012. A Signed Record of Decision (ROD) was signed in September 2012. The project was authorized in WRRDA 2014.

Project 2310 C&SF: CERP C-111 Spreader Canal Page 1 of 3

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Eastern PIR – The Eastern PIR project will replace existing portions of the lower C-111 canal with a spreader canal to enhance sheet flow to Florida Bay, and help augment restoration efforts within the Southern Glades and Model Lands.

Current Status: In February 2012, SFWMD completed construction of the C-111 Spreader Canal Western Project as part of its state-expedited program. The C-111 Spreader Canal Western Project includes the Frog Pond Detention Area, Aerojet Canal features, plugs in the C-110, a plug at S-20A, and operational changes at S-18C and S-20.

Pending a revised takings analysis for operations of features constructed by the SFWMD, a Project Partnership is scheduled to be executed in 2020 which will make the project eligible for Federal funding during the appropriations process.

Est. Cost: \$ 197,247,000

Project Schedule:

2010	Two year Design Test begun.
2012	Design Test disassembled.
2010	Western, construction begun
2012	Western, construction completed.
TBD	Eastern PIR.

Detailed Project Budget Information)

C-111 Spreader Canal	Investment thru FY2020
USACE	\$12,703,000
SFWMD	\$12,010,000
Total	\$24,713,000

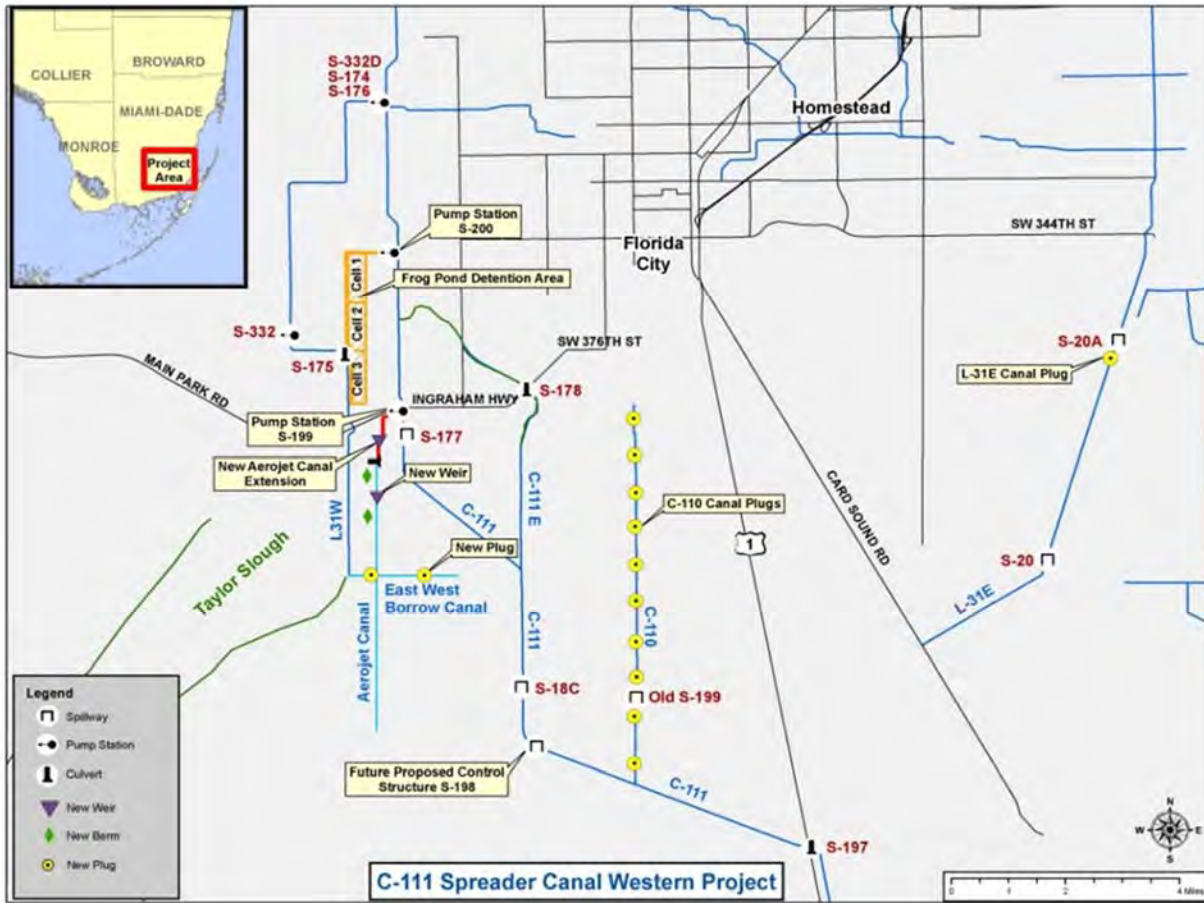
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Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19. Other information is summarized from the PIR/EIS for the Western PIR published in the Federal Register on April 24, 2009.

Additional Information:



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Program Name Infrastructure
Project Name: C&SF: CERP Biscayne Bay and Southeastern Everglades Ecosystem Restoration
Project ID: 2312
Lead Agency: USACE / SFWMD
Authority: WRDA 2000
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed:

Measurable Output(s):

April 1999 (Restudy) Project Synopsis: The BBSEER Project considers six of the 68 CERP components, Biscayne Bay Coastal Wetlands (OPE), Biscayne Bay Coastal Canals (FFF), C-111N Spreader Canal (WW), North Lake Belt (XX), South Miami-Dade Reuse (BBB), and West Miami-Dade Reuse (HHH) to rehydrate wetlands and reduce unnatural canal flows to Biscayne Bay. Combined these components intend to restore lost overland flow and partially compensate for the reduction in groundwater seepage by redistributing available surface water entering the area from regional canals; restore desired salinity gradient across the landscape; maintain higher stages in C-102 and C-103 canals for urban and environmental water supply; improve deliveries and enhance the connectivity and sheet flow in the Model Lands and Southern Glades areas, reduce wet season flows in C-111, and decrease potential flood risk in the lower south Miami-Dade County area; capture and store a portion of the stormwater runoff from the C-6, western C-11 and C-9 Basins to be used to maintain stages during the dry season in the C-9, C-6, C-7, C-4 and C-2 canals for Biscayne Bay to aid in meeting salinity targets. Reuse water may provide a new source of freshwater that could be treated to meet OFW water quality to meet ecological goals and objectives of BBSEER, and meet demands for 1) Bird Drive Recharge Area, 2) South Dade System and 3) Northeast Shark River Slough.

Current Project Synopsis: BBSEER is intended to improve the quantity, quality, timing and distribution of freshwater to Biscayne Bay, including Card Sound and Barnes Sound and Biscayne National Park, to improve the natural coastal glades habitat in the Model Lands and Southern Glades, and to improve resiliency of these coastal habitats in response to sea level change. BBSEER consists of combinations of water storage reservoirs, wastewater reuse sites, and wetland restoration sites in Miami Dade County and in the vicinity of Biscayne Bay.

Current Status: In September 2020, the PMP was signed officially kicking off the study. In March 2021, BBSEER achieved the alternatives meeting milestone and continues alternative analysis and evaluation which will be conducted via modeling the quantities of freshwater that can be distributed to the project areas to benefit an array habitats including freshwater marsh, estuarine habitats, and nearshore areas. A request was routed through the MSC to Headquarters and the Office of the Secretary of the Army for Civil Works to allow an exception to the WRRDA 2014, Section 1002 requirements to complete the study in three years and within three million dollars. The proposed schedule is provided below.

Est. Cost: Under development

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Project Schedule:

2020: Project Kick Off
2021: Alternatives Meeting Milestone
2022: Alternative Formulation and Analysis
2023: TSP and Draft Report Release
2024: Agency Decision Milestone and Feasibility-Level Analysis
2025: State and Agency Briefing, Chief’s Report, and Congressional Approval

Detailed Project Budget Information)

BBSEER	Investment thru FY2020
USACE	\$302,074
SFWMD	\$ 0
Total	\$302,074

Contact: April Patterson, Senior Project Manager, Programs & Project Management Division,
USACE, April.N.Patterson@usace.army.mil

Program Name: Florida Ecological Services Field Office (Vero Beach), Threatened and Endangered Species
Project Name: South Florida Multi-Species Recovery Plan
Project ID: 2402
Lead Agency: USFWS
Authority: Endangered Species Act of 1973 (16 U.S.C. 1531-1543)
Funding Source: No specific funding source, part of base funding for agency/organizations and further incorporated into agency/organization budgets to extent practical

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Number of species delisted, number of species reclassified to threatened, number of species status stable or improving

Project Synopsis: A Multi-Species Recovery Plan (MSRP) for the threatened and endangered species of south Florida was completed in May 1999. This document was prepared to fulfill a major element of the South Florida Ecosystem Restoration Initiative. It contains information on the biology, ecology, status, trends, management, and recovery actions for 67 federally listed species that occur in south Florida, as well as the ecology and restoration needs of 23 natural communities in this region. Implementation of the MSRP is underway through the work of the Service and their many Federal, State, and non-governmental partners. The MSRP implementation schedule was completed in 2007. The implementation schedule prioritizes recovery actions in the MSRP, as well as providing time and cost estimates for those actions. Participants to complete those actions are identified. Additionally, since April 2012, the Service has also published final rules listing the Miami blue butterfly, Florida semaphore cactus, aboriginal prickly apple, Cape Sable thoroughwort, Florida bonneted bat, Carter's small-flowered flax, Florida brickell-bush, Bartram's hairstreak butterfly, Florida leafwing butterfly, Big Pine partridge pea, wedge spurge, Florida prairie clover, Florida pineland crabgrass, sand flax, and Florida bristle fern as endangered and Blodgett's silverbush, pineland sandmat, pineland sandmat, and Everglades bully as threatened. This brings the full number of federally listed species in south Florida to 93. The South Florida Ecological Services Office has the lead responsibility for 62 of these species. As of Fiscal Year 2011, 11 species were considered to have a status of "stable"; these included Florida panther, Key deer, Key Largo cotton mouse, rice rat, American crocodile, Everglade snail kite, Avon Park harebells, Beach jacquemontia, Garber's spurge, Key tree cactus, and Florida ziziphus. A total of 21 species had a status of "uncertain" and 12 species were considered to have a status of "declining". As of Fiscal Year 2012, the Service no longer reports species' status on an annual basis.

In Fiscal Year 2017, we started initiating a round of 5-year reviews to evaluate the status of our listed species, including the Florida panther, crenulate lead-plant, Small's milkpea, Garber's spurge, tiny polygala, and deltoid spurge. In Fiscal Year 2018, a 5-year review was completed for the Key Largo woodrat. That review did not recommend a change in the species' endangered status. In Fiscal Year 2018, we also initiated 5-year reviews for the Schaus' swallowtail butterfly, Avon Park harebells, papery whitlow-wort, Florida perforate cladonia, pigeon wings, beach jacquemontia, Lakela's mint, American crocodile, Lower Keys marsh rabbit, Stock Island tree snail, rice rat, Florida bonneted bat, aboriginal prickly apple. In FY 2019, we initiated 5-year reviews for the following 30 species: Cape Sable seaside sparrow, Everglade snail kite, Audubon's crested caracara, bluetail mole skink, sand skink, Key Largo cotton mouse, Florida grasshopper sparrow, Bartram's hairstreak butterfly, Florida leafwing butterfly, pygmy fringe-tree, Cape Sable thoroughwort, Garrett's mint, scrub mint, Florida ziziphus, Carter's mustard, highlands scrub hypericum, four petal pawpaw, Florida brickell bush, fragrant prickly-apple, short-leaved rosemary, Florida semaphore cactus, Okeechobee gourd, beautiful pawpaw, snakeroot, , scrub blazingstar, Carter's

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small flowered flax, Key tree cactus, Lewton’s polygala, wireweed, and sandlace. In FY 2020, we initiated a 5-year review for the Miami blue butterfly. In FY 2021, we initiated 5-year reviews for Key deer, Miami tiger beetle, Florida bristle fern, Blogett’s silverbush, sand flax, wedge spurge, and Big Pine partridge pea and completed 5-year reviews for 16 species, including tiny polygala, Schaus’ swallowtail butterfly, papery whitlow-wort, pigeon wings, beach jacquemontia, Lakela’s mint, Key Largo cotton mouse, Stock Island tree snail, bluetail mole skink, pygmy fringe-tree, scrub mint, Carter’s mustard, highlands scrub hypericum, Okeechobee gourd, snakeroot, and wireweed. None of the completed reviews recommended a change in species status. We will be completing the remaining 5-year reviews in FY 2021-FY 2023.

The Service is working with partners to initiate, continue, or complete recovery actions in the MSRP for a multitude of species. In FY 2019, we finalized amendments to the MSRP with new recovery criteria for 31 species that did not have delisting criteria in the MSRP. Research, monitoring, and/or habitat restoration are being conducted for the following species: Florida panther, Key deer, Key Largo cotton mouse, Key Largo woodrat, Lower Keys marsh rabbit, southeastern beach mouse, West Indian manatee, Audubon’s crested caracara, Cape Sable seaside sparrow, Everglade snail kite, Florida grasshopper sparrow, Florida scrub jay, piping plover, red-cockaded woodpecker, wood stork, American crocodile, eastern indigo snake, blue-tailed mole skink, sand skink, Schaus’ swallowtail butterfly, Bartram’s hairstreak butterfly, Florida leafwing butterfly, crenulate lead-plant, Florida bonamia, deltoid spurge, pygmy fringe-tree, pigeon wings, Avon Park harebells, Garret’s mint, scrub mint, Lakela’s mint, scrub blazingstar, papery whitlow-wort, Key tree cactus, Lewton's polygala, tiny polygala, wireweed, sandlace, scrub plum, Florida perforate cladonia, snakeroot, Garber's spurge, Highlands scrub hypericum, Carter's mustard, short-leaved rosemary, four-petal pawpaw, beach jacquemontia, fragrant prickly-apple, Florida bonneted bat, Okeechobee gourd, Miami blue butterfly, and Florida ziziphus.

Cost Total: \$386,112,000 (does not include all amounts for habitat acquisition, management, or restoration because those tasks are expressed as costs per acre and could not be determined at this time). Total is rough estimate based upon the 1999 South Florida Multi-Species Recovery Plan and the precise amount of dollars has not been updated recently.

Project Schedule:
 Start Date: 1999
 Finish Date: TBD

Estimated Cost of Recovery

Includes the estimated cost of accomplishing all recovery actions in the MSRP. These costs were calculated as totals per community for the multiple species that occur within each community. Costs for land acquisition, management, and restoration will be more accurately determined as the MSRP is implemented.

Project Budget Information-Totals^{a, b}

	Expenditures 2005 - 2019
Federal	\$47,309,032
Total	\$47,309,032

^aAmounts obtained from the Florida Ecological Services Field Office’s (Vero Beach) recovery expenditures report to Congress.

^bDoes not include all amounts for habitat acquisition, management, or restoration because those tasks are expressed as costs per acre and could not be determined at this time.

*Amounts for FY 21 are not yet available.

Contact: Nikki Colangelo

Project 2402 South Florida Multi-Species Recovery Plan Page 201 of 468

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Project Name: WCA 2A Regulation Schedule Review
Project ID: 2403
Lead Agency: USACE
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Revised Schedule

Project Synopsis: The purpose of the project is to evaluate the feasibility of modifying operational standards for WCA 2A to benefit its fish and wildlife resources, without adversely impacting the area's ability to satisfy its flood control and water supply purposes.

Current Status: This project has not begun. It can be implemented with existing operational and maintenance authority. It will be conducted in coordination with Everglades Rain-Driven Operations and can be funded through ongoing Operations and Maintenance appropriations for the USACE.

Est. Cost: TBD

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Budget information is unavailable, as project has not begun.

Hyperlinks:

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

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Program Name: Detector Dog Teams and High-Risk Areas
Project ID: 2501 Combined with 2506 and 2505
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: Florida is a sentinel state for exotic plant pests with thirty ports of entry, a very high volume of international travelers, and a diverse array of agriculture production. The number of significant exotic invasive pests detected in Florida continues unabated with a new pest being found every month or less. Funding will be used to strengthen the ability to detect, respond and control exotic pests before they establish in Florida and the United States. The primary objective of this initiative is to target domestic inspection activities at vulnerable points in the safeguarding continuum.

The Detector Dog Team and High-Risk Areas program was established to serve as an additional mechanism for pest detection occurring at mail/package service facilities in Florida. It has been well documented that dogs can be trained to detect plant materials in packages. This program will allow for the detection of plant pests that may accompany plant material in mail packages destined for Florida. Detector dog teams have been deployed at high-risk areas such as mail/package distribution centers in Miami, Tampa and Orlando.

Current Status: Ongoing (project up for renewal annually)

Project Schedule:

Start Date: 9/26/2014
Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	8,213,380
SFWMD	
Local	
Total	8,213,380

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.
eric.rohrig@fdacs.gov

Information for the 2021 Integrated Financial Plan
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Program Name: Fruit Fly Survey and Detection
Project ID: 2502
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: Fruit flies are one of the most potentially destructive pests in the world. With a wide host range of fruits, vegetables and nuts, most of Florida's crops, including citrus, fall within the host range. This makes it imperative to act quickly and decisively when any species of fruit fly is found. The division is currently utilizing several methods to support and protect Florida from exotic fruit fly pests.

This project is aimed at early detection of exotic fruit fly species that would be harmful to Florida agriculture. Approximately 55,000 fruit fly traps are placed strategically in high risk areas and serviced by state or federal employees every 7, 14, 21 days depending on trap type. A fully staffed diagnostic lab is additionally maintained in Palmetto, Florida to sort/identify fly specimens found in traps.

Implementation: Ongoing, (project up for annual renewal).

Project Schedule:

Start Date: 7/15/2014
Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$4,000,000
Local	
Total	\$4,000,000

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Program Name: Florida Fish and Wildlife Conservation Commission's Nonnative Fish and Wildlife Program

Project ID: 2503

Lead Agency: Florida Fish and Wildlife Conservation Commission

Strategy and Biennial Report Objectives Addressed: 2-B.1, 2-B.2, 2-B.3, 2-B.4, and 3-D.1

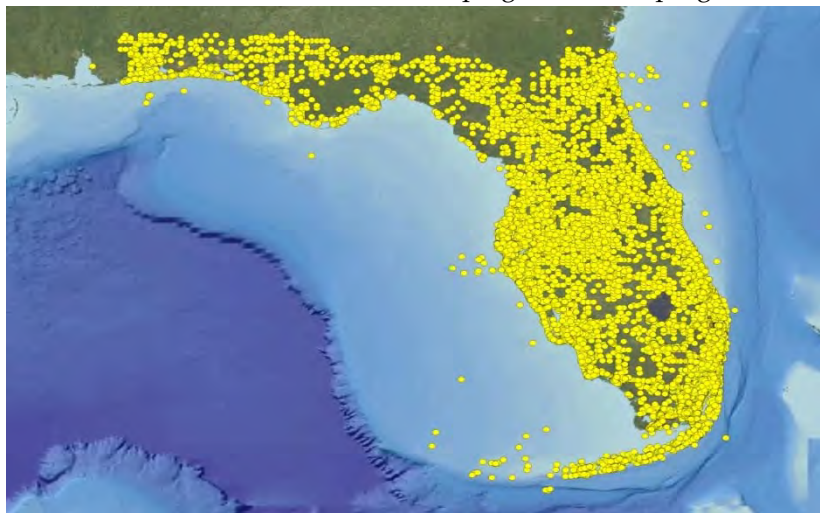
Invasive Species Strategic Action Framework Goal: 1, 2, 3, 4

Measurable Output(s):

1. Number of priority species removed from Florida (e.g. Burmese pythons, North African pythons, Nile monitors, Argentine black and white tegus)
2. Number people available to respond to reports of priority nonnative species (e.g. contractors, volunteers, increased staffing, informed and activated public)
3. Number of exotic pets not released into wild
4. Development of new tools for risk assessment

Projects' Synopses:

The Florida Fish and Wildlife Conservation Commission's (FWC) Nonnative Fish and Wildlife Program operates under four basic program objectives: prevention, early detection/rapid response (EDRR), control and management, and education/outreach to minimize the adverse impacts of nonnative wildlife in Florida. This goal is achieved through these essential components of the program, dynamic working relationships among staff, supporting research to improve our understanding of invasive species and how best to detect and remove these species from Florida's environment, developing innovative programs and initiatives, fostering awareness and public engagement, and leveraging resources and coordination through interagency partnerships. An array of projects is identified each year to address emerging invasive species issues, assess risk of new introductions, contain or control high priority breeding populations of invasive wildlife, and continue to inform the public on how they can be involved in invasive species management in Florida.



Over 100,000 observations of nonnative fish and wildlife are a part of the FWC database.

Burmese Python Management Programs

One of the highest priority invasive species for control in Florida is the Burmese python. Burmese pythons are now a Prohibited species in Florida as of April 29, 2021 and continue to be a high priority species for control by the FWC as they have a broad diet and adversely impact native wildlife. In the past few years, the FWC has ramped up support for innovative research to improve detection and removal, developed incentives programs for public engagement, increased removal capacity with the Python Action Team and almost completed a Florida Python Control Plan with partners.



A member of FWC's Python Action Team and a member of SFWMD's PEP worked together to remove the largest Burmese python on record from Florida. This female python was captured in October 2020 in Big Cypress National Preserve and measured 18 feet 9 inches.

In spring 2017, the FWC launched the Python Action Team and the SFWMD launched their sister program at the same time. Visual searches by local experts continues to be the most effective means of detecting and removing pythons from the wild. The intent of this program is to expand efforts to remove Burmese pythons and other large nonnative constrictors from public lands and from areas where verified reports are received from the public via the Exotic Species Hotline. These contractors are compensated for their time surveying public lands in south Florida, which includes several public lands such as Wildlife Management Areas, Big Cypress National Preserve, Everglades National Park, Biscayne National Park and Florida State Parks. Contractors are also compensated for any pythons or python eggs removed from these areas. Currently, 50 contractors work



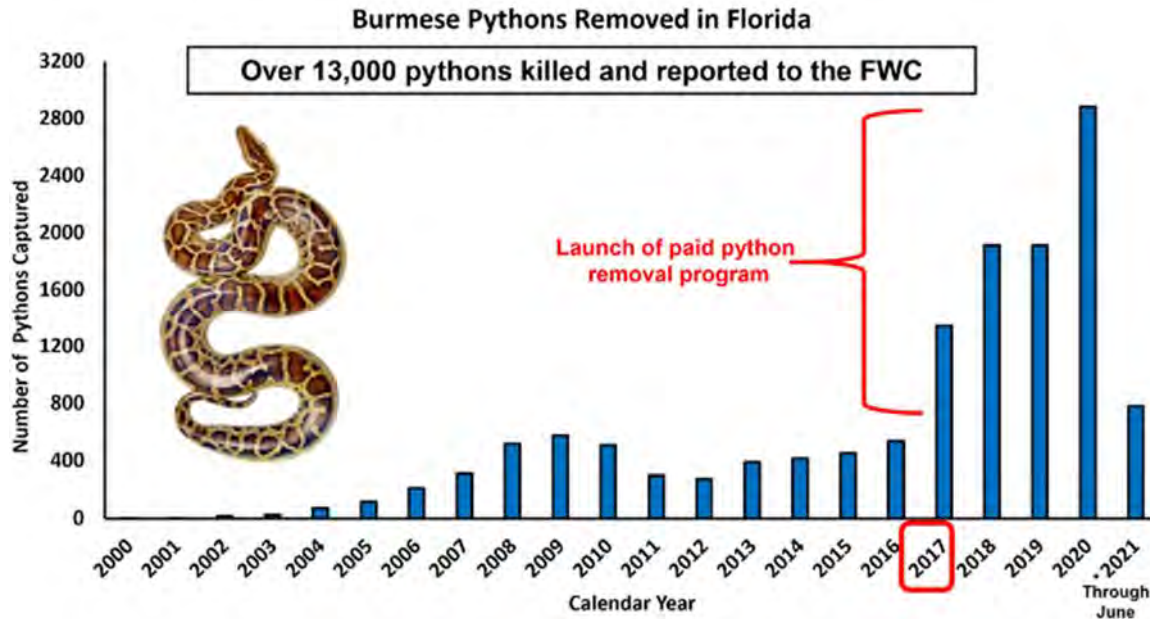
Grand Prize winner and novice participant, Charles Dacht, collected 41 Burmese pythons during the 2021 Florida Python Challenge®. He won \$10,000 for his efforts thanks to exclusive sponsor Virtual Business Services.

for the FWC's Python Action Team and 50 for SFWMD. Together, having accumulated over 78,000 hours of survey time and have removed more than 7,000 pythons.

Under the leadership of Governor DeSantis, the FWC in partnership with SFWMD, the Fish and Wildlife Foundation of Florida and new sponsor Virtual Business Services hosted the 2021 Florida Python Challenge®. During the ten-day competition, over 600 participants registered to remove 223 pythons from participating properties. The winners were announced on August 5, 2021, at the FWC's Commission meeting in Bonita Springs. Details of the event can be viewed at www.flpythonchallenge.org.

For more information visit: www.myfwc.com/python and <https://www.sfwmd.gov/our-work/python-program>.

In 2016, the FWC developed an Interagency Python Management Coordinator position with support from Everglades National Park to start development on the first Florida Python Control Plan (FPCP). The



[Impact of python removal contractor programs on the number of pythons removed over time. These data include PATRIC and PEP.](#)

first three years were spent sharing information from researchers and managers, determining which land managing agencies, Tribes and organizations would be included in the written plan development and creating goals and strategies pertaining to python management. In 2019, the first interagency team meeting, including 15 partner agencies, Tribes and organizations, was held in Fort Lauderdale and an outline for what would be included in the FPCP was developed. The first FPCP draft was completed in June 2021 and identifies goals and management strategies among agencies and organization partners to optimize resources, prioritize and align control strategies and actions for Burmese pythons.

North African Python Removal

North African pythons are a now a Prohibited species in Florida as of April 29, 2021 and continue to be a high priority species for control by the FWC as they have a broad diet and adversely impact native wildlife. North African python sightings were first noted in west Miami in 2002. A population of North African pythons has been documented in the Bird Drive Recharge Area, an approximately 6-square-mile area in western Miami-Dade County. While the FWC has determined that the population is likely limited to a 6-square-mile area, the population is not uniformly distributed because of the lack of good habitat. This population was likely introduced to the area when one or more North African pythons were released or escaped into the area, but no evidence exists on the true origin. Biologists characterize the population of North African pythons in south Florida to be likely established or breeding and consider eradication still possible.

Since 2009, the FWC and partners, including the Miccosukee tribe of Indians, South Florida Water Management District, Miami-Dade County, National Park Service and other local and federal agencies have removed 78 North African pythons, including 37 hatchlings confiscated by LE from an individual who claimed to have collected the eggs from the wild in the Bird Drive Recharge Area. During dry seasons, FWC staff and cooperators with the Everglades Cooperative Invasive Species Management Area conduct surveys and removal efforts on days with optimal weather conditions for finding North African pythons along established routes in the Bird Drive Recharge Area. In May 2021, 22 people from seven organizations completed a cumulative 13.5 hours of evening surveys, but did not find any pythons. Since 2014/15, effort to detect and remove has increased including setting up refuges to attract pythons, the use of detection dogs, increased surveys by experts including members of the Irula tribe and UF, and number of surveys conducted year-round. The FWC and partners are looking at additional alternatives to address potential eradication of this species.



An interagency team searched for North African pythons in Miami-Dade County during May 2021. Image courtesy of Miami-Dade County.

Nile Monitor Removal – Palm Beach County

Nile monitors are now a Prohibited species in Florida as of April 29, 2021 and continue to be a high priority species for control by the FWC as they have a broad diet and adversely impact native wildlife. Nile monitors have been reproducing in Florida for as long as twenty years. Besides the well-documented population in Cape Coral, sightings have been verified near the Homestead Air Force Base and Miami Speedway, along the C51 and E2 canals in West Palm Beach, and scattered records reported in southern Broward County that may indicate one or more breeding populations. Over the years, reports of Nile monitors have decreased in these areas, but continue in Palm Beach County. Efforts to contain or even eradicate the population of monitors in Palm Beach county have been underway since 2011. Boat surveys conducted by FWC staff and University of Florida and removals by the Fthis area (*Note: this number decreased from last year’s total of 149 due to ongoing data QA/QC which resulted in removal of duplicate data). Efforts to contain this population are ongoing.

Interagency Argentine Black and White Tegu Control

WC staff removed a Nile monitor from a canal in Palm Beach County during a boat survey.



FWC staff removed a Nile monitor from a canal in Palm Beach County during a boat survey.

The Argentine black-and white tegu is a large omnivorous lizard native to South America. While these lizards have been documented eating a wide variety of plants, insects, and small vertebrates, they are known egg predators, and may pose a significant threat to crocodilians, turtles, and birds, as well as many other native species. There are now four confirmed breeding populations of tegus in Florida: Hillsborough, Miami-Dade, Charlotte, and St. Lucie counties. Tegus in South Florida were observed from 2007-2010, and the first nest was discovered in 2010 (Pernas et al., 2011). Since then, sustained trapping effort has been conducted by many agencies. As of 2019, tegus occur throughout several hundred square kilometers in south Florida, with a population core in natural areas near Florida City. After several years of trapping, the consensus is that eradication is unlikely, and the strategy has shifted to containment. To date, over 11,000 tegus have been removed from Florida. Live trapping and camera trapping in the core area in Miami-Dade County continue by Everglades Cooperative Invasive Species Management Area partners (FWC, USGS, SFWMD, NPS, UF), including Florida Power and Light that focus efforts at Turkey Point. In 2016, the FWC ramped up efforts to engage citizens of Homestead and

Florida City in trapping tegus on private lands. Trap loans in Miami-Dade County alone have resulted in the removal of almost 700 tegus. The FWC also loans traps to private citizens in the Hillsborough County, Charlotte County, and across the state where tegus are confirmed.



Argentine black and white tegu footage captured by a game camera setup near a live trap.

Exotic Species Hotline and Early Detection Rapid Response

The FWC relies on reports of nonnative fish and wildlife from partners and members of the public to determine if a new nonnative species may have potential to reproduce or adversely impact Florida's ecology, economy, or human health and safety. The FWC began operating the toll-free "IVEGOT1" hotline in 2011, a statewide expansion of the Python

Patrol hotline for the Florida Keys. Hotline reports, combined with FWC and

partner surveys and reports received from Early Detection & Distribution Mapping System (EDDMapS), has increased our collective knowledge of many otherwise unknown potential nonnative species issues, such as Argentine black and white tegu expansion and releases, monitor (*Varanus* spp.) distribution and new introductions of nonnative fish and wildlife statewide. The hotline also provides a way for the public to surrender unwanted exotic pets through the Exotic Pet Amnesty Program.

The FWC maintains a database that maps sightings of species and tracks trends in observation reports. Records in this database come from direct observations by citizens, staff and partner agencies; historical records and other databases such as the eBird and the Christmas Bird Count (CBC); or from data sharing relationships with the EDDMapS database, developed in 2005 by the University of Georgia's Center for Invasive Species and Ecosystem Health, and the U.S. Geological Survey's Nonindigenous Aquatic Species database.



Monitor lizard removed from Charlotte County, FL.

Exotic Pet Amnesty Program

The FWC's Exotic Pet Amnesty Program is an innovative effort that provides exotic pet owners with an opportunity to surrender or re-home their unwanted exotic pet. The goals of the Exotic Pet Amnesty Program are to reduce the number of exotic pets released in Florida and provide amnesty for individuals, whether keeping the animals legally or illegally. The program also serves to provide education and outreach regarding responsible pet ownership and nonnative species in Florida. Initiated in 2006, The Exotic Pet Amnesty Program was started as periodic one-day events where citizens could come and surrender their unwanted nonnative

pets. Surrendered animals are examined by volunteer veterinarians and all healthy animals are held for adoption during the same day event.

These events were linked with multiple exhibitors providing people with the opportunity to learn more about nonnative species and animal care. In later years, events were combined with existing festivals and outreach events. Avoiding the responsibility of long-term housing of the animals allows the Exotic Pet Amnesty Program to be successful with a low budget. This program also relies heavily on volunteers from outside organizations. Pet owners who cannot attend an event are now able to rehome their pets year-round by calling the Exotic Species Hotline. This program has received national attention as an innovative way to prevent the unlawful release of nonnative animals into the wild. This program has hosted 50 events and over 6,700 pets have been surrendered.

To learn more about the program visit <https://myfwc.com/wildlifehabitats/nonnatives/amnesty-program/>.

Risk Assessment and Rule Development

In July 2020, the FWC took a draft rule package to the Commission proposing to list 16 high-risk nonnative reptiles to the state's Prohibited list. The goal of this proposal was to eliminate commercial breeding and pet ownership of these high-risk species to protect Florida's ecology, economy and human health and safety. The Commission approved staff to continue developing this rule language by obtaining stakeholder feedback. In the following months, the FWC created online survey tools, held 10 public workshops and 3 focus groups to gather input from interested parties. On February 25, 2021, the FWC Commissioners unanimously approved the final rule packaged which moved 16 high-risk reptiles to Florida's Prohibited list. The rules also identified several limited exceptions for those currently in possession of tegus or green iguanas. People in possession of these animals as pets prior to their listing as Prohibited can keep their pets for the life of the animal(s) with a no-cost permit. This type of permit does not allow pet owners to acquire additional animals of these species. The rule change also incorporated limited exceptions to allow some qualifying businesses to continue to sell and breed tegus or green iguanas, but the breeding allowances will




The FWC created risk screen summary sheets for the high-risk nonnative reptiles that were included in the 2021 rule change package. Information on the rule change and other risk summaries can be found at www.myfwc.com/reptilerule

be phased out by June 30, 2024. FWC will continue to assess risk of nonnative species in trade and consider this information when developing management strategies.

Tag Your Reptile Days

To help pet owners come into compliance with the new rules, the FWC partnered with zoos, veterinarians and other facilities across the state to offer six free Tag Your Reptile Days. Owners brought their pet tegus or green iguanas from 9 a.m. until 4 p.m. to any of the events and a veterinarian microchipped or PIT tagged each animal, which is now required in Rule 68-5.007, F.A.C. FWC staff and law enforcement on site also addressed questions pertaining to biosecurity and caging, permitting and invasive species.



Schedule of Tag Your Reptile Day Events

- May 22 [Gulfarium Marine Adventure Park](#)
- June 5 [Brevard Zoo](#)
- June 12 [UF College of Veterinary Medicine](#)
- June 19 [Zoo Tampa](#)
- June 26 [South Florida Science Center and Aquarium](#)
- July 11 [Lee County Domestic Animal Services](#)

Please note July 11 is a Sunday event, all other events are scheduled for Saturdays.

All locations will have PIT tagging services available from 9 a.m. to 4 p.m. No appointments are required. PIT tags are available on a first-come, first-serve basis while supplies last.

FWC promoted the six Tag Your Reptile Days on the MyFWC.com website, Facebook ads and through an iHeart media campaign.

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Current Status: All projects are ongoing except for the Tag Your Reptile Days. These special events were completed in July 2021.

Finish Date: TBD, but all programs are intended to continue for long-term management

Detailed Project Budget Information

FWC Budget Information for Nonnative Fish and Wildlife Control and Management	Expenditures July 2013-June 2021
State (FWC)	\$9,675,778
Grants	\$1,152,214
Total	\$10,827,992

Contact: Sarah Funck, Nonnative Fish and Wildlife Program Coordinator, FWC
Sarah.Funck@MyFWC.com

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Program Name: Enhancement of Fruit Fly Immature Stage ID and Taxonomy
Project ID: 2509
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: This project will build upon our recent accomplishments in collecting a large number of research specimens and a large diversity of *Anastrepha* species (50+) from two different faunistic regions of the Neotropics: the central Andean region (Peru) and Central America (Panama). New collections total over 10,000 adult and immature stage specimens of high quality that are suitable for both morphological and DNA analysis. We discovered previously unknown pest species attacking guava and an edible *Annona* relative in Peru. Additionally, we have sequence data that provides good diagnostic separation of 3 distinct lineages in the *A. fraterculus* complex. The northern (Mexico - Central America) and southern populations (Argentina - southern Brazil) are genetically well defined, while populations in the middle zone (Andean - Amazon regions) may include further taxonomic subdivisions.

This project will increase our capability for rapid and accurate identification of immature stages of pest fruit flies. As invasive fruit flies spread through global commerce in infested commodities, the entire international plant protection community will benefit from better diagnostic data. Domestic beneficiaries include especially the sentinel states of Florida and California which bear the brunt of invasive fruit fly introductions. The survey element of the project will improve offshore agency capabilities in determining economic and alternate host plants of pest species and applying mitigation strategies to export programs, thus reducing numbers of fruit fly colonization events and associated quarantines that negatively impact numerous specialty crops.

Current Status: Ongoing (project up for renewal annually)

Project Schedule:

Start Date: 9/25/2013
Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$534,107
SFWMD	
Local	
Total	\$534,107

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

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Program Name: Exotic Management
Project Name: Early detection of new exotic fish species in adjacent canals Vital Sign
Project ID: 2601
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Species Strategic Action Framework Goal: 2

Measurable Output(s): The area surveyed will provide us with the type of exotic fish species located in the canals. This will also allow us to detect the establishment of any new species in the canals.

Project Synopsis:

The SFCN intermittently monitors the canals adjacent to Everglades National Park (EVER) for the purpose of detecting the new exotic species of fish. Introductions of exotic fish can lead to adverse effects on the aquatic food web by altering community structure over time. The intermittent sampling of the canals bordering EVER is based on pilot work conducted by the SFCN and baseline data provided by Florida International University (FIU). The SFCN conducts sampling in the canals by way of electrofishing, an efficient technique for assessing fish populations. The sampling technique uses multi-pass electrofishing at a fixed location (multiple passes at the same location) along with a significant amount of the sampling occurring at night (nighttime sampling has higher CPUE, larger fish and more rapid species accumulation). Early detection and reporting of a new exotic fish species, that can potentially harm the aquatic ecosystems in our parks, would allow resource managers to respond quickly and efficiently to the threat.

There are at least six groups operating electrofishing boats in the area (two in NPS, 2 in universities, 1 USGS, 1 in Florida Fish and Wildlife Conservation Commission). The activities and goals of these six groups could be coordinated with an expansion of the current budget by \$15,000 per year. Fully funding all six of these groups would cost ~\$150,000 per year. Current information suggests that species composition of canal reaches are stable across years, and that selective removal of exotic fish can shift the species composition of a canal (SFCN internal pilot study). Rehage et al (2014) have extensively reviewed available research on depopulation of non-native fish over large areas and this review suggests that managing species composition is possible. The ~\$150,000 per year budget is likely to support a systematic depopulation effort. This effort will probably be more effective if coupled with \$20,000 per year budget (this is a rough estimate) focused on stocking native piscivorous fish in areas where non-natives are removed.

Current Status:

In 2020, no sampling occurred due to COVID. Typically, SFCN assist with sampling as part of the multi-agency fish inventory efforts in South Florida. A draft protocol for this monitoring is in draft form but its completion has been put on hold.

Project Schedule:

Start Date: 2012

Finish Date: ongoing - intermittent

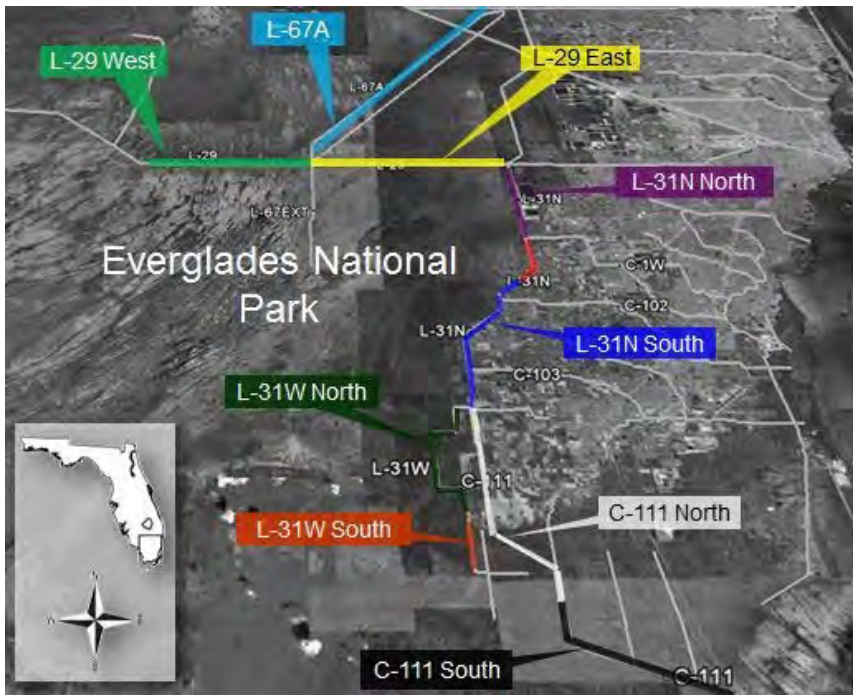
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Detailed Project Budget Information

	Expenditures Thru 2020
Federal	40,000
SFWMD*	
Local	
Total	40,000

Contact: Kevin Whelan SFCN NPS Kevin_Whelan@nps.gov

Map of Area:



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Program Name: Cooperative Agricultural Pest Survey
Project ID: 2604
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Species Strategic Action Framework Goal: 2

Project Synopsis: The Cooperative Agricultural Pest Survey Program is a combined effort by state and federal agricultural agencies to conduct surveillance, detection, and monitoring of exotic plant pests of agricultural and natural plant resources and biological control agents. Survey targets include plant diseases, insects, weeds, nematodes, and other invertebrate organisms.

Current Status: Ongoing (project up for renewal annually)

Project Schedule:

Start Date: 1/1/2015
Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$3,114,830
SFWMD**	
Local	
Total	\$3,114,830

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Hyperlink: <http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Bureaus-and-Services/CAPS>

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Program Name: An Integrated Early Detection, Rapid Response, Management, and Monitoring Program for Everglades Invasive Reptiles and Amphibians
Project Name: Everglades Invasive Reptile and Amphibian Monitoring Program
Project ID: 2605
Lead Agency: University of Florida, funded by the FWC, USFWS, USGS, and SFWMD

Strategic Plan Goal(s) Addressed: Objective 2A2-monitor to increase detection, Objective 2A5-establish rapid response programs, Objective 3A2&3- containment and/or reduction of populations of Nile monitors, tegus, and other invasive exotic reptiles, Objective 3B1,2&3-improve effectiveness of containment, Objective 4A1&2-reduce populations of invasive reptiles

Measurable Output(s):

Removal of nonnative wildlife is conducted while collecting location information, data is collected on diet, body condition, sex, and reproductive status. The information provided is used to determine the status and spread of invasive reptiles and amphibians and used to assist in removal of invasive species while determining their impact on native wildlife within the Everglades Cooperative Invasive Species Management Area (ECISMA).

Project Synopsis:

The Everglades Invasive Reptile and Amphibian Monitoring Program (EIRAMP) was initiated in 2010, prompted by and addressing needs defined by the Everglades Cooperative Invasive Species Management Area (ECISMA) Early Detection & Rapid Response (EDRR) plan. This inventory and monitoring program, designed to detect species before they become established, helps to provide a foundation to meet State and DOI science needs for invasive wildlife management. It provides natural areas managers with life history and location information to contribute to the development of effective control methods for non-native reptiles and amphibians that threaten ecosystem health. This program also involves surveying for native reptiles, amphibians, and mammals concurrently with surveys for invasive species. This provides baseline data to determine impacts of exotic species on native fauna and ecosystems within State lands and other regional conservation lands. When possible, all nonnative species encountered are removed during all field activities.

During 2019/2020, the monitoring program involved visual searches for targeted invasive species on fixed routes along levees and roads within Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR), Big Cypress National Preserve (BCNP), Everglades National Park (ENP), Corkscrew Swamp Sanctuary, US Highway 1, Card Sound Road, US Highway 27, Frog Pond Wildlife Management Area, Everglades and Francis S. Taylor Wildlife Management Area, and other areas such as the C-51 canal and Southern Glades Wildlife Management Area. Visual searches and call surveys are conducted to monitor invasive species and their potential prey species. Twenty-one routes have been established and eight are active. The encounter rates for Burmese pythons on these routes ranged from 0.00039 to 0.01125 observations per kilometer. In 2019/2020, the most commonly observed nonnative reptiles were tropical house geckos (*Hemidactylus mabouia*), brown anoles (*Norops sagrei*), and green iguanas (*Iguana iguana*); nonnative amphibians were greenhouse frogs (*Eleutherodactylus planirostris*), Cuban treefrogs (*Osteopilus septentrionalis*), and cane toads (*Rhinella marina*); and nonnative mammals were wild hogs (*Sus scrofa*), black rats (*Rattus rattus*), and domestic cats (*Felis catus*). The most observed native amphibians were southern leopard frogs (*Lithobates sphenoccephalus*), green treefrogs (*Hyla cinerea*), and pig frogs (*Lithobates gryllio*); native reptiles were southern watersnakes (*Nerodia fasciata*), Florida green watersnakes (*Nerodia floridana*), and cottonmouths (*Agkistrodon piscivorus*); and native mammals were white-tailed deer (*Odocoileus virginiana*), raccoons (*Procyon lotor*), and marsh rabbits (*Sylvilagus palustris*). To date, 149 Burmese pythons have been detected during these visual surveys. Moving forward, the team plans to refine survey methods to correspond with peak Burmese python movement periods.

Project 2605: Everglades Invasive Reptile and Amphibian Monitoring Program Page 1 of 3

In addition, EIRAMP provides EDRR capability for invasive reptiles in the ECISMA. The EDRR surveys and trapping have resulted in the removal of 109 Nile monitors, 2,701 Argentine black and white tegus, 601 Oustalet's chameleons (*Furcifer oustaleti*), 26 veiled chameleons (*Chamaeleo calyptratus*), 159 spectacled caiman, 312 Burmese pythons, one giant whiptail (*Aspidoscelis motaguae*), one common water monitor (*Varanus salvator*), one Nile crocodile (*Crocodylus niloticus*), one Morelet's Crocodile (*Crocodylus moreletii*), one boa constrictor (*Boa constrictor*), one rainbow boa (*Epicrates cenchria*), one ball python (*Python regius*), two African pythons (*Python sebae*), one red-headed agama (*Agama picticauda*), three brown basilisks (*Basiliscus vittatus*), one leopard gecko (*Eublepharus macularius*), one tokay gecko (*Gekko gekko*), one red-footed tortoise (*Chelonoidis carbonarius*), one rhinoceros iguana (*Cyclura cornuta*), four green iguanas (*Iguana iguana*), and five black spinytail iguanas (*Ctenosaura similis*). A small group of volunteers managed as part of this program from 2015 to 2017 removed 108 Burmese pythons. In 2020, EIRAMP will increase focus on removal of priority species.

Current Status:

Currently partially funded through fiscal year 2019-2020.

Project Schedule:

Start Date: October 2010

Finish Date: Will be determined on availability of funds

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2020
Federal (FWS)	\$250,000
Federal (USGS)	\$190,000
State (FWC)	\$553,250
State (SFWMD)	\$997,500
Private Grants or Donations	\$125,000
Zoo Miami	\$1,440
Total	\$2,117,190

Contact: Frank Mazzotti, fjma@ufl.edu.

Hyperlink: <http://crocdoc.ifas.ufl.edu/projects/eiramp/>

Pictures:



Project 2605: Everglades Invasive Reptile and Amphibian Motoring Program Page 2 of 3

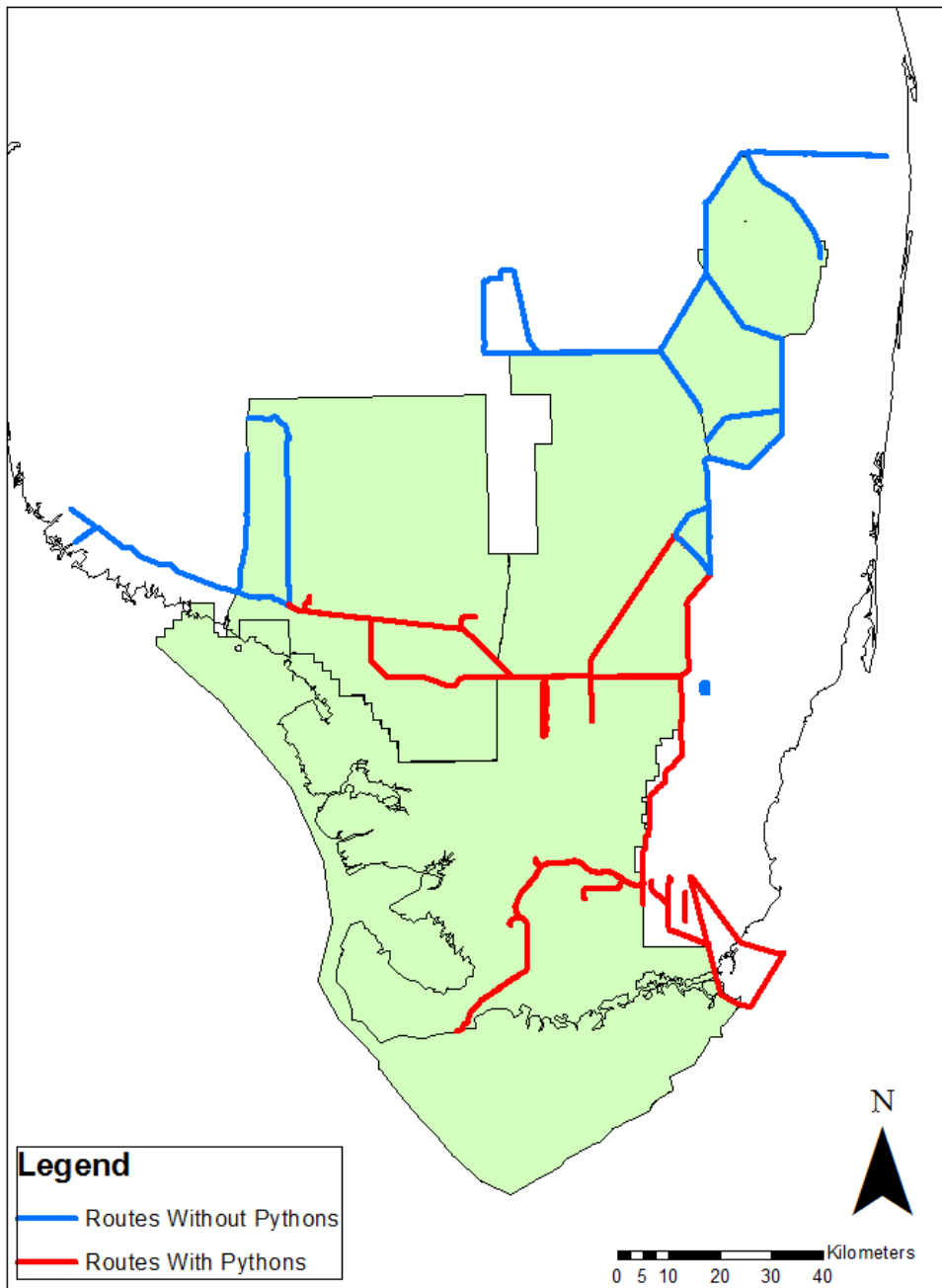


Figure 1. Location of regular EIRAMP (Everglades Invasive Reptile and Amphibian Monitoring Program) survey routes in FY 16. Burmese pythons have been detected on the red routes. No pythons have been detected on the blue routes.

Information for the 2021 Integrated Financial Plan
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Program Name: Miami-Dade Fire Rescue (MDFR) Venom Response Program
Project Name: **MDFR Rapid Response and Invasive Species Removal**
Project ID: 2609
Lead Agency: Miami-Dade County

Strategy and Biennial Report Objective Addressed: 2-B.2, 2-B.3, and 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 2, 3 and 4

Measurable Output(s):

Number of incidents to which personnel respond
Number of non-native species removed from environment

Project Synopsis: The Miami-Dade Fire Rescue Venom Response Program has been involved in removal of non-native species from Miami-Dade County since the inception of the program in 1998. In that time we have removed 100s of animals that have been reported by citizens on Miami-Dade County. The program operates with three persons on a rotating 24-hour schedule. As the unit is staffed 24 hours, personnel are available to remove non-native animals that have been reported within the boundaries of Miami-Dade County. These removals are coordinated with the local, state and federal agencies and the animals removed are turned into the state of Florida Fish and Wildlife Conservation Commission for final disposition. These activities have been solely funded via county government. Prior to coordination with the cooperating agencies, the program was operating as a de facto Early Detection and Rapid Response entity.

Current Status: Personnel from the unit are currently actively engaged in removal of exotic species during the course of their normal 24 hour workday and respond to complaints of non-native species regularly (more than 100 calls per year). \$1,222. This year there were no novel species and fewer calls due to Covid 19 and a reduction in FTE personnel.

Project Schedule:

Start Date: October 2014
Finish Date: Ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2020	2021
Local	\$2,125,200	\$277,200
Total	\$2,125,200	\$277,200

Contact: Captain Jeffrey Fobb - 786-331-4443

Hyperlink: <http://www.miamidade.gov/fire/about-special-venom.asp>

Program Name: Invasive Exotic Species Management
Project Name: **Develop and Implement a USFWS Invasive Species Strike Team**
Project ID: 2610
Lead Agency: U.S. Fish and Wildlife Service (USFWS)
Funding Source: Federal
Goal(s) Addressed: 2.B.1

Measurable Output(s): Project acres treated including Early Detection and Rapid Response (EDRR) projects, gross area surveyed, actual infested acres treated, cost per acre, herbicide amounts utilized, prioritized lists of invasive plants and animals, modified or enhanced control methods, funding totals, invasive exotic plant species targeted, inventory and monitoring methodologies for invasive plants and animals, treatment effectiveness, assessment and evaluation.

Project Synopsis: Secure and appropriate Congressional funding to develop and implement a highly mobile USFWS Invasive Species Strike Team (2-member) to rapidly respond to, and control incipient or newly established infestations (EDRR) of highly invasive exotic species (plants and animals) occurring on National Wildlife Refuges (NWR) in Florida (FL). Officially formed in 2004, the ISST - Everglades (ISST-E) will provide administration, funding and oversight support for projects involving control and treatment of moderate and dense infestations of invasive exotic plants utilizing highly specialized and experienced exotic plant contractors on Southeast (SE) and FL NWRs. In addition, the ISST-E will provide technical assistance to FL and SE NWR refuge managers and staff concerning invasive species identification, control and management, and lastly, will represent the interest of the USFWS on associated invasive species task forces or working groups, and Regional Cooperative Invasive Species Management Areas (CISMAs) established throughout peninsular Florida.

Current Status: In Fiscal Years 2020 and 2021, \$1.73 million and \$1.76 million respectively was awarded to NWR in the Southeast Region (SE) for treatment of invasive plants and animals. Of this total, \$1.92M was awarded for 18 projects on 14 Florida NWR over a two-year period. Targeted species included Florida-listed Category 1 and 2 invasive plants, and invasive animals such as Burmese pythons, Argentine black and white tegus, green iguanas, and feral cats. More than 10,000 acres were surveyed and treated on south Florida NWR. Invasive plant management is usually completed through contracting; however, invasive animal control is completed via inter-agency and cooperative agreements, or, when more efficient, by securing interns through student conservation organizations. In addition, the Strike Team Leader provided technical assistance to Florida and SE refuge managers and biological staff when requested. Since its inception in 2004, the USFWS ISST has provided over \$16 million to Florida and SE NWR for the control and management of invasive plants and non-native wildlife.

Site specific EDRR highlights for 2020 included the treatment of the first documented occurrence of cogongrass (*Imperata cylindrica*) at A.R.M. Loxahatchee (Loxahatchee) NWR headquarters, and the second occurrence of tropical soda apple (*Solanum viarum*) in the southeast corner of Loxahatchee adjacent to the S-39 water control structure. The cogongrass infestation at Loxahatchee headquarters was later deemed eradicated. Funding provided to Crocodile Lake NWR through the USFWS ISST Request for Proposals program contributed to the hiring of two Student Conservation Association (SCA) invasive wildlife interns that surveyed for and removed Burmese pythons, tegu lizards, green iguanas, Tokay geckos and feral cats (Figure 1.). During their tour of duty, SCA interns removed 11 Burmese pythons, seven (7) feral cats, and 38 non-native lizards, mostly green iguanas. Another highlight was the first ever footage of a Burmese python captured via remote camera at Crocodile Lake NWR.



Figure 1. USFWS SCA interns with a Burmese python captured during a nighttime survey. This python was later instrumented with a VHF transmitter so it could be used as a 'Scout' snake to search for additional pythons during breeding season.

Photo credit: USFWS

The Strike Team Leader (STL) conducted many site-specific EDRR projects at Loxahatchee NWR in 2021 due to the continuing Covid-19 pandemic as travel was suspended. The STL completed 26 EDRR projects at Loxahatchee. Targeted species invasive plant species included *Bischofia*, Burma reed, carrotwood, earleaf acacia, Java plum, lantana, laurel fig and *Schefflera*. In addition, two gray-headed (vice purple) swamphens were removed from the C-1 feeder canal that supplies water to the South Florida Water Management District's experimental Loxahatchee Impoundment Landscape Assessment project. Another single swamphen was removed from an adjacent refuge-managed impoundment. Another major accomplishment was the release of the Brazilian peppertree (BP) thrips biological control agent at Loxahatchee NWR. Twenty thousand (20,000) BP thrips were released at two locations. The STL coordinated this effort with USDA scientists and refuge staff.

The Strike Team Assistant position remained vacant for the eleventh consecutive year.

The Invasive Species Strike Team Leader served on the following USFWS, inter- and intra-agency, and State agency committees:

- USFWS National Integrated Pest Management/Regional Invasive Species Coordinator/Invasive Species Strike Team Committee.
- USFWS Southeast Region Invasive Species Panel (*Co-chair*).
- Everglades Cisma EDRR Sub-committee (*Tri-chair*).

Project 2610 Develop and Implement a FWS Invasive Species Strike Team Page 2 of 3

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- OERI Invasive Exotic Species Strategic Action Framework Revision Team.
- Florida Python Control Plan (FPCP) Coordination Team.
- FPCP Work Group.

Estimated Cost: >\$35 million

Project Schedule:

Start Date: October 1, 2004
 Finish Date: N/A

Detailed Project Budget Information (\$1000s)

	2004 - 2017	2018	2019	2020	2021	2022	Total
Federal	9,112	1,319	1,259	1,730	1,755		15,175
State							
Tribal							
Local							
Other							
Total	9,112	1,319	1,259	1,730	1,755		15,175

Contact: William G. Thomas, Jr, Invasive Species Strike Team Leader - Everglades, USFWS,
 (561) 735-6011, William_G_Thomas@fws.gov

Information for the 2021 Integrated Financial Plan
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Program Name: Exotic Management
Program Name: **Giant African Land Snail Eradication Program**
Project ID: 2611
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Species Strategic Action Framework Goal: 2

Project Synopsis:

Project Synopsis:

The goal of this cooperative agreement is to provide federal funds to support continued survey, regulatory, control and outreach activities related to the presence of Giant African Land Snail (GALS) in Florida. These activities are intended to: 1) identify infestations; 2) remove the pest from the environment; 3) ensure that persons moving plants and plant material are not further distributing the pest; and 4) educate the public about potential health issues associated with the pest and elicit assistance in reporting pest presence. DPI will continue to closely work with APHIS to implement a program that is scientifically based and adapted to the challenges presented by this pest within the Florida landscape.

Current Status: The total number of snails collected by the eradication program is now at 164,336. No new cores were discovered, and no core was expanded during this past year. This maintains the cumulative total number of cores detected to **32**, consisting of 719 positive properties. The program currently has **6** active cores. Cores 2 (Z1-Z5, Z13-Z14), 9, 29, and 31 became eligible for decommissioning. Cores 9, 29, and 31 were decommissioned. A total of 26 cores and seven Z-grids, consisting of 2,789 parcels have been decommissioned as of the end of the 2020-2021 period.

Project Schedule:

Start Date: 4/16/2014

Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	14,349,799
Local***	
Total	3,469,361
	17,819,160

*** Note: This refers to state funds in this case.

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

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Project Name: Corridors of Invasiveness Vital Sign
Project ID: 2613
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Species Strategic Action Framework Goal: 2

Measurable Output(s): Routine annual data summary reports to the park surveyed in a particular year. Individual infestations are reported together with waypoint information, infestation area, abundance, field of view estimate, treatment data, and comments. Summary data is also reported by species, whether it's new to the park, the number of infestations, minimum size of infestation found, and maximum size of infestation found, total area, and percent infested in the field of view. Maps and photos are included.

Project Synopsis:

Early detection and rapid response to these new species of exotic plants is important to maintaining the integrity of the parks' natural habitats in a cost-effective manner. The purpose of the Corridors of Invasiveness vital sign is to have early detection of these potential invaders and facilitate rapid treatment of these plants while they are small and isolated. The Corridors of Invasiveness Vital Sign detects new invasive exotic plants that appear/establish along corridors in Big Cypress National Preserve (BICY), Biscayne National Park (BISC), and Everglades National Park (EVER). Our collaboration with the Exotic Plant Management Team (EPMT) of the Florida and Caribbean Office (FLACO) allows early detection and rapid response to the threat of invasive exotic plants. The protocol for this vital sign was completed and sent out for external peer review. The protocol was approved by the Regional Coordinator and officially accepted in the summer of 2013 (available here:

https://irma.nps.gov/App/Reference/DownloadDigitalFile?code=472357&file=20130709_Corr_Inv_Protocol_nrss.pdf).

Expansion of this project could be made to include all other state/federal lands in the region (~15 additional areas covering ~2000 square miles or ~75% of area that is currently monitored). Applying concept to other areas would probably cost ~\$30,000 per year.

A complete sample of all selected survey sites in the three National Park Service units (BISC, EVER, BICY) occurs every five years. The sampling effort is balanced across years by using a rotating panel design, with year one in Biscayne National Park, two years dedicated to Everglades National Park (Eastern and Western Regions), and two years dedicated to Big Cypress National Preserve (Southern and Northern Regions).

Current Status: FY 21 is year eleven of the Corridors of Invasiveness monitoring program. The first five years were the initial surveys in BISC, Eastern and Western EVER, and Southern and Northern BICY. Subsequent years (6-10) begin the resurvey monitoring of the initial panels. The 2020 survey was suspended due to covid so the second visit for Northern Big Cypress was not sampled and was skipped to keep the rotation of the other parks in order. In FY21, we were able to sample Biscayne National Park. This would mark the third sampling rotation in this park unit. Additionally, the sampling protocol was updated to reflect the adoption of the iPad to allow real time GPS tracking during sampling and spatial explicit photographic data collection

Project Schedule: Start Date: 2011 Finish Date: Ongoing

Project 2613 Corridors of Invasiveness Vital Sign Page 1 of 2

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Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$169,368
Total	*169,368*

*Due to Covid, field work was not accomplished so database management and other components were worked on.

Contact: Kevin Whelan SFCN NPS Kevin_R_whelan@nps.gov

Picture:



2019 Seaside Mahoe (*Thepesia populnea*) has been found more commonly than on previous surveys along the western region of Everglades National Park (e.g. New Turkey Key).

Information for the 2021 Integrated Financial Plan
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Program Name: Fruit Fly Eradication Methods Development
Project ID: 2614
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Species Strategic Action Framework Goal: 2

Project Synopsis: Florida’s subtropical climate, a highly mobile and cosmopolitan human population, and an abundance of cultivated and indigenous hosts makes this state extremely vulnerable to fruit fly infestation. While Florida maintains an effective program for the detection and potential eradication of these pests, it is important that new and improved technologies be developed, tested and incorporated on a continual basis to maintain the program as cost effective as possible.

The primary purpose of this agreement is to support the protection of the national food supply and economic interests that would be impacted by the introduction and establishment of exotic fruit fly pests in the United States. This project will address fruit fly methods development and implementation of management strategies. These would include improvements in emergence and release of sterile flies, implementation of newly developed detection or eradication technology, testing of lures to increase detection capabilities, and improving personnel safety and ease of use of such technologies.

Project Schedule:

Start Date: 2/15/2015
Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$255,779
Total	\$255,779

Contact: Dr. Greg Hodges, Assistant Director, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

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Program Name: Everglades Invasive Species Early Detection & Rapid Response

Project Name: Early Detection Rapid Response

Project ID: 2616

Lead Agency: Collaboration of partner agencies within the Everglades Cooperative Invasive Species Management Area (ECISMA): FWC, SFWMD, USACE, USFWS, USNPS, Miami-Dade County, Broward County, University of Florida

Strategy and Biennial Report Objective Addressed: 2-B.2

Invasive Species Strategic Action Framework Goal: 2

Measurable Output(s): ECISMA will assess, coordinate and initiate rapid response to new invasive species. Measurable output will be the number of species assessed and the associated response actions.

Project Synopsis: ECISMA will continue to coordinate, assess and respond to new invasive species, using the ECISMA EDRR plan as a framework. Invasive species assessed will have been reported to ECISMA via EDDMapS or 1-888-Ive Got 1. The invasive species that are currently considered priority rapid response candidates:

Current Status: Ongoing management of ECISMA priority EDRR species through ECISMA workdays and contracts. Florida Fish and Wildlife Conservation Commission provides funding for rapid response for new invasive species documented on Florida CISMA EDRR plant lists. The National Park Service, SFWMD, Broward County, Miami-Dade County and others have provided personnel and supplies to respond to newly detected invasive species eradication efforts.

Project Schedule:

Start Date: 2014

Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures Thru 2020	FY 2021
Federal	\$2,000	In Kind
FWC	\$180,000	In Kind
SFWMD	\$6,100	In Kind
Friends of ECISMA	\$40,030	In Kind
Total	\$228,130	In Kind

Contact: Art Roybal, Eric Suarez, Dennis Giardina, Tony Pernas, LeRoy Rodgers

Hyperlink: www.friendsofecisma.org

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Conehead Termite Eradication Program
Project ID: 2617
Lead Agency: Florida Department of Agriculture and Consumer Services

Strategy and Biennial Report Objective Addressed: 2.B.2
Invasive Exotic Species Strategic Action Framework Goal: 2

Project Synopsis: Mangrove wetlands and other natural landscapes, agricultural crops, native and ornamental plants, and structures are at high risk for conehead termite (*Nasutitermes corniger*) infestations.

The only known populations of invasive non-native conehead termites in the United States exist within approximately 60 acres in Broward County, Florida. Since 2012, the Florida Department of Agriculture and Consumer Services (FDACS) has been working diligently to prevent this invasive termite from becoming permanently established and spreading further throughout the state.

In October 2020, a new infestation was discovered in a mangrove forest near the Fort Lauderdale-Hollywood International Airport in Broward County. Conehead termites have extensively infested red, black, and white mangrove trees and other wetland vegetation. The termites' presence in the mangrove wetland confirms FDACS's concern that this invasive pest could and would infest natural areas (including the Everglades) in the U.S.

FDACS continues to seek partners in the conehead termite eradication effort and, therefore, submitted a request to USDA for Fiscal Year 2022 PPA 7721 funding for rapid response to the mangrove wetland infestation. The project's primary purpose is to prevent spread of the pest to nearby and extensive mangrove ecosystems.

Current Status: New infestation found in mangrove forest in Broward County.

Project Schedule:
Start Date: 2012
Finish Date: TBD

Detailed Project Budget Information

	Expenditures Thru 2020	2021
Federal	\$183,766	\$0
Total	\$173,766	\$0

Contact:
Kelly Friend, Director, Division of Agricultural Environmental Services, Florida Department of Agriculture and Consumer Services.
kelly.friend@fdacs.gov
Sue Alspach, Environmental Specialist III, Division of Agricultural Environmental Services, Florida Department of Agriculture and Consumer Services.
sue.alspach@fdacs.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Critical Ecosystems Science Initiative (CESI)
Project Name: Impacts of Recent Fish Invasions on Native Fish Diets in the Shark River Slough: Repetition of Diet Study from 1977 to 1995
Project ID: 2618
Lead Agency: NPS through CESU Task Agreement with Florida International University

Strategy and Biennial Report Objective Addressed: 2.B
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Evaluate the ecological impact of the invasion of non-native fishes on the diets and trophic position of native freshwater fishes in Everglades National Park.

Project Synopsis:

Since 2000, eight new non-native freshwater fishes have been found in Everglades National Park bringing the total to 17 non-native fishes. African Jewelfish and Asian Swamp Eel in particular have become among the most abundant non-native fishes in EVER. In some locations and in recent years, these species have dominated fish catches of monitoring projects in a manner not previously observed. The non-native Mayan Cichlid, when abundant, has been shown to reduce the abundance of some small native fish species suggesting an influence on the food Everglades food web may be occurring. Solution hole habitats in the Rocky Glades area of EVER can also be dominated by non-native fishes and are credited in part with the loss of native fishes from those habitats in the dry season. Therefore, when abundant, these non-native fishes may influence the Everglades food web through either direct consumption of or other aspects of competition for resources. This project will explore aspects of the potential impacts of these abundant non-native fishes on the food web of native fishes in EVER.

The purpose of this study is to evaluate the impact of African Jewelfish and Asian Swamp Eels on native fish diets and trophic positions. This project will document the contemporary diet composition and trophic positions of fishes by collecting and processing diet and stable isotope samples from fishes in Shark River and Taylor Sloughs of Everglades National Park. This work will compare the contemporary post-invasion diet and stable isotope sample results with those collected during the Loftus dissertation (1999) prior to the invasion of African Jewelfish and Asian Swamp to identify possible influences of non-native fishes on the Everglades food web.

Current Status:

The project is ongoing and nearing completion. Field samples for the contemporary diet and stable isotope analyses have been collected and processed. Data are being analyzed and final report is being prepared.

Project Schedule:

Start Date: September 2018
Finish Date: September 2021

Detailed Project Budget Information

	Expenditures July 2020-June 2021
Federal	\$74,248.00
Total	\$74,248.00

Contact: Agreement Representative Jeff Kline, EVER; PI Dr. Joel Trexler, FIU

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: ECISMA coordinated response
Project Name: **Argentine black-and-white tegu (*Salvator merianae*) interdiction**
Project ID: 2702
Lead Agency: Florida Fish and Wildlife Conservation Commission (FWC)/ National Park Service (NPS)

Strategy and Biennial Report Objective Addressed: 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3

Measurable Output(s): Number of tegus observed and removed from perimeter; documented absence or infrequent occurrence on priority lands; number of tegus observed and removed from high-density areas

Project Synopsis:

The Argentine black-and white tegu is a large omnivorous lizard native to South America. While these lizards have been documented eating a wide variety of plants, insects, and small vertebrates, they are known egg predators, and may pose a significant threat to crocodylians, turtles, and birds, as well as many other native species. There are now at least four populations of tegus in Florida: one in Hillsborough County, one in Miami-Dade County, one in Charlotte County, and a newly discovered population in St. Lucie County. Tegus were initially observed in Miami-Dade County during 2007-2010, and the first nest was discovered in 2010 (Pernas et al., 2011). In 2011 and 2012, regular trapping efforts were initiated by Everglades Cooperative Invasive Species Management Area (ECISMA) partners with the objective of eradicating tegus. Live-trapping takes place each year from February to October when tegus are active, and it appears successful; over 8,000 tegus have been removed since 2012 by partner agencies. However, despite these captures, the population size and distribution appears to be growing; tegus occur throughout several hundred square kilometers in Miami-Dade County, with a population core emanating from an area south of Florida City.

After several years of trapping, the consensus is that eradication is unlikely, and the strategy is containment outside ecologically sensitive areas like Everglades National Park, Turkey Point, and the Florida Keys. Objectives of the containment effort include intercepting tegus dispersing from high-density areas toward sensitive natural areas, reducing the population density in high-density areas, and monitoring for any tegus within sensitive lands, followed by concerted effort to remove any tegus documented in these areas. We expect the effort to continue indefinitely to prevent establishment of a tegu population in Everglades National Park and other nearby ecologically sensitive areas.

Current Status:

Multiple ECISMA partners, including staff from Everglades National Park, Biscayne National Park (BISC), the Florida Fish and Wildlife Conservation Commission (FWC), Florida Power and Light (FPL), and the University of Florida, trapped for tegus in Miami-Dade County during the July 1, 2020 – June 30, 2021 reporting period. EVER increased trapping efforts by ~40%, with most of that increased effort focused in areas inside and immediately adjacent to the park. Despite these increased efforts for containment, 34 tegus were removed from inside EVER during the reporting period, and hatchlings were documented in EVER for the first time. The presence of hatchlings suggests that tegus are reproducing and now established inside EVER boundaries (i.e., the goal of tegu containment was not achieved). FWC also expanded their trapping efforts, and areas further east and nearer Biscayne National Park yielded consistently high numbers. A tegu was detected for the first time in Biscayne National Park during the reporting period, but no tegus have so far been removed from BISC.

Project Schedule:

Start Date: 2011
Finish Date: Ongoing; indefinite

*Project 2702: Argentine black-and-white tegu (*Salvator merianae*) interdiction Page 1 of 3*

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information

	Expenditures July 1, 2020 - June 30, 2021
Federal (NPS)	\$125,660
Total	\$125,660

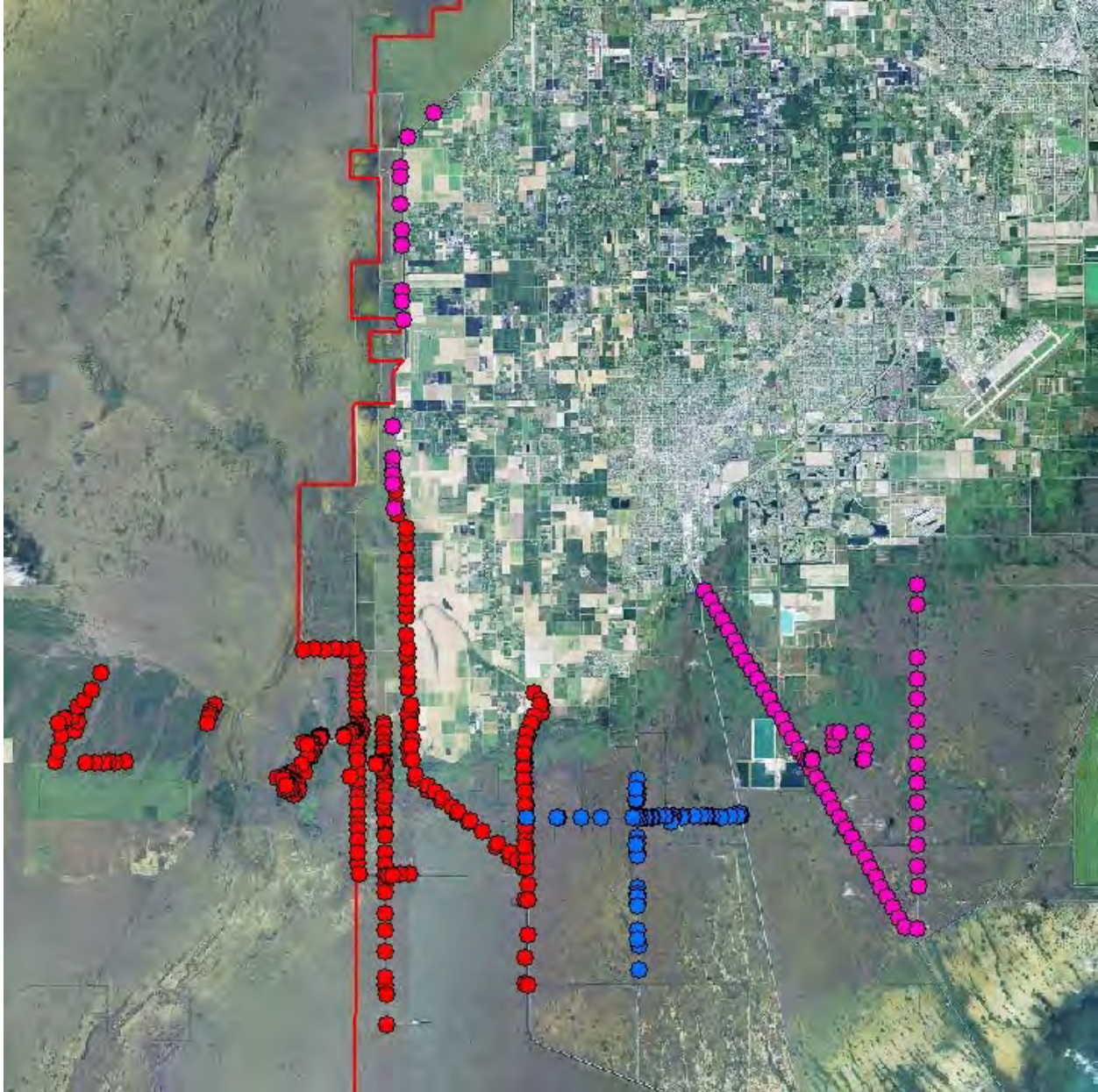
Contact: Bryan Falk, Supervisory Invasive Species Biologist, Everglades National Park

Pictures:



Photo credit: National Park Service

Map of area showing approximate locations of tegu live traps as of June 30, 2021. Everglades National Park traps are shown in red, University of Florida traps are blue, and FWC traps are purple. The red line is the boundary of Everglades National Park, and the municipalities are Florida City and Homestead in southern Miami Dade County. Locations of Biscayne National Park and Florida Power and Light traps are not shown and are to the right (east) of the map margin.



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Big Cypress National Preserve Invasive Reptile Control
Project Name: **BICY Invasive Reptile Control**
Project ID: 2705
Lead Agency: Big Cypress National Preserve

Strategy and Biennial Report Objective Addressed: 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3

Measurable Output(s): Burmese Pythons within Big Cypress National Preserve (BICY) are brought to a management level. Measurable output will be numbers of invasive specimens captured and removed, as well as the status of vulnerable native wildlife (i.e. stable or declining mesomammal communities, stable or declining deer herd etc). Additionally, new large reptile species (monitors, tegus, iguanas, etc) are prevented from establishing breeding populations within BICY; the measurable output will be the number of new populations established.

Project Synopsis: Continue partnering with USGS, Conservancy of SW Florida, South Florida Water Management District, FWC and other agency and NGO partners to develop a management network including NPS Authorized Agents. Develop new management tools through telemetered python and associated research (Pheromones etc.). Increase the python program at BICY via increased size and scope of the telemetered python team, this will require increased staffing to maintain them. Improve communication and management response to new invasive reptile observations within Big Cypress National Preserve. Increase trained staff to conduct invasive reptile detection and eradication efforts.

Current Status: Efforts to control invasive reptiles currently depend upon chance observations from visitors (public and private), contractors, employees, volunteers, and landowners, who report those observations, or are in a position to capture or kill the animal. BICY wildlife staff is prioritizing management focused research in the form of a team of radio transmitted male pythons that are closely monitored within BICY. The goal of this research is to develop and improve tools for removing pythons from the Preserve, specifically by exploiting the python's natural behavior during breeding season (December-March).

Project Schedule:
Start Date: 2019
Finish Date: 2029

Estimated Project Cost: Annual

Detailed Project Budget Information

	Expenditures 2021- 2029
Federal	\$2,250,000
Total	\$2,250,000

Contact: Tony Pernas, Tony_Pernas@nps.gov, 239-994-0921

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Enhanced Mitigation Techniques for Control of Cactus Moth
Project ID: 2802
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Project Synopsis: The Argentine cactus moth, *Cactoblastis cactorum*, is an invasive insect from South America that poses a serious threat to *Opuntia*-rich areas in the southwestern USA and Mexico. *Opuntia* cactus are dominant key components of many arid areas in the southwestern USA and throughout Mexico, minimizing erosion and providing food, moisture, shade, shelter, and nesting sites for a wide variety of vertebrates and invertebrates. Since the initial 1989 find of *C. cactorum* in Florida, the moth has continually spread along the Gulf and Atlantic Coasts and now occurs as far west as Texas and as far north as North Carolina. A combination of tactics such as SIT and host plant removal was successful at slowing the spread of this insect and eradicating outbreak populations on islands in Alabama, Mississippi, and Mexico.

However, the cactus moth continued to spread, and funding levels were inadequate to sustain the area-wide program necessary to stop the moth's spread. As a result, beginning in 2012, a coordinated regional approach became focused on developing a biological control technology against this pest. The Argentine braconid wasp, *Apanteles opuntiarum*, was identified to have a narrow field host range in its native area (limited to the genus *Cactoblastis*) and the potential biological control agent underwent host specificity tests in a Florida quarantine facility starting in 2013.

Current Status: Host specificity testing of *A. opuntiarum* strongly indicates this biological control agent is safe for release in the southern US. The Environmental Assessment summarizing host specificity data and seeking permission from USDA APHIS PPQ to field release the parasitoids will soon be submitted.

Project Schedule:

Start Date: 7/1/2014
Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$848,250
Total	\$848,250

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Asian Citrus Psyllid Biocontrol
Project ID: 2805
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Project Synopsis: Asian citrus psyllid (ACP), *Diaphorina citri* (Hemiptera: Psyllidae), was discovered by Division of Plant Industry personnel in Boynton Beach, Florida in June of 1998. It quickly spread to all citrus producing counties in Florida. ACP is one of the most efficient vectors of citrus greening disease, which was found in Florida in 2005. Infection with citrus greening, or Huanglongbing (HLB), results in a systemic tree infection leading to poor fruit production and tree decline.

In cooperation with UF-IFAS, two parasitoids of the psyllid, *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) and *Tamarixia radiata* (Hymenoptera: Eulophidae), were introduced into the division's quarantine laboratory in 1998 and a permit for field release of *T. radiata* was granted in July of 1999 and *D. aligarhensis* in March of 2000.

Tamarixia radiata quickly established and can be found throughout Florida providing varying levels of ACP control. *Diaphorencyrtus aligarhensis* is not known to have established to date. However, augmentative releases of this wasp does provide additional psyllid control.

Current Status: Both parasitoids are mass reared and distributed to researchers and citrus growers throughout Florida. Approximately 3,000,000 wasps are released per year throughout the state.

Project Schedule:

Start Date: 5/1/2014
Finish Date: ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$4,143,887
Total	\$4,143,887

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Hyperlink: <http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Bureaus-and-Services/Bureau-Of-Methods-Development-Biological-Control/Biological-Control/Classical-Biocontrol>
Pictures:

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Everglades Complex of Wildlife Management Areas (Everglades & Francis S. Taylor, Holey Land, and Rotenberger)
Project Name: Exotic Plant Control
Project ID: 2807
Lead Agency: Florida Fish and Wildlife Conservation Commission

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Achieve a 95% kill rate of targeted exotic species in the acreage contracted for treatment each year. Main targeted species are Brazilian pepper (*Schinus terebinthifolius*), Old World climbing fern (*Lygodium microphyllum*), and Napier grass (*Pennisetum purpureum*), but includes all FLEPPC category 1 species found.

Project Synopsis: Contract the survey and treatment of exotic vegetation on tree islands, levee perimeters, spoil islands, and in the marsh, within the Complex.

Current Status: On-going annually

Project Schedule:

Start Date: Annual

Finish Date: Continuous

Estimated Project Cost: \$1,200,000 annually

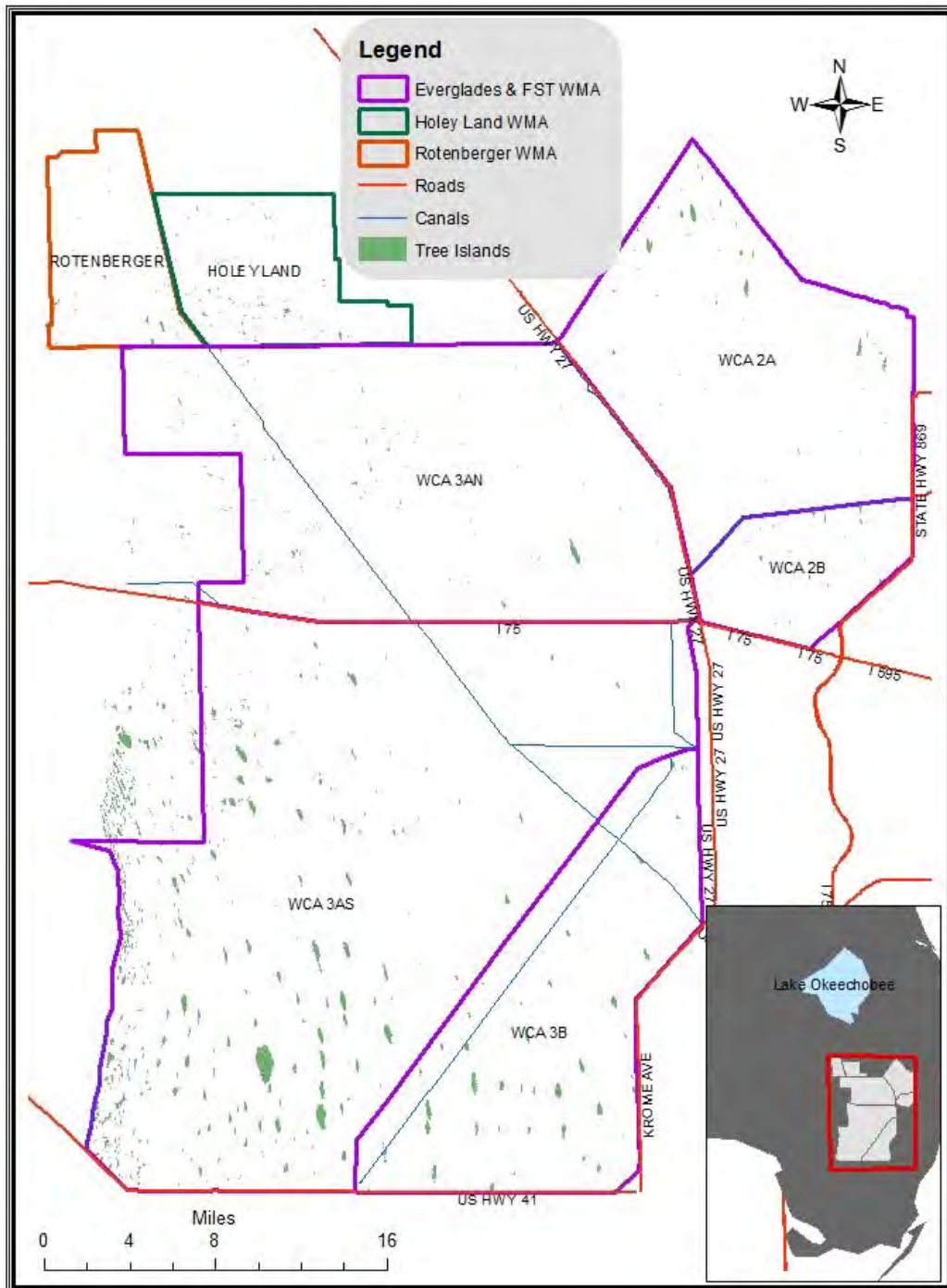
Detailed Project Budget Information

	Expenditures 2014 - 2021
Federal	
State	\$7,759,301
Total	\$7,759,301

Contact: Rachel Taylor Rachel.Taylor@MyFWC.com 954-746-1789

Hyperlink(s): <http://myfwc.com/viewing/recreation/wmas/lead/everglades/>
<http://myfwc.com/viewing/recreation/wmas/lead/holey-land>
<http://myfwc.com/viewing/recreation/wmas/lead/rotenberger>

Map of area(s):



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Everglades Complex of Wildlife Management Areas (Everglades & Francis S. Taylor, Holey Land, and Rotenberger)
Project Name: Native Tree and Shrub Planting/Maintenance
Project ID: 2808
Lead Agency: Florida Fish and Wildlife Conservation Commission

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Re-vegetate tree islands post-exotic treatment within the Complex through the planting of native trees and shrubs at an average of 150 plants/acre.

Project Synopsis: Contract the planting of native trees and shrubs (est. 600-1,500 plants annually) on tree islands within the Complex. Contract the annual maintenance of protective exclosures around the planted trees and shrubs and track their survival rates utilizing the maintenance data. Re-vegetation of islands previously cleared of invasive exotics improves wildlife habitat and promotes natural recruitment of native plant species.

Current Status: On-going annually

Project Schedule:

Start Date: Annual
Finish Date: Continuous

Estimated Project Cost: \$150,000 annually

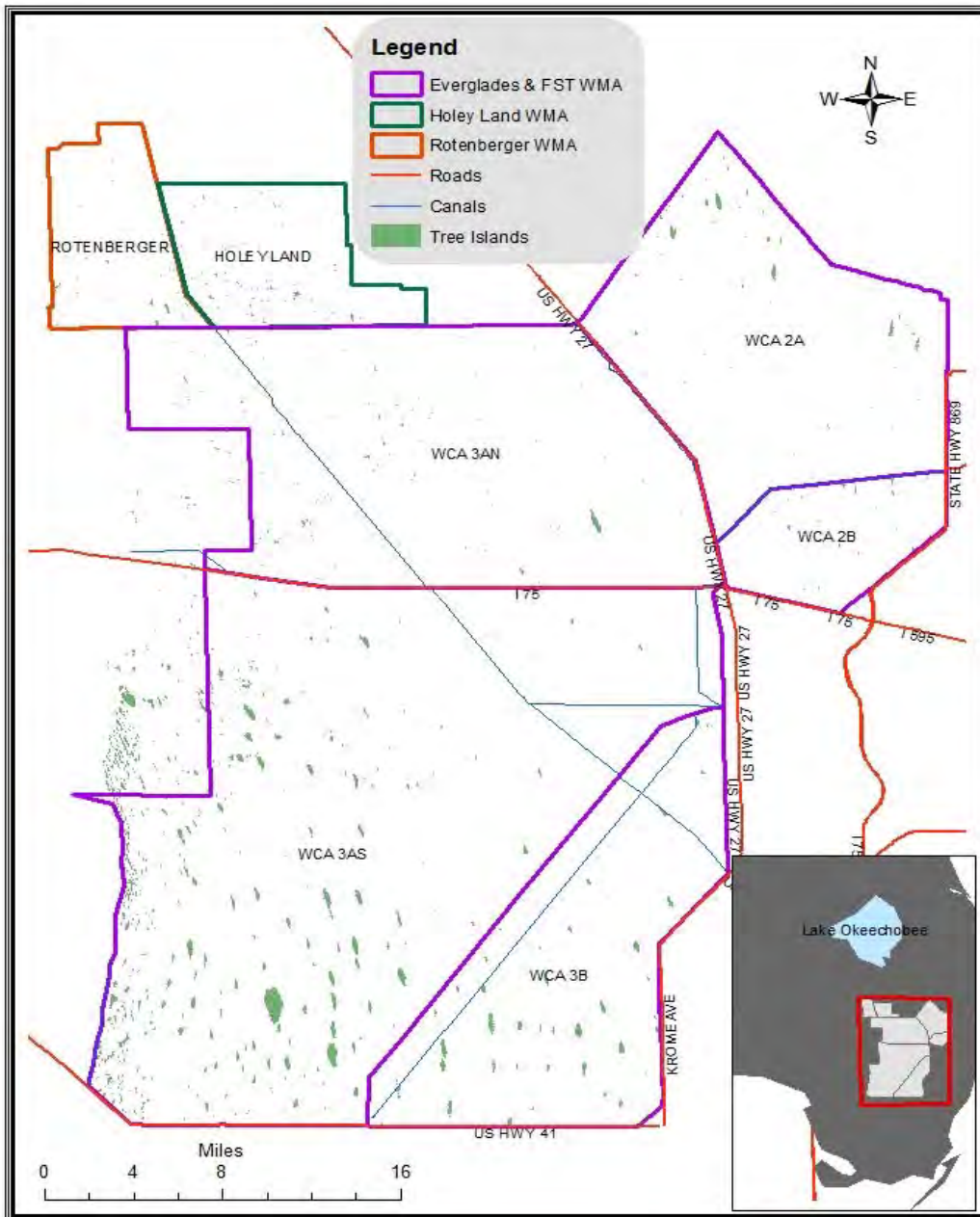
Detailed Project Budget Information

	Expenditures 2014 - 2021
State	\$1,103,605
Total	\$1,103,605

Contact: Rachel Taylor Rachel.Taylor@MyFWC.com 954-746-1789

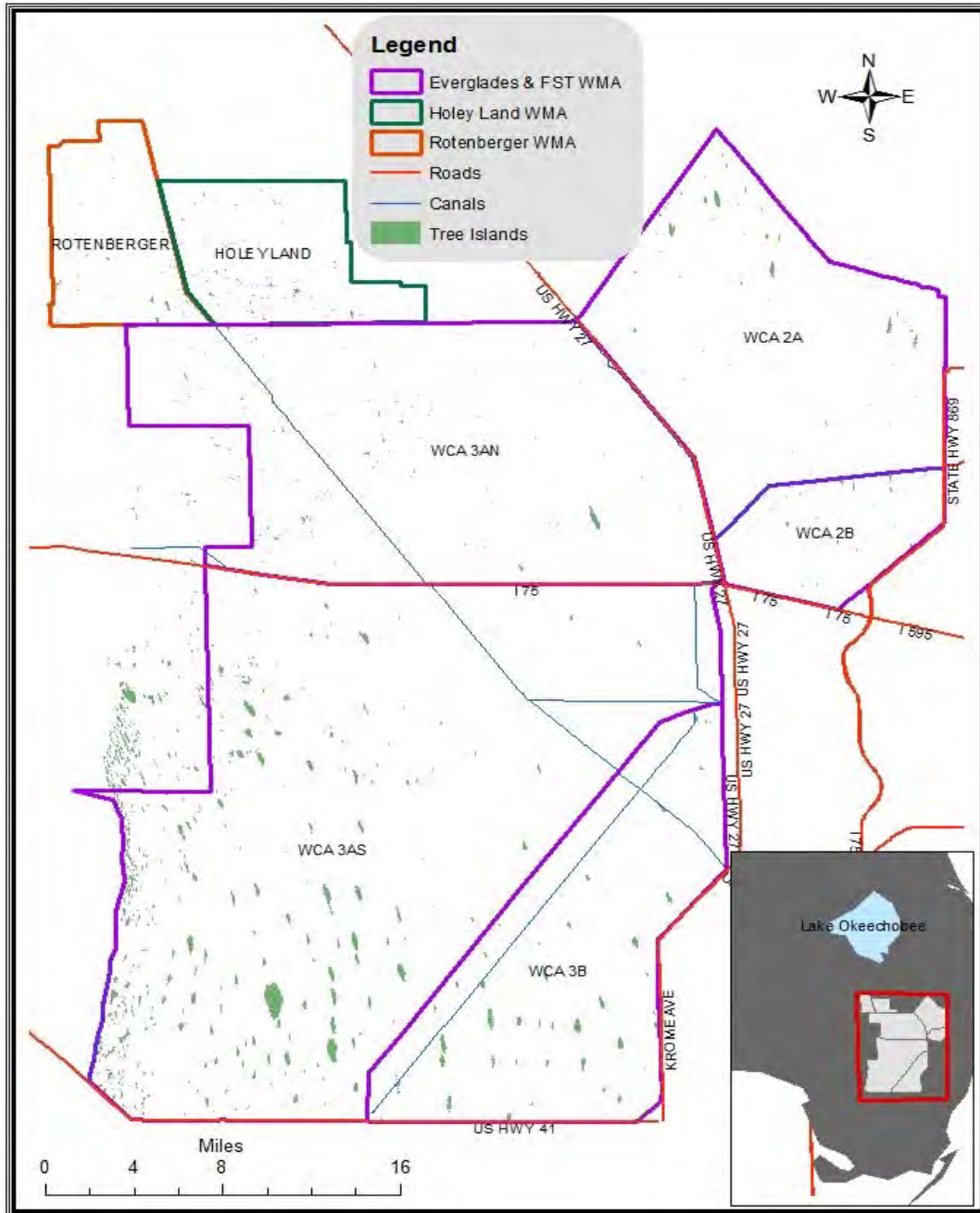
Hyperlink(s): <http://myfwc.com/viewing/recreation/wmas/lead/everglades/>
<http://myfwc.com/viewing/recreation/wmas/lead/holey-land>
<http://myfwc.com/viewing/recreation/wmas/lead/rotenberger>

Map of area(s):



Hyperlink(s): <http://myfwc.com/viewing/recreation/wmas/lead/everglades/>
http://myfwc.com/viewing/recreation/wmas/lead/holey-land
http://myfwc.com/viewing/recreation/wmas/lead/rotenberger

Map of area(s):



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Miami-Dade County Environmentally Endangered Lands Program
Project Name: **Conservation Land Acquisition and Management**
Project ID: 2809
Lead Agency: Miami-Dade County Environmentally Endangered Lands Program

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Acres acquired, acres treated – The EEL Program acquired 472 acres and managed/eradicated invasive exotic species on 1,957 acres from July 1, 2020- June 30, 2021.

Project Synopsis: The Miami-Dade County Environmentally Endangered Lands (EEL) Program was established in 1990, amid growing concern about the continued loss of pine rocklands and other natural areas unique to southeast Florida. Miami-Dade County voters approved a referendum for a two-year property tax increase that initially funded and established the EEL Program to acquire, protect and manage environmentally endangered lands for this and future generations. Although the State of Florida had established land acquisition programs for preserving conservation lands by 1990, Miami-Dade County’s EEL Program was among the first in the state that was approved at a local level for this purpose. While EEL Funds have adequately supported the program since its inception, EEL Funds will be depleted by 2024, possibly sooner. Recurring revenue sources need to be identified and secured to assure that acquisition and management can continue.

Current Status: The EEL Program, in partnership with the South Florida Water Management District, the State of Florida and other funding partners, has acquired approximately 23,535 acres of land in Miami-Dade County from inception of the EEL Program through June 30, 2021. In total, the EEL Program restores and manages over 80 preserves totaling more than 27,000 acres. Since its inception, the EEL Program has acquired land within the Greater Everglades Ecosystem, including pine rockland, tropical hardwood hammock, salt marsh, mangrove and freshwater wetlands. Over 20,000 acres of land within the EEL Program’s inventory are within the CERP C-111 and BBCW project footprints. The primary effort of management activities is eradication of invasive exotic plant species and restoration of native habitats at a cost in excess of \$3,000,000 per year.

Project Schedule:

Start Date: May 18, 1990

Finish Date: N/A – these lands are meant to be maintained in a restored state in perpetuity

Detailed Project Budget Information

	1990 - 2017	2018	2019	2020	2021	2022	Balance to Complete	Total
Federal / State grants	13,533,000	100,000	100,000	100,000	100,000	100,000		
Local (for management)	48,573,440	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000*	3,000,000* per year	
Local (for acquisition & administration)	\$122,289,425	3,000,000	1,000,000	1,000,000	1,000,000	1,000,000*	>\$100,000,000*	
Total	\$184,395,865	6,100,000	4,100,000	4,100,000	4,100,000	4,100,000*		TBD

* Dependent on availability of funds – we are currently under managing because of fiscal constraints

Contact: Janet Gil, Program Director

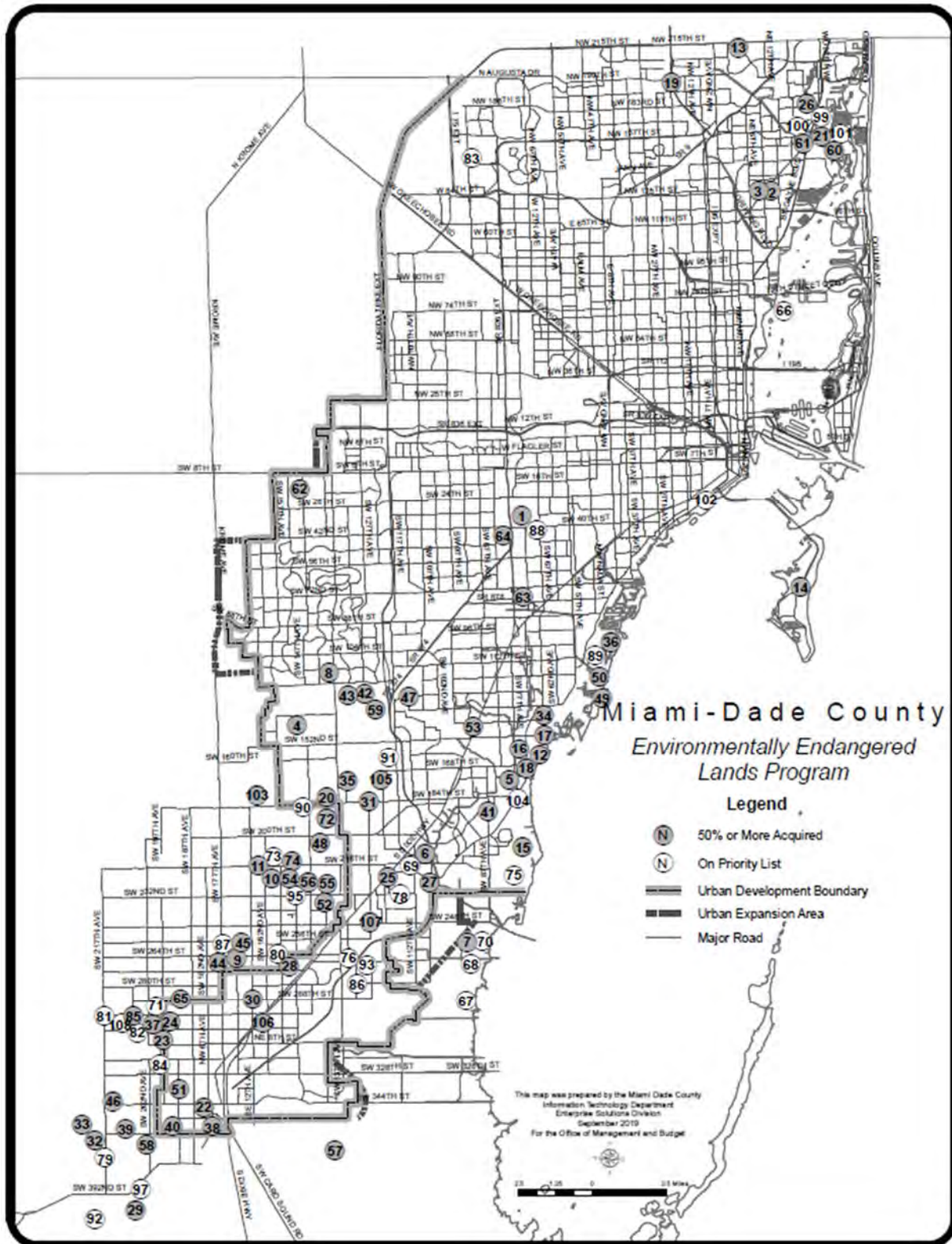
Hyperlink: www.miamidade.gov/environment/endangered-lands.asp

Project 2809: Conservation Land Acquisition and Management Page 1 of 3

Pictures:



Map of project area:



Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Arthur R. Marshall Loxahatchee National Wildlife Refuge
Project Name: Invasive Exotic Control Program
Project ID: 2810
Lead Agency: SFWMD in collaboration with USFWS, FWC

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s):

Fiscal Year	Acres Covered	
	Melaleuca	Old World Climbing Fern
2021	10,036	6,248
2020	7,021	5,328
2019	22,971	12,597
2018	25,441	6,916
2017	11,115	6,916
2016	27,911	14,326
2015	25,194	16,302

* All federal funding provided to SFWMD under the cooperative agreement.

Project Synopsis:

Beginning in 2014, the SFWMD and FWC initiated a new collaboration with the USFWS to increase much-needed control efforts in the Refuge. Between 2014 and 2017, FWC funded and SFWMD implemented herbicide control of melaleuca and Old World climbing fern in the Refuge to augment the FWS invasive plant management program. Under a new license agreement (February 2018) between the USFWS and SFWMD, invasive plant management is implemented only by the SFWMD with funding commitments from USFWS. Additional funding from FWC and SFWMD should allow for significant progress towards management of these species in the next 5-10 years. The District’s invasive plant management strategy at the Refuge includes three components: 1) follow a landscape-scale containment approach working from the perimeter toward the interior core of the invasive plant populations, 2) ensure resources are allocated to maintain control of areas previously treated, 3) address “triage” areas outside the planned treatment areas where critical resources (e.g. intact tree islands) could soon be degraded by rapidly developing infestations.

Contracted crews access the interior marsh via airboats and use a combination of chemical and mechanical removal of all Class I species, primarily focusing on Melaleuca, Old World climbing fern, and Brazilian pepper.

Current Status: Ongoing

Project Schedule:

Start Date: ongoing
 Finish Date: ongoing

Detailed Project Budget Information

	Expenditures 2014 - 2021
Federal	\$18700120
FWC/ SFWMD	\$16,582,116
Total	\$35,282,237

Project 2810: Invasive Exotic Control Program Page 1 of 2

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Contact: LeRoy Rodgers (SFWMD)

Map of area:



Old World climbing fern
invasion on tree island in
A.R.M. Loxahatchee National
Wildlife Refuge

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Operations of National Park Service
Project Name: Python Removal Authorized Agent program for South Florida National Parks and Preserve
Project ID: 2811
Lead Agency: National Park Service (NPS)

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Number of individuals removed; reduction in occurrence of invasive species over time within target areas

Project Synopsis: Burmese pythons are currently well-established within Everglades National Park (EVER) and Big Cypress National Preserve (BICY), and also occur within Biscayne National Park (BISC). Efforts to remove pythons from NPS lands have been under way for many years to limit ecological impacts, but also to obtain python specimens for scientific studies. Due to the low detection probability for pythons, efforts to increase search effort have been necessary to continue to remove pythons, though existing regulations prevent “hunting” within the Parks. Through the authorized agent program, members of the public work are authorized to participate in python removal.

For the most part, authorized agents are interested members of the public, and we work to ensure that they are adequately trained and prepared to remove pythons. Their efforts help to generate detection probabilities, gain natural history information about invasive species, and increasingly, they serve an important role in detecting new species. EVER staff continue lead administration of a combined authorized agent program for EVER, BICY, and BISC.

In addition to NPS volunteers, the authorized agent program now also includes participation of python removal contractors employed by the Florida Fish and Wildlife Conservation Commission (FWC) and the South Florida Water Management District (SFWMD). This started in 2018 with FWC python removal contractors in EVER but has expanded each year so that contractors from both FWC and SFWMD can remove pythons from BISC, BICY, and EVER.

Current Status: Despite challenges associated with the COVID-19 pandemic, there were continued efforts to facilitate python removal from NPS lands during the July 1, 2020 – June, 30, 2021 reporting period. The activities of the NPS volunteer authorized agents remained on hold, but the paid contractor programs expanded. EVER staff worked with staff from regional and national NPS offices, as well as the Department of the Interior, to allow the state agencies discretion over the disposition of the python carcasses, including possession by their python removal contractors, with the goals of incentivizing removal efforts by contractors and reducing the administrative burden for both NPS and partner staff. Furthermore, with support by NPS staff, the state partner agencies increase the combined number of contractors to 100. As a result of all these efforts, ~990 pythons were removed from NPS lands during the reporting period, mostly by the paid python removal contractors, which is an increase of ~38% from the same period the previous year and includes 4 pythons found swimming considerable distances from the nearest land in Biscayne Bay.

Project Schedule:

Start Date: ~2009
Finish Date: TBD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information

	Expenditures 2018 - 2021
Federal	\$37,912
Total	\$37,912

Hyperlink: <https://www.nps.gov/ever/learn/nature/npspythonmanagement.htm>

Contact: Bryan Falk, Supervisory Invasive Species Biologist, Everglades National Park

Pictures:



Photo credit - Tom Rahill and the Swamp Apes

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Operations of National Park Service
Project Name: **Lionfish assessment and control in South Florida National Parks**
Project ID: 2812
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Reduced abundance and occurrence of lionfish at selected reef sites;

Project Synopsis: Lionfish now occur throughout much of South Florida’s marine and estuarine waters. Within Biscayne National Park, Dry Tortugas National Park, and Everglades National Park, efforts have been under way to systematically remove lionfish from selected sites, assess the lionfish populations and trends in conjunction with the control efforts, and better understand the habitat preferences of this species in order to better utilize staff and resources on lionfish control. It is not currently feasible to control lionfish throughout these properties, but removal and density reduction can be achieved at specific sites. Within Everglades and Dry Tortugas, spears are prohibited fishing gear, but their use by the public is allowed within Biscayne National Park in accordance with State law, and recreational/commercial harvest may be a significant contributor to control efforts.

NPS personnel and interns search sites to assess the occurrence of lionfish across broad areas and their habitat associations. Teams of divers use spears and hand nets to remove lionfish. Accompanying data, which could include person-hours, numbers of lionfish observed, numbers of lionfish removed, and abiotic and biotic habitat information are also collected during each dive. Sites are revisited over time, with “hotspots” (sites tending to attract larger densities of lionfish) receiving increased attention. This approach provides information on lionfish distribution and density, as well as habitat associations, rates of re-occupancy of the selected sites, and the extent of effort needed to control lionfish at acceptable levels.

Current Status: From July 1, 2020- June 30, 2021, a total of 935 lionfish were removed from Biscayne National Park. These 935 lionfish were removed during 157 separate dives on 48 field days, with one lionfish being removed, on average, for every 20 minutes of diver effort. Biscayne divers successfully removed ~89% of sighted lionfish. During the reporting period, lionfish removed from Biscayne ranged in size from 7.5cm to 42.3cm total length (TL), with an average size of 24.6cm TL.

Lionfish management efforts were negatively affected by COVID-19 pandemic as well as lack of staff, and this lack of staff precluded lionfish management altogether for Everglades National Park during the reporting period.

Project Schedule:

Start Date: 2011
Finish Date: TBD

Estimated Project Cost: TBD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information

	Expenditures 2020 - 2021
Federal	\$70,250
State	\$0
Total	\$70,250

Contact: Vanessa McDonough, Fishery and Wildlife Biologist, Biscayne National Park

Pictures:



Photo credit - National Park Service



Photo credit - National Park Service

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Exotic Management
Project Name: Everglades Invasive Plant Monitoring Program
Project ID: 2814
Lead Agency: South Florida Water Management District

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Regularly updated maps describing the location and intensity of common invasive plant species and a rapidly spreading tree disease within the Everglades region.

Project Synopsis: The Everglades Invasive Plant Monitoring Program is a multi-scale monitoring system designed to meet numerous objectives including: 1) landscape level assessments of distribution and abundance of common invasive plant species, 2) provide timely spatial information on invasive plant locations to improve control strategy development, 3) provide early detection capabilities for new invasive species entering the system. Landscape level assessments of distribution and abundance are conducted on 5 year intervals for the entire ECISMA. At the request of invasive species specialists at partner agencies, detailed maps of invasive plant populations in planned work areas are prepared each year to support ongoing control efforts. The project also includes biennial sampling using the RECOVER landscape monitoring panels to quantify fine-scale infestation patterns (Generalized Random Tessellated Stratified monitoring [GRTS]). The District and USNPS have also initiated separate ground-based monitoring programs for priority early detection-rapid response (EDRR) species in areas with high probability for initial establishment of new invasive plants. This “corridors of invasion” monitoring effort focuses on levees, boat ramps, recreational areas and other areas where human activity results in the spread of new species.

Current Status: The project has yielded numerous products to achieve the stated goals. These include a 2012-2013 priority invasive plant inventory for the entire ECISMA boundary, 22 detailed invasive plant inventories in priority areas in support of management efforts, and a region wide analysis of landscape level changes in the abundance and distribution of the four priority species between 1995 and 2020. In addition, the 1 km SRF produced detailed abundance and distribution maps for priority invasive plant species in the Loxahatchee National Wildlife Refuge (LNWR) in 2013, 2015, and 2016. In 2018, canopy condition and invasive plant cover on all large (greater than 8 acres) strand islands in LNWR were documented at a 100m grid scale using low and slow methodology. Due to COVID-19, the 2020 landscape level assessment was delayed and sampling was completed in June 2021. These new region-wide data are being analyzed and will be available in the 2022 update

Project Schedule:
Start Date: 2003 Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

Expenditures 2014 - 2021	
SFWMD	\$351,000
Total	\$351,000

Contact: Leroy Rodgers, SFWMD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Invasive Species Population Management
Project Name: Invasive Animal Research
Project ID: 2815
Lead Agency: USDA/APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Characterization of python and tegu skin chemicals, behavioral response of python and tegu to conspecific scent, catch per unit effort for pythons and patented large reptile trap

Project Synopsis: The goal is to develop methods to better control invasive animals within the Everglades and other parts of southern Florida, with a focus on tegus and pythons. We are obtaining quantitative analyses of chemicals in the skin of invasive Burmese pythons and tegus now established in Florida. Understanding the nature of the chemical signals used in python and tegu reproductive ecology will lead to the development of useful management tools: 1) female-specific chemical signals for tracking and locating female tegus and pythons; 2) development of a reproductive attractant to trap male pythons and female tegus. Testing of the large reptile trap in remote areas using a cellular based camera check system will help determine if this method should be used as a python management tool.

Current Status:

Chemical extractions from python and tegu sheds have been made and several steroid derivatives are present. Female tegus showed increases in sampling rates when following male chemical trails in Y-mazes. Pheromone based lures have been created and will be tested on captive tegus in 2021. We are also imitating a captive tegu foraging behavior investigation aimed at determining tegu searcher efficiency and susceptibility of bobwhite quail nests to tegu predation. This study will take place in July and August of this year 2020.

In collaboration with FWC, UF "Croc Docs", and Loxahatchee National Wildlife Refuge staff, the Large Reptile Trap (LRT), and a novel game camera system were field tested from July 1, 2019 to March 19, 2020 in the eastern portion of the Everglades. The LRT is a patented live trap designed to capture only long heavy-bodied reptiles, such as Burmese pythons, and exclude non-target animals, by using dual spring loaded trip pans which have to be depressed simultaneously to trigger the trap. The CuddeLink game camera system utilizes cellular and mesh network based cameras, enabling one base unit camera with cellular capability to communicate with up to 15 other cameras, with a line of sight range of up to 4 miles. The camera system allowed for remote monitoring of animal activity at traps via twice daily emails of photos. The combination of a target specific trap, and an array of cellular linked game cameras, enabled cost effective trapping in remote and hard to access areas by significantly reducing the labor cost of physically checking traps. While no pythons were trapped in this study, placing traps in python dense areas and adding a python specific lure is recommended for further evaluation of this trap as a tool in managing invasive pythons. Evaluation for use with other large invasive reptiles, such as Nile monitors, may also be warranted.

Richard, S.A., Tillman, E.A., Humphrey, J.S. Avery, M.L. and M.R. Parker. 2018. Male Burmese pythons follow female scent trails and show sex specific behaviors. *Integrated Zoology* doi: 10.1111/1749-4877.12376

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Manuscript in review: Parker, M.R. Tillman, E.A., Kluever, B.M., J.S. Avery, M.L. and M.R. Parker.
Female tegus follow male scent trails: implications for improving management tools.

Project Schedule:

Start Date: 2014

Finish Date: ongoing

Estimated Project Cost: \$250,000 (to completion)

Detailed Project Budget Information

	Expenditures 2014 - 2021*
Federal	\$164,500
Non-federal	\$103,500
Total	\$268,000

*Projects planned for 2020 delayed due to Covid-19 agency restrictions.

Contact: USDA APHIS National Wildlife Research Center

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Project Name: C&SF: CERP Melaleuca Eradication and Other Exotic Plants (OPE)
Project ID: 2818 (CERP Project WBS # 95)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (Programmatic Authority < \$25 M)
Funding Source: Federal/State

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Increase effectiveness of biological control technologies

April 1999 Project Synopsis: Includes: (1) upgrading and retrofitting the current quarantine facility in Gainesville, and (2) large-scale rearing of approved biological control organisms for release at multiple sites within the South Florida ecosystem. The purpose of this feature is to increase the effectiveness of biological control technologies to manage melaleuca and other invasive exotic plant species.

Current Project Synopsis: The primary benefits of this project include limiting the expansion of invasive exotic plant species by reducing their coverage, density, and reproductive potential. Secondary benefits include promoting the re-establishment of native plants, restoring habitat for native bird and wildlife species, and reducing stressors on rare, threatened and endangered species.

The Design Agreement between the USACE and the SFWMD was amended 29 July 2004 to include the Melaleuca and Other Exotic Plants–Implement Biological Controls project. The Project Management Plan was approved in 2005 and the Project Implementation Report (PIR) was completed June 2010. The PIR focused on the mass rearing and controlled release of biological agents to control melaleuca, Brazilian pepper, Australian pine, and Old World climbing fern throughout South Florida, although other invasive plant species may be targeted for biological control under this project if there is a benefit to Everglades restoration. An adaptive management strategy was developed in coordination with RECOVER and incorporated in the final PIR.

Current Status:

The Project's operations and maintenance phase officially started in December 5, 2013 when the Melaleuca Mass Rearing Annex was formally transferred from the ACOE to the SFWMD. As part of the O&M phase, an Annual Work Plan is discussed among the Project Managers of the three partnering agencies (USDA-ARS, USACE, and SFWMD) and approved by the SFWMD Project Manager. The general focus of the program will be placed on 1. Surveying the current ranges of selected biological control agents, 2. Mass rearing selected agents for release, 3. Selecting release sites and coordinating with local land managers, 4. Conducting releases, and 5. Monitoring these releases for establishment, dispersal, and impacts on the target weeds. This first five years of operations involved mass rearing and release of two agents targeting Old World climbing fern (Brown lygodium moth [*Neomusotima conspurcatalis*] and the lygodium mite [*Florocarus perrepae*]), one agent targeting water hyacinth (leafhopper [*Megamelus scutellaris*]) and one agent targeting air potato (air potato leaf beetle [*Lilioceris cheni*]), along with field monitoring of establishment and spread of the agents. Populations of the air potato leaf beetle and water hyacinth leafhopper in South Florida are self-sustaining and continuing to spread across the landscape. Mass rearing of these biocontrol agent as part of the CERP project ended in 2020. The first biological control agents for Brazilian pepper have been approved for release and mass rearing of the thrips (*Pseudophilothrips ichini*) is underway.

Est. Annual Operating Cost: TBD

Project Schedule: December 2013 thru December 2038 – Operations and Maintenance Phase

Detailed Project Budget Information (rounded):

Detailed Project Budget Information

CERP Biological Control	Obligations through FY21
USACE	\$6,807,994
SFWMD	\$2,421,994
Total	\$9,229,988

Hyperlink: http://www.evergladesplan.org/facts_info/fact_sheets.aspx

Contact: Christen Mason, Project Manager, SFWMD
(561) 682-2782, cmason@sfwmd.gov

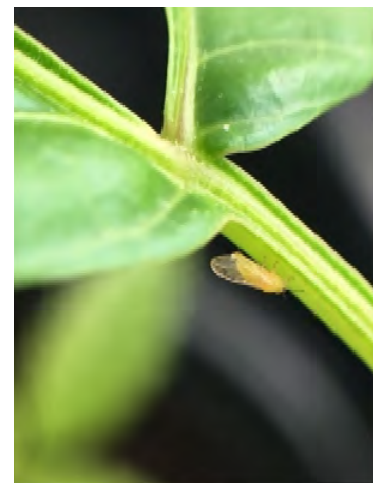
Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is updated to reflect current price levels in October 2019 dollars. Actual expenditures include all federal expenditures through FY21 (Sept, 2021) and sponsor verified and recorded in kind credit through 4th quarter FY21.

Additional Information: The first two biological agents for Brazilian pepper were approved for release in May 2019. The thrips, (*Pseudophyllothrips ichini*) targets new growth and flowers. It feeds on the plant, slowing its growth, and often killing the growing tips. In Brazil it's common to see thrips congregating in fairly large numbers on the growing tips which dramatically weakens the plant.

The leaf galler, (*Calophya latiforceps*) lays its eggs on the leaves, particularly on the new growth. The plant vigor is diminished by the feeding behavior of the nymphs which create leaf galls, leaf tissue death, and general weakening of the plants which results in a decrease in photosynthesis and an inability to grow as vigorously. Both of these insects are highly host specific, meaning that they cannot complete a lifecycle on any other plants.



The thrips (left) feed on the growing tips of Brazilian pepper, reducing its vigor and growth rate. The leaf galler (right) creates open pit galls on young leaves which reduce the trees ability to photosynthesize and grow.



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Program Name: Exotic Vegetation Management Program
Project Name: **Everglades National Park Exotic Vegetation Management**
Project ID: 2819
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Acres infested with Exotic Plants

Project Synopsis: Everglades National Park (EVER) encompasses 1.5 million acres of which 1.3 million is designated as wilderness. Non-native (exotic or invasive) plants are a significant threat to the native plant communities of EVER. Approximately 1,030 plant species have been recorded in the park. Of these, over 270 species are non-native. Systematic treatments address 10 to 15 species. The most commonly targeted invasive plants are: Brazilian pepper (*Schinus terebinthifolius*), melaleuca (*Melaleuca quinquenervia*), Australian pine (*Casuarina equisetifolia*), Old World climbing fern (*Lygodium microphyllum*), lather leaf (*Colubrina asiatica*), and shoebutton ardisia (*Ardisia elliptica*). Aerial estimates of the, top four priority plants, indicate the total acres affected by invasive plants in EVER sums to roughly 58,000 acres. Overall, approximately 200,000-300,000 acres of EVER are estimated to have invasive plants present.

Over the last 30 years, funds provided by federal, state, county, and non-profit agencies, such as the National Park Service (NPS) South Florida Natural Resources Center, NPS Florida and Caribbean Invasive Plant Management Team, and the Florida Fish and Wildlife Conservation Commission, have helped to treat invasive vegetation in EVER.

Current Status: Although contractors, volunteers, interns, and park staff were able to treat invasive vegetation this past year, invasive plant problems still occur in the park. For example, *Lygodium* is established in the sparsely wooded coastal marsh areas along the western coast in both the Gulf Coast and Flamingo Districts. *Lygodium* was first recognized in the park in 1999 and has been increasing in cover since first detected.

Brazilian pepper is the most widespread invasive plant species in Everglades National Park. Brazilian pepper is particularly abundant in the western portion of EVER along the fringes of the mangroves. A cost effective strategy for systematically removing Brazilian pepper from the park has not been identified. Treatment of this plant is done sporadically as a part of broader invasive projects and in discreet areas that have been identified as resource management priorities.

Although most of the initial treatment of melaleuca and Australian pine in the East Everglades Addition (EEA) area was completed in 2021, there is still approximately 67 acres of dense melaleuca that was aerial sprayed in March of 2021 still needing follow-up treatment and continued funding for re-treatment efforts for all of the EEA area is very important in order to continue the progress already achieved. Funding for re-treatment efforts are not guaranteed. Re-treatment funds are crucially important in order to insure restoration success. Table 1 presents funding sources and acres of invasive vegetation treated between July 1, 2019-June 30, 2020. Figure 1 is a map corresponding to these treatment areas.

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Detailed Project Budget Information

Type	Expenditures 2020 – 2021
Federal (NPS)	\$ 197,451.00
State of Florida (FWC)	\$495,413.78
Total	\$692,864.78

Project Schedule:

Start Date: 2002
Finish Date: TBD

Hyperlink: <http://www.nps.gov/ever/naturescience/exoticvegprogram.htm>
Contact: Hillary Cooley Hillary_Cooley@nps.gov

Table 1. Summary of invasive plant treatment projects in Everglades National Park between July 1, 2020 and June 30, 2021.							
Project Name	Major Species Treated	Funding Source	Treatment Type	Gross Acres swept	Canopy Acres Treated	% of area infested	Amount
NPS_EVER_SFCIPMT_FY2020	<i>Melaleuca</i>	NPS_FLCIMPT & EVER (140P5420F0049)	Initial	639	234	37%	\$ 197,451.00
FWC_EVER_DryAccess_2021_S of Richmond	<i>Melaleuca</i> <i>Schinus</i>	FWC (SE-237) (B7DC7D)	Re-treatment	2,575	227	9%	Labor=\$373,375 Herbicide=\$2,268.68 Total= \$375,643.68
FWC_EVER_DryAccess_2021_L31N	<i>Melaleuca</i> <i>Casuarina</i> <i>Schinus</i> <i>Ardisia</i>	FWC (SE-237) (B7DC7D)	Re-treatment	731	112	15%	Labor=\$105,995 Herbicide=\$4,693.57 Total=\$110,688.57
Aerial treatment EEA	<i>Melaleuca</i>	FWC/SFWMD (WO40CAS21)	Initial	67	66	99%	\$9,081.53
EVER_In-house projects NPS	Many	NPS_EVER	Re-treatment	19	1		Part of budget
Total				4,031	640		\$692,864.78
<u>Funding Sources</u> EVER - (Everglades National Park) SFCIPMT- (Florida and Caribbean-Invasive Plant Management Team) FWC - (Florida Fish and Wildlife Conservation Commission) NPS - (National Park Service) SFWMD- (South Florida Water Management District) <u>Gross acres</u> - An estimate of the total land area swept by treatment crews. <u>Canopy acres</u> - An estimate of the percent of ground covered by a particular invasive species. For example, 200 acres swept at a cover range of 0.1-5%, invasive species cover would have the mid-point of 3% and have the estimated canopy acres of 6 acres (200 acres x 0.03=6).							

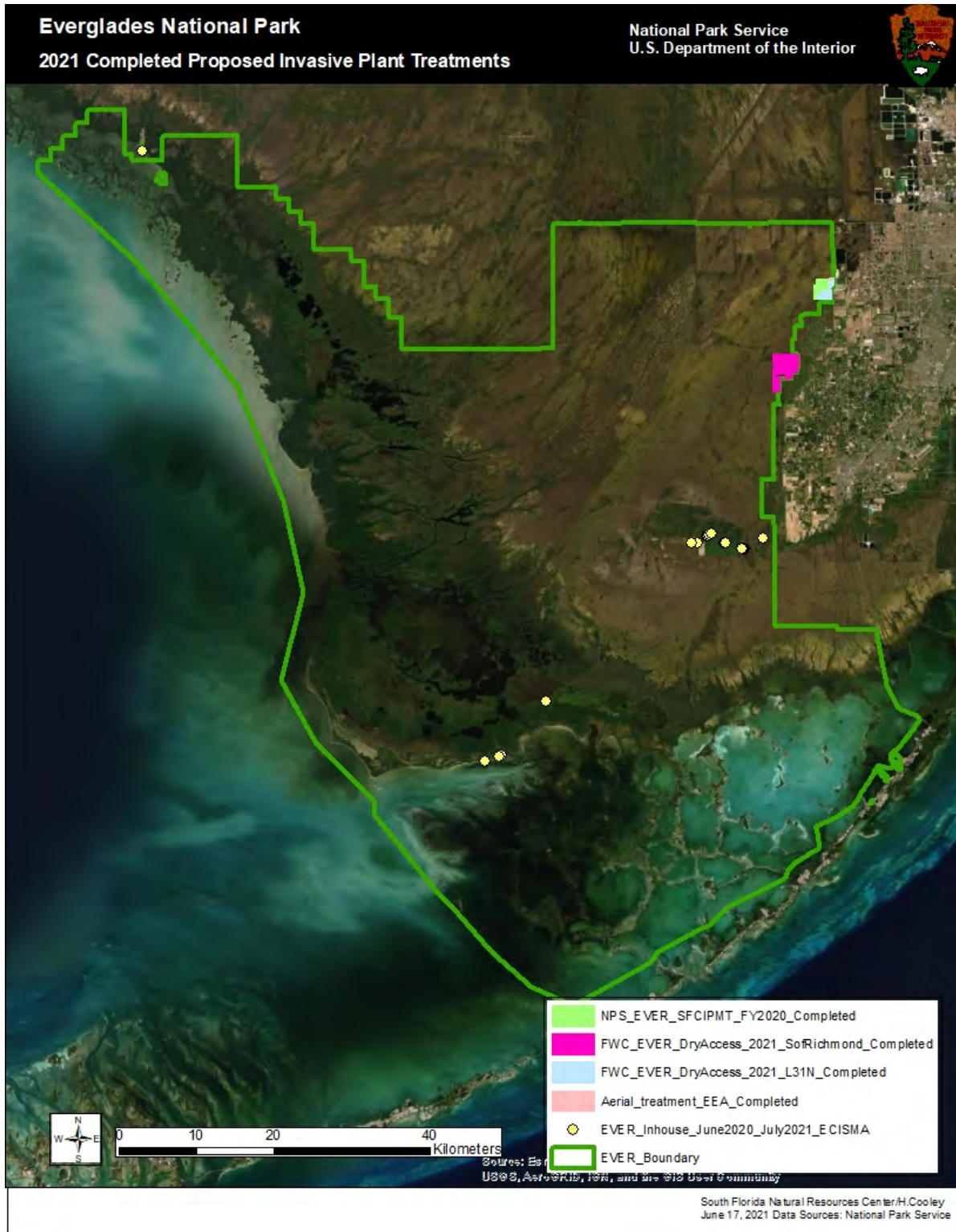


Figure 1: Map of contracted and in-house invasive vegetation treatment within Everglades National Park completed July 1, 2020 –June 30, 2021. In-house work is work completed by National Park Service staff, interns and volunteers.

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Program Name: Invasive Exotic Species Management
Project Name: **Hole-in-the-Donut (HID)**
Project ID: 2820
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.4

Invasive Exotic Species Strategic Action Framework: 4

Project Synopsis: This mitigation project will restore approximately 6,300 acres of wetlands within Everglades National Park by removing Brazilian pepper, an invasive exotic plant species, and the disturbed substrate to limestone bedrock. Invasive exotic plants are one of the greatest long-term threats to the Everglades ecosystem. As a result of this project, approximately 6,300 acres will be restored to natural wetlands within the park as mitigation for development projects in other areas of Miami-Dade County. The amount of restoration accomplished in the **Hole-in-the-Donut** during any one year is dependent on the amount of mitigation activity occurring in Miami-Dade County. A vast seed source with the potential to invade and disturb other areas of the Everglades will be eradicated.

Current Status: In FY 2020, 383 acres of Brazilian pepper were removed at a cost of \$5,042,037. In FY 2021 0 acres of Brazilian pepper were removed, due to a very wet 2020/2021 fall/winter season. To date, 6,061 acres of the Hole-in-the-Donut have been restored. Restoration is planned for 2022.

Cost:

Estimated Total Cost to Date FY 1994 - 2020: \$79,781,788*.

*This value is the same as last year's total cost due to the fact that no restoration work was performed in FY 2021.

Project Schedule:

Restoration Start Date: 1994
Estimated Restoration Finish Date: 2022
Estimated Stewardship Start Date: 2023
Estimated Stewardship Finish Date: 2099

Detailed Project Budget Information

Expenditures FY 1994 - FY2020	
Federal	\$79,781,788
Total	\$79,781,788

Hyperlink: <https://www.nps.gov/ever/learn/nature/hidprogram.htm>

Point of Contact: Everglades CFO

Program Name: South Florida Water Management District Invasive Species Management
Project Name: **Invasive Exotic Plant Control in Terrestrial and Aquatic Natural Systems**
Project ID: 2822
Lead Agency: SFWMD

Strategy and Biennial Report Objective Addressed: 2-B.4

Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Implementation of invasive species management plans as a coordinated program, including inter-agency collaboration; reduction in footprint or area covered by priority invasive plant species; attainment of maintenance control for priority invasive plants such as melaleuca, Brazilian pepper, Australian pine, Old World climbing fern, water hyacinth, water lettuce, and other invasive species impacting natural resources.

Project Synopsis: Several decades of integrated management by the SFWMD, FWC, NPS, FWS and other partner agencies have substantially reduced the abundance of melaleuca in the Everglades Protection Area (EPA). The remaining dense stands within the south Florida ecosystems are limited to the northern reaches of the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Refuge), Eastern Everglades National Park, the East Coast Buffer acquisition lands, Big Cypress National Preserve and Picayune Strand State Forest . The decline in melaleuca was achieved through an integrated approach using aerial and ground-based herbicide applications, mechanical removal, biological control, and strategic use of prescribed fire. Recovery of melaleuca continues, especially in areas once dominated by the plant. However, recruitment rates are much lower and are explained by lower propagule pressure and suppression of small plants from biological controls. Continued low-level control in these areas is planned to prevent full recovery of melaleuca in these areas. Maintenance control has also been achieved for melaleuca within many acquisition areas in the Florida Keys, Lake Okeechobee, WCA2, WCA3 and most natural areas in the Treasure Coast and Kissimmee River regions.

Old World climbing fern remains problematic on many SFWMD-managed lands, especially the Refuge (WCA1) The SFWMD continues to search for and treat populations of Old World climbing fern on WCA tree islands, while new and extensive infestations have recently been found in WCA3A marshes near the Miami canal. Repeated herbicide work is necessary to control persistent regrowth. Newly established isolated occurrences in Southern Glades tree islands are monitored and treated annually. Old World climbing fern remains abundant throughout much of the central Kissimmee River basin. Management resources (e.g., herbicide control funding) remain far below what is needed to reduce populations and minimize the spread of this highly invasive plant in that region.

The SFWMD continues to maintain water lettuce and water hyacinth at maintenance control levels in most natural water bodies under its jurisdiction. Other species, including hydrilla, West Indian marsh grass, torpedograss, limpgrass, and Wright's nut rush remain problematic in the Kissimmee Chain of Lakes region. In addition, large-flowered primrose-willow and Cuban bulrush have become priorities for control in the Kissimmee River basin. The SFWMD continues control efforts for most of these species in collaboration with FWC. The SFWMD also continues to focus on locally-problematic species such as downy rose myrtle (pinelands in the northeastern region and recently established populations in the southwest region), shoebutton ardisia (eastern Everglades), and South American water grass (Lake Okeechobee).

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Large, non-native grasses (canegrass) such as Napiergrass (*Cenchrus purpureus*) and Burmared (*Neyraudia reynaudiana*) have invaded thousands of acres of SFWMD-owned land, particularly within former agricultural lands that were purchased as part of Everglades restoration projects. The only proven method of restoring these highly disturbed sites is by mechanically scraping away the disturbed, nutrient rich soils down to the caprock. High per-acre costs prohibit this approach in most areas. However, recent field experiments using novel control strategies t show great promise for sustainable, cost-effective method of eliminating dense canegrass stands.

Current Status: Regional, coordinated efforts have yielded an Everglades region with reduced significant melaleuca infestations. However, recent recolonization of melaleuca in controlled areas underscore the need for continued monitoring and treatment. Follow-up maintenance control of melaleuca in previously treated areas remains a long-term priority for the SFWMD in order to keep management costs and environmental impacts at the lowest feasible level. Much of the remaining dense populations of melaleuca are now found on private lands. SFWMD and FWC continue to focus on removal of Old World climbing fern and Brazilian pepper throughout the Water Conservation Areas as well as other SFWMD-managed conservation lands.

Project Schedule:

Start Date: 2007

Finish Date: TBD

Detailed Project Budget Information

	Expenditures Through 2021
Federal	\$2,003,000
State**	\$106,726,000
Total	\$108,729,000

**SFWMD: Expenditures to date per fiscal year (July 1 – June 30); does not include expenditures for vegetation management supporting flood control system (e.g. canal/levee vegetation), Stormwater Treatment Areas, or salaries. Includes FWC allocated funding for melaleuca program and other invasive plant control operations. Funds allocated to the A.R.M. Loxahatchee NWR project are not included here (see separate project 2108).

Contact: LeRoy Rodgers, SFWMD

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Program Name: South Florida Water Management District Invasive Species Management
Project Name: **Invasive Species Research and Information Exchange**
Project ID: 2823
Lead Agency: SFWMD

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Development of new management approaches for invasive plants through applied research and information exchange between cooperators; development of management plans for priority invasive species.

Project Synopsis: The SFWMD continues to conduct and fund research programs in herbicide development and management techniques for priority invasive species. Recent developments in herbicide control technologies and best management practices are improving control efficacy for numerous species, including Old World climbing fern,, invasive grasses, and Brazilian pepper. New research evaluating the efficacy of new herbicides for the control of invasive grasses and floating aquatic plants are currently underway. The SFWMD is collaborating with researchers at the University of Florida (UF) to refine herbicide and integrated pest management strategies for Old World climbing fern.

There is still a large gap in acquiring sufficient funding to implement the multi-species control program with multi-agency integration. However, some success has been achieved through collaboration with Cooperative Invasive Species Management Areas (CISMA). As mandated in the Everglades Forever Act, the SFWMD continues to coordinate invasive species management with other agencies throughout the Everglades Protection Area. In addition, the SFWMD has increased funding for research into control tool development for Burmese pythons and other invasive reptiles.

Current Status: Development and refinement of control tools for invasive species has recently focused on herbicides for cattail, crested floating heart, Brazillian pepper, and Old World climbing fern. The District continues to fund biological control research institutions for melaleuca, Old World climbing fern, downy rosemyrtle, and earleaf acacia. The SFWMD expends \$300,000 annually toward development of biological control agents for these invasive species through agreements with the U.S. Department of Agriculture Agricultural Research Service (USDA-ARS).

In FY16 the SFWMD, in partnership with the FWC and FWS, entered into a five-year contract with UF to conduct research on Old World climbing fern control. The primary objectives include evaluating currently used and new herbicides for control efficacy and degree of non-target damage; determining how hydroperiod, soils and treatment sequences influence the rate of Old World climbing fern recruitment and regrowth; and conducting spore biology studies to investigate the rate of viability and germination in soils with residual herbicide activity. Research findings include verification of improved herbicide control efficacy using new herbicides and new formulations of existing herbicides. Additional As this agreement comes to a close in FY22, final recommendations on control refinements are anticipated.

Project Schedule:

Start Date: 2007
Finish Date: TBD

Project 2823: Invasive Species Research and Information Exchange Page 1 of 2

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Detailed Project Budget Information:

	Expenditures through 2021
Federal	
State*	\$2,945,000
Total	\$2,945,000

*SFWMD: Expenditures to date per fiscal year. The 2014 figure does not include funding to USDA/ARS for biological control research (\$300,000) and CERP Biological Control Implementations (\$661,536) which are identified on other project sheets.

Contact: LeRoy Rodgers, SFWMD

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Program Name: Biological Control of Invasive Weeds (Air Potato and Brazilian Pepper)
Project ID: 2824
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B4
Invasive Species Strategic Action Framework Goal: 4

Project Synopsis: For the past 8 years, DPI has been funded through USDA-APHIS-PPQ cooperative agreements to initiate and maintain statewide biological control programs aimed at researching, mass rearing and releasing several species of insect biological control agents against the noxious weeds, air potato (*Dioscorea bulbifera*) and for the past two years for Brazilian pepper (*Schinus terebinthifolia*). The overall purpose of the program is to establish biological control alternatives to the current costly and unsustainable weed management methods of mechanical or chemical control. These programs are collaborations with University of Florida and USDA-ARS Invasive Plant Research laboratory.

To date, over 1,000,000 air potato biological agents have been released in all 67 counties in Florida. The agents have established and dramatically reduced vine coverage and pressure in Central and North Florida. Control has not been fully achieved in South Florida so current research efforts are focused there. The Brazilian pepper program began limited insect releases in 2020 with widespread releases on public lands in 2021.

Project Schedule:

Start Date: 9/1/2014
Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	1,398,914
Total	1,398,914

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

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Program Name: Operations of National Park Service
Project Name: Iguana control in Biscayne National Park
Project ID: 2832
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Reduced abundance and occurrence of Green Iguanas at select locations along Biscayne’s mainland coastline.

Project Synopsis: Green iguanas are problematic in South Florida, and are so prevalent that many consider them as naturalized and do not expend effort in controlling them. At Biscayne, they occur in high numbers along the mainland shoreline, where they can be seen basking in the sun, climbing in trees, and swimming in shallow coastal waters. All sizes are observed, suggesting that they are actively breeding and nesting in the area. To a much smaller extent, they are occasionally observed on Boca Chita Key and possibly other islands.

Since 2007, park staff have engaged in efforts to capture and dispatch green iguanas in specific areas along the mainland. Initial efforts focused only on the area around Convoy Point (where park headquarters and Visitor Center are located), but over time, efforts have also expanded to Mowry Canal and various spoil islands. The primary methods of capture are trapping (using Havahart traps baited with mango or other fruit), pellet gun (only used in areas where visitors are not present), netting cold-stunned iguanas from mangroves, and monofilament noosing. Once captured, iguanas are dispatched with a captive bolt. After dispatch, iguanas are sexed and measured.

Iguana control activities are typically limited to winter and fall months, based on staff availability and priorities. Due to the overwhelming abundance of these animals throughout south Florida and the general lack of management activities to control the species in most other parts of the invaded area, efforts are not expected to have any impacts on the population, but instead are aimed at reducing numbers in specific areas, particularly those areas heavily used by park visitors and those areas undergoing habitat restoration where herbivory by iguanas can be detrimental.

Current Status: From July 1, 2020- June 30, 2021, park staff conducted 18 days of iguana removal efforts and removed 61 iguanas. Captured iguanas ranged in size from 14 to 40 cm snout-vent length.

Project Schedule:

Start Date: 2007
Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2020-2021
Federal	\$3,100
State	\$0
Total	\$3,100

Contact: Vanessa McDonough, Fishery and Wildlife Biologist, Biscayne National Park

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Pictures (Photo credit - National Park Service):



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Program Name: Operations of National Park Service
Project Name: Exotic Plant Control in Biscayne National Park
Project ID: 2833
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): Reduced abundance and occurrence of exotic plants within the park;

Project Synopsis: The climate along with multiple other factors in South Florida make this area susceptible to exotic plant infestations that threaten biological and cultural resources. Aggressive exotic plant species, such as Australian pine, lather leaf, Brazilian pepper, and seaside mahoe have over the years invaded the 5% terrestrial acreage of Biscayne National Park and crowded out hundreds of acres of native plants. Effective invasive plant controls are essential to prevent further degradation of park habitat resources.

Within Biscayne National Park efforts have been underway since 2000 to systematically treat exotic plant species listed as Category I and II on the Florida Invasive Species Council list. Since treatment began in the park two decades ago, approximately 24,064 acres have been treated. Treatment has been conducted mainly by contractors with some additional support from seasonal South Florida and Caribbean Exotic Plant Team crews as well as in-house resource management staff and volunteers. When treatment is conducted by contractors, NPS Daily Progress Datasheets along with GPS data logs are collected and entered into the National Invasive Species Information Management System (NISIMS) by the Exotic Plant Team data manager. Data is used to produce Time Since Last Treatment maps and as a management tool to decide where to focus efforts re-treatment efforts.

Current Status: From July 1, 2020 to June 30, 2021 one contractor has re-treated a total of 64 gross infested acres of exotic plants within Biscayne National Park. The project work took place in January 2021 and included treatment of 5.5 acres on Porgy Key, 15 acres on Boca Chita and 43.5 acres on Adam’s Key. Most species treated on all islands were *Thespesia polpunea*, *Schinus terebinthefolius*, *Manilkara zapota*, *Colubrina asiatica* and *Sansevieria trifasciata*. Many exotic pest plants including those listed above as well as several other invasive species continue to negatively impact the native hardwood hammock and coastal transition zone species on the islands. Park staff also conducted inhouse treatment of invasive plant species around the Park Headquarters as well as along canals adjacent to the mainland. Treatment covered 2.2 gross infested acre and included treatment mainly of *Colubrina asiatica*, *Thespesia polpunea*, and *Schinus terebinthefolius*.

Project Schedule:

Start Date: 2000
Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2020 - 2021
Federal	\$60,000
Total	\$60,000

Contact: Shelby Moneysmith, Biologist, Biscayne National Park

Program Name: Agriculture
Program Name: Florida Panther NWR

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Project Name: Florida Keys Overseas Heritage State Trail
Project ID: 3200
Lead Agency: Division of Recreation and Parks, District 5
Authority: Florida Department of Environmental Protection

Strategic Plan Goal(s) Addressed: 3.A.1

Florida Keys Overseas Heritage Trail Vision

The Florida Keys Overseas Heritage Trail (FKOHT) is being developed by the FDEP, the Florida Department of Transportation (FDOT) and Monroe County as a world-class, multi-use bicycle and pedestrian facility that will traverse the Florida Keys from Key Largo to Key West. A recreational greenway, that upon completion, will include an integrated system of educational kiosks, roadside picnic areas, scenic overlooks, fishing piers, water access points, and bicycle and jogging paths serving both residents and visitors to the Florida Keys. The FKOHT will link communities by providing a safe and continuous multi-use path, offer an alternative form of transportation, help mitigate congestion, promote health opportunities, and provide a mechanism for the preservation and use of the historic Flagler Railroad Bridges. The trail will also provide outstanding educational opportunities for both residents and visitors to learn about the unique history of the Florida Keys and the importance of sustainable development, by offering cultural, historical and ecological interpretation, as users traverse the historical railroad bridges and the many conservation areas between Key Largo and Key West.

Measurable Output(s): 100 Miles of trail, bayside and oceanside

A recreational greenway, that upon completion, will include an integrated system of educational kiosks, roadside picnic areas, scenic overlooks, fishing piers, water access points, and bicycle and jogging paths serving both residents and visitors to the Florida Keys.

Project Synopsis:

Spurred by concerns in the community for the future of the Old Keys Bridges and under Executive Order, the "Old Keys Bridge Task Force" report was presented to then Governor Lawton Chiles in 1997, outlining recommendations for the old Flagler Railroad bridges as a linear greenway. A similar report had been presented in 1938, to then Governor Fred Cone by the Road and Toll Authority, the State Forestry Department and the National Park Service outlining the creation of a linear park from Key Largo to Key West. In 1998, Clean Florida Keys rallied enough local support to prepare a Florida Keys Overseas Heritage Trail Conceptual plan published in January 1999, and a Florida Keys Overseas Heritage Trail Action plan published in November 1999. With a combination of local citizen support, the Rails To Trails, National Park Service, Greenways and Trails, Monroe County, the Florida Department of Environmental Protection, the Florida Department of Transportation and many other agencies, the Florida Keys Overseas Heritage Trail Master Plan was approved in August 2000. Monroe County passed a resolution in 2000, approving allocation of enhancement funding to the project and a Memorandum of Understanding (MOU) was signed allowing the coordination, planning and implementation of the FKOHT as a joint effort between the FDEP, Monroe County, and the FDOT. Direct support for the 106-mile long multi-use recreational trail and facilities is one of the primary features of the Scenic Highway Corridor Management Plan Goals and Objectives, the Corridor Management Plan (CMP), the Florida Keys Overseas Heritage Trail Master Plan, the Scenic Highway Interpretive Master Plan. In addition, the FKOHT was nominated as a National Recreational Trail in 1994 and has designated all 23 remaining historical Flagler Railroad Bridges on the National Registry of Historic Places. Recently completed signage plan and environmental plan provide a look and mechanism for reviewing the trail corridor as one entity rather than multiple separate segments.

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A Memorandum of Agreement was signed in August 2001, by the FDEP to maintain FDOT right-of-way where the trail will be designed and built. The FDEP maintains a 50-year lease on all 23 historical bridges from State of Florida, Division of State Lands.

The trail offers access to many [points of interest](#) and ecological resources throughout the Keys, including the Everglades National Park, Biscayne National Park, Florida Keys National Marine Sanctuary, The Great White Heron National Wildlife Refuge, Key Deer National Wildlife Refuge, Crocodile Lakes National Wildlife Refuge, Key West National Marine Sanctuary, as well as 10 [state parks](#).

Current Status:

Knight's Key Pedestrian underpass and Old Spanish Harbor Bridge reconnection have been completed. Knight's Key is 80% closed for the next three to four years as an FDOT staging area for the Old 7 Rehabilitation project to Pigeon Key.

Grassy Key Trail segment design has been completed. Construction will be determined based on availability of Sun Trail funding.

Lower Sugarloaf Trail design is underway. Anticipated completion and approval from FDOT for letting the project for construction TBD.

Cost: TBD

Project Development: The FDOT work program and the FDEP implementation plan outline a progression of design and build projects that will construct the Florida Keys Overseas Heritage Trail over the next five years. Construction of the FKOHT is funded in the FDOT Five Year Work Program using enhancement funds for the segments between historic bridges. Additional funding is being sought to retrofit the remaining historical bridges and fishing platforms. All remaining projects will be designed and constructed through the Sun Trail program.

Operations and maintenance: There are currently 100 miles of existing bike path located along the ocean side and bay side. Some segments do have trail on both sides so there is some overlap. There are twenty-three bridges comprising fourteen miles of trail in various stages of completion and funding. The City of Key West currently maintains an agreement with the FDEP on maintenance of the existing sections throughout the City. The Village of Islamorada signed an agreement in 2003 and the City of Marathon is in the process of developing agreements for maintenance and trail planning. The FDEP is responsible for the maintenance of the trail in accordance with the agreement established between FDOT, the FDEP, and its maintenance partners currently maintain 100 miles of trail.

In 2015, approximately 1.4 million visitors utilized the Florida Keys Overseas Heritage Trail.

Detailed Project Budget Information

	Expenditures 2008 - 2018
State	\$37,477,100
Total	\$37,477,100

Hyperlink: <http://www.floridastateparks.org/floridakeys/>

Contacts: Lu Dobson and Jim Post, Division of Recreation and Parks
Project 3200 Florida Keys Overseas Heritage Trail Page 2 of 4



Spanish Harbor Bridge



Knight's Key Underpass Oceanside



Knight's Key Old 7 Approach (Currently FDOT Contractor staging area).

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Program Name: Florida Greenways and Trails
Project Name: Florida Greenways and Trails Program
Project ID: 3202
Lead Agency: FDEP-Florida Office of Greenways and Trails
Authority: Acquisition: Florida Forever Act, Section 259.105, Florida Statutes
Designation: Chapter 260, F.S.; 62S-1.400, 62S-1.450, F.A.C
Funding Source: Florida Forever

Strategic Plan Goals(s) Addressed: 3.A.1

Measurable Output(s): Target 10,000 acres (Designation)

Project Synopsis: The Office of Greenways & Trails (OGT), within the Florida Department of Environmental Protection (DEP)'s Division of Recreation and Parks, provides leadership and coordination to establish and expand the Florida Greenways and Trails System.

OGT implements the Florida Greenways and Trails System (FGTS) Plan to establish priorities and define the role of the FGTS in advancing Florida's economy, tourism, health, alternative transportation, recreation, conservation and quality of life. OGT oversees the priority and opportunity maps that define the FGTS, and works in partnership with communities, agencies and organizations to close gaps in the system and promote outdoor recreation in Florida.

The Florida Forever Act authorizes a land acquisition program for the statewide trail system. This is a competitive program that provides funding for local and regional land acquisition projects that will facilitate the establishment of a statewide system of greenways and trails. The primary mission of this program is to facilitate the establishment of a statewide system of greenways and trails for recreation and conservation purposes. Once acquired, the property is owned by the Board of Trustees of the Internal Improvement Trust Fund (Governor and Cabinet) and managed by the state, regional and local governments.

The Office of Greenways and Trails Designation Program encourages voluntary partnerships in conservation, development, and management of greenways and trails, provides recognition for individual components of the system and the partners involved, and raises public awareness of the conservation and recreation benefits of greenways and trails. The criteria for a designated land or waterway are that it must (1) protect and/or enhance natural, recreational, cultural or historic resources and (2) either provide linear open space or a hub or site, or promote connectivity between or among conservation lands, communities, parks, other recreational facilities, cultural sites, or historic sites.

Cost: Total: \$4.5 million of Florida Forever funding for land acquisition (statewide). No direct cost to the state for designation.

Project Schedule: Start Date: 2000 Finish Date: Ongoing

South Florida Designated Acres

Through Fiscal Year 2003: 227,094 acres plus 75 linear miles.

Through Fiscal Year 2004: 298,774 acres plus 147 linear miles (add 71,680 acres & 72 linear miles), In 06/07, an additional 179 acres and 24 miles of designated greenways & trails in South Florida.

Through Fiscal Year 2008: 2 Blueway systems were designated in South Florida. One in Lee County and one in Charlotte County. The estimated “acreage” for these Blueway systems is 79,400 acres or 440 miles of paddling trails.

Through Fiscal Year 2009: Designation: The Shingle Creek Paddling Trail (35 miles long, approx. 21 acres) and the Shingle Creek Regional Park (1028 acres), which are both located in Osceola County, were designated in 2009. Acquisition: 5.22 acres acquired with Florida Forever funding (\$412,000) in Orange County as part of the Cady Way Trail system.

Through Fiscal Year 2010: Designation: The Pine Creek located in Broward County (.275 miles long, approx. 1.5 acres), the Montverde Greenway Trail located in Lake County (.5 miles long, approx. 5.4 acres), the Lake Wales Rails to Trails in Polk County (2.1 miles long, approx. 18 acres) and the Lake Okeechobee Scenic Trail (110 miles long, approx. 226.67 acres), were designated in 2010. Acquisition: Nothing acquired in the 16 counties.

Through Fiscal Year 2011: Designation: The Lake Wales Rails to Trail located in Polk County (2.1 miles long, 18 acres), the Pine Glades Natural Area located in Palm Beach County (6,642 acres), the Peace River Extension located in Polk County (18 miles long, 832 acres). Acquisition: Nothing acquired in the 16 counties.

Through Fiscal Year 2012: Designation: Apalachicola River Blueway (116 miles long, 7296 acres).

Through Fiscal Year 2013: Designation: John Yarbrough Linear Park in Lee County (6 miles, 817 acres), Big Talbot State Park in Duval County (1708.34 acres), Winding Waters Natural Area in Palm Beach County (534 acres), North Jupiter Natural Area in Palm Beach County (154 acres) and Jupiter Waterway Trail in Palm Beach County (39.19 miles, 23.51 acres).

Through Fiscal Year 2014: Cypress Creek Natural Area in Palm Beach County (2,083.1 acres), St. Johns River Blueway in Duval, Clay, St. Johns, Putnam, Flagler, Marion, Lake, Volusia, Orange, Seminole, Brevard, Osceola and Indian River counties (310 miles), and Withlacoochee Gulf Preserve in Levy County (1.5 miles).

	Expenditures 2004 thru 2018
State	\$1,363,372
Total	\$1,363,372

Through Fiscal Year 2015: Designations: Cockroach Bay Preserve State Park (615 acres), Crystal River Preserve State Park (25,381.21 acres), Dunns Creek State Park (6,302.63 acres), Estero Bay Preserve State Park (11,381.62 acres), Fort Cooper State Park (734.81 acres), Fred Gannon Rocky Bayou State Park (346.42 acres), George Crady Bridge Fishing Pier State Park (109.51 acres), Jonathan Dickinson State Park (10,442.30 acres), Madison Blue Spring State Park (45.13 acres), Ponce de Leon Springs State Park (386.94 acres), San Pedro Underwater State Park (643.66 acres), St. Andrews State Park (includes Shell Island) (1,167.08 acres), St. Marks River Preserve State Park (2,589.67 acres), Yellow River Marsh Preserve State Park (835.40 acres), Silver River Paddling Trail (5.40 miles), Steinhatchee Paddling Trail (8.00 miles), State Road 207 Mussallem

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Trailhead (24.00 acres), Pine Island (1.50 acres), Upper Chipola River Paddling Trail (6.00 acres), Watersound Trail (5.25 miles), Lake County Blueway Trail System (130.00 miles), Faver-Dykes State Park (5,920.20 acres), Indian River Lagoon Preserve State Park (544.08 acres), Pumpkin Hill Creek Preserve State Park (3,967.22 acres), St. Sebastian River Preserve State Park (21,362.42 acres), and Hillsborough River State Park (3,319.04 acres).

Through Fiscal Year 2016: Designations: Silver Springs State Park (4,666.50 acres), East Central Regional Rail Trail (668.35 acres), Big Shoal State Park (1,681.01 acres), Lafayette Blue Springs State Park (includes river camps) (778.19 acres), Manatee Springs State Park (includes Andersons Landing) (2,447.80 acres), Stephen Foster Folk Cultural Center State Park (903.90 acres), Wekiwa Springs State Park (9,503.90 acres), Allen David Broussard Catfish Creek Preserve (8,157.21 acres), Atlantic Ridge Preserve State Park (4,886.08 acres), Kissimmee Prairie Preserve State Park (53,712.09 acres), Savannas Preserve State Park (6,876.66 acres), Holmes Creek Paddling Trail Extension (2.00 miles), Paynes Prairie Preserve State Park (21,659.75 acres), Lovers Key State Park. (1,397.48 acres), Choctawhatchee River Blueway (64.00 miles), and Merritt's Mill Pond Paddling Trail (4.00 miles)

Through Fiscal Year 2017: Designations: Charlotte Harbor Preserve State Park(43,403.97 acres), Colt Creek State Park(5,066.98 acres), Myakka River State Park(37,198.91 acres), Terra Ceia Preserve State Park(1,948.03 acres), Weeki Wachee Sprngs State Park(570.36 acres), Werner Boyce State Park(3,253.45 acres), Lake Jackson Paddling Trail, Apalachee Bay Maritime Heritage Paddling Trails(58 miles), Sable Pines Park and Greenway(1.5 miles), Winston Nature Park and Hilton Road Greenway(.5 miles), Camp Abel FNST, Wilton Manor's Paddling Trail(7 miles).

Through Fiscal Year 2018: Designations: Ocheesee Pond Paddling Trail (5.2 miles), Indian River Lagoon and St. Lucie River Paddling Trail (37.7 miles), Royal Palm Beach Pines Natural Area (771.6 acres), Hungryland Slough Natural Area in Palm Beach County (2,987 acres), Cumberland to Timucuan Regional Trail in Nassau County (38 miles), Oak Trails Park in County (5 acres and .5 miles).

Fiscal Year 2019: Designations: Upper Tampa Bay Trail Site in Hillsborough County (0.7 acres), Deltona Lakeshore Trailhead in Seminole County (6 acres), and North Fork St. Lucie River in St. Lucie County (18.5 miles).

Fiscal Year 2020: Designations: None.

Hyperlink: <http://www.dep.state.fl.us/gwt/>

Contact: Samantha Browne, Office of Greenways and Trails

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Watershed Management Assistance
Project Name: **Technical Assistance to Seminole and Miccosukee Indian Reservations**
Project ID: 3300
Lead Agency: Natural Resources Conservation Service
Authority: Public Law 46 & Public Law 566

Strategic Plan Goal(s) Addressed: 3.A.2

Measurable Output(s): Target 107,000 Acres

Project Synopsis: From a watershed management perspective, assist the Seminole and Miccosukee Indian Reservations to plan and implement resource management systems on a voluntary basis to reduce nutrient loading. Assistance will be provided to each agricultural producer, at the direction of the Tribal Councils, to assist in their planning, design, application, cost shared installation and management of BMP's that will improve water quality and the ecological integrity of the landscape.

Current Status: On-going

Cost:
Total (projected through 2025) \$15,000,000
Project Development
Land Acquisition
Implementation
Operations and maintenance
Management \$15,000,000

Project Schedule:

Start Date: 1998
Finish Date: TBD

Detailed Project Budget Information

	Obligations thru 2021
Federal	\$1,532,252
Total	\$1,532,252

Hyperlink: N/A

Contact: Chakesha Harvey- (USDA - NRCS)

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Agricultural Assistance
Project Name: 2008 & 2014 Farm Bill
Project ID: 3301
Lead Agency: Natural Resources Conservation Service
Authority: Food, Conservation, and Energy Act of 2008 (Farm Bill)

Strategic Plan Goal(s) Addressed: 3.A.2

Measurable Output(s): Acres Enrolled in 2008 & 2014 Farm Bill Programs

Project Synopsis: The Farm Bill responds to a broad range of emerging natural resource challenges faced by farmers and ranchers, including soil erosion, wetlands, wildlife habitat, and farmland protection. Private landowners will benefit from a portfolio of voluntary assistance, including cost-share, land rental, incentive payments, and technical assistance. The Farm Bill places a strong emphasis on the conservation of working lands, ensuring that land remain both healthy and productive. The assistance includes the design, layout and consultation services associated with the conservation practice application or management guidance provided. Technical assistance is targeted towards nutrient management, water quality, and water conservation concerns associated with animal feeding, livestock grazing operations and fruit and crop production within the Everglades Ecosystem.

Current Status: On-going

Cost:

Project Development:

Land Acquisition:

Implementation:

Operations and maintenance:

Project Schedule:

Start Date: 2009

Finish Date: 2022

Detailed Project Budget Information

	Obligations thru 2020
Federal	ACEP: \$20,237,828
Total	\$20,237,828

Contact: Roney Gutierrez (USDA - NRCS)

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: C&SF: CERP PLA/Public Outreach and Assistance
Program ID: 3502
Lead Agency: USACE / SFWMD
Authority: WRDA 2000; Design Agreement, WRDA 2007 (*specific authorized funding*)

Strategic Plan Goal(s) Addressed: 3-A.3

April 1999 (Restudy) Program Synopsis: The Restudy listed guidelines for implementing CERP and stated that outreach and public involvement efforts were an integral part of the process and would continue throughout the planning, design, construction, monitoring, and implementation of CERP. The objective of all outreach activities was to ensure that the public is informed about the Plan and that its implementation is reflective of the input received from stakeholders and the public throughout the project's implementation.

Current Program Synopsis: Public outreach is a critical part of CERP. Its two primary components -- involvement and information -- continue to play a key role in the CERP implementation effort. The primary objectives of outreach are to (1) keep the public informed of the status of the program or project and key issues associated with restoration implementation, and (2) provide effective mechanisms for public participation in the restoration plan development. A *CERP Public Outreach Program Management Plan* approved in 2001 describes these outreach goals, objectives, and tasks in more detail.

Since 2001, the USACE and SFWMD have implemented an ongoing multi-faceted public outreach program for the CERP. Outreach strategies seek two-way communication with all public sectors to broaden understanding and to instill a sense of stewardship among all south Floridians and visitors. Two separate and simultaneous levels of public outreach have been employed:

Program-level Outreach - involves long-term, system-wide issues at an overarching program level such as general outreach, RECOVER, environmental equity and other CERP issues that span the life of the 30+ year plan.

Project-level Outreach - involves targeted outreach for the 50+ specific CERP components: the individual reservoirs, underground storage wells, filtering wetlands, and other local project features. A custom outreach plan is developed for each individual CERP project. While program and project outreach activities are considered separate, there is often a great overlap of materials, tools and techniques. The same overarching CERP messages apply to both program and project level outreach activities.

A broad array of outreach involvement and information programs has been developed to include the general public, minority groups, small businesses, and specific stakeholder audiences. The program has included public meetings and workshops; news media relations; creative and unusual information products; environmental education; print, electronic and Internet materials; and many other programs and products to ensure the public is engaged and involved in CERP. The main focus of the outreach efforts is the 16-county central and south Florida region, the area most affected by CERP. However, outreach activities and products also reach people throughout the state of Florida, the nation and the world.

Highlights of this very diverse outreach program, from the past two years, follow below.

Current Status: The USACE and the SFWMD continued to make much progress during this reporting period to raise awareness of central and south Florida's public-at-large about CERP and the restoration of the greater Everglades ecosystem.

Project 3502 C&SF: CERP PLA/Public Outreach and Assistance Page 1 of 2

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While these efforts were organized by the USACE, they often included the SFWMD as a major state partner in the restoration of the Everglades. Ongoing efforts are summarized below:

The official everglades web site is www.evergladesrestoration.gov. The website provides an important source of current and archived news and information to the public and stakeholders.

Fact sheets are produced as needed on CERP projects and are available to the community.

Public meetings and workshops are held to inform and include the public in the development of CERP projects. This form of project-specific communication is essential to the success of the CERP. Meetings are announced in advance, held in convenient locations, and often feature an open house session to meet CERP staff prior to the formal meeting or workshop. For those people who could not attend meetings, meeting documents are posted online.

Contacts: Michael Collis, Senior Program Manager, Programs and Project Management Division,
USACE
Michael.J.Collis@usace.army.mil

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: SFWMD Outreach Program
Project Name: Outreach
Project ID: 3503
Lead Agency: SFWMD

Strategic Plan Goal(s) Addressed: 3-A.3 Increase community understanding of ecosystem restoration

Measurable Output(s): Public and Stakeholder Meetings; News Releases; Social Media; Intergovernmental Relations; Annual Conferences such as GEER, Everglades Coalition and Environmental Resources Permitting Summer School; Milestone Celebrations including Groundbreakings and Ribbon Cuttings; Factsheets; Annual Publications including South Florida Environmental Report Highlights and Everglades Progress; Awards and Recognitions; Videos and Photos including drone footage; Infographics; Presentations; Briefings with Stakeholders; Community Events; External Web Site Updates; Weekly Communications Emails about Water Levels and Environmental Conditions; Biweekly Emails about Public Meetings; Restoration Ecosystem Restoration Progress Map; Field Visits.

Project Synopsis: The South Florida Water Management District continues to partner with the Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, U.S. Army Corps of Engineers, and other federal, state and local agencies as well as stakeholders and the public regarding various outreach activities, as listed above, to increase the understanding of ecosystem restoration.

Total Estimated Project Cost: Ongoing

Project Schedule:

Start Date: Ongoing
Finish Date: Ongoing

Expenditures by SFWMD:

	Expenditures Fiscal Year 2002-03 thru 2017-20
SFWMD	\$21,360,134
TOTAL	\$21,360,134

Hyperlink: www.sfwmd.gov
Contact: Jill Margolius, 561-682-6004

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021



SFWMD Celebrates Major Milestone with the Everglades Agricultural Area (EAA)
Project Partnership Agreement with the U.S. Army Corps of Engineers



Allapattah Flats Ribbon-Cutting Ceremony



CAPTURED! Longest Python on Record Removed from Everglades as part of SFWMD's and FWC's
python elimination program.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Herbert Hoover Dike Rehabilitation (HHD)
Project ID: 3700
Lead Agency: USACE
Authority: Central and Southern Florida (C&SF) Project for Flood Control and Other Purposes in the Flood Control Act of 1948, 1954, 1958, 1960, 1965 and 1968; Authorization in 1970 under Section 201 of the Flood Control Act of 1965; the Water Resources Development Acts of 1986, 1988, 1990, 1992, 1996, 2007; and the Rivers and Harbors Act of 1930. WRDA 2007 (*report requirement and authorization*)

Funding Source: USACE

Strategic Plan Goal(s) Addressed: 3-B.2

Measurable Output(s): Risk reduction features implemented within the 143-mile HHD system

Project Synopsis: The Herbert Hoover Dike system consists of nearly 143 miles of levees surrounding Lake Okeechobee, with culverts, hurricane gates and other water control structures. The first embankments around Lake Okeechobee were constructed by local interests from sand and muck, circa 1915. Hurricane tides overtopped the original embankments in 1926 and 1928 causing over 3,000 deaths. The River and Harbor Act of 1930 authorized the construction of 67.8 miles of levee along the south shore of the lake and 15.7 miles of levee along the north shore. The USACE constructed the levees between 1932 and 1938 with crest heights ranging from +32 to +35 feet, NGVD.

A major hurricane in 1947 prompted the need for additional flood protection work. As a result, Congress passed the Flood Control Act of 1948 authorizing the first phase of the Central and South Florida (C&SF) Project, a comprehensive plan to provide flood protection and other water control benefits in Central and South Florida. By the late 1960's the new dike system was completed, raising the elevation of the levees to +41 feet, NGVD. This provides protection to the Standard Project Flood level, approximately an event occurring once in 935 years.

Investigations conducted in the 1980's and early 1990's of the dike system's potential seepage and stability problems resulted in the identification of two major areas of concern: the seepage and embankment stability at the culvert locations, and the problematic foundation conditions of the dike. During high water events, piping is experienced thru the levee. In 1999, the Corps developed a plan to rehabilitate HHD and the plan was approved in 2000.

The Major Rehabilitation Report (MRR) from 2000 divided the 143-mile dike into eight (8) Reaches with the initial focus on Reach 1. This Reach by Reach rehabilitation approach has been replaced with a system wide risk reduction approach as required for safety modifications to Corps dams. The supplemental MRR produced for Reaches 2 and 3 evolved into a system wide Dam Safety Modification Study (DSMS) that was completed in March 2015. (The MRR approach and approval for Reach 1 occurred prior to procedural changes implemented post-Katrina.) The DSMS addresses the entire dike as a system and includes a risk reduction approach to implementing features based on priority and reducing risk as quickly as possible. The Final Dam Safety Modification Study Report (DSMR) and Record of Decision (ROD) on the Environmental Impact Statement (EIS) was approved in August 2016.

In 2011, the Corps approved a plan to replace, abandon or remove the 32 water control structures (culverts) operated by the Corps within the HHD system. This project is being implemented as part of the risk reduction approach to the entire system.

Current Status:

21.4 miles of cutoff wall has been constructed in Reach 1. A contract for closing the gaps between the existing structures and cutoff wall in Reach 1 was completed in 2019. A Supplemental Report to the MRR from 2000 was approved in 2015 that extended the limits of Reach 1 to include 6.6 additional miles of cutoff wall. The construction contract for the Reach 1 Cutoff Wall Extension is ongoing with completion in 2021.

A total of 32 water control structures (culverts) are planned for replacement, removal or abandonment around the dike. The replacement of twentyseven (27) culverts has been completed. The final culvert replacement construction is ongoing and expected to be complete by the end of 2021. The four (4) removals or abandonments have been completed.

A Multiple Award Task Order Contract (MATOC) was awarded in January 2019 to construct 28 miles of cutoff wall using five (5) task orders. All five task order construction contracts are ongoing and are on schedule for completion by 2022.

Two embankment armoring contracts for low points on HHD have been awarded. The SR78 Bridge & S-71 Embankment Aromring contract and the S-72 Embankment Armoring contract are on schedule for completion in 2022. These are the final risk reduction construction contracts on HHD.

Est. Cost: \$1,799,507,000

Project Schedule:

2022 Physical construction on all contracts complete

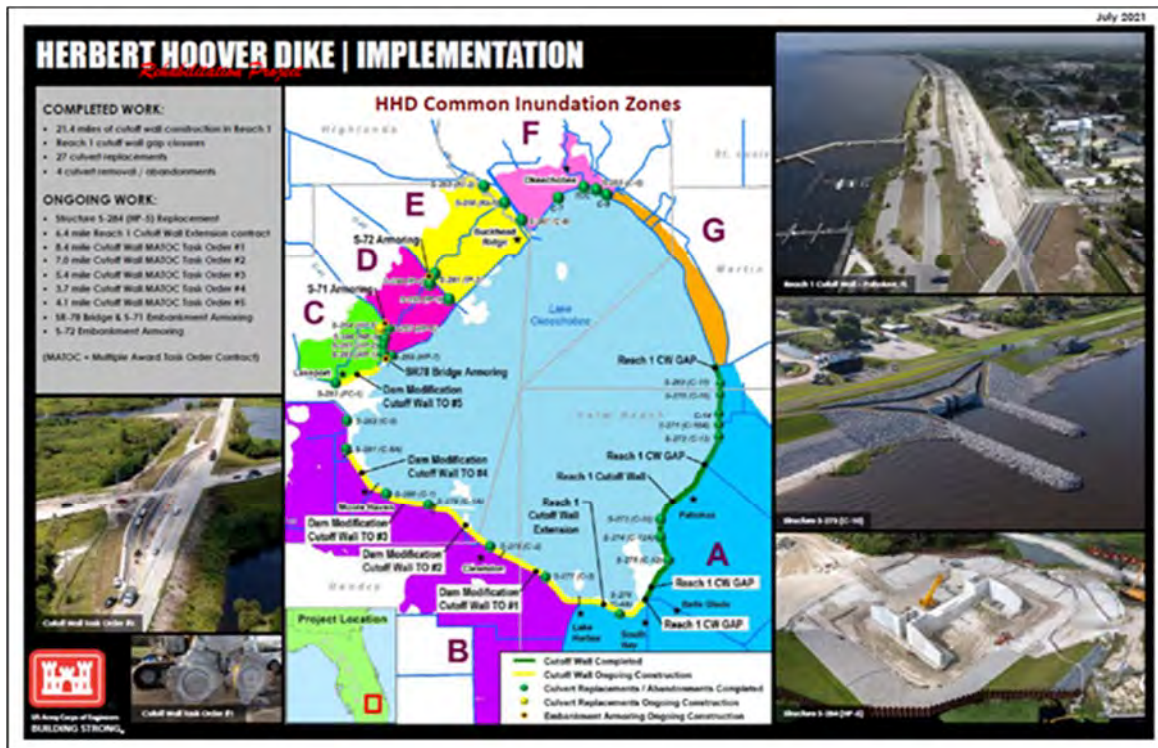
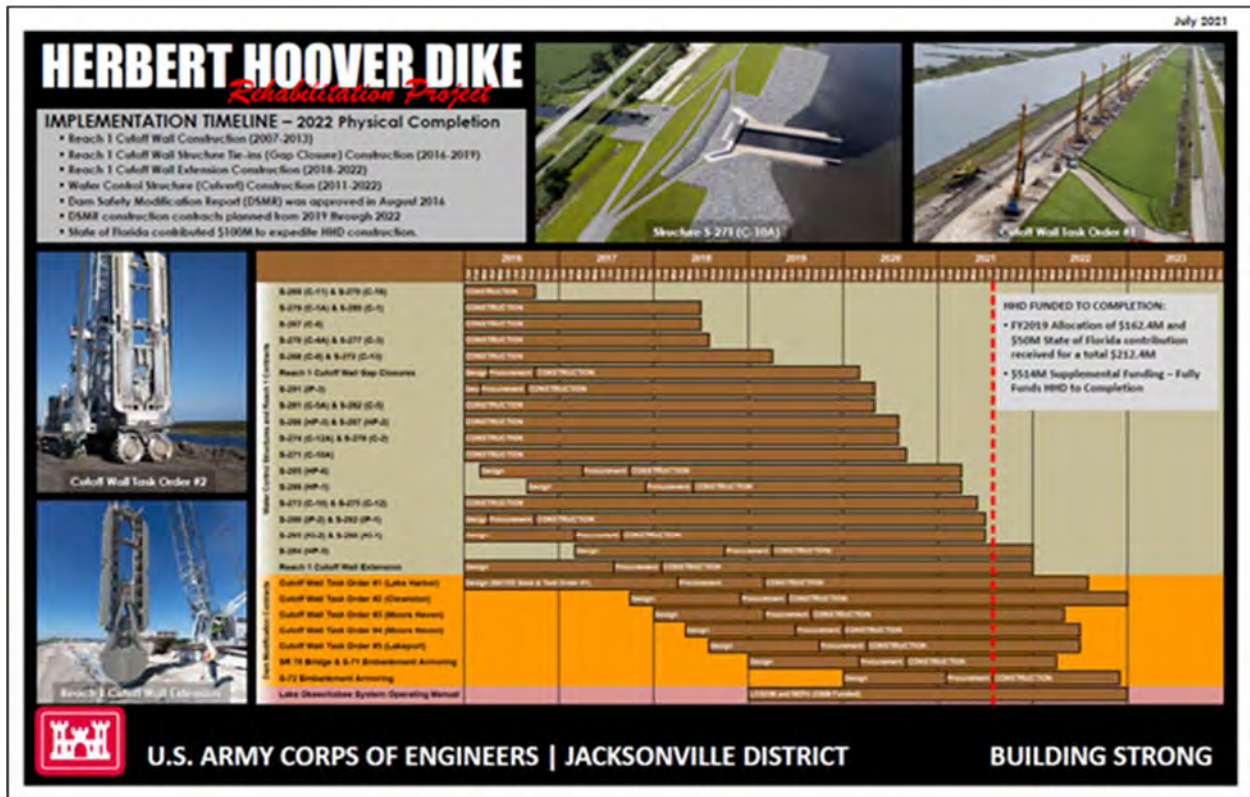
Detailed Project Budget Information

HHD	Investment thru FY 2020
USACE	\$1,506,175,000
SFWMD	\$100,000,000
Total	\$1,606,175,000

Contact: Tim Willadsen, Project Manager USACE
Timothy.D.Willadsen@usace.army.mil

Source: Current status and schedule was provided by the project manager.

Additional Information:



Structure S-284 (HP-5) - July 2021



Cutoff Wall MATOC Task Order #4 (near Moore Haven, Florida) - July 2021



Information for the 2021 Integrated Financial Plan
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Program Name: Water Supply Planning
Project Name: **Regional water supply plans (LEC, LWC, UEC, LKB, UKB-CFWI)**
Project ID: 3800 (Formerly Project ID 3704)
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes

Strategic Plan Goal(s) Addressed: 3.C.1

Measurable Output(s): Regional Water Supply Plans (RWSP) identify strategies to meet existing and projected water demands over a 20-year planning horizon, while meeting the needs of the water resources including related natural systems. Water made available through Alternative Water Supply (AWS) Program is reported separately as Project ID: 4000.

Project Synopsis: In Florida, RWSPs are developed by the water management districts to ensure that an adequate supply of water exists to protect water resources and natural systems and to meet existing and future reasonable-beneficial uses. Development of RWSPs customized to each region is key to identifying and understanding current and future water needs. Based on a 20-year outlook, these plans provide detailed, area-specific information and suggested actions including identification of water conservation measures, water supply development project options, and water resource development project options. In addition, water supply plans include minimum flows and minimum water levels (MFL) criteria and associated recovery or prevention strategies adopted within the planning region. The plans also identify any surface water bodies or aquifers for which MFLs are scheduled to be adopted. CERP projects form the capital projects element of several MFL recovery strategies. Water supply plans are mandated to be updated at least every five years and are developed in a public process.

Five regional planning areas have been established encompassing the District: The Lower East Coast (LEC), the Upper East Coast (UEC), the Lower West Coast (LWC), Lower Kissimmee Basin (LKB) and the Upper Kissimmee Basin (UKB). The UKB is in the Central Florida Water Initiative (CFWI) Regional Water Supply Planning (RWSP) area, which is a joint effort between South Florida, Southwest Florida, and St. Johns River water management districts. Initial water supply plans were approved between 1998 and 2000 and updated approximately every five years thereafter.

The Program requires water supply planning coordination between the water management district and local governments to ensure potable water supply and potable water facilities are timely developed to meet future growth. The District must notify each public water supply (PWS) utility that is required to complete a project and each local government in the planning region within six months of the plan approval. Each PWS utility then has one year from the notification to identify the water supply projects it intends to develop. Within 18 months after the water supply plans are approved, local governments also must update the Water Facilities Element of their Comprehensive Plan that details the water supply and conservation projects for at least a 10-year planning period.

Each RWSP includes water supply development and water resource development project option sections. Water supply development projects are the responsibility of local governments and utilities. Water resource development projects support and enhance water supply development projects, but often do not by themselves yield specific quantities of water. For example, hydrologic investigations and groundwater monitoring and modeling provide important information on aquifer characteristics, such as hydraulic properties and water quality.

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All this information is useful in developing an appropriate facility design, related regional issues and evaluating the economic viability of water supply development projects. Many water resource development projects cross planning region boundaries or are conducted District-wide.

Current Status: In November 2020, the SFWMD Governing Board approved the 2020 CFWI RWSP Update. Updates to the District's other regional water supply plans have been initiated or planned. The schedule for completion of these updates are: Upper East Coast in Fiscal Year 2021-22; Lower West Coast in Fiscal Year 2022-23; Lower East Coast in Fiscal Year 2023-24; Lower Kissimmee Basin in Fiscal Year 2024-25; and CFWI in Fiscal Year 2025-26. The planning horizon for these updates is 2045.

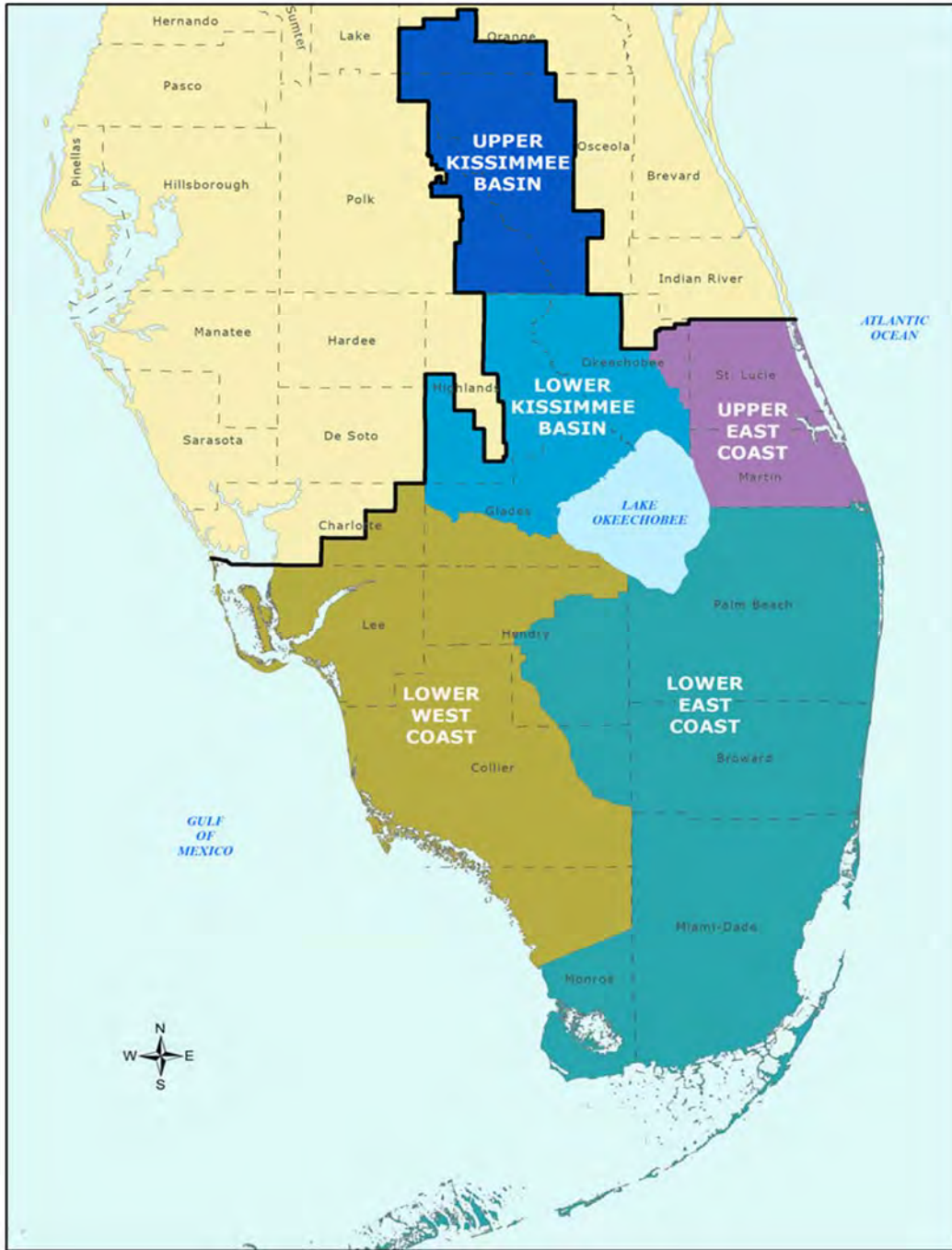
Cost:	Total Cost*+
Regional water supply plans – Water Resource Development Projects (2021-2025)	\$ 39,395,000

*Excludes: costs associated with CERP and costs of alternative water supply projects, which are reported separately, and the estimated portion of the C&SF Operation and Maintenance budget allocated to Water Supply.

Hyperlink:
<http://www.sfwmd.gov/watersupply>

+Source: The 2021 South Florida Environmental Report. Table 5A-3. Fiscal Years 2011–2025 implementation schedule and projected costs for regional water resource development projects. Includes projects estimated to be completed between 2021-2025. Includes FTE costs.

Contacts: Tom Colios, SFWMD; Stacey Adams, SFWMD



Water Supply Planning Regions

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP South Miami-Dade Reuse (BBB)
Project ID: 3900 CERP Project WBS # 98
Lead Agency: USACE / Miami-Dade County
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 3-C.2

Measurable Output(s): 131 million gallons per day advanced WWTP

April 1999 Project Synopsis: This project includes a plant expansion to produce superior, advanced treatment of wastewater from the existing South District Wastewater Treatment Plant (WWTP) located north of the C-1 Canal in Miami-Dade County. In order to attain the superior level of treatment, construction of an add-on pretreatment and membrane treatment system to the existing secondary treatment facility will be necessary. The initial design of this feature assumed the plant would have a capacity of 131 million gallons per day.

Current Project Synopsis: The purpose of the project is to provide additional water supply to the South Biscayne Bay and Coastal Wetlands Enhancement Project. Detailed analyses will be required to determine the quality and quantity of water needed to meet the ecological goals and objectives of Biscayne Bay. Superior water quality treatment features will be based on appropriate pollution load reduction targets necessary to protect downstream receiving surface waters (Biscayne Bay).

Current Status: Due to the water quality issues associated with discharging reclaimed water into Biscayne National Park, an *Outstanding Florida Water*, such as potential failures of the treatment system and the limited ability to control contaminant inputs to the sanitary sewer system serving the treatment facility, other sources of water to provide required freshwater flows to southern and central Biscayne Bay should be investigated before pursuing the reuse facility as a source. If, more appropriate sources are not available, the reuse project will be initiated by determining the parameters of concern, the necessary wastewater treatment requirements, and the appropriate treatment technology to be implemented.

This project has not begun.

Est. Cost: \$ 770,800,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Detailed Project Budget Information

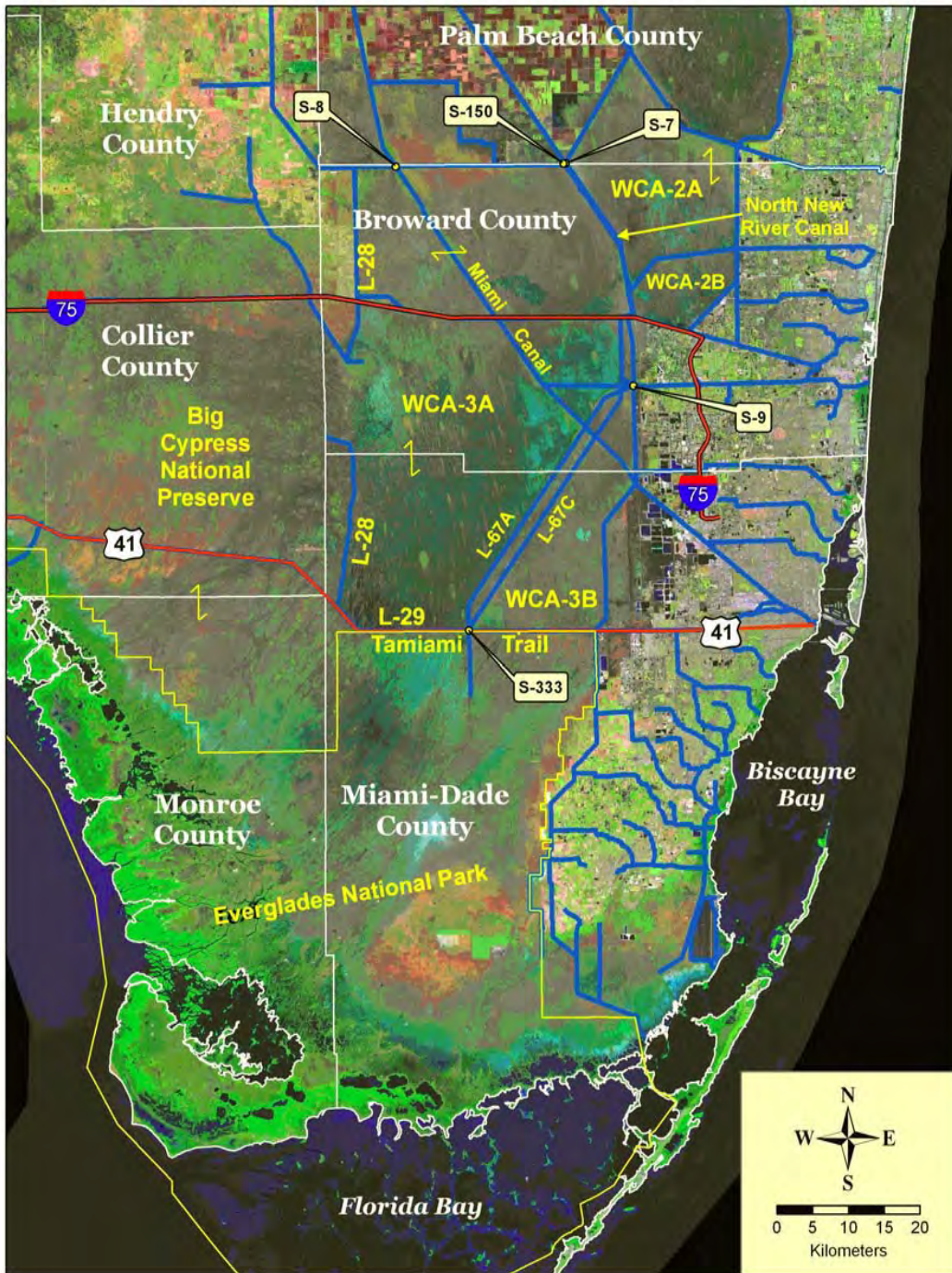
South Miami-Dade Reuse	Investment thru FY 2020
Federal	\$0
State	\$0
Total	\$0

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Project 3900 C&SF: CERP South Miami-Dade Reuse Page 1 of 2

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP West Miami-Dade Reuse (HHH)
Project ID: 3901 (CERP Project WBS # 97)
Lead Agency: USACE / Miami-Dade County
Authority: Not authorized
Funding Source: Federal/County

Strategic Plan Goal(s) Addressed: 3-C.2

Measurable Output(s): 100 million gallons/day advanced WWTP; report

WRDA 1996: Conduct reconnaissance study to determine Federal interest in using West Dade, FL reuse facility to improve water quality in, and increase supply of surface water to, Everglades to enhance fish and wildlife habitat.

April 1999 Project Synopsis: Superior water quality treatment features will be based on appropriate pollution load reduction targets necessary to protect downstream receiving surface waters. The initial design assumed a potential discharge volume of 100 million gallons per day from the wastewater treatment plant.

Current Project Synopsis: The purpose of the feature is to meet the water demands for: 1) the Bird Drive Recharge Area, 2) the South Dade Conveyance System, and 3) the Northeast Shark River Slough. When all demands have been met, the plant will stop treatment beyond secondary standards and will dispose of the secondary treated effluent into deep injection wells. The final configuration of these facilities will be determined through more detailed planning and design to be completed in the West Dade Water Reuse Feasibility Study authorized in Section 413 of the Water Resources Development Act of 1996.

This feature includes a wastewater treatment plant expansion to produce superior, advanced treatment of wastewater from a future West Miami-Dade Wastewater Treatment Plant (WWTP) to be located in the Bird Drive Basin in Miami-Dade County. This project adheres to the original concept described in the Restudy.

Current Status: This project has not begun.

Est. Cost: \$ 858,317,000

Detailed Project Budget Information (rounded):

West Miami Dade Reuse	Investment Thru FY 2020
Federal	\$0
SFWMD	\$0
Total	\$0

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Current status was summarized from the PMP (2005).

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Alternative Water Supply (AWS)
Project Name: **Alternative Water Supply Grant**
Project ID: 4000 (Formerly Project ID 3900)
Lead Agency: SFWMD
Authority: Chapter 373.707, Florida Statutes

Strategic Plan Goal(s) Addressed: 3.C.3

Measurable Output(s): 369 mgd of water supply capacity created District-wide between FY2006 - FY2021. From FY2011 - FY2021, water supply capacity created was 110 mgd.

Project Synopsis: SFWMD has a program of cooperative funding with local governments and other entities to assist in their development of alternative water supplies. Since FY1997, this program has invested approximately \$220 million for the construction of approximately 521 projects creating approximately 515 mgd of water supply capacity. For the period FY11 - FY21, approximately \$41 million in AWS funding, was budgeted for local government and other partners. This funding was used to assist 78 AWS projects that created approximately 110 mgd of additional water supply capacity. The AWS program is now part of the Cooperative Funding Program (CFP), along with Water Conservation.

Current Status: Sixteen projects under contract will be completed on or before June 30, 2025.

Total Estimated Project Cost: \$220,167,807

Project Schedule:

Start Date: 1997

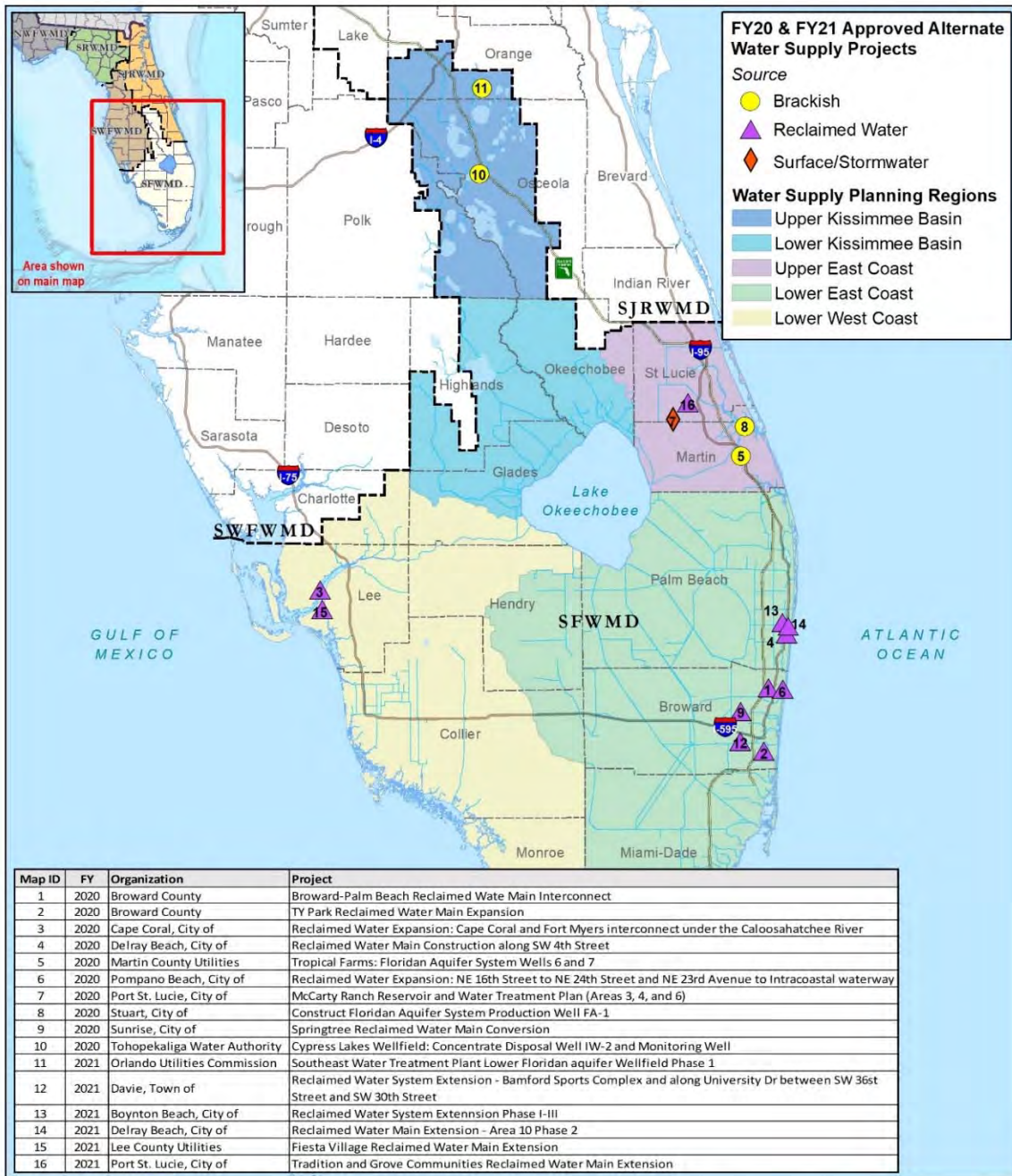
Finish Date: Ongoing – current projects under contract for completion on or before June 30, 2025.


Expenditures by SFWMD:

	Expenditures Fiscal Year 2010-11 thru 2019-21
SFWMD	\$16,998,128
TOTAL	\$16,998,128

Hyperlink: www.sfwmd.gov/doing-business-with-us/coop-funding

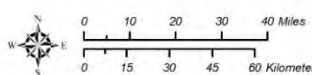
Contact: Stacey Adams, SFWMD





FY20 & FY21 Approved Alternate Water Supply Projects

South Florida Water Management District
 3301 Gull Club Rd., West Palm Beach, Florida 33406
 (561) 886-8800; www.sfwmd.gov



IMPORTANT DISCLAIMER:
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July 2021

User Name: ahoffart Map Produced on Date: 7/22/2021 11:30:55 AM \\sd.sfwmd.gov\dfsroot\GIS\GISBiz\WS\CFP\mxd\20210722_CFPDEP_FY20FY21AWS_Table.mxd

FY20-21: Approved Alternative Water Supply Projects.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: BMPs for Agriculture
Project ID: 4101
Lead Agency: Natural Resources Conservation Service
Authority: Public Law 46
Funding Source:

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Nutrient Load Reduction

Project Synopsis: This project provides for technical assistance to landowners and managers of agricultural lands. The goals of this project are to encourage the adoption and implementation of Best Management Practices (BMPs) that will provide for sustainable agriculture within the Everglades ecosystem that is both ecologically and economically sound. Comprehensive resource management plans are developed with the farmer/rancher to achieve their management objectives, while meeting federal, state, regional and local environmental quality criteria and standards (TMDLs).

Current Status: On-going.

Cost Total: \$160,278,000

Project Schedule:

Start Date: 1997
Finish Date: TBD

Detailed Project Budget Information (dollars in thousands)

	Obligations thru 2021
Federal	\$71,253
State	\$65,085
Total	\$136,338

Contact: Chakesha Harvey - USDA-NRCS

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Soils
Project Name: **Monitoring of Organic Soils in the Everglades**
Project ID: 4102
Lead Agency: Natural Resources Conservation Service
Authority: Public Law 46
Funding Source:

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Resource Assessment

Project Synopsis: This project will produce an assessment of the amount of accretion and/or subsidence that has occurred on organic soils throughout the Everglades region. ARS and IFAS have initiated work within the Everglades Agricultural Area (EAA) based upon observations taken every 5-year from 1913 – 1978. The goal of this project is to expand this assessment to the entire Everglades ecosystem, in an effort to provide scientists and land managers a tool to ascertain the effects from hydrologic condition changes upon the organic soil resource.

Current Status: Not funded – Florida NRCS did not receive this funding and this project is the responsibility of ARS and IFAS. If funded, the Soil Science Division’s MLRA office in North Fort Myers could potentially assist depending on staffing and time requirements.

Cost:
Total: \$1,236,000
Project Development:
Land Acquisition:
Implementation:
Operations and maintenance: \$1,236,000

Project Schedule:

Start Date: 1998
Finish Date: On-going

Detailed Project Budget Information

	Obligations Thru 2021
Federal	\$25,000
State	\$11,000
Total	\$36,000

Contact: Kevin Sullivan and Craig Prink - USDA – NRCS

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Soil Survey
Project Name: Soil Survey Update for the Everglades Agricultural Area
Project ID: 4103
Lead Agency: Natural Resources Conservation Service
Authority: Public Law 46
Funding Source:

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Acres Mapped

Project Synopsis: This project will produce an updated comprehensive soil survey of the Everglades Agricultural Area (EAA). The project is designed to produce a spatial representation of the soils on approximately 700,000 acres, and a detailed description of each soil's profile. The current soil survey is over 20 years old. Significant changes have occurred due to organic soil subsidence and changes in landscape features. This project will provide an effective conservation planning tool for on-farm decision making that will contribute to over-all ecosystem restoration efforts.

Current Status: Not funded – Project was not begun – If funded, it would be the responsibility of the Soil Science Division and the North Fort Myers MLRA office to complete the updated soil survey.

Cost:
Total: \$2,100,000
Project Development: \$2,100,000
Land Acquisition:
Implementation:
Operations and maintenance:

Project Schedule:
Start Date: 2007
Finish Date: TBD

Detailed Project Budget Information

	Obligations thru 2021
Federal	\$0
Total	\$0

Contact: Kevin Sullivan and Craig Prink - USDA – NRCS

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Soil Survey
Project Name: Soil Survey for Everglades National Park, Big Cypress National Preserve, Biscayne National Park, Dry Tortugas National Park, and Water Conservation Areas
Project ID: 4104
Lead Agency: NRCS
Authority: PL-46
Funding Source:

Strategic Plan Goal(s) Addressed: Primary: Other

Measurable Output(s): Acres Mapped

Project Synopsis: This project will produce a comprehensive soil survey of Everglades National Park, Big Cypress National Preserve, Biscayne National Park, Dry Tortugas National Park, and the Water Conservation Areas. The project is designed to produce a spatial representation of the soils on approximately 2,300,000 acres, and a detailed description of each soil's profile. Currently there is not a detailed soil survey available to land managers, modelers and planners. This project will provide an effective correlation/association tool for land managers, modelers and planners to identify, restore, and sustain natural ecological communities.

Current Status: Not funded - Project was not begun - If funded, it would be the responsibility of the Soil Science Division and the North Fort Myers MLRA office to complete the comprehensive soil survey.

Cost:
Total: \$16,000,000
Project Development: \$16,000,000
Land Acquisition:
Implementation:
Operations and maintenance:

Project Schedule:
Start Date: 2007
Finish Date: TBD

Detailed Project Budget Information

	Obligations thru 2021
Federal	\$35,000
Total	\$35,000

Contact: Kevin Sullivan and Craig Prink -USDA - NRCS

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Flows to NW and Central WCA 3A (II) (RR)
Modify G-404 Pump Station (II), Flow to NW and Central Water Conservation Area 3A (RR)

Project ID: 4105 (CERP Project WBS # 11)

Lead Agency: USACE / SFWMD

Authority: WRDA 2000 (Programmatic Authority <\$25 M)

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Increased flows to WCA 3A

April 1999 Project Synopsis: Additional flows will be directed to the northwest corner and west central portions of Water Conservation Area 3A by increasing the capacity of the G-404 pump station, currently a part of the Everglades Construction Project, and increasing the capacity and relocating the S-140 pump station. Development of a spreader canal system at S-140 will reestablish sheetflow to the west-central portion of Water Conservation Area 3A.

Current Project Synopsis: The purpose of this feature is to increase environmental water supply availability, increase depths and extend wetland hydropatterns in the northwest corner and west-central portions of Water Conservation Area 3A in western Broward County. If additional water quality treatment is determined to be required as a result of future detailed planning and design work, existing facilities would be modified to provide the necessary treatment. Water quality treatment of flows is assumed to be provided by the Everglades Construction Project and water quality treatment strategies developed to fulfill the Non-Everglades Construction Project requirements of the Everglades Forever Act.

Current Status: This project has dependencies on the Everglades Construction project. A component of this project was included in the Central Everglades Planning Project for authorization.

Est. Cost: \$ 53,515,000

Detailed Project Budget Information (rounded):

Flows to NW and Central WCA 3A	Investment thru FY 2020
USACE	\$59,000
SFWMD	\$7,000
Total	\$66,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Miami-Dade County Environmentally Endangered Lands Program
Project Name: Environmentally Endangered Lands Volunteer Workdays
Project ID: 4200
Lead Agency: Miami-Dade County Environmentally Endangered Lands Program

Strategic Plan Goal(s) Addressed: Foster Compatibility of the Built and Natural Systems

Measurable Output(s): Number of Events, Number of Volunteers – (The EEL Program hosted approximately 9,494 citizen volunteers from July 2012 to June 30, 2021 at 290 Volunteer Workday Events)

Project Synopsis: The Miami-Dade County Environmentally Endangered Lands (EEL) Program was established in 1990, to acquire, protect and manage environmentally endangered lands for this and future generations. Among the EEL Program purposes is to use acquired lands, where feasible within financial constraints and with minimal risk to the environmental integrity of the preserves, to educate Miami-Dade County’s school-age population and the general public about the unique importance of Miami-Dade County’s subtropical ecosystems and natural communities. The EEL Program accomplishes that objective by engaging volunteers in land management within its Preserves. While EEL Funds have adequately supported the program since its inception, EEL Funds will be depleted by 2024, possibly sooner. *Recurring revenue sources need to be identified and secured to assure that acquisition and management can continue. The Volunteer Workday Program is funding-dependent.*

Current Status: The EEL Program’s Volunteer Workdays and other volunteer events run from September through June of each year, with occasional summer projects, within EEL Preserves. The EEL Program hosts at least 14 events annually, attracting over 1,000 volunteers per year who plant trees, maintain trails, remove refuse and debris, eradicate invasive exotic species, and conduct other restoration tasks. *In exchange for their service, volunteers are provided an opportunity to visit natural areas that are typically not accessible to the public, to learn to identify native species, to learn how to identify and eradicate invasive exotic species and to receive guided tours by naturalists and land managers.*

Project Schedule:

Start Date: May 18, 1990

Finish Date: N/A – these lands are meant to be appreciated by this and future generations

Detailed Project Budget Information

	1990 - 2017	2018	2019	2020	2021	2022	Balance to Complete
Local	795,000	50,000	50,000	50,000	50,000	50,000*	~\$50,000* annually
Total	795,000	50,000	50,000	50,000	50,000	50,000*	

* Dependent on availability of funds

Contact: Janet Gil, Program Director

Hyperlink: www.miamidade.gov/environment/endangered-lands.asp

Pictures:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Miami-Dade County/Zoo Miami Educational Programming
Project Name: Zoo Miami/Miami-Dade County Invasive Species Outreach and Educational Programs
Project ID: 4202
Lead Agency: Miami-Dade County

Strategic Plan Goal(s) Addressed: Objective 3D.1

Measurable Output(s): Exposing, educating, and engaging nearly one million visitors, students, and volunteers annually about invasive species through classes, lecture series, volunteer work days, internships, signage and tours. Invasive species removal and control programs, habitat restoration and enhancement, and biological surveys of the zoo's 740 acres and other regional properties.

Project Synopsis: Zoo Miami has over 1,000,000 visitors annually making it the most popular attraction in South Florida. Through our patrons, educational classes, internships and community engagement activities we leverage these numbers to increase awareness and educate the public about invasive species in South Florida and how they may be active in curtailing further introductions or spread of established species. Our exhibit, Florida: Mission Everglades profiles many habitats and species in South Florida and has signage discussing the impacts of invasive species on our local habitats. Our newest exhibit, the Conservation Action Center, has an entire section devoted to educating the public on invasive species with some live invasive species on exhibit and even a huge Burmese python sculpture that people can climb through and learn about their effects on Florida.

Volunteer days involving corporate, public, and school groups, magnet school students, and members of our Conservation Teen Scientist program participate in guided invasive plant species removal programs and habitat restoration and enhancement plantings. Zoo Miami has ongoing removal programs for marine toads, Cuban tree frogs, green iguanas, and Cuban knight anoles on property and the staff engages the public about these programs and the effects on our native habitats and species. Internal training also occurs to teach staff of what dangers these animals present to the collection, their animals at home, our native species, and proper safe handling. Zoo Miami holds family fishing days twice a year at our lakes on property to engage the public about the effects of invasive fish species and participate in the removal of them from our lakes. The events continue to be popular and result in the removal dozens of pounds of spotted tilapia and cichlids at each event with over hundreds of family participants since its inception.

The Conservation and Research Department offers internship opportunities for Florida International University undergrad students and zookeepers at the zoo. These internships usually involve training and active management of invasive plant and animal control programs within Miami-Dade County parks or other regional areas. Members of the Conservation and Research Department conduct public and internal lecture series to educate about invasive species issues in South Florida. These lectures profile the history and current status of invasive species in the area and leave with messages of how the public can assist in the control and reporting of invasive species through EDDMaps and the IveGot1 app.

Staff at the Deering Estate at Cutler conducts field walks into the natural areas of the Deering Estate Rockland Hammock and Pine Rocklands of public groups and students. They discuss invasive plant effects on the native habitats and convey the effects and difficulty in management of the established boa constrictor population on the property.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Zoo Miami periodically hosts an FWC Amnesty Day since that program's inception. Zoo Miami curators, veterinarians and zookeepers staff the animal surrender area to support FWC's event to raise awareness about non-native animals in South Florida.

Current Status: These multiple outreach and educational programs concerning invasive species will continue in perpetuity as part of our mission. As the Conservation and Research Department expands its programs for invasive species control, more outreach opportunities will be developed and expanded.

Project Schedule:

Start Date: July 2011
Finish Date: Ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2019 - 2021
Local	\$180,947
Total	\$180,947

Contact: Frank Ridgley DVM; frid@miamidade.gov

Hyperlink: https://www.zoomiami.org/assets/2440/zoo_miami_conservation_and_research_annual_report_2017.pdf

Pictures:



Public and student invasive removal and restoration day.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Outreach Support for Invasive Species Management in Florida
Project Name: Public Outreach Projects to Support Prevention, EDRR, and Containment Efforts
Project ID: 4203 (previously 4203, 4204, & 4205)
Lead Agency: University of Florida

Strategic Plan Goal(s) Addressed: Objective 1A-2: Conduct outreach to support prevention efforts, Objective 1B-3: Improve pathway awareness and engage the public in prevention efforts. Objective 2A-4: Engage the public and provide exotic species reporting mechanisms. Objective 3B-4: Improve public awareness of the need for ongoing containment efforts

Measurable Output(s): Website visits, social media followers, outreach products distributed, number of people reached at events and presentations

Project Synopsis: The goal of the prevention portion of this project is to inform and engage the south Florida public in efforts to prevent the introduction of invasive exotic species. This project will increase the visibility of the “Don’t Let It Loose” message by disseminating practical information related to responsible pet ownership and native plant landscaping. In addition, the project aims to raise awareness of management and regulatory approaches such as exotic species risk assessment, screening and inspection processes, and public declarations (e.g., Don’t Pack a Pest). A strong social media presence, and events calendar will be used to disseminate information and promote existing prevention programs (e.g., Exotic Pet Amnesty). Face-to-face outreach will be conducted through event exhibits and group presentations. Outreach products (e.g., brochures, stickers, etc.) will be developed and updated as needed.

The goal of the EDRR portion of this project is to engage the south Florida public and key target audiences in helping to detect and report invasive exotic species. The first objective is to develop a coordinated inter-agency public outreach strategy to enhance EDRR efforts. This project will coordinate with partners to promote existing invasive species detection resources (e.g., species identification guides), reporting systems (e.g., 1-888-IVE-GOT1 and IVEGOT1.org, and smart phone apps), and volunteer opportunities (e.g., Python Patrol, EEL workdays). We will also develop and update resources (e.g., Pest Alerts, identification guides) as needed. Online outreach will be conducted via [the evergladescisma.org](http://theevergladescisma.org) website, regular social media posts, and an events calendar. Face-to-face and online outreach will be conducted through event exhibits and group presentations. The wider the audience reached, the more effective this program will be. A partnership effort will be established with the Florida Panthers hockey association to educate the masses. Another important component of this project is to conduct targeted outreach – via direct mailings, door hangers, canvassing neighborhoods, social media campaigns, webinars, and group trainings – with people who reside or work in areas affected by EDRR species.

In cases when an invasive species can no longer be eradicated, outreach to the public and decision makers is important to generate political and financial support for ongoing containment and management. This portion of the project aims to improve public understanding of containment efforts on an ongoing basis as strategies are continually being assessed and adapted. Communication messages will target a general audience with information about research findings, development of control tools, impacts of invasive species, and benefits of containment for Everglades restoration. Online outreach will be conducted via [the evergladescisma.org](http://theevergladescisma.org) website, regular social media posts, and an events calendar. Face-to-face and online outreach will be conducted through event exhibits and group presentations. Another important component of this project is the development of fact sheets, as needed, to convey invasive species science and management needs to decision makers (e.g., see [Early Detection and Rapid Response \(EDRR\) to Nonnative Wildlife in South Florida](#)).

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

The project is being conducted by outreach specialists at University of Florida's Fort Lauderdale Research and Education Center. As chairs of the Outreach Subcommittee of the Everglades Cooperative Invasive Species Management Area (ECISMA), we produced educational materials (e.g., fact sheets, identification guides, newsletters, bookmark, bumper sticker), coordinated online presentations. We developed a partnership with the Florida Panthers hockey association in 2019 to educate nearly 15,000 individuals through an educational display and awareness video during a regularly scheduled hockey game. We organized a second event at the Florida Panthers arena during National Invasive Species Awareness Week, reaching over 13,000 individuals in February 2020 to enhance public awareness and financial support for ongoing invasive species management.

Current Status: University of Florida has been coordinating invasive species outreach efforts since 2011. There is no dedicated source of funding for outreach efforts.

Project Schedule:

Start Date: 2011
Finish Date: None

Estimated Project Cost: \$1,000,000

Detailed Project Budget Information

The budget includes salaries of an Environmental Education Coordinator a Social Media Influencer, and a Graphic Designer/Web Developer. Through 2020, University of Florida has self-funded a major portion of the outreach program.

	Expenditures 2014 - 2021
Federal	\$50,000
Tribal	\$10,000
South Florida WMD	\$20,000
Foundation	\$7,500
University of Florida	\$150,000
Total	\$237,500

Contact: Frank Mazzotti, fjma@ufl.edu, 954-577-6338

Hyperlink: <http://crocodoc.ifas.ufl.edu/>

Pictures:



DID YOU KNOW?

- » Florida has more nonnative reptile and amphibian species than anywhere else in the world.
- » More than 80% of the nonnative reptiles and amphibians in Florida arrived here through the pet trade.
- » There are more species of nonnative lizards breeding in Florida than native lizards.
- » Invasive plants and animals cost Floridians more than \$500 million each year.
- » Invasive species are the second-leading cause of species endangerment and extinction, after habitat loss.

WHAT YOU CAN DO

- » Do your research before buying exotic pets, and remember, Don't Let it Loose!
- » Learn to identify invasive nonnative species and report sightings at www.IveGotI.org or 1-888-IVE-GOTI
- » If you have an exotic pet you can no longer care for, contact the Pet Amnesty hotline at 1-888-IVE-GOTI
- » Inspect boating and fishing equipment and remove any plants and animals before going home.
- » Learn about laws and regulations regarding nonnative species at www.myfwc.com/nonnatives



For more information about invasive species in south Florida and tips on how you can help, visit www.dontletitloose.org

Species of nonnative reptiles breeding in Florida currently outnumber native species. This imbalance is illustrated by the fact that the four largest lizards breeding in Florida are from Africa, South America, Central America, and Mexico.

This fact sheet serves as a guide to several commonly confused species. The large lizards described here are invasive in south Florida, arriving through the pet trade. Tegus, monitors, and spiny-tailed iguanas are diet generalists and opportunistic feeders, consuming various native fruits, insects, small reptiles, and occasionally small mammals and birds. Tegus and monitors have an affinity for eggs, making them a threat to ground-nesting birds and reptiles, including threatened and endangered species such as American crocodiles, burrowing owls, shorebirds, and sea turtles. Green iguanas are a pest in suburban areas and may harm native plants and animals in natural areas, however their biggest threat is to infrastructure such as seawalls and levees, which they damage by burrowing into and under them. Preventing these lizards from spreading into vulnerable natural areas will save time and money down the road.

Use this guide to correctly identify large-bodied lizards and immediately report sightings of monitors and tegus to 888-IVE-GOT1. Because they are very widespread, green iguanas are not necessary to report. Additional information on removing nuisance iguanas from your property is included in this fact sheet.

Even if you are not sure what something is, it is important to take a photo of any suspicious-looking lizard and report it to <https://www.eddmaps.org/florida/report>. Reporting helps managers understand existing threats and may even help prevent the establishment of a new invader.

REPORT SIGHTINGS!

Of monitors and tegus

1. Take a photo
2. Note the location
3. Call 888-IVE-GOT1 or report online at Ivegot1.org

For information on removing nuisance iguanas from your property, visit: <http://edis.ifas.ufl.edu/m528>

For additional information on invasive species and reporting, visit: Evergladescisma.org

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UF | **IFAS Extension**
UNIVERSITY of FLORIDA

Institute of Food and Agricultural
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Large Lizard Lineup

For South Florida



UF | **IFAS Extension**
UNIVERSITY of FLORIDA

Tegus



Argentine black & white tegu (*Salvator merianae*) - adult size over 4 feet. Hatchlings have bright green heads, which fade after the first month. Photos: UF.



Gold tegu (*Tupinambis teguixin*) - average adult size 2-3 feet. Photo: Florida Museum of Natural History.



Red tegu (*Salvator rufescens*) - adult size over 4 feet. Photo: Joseph Wasilewski.

Three tegu species have been found in south Florida. Argentine black and white tegus (*Salvator merianae*) are breeding in Miami-Dade County and Hillsborough County. Their core population is centered in Florida City and is spreading. Evidence suggests gold tegus (*Tupinambis teguixin*) are also reproducing in the wild in Miami-Dade County. Red tegus (*Salvator rufescens*) have been found in south Florida, but with no evidence of breeding. Tegus spend most of their time on land and are often observed on roadsides or disturbed areas.

Monitors



Nile monitor (*Varanus niloticus*) - adult size up to 7 feet. Photo: Bill Bayless.



Asian water monitor (*Varanus salvator*) - adult size over 8 feet. Photo: Ashley Lawrence, FWC.



Savannah monitor (*Varanus exanthematicus*) - average adult size 2-3 feet. Photo: EDDMapS.

Several species of monitor lizards have been found in south Florida. Nile monitors (*Varanus niloticus*) have localized breeding populations in Palm Beach and Lee counties and are often reported in Miami-Dade and Broward counties. The Asian water monitor (*Varanus salvator*) and savannah monitor (*Varanus exanthematicus*) have also been found in south Florida but are not known to be breeding. These semi-aquatic lizards prefer to be near water, like the C-51 canal in Palm Beach County. Their long, rudder-like tails and sharp claws enable them to traverse both wet and dry habitat with ease.

Iguanas



Spiny-tailed iguana (*Ctenosaura* spp.) - adult size 2-4 feet. Photo: UF.



Green iguana (*Iguana iguana*) - adult size 4-6 feet. Photo: UF.



Male green iguana displaying breeding colors. Photo: Florida Museum of Natural History.

Green iguanas (*Iguana iguana*) are the most widely established large nonnative lizards in Florida. Two other iguana species can be found in several populations throughout Florida: black spiny-tailed (*Ctenosaura similis*) and Mexican spiny-tailed iguanas (*Ctenosaura pectinata*). Iguanas are often confused with monitors and tegus due to their large size. They are frequently observed in rocky habitat and along canals or in urban areas. While green iguanas prefer to eat fruits and vegetation, spiny-tailed iguanas tend to be omnivorous, posing more of an immediate threat to native wildlife.





Pest Alert

Nonnative Lizards in Nurseries and Groves

June 2012

Everglades Cooperative Invasive Species Management Area



UF UNIVERSITY of FLORIDA
IFAS Extension
Design and production provided by University of Florida.



The ECISMA is a formal partnership among federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species in the Greater Everglades area.

For more information about invasive species in south Florida, upcoming PWC Nonnative Pet Amnesty Days, and tips on how you can help, visit:

EvergladesCISMA.org



Oustalet's Chameleon
Image Courtesy of University of Florida
12 to 24 in. Females are various shades of green with white dots along side. Males are tan with brown/black stripes. Spines extend down the center of back. Please REPORT ALL sightings.



Veiled Chameleon
Image Courtesy of Joshua David Holbrook
12 to 24 in. Bright green with shades of orange, white, and yellow; males have bright yellow bands. Prominent casque on top of head is taller than Oustalet's. Please REPORT ALL sightings.



Argentine Black & White Tegu
Image Courtesy of David Bakula
2 to 4 ft. Dark bands with plentiful white dots between them. Please REPORT ALL sightings.



Nile Monitor
Image Courtesy of U.S. Geological Survey
4 to 6 ft. Dark brown with yellow spots forming bands around the body. Please REPORT ALL sightings.



Green Iguana
Image Courtesy of University of Florida
4 to 6 ft. Vibrant shades of green become dull with age. Males have larger spines along back. Please DO NOT report.



Cuban Knight Anole
Image Courtesy of DE-DanWells
6 to 18 in. Changes from bright green to brown; yellow facial band. Please DO NOT report.

Quickly report all sightings
of chameleons, tegus, and monitors to:
888-1-vo-Got1 or submit at www.iveGot1.org



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Southwest Florida Cooperative Invasive Species Management Area (SWFL CISMA)
Project Name: Outreach and Educational Events
Project ID: 4208
Lead Agency: SWFL CISMA

Strategy and Biennial Report Objective Addressed: 3-D.1
Invasive Exotic Species Strategic Action Framework Goal: 1, 2, 3 and 4

Measurable Output(s): Number of events attended; Number of people attended

Project Synopsis: The mission of this group is to coordinate and increase efforts between local, state and federal agencies and landowners of all sizes. The goal is to reduce the impact of or eliminate invasive, nonnative plants and nonnative animals by combining programs and resources to address invasive species on a landscape level to achieve common goals and objectives.

Due to the Covid-19 pandemic, in-person operations and outreach were suspended entirely during the timeframe of this report. However, in February 2021, the SWFL CISMA hosted its Annual Symposium for agency and organization personnel as well as students and private landowners. This workshop provides an opportunity for people to learn current information on identification and treatment of invasive species in Southwest Florida. Due to the ongoing pandemic, the meeting was hosted virtually and attended by 145 participants. We plan to continue/enhance outreach operations when it is safe to do so.

Current Status:

July 1, 2020 - June 30, 2021:

- Annual Invasive Species Symposium, approximately 145 professionals were educated through the event.
- Hosted 1 virtual cane toad technical assistance presentation to HOA in Bonita Springs, FL reaching ~20 community members.
- New initiatives were started by co-chairs including dissolving the previous animal and plant subcommittees in favor of an education sub-committee and smaller sub-committee's/teams focused on more discreet efforts including the annual symposium, invasive fish roundup, weed wrangle, and multipurpose engagement days focused on professional development and social opportunities. The education sub-committee will likely be aimed at stakeholder groups and school children to maximize efficacy.
- First multi-purpose engagement day event held on June 18, 2021. This event consisted of a BioBlitz on Rattlesnake Hammock Preserve managed by Collier County. The BioBlitz was followed by a social event at Celebration Park in Naples, FL. Eleven participants from the SWFL CISMA attended the BioBlitz resulting in 22 documented nonnative species (5 animals, 17 plants).

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Schedule:

Start Date: January 2020
Finish Date: TBD

Estimated Project Costs: TBD

Detailed Project Budget Information July 2020-June 2021

	Expenditures	Income
Annual Symposium¹	\$0.00	\$0.00
Fish Roundup²	\$0.00	\$0.00
Total	\$0.00	\$0.00

¹2021 Symposium conducted virtually due to COVID 19, no expenditures nor income

²Fish Roundup cancelled due to COVID19

Contact: Dan Quinn: 239-220-9454; Daniel.quinn@myfwc.com
Mitch Barazowski: 239-631-0162; Mitchell.Barazowski@CollierCountyFL.gov

Hyperlink: www.FloridaInvasives.org/Southwest

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: ECISMA Outreach
Project ID: 4209
Lead Agency: ECISMA

Strategy and Biennial Report Objective Addressed: 3-D.1

Measurable Output(s):

Outreach events: Despite COVID 19 restrictions ECISMA has continued to host limited outreach events. Many of the outreach events this past year have been outdoors, where social distancing is possible. In the events where outreach became unsafe and infeasible due to COVID-19, focus shifted to virtual outreach in the form of online presentations and social media.

Below are some statistics for the ECISMA Website and social media sites. The website will be upgraded in this year:

- IveGot1 iPhone App Downloads – 2,468 last year / 49,639 total
- IveGot1 Android Downloads – 1,069 last year / 7,929 total
- EDDMapS Records added in last year for Florida:
 - 3,807 Records added
 - 226 Species
 - 1,211 Reporters
 - 1,142 Web Reports
 - 476 iPhone Reports
 - 577 Android Reports
 - 801 Bulk Data
 - 792 API Data/iNaturalist
- ECISMA Website Traffic April 2020 – April 2021
 - 122,034 Page Views
 - 72,741 Users
 - Home Page – 4,505
 - Dirty Dozen Snakehead – 4,353
 - Dirty Dozen Australian Pine – 4,291
 - Dirty Dozen Air Potato – 3,795
- Other News
 - 821 Facebook Likes
 - 671 Twitter Followers

Synopsis: The objective is to inform the general public and environmental professionals about invasive species issues. The interagency team attend and promote several outreach initiatives throughout the year.

Project Schedule: Start Date: 2014 Finish Date: TBD

Estimated Project Cost: \$30,000 annually, plus interagency staff participation costs.

Detailed Project Budget Information (rounded):

	Expenditures 2014 – 2021
ECISMA	\$172,947
Total	\$172,947

Contact: Dennis Giardina dennis.giardina@myfwc.com

Tony Pernas tpernas.nps@gmail.com

Hyperlink: <https://www.evergladescisma.org/>, www.friendsofecisma.org

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: "Travelers Pack a Don't Pest" Targeted Marketing
Project ID: 4300
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 3-D.2
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: For the past four years, the Travelers Don't Pack a Pest program (DPAP) has been funded by the USDA (Farm Bill and AQI) addressing strategies that prevent the introduction or spread of high-consequence pests into and around the United States, particularly in high-risk areas; develop people's knowledge of plant pests to strengthen the safeguarding system; and increase the number of people actively looking for and reporting high-consequence pests at vulnerable points along high-risk pathways.

The DPAP is a partnership with the USDA and U.S. Customs and Border Protection (CBP). The concept for the key components of the program (video and signage) is using a CBP detector dog to deliver the message ... When You Travel, Declare Agricultural Items, Don't Pack a Pest.

Notable accomplishments have involved the production of a 60-second video, signage and promotional materials for multiple uses and broad distribution. Video is displayed on monitors in the passport control areas at 20 U.S. international airports through CBP's Model Ports Program with the potential to reach 85% of international travelers into the U.S. Video was also aired for over a year on American Airlines flights as part of the *NBC Universal American* programming. Over 350 signs are displayed at Miami International Airport, Fort Lauderdale/Hollywood International Airport, Port of Miami, Port Everglades, Orlando International Airport, two international airports and a cruise port in Jamaica, two airports and a cruise port in the Dominican Republic, ports of entry in San Juan, Puerto Rico and the U.S. Virgin Islands. Plans to launch the program in the Cayman Islands are set for July 2014. A survey of 480 international travelers at Miami International Airport was conducted to gauge travelers' awareness of the DPAP program. Results indicated that 39% of the travelers surveyed had seen the signs, and of those, 85% understood why it was important to declare agricultural items.

Current Status: Over the four-year contract period, it is estimated that over 500 million eyes-on-impressions have been achieved through this outreach campaign.

Project Schedule:

Start Date: 9/1/2014
Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2021
Federal	\$2,690,480
Total	\$2,690,480

Contact: Dr. Eric Rohrig, Chief-Bureau of Methods Development and Biological Control, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Everglades Cooperative Invasive Species Management Area (ECISMA)
Project Name: ECISMA
Project ID: 4301
Lead Agency: ECISMA

Strategy and Biennial Report Objective Addressed: 3-D.2
Invasive Exotic Species Strategic Action Framework Goal: 1, 2, 3 and 4

Measurable Output(s): Number of agencies involved; materials developed, website “hits”, annual summit

The Everglades Cooperative Invasive Species Management Area (ECISMA) is a working partnership of federal, state, and local government agencies, tribes, individuals and various interested groups that manage invasive species within the Everglades Protection Area, Big Cypress National Preserve, and managed natural areas in Palm Beach, Broward, and Miami-Dade Counties.

Florida has a long history of invasive species organization cooperation across jurisdictions Everglades restoration poses new challenges for invasive species management and has created a need for a more defined commitment to cooperation among agencies and organizations at higher levels of policy and management. The Everglades Forever Act directs the SFMWD to coordinate invasive species management efforts within the Everglades restoration footprint. ECISMA provides an organizational platform to accomplish this coordination mandate.

Through this coordination body, agency staff and stakeholders have improved prioritization of invasive species management for Everglades restoration, improved information sharing and technology transfers, integrated coordination, control and management of invasive species at regional levels, and helped resolve interagency coordination issues that require higher level management involvement. ECISMA also leverages resources for education and outreach on invasive species to help secure cooperation with public lands, private landowners, homeowners and visitors to the region. Representative staff from participating agencies meet quarterly to review progress and share successes/challenges related to invasive species control, research, and outreach. An annual Everglades Invasive Species Summit is hosted by ECISMA to review annual progress among partners and develop plans for future collaborations. On July 21, 2021 a virtual summit was held.

Current Status: ongoing, several committees and EDRR and outreach activities. ECISMA has a friends group to help raise funding for EDRR activities.

Active website: <http://www.evergladescisma.org/>

Project Schedule:

Start Date: 2008
Finish Date: TBD

Estimated Project Cost: Partnership cost is dependent upon each agencies staff costs.

Contact: Dennis Giardina dennis.giardina@myfwc.com
Tony Pernas tpernas.nps@gmail.com

Hyperlink: <http://evergladescisma.org/>

Completed Projects

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: E&SF: Critical Projects - Ten Mile Creek Water Preservation Area
Project ID: 1111
Lead Agency: USACE / SFWMD
Authority: WRDA 1996 (Section 528); WRDA 2007 (*amended cumulative cap*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-A.1 Secondary: 2-A.3

Measurable Output(s):

- 6,000 acre feet of storage provided on 526 acres of land
- 2,740 acres of habitat improved by project

Project History: WRDA 1996 authorizes the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the south Florida ecosystem. The SFER Task Force nominated 35 projects with input from the Governor’s Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study of and produced a report transmitted to the Secretary of the Army for approval. This is one of the 12 restoration “Critical Projects” having the Secretary of the Army’s approval (WRDA 1996). However, Federal funding caps under WRDA 1996 and later revised under WRDA 2007 provide a \$95M spending limit.

Current Project Synopsis: The project site is located just south of Ten Mile Creek in St. Lucie County and consists of the acquisition of 1,559 acres of land in the eastern portion of the Ten Mile Creek Basin, construction of an above-ground impoundment, a treatment cell, a pump station, and several control structures. Ten Mile Creek is the largest sub-basin delivering water to the North Fork of the St. Lucie River Estuary (SLE), which has been established as an *Outstanding Florida Water* (OFW). The SLE discharges into the Indian River Lagoon, also an OFW, and the most biologically diverse estuary in North America. The entire lagoon is endangered by increased watershed runoff. Excess stormwater, due to drainage improvements, is causing radical fluctuations of the salinity concentration in the estuary. Adverse salinity concentrations eliminate viable habitat suitable for oysters, sea grasses, and marine fish spawning.

The 1998 Tentatively Selected Plan (TSP) recommended seasonal or temporary storage of stormwater from the Ten Mile Creek basin. Land certification, plans and spec completion and the construction award occurred in 2003; and construction was physically completed on the Ten Mile Creek Water Preserve Area by June 2006. Interim operations, testing, and monitoring by the South Florida Water Management District (SFWMD) and the U.S. Army Corps of Engineers (USACE) in accordance with the Water Quality Permit and Project Cooperation Agreement is complete.

During the process for preparation to transfer the project to the sponsor (SFWMD) for full operations, concerns were raised regarding the constructed project. In September 2007, the USACE and the SFWMD began working to resolve project issues, to transfer this project to the SFWMD for operation and maintenance.

The 2009 Water and Energy Appropriations Act increased the spending authorization by \$3.5M. The \$3.5M would be used to complete a post authorization change report and to fund facility maintenance thru FY2014. A Feasibility Cost Share Agreement (FCSA) was underway from September 2010 through April 2011 between USACE and SFWMD, which would increase project spending cap, with the non-Federal sponsor, to begin the post authorization change report. However, the agreement was put on hold by the SFWMD in April 2011, pending the outcome of the litigation efforts.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

The Ten Mile Creek WPA project was in a passive operating state since 2009. Temporary operational testing of the reservoir was conducted from December 2011 to March 2012 for data collection purposes to monitor and evaluate the performance of the reservoir. Upon completion of the limited operations of the Ten Mile Creek WPA, all water was pumped out of the reservoir into Ten Mile Creek and the project has been returned to a passive operating state. The data collected is being used by the government and will assist the U.S. Army Corps of Engineers in identifying the future operation plan for the Ten Mile Creek WPA.

Current Status:

Congress passed legislation directing the Secretary of the Army (through the Corps of Engineers) to execute a transfer agreement with the SFWMD. Section 107 of the Energy and Water Development and Related Agencies Appropriations Act, 2016, deauthorizes the Ten Mile Creek project upon execution of the transfer agreement. The Corps and SFWMD executed the transfer agreement on May 12, 2016. The Ten Mile Creek project is no longer a federally authorized project.

Est. Cost: \$ 57,000,000

Project Schedule:

1997 Start
2006 Finish Construction
2007 Interim Operations and Monitoring - SFWMD
2009 Passive Operations and Monitoring begun - USACE
2015 SFWMD temporary operational testing
2016 The Project was officially deauthorized

Detailed Project Budget Information (rounded):

Ten Mile Creek	Obligations Thru 2017
USACE	\$24,943,025
SFWMD	\$24,743,025
Total	\$49,886,050

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

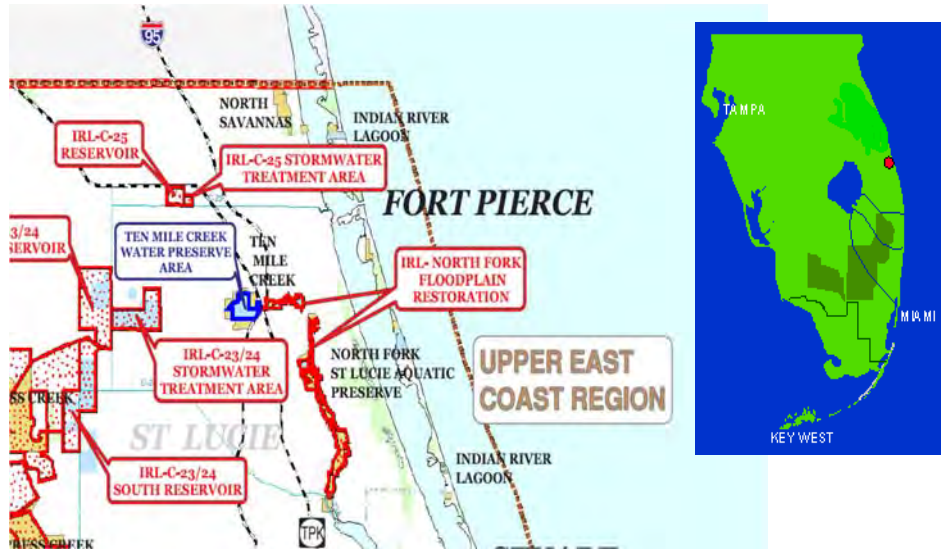
Contact: Michael Collis, Senior Program Manager, Programs and Project Management Division, USACE, Michael.J.Collis@usace.army.mil

Alan Shirkey, Lead Engineer, SFWMD
ashirkey@sfwmd.gov

Source: Project description was summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Current status information was provided by the program manager.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Aquifer Storage and Recovery Regional Study
A/k/a ASR Regional Study
Project ID: 1203 (CERP Project WBS # 44)
Lead Agency: USACE / SFWMD
Authority: Programmatic Authority
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): Peer Reviewed Technical Data Report

April 1999 (Restudy) Project Synopsis: Not described.

Current Project Synopsis: While the CERP Restudy did not directly call for an ASR Regional Study, the USACE and the SFWMD agreed that a coordinated central data collection and regional modeling effort was required to address the large-scale ASR implementation issues under the CERP. The ASR Regional Study described in the PMP was completed in 2015.

The study investigated regional and technical issues governing the feasibility of full-scale ASR implementation; and its potential effect on water levels and water quality within the aquifer systems, and on existing water users, surface-water bodies, and the flora and fauna that inhabit them. This study will conduct critical ASR-related research and develop scientific data required to help determine the scientific and engineering feasibility of large-scale ASR implementation as proposed in the CERP.

State and Federal scientists, engineers, and stakeholders proposed a list of significant uncertainties related to hydro-geologic processes, geotechnical evaluations, ecosystem effects and ASR operation and performance. The ASR pilot facilities are the platforms used to conduct scientific and engineering studies addressing the uncertainties identified with using the technology at the scale envisioned under the CERP. Objectives of the ASR Regional Study are to acquire a comprehensive understanding of the characteristics of the Floridian Aquifer system, its ability to support ASR as envisioned in the CERP, and to identify any limitations to applying full scale ASR. With this information, optimum implementation of regional ASR water storage and recovery can be determined. Goals of the ASR Regional Study include:

- Addressing outstanding issues of a regional nature that cannot be adequately addressed by the authorized ASR Pilot Projects.
- Reducing uncertainties related to full-scale CERP ASR implementation by conducting scientific studies based on existing and newly acquired data, evaluate the potential effects on water levels and water quality within the aquifer systems, as well as existing users, surface-water bodies, and the flora and fauna that inhabit them.
- Developing a regional groundwater model of the Floridian Aquifer System (FAS) and conduct predictive simulations to evaluate the technical feasibility of the proposed 333-well CERP ASR system, or if determined to be unfeasible, identify an appropriate magnitude of ASR capacity with minimal impact to the environment and existing users of the FAS.

The Restudy envisioned the ASR facilities to be constructed and store as much as 1.6 billion gallons of freshwater per day to ensure water for the Everglades, improve conditions in Lake Okeechobee and agriculture and to protect urban wells located near the coast from saltwater intrusion.

An interim report (June 2008) summarized efforts, including the pilots and other testing between 2003 and 2007.

Project 1203 C&SF: CERP Aquifer Storage and Recovery Regional Study Page 1 of 3

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Groundwater modeling of the envisioned CERP ASR wells (333) operations strategy was completed in FY13, and reviewed by the IMC in FY13. Geotechnical data collection is complete, and is currently being interpreted. Groundwater and surface-water quality data and ecotoxicological data were obtained at two ASR pilot systems during operational testing was completed in July 2013. Incorporation of all acquired data into an Ecological Risk Assessment is under review. The Lake Okeechobee ASR pilot project Technical Data Report encompassing Lake Okeechobee and Hillsboro ASRs is complete.

In May 2015, the ASR Regional Study Technical Data Report was completed. The ASR Regional Study incorporated and evaluated the results of the pilot projects and eleven years of scientific and engineering investigations. The National Research Council convened a committee of experts to review of the report. The committee agreed with the ASR Regional Study findings that no “fatal flaws” have been discovered, but many uncertainties remain before large-scale ASR should be implemented.

Based on the study's findings, phased implementation of CERP ASR should proceed with continued modeling, testing and expansion of the existing pilots and construction of additional multi-well systems. Projects in the planning phase may consider incorporating ASR into alternatives, or as an aspect of planning alternatives, in conjunction with a reservoir. Additionally, if future ASR systems are implemented, they should proceed in a phased approach (utilizing up to 5 ASR wells) to provide interim restoration benefits and new iterations of groundwater and ecological models should be developed.

Further work on ASR planning and implementation will occur either as a component of a project, as a new project, or under existing pilot project authorizations.

Current Status: Complete

Est. Cost: \$25,271,000

NOTE: In addition to the ASR projects, the CERP April 1999 Restudy cost estimate included a total of approximately \$128,000,000 for ASR-related Planning, Engineering and Design studies for the six (6) proposed ASR components. Funding was provided from a redistribution of the established CERP ASR design estimates from these related projects.

Project Schedule:

2003 Start - Technical Design Report
 2015 Study completed

Detailed Project Budget Information (rounded):

ASR Regional Study	Obligations Thru FY 2017
USACE	\$13,921,000
SFWMD	\$11,279,000
TOTAL	\$25,200,000

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Hyperlink:

[http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/AquiferStorageandRecovery\(ASR\)RegionalStudy.aspx](http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/AquiferStorageandRecovery(ASR)RegionalStudy.aspx)

Contact: April Patterson, Project Manager, Programs and Project Management Division, USACE, April.N.Patterson@usace.army.mil
 Bob Verrastro, Lead Hydro-geologist, SFWMD
bverras@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is updated to actual expenditures include all federal expenditures through FY17.

<u>CERP ASR SYSTEM</u> <u>LOCATIONS BY BASIN</u>	<u>NUMBER OF WELLS</u>	
	<u>PLANNING</u> <u>ESTIMATE</u>	<u>MODEL</u> <u>SIMULATIONS</u>
Lake Okeechobee	200	139
Caloosahatchee	44	27
L-8 Basin	10	8
C-51 Basin	34	24
Central Palm Beach County	15	14
Hillsboro	30	20
TOTAL	333	232



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Infrastructure
Project Name: E&SF Critical Projects - East Coast Canal Structures (C-4)
Project ID: 1406
Lead Agency: USACE / SFWMD
Authority: WRDA 1996

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Water control structures

Project History: This project calls for the construction of a gated water control structure (S-380) on the C-4 canal in Dade County, Florida. This structure will be located immediately southeast of the Pennsuco Wetlands.

Project Synopsis: The purpose of the structure is to maintain stages to create and preserve wetlands as well as aquifer recharge.

Current Status: COMPLETED 2003

Cost: \$3,737,000

Project Schedule:

Start Date: 1999
Finish Date: 2003

Detailed Project Budget Information (rounded):

East Coast Canal Structures (C-4)	Expenditures Thru FY2017
USACE	\$1,901,000
SFWMD	\$1,836,000
Total	\$3,737,000

Hyperlink: <http://www.saj.usace.army.mil/projects/proj1.htm>

Contact: Karen Tippett, Program Execution Branch Chief
Karen.S.Tippett@usace.army.mil

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP L-31N (L-30) Seepage Management Pilot
F/k/a L-31N Seepage Management Pilot
Project ID: 1416 (CERP Project WBS # 36)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*pilot project*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 1-A.2 and 2-A.3

Measurable Output(s): Pilot (*output is temporary*)

April 1999 (Restudy) Project Synopsis: The purpose of the L-31N Levee Improvements feature is to reduce levee seepage flow across L-31N adjacent to Everglades National Park (ENP) via a levee cutoff wall. Additionally, the feature was designed to reduce groundwater flows during the wet season by capturing groundwater flows with a series of groundwater wells adjacent to L-31N, then back-pumping those flows to ENP. The pilot project for this feature is necessary to determine the appropriate technology to best control seepage from ENP. The pilot will also provide necessary information to determine the appropriate amount of wet season groundwater flow to return that will minimize potential impacts to Miami-Dade County's West Well field and groundwater flows to Biscayne Bay.

Current Project Synopsis: After further study of the L-31N site, it was determined that a seepage management feature at this location might be rendered obsolete with implementation of the full-scale ENP Seepage Management project. The USACE Jacksonville District proposed further study for a feature located along a portion of the L-30 levee, north of U.S. Highway 41, in Miami-Dade County, Florida. The change in study area was endorsed by the Quality Review Board (October 2005). As a follow up, the Jacksonville District requested official approval to prepare a Pilot Project Design Report (PPDR) for the L-30 site, from the USACE South Atlantic Division (SAD).

The L-31N (L-30) Seepage Management Pilot Project will help resolve critical uncertainties associated with seepage management. These include the characterization of the Biscayne Aquifer hydrodynamics, constructability in south Florida geology, reliability of materials and technologies, implementability of a seasonally flexible operating system, appropriateness of monitoring to evaluate effects on seepage, and cost and time requirements necessary for implementation. The pilot will also help answer questions on overall effectiveness of seepage management technologies. The recommended plan will test structural seepage reduction technologies and ability to seasonally manage seepage flows through pumping operations with the use of extraction and injection wells. Field tests, seepage reports and historical data independently showed that this is one of the most transmissive parts of the Biscayne Aquifer.

Current Status: A detailed monitoring plan has been developed to determine the effectiveness of the seepage management system. In December 2008, intermediate plans and specifications were reviewed by the SFWMD. Independent Technical Review and public and agency review of the draft Pilot Project Design Report (PPDR) were completed by January of 2009. Following Independent External Peer Review in March, the PPDR was approved by the Assistant Secretary of the Army for Civil Works in November 2009. Monitoring will be completed in 2012 at which time a Technical Data Report will be released with the baseline monitoring findings. No further efforts are planned for this project.

Project 1416 C&SF: CERP L-31N (L-30) Seepage Management Pilot 1 of 3

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Est. Cost: \$ 16,161,976

Project Schedule:
2012 Baseline groundwater monitoring complete

Detailed Project Budget Information (rounded):

L-31N (L-30) Seepage Management Pilot	Obligations Thru 2017	FY
USACE	\$6,695,115	
SFWMD	\$1,416,020	
Total	\$8,111,135	

Hyperlink: http://www.evergladesplan.org/pm/projects/proj_36_l31n_seepage.cfm

Contact: Michael Collis, Chief, Everglades Section, USACE
Michael.J.Collis@usace.army.mil

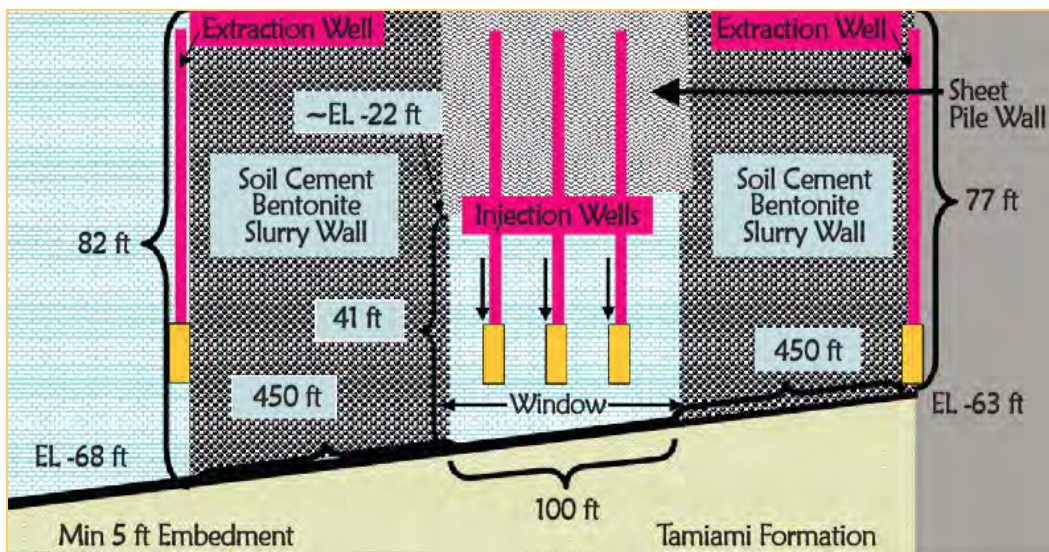
Matt Morrison, Project Manager, SFWMD
mjmorris@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Actual expenditures include all federal expenditures through FY17 and sponsor verified and recorded in kind credit through 4th quarter FY17. Schedule is updated based on the approved *Integrated Delivery Schedule Through 2020*.

Additional Information: (see next page)



UNDER GROUND VIEW



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Lake Okeechobee Aquifer Storage and Recovery Pilot
Lake Okeechobee ASR Pilot [Kissimmee River ASR (KRASR); Port Mayaca ASR (PMASR)]

Project ID: 1418 (CERP Project WBS # 32)

Lead Agency: USACE / SFWMD

Authority: WRDA 1999; WRDA 2007 (*modified cost*)
As part of the "Hillsboro and Okeechobee Aquifer, Florida" project

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other - supports 1-A.2

Measurable Output(s): Data and analysis acquired during operational testing.

April 1999 Project Synopsis: The pilot project is necessary to identify the most suitable sites for the aquifer storage and recovery (ASR) wells in the vicinity of Lake Okeechobee and to identify the optimum configuration of those wells. Additionally, the pilot will investigate changes to water chemistry resulting from aquifer storage and determine specific water quality characteristics of water to be injected and the water quality characteristics and amount of water recovered from the aquifer. Further information from the pilot project will provide the hydro-geological and geotechnical characteristics of the upper Floridan Aquifer System within the region and the ability of the upper Floridan Aquifer System to maintain injected water for future recovery.

Current Project Synopsis: The initial pilot project consisted of up to five ASR systems, each with one or more ASR wells having an estimated capacity of five million gallons per day (mgd) per well. Three of the ASR systems would be located spatially around Lake Okeechobee to demonstrate ASR performance in geographically different areas: at Moore Haven, Okeechobee (Kissimmee River), and Port Mayaca. The wells will be used to recharge and recover surface water from the Lake and/or its tributaries. Extensive water quality characterization and pilot treatment testing takes place during the permitting and design phase. Once constructed, the Lake Okeechobee ASR pilot project systems (Kissimmee River and Port Mayaca locations) will be cycle tested to evaluate their ability to achieve assumed water quality and volumetric levels of performance, and recommendations for facility expansion. Well sites are as follows:

Port Mayaca: site includes the construction of three ASR wells and multiple monitoring wells
Kissimmee: site includes the construction of one ASR well and multiple monitoring wells
Moore Haven: site includes the construction of one ASR well and multiple monitoring wells

WRDA 1999 authorized the project described in the Chief's Report for the *Hillsboro and Okeechobee Aquifer Project* for aquifer storage and recovery described in the U. S. Corps of Engineers Central and Southern Florida Water Supply Study, Florida, dated April 1989, and in House Document 369, dated July 30, 1968. This project was refined during the Pilot Project Design Report (PPDR) completed in September 2004.

WRDA 2007 amended WRDA 2000 by adding the "Hillsboro and Okeechobee Aquifer, Florida" project(s) are to be treated "in the Plan", except that operation and maintenance costs of the project shall remain a non-Federal responsibility. WRDA 2007 section 6001 also modified WRDA 1999 and authorized the Secretary to carry out the project for aquifer storage and recovery, Hillsboro and Okeechobee Aquifer (WBS #32 and #34) at a total cost of \$42,500,000 combined.

Project 1418 C&SF: CERP Lake Okeechobee Aquifer Storage and Recovery Pilot Page 1 of 3

Information for the 2021 Integrated Financial Plan
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Exploratory wells around Lake Okeechobee obtained preliminary lithologic, geophysical, and hydrogeological data. Results have been incorporated into the PPDR that now includes all three pilot projects [Lake Okeechobee, Hillsboro, and Caloosahatchee River (C-43)].

Installation of this pilot's Kissimmee River ASR facility was completed in 2008. Preliminary operational testing for state and federal regulatory compliance was completed at the end of December 2008.

Current Status: The ASR system planned for Moore Haven was cancelled in 2005. The three-well ASR system was planned and designed for Port Mayaca but was never constructed. Operational testing at Kissimmee River ASR was completed successfully in 2013. The Lake Okeechobee ASR Pilot Project Technical Data Report was completed and reviewed in 2013. The Lake Okeechobee ASR facility was transferred in December 2013. The Lake Okeechobee ASR Pilot Project is complete.

Est. Cost: \$ 23,339,466

Project Schedule:

2001 Start
2009 Cycle testing began
2013 Cycle testing ends
2013 Technical Data Report complete.

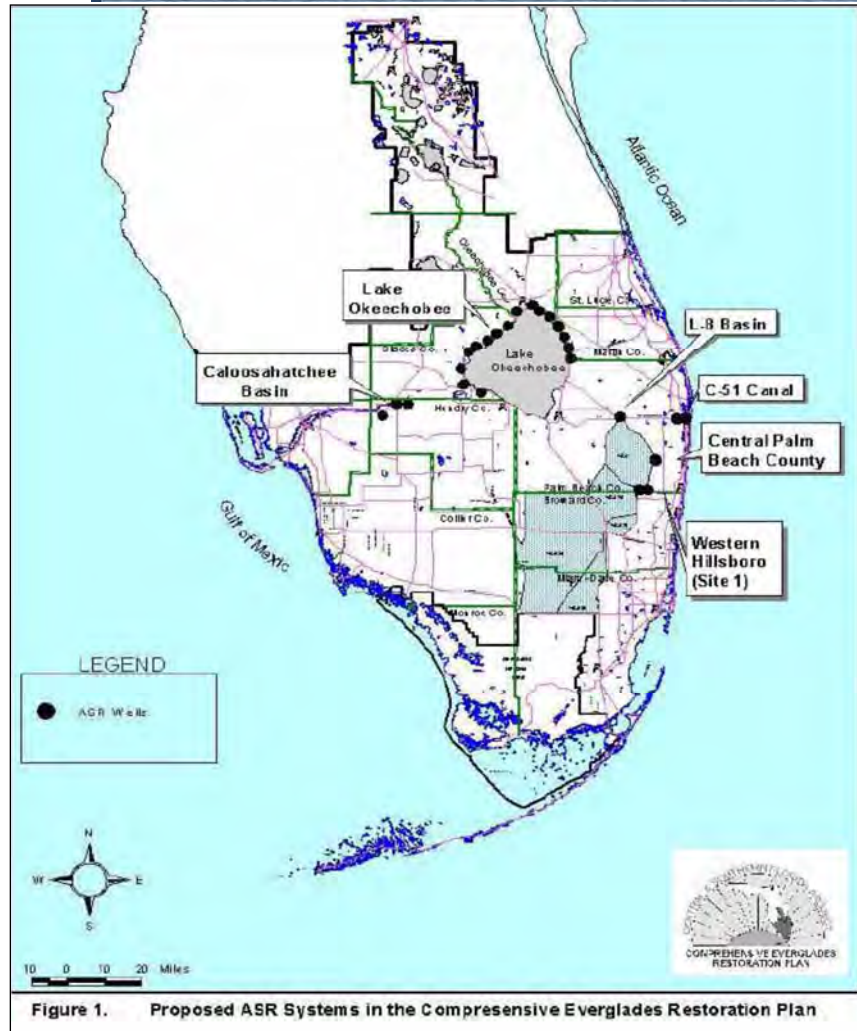
Detailed Project Budget Information (rounded):

LOW ASR	Obligations Thru FY 2017
USACE	\$19,113,521
SFWMD	\$4,225,945
Total	\$23,339,466

Contact: Bob Verrastro, Lead Hydrogeologist, SFWMD
bverras@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Current status is provided by the project manager. Cost estimate information is updated to reflect current price levels in October 2017 dollars. Actual expenditures include all federal expenditures through FY17 (Sept, 2017).

Additional Information: (see next pages)



Information for the 2021 Integrated Financial Plan
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Project Name: C&SF: CERP Hillsboro Aquifer Storage and Recovery Pilot
(A/k/a Hillsboro ASR Pilot)
Project ID: 1423 (CERP Project WBS # 34)
Lead Agency: USACE / SFWMD
Authority: WRDA 1999; WRDA 2007 (*modified cost*)
As part of the "Hillsboro and Okeechobee Aquifer, Florida" project
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): Pilot (*output is temporary*)

April 1999 (Restudy) Project Synopsis: The Site 1 above-ground impoundment is proposed to be operated in conjunction with multiple aquifer storage and recovery (ASR) wells in order to maximize the benefits of the reservoir. An ASR pilot will include the construction of a 5- million gallon per day ASR well. The pilot will determine the most suitable sites for the aquifer storage and recovery wells near the reservoir. In addition, identification of the hydro-geological and geotechnical characteristics of the soils and aquifer, the specific water quality characteristics of water within the aquifer, and the quality of water injected and recovered from the aquifer will be determined. Using the pilot project data, the ASR Regional Study team will then determine the optimum configuration and operation of the ASR wells.

Current Project Synopsis: WRDA 1999 authorized the project described in the Chief's Report for the "Hillsboro and Okeechobee Aquifer, Florida" project for aquifer storage and recovery described in the U.S. Corps of Engineers Central and Southern Florida Water Supply Study, Florida, dated April 1989, and in House Document 369, dated July 30, 1968. This project was refined during the Pilot Project Design Report (PPDR) process completed in September 2004.

The CERP Hillsboro ASR Pilot project is located just south of the Loxahatchee National Wildlife Refuge (LNWR) and north of the Hillsboro Canal on a 1,660-acre tract of SFWMD-owned land in south-central Palm Beach County. The Hillsboro pilot site includes the construction of one 5-mgd ASR well and several monitoring wells. Its purpose is to evaluate and reduce the technical and regulatory uncertainties of implementing the full-scale Hillsboro ASR Project, as described in the CERP.

The full-scale Hillsboro ASR project includes construction of up to a 150-mgd ASR capacity (approximately 30 wells) and will be co-located with the 1,660-acre surface water reservoir (Site 1 Impoundment). The full-scale system will store excess water from the Hillsboro Basin when available (typically in the wet season) and release water into the Hillsboro Canal to maintain canal stages during dry periods.

The final Pilot Project Design Report (PPDR) was approved and the Environmental Impact Statement (EIS) received a Record of Decision for all three pilots (C-43, Hillsboro and Okeechobee) in late 2005.

WRDA 2007 amended WRDA 2000 by adding that the *Hillsboro and Okeechobee Aquifer, Florida* project(s) (WBS #32 and #34) are to be treated as "in the Plan", except that operation and maintenance costs of the project shall remain a non-Federal responsibility. WRDA 2007 section 6001 also modified the prior authorization under WRDA 1999 and authorized "the Secretary to carry out the project at a total cost of \$42,500,000" (total combined for the two pilot projects).

Project 1423 C&SF: CERP Hillsboro Aquifer Storage and Recovery Pilot Page 1 of 2

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The SFWMD led this pilot and prepared the plans and specifications for the 5-mgd ASR system that was installed in autumn 2008. Cycle testing began in January 2010 and was completed in 2012. Results and findings from operational testing are included in the Lake Okeechobee ASR Pilot Project Technical Data Report, which was completed and reviewed in 2013.

Current Status: Complete

Est. Cost: \$ 8,146,967

Project Schedule:

2001 Start
2009 Cycle testing began
2012 Cycle testing ends
2013 Technical Data Report completed and reviewed.

Detailed Project Budget Information (rounded):

Hillsboro ASR	Obligations Thru FY 2017
USACE	\$2,094,323
SFWMD	\$1,048,090
Total	\$3,142,413

Contact: April Patterson, Project Manager, Programs and Project Management Division,
USACE, April.N.Patterson@usace.army.mil

Bob Verrastro, Lead Hydro-geologist, SFWMD
bverras@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Current Status is from the Project Manager. Cost estimate information is updated to reflect current price levels in October 2017 dollars. Actual expenditures include all federal expenditures through FY17 (Sept, 2017).

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Project Name: E&SF: Critical Projects - Seminole Big Cypress Reservation Water Conservation Plan
Project ID: 1425
Lead Agency: USACE / Seminole Tribe of Florida
Authority: WRDA 1996; WRDA 2000 (*addressed cost sharing*); WRDA 2007 (*amended WRDA 1996 Critical Projects cap; raised federal share of cost ceiling to \$30 M for this project*)
Funding Source: Federal/Seminole Tribe

Strategic Plan Goal(s) Addressed: Other – supports 1-B.2

Measurable Output(s): Construction of conveyance systems, major canal bypass structures, and water resource areas to meet the 50 ppb phosphorous level goal of the Everglades Construction Project or more stringent performance levels as developed.

Project History: WRDA 1996 authorized the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the south Florida ecosystem. The SFER Task Force nominated 35 projects with input from the Governor’s Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study of and produced a report transmitted to the Secretary of the Army for approval. This is one of the 12 restoration “Critical Projects” having the Secretary of the Army’s approval (WRDA 1996) with a funding cap of \$12M. Due to the legislated funding limits of the Critical Projects program, only the “west” portion of the project was nominated as a Critical Project.

The Seminole Tribe had requested the assistance of the Natural Resources Conservation Service (NRCS) to implement the “east” portion of the plan. With uncertainty of the NRCS funding and the potential that the west portion might not be entirely funded through the Critical Projects program, the “combined” project was recommended as an Other Project Element (OPE) as part of the Comprehensive Plan in the Restudy. (See: CERP Projects).

April 1999 (Restudy) Synopsis: The proposed comprehensive watershed management system is designed to achieve environmental restoration on the Reservation, the Big Cypress Preserve, and the Central and Southern Everglades and reduce flood damage and promote water conservation on the Reservation to ensure a complete project.

Current Project Synopsis: The project purpose is to improve quality of agricultural water runoff within the Reservation; improve wetland hydrology and return native vegetation. In addition, this project will mitigate agricultural runoff adverse impact and promote water conservation on the Reservation. The Big Cypress Reservation, in Hendry County, is traversed by the L-28 and L-28I canals and the North and West Feeder canals (conveyances were constructed as part of the Central and Southern Florida (C&SF) Project).

East side work consists of conveyance canals, designed and constructed by the Seminole Tribe. West side work consists of several basins, each of which will consist of water resource area (similar to a storm water treatment area (STA), pump stations for transferring water, canals for distribution, and inverted siphons to carry effluent under the West Feeder Canal into the reservation's Native Range. Water will then flow southward into the Big Cypress National Preserve. A planned network of surface water management structures is designed to accomplish the following four objectives to get the water right through quantity, quality, timing and distribution necessary for restoration:

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1. Remove phosphorus and other pollutants from water leaving the Reservation: The removal of these pollutants will be achieved using natural treatment processes, in water resource areas (WRAs). The Tribe's WRAs will take advantage of the natural treatment processes and will serve additional functions in the storage and conveyance of water
2. Convey and store irrigation water: To make use of water provided by the District (to replace the Tribe's diverted Compact water rights), the Tribe needs to be able to take this water, when it is available, to move it and to store it. This will be accomplished through water conveyance improvements.
3. Provide improved storm-water flows control: Storm water must be controlled on the Reservation to prevent storm-water damage to agricultural lands and limit impacts downstream to Big Cypress National Preserve. This will be accomplished by means of storm-water attenuation areas.
4. Re-hydrate Big Cypress National Preserve: The Seminole Water Conservation Project will provide the opportunity to restore more natural hydro periods southward in the Big Cypress National Preserve.

WRDA 2000 stated that "the Seminole Tribe of Florida shall be responsible for 50 percent of the cost of operation, maintenance, repair, replacement, and rehabilitation activities for the Big Cypress Seminole Reservation Water Conservation Plan Project". Construction of the conveyance canal system on the 'east' side of the Reservation (Phase I) was completed in May 2004. Canal pump stations will connect this conveyance canal system to the North Feeder Canal system. WRDA 2007 increased the Federal share cap specific for the 'west' portion of this Critical Project "not to exceed \$30,000,000".

Phase II identified four basins for construction. Basin 1 was constructed (August 2008) and transferred (February 2010) to the Seminole Tribe of Florida for OMRR&R. Basin 4 was completed in January 2013 and transferred to the Seminole Tribe of Florida in July 2013.

Geotechnical testing in basins 2, 3, and 4 revealed permeability rates greater than originally assumed in design documentation. Basins 2 & 4 design was modified to address the higher seepage rates while preserving the environmental restoration benefits.

Current Status: Basin 2 construction completed in 2016, with official transfer to the Seminole Tribe of Florida in 2016 for OMRR&R purposes. At the request of the Seminole Tribe of Florida, Basin 3 will be removed from the congressionally authorized project. An Engineering Documentation Report was approved in July 2015 and a Project Cooperation Agreement Amendment will be executed to remove Basin 3 from the project in July 2018.

Est. Cost: \$61,690,000 (Federal project cost not to exceed \$30,000,000)

Project Schedule:

1997	Start
2008	Basin 1 construction completed.
2013	Basin 4 construction completed.
2016	Basin 2 construction will be completed.
2017	Basin 3 Project Cooperation Agreement Amendment was executed.

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Detailed Project Budget Information (rounded):

	Investment Thru FY 2018
USACE	\$30,000,000
Seminole Tribe of Florida	\$31,670,000
Total	\$61,670,000



Ongoing construction of basin 4 water resource area. Photo taken March 15, 2012.

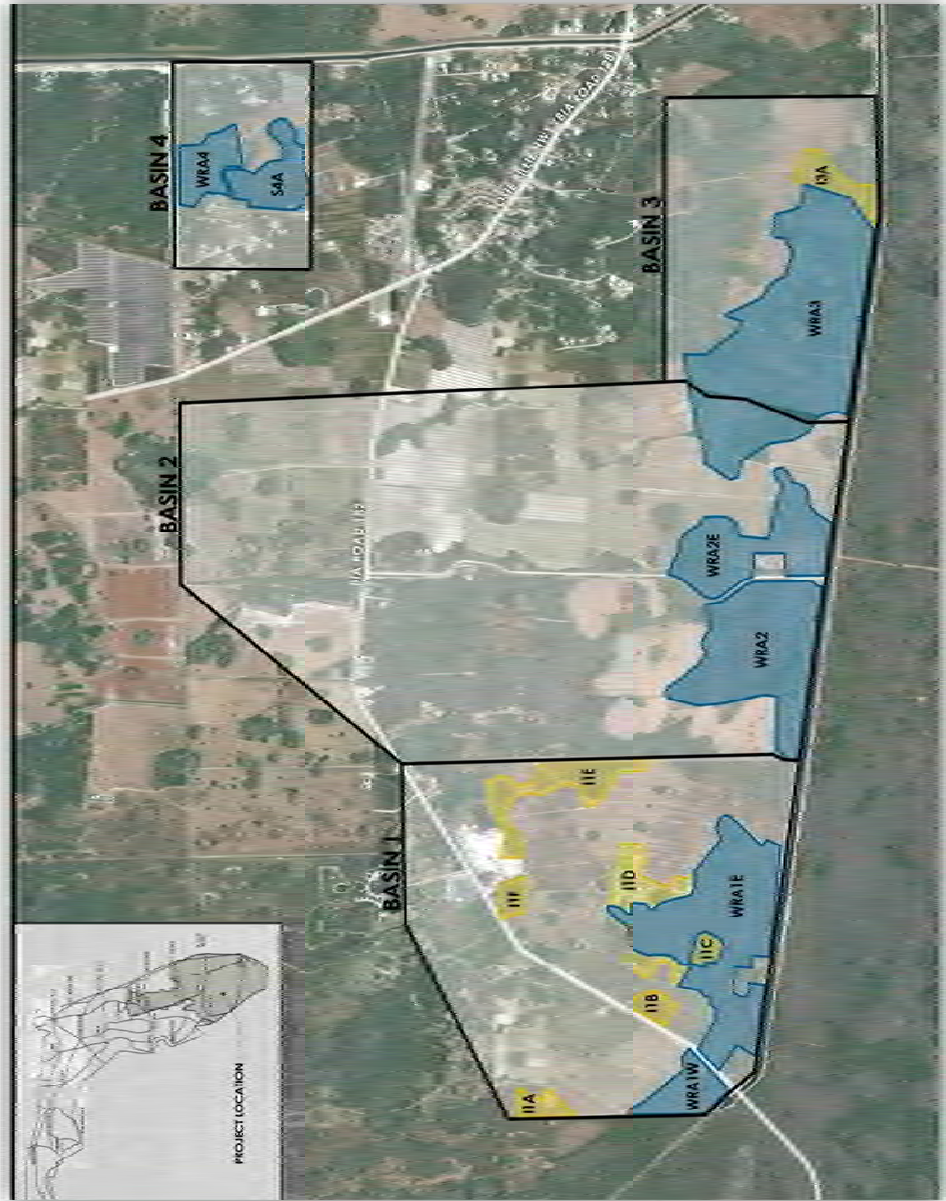
Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/Ecosystem-Restoration/>

Contact:

Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE,
Jeffery.D.Couch@usace.army.mil

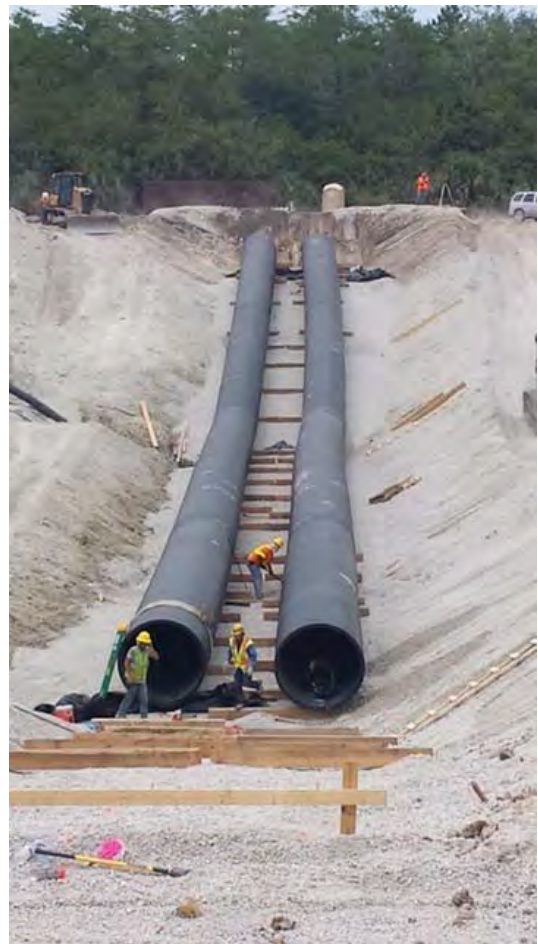
Cherise Maples, Director, Environmental Resource Management Division
Seminole Tribe of Florida
cherisemaples@semtribe.com

Source: Current status is summarized from information provided by the USACE project manager. Estimated project costs are fully funded estimates as of October 2018. Investment costs are through FY18 (Sept. 2018).



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**Additional
Information:**



Information for the 2021 Integrated Financial Plan
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Program Name: Infrastructure
Project Name: C&SF: Indian River Lagoon Feasibility Study
Project ID: 1428
Lead Agency: USACE / SFWMD
Authority: WRDA 1996

Strategic Plan Goal(s) Addressed: Other supports 3-C.1

Measurable Output(s): Reports

Project History: The purpose of the study is to investigate making structural and operational modifications to the C&SF Project to improve the quality of the environment, improve protection of the aquifer, and improve the integrity, capability, and conservation of urban and agricultural water supplies and other water related purposes. The product of this study is a regional plan for addressing the water resource problems and opportunities of the St. Lucie River and Estuary and Indian River Lagoon watersheds in Martin and St. Lucie Counties.

Project Synopsis: The initial Indian River Lagoon South Feasibility Study was completed in October 2002 and a Project Implementation Report was completed in March 2004.

Current Status: COMPLETED 2002

Est. Cost: \$6,150,000

Project Schedule:

1996 Start
2002 Completed

Detailed Project Budget Information (rounded):

	Total Expenditures
USACE	\$3,075,000
SFWMD	\$3,075,000
Total	\$6,150,000

Hyperlink: http://www.evergladesplan.org/pm/studies/irl_south.cfm

Contact: Jeff Couch, Okeechobee Section Chief, Everglades Division, USACE
Jeffery.D.Couch@usace.army.mil

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: E&SF: Critical Projects - Lake Okeechobee Water Retention / Phosphorous Removal
Project ID: 1506
Lead Agency: USACE / SFWMD
Authority: WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-B.1

Measurable Output(s): Two stormwater treatment areas with 940 acres

Project History: WRDA 1996 authorizes the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the South Florida Ecosystem. The SFEER Task Force nominated 35 projects with input from the Governor's Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study of, and produced a report transmitted to, the Secretary of the Army for approval. This is one of the 12 restoration "Critical Projects" having the Secretary of the Army's approval and authorized to be appropriated by Congress (WRDA 1996) for the Department of the Army to pay the federal share up to \$75 million (no more than \$25 million for any single project) for fiscal years 1997-1999. WRDA 2007 amended the sum to up to \$95 million.

Current Project Synopsis: Four key basins for the Lake Okeechobee watershed include the lower Kissimmee River basins (S-65D, S-65E, and S-154), and the Taylor Creek-Nubbin Slough basin (S-191). Wetlands account for between 18 and 25 percent of the land classification in the basins (U.S. Fish and Wildlife Service 1990 National Wetlands Inventory); however, approximately 37 percent of these wetlands have been ditched to drain the land for agriculture (i.e., improved pasture). Many of these wetlands were isolated depressions that once functioned as small water retention areas in the landscape. Others were more expansive and experienced drying from the regional built drainage system.

The resulting system causes an accelerated loss of water from the watershed as surface water runoff, which is rapidly transported to the tributary system draining into Lake Okeechobee. Loss of isolated wetlands has contributed to rapid rises in the stage of Lake Okeechobee -- resulting in damaging freshwater discharges to the estuaries. There has been a loss of the water quality treatment function that used to result from retaining water for short periods in those wetlands, and a loss of wetland habitat for migratory birds and waterfowl.

As part of the USACE planning process, alternative plans were reviewed and the Tentatively Selected Plan (TSP) was identified in 1998 with a two-pronged approach. The first is to restore the hydrology of isolated wetlands by plugging the connection to drainage ditches; and the second is diversion of the collector canal flows to adjacent wetlands to attenuate peak flows and retain phosphorus in Reservoir-Assisted Stormwater Treatment Areas (RSTAs). The plan includes construction of two stormwater treatment areas, acquiring conservation easements and removing improvements, which will also reduce phosphorous loads going to Lake Okeechobee as well as reestablishing wetlands previously drained for agriculture. At the sub-basin scale, land parcels that were once part of the tributary system's historic flood plain will be re-flooded to add adjacent and/or isolated wetlands back to the landscape. The result will be increased regional water storage north of Lake Okeechobee and restoration of wetland functions in the process.

Current Status: Taylor Creek portion was completed April 2011. Nubbin Slough STA transferred to SFWMD for OMRR&R in March 2015.

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Est. Cost: \$ 28,550,000

Project Schedule:

1997 Start
 2006 Construction complete
 2013 Construction repair and testing
 2015 Transfer to SFWMD

Detailed Project Budget Information (rounded):

LOW	Obligations Thru FY 2017
USACE	\$13,731,603
SFWMD	\$14,775,923
Total	\$28,507,526

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Lisa Krieger, Project Manager, SFWMD
Lkriege@sfwmd.gov

Source: Current status information was provided by the Project Manager. Project description is from the Tentatively Selected Plan (1998), and other planning documents.

Additional Information:



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Project Name: C&SF: West Palm Beach Canal STA-1E/C-51 West
Project ID: 1513
Lead Agency: USACE / SFWMD
Authority: Flood Control Act 1968; WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 1-B.1 Secondary: 3-B.1

Measurable Output(s): 6,500-acre storm water treatment area

Project History: Stormwater Treatment Area 1 East (STA-1E) is located in Palm Beach County and runs east/west from Water Conservation Area 1 (Loxahatchee National Wildlife Refuge) to West Palm Beach at Lake Worth. Construction of the STA-1E complex was authorized by the US Congress in section 316 of the Water Resources Development Act of 1996 (WRDA 1996). A Design Memorandum was executed in 1998. Construction of STA-1E was started by USACE in 2000, and was completed in 2004.

The STA-1E complex was transferred to the SFWMD for operations and maintenance in 2005, except for the eastern portion of the complex (also known as the PTSA area [periphyton stormwater treatment area]), which was retained temporarily by USACE in order to evaluate the ability of periphyton to reduce phosphorus concentrations in the water as it passed through the treatment cells in the complex. Testing was completed and the PTSA portion of the complex was transferred to SFWMD in 2014.

During the conduct of O&M activities SFWMD determined some components of the STA-1E project did not function as intended. A modification report was prepared and authorization to address identified deficiencies was obtained. Contracts were issued by USACE to remediate identified deficiencies. Remediation work on the culverts and the trash rakes was completed in 2016. During the conduct of remediation work on the culverts corrosion damage on the gate assemblies was identified. A second modification report was prepared and authorization to address identified deficiencies was obtained. A contract to address the corrosion damage on the gate assemblies was issued in September 2015. Work to remediate the corrosion damage on the gate assemblies is underway and is anticipated to be completed in summer 2017.

Current Project Synopsis: STA-1E is a modification of the C-51 West Palm Beach (WPB) Canal project. The modification expanded an existing 1,600-acre floodwater detention area into what is currently a 6,500-acre STA. It provides both 30-year flood risk management to the urbanized eastern basin and 10-year flood protection to the western basin. In addition to the flood damage/reduction benefits, the modified plan provides water quality treatment, reduction of damaging freshwater discharges to Lake Worth, and increased water supply for the Everglades and other users.

Major components include construction of the following: STA 1E, pumping station S-319 and S-362, Canal C-51 enlargement, and gated structure S-155A. The project will operate in parallel with STA 1W to reduce runoff from both the C-51 West and S-5A basins improving water quality prior to discharge into the Water Conservation Area (Arthur R. Marshall Loxahatchee Wildlife Refuge).

Current Status: All design and constructions are completed. Project is being closed-out in FY2018.

Project 1513 C&SF: West Palm Beach Canal STA-1E / C-51 West Page 1 of 2

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Est. Cost: \$ 371,459,000 (Cost Certification date 21 March 2014)

Project Schedule:

1994 Start of preliminary design work
 2018 Project closeout

Detailed Project Budget Information (rounded):

STA 1E/C-51	Expenditures Thru FY 2017
USACE	\$291,858,000
DOI	\$46,000,000
SFWMD	\$30,233,000
Total	\$368,091,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jim Hourican, Project Manager, USACE
James.J.Hourican@usace.army.mil

Jorge Jaramillo, Project Manager, SFWMD
jjaramil@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Current status information was provided by the project manager. Last cost estimate reflect price levels in 2017 dollars.

Additional Information:



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Program Name: Infrastructure
Project Name: **State Project Includes Everglades Agricultural Area (EAA) Stormwater Treatment Areas (STAs) Expansion** (Project is being implemented as part of the Long-Term Plan for Achieving Everglades Water Quality Goals [Long-Term Plan])
Project ID: 1514 A
Lead Agency: SFWMD
Authority: Everglades Forever Act (EFA)
Funding Source: State – Long-Term Plan funds

Strategic Plan Goal(s) Addressed: Primary: 1.B.1

Measurable Output(s): ~18,000-acre STA expansion, water quality, phosphorus reduction

Project Synopsis: This SFWMD project, which was implemented as part of the Long-Term Plan, expanded the size and enhanced the performance of existing Stormwater Treatment Areas created as part of the Everglades Construction Project. These constructed wetlands naturally reduce stormwater runoff pollution levels flowing from the Everglades Agricultural Area before entering the Everglades. This Project added approximately 18,000 acres of additional treatment area to the existing Everglades Agricultural Area Stormwater Treatment Areas (EAA STAs). The expansions were built in Compartment B, an approximately 9,500-acre parcel of land located in southern Palm Beach County, and Compartment C, an approximately 8,800-acre parcel of land located in eastern Hendry County.

The first phase of implementation was the EAA STA Initial Expansion Projects which involved expanding STA-2 into Compartment B to construct cell 4, expanding STA-5 into Compartment C to construct flow way 3, and STA 6 into section 2. Phase 1 became flow capable on December 31, 2006. The second phase of implementation, the EAA STA Compartment B and Compartment C Build-out Projects, involved STA construction in the remaining areas of Compartment B and Compartment C. The second phase is now complete.

Current Status: Construction of the initial phases of EAA Compartments B and C STAs and the C-139 Annex Pump Station are complete.
Construction of Compartment C pump station G-508 and Compartment B pump stations G-434, G-435, and G-436 started in September 2009 and are complete.
Flow capable status was achieved by December 2010 for EAA Compartments B and C Build-out STAs.
EAA Compartments B and C Build-out STAs civil works construction was completed in 2011.
Permanent pump stations G-434, G-435, G-436 and G-508 are complete.
Construction to regrade a portion of Cell 8 in STA2 was completed in June 2014.

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Total Estimated Project Cost: \$335,583,167
Construction Start Date: April 2009, Compartment C; June 2009, Compartment B
Scheduled Project Completion Date: December 2010 (Flow-Capable), June 2012 (Pump Stations)

Actual Expenditures to date by SFWMD:
*Updated through May 2, 2012

	2009	2010 *	2011	2012 (as of 5/02/12)	2013	2014	Total
SFWMD	\$121,281,275	\$100,085,464	\$100,191,267	\$12,940,551	\$471,000	\$612,610	\$335,583,167

Hyperlink:

http://my.sfwmd.gov/portal/page/portal/pg_grp_sfwmd_sfer/portlet_prevreport/2011_sfer/v1/chapters/v1_ch8.pdf

Contact: Alan Shirkey, SFWMD

G-434 Pump Station - Compartment B Inflow Pump Station to Cells 4, 5 & 6



G-436 Pump Station - Compartment B Outflow Pump Station Cell 4, 5, 6, 7, & 8



G-508 Pump Station - Compartment C Inflow Pump Station



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Program Name: Restoration Program: Hydrological Restoration, Water Quality
Project Name: Chapter 298 Districts/Lease 3420 Improvements
Project ID: 1700
Lead Agency: South Florida Water Management District
Authority: Florida's Everglades Forever Act

Strategic Plan Goal(s) Addressed: Getting the Water Right

Measurable Output(s): Extent of reduction of total phosphorus entering Lake Okeechobee.

Project Synopsis: South Florida Water Management District funded works of the Chapter 298 District (East Beach Water Control District, East Shore Water Control District, South Shore Drainage District and South Florida Conservancy District) for the design and construction of these diversion works as described in the Everglades Forever Act. South Florida Water Management District also funded works of the Lessee of Lease No. 3420 (Closter Farms) for the design and construction of diversion works described in the Everglades Forever Act. The primary objective of these improvements is to reduce total phosphorus loads discharged directly to Lake Okeechobee. **All projects are complete and are in operation.**

*** Cost (Estimate):** Total: \$ 24,115,521
 (1) Project Development: \$ 779,995
 Land Acquisition: \$ -
 (2) Implementation: \$ 23,335,526
 Operations and Maintenance: \$ -

Project Schedule: Completion Date: September 2005

	FY 1994 - FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010 - FY 2016
Project Development						
Implementation						

*** Detailed Project Budget Information**

	Actual FY 1994-05	Total
Federal		
State	\$24,115,521	\$24,115,521
Other		
Total	\$24,115,521	\$24,115,521

- (1) Cost data reflects actual inception-to-date expenditures through September 30, 2005 and current preliminary cost estimate projections.
- (2) Project Development includes Design Phase [contracts & staff costs] costs.
- (3) Implementation includes all Construction [contracts & contingency] and Construction Management [contracts & staff costs] costs.

Contact: Steve Poonasingh

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: E&SF: Critical Project - Lake Trafford Restoration
Project ID: 1702
Lead Agency: USACE / SFWMD
Authority: WRDA 1996; WRDA 2000 (*Programmatic Authority*)

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): 2.85 million cubic yards of organic sediments removed

Project History: WRDA 1996 authorizes the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the south Florida ecosystem. The SFEER Task Force nominated 35 projects with input from the Governor's Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study of and produced a report transmitted to the Secretary of the Army for approval. This is one of the 12 restoration "Critical Projects" having the Secretary of the Army's approval (WRDA 1996).

April 1999 (Restudy) Project Synopsis: The project is also described in the *Central and Southern Comprehensive Review Study (1999)* as an OPE, utilizing one or more 14-inch portable cutter dredges to accomplish lake-wide organic sediment removal.

Current Project Synopsis: Lake Trafford, the largest lake south of Lake Okeechobee, with a surface area of approximately 1,494 acres, is located in north Collier County. The lake is the headwaters for the Corkscrew Swamp Sanctuary to the southwest, the Corkscrew Regional Ecosystem Watershed (CREW) to the west, and the Fakahatchee Strand system including the Florida Panther National Wildlife Refuge, to the south. Lake Trafford has poor water quality, extensive muck accumulations, lost native submerged plant communities, experienced periodic aquatic weed infestations, and had numerous moderate fish kills. Poor water quality is attributed to internal nutrient cycling from extensive organic muck deposits throughout the basin. About 8.5 million cubic yards of loose, flocculent, organic materials form a blanket with a thickness of 9" up to 9' on the lake bottom. The project includes the use of cutter dredges to remove this material and pump it into a 449-acre, diked, agricultural facility. Once completed, improved water quality should enhance fish and wildlife habitat in and around Lake Trafford.

The Lake Trafford Restoration project was initiated in 2002. The in-lake portion of dredging was completed by the spring of 2006. This phase of the project removed approximately 3 million cubic yards of organic sediments from the bottom of the lake. A second phase was to remove approximately 800,000 cubic yards of the muck sediment from the littoral zone and commenced in 2006. However, the prevailing historic drought in south Florida rendered the lake levels critically low for operation of the dredging machinery and remaining effort had to be terminated that same year.

The USACE completed plans and specifications, but at that time there was insufficient funding to award a contract. The SFWMD assumed 100% of the cost of revamping the detailed design and the construction with the intent of receiving credit and/or reimbursement upon project completion and approval by the USACE. The FWC and Collier County Tourist Development Council provided some financial assistance to SFWMD for the project

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Current Status: Construction for Lake Trafford was completed in November 2010 by the SFWMD. The cost of construction and land was borne by SFWMD (Big Cypress Basin revenue) with funds received from the State (FWC) and from Collier County Tourist Development fund. There are post construction activities, the SFWMD presently has a lake restoration management/ research contract with FGCU who coordinates an inter-agency task group (FWC, DEP, FWS, Collier County, Corps) for monitoring of the post restoration health of the lake. FGCU researchers have been planting SAVs, monitoring lake water clarity parameters, macro-invertebrates etc.; FWC is stocking enormous number of fish seedlings, watching their growth, and cautiously treating re-growth of hydrilla, algae with herbicides, and burning shoreline/littoral zone exotics - expense not known. The lake is still unbalanced with several episodes of spotty algae blooms during the last two years.

Est. Cost: \$26,043,767

Project Schedule:

2011 Construction complete

Detailed Project Budget Information (rounded):

Lake Trafford	Obigations Thru FY 2017
USACE	\$1,600,943
SFWMD	\$1,061,820
Total	\$2,662,763

Hyperlink:

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Janet Starnes, Project Manager Principal, SFWMD
jstarne@sfwmd.gov

Source: Original project description (OPE) is summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Current status and estimate was provided by the project manager.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Infrastructure
Project Name: E&SF: Critical Projects - Western C-11 Water Quality Treatment
Project ID: 1703
Lead Agency: USACE / SFWMD
Authority: WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Gated spillway structure; pump station

Project History: Construction of a 500-cfs seepage pump station (S-9A) and spillway (S-381) in Canal C-11 will separate clean seepage from urban run-off waters and pump the clean water back into Water Conservation Area 3A.

Project Synopsis: The purpose is to improve the quality and timing of stormwater discharges to the Everglades Protection Area from the Western C-11 Basin located in south central Broward County. The S-9 pump station pumped untreated urban and agricultural stormwater runoff from the Western C-11 Basin directly into Water Conservation Area 3A. The project involved construction of a gated control structure on C-11 to divide western seepage waters (i.e., clean water) from the eastern runoff waters in C-11 canal (i.e., polluted water) and construction of an additional pumping station adjacent to S-9 to pump clean seepage back into the Everglades Protection Area. Both features will be remotely controlled using sponsor-installed telemetry.

Construction of pump station S-9A was completed in August 2002. The initial audit of original construction contract termination for spillway S-381 was completed in September 2003. The second audit phase began in February 2004. Construction of a re-designed spillway (S-381) was completed in 2005. The Obermeyer construction contract has been in the closeout phase.

Current Status: COMPLETED 2006

Est. Cost: \$ 18,494,996

Project Schedule:

1997 Start
2006 Finish

Detailed Project Budget Information (rounded):

Western C-11 Water Quality Treatment	Expenditures Thru FY2017
USACE	\$9,247,498
SFWMD	\$9,247,498
Total	\$18,494,996

Hyperlink: <http://www.saj.usace.army.mil/projects/newrpt.htm>

Contact: Karen Tippett, Program Execution Branch Chief
Karen.S.Tippett@usace.army.mil.

Source: Actual expenditures include all federal expenditures through FY17 (Sept, 2017) and sponsor verified and recorded in kind credit through 4th quarter FY17.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Infrastructure
Project Name: Everglades National Park Water and Wastewater
Project ID: 1705
Lead Agency: National Park Service

Strategic Plan Goal(s) Addressed: Primary: Other

Measurable Output(s): Number of water and wastewater systems that are rehabilitated or replaced

Project Synopsis: This project will rehabilitate or replace 28 water and wastewater systems in two districts of Everglades National Park. A large percentage of the existing water and wastewater systems within the park were constructed over 35 years ago when the public health and environmental standards were not as fully evolved as they are today. While originally constructed to code, all of the systems are in non compliance with environmental regulations and standards for operating a public water supply. This rehabilitation effort would modify or replace all of the existing systems with new systems that offer the full level of public health and environmental protection that present day standards require. The final result will be potable water systems properly designed to provide safe, clean water and wastewater that is sufficiently treated to fully protect the fragile water resources within Everglades National Park. **This project has been completed.**

Cost:
Total
 \$18,965,000

Project Schedule:
 Start Date: 1997
 Finish Date: 2006

	1997	1998	1999	2000	2001	2002	2003	2004
Construction								

Detailed Project Budget Information (\$1,000)

	Thru 1999	2000	2001	2002	2003	2004	Balance to complete	Total
Federal	3,516	1,894	2,883	4,192	4,594	286	1,600	18,965
State								
Tribal								
Local								
Other								
Total	3,516	1,894	2,883	4,192	4,594	286	1,600	18,965

Hyperlink: N/A
Contact: Michael Jester

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Water Quality, Habitat & Species
Project Name: Lake Okeechobee Sediment Removal Feasibility Study and Pilot Project
Project ID: 1708
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source:

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Recommendation Regarding Sediment Removal from Lake Okeechobee

Project Synopsis: The goal of this project was to analyze alternatives and determine the best method of sediment management to reduce internal phosphorus loading in Lake Okeechobee. The Feasibility Study addressed alternatives such as sediment removal, processing, disposal, chemical treatment, and/or sealing sediment to achieve the project goal. The goal of the Feasibility Study was achieved using an objective methodology that allowed for review and input by experts and stakeholders throughout the study process. A pilot test of a state-of-the-art sediment removal/treatment technology train was conducted in parallel with the Feasibility Study. The pilot test included sediment removal, de-watering, treatment, and a pilot water quality treatment system. The results of the pilot test were incorporated into the Feasibility Study.

The results for the feasibility study indicated that once the TMDL is met the annual frequency of algal blooms would decrease to below a 15% annual probability of a bloom occurrence (from a current annual likelihood of approximately 20%) by 2015 and 10% by 2028. Under this “no in-lake action” alternative, steady-state lake recovery conditions would be achieved approximately 35 years from the point that external loads are reduced to the inflow load of 140 metric tons. Dredging did not prove feasible, while chemical treatment might be of value under limited conditions.

Cost:

Total	\$955,069
Project Development	\$955,069
Land Acquisition	N/A
Implementation	N/A
Operations and Maintenance	N/A

Project Schedule:

Start Date: 6/1/00
 Finish Date: 6/1/03 (Completed 04/03)

Detailed Project Budget Information (\$1000)

	Thru 1999	2000	2001	2002	2003	Balance to complete	Total
State		0	287.5	280.8	386.7		955.1
Tribal							
Local							
Other							
Total			287.5	280.8	386.7		955.1

Hyperlink: N/A
Contact: Don Nuelle

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Water Quality, Habitat & Species
Project Name: Lake Okeechobee Tributary Sediment Removal Pilot Project
Project ID: 1709
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source: SFWMD Ad Valorem; EPA 319

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Reduction in phosphorus loads from the Lettuce Creek drainage basin to Lake Okeechobee.

Project Synopsis: This project provides a direct comparison between two sediment removal technologies, namely, a continuous deflective separation (CDS) unit and a tributary sediment trap (TST) to determine if particulate phosphorus loading to Lake Okeechobee from Lettuce Creek drainage basin may be reduced using either of two pre-selected technologies. This project also examines the feasibility of sediment removal in a tributary as a method of reducing phosphorus loading to Lake Okeechobee. The effectiveness of the two technologies is being evaluated over a 12-month monitoring period. Initial monitoring results have indicated poor removal efficiencies for phosphorus by both units. Upon evaluation of the physical characteristics of the particles in the Lettuce Creek water, it was hypothesized that the settling velocities of the particles are too slow to allow capture of the particulate phosphorus within the relatively short residence times provided by the two units. Additional sediment management techniques are being investigated to examine if the effectiveness of these units can be improved by enhancing the settling velocity of the particles. The effectiveness of each system will be quantified using both a concentration-based and mass balance approach. The economic viability of each technology will be evaluated by comparing the present worth cost (20-yr) per kilogram of sediment and phosphorus removed by each system. If one of the tested sediment trap methods is found effective, landowners in the watershed will be encouraged to use it. The District will also use the technology wherever possible on District facilities. **This project has been completed.**

Cost:

Total \$440,000
 Project Design (Phase I) \$93,728
 Construction, Installation and Calibration of Monitoring Instruments (Phase II) \$210,940
 Post Sediment Removal Monitoring and Measuring Effectiveness of the Project (Phase III) \$135,332

Detailed Project Budget Information (\$1000)

	2000-2001	2001-2002	2002-2003	2003-2004	Balance to complete	Total
Federal EPA	59.5	87.1	23.4			170
State SFWMD	71	136.6	42.4	20		270
Total	130.5	223.7	65.8	20		440

Contact: Odi Villapando

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration, Water Quality
Project Name: S-5A Basin Runoff Diversion Works
Project ID: 1713
Lead Agency: South Florida Water Management District
Authority: Florida's Everglades Forever Act

Strategic Plan Goal(s) Addressed: Getting the Water Right

Measurable Output(s): Reduce phosphorus levels before it enters the Everglades Protection Area (EPA).

Project Synopsis: S-5A Basin Runoff Diversion Works is located in western Palm Beach County at the confluence of the Hillsboro and Ocean Canals in the Everglades Agricultural Area (EAA). The project diverts flow from the S-5A Basin into STA-2 for treatment. This project included enlargement of approximately 17 miles of the Hillsboro and Ocean Canals in approximately 2001 and the construction of a water control structure (G-341) which was **completed in June 2005**.

* **Cost (Estimate):**

Total:	\$ 14,233,758
(1) Project Development:	\$ 408,815
Land Acquisition:	\$ 1,902,688
(2) Implementation:	\$ 11,298,233
Operations and Maintenance:	\$ 624,022

*** Detailed Project Budget Information**

	Actual FY 1994-05	Projected FY 2006	Projected FY 2007	Projected FY 2008	Projected FY 2009	Balance to complete	Total
Federal							
State	\$13,536,252	\$49,892	\$51,387	\$53,314	\$54,913	\$488,000	\$14,233,758
Tribal							
Local							
Other							
Total	\$13,536,252	\$49,892	\$51,387	\$53,314	\$54,913	\$488,000	\$14,233,758

- (4) Cost data reflects actual inception-to-date expenditures through September 30, 2005 and current preliminary cost estimate projections.
- (5) Project Development includes Design Phase [contracts & staff costs] costs.
- (6) Implementation includes all Construction [contracts & contingency] and Construction Management [contracts & staff costs] costs.

Contact: Steve Poonaisingh

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Seminole Tribe Best Management Practices for the Big Cypress Reservation
Project ID: 1714
Lead Agency: Seminole Tribe of Florida
Authority: Tribal Council Resolution

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s):

The project will result in immediate, measurable improvements in the quality of water discharged to the Everglades Protection Area. It will also provide tangible improvement of the water quality leaving the Western Basins, an area not addressed completely by the Everglades Construction Project and the Everglades Forever Act.

Project Synopsis:

The Seminole Tribe has contracted with the NRCS to implement a comprehensive system of best management practices (BMP's) for all seven basins in the Big Cypress Reservation through the EQUIP program. Enhanced water management will be accomplished through BMP's that include: conservation irrigation systems; nutrient loading reduction; application procedure training; fencing of WRA's and irrigation cells as detailed in the Water Conservation Plan; cross fencing for grazing management; livestock watering facilities; grazing management plans; closed-end irrigation systems; and will function independently of the Water Conservation Project, the two will work best together to create the most benefit for the ecosystem.

Current Status:

Grazing Management Plans are complete. Interior fence installation is complete as well as 18 solar panel and pump systems. All BMP projects were completed.

Cost:

Total: \$4,779,000

Project Development:

Land Acquisition:

Implementation:

Operations and maintenance:

Project Schedule:

Start Date: June 1996

Finish Date: September 2015

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (\$1000)

BMP BC	Total thru '13	Balance to complete	Total
Federal	3,584.1	0	3,584.1
State			0
Tribal	1,114.75	79.95	1,194.7
Total	4,698.85	79.95	4,779.0

Project sheet updated in 2014.

Contact: Cherise Maples, Director
Environmental Resource Management Department
Seminole Tribe of Florida



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Infrastructure
Program Name: Surface Water Management
Project Name: Seminole Tribe Best Management Practices for the Brighton Reservation
Project ID: 1715
Lead Agency: Seminole Tribe of Florida
Authority: NRCS EQIP Program/Tribal Council Resolution

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s):

Implementation of BMP's will provide immediate water quality benefits for the watershed which includes Lake Okeechobee. They will also compliment a comprehensive system of surface water management works planned for the Brighton Reservation.

Project Synopsis:

The Seminole Tribe has contracted with NRCS to design a comprehensive system of best management practices (BMP's) for the Brighton Reservation. Enhanced water management will be accomplished through application of field-level BMP's which might include: conservation irrigation systems; nutrient loading reduction; application procedure training; cross-fencing for grazing management; livestock watering facilities; grazing management plans; closed-end irrigation systems; and a tail-water recovery system where appropriate.

Current Status:

The plan was completed in 2002. Conservation irrigation systems, livestock watering facilities, closed-end irrigation systems have been established. Monitoring results show reduction in nutrient loads. Solar panels (22) and pump systems were recently installed. Project is complete.

Cost:

Total

\$374,000

Project Development

Land Acquisition

Implementation

Operations and maintenance

Project Schedule:

Start Date: January 1998

Finish Date: September 2012

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (1000s)

BMP Brighton	Total thru '13	Balance to complete	Total
Federal	289.5	0	289.5
State			0
Tribal	84.5	0	84.5
Total	374	0	374

Contact: Cherise Maples, Director
Environmental Resource Management Department
Seminole Tribe of Florida



Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Surface Water Management
Project Name: Seminole Tribe Comprehensive Surface Water Management System for the Brighton Reservation
Project ID: 1716
Lead Agency: Seminole Tribe of Florida
Authority: Tribal Council by Resolution

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): This plan would provide positive water management benefits to the Indian Prairie Basin which discharges into Lake Okeechobee. Water quality will be improved by reducing nutrient loadings through detaining discharges from Tribal lands in each group. Flood control will be enhanced through the implementation of additional sites in each sub-basin. Storage and conveyance of surface waters will be increased and enhanced in each and between sub-basins. Re-hydration of slough systems in each group will also be accomplished.

Project Synopsis: A comprehensive surface water management system will be designed and implemented for the Brighton Reservation which will include supplemental irrigation, storage, improved flood control, surface water conveyance and water quality treatment.

Current Status:

Complete

Cost: \$15,818,000

Project Schedule:

Start Date: 1999
 Finish Date: 2010

Detailed Project Budget Information (1000s)

	2004	2005	2006	2007	2008	2009	2010	Balance to complete	Total
Federal	20	4,344	970	679	853	853	655	0	8,374
State									0
Tribal	0	4,343	970	679	852	426	174	0	7,444
Total	20	8,687	1,940	1,358	1,705	1,279	829	0	15,818

Contact: Cherise Maples, Director
 Environmental Resource Management Department
 Seminole Tribe of Florida

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Surface Water Management
Project Name: Seminole Tribe Water Conservation Project for the Big Cypress Reservation
Project ID: 1717
Lead Agency: Seminole Tribe of Florida
Authority: Tribal Council Resolution/ USDA PL-53-866

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s):

This network of surface water management structures will produce the following substantial restoration, preservation, and protection benefits and will do so immediately and independently of the completion of any other projects:

Remove phosphorus and other pollutants from water leaving the Reservation and flowing to the Big Cypress National Preserve into Mullet Slough to the Everglades Protection Area. The removal of these pollutants will be achieved using natural treatment processes in pretreatment cells and water resource areas (WRA's). Unlike the stormwater treatment areas in the Everglades Construction Project, the Tribe's WRA's will take advantage of the natural treatment processes and will serve additional functions of water storage and conveyance.

Rewater the Big Cypress National Preserve. This project will provide the opportunity to restore more natural hydroperiods in the Big Cypress National Preserve. The clean water sent in a sheetflow over the Preserve and into Mullet Slough will improve the hydrology in the Everglades Protection Area as well as convey and store irrigation water. To make use of water provided by the SFWMD to replace the Tribe's diverted Compact water rights, the Tribe needs to be able to move and store such water, when it is available. Water conveyance improvements and irrigation storage cells will move and store the Compact water converted for Everglades restoration. This diversion allowed for treatment of water flowing to the Everglades Protection Area.

Provide improved flood control. To prevent extended periods of flooding and to limit downstream impacts of flooding, stormwater must be controlled. Stormwater attenuation areas will detain water from large storm events.

Project Synopsis:

The Seminole Tribe's Big Cypress Reservation is located in Hendry and Broward Counties, directly north of the Big Cypress National Preserve and the federal Miccosukee Reservation. This project provides for the design and construction of water control, management, and treatment facilities in Basins 5, 6 & 7 composing the eastern portion of the Big Cypress Reservation. The project elements include conveyance systems, including major canal bypass structures, irrigation storage cells, and water resources areas. This project is designed to meet 50 ppb. phosphorus, which is the current performance level designed to be achieved by the Everglades Construction Project. Should design performance levels for phosphorus become more stringent, this project is designed to be able to incorporate additional technology to meet stricter levels. This project will enhance the hydroperiod in Big Cypress National Preserve through Mullet Slough and improve the water quality in the Everglades Protection Area.

Current Status:

An EIS has been completed for the project. No activities are planned for Basins 5, 6 and 7.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Cost: \$60,000,000

Project Schedule:

Start Date: 2002
 Finish Date: 2012

Detailed Project Budget Information

	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
Federal	1,500	3,500	3,500	3,500	3,500	8,000	12,500	0	0	36,000
Tribal	0	1,625	1,625	1,625	1,625	4,000	6,400	7,100	0	24,000
Total	1,500	5,125	5,125	5,125	5,125	12,000	18,900	7,100	0	60,000

Contact: Cherise Maples, Director
 Environmental Resource Management Department
 Seminole Tribe of Florida

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration, Water Quality
Project Name: STA-1 Inflow and Distribution Works
Project ID: 1719
Lead Agency: South Florida Water Management District
Authority: Florida's Everglades Forever Act

Strategic Plan Goal(s) Addressed: Getting the Water Right

Measurable Output(s): Reduce phosphorus levels in outflows from the STAs as directed in the Everglades Forever Act.

Project Synopsis: STA-1 Inflow and Distribution Works is located in Western Palm Beach County, just north of the Water Conservation Area No. 1 (Loxahatchee National Wildlife Refuge). This project redirects the discharge from S-5A Pump Station via the L-40 and L-7 Borrow Canals to STA-1 West and STA-1 East. The project scope includes the construction of four water control structures (G-300, G-301, G-302, G-311), and associated bypass canals, a separation levee extending from L-7 to L-40 and an inflow canal and perimeter levee leading to the STA-1W project.

* **Cost (Estimate):** Total: \$ 12,679,955
 (1) Project Development: \$ 1,090,618
 (2) Implementation: \$ 11,589,337
 Operations and Maintenance:\$ Included with STA-1 West

Project Schedule:

Completion Date: September 2005 (including structure G-311, inflow structure for STA-1E)

	FY 1994 - FY 2005
Project Development	
Land Acquisition	
Implementation	
Operations and Maintenance	

* Detailed Project Budget Information

	Actual FY 1994-05	Total
Federal		
State	\$12,679,955	\$12,679,955
Tribal		
Local		
Other		
Total	\$12,679,955	\$12,679,955

- (7) Cost data reflects actual inception-to-date expenditures through September 30, 2005 and current preliminary cost estimate projections.
- (8) Project Development includes Design Phase [contracts & staff costs] costs.
- (9) Implementation includes all Construction [contracts & contingency] and Construction Management [contracts & staff costs] costs.

Contact: Steve Poonasingh

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Northern Everglades and Estuaries Protection Program
Project Name: Hybrid Wetland Treatment Technology
Project ID: 1723
Lead Agency: FDACS, State of Florida
Funding Source: State General Revenue

Strategic Plan Goal(s) Addressed: 1-B-2, Other Related Water Quality Projects

Measurable Output(s): Estimated annual phosphorus load reduction is 4 metric tons for six Hybrid Wetland Treatment Technology (HWTT) systems.

Project Synopsis: In 2007, the Florida legislature enacted the Northern Everglades and Estuaries Protection Program (NEEPP) (*Section 373.4595, F.S., 2007*), which expands the Lake Okeechobee Protection Act to the entire Northern Everglades system, including the Lake Okeechobee watershed as well as the Caloosahatchee and St. Lucie rivers and estuaries. This project was initiated by the State of Florida under NEEPP. It combines the use of both wetland and chemical treatment components to remove nutrients from surface waters. This project was jointly initiated in 2007 by the SFWMD and FDACS to demonstrate the technical feasibility and cost effectiveness of this technology.

In 2008, four HWTT systems were constructed (Nubbin Slough, Mosquito Creek, Ideal Grove 2, Larson Lagoon) and optimization efforts were initiated. Three of the facilities are continuous flow systems while the fourth (Larson Lagoon) was used for batch treatment of waters with high nutrient levels but is no longer operational. In 2009, two additional systems were constructed on Wolff Ditch and Lemkin Creek on a District-owned parcel, with operations beginning in late 2009. During 2010 and 2011, a 10 cfs HWTT facility was constructed at the District's Taylor Creek/Grassy Island property with the optimization monitoring period beginning in late 2011. In 2012, Phase II of the Grassy Island HWTT facility increased the treatment capacity of the facility from 10 to 20 cfs. A third and final expansion to increase the treatment capacity of the facility from 20 to 30 cfs was completed by June 2013. In 2014 a seventh HWTT facility is under permit review for construction in the Bessey Creek watershed located in Martin County.

Current Status: Operations continue on the six current sites (Nubbin Slough, Mosquito Creek, Ideal Grove 2, Wolff Ditch, Lemkin Creek and Grassy Island) providing phosphorus concentration reductions ranging from 60 to 90 percent. The Phase II operations permit was issued by FDEP on November 29, 2012, which authorized operations up 20 cfs. Construction of Phase III was completed on June 14, 2013. The newly expanded Taylor Creek/Grassy Island facility will commence operation at 30 cfs in 2014.

Total Estimated Project Cost for Project: \$24,484,000

Project Schedule:

Start Date: October 2007

Finish Date: On going

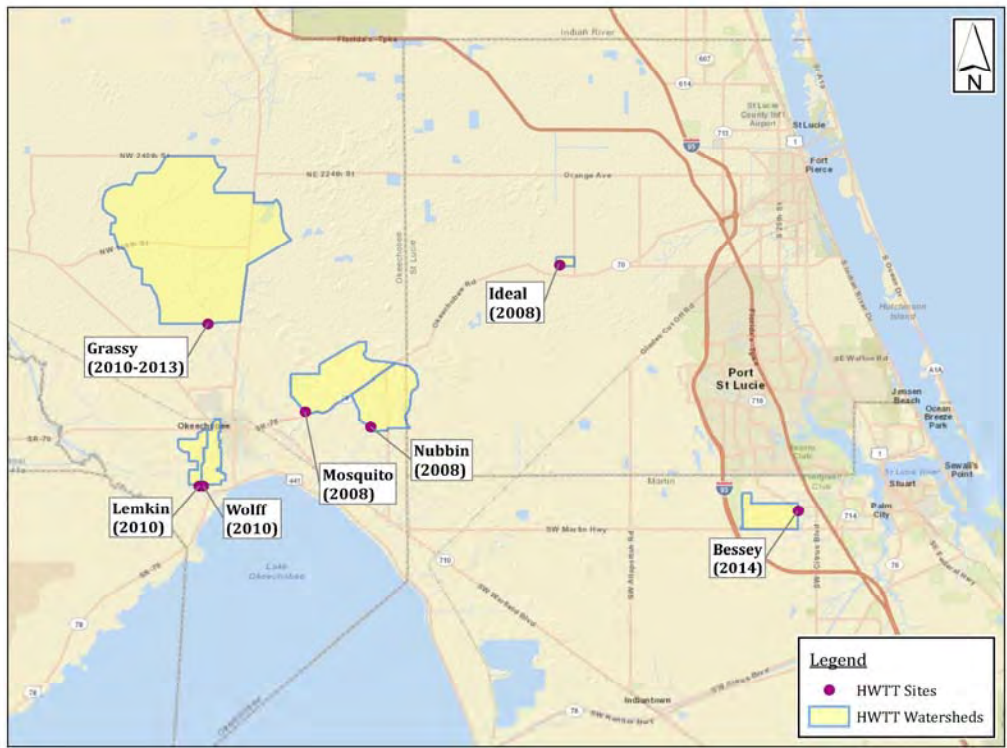
	Expenditures 2008 - 2014
FDACS	\$24,484,000
TOTAL	\$24,484,000

Project sheet updated in 2014

Contact: FDACS



HWTT Facilities in the Northern Everglades Watershed



Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Northern Everglades and Estuaries Protection Program
Project Name: Local Cost-Share Projects with Martin County
Project ID: 1724
Lead Agency: SFWMD, State of Florida and Martin County
Funding Source: Lake Okeechobee Trust Fund

Strategic Plan Goal(s) Addressed: 1-B-2, Other Related Water Quality Projects

Measurable Output(s): Improves hydrology, water quality and aquatic habitats in the St. Lucie Watershed. Also reduces sediment and nutrient loading to the St. Lucie River and Estuary and increases basin storage and treatment.

Project Synopsis: The State of Florida, the SFWMD, and Martin County have completed five water quality improvement projects under a unique cost share agreement as part of the Northern Everglades and Estuaries program. These projects provide water quality treatment through construction of stormwater detention/retention areas and marsh filtration areas prior to discharge.

The five projects completed through the Martin County partnership are:

Phase III of the Old Palm City Stormwater Quality Improvement Project developed a neighborhood stormwater quality management system including construction of two STAs.

The **Manatee Pocket Dredging Project** was designed and constructed to improve the water quality in the Manatee Pocket of the St. Lucie Estuary.

The **North River Shores Sewer System** provides sanitary sewer service to approximately 450 single-family and multi-family parcels of land in the North River Shores area. The project enhances water quality in the North Fork of the St. Lucie River by eliminating nutrient loading from septic systems.

The **Manatee Creek Water Quality Retrofit** provides additional water quality treatment for drainage from 833 acres of residential, commercial and industrial development that discharges into the Manatee Pocket of the St. Lucie Estuary.

The **Rio St. Lucie Stormwater Retrofit** captures sediments and nutrients prior to discharging in the middle section of the St. Lucie Estuary through the construction and installation of exfiltration trench and a nutrient separating baffle box in a 45-acre residential/mixed use basin.

Current Status:

All five projects are completed and operational.

Total Estimated Project Cost: \$25,977,000

Project Schedule: **Start Date:** Contract execution date for first contract - June 27, 2008
 Finish Date: Expiration date for last contract – May 26, 2012

Actual Expenditures to Date by SFWMD:

	2008	2009	2010	2011	2012	2013	2014	Total to Date
SFWMD	-	1,151,834.80	167,316.56	4,902,780.37	2,415,876.85	0	310,000	8,947,808.58

Contact: Kathy LaMartina, SFWMD

Project Name: C&SF: CERP Strazzulla Wetlands (OPE)

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Babcock Ranch
Project ID: 2102
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): 73,542 Acres acquired

Project Synopsis: The Babcock Ranch project consists of approximately 91,361 acres in Charlotte and Lee counties. Acquisition of would assist in the creation of a wildlife corridor that would span from Lake Okeechobee to the Gulf of Mexico. The majority of the project area consists of mesic flatwoods with the center of the project dominated by Telegraph Swamp. This ten thousand acre swamp drains most of the project area. Portions of the project provide habitat for the endangered red-cockaded woodpecker, crested caracara, and numerous other plants and animals. The project is proposed primarily as a less-than-fee simple acquisition a portion of the project will be acquired in full fee title. The evaluation team visited the project on September 25, 2001.

The majority of the Babcock Ranch project lies in southeastern Charlotte County; a small part extends into northeastern Lee County. It is contiguous with Fred C. Babcock-Cecil M. Webb Wildlife Management Area (Babcock-Webb WMA) for approximately 6 miles (mostly Babcock Family Reserve portion; proposed Curry Lake conservation easement is contiguous for 0.75 mile) on the west, Fisheating Creek Florida Forever project for approximately 3 miles on the east, and Caloosahatchee Regional Park for approximately 1.5 miles on the south. Bright Hour Watershed conservation easement is situated approximately 12 miles to the north, Hall Ranch Florida Forever project (contiguous with Babcock-Webb WMA) is contiguous with the Babcock Family Reserve portion for approximately 3 miles (it is ca. 4 miles to the northwest of the proposed Curry Lake conservation easement), Hickey Creek Mitigation Park Wildlife and Environmental Area is located less than 1.5 miles to the south, Moya Sanctuary is located less than 1 mile east of the southeast boundary of the proposal, and the Caloosahatchee Ecoscape Florida Forever project and Okaloacoochee Slough State Forest lie 10.5 miles and 15 miles, respectively, to the southeast. **This project has been completed.**

Cost: Project size is 73,542 acres. 73,542 acres have been acquired at a cost of \$350,000,000 Land Acquisition.

Project Schedule:

Start Date: 2001

Finish Date: 2007

Detailed Project Budget Information (\$1000)

Expenditures Thru 2007	
Federal	
State*	308,461
Tribal	
Local	41,538
Total	350,000

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Biscayne Coastal Wetlands
Project ID: 2106
Lead Agency: South Florida Water Management District, Miami-Dade County and Florida Communities Trust
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 1,995 Acres

Project Synopsis: The Biscayne Coastal Wetlands are divided into three units that total 1,995 acres. The units lie east of L-31E canal, and adjacent to other protected lands acquired as part of Biscayne National Park and Homestead Bayfront Park. All are a mixture of red, black and white mangroves. The three units appear to be in good condition and relatively exotic-free, except along the western edge and along mosquito ditches, where there are Brazilian Pepper and Australian Pine. Acquisition of these areas would add another layer of protection to Biscayne National Park and provide opportunities for a better distribution of fresh water from L-31E. Some of the properties in this land acquisition project are necessary for the Biscayne Bay Coastal Wetlands-Phase 1, CERP Project.

Cost: Project size is 1,995 acres.
1,793 acres acquired at a cost of \$20,878,500.
202 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1998
Finish Date: 2019

Detailed Project Budget Information (1000s)

	Expenditures Thru 2019
Federal	
State*	19,390.5
Local	1,488
Total	20,878.5
Adjusted Total	0.523915

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 1116 in Goal 1. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Cayo Costa
Project ID: 2110
Lead Agency: FDEP
Authority: CARL Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): 1,954 Acres acquired

Project Synopsis: The project area, involving 1,954 acres, includes Cayo Costa and North Captiva, both part of a small chain of barrier islands that provide protection for Charlotte Harbor, one of Florida's most productive estuaries. The natural communities within the project are in excellent condition and have high species diversity; some may be unique to these islands. This project contains several archaeological and historical sites. Cayo Costa Island is subdivided into small lots and is threatened by rapid residential development. **This project has been completed.**

Cost: Project size 1,954. All acres acquired at a cost of \$29,002,346.

Project Schedule:

Start Date: 1980
Finish Date: 2004

Detailed Project Budget Information (1000s)

	Expenditures Thru 2004
Federal	
State	\$29,002.346
Tribal	
Local	
Other	
Total	\$29,002.346

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Charlotte Harbor Estuary/Flatwoods/Cape Haze
Project ID: 2111
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 12,305 Acres

Project Synopsis: The project area, located northwest of Fort Myers in Charlotte and Lee Counties, includes 12,305 acres containing the largest and highest quality slash-pine flatwoods left in Southwest Florida. The area contains pockets of old growth that provide habitat for red-cockaded woodpeckers, black bears, and bald eagles, and an occasional Florida panther ranges in the area. Additionally, the tract provides habitat for rare plant communities. Several drainages flow through these flatwoods into the Charlotte Harbor Aquatic Preserve.

Cost: Project size 12,305**.
11,357 acres acquired at a cost of \$21,366,454
948 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1986
Finish Date: 2019

Detailed Project Budget Information (\$1000s)

	Expenditures Thru 2019
Federal	
State*	20,759.039
Tribal	
Local	607.415
Other	
Total	21,366.454

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Habitat and Species
Project Name: Cypress Creek/Loxahatchee
Project ID: 2172
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 4,374 Acres

Project Synopsis: Cypress Creek/Loxahatchee project is located in southern Martin and northern Palm Beach Counties, near lands recently acquired in Pal-Mar, and adjacent to Jonathan Dickinson State Park. It is a mixture of land uses and community types. Nearly 3,000 acres are mostly undisturbed natural area, containing a mixture of pine flatwoods, cypress swamps, depression marshes, and wet prairies. This area forms the headwaters of Cypress Creek, which drains to the Northwest Fork of the Loxahatchee River. The remainder of the site is cleared and drained for intense agriculture, including row crops and citrus.

Cost: Project size is 4,374 acres.
4,184 acres have been acquired at a cost of \$64,630,767.
190 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 2002
Finish Date: 2019

Detailed Project Budget Information (\$1000s)

Expenditures Thru 2019	
Federal	
State**	35,407.660
Tribal	
Local	29,223.107
Other	
Total	64,630.767

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Dupuis Reserve Land Acquisition
Project ID: 2116
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 21,878 Acres

Project Synopsis: The Dupuis Reserve encompasses 21,875 acres in northwestern Palm Beach and southwestern Martin Counties. The property is interspersed with numerous ponds, wet prairies, cypress domes, pine flatwoods, and remnant Everglades marsh. Dupuis is actively managed by the District and the Florida Fish and Wildlife Conservation Commission. Numerous public use opportunities are available, including hiking, horseback riding, hunting, fishing, and bicycling. Total project acreage is 21,878 acres. **This project has been completed.**

Cost: Project size is 21,878 acres.
21,878 acres have been acquired at a cost of \$23,016,601

Project Schedule:

Start Date: 1985
Finish Date: 1986

Detailed Project Budget Information (\$1000)

	Expenditures Thru 1986
Federal	
State	23,016.601
Tribal	
Local	
Other	
Total	23,016.601

Contact: Wanda Caffie-Simpson

Additional information available at www.sfwmd.gov under the heading "Major Projects"

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Frog Pond/L31N
Project ID: 2123
Lead Agency: Florida Department of Environmental Protection
Authority: CARL Program

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): 10,450 Acres acquired

Project Synopsis: Lands border Everglades National Park and are considered critical to the Park's ecosystem, particularly Shark River Slough. The project's water storage capacity helps to prevent excessive flooding and serves as a recharge area for well fields in South Dade. The area is highly vulnerable to development pressure. **This project has been completed.**

Cost: Project size 2,484 acres. 2,484 acres have been acquired at a cost of \$20,005,367.
0 acres remaining to be acquired.

Project Schedule:
Start Date: 1982
Finish Date: 2007

Detailed Project Budget Information (1000s)

	Expenditures Thru 2007
Federal	799
State*	19,206.367
Tribal	
Local	
Other	
Total	20,005.367

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

*** A portion of the acres and costs on this project sheet overlap with Project ID 1300 in Goal 1. The Adjusted total compensates for this overlap by allocating the appropriate costs to this project.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Indian River Lagoon Blueway**
Project ID: 2124
Lead Agency: Department of Environmental Protection and South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 2,301 Acres

Project Synopsis: This project consists of wetlands, dominated by red and black mangroves, with a few freshwater wetlands.

This acquisition is part of a larger effort by several counties in both the SFWMD and St. Johns River WMD to protect, preserve and restore the Indian River Lagoon. These lands represent the only two undeveloped parcels along the Indian River in St. Lucie County that are not in public ownership. Mosquito control impoundments are present on both tracts. Public ownership of these parcels would allow installation of operable water control structures that allow flushing of the mosquito control impoundments during most of the year. This flushing will provide an important source of mangrove detrital matter, which is critical to the health of the estuary. Public ownership will also prevent aerial applications of chemical pesticides for mosquito control. In 1997, protection was expanded to include lands in Martin County as well.

Cost: Project size 2,301 acres.
All acres have been acquired by the state at a cost of \$49,387,018.

Project Schedule:

Start Date: 1998
Finish Date: Upon completion

Detailed Project Budget Information (dollars in thousands)

	Expenditures Thru 2020
Federal	3,332.074
State*	43,155.760
Tribal	
Local	2,899.184
Other	
Total	49,387.018

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

**This project is not entirely within SFWMD; the numbers here are that portion of the project within the SFWMD. Expenditures are pro-rated for that portion of the project.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Juno Hills/Dunes
Project ID: 2125
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 590 Acres

Project Synopsis: This 590-acre site in Palm Beach County contains one of the largest and best remaining examples of the now rare coastal scrub. The extremely rare four-petal pawpaw, known only from a few sites in the Southeast Florida coastal scrub, and at least three other rare species of scrub plants occur in the Juno Hills project. Such rare animals as the scrub jay, scrub lizard, gopher tortoise, and red widow spider also inhabit the scrub here. Endangered sea turtles nest on the Atlantic beach/ dune portion of the property. A remnant portion of coastal hammock is located west of the dune system. Scrubby slash pine flatwoods, disturbed basin swamps, and estuarine tidal swamps cover parts of the project area.

Cost: Project size 590 acres.
576 acres have been acquired at a cost of \$41,892,718.
14 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1994
Finish Date: 2019

Detailed Project Budget Information (\$1000s)

Expenditures Thru 2019	
Federal	
State*	15,023.556
Tribal	
Local	26,869.162
Other	
Total	41,892.718

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Jupiter Ridge
Project ID: 2176
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 280 Acres

Project Synopsis: The Jupiter Ridge Natural Area is one of the best remaining examples of the Florida Scrub ecosystem in Palm Beach County. Less than 2% of the historic Florida scrub still exists in the county, making preservation of this endangered natural community extremely important. This 287-acre natural area is located in the Town of Jupiter. It is bordered on the north by commercial development, on the east by U.S. Highway 1, on the west by the Intracoastal Waterway, and on the south by the Bluffs residential development. Small areas of scrubby flatwoods, mangrove swamp and freshwater wetland ecosystems also are present. These diverse habitats support many threatened and endangered species.

Cost: Project size is 280 acres.
271 has been acquired for a cost of \$23,099,950
9 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1991
Finish Date: 2019

Detailed Project Budget Information (\$1000s)

	Expenditures Thru 2019
Federal	
State*	\$11,047.600
Tribal	
Local	\$12,052.350
Other	
Total	\$23,099.950

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Kissimmee Prairie Ecosystem
Project ID: 1305
Lead Agency: Florida Department of Environmental Protection/South Florida Water Management District
Authority: CARL/Save Our Rivers

Strategic Plan Goal(s) Addressed: 1.A.3 and 2.A.1

Measurable Output(s): 38,282 Acres Acquired

Project Synopsis: This project involves acquisition and restoration of wetland and dry prairie habitat in Okeechobee County. The SFWMD and FDEP purchased 38,282 acres of land in 1997 for conservation as the Kissimmee Prairie State Preserve. Restoration has been initiated on the Preserve as well as the adjacent 7,315-acre Ordway-Whittell Kissimmee Prairie Sanctuary owned and managed by the National Audubon Society. The project will restore 13,100 acres of wetlands that were over drained or over impounded by agricultural activities. In addition, the project will enhance another 2,625 acres of wetlands and 9,500 acres of associated dry prairie habitat. Restoration will be accomplished by removing 39.3 miles of ditches and dikes to return sheet flow across the land. Enhancement will include removal of unwanted or invasive vegetation from wetland and dry prairie habitats.

The purpose of the land acquisition project is to preserve the unique wetland and dry prairie habitats that were in agriculture and cattle land use and, using a five-year federal grant, restore and enhance these lands. Approximately 5,000 acres of the project hydraulically linked with the Kissimmee River will be reconnected, thereby restoring wetland habitat to regain historical biological diversity. The remaining 40,000 acres of the project in the project area contain extensive wetland habitats and excellent examples of the dry-prairie community type, which is recognized by the Florida Natural Areas Inventory as endangered at state and global levels. Because of the conversion of similar lands to citrus and improved pasture throughout central Florida, the Kissimmee Prairie Ecosystem, in combination with the adjacent Air Force's Avon Park Bombing Range and Audubon's Kissimmee Prairie Sanctuary, will form the largest region of dry prairie in public ownership in the State. Its preservation is the most important step in the recovery of the federally endangered Florida grasshopper sparrow. The endangered whooping crane, Everglades snail kite, and the woodstork utilize the habitats of the project area. Protection of these lands will also provide habitat for the following threatened species: southern bald eagle, Audubon's caracara, Florida scrub jay, and the eastern indigo snake. In addition, the project area contains habitat that supports over 800 species of plants and animals. **This project has been completed.**

Cost: Total: Project size 38,282 acres.
38,282 acres have been acquired at a cost of \$21,953,790.

Project Schedule:

Start Date: 1996
Finish Date: 1997

Detailed Project Budget Information (\$1000s)

	Through 2011	Total
Federal		
State	21,953.790	21,953.790
Total	21,953.790	21,953.790

Hyperlink: N/A
Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration
Project Name: Kissimmee River (Lower Basin) Land Acquisition
Project ID: 2127
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 75,617 Acres

Project Synopsis: The Lower Basin project includes those lands in the historic river floodplain and along the C-38 canal in Pools B, C and D; Pool A, Chandler Slough, and Istokpoga Canal Basin; all of which are components of the Kissimmee River Restoration Project.

Cost: Project size is 75,617 acres
72,327 acres have been acquired for a cost of \$177,870.261.
3,290 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1985
Finish Date: TBD

Detailed Project Budget Information (1000s)

	Expenditures Thru 2019
Federal	
State**	177,870.261
Tribal	
Local	
Other	
Total	177,870.261

*Total includes lands for several components of the Kissimmee River Restoration project.

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrological Restoration
Project Name: Kissimmee River (Upper Basin) Land Acquisition (a/k/a Kissimmee Chain of Lakes)
Project ID: 2128
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Getting the Water Right

Measurable Output(s): Target 38,591 Acres

Project Synopsis: In the early 1990s it was determined that not enough water would be available in the upper chain of lakes to provide year round base flow for the restored Kissimmee River. As a result the scope of the Kissimmee River Restoration project includes the acquisition of land around the shoreline of the Kissimmee Chain of Lakes between elevations 52.5' and 54.0'. This land is needed to support the KRR Headwaters Revitalization Regulation Schedule, which will raise the seasonal high stage in Lakes Kissimmee, Hatchineha and Cypress 1.5' to 54.0' NGVD. This project is completed.

Cost: Project size is 38,591 acres
 35,416 has been acquired for a cost of \$86,156,014.
 3,175 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1990
 Finish Date: TBD

Detailed Project Budget Information (\$1000s)

	Expenditures Thru 2019	Balance to complete	Total*
Federal			
State**	86,156.014		TBD
Tribal			
Local			
Other			
Total	86,156.014		TBD

*The total includes Kissimmee River Restoration Project Lands.

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: **Lake Walk-in-Water Land Acquisition**
Project ID: 2130
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 4,009 Acres

Project Synopsis: The Lake Walk-in-Water project covers land between the northeast shore of lake Weohyakapka (Walk-in-Water) and SR60. The retirement communities of Nalcrest and Fedhaven border the property to the west and the community of Indian Lake Estates lies to the south. The project has extensive frontage along SR60 and Lake Water-in-Water and contains a large expanse of dry prairie, interspersed with small, isolated depression marshes a very large basin marsh along the highway, and large pine stands that have grown back since being logged in the 1920s. In 1999, the District and Polk County partnered to make the initial 4,000 acre purchase. The project is historically significant Town of Sumica. Polk County actively manages the property with financial assistance from the District. The total project acreage is 4,009 acres and all have been acquired. **This project has been completed.**

Cost: SFWMD does not make cost projections on SOR projects

Project Schedule:

Start Date: 1995

Finish Date: 1999

Detailed Project Budget Information (1000s)

	Thru 1999	Total
Federal		
State	\$1,975	\$1,975
Tribal		
Local	\$1,975	\$1,975
Other		
Total	\$3,950	3,950

Additional information available at www.sfwmd.gov under the heading "Major Projects"

Contact: Wanda Caffie-Simpson

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Loxahatchee River Land Acquisition
Project ID: 2131
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Restore, Preserve and Protect the Natural Habitat and Species

Measurable Output(s): Target 1,915 Acres

Project Synopsis: This 1,915-acre project connects to the southern end of Jonathan Dickinson State Park, and contains lands in Palm Beach and Martin Counties. The project includes the historic floodplain of the Northwest Fork of the Loxahatchee River, a National Wild and Scenic River.

The purpose of this project is to protect the outstanding natural and cultural values of Florida's first federally designated Wild and Scenic River. Public ownership of this property will prevent direct disruption of surface and groundwater flows to the northwest Fork, and increase minimum flows to the Loxahatchee River, which will affect downstream movement of the saltwater wedge during dry conditions. A total of 1,915 acres are in public ownership; the District has acquired 1,547 acres and Palm Beach County owns 367 acres within the project area. **This project has been completed.**

Project is completed.

Cost: Total \$19,738,769.

Project Schedule:

Start Date: 1984
Finish Date: 2001

Detailed Project Budget Information (\$1000)

	Thru 1999	Total
Federal		
State	\$11,792,373	\$11,792,373
Tribal		
Local	\$7,946,396	\$7,946,396
Other		
Total	\$19,738,769	\$19,738,769

Additional information available at www.sfwmd.gov under the heading "Major Projects"

Contact: Wanda Caffie-Simpson

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Loxahatchee Slough Land Acquisition
Project ID: 2132
Lead Agency: South Florida Water Management District/Palm Beach County
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 13,099 Acres

Project Synopsis: The Loxahatchee Slough Project is located in Palm Beach County and covers approximately 13,099 acres. It contains a mixture of habitat types, including pine flatwoods, cypress forest, and wet prairie. The present land use is native range. These lands are adjacent to the Loxahatchee Slough Corridor, an area that has been pledged for protection by the current landowner. Palm Beach County will lead the land management effort for this project and holds title to land.

The purpose of this project is to provide additional wetland and upland buffer to the Loxahatchee Slough Corridor and to preserve critical foraging and nesting sites for wildlife in an area that is undergoing rapid urban development. This system is important for storing surface water runoff and providing groundwater base flow to Canal 18 and the Loxahatchee River. The slough, which is the initial headwaters of the Loxahatchee River, can also spill over to the south and contribute to the Everglades watershed under certain hydrologic conditions.

Cost: Project size is 13,099 acres.
12,984 acres acquired for \$74,447,218.
115 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1996
Finish Date: Upon Completion

Detailed Project Budget Information (\$1000)

	Expenditures Thru 2019
Federal	
State*	45,283.100
Tribal	
Local	29,164.118
Other	
Total	74,447.218

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Nicodemus Slough Land Acquisition
Project ID: 2137
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 2,231 Acres

Project Synopsis: Nicodemus Slough consists of wet prairie, broadleaf marsh, and prairie hammock south of the Herbert Hoover Dike (LD-3) and west of State Road 78. Until recently, the construction of the Herbert Hoover Dike, coupled with the maintenance of lower stages in Lake Okeechobee, resulted in a shortened hydroperiod and general lowering of water levels in Nicodemus Slough. This in turn altered vegetative patterns on the property and allowed the spread of transition and upland species. **This project has been completed.**

Cost:	Total	\$1,894,501
	Project Development	N/A
	Land Acquisition	\$1,894,501
	Implementation	N/A
	Operations and Maintenance	N/A

Project Schedule:

Start Date: 1981
 Finish Date: 1988

Detailed Project Budget Information (1000s)

	Thru 1999	Total
Federal		
State	\$1,894.5	\$1,894.5
Tribal		
Local		
Other		
Total	\$1,894.5	\$1,894.5

Contact: Wanda Caffie-Simpson
 Additional information available at www.sfwmd.gov under the heading "Major Projects"

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Okaloacoochee Slough
Project ID: 2141
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 35,201 Acres

Project Synopsis: This site contains more than 35,201 acres in Hendry and Collier Counties. It is a major tributary to Fakahatchee Strand and Big Cypress National Preserve. It is dominated by a central slough, consisting of sawgrass marshes and wet prairies, with fringes of live oak/cabbage palm hydric hammocks. Most of the pines have been logged, but otherwise the site is pristine. Okaloacoochee Slough is critical habitat for the Florida panther.

Some exotic treatment is needed to control minor infestations of Brazilian pepper and melaleuca. Hydrologically, the property remains undisturbed.

Cost: Project size is 35,201 acres.
34,985 acres have been acquired at a cost of \$20,570,673.
216 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1996
Finish Date: Upon completion

Detailed Project Budget Information (\$1000s)

	Expenditures Thru 2019
Federal	
State*	20,570.673
Tribal	
Local	
Other	
Total	20,570.673

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Paradise Run Land Acquisition
Project ID: 2146
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 3,841 Acres

Project Synopsis: This 3,841 acre project lies west of canal C-38, between Water Control Structure S-65E and Lake Okeechobee in Glades and Okeechobee Counties. Current land use is predominantly improved pasture and cattle grazing but agricultural activities in the area are intensifying as exemplified by new, nearby row crops (potatoes), sod extraction, and citrus. The remnant river run and adjacent wetlands remain largely intact but have no continuous water flow; hence water quality (especially dissolved oxygen) has become poor and organics have accumulated deeply in the remnant river run. This area consistently has greater wading bird and waterfowl use than most any area of the Kissimmee River. Its close proximity to Lake Okeechobee puts it in foraging flight distance of the large wading bird rookeries. Restoration would be fairly simple because the remnant river run and wetlands are largely intact, and water could gravity flow from Pool E (elevation 21 feet msl) one-half mile to Paradise Run (elevation 16 feet msl). The C-38 canal would be bypassed.

Cost: Project size 3,841 acres.
3,447 acres have been acquired at a cost of \$4,908,582.
395 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1998
Finish Date: TBD

Detailed Project Budget Information (1000s)

Expenditures Thru 2019	
Federal	
State*	\$4,908.582
Tribal	
Local	
Other	
Total	\$4,908.582

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Rookery Bay
Project ID: 2149
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2 - Restore and Enhance the Natural System

Measurable Output(s): Target 18,721 acres

Project Synopsis: This project consists of 18,721 acres in Collier County and provides an outstanding example of a subtropical estuarine system. Its mangroves shelter important nesting colonies of water birds, and feed and protect many aquatic animals, which are the foundation of a commercial and sport fishery. The natural communities associated with the estuary are relatively undisturbed and range from mangrove and marsh to flatwoods and maritime hammock. As part of the national estuarine research reserve system, Rookery Bay is representative of the West Indian biogeographic type. The area is believed to have good potential for archaeological investigations. The area is threatened by dredging and filling associated with the rapid development of the area.

Cost: Project size 18,721 acres.
18,650 acres have been acquired at a cost of \$49,832,068.
71 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1980
Finish Date: Upon completion

Detailed Project Budget Information (1000s)

	Expenditures Thru 2019
Federal	\$3,500
State*	\$46,332.068
Tribal	
Local	
Other	
Total	\$49,832.068

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: **Rotenberger-Holey land Tract**
Project ID: 2150
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 79,170 Acres

Project Synopsis: The Rotenberger/Holey Lands were historically an integral part of the Everglades hydrological system. The natural communities of the project consisted of shallow sawgrass marshes with tree islands interspersed. Much of the area has been disturbed. Restoration of the area is important to the restoration of the water quality and quantity to the Everglades.

Cost: Project size 79,170 acres.
70,833 acres have been acquired at a cost of \$20,119,775.
8,337 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1984
Finish Date: Upon completion

Detailed Project Budget Information (1000s)

	Expenditures Thru 2019
Federal	
State*	20,119.775
Tribal	
Local	
Other	
Total	20,119.775

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.*

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Southern Glades - Natural Lands
Project ID: 2155
Lead Agency: South Florida Water Management District and Miami-Dade County
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 34,093 Acres

Project Synopsis: This 34,093-acre project is located adjacent to the C-111 Canal, between U.S. 1 and Everglades National Park. The project land is dominated by Everglades sawgrass marsh and tropical hardwood hammock. Land management will be carried out by the SFWMD and Fish and Wildlife Conservation Commission and the land is currently open for public use. This land is needed for the C-111 Canal project and C-111 Spreader Canal CERP project. These projects will benefit the flow of water into Everglades National Park and Northeast Florida Bay.

The project acres under the Florida Forever/SOR program are directed toward the purchase of natural lands acquired for their conservation, preservation value --high quality flood plains, wetlands and uplands that continue providing recreation, water resource protection, and wildlife habitat for future generations. Acres used or to be used for construction of facilities, such as STAs, reservoirs, and impoundments for Critical Restoration Projects (CRP) and Comprehensive Everglades Restoration Plan (CERP) initiatives have been removed from the Natural Lands project boundary.

Cost: Project size: 34,093 acres.
 31,987 acres have been acquired at a cost of \$15,760,227.
 2,106 acres remaining to be acquired. Land acquisition greater than 90% completed.

Project Schedule:

Start Date: 1964
 Finish Date: Upon completion

Detailed Project Budget Information (\$1000)

	Expenditures Thru 2019
Federal	
State*	13,137.432
Tribal	
Local	2,622.795
Total	15,760.227
Adjusted Total	5,046

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 2310. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project name: Southern Golden Gate Estates (Save Our Everglades)- Picayune Strand
Project ID: 2156
Lead Agency: Florida Department of Environmental Protection
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): 55,051 Acres acquired

Project Synopsis: The Southern Golden Gate Estates (SGGE) encompasses an approximately 94 square mile area of sensitive environmental landscape in South Central Collier County. It is an important surface water storage and aquifer recharge area with a unique ecology of cypress, wet and dry prairie, pine flatwoods and hardwood hammock swamp communities; and includes three flowways that contribute freshwater input to the Ten Thousand Island estuary of the western Everglades watershed. The area supports a diversity of wildlife, including at least a dozen endangered and threatened vertebrates as well as a large variety of rare orchids and other air plants. The area is linked hydrologically to the Everglades ecosystem and contains remnants of two large cypress strands, the Lucky Lake and Picayune Strands. The rapid urbanization of southwest Florida is posing a continuous and increasing threat to the wildlife habitat and maintenance of water quality within SGGE. Acquisition of lands within SGGE will preserve large pieces of the South Florida ecosystem. Ultimately, this will contribute to the formation of a continuous public conservation area extending across South Florida from the Gulf Coast to approximately 10 miles from the Atlantic Ocean, protecting the Everglades ecosystem from the encroachment of residential, commercial, and industrial developments.

Cost: Project size 55,051 acres. All acres have been acquired at a cost of \$136,985,518
Land Acquisition: **Completed.**

Project Schedule:

Start Date: 1984
Finish Date: Upon completion

Detailed Project Budget Information (1000s)

	Thru 2015
Federal	38,084.965
State*	98,900.553
Tribal	
Local	
Other	
Total	136,985.518
Adjusted Total	0

*State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects.

** A portion of the acres and costs on this project overlaps with Project ID 2307. The adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: South Fork St. Lucie River Land Acquisition
Project ID: 2153
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Restore, Preserve and Protect the Natural Habitat and Species

Measurable Output(s): Target 184 Acres

Project Synopsis: This project includes 184 acres on the western shore of the upper South Fork St. Lucie River. The property begins approximately 0.75 miles south of State Road 76 and extends approximately 1.25 miles southward.

The purpose of this project is to protect the integrity of the river corridor. River water quality is best maintained when river corridor lands remain in their natural state and are restored and managed to enhance the natural community quality. Prescribed fire has successfully been used as the main restoration tool to improve the condition of degraded communities on this property. Responsibility for management of land is divided between the Department of Environmental Protection and Martin County. **This project has been completed.**

Cost:	Total	\$2,480,000
	Project Development	N/A
	Land Acquisition	\$2,480,000
	Implementation	N/A
	Operations and Maintenance	N/A

Project Schedule:

Start Date: 1995
 Finish Date: 1996

Detailed Project Budget Information (1000s)

	Thru 1999
Federal	
State	\$2,480
Tribal	
Local	
Other	
Total	\$2,480
Adjusted Total	0

** A portion of the acres and costs on this project sheet overlap with Project ID 1101 in Goal 1. The Adjusted total compensates for this overlap by allocating the appropriate costs to this project.

Contact: Wanda Caffie-Simpson
 Additional information available at www.sfwmd.gov under the heading "Major Projects"

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Tibet-Butler Preserve Land Acquisition
Project ID: 2157
Lead Agency: South Florida Water Management District
Authority: Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: Restore, Preserve and Protect the Natural habitat and Species

Measurable Output(s): 439 Acres

Project Synopsis: The Preserve covers 439 acres along the southwest shore of Lake Tibet-Butler in Orange County. The vegetative communities include bay swamp, pine flatwoods, cypress swamp, and smaller areas of xeric oak and freshwater marsh. The Tibet-Butler Preserve site includes approximately 4,000 feet of shoreline on Lake Tibet. Orange County Parks and Recreation Department manages Tibet-Butler Preserve as an environmental education facility. **This project has been completed.**

Cost:

Total	\$3,601,900
Land Acquisition	\$3,601,900

Project Schedule:

Start Date: 1988
Finish Date: 1999

Detailed Project Budget Information (1000s)

Through 1999	
Federal	
State	\$3,601.9
Tribal	
Local	
Other	
Total	\$3,601.9

Contact: Wanda Caffie-Simpson

Additional information available at www.sfwmd.gov under the heading "Major Projects"

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Restoration Program: Habitat and Species
Project Name: Water Conservation Areas 2 and 3
Project ID: 2160
Lead Agency: South Florida Water Management District
Authority: Florida Forever/Save Our Rivers (SOR)

Strategic Plan Goal(s) Addressed: 2.A.1

Measurable Output(s): Target 709,618 Acres of outstanding fee interests

Project Synopsis: The WCAs encompass approximately 709,618 acres in Broward, Dade, and Palm Beach counties in which the SFWMD holds a combination of fee and easement interests. The SOR project is designed to complete the public acquisition of the outstanding fee interests in the project area. Land management is carried out by the Florida Fish and Wildlife Commission and the U.S. Fish and Wildlife Service, under contract to the SFWMD.

The general purpose of these lands is to store floodwater from developed areas adjacent to the WCAs for later use during the dry season. Releases of water from the WCA's during the dry seasonal and, particularly during drought conditions are considered vital to the maintenance of adequate water levels in the coastal canals, wellfields, and Everglades national Park and for the prevention of saltwater intrusion.

Cost: Project size 709,618 acres*.
 706,143 acres have been acquired at a cost of \$26,166,104.
 3,475 acres remaining to be acquired

Project Schedule:

Start Date: 1948
 Finish Date: Upon Completion

Detailed Project Budget Information (dollars in thousands)

Expenditures Thru 2020	
Federal	
State*	26,166.104
Tribal	
Local	
Other	
Total	26,166.104

**State expenditures may include local government contributions on CARL, Florida Forever, FCT and SOR projects. The total project size of the WCA's is 867,000 acres which encompasses WCA's 1, 2 and 3. WCA 1 is reported as the State/SFWMD acquired acres under the ARM Loxahatchee National Wildlife Refuge entry.*

Contact: Marcy Zehnder, mzehnder@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Land Acquisition
Project Name: Yamato Scrub
Project ID: 2161
Lead Agency: FDEP
Authority: Florida Forever

Strategic Plan Goal(s) Addressed: Primary: 2.A.1

Measurable Output(s): Target 217 Acres

Project Synopsis: Predominantly natural communities here are sand pine scrub and scrubby flatwoods. The species richness of the scrub is considered higher than that of any other scrub on the southeast coast. A bargain shared project. **This project has been completed.**

Cost: Project size 217 acres all acquired
Land Acquisition: 217 acres acquired at a cost of \$25,932,850

Project Schedule:
Start Date: 1992
Finish Date: 1996

Detailed Project Budget Information (1000)

	Thru 1999
Federal	
State	17,500
Tribal	
Local	8,432.8
Other	
Total	25,932.8

Contact: Sheryl Boutin, Sheryl.Boutin@dep.state.fl.us

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project ID: 2300 (CERP Project WBS # 39)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/DOI (WRDA 2000)/State

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): An increase of 3,335 acres of habitat extent and connectivity

April 1999 (Restudy) Project Synopsis: Water control structures and the acquisition of 3,335 acres located in Palm Beach County. Expanding wetlands will act as a buffer between higher water stages to the west and lands to the east that must be drained.

Current Project Synopsis: The purpose of this feature is to provide a hydrological and ecological connection to the Loxahatchee National Wildlife Refuge and expand the spatial extent of protected natural areas. This land will act as a buffer between higher water stages to the west and lands to the east that must be drained. This increase in spatial extent will provide habitat connectivity for species that require large un-fragmented tracts of land for survival.

WRDA 2000 dictated that the Federal share for land acquisition in the Loxahatchee National Wildlife Refuge, including the Strazulla tract, should be funded through the budget of the Department of the Interior. The project adheres to the original concept outlined in the Restudy.

Current Status: The transfer of the Strazulla Tract to the US Fish and Wildlife Service Loxahatchee National Wildlife Refuge was completed with a land exchange between the US Fish and Wildlife Service and SFWMD completed in 2017.

Est. Cost: \$ 67,390,000

Project Schedule: Completed

Detailed Project Budget Information (rounded):

Detailed Project Budget Information

	Expenditures Thru FY 2017
Federal	\$355,035
SFWMD	\$142,831
Local	
Total	\$497,866

Contact: Jeff Couch, Ecosystem Projects Section, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Cost estimate information is updated to reflect current price levels in October 2017 dollars. Actual expenditures include all federal expenditures through FY17 (Sept, 2017) and sponsor verified and recorded in kind credit through 4th quarter FY17.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Acme Basin B Discharge (OPE)
Project ID: 2306 (CERP Project WBS # 38)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 2-A.3 **Secondary:** 3-C.2

Measurable Output(s):

365-acre constructed upland/wetland mosaic improved
17,000 acre-feet (ac-ft) per year recaptured for reuse
1,000 acre-feet per year supplement to Lake Worth Drainage District municipal water supply
14,000 acre-feet per year of water conveyance to WCA-2, WCA-3, Everglades National Park, and Shark River Slough

April 1999 (Restudy) Project Synopsis: The concept includes construction of a wetland or chemical treatment area and a storage reservoir with a combined total storage capacity of 3,800 acre-feet located adjacent to the Loxahatchee National Wildlife Refuge in Palm Beach County. Stormwater runoff from Acme Basin "B" will be pumped into the wetland treatment area and then into the storage reservoir, until such time as the water can be discharged into the Loxahatchee National Wildlife Refuge if water quality treatment criteria is met, or into the one of two alternative locations: the Palm Beach County Agricultural Reserve Reservoir (VV) or the combination above-ground and in-ground reservoir area located adjacent to the L-8 Borrow Canal and north of the C-51 Canal (GGG).

Current Project Synopsis: Acme Basin B encompasses approximately 8,680 acres of low-density development with the primary land uses being rural residential lots and nurseries with a substantial presence of stables and other equestrian uses. The primary goal of the Acme Basin B Discharge project is to provide surface water to the refuge that would otherwise be routed through Basin A to C-51 and lost to tide.

In the time period between the Restudy and the start of the Acme Basin B Discharge Project Implementation Report (PIR), the land the Restudy had envisioned for a reservoir was sold to a developer. Thus, due to real estate cost increases, the project changed from an on-site water quality treatment project to a water conveyance project to an off-site water quality treatment area (STA 1E).

Current Status: Federal efforts were discontinued. The SFWMD worked with local interests to expedite design and construction of the Acme Basin B Discharge project, outside the CERP, and was completed in 2010.

Est. Cost: \$5,497,000

Project Schedule:

2002 Planning begun.
2010 Construction completed.

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

Acme Basin B Discharge	Investment Thru 2018	FY
USACE		\$2,238,000
SFWMD		\$3,259,000
Total		\$5,497,000

Hyperlinks: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2018. Investment costs are through FY18 (Sept. 2018) and sponsor verified and recorded in kind credit through 4th quarter FY18.

Additional Information:



Acme Basin B is one of two primary drainage basins within the Acme Improvement District (AID). The AID, a dependent district to the Village of Wellington, is located in central Palm Beach County, Township 43South and 44 South, Range 41 East. Acme Basin B boundaries generally follow Pierson Road to the north, Flying Cow Road to the west, the Arthur R. Marshall Loxahatchee National Wildlife Refuge (Refuge) to the southwest and south and Lake Worth Drainage District (LWDD) to the east.

Project Name: C&SF: Manatee Pass Gates
Construction of Modifications to the C&SF Project features for the Protection of Manatees)

Project ID: 2404

Lead Agency: USACE / SFWMD

Authority: ER 1130-2-540, Environmental Stewardship Operations and Maintenance Policies, 15 November 1996; EP 1130-2-540, Environmental Stewardship Operations and Maintenance Guidance and Procedures, revised 30 November 2001; the Marine Mammal Protection Act of 1972; the Endangered Species Act of 1973 (as Amended) and the approved water control plans and manuals for the Central and Southern Florida Project; Section 203 Flood Control Act (1948) and Section 203 of the Flood Control Act (1958) addresses cost-sharing.

Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – Supports 2.A.3

Measurable Output(s): Structural modifications and operational changes for species protection

Project History: The West Indian manatee is provided protection under the Endangered Species Act of 1973, making it against the law to “harm, harass, kill” etc. any of these animals. After boats, the “operations of spillways and locks are cited as the second leading cause of human related manatee mortalities”. Protection of the manatees at water control structures is a part of the long range recovery goals of the Florida Manatee Recovery Plan required by the Marine Mammal Protection Act (1972), to maintain “the health and stability of the marine ecosystem” and to determine and maintain manatee numbers at “optimum sustainable population” in the southeastern United States.

In the *Central and Southern Florida Project Comprehensive Review Study* (Restudy) section 4.9.1.5 of the Restudy, the Manatee Protection Project is described as follows: “The West Indian manatee (*Trichechus manatus*) is listed as a federally endangered species and is one of the most endangered species in Florida. As a response to recent manatee mortality trends associated with water control structures, this project will provide operational changes and implement the installation of a manatee protection system at seven sector gates at navigational locks near Lake Okeechobee. The beneficial outcome of this project will be the reduction of risk, injury, and mortality of the manatee. The seven sector gates include S-193 at Okeechobee and S-310 at Clewiston on Lake Okeechobee; St. Lucie Lock and Port Mayaca Lock on the St. Lucie Canal; and Moore Haven Lock, Ortona Lock, and W. P. Franklin Lock on the Caloosahatchee River.

The mechanism proposed uses hydro acoustic and pressure sensitive devices that immediately stop the gates when an object is detected between the closing gates. These systems transmit an alarm and signal to stop the gate movement when a manatee is detected. When an object or manatee activates the gate sensors, the gate will stop and open approximately six inches to release a manatee. As a result, a manatee will be able to travel between the open gates. Once the gate opens, the operator can fully close the gate, unless an object remains between the gates. The opening process will repeat the cycle as the sensors are activated again. Due to these structural modifications, manatees will be at a significantly less risk as they encounter locks with sector gate.

Current Project Synopsis: The purpose of this project is to develop and install Manatee Protection Devices on vertical lift gates and sector gates at specific navigation and flood control structures.

The project consists of alternative structural modifications to 23 existing water control structures and locks in the C&SF Project to reduce or eliminate manatee mortalities, associated with their operation. The project is being implemented in two phases; the first phase addresses the addition of pressure sensitive devices at water control structures.

Project 2404 C&SF: Manatee Pass Gates Page 1 of 2

Information for the 2021 Integrated Financial Plan
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The second phase includes acoustic devices at selected sector gate water control structures. These devices reverse the gate closure if a foreign object is detected.

Operation, maintenance, repair, replacement, and rehabilitation responsibilities for each structure differ between Non-Federal and Federal sponsors based on their location. A Project Cooperation Agreement (PCA) for Phase 2 was signed in January, 2005 for the following six sector gates: Moore Haven Lock (S-77), Ortona Lock (S-78), W.P Franklin Lock (S-79), Taylor Creek Lock (S-193), Port Mayaca Lock (S-308B), and S-310.

Current Status: Installation of acoustic devices has been completed and the project is now in operations & maintenance (O&M).

Cost: \$ 17,355,000 (Different cost-sharing parameters exist for each gate, based on modification requests and PCA)

Project Schedule:

2001 Start
2014 Finished



Detailed Project Budget Information (rounded):

Manatee Pass Gates	Obligations Thru FY 2017
USACE	\$15,269,000
SFWMD	\$2,086,000
Total	\$17,355,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration.aspx>

Contact: Jim Hourican, Project Manager, Ecosystem, USACE
James.J.Hourican@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Current status information was provided by the project manager. Cost estimate information is updated to reflect current price levels in October 2017 dollars.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Critical Ecosystems Science Initiative (CESI)
Project Name: Effects of exotic fish on Everglades structure and function: risk assessment
Project ID: 2507
Lead Agency: NPS with USGS interagency agreement

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Exotic Species Strategic Action Framework Goal: 1

Measurable Output(s): 1. A literature review of the life-history characteristics, physiological tolerances, and habitat requirements of non-native fishes in Florida. 2. Fill information gaps of physiological tolerances and potential impacts of non-native species in support of quantitative risk assessment development.

Project Synopsis:

Disturbances outside National Park Service unit boundaries promote invasion by non-native species (Long et al. 2012), and this appears particularly true in Florida. Florida has the second highest number of non-native fish species reported from the freshwaters of any state (Fuller et al. 1999). Since 1965, 17 non-native freshwater fish species have been observed in Everglades National Park (EVER), including eight new species since 2000 (Kline et al. 2014). Sixteen of the 17 species were first established in canals outside the boundaries of EVER prior to colonizing inside (Loftus 1988, Kline et al. 2014) suggesting fish are spreading from canals into EVER marshes (Kline et al. 2014).

Preventing introduction of non-native species into protected natural areas will require management actions outside the NPS unit boundaries. The USGS Natural Resources Preservation Program (USGS NRPP) is supporting the development of a quantitative predictive risk assessment tool to identify fishes that pose the greatest risk of establishing populations within the freshwater marshes of the south Florida National Parks. However, gaps in the knowledge of life history characteristics or physiological tolerances that may influence the likelihood of establishing population in marsh habitats needed to be identified and evaluated. This CESI project supports research to identify and fill gaps in the knowledge of physiological tolerances or potential impacts of select non-native species in south Florida.

Current Status:

The project is completed and a final report was delivered. A literature review was used to identify gaps in the knowledge of biological and ecological variables (e.g. life-history characteristics, physiological tolerances, habitat requirements) of the non-native fishes in Florida. Experimental studies filled gaps in the known temperature tolerance of Spottfin Spiny Eel and Banded Cichlid and the lower lethal temperature limits for all 17 non-native freshwater fish species that have been found in EVER were between 4°C to 16.1°C (Schofield and Kline 2018). The risk of potential impacts of African Jewelfish on the structure and function of simulated marsh communities was examined experimentally. No future status updates.

Project Schedule:

Start Date: September 2013
Finish Date: July 2019

Detailed Project Budget Information

	Expenditures July 2019-June 2020
Federal	\$0
Total	\$0

Contact: Agreement Representative Jeff Kline, EVER; PI Dr. Pamela Schofield, USGS

Program Name: Flood Protection

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Invasive Species Population Management
Project Name: **Thermal infra-red detection of Burmese pythons**
Project ID: 2817
Lead Agency: USDA/ APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Measurable Output(s): Ability of commercial IR units to detect pythons

Project Synopsis: Captive pythons were allowed to bask during the day to accumulate body heat. At sunset, 4 animals tightly secured within nylon mesh snake bags were placed on the ground at varying distances from the IR detectors. One of the detectors was small enough to be taken aloft on an unmanned aerial vehicle should it prove to be able to detect the snakes. The heat signature of each snake was recorded at 10-min intervals until it is no longer visible.

Current Status: Readings were collected and the data are being analyzed, with follow up trials to be determined.

This project is completed.

Project Schedule:

Start Date: 2014

Finish Date: 2015

Detailed Project Budget Information

	Total
Federal	\$23,500
SFWMD	
Local	
Total	\$23,500

Contact: Michael Avery USDA APHIS National Wildlife Research Center

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Invasive Exotic Species Management
Project Name: Melaleuca Quarantine Facility
Project ID: 2828
Lead Agency: U.S. Department of Agriculture – Agricultural Research Service
(here for reference only)
Authority: ARS
Funding Source: DOI and DOA

Strategic Plan Goal(s) Addressed: 2-B.3

Measurable Output(s): Number Biological Agents Approved. Biological control agents for effectively reversing and halting the effects of non-native species on the South Florida habitat.

Project History: *Melaleuca quinquenervia* (Melaleuca) is an invasive, exotic tree that has proliferated in Florida for approximately 100 years and now occupies more than 400,000 acres of wetland, riparian and, to a lesser degree, agricultural, systems in the state. Melaleuca is competitively superior to most, if not all, native plants and rangeland grasses, with infestations resulting in degradation of native wildlife habitats and waterways, including portions of the Everglades National Park, and of the limited grazing lands in South Florida. Biological control agents have the potential of providing greater efficiency and improved economy. Ultimately, they may prove to be the only truly effective large-scale means of reversing and halting the effects of non-native species on the South Florida habitat.

Project Synopsis: This project consisted of constructing a quarantine facility to enable the testing of candidate organisms for biological control and reversal of the spread of exotic plant species. Construction of the quarantine facility was completed after receiving an additional contribution of about \$500K by USDA-ARS and \$400,000 from the South Florida Water Management District. USDA took occupancy of the facility on 19 Jan 2005. It opened March 2005 and was dedicated April 8, 2005. Minor checklist items were finished up at that time. Design problems and shoddy construction by the contractor of critical subsystems are hampered full use of the quarantine areas, but funding for needed repairs had not been identified. Due to a lack of Operations & Maintenance funding, full staffing could not be achieved (\$350,000/yr. estimated need).

Current Status: COMPLETED 2005

Cost: \$ 7,100,000

Project Schedule:

1997 Start
2005 Finish

Detailed Project Budget Information (rounded):

Melaleuca Quarantine	Total Expenditures
Federal	\$6,700,000
State	\$400,000
Total	\$7,100,000

Hyperlink: <http://www.ars.usda.gov/is/pr/2005/050408.2.htm>

Contact: Ted Center

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Invasive Exotic Species Management
Project Name: Estero Bay Aquatic Preserve and Buffer Enhancement and Exotic Removal Project
Project ID: 2830
Lead Agency: FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Authority: Chapter 403, Florida Statutes

Strategic Plan Goal(s) Addressed: 2.B.2

Measurable Output(s): Acres of exotic plants removed

Project Synopsis:

I. Melaleuca removal: Treatment, removal, monitoring and follow-up treatment of 708 acres of Melaleuca within the 10,405 acre Estero Bay Preserve State Park – **PROJECT COMPLETED**

II. Dog Key Exotic Removal: Treatment, removal, monitoring and follow-up treatment of exotic vegetation on Dog Key, a 24 acre island within the Estero Bay Aquatic Preserve and part of the Estero Bay State Buffer Preserve with documented Calusa Indian middens/mounds – **PROJECT COMPLETED**

Cost: Total: \$1.05 million

Project Development:

I. Melaleuca Removal – The initial aerial treatment of 708 acres of melaleuca was completed through funding by the Bureau of Invasive Plant Management (BIPM) at a cost of approximately \$100,000.00. Only the heavily infested monoculture areas were treated, leaving untreated buffers around native plant communities. It will be necessary to hand treat these buffer areas and any unsuccessful initial treatment areas. It is anticipated that \$600,000.00 will be needed for this work. Monitoring and follow-up treatment of this large-scale treatment still needs funding. Smoke from a prescribed fire within these treatment areas (dead) would be a major problem in the Estero development area so actual removal of dead or live trees off site would be preferable. In this case, costs could exceed the \$600,000.00 figure.

Implementation:

I - initial treatment completed in 2001. On the ground treatment of the buffer areas (edges of the treated areas) and any unsuccessful treatment areas should also occur toward the end of 2001 or beginning of 2002. Monitoring and follow-up treatment to continue through 2004 at an estimated cost of \$300,000.00.

Operations and maintenance: Total =2,852 acres treated at a cost \$1,129,214
 Estimated at \$40,000.00 through 2004.

Project Schedule:

Start Date: 1998
 Finish Date: 2004

Detailed Project Budget Information (1000s)

	Total
Federal	
State	
Tribal	
Local	
Other	
Total	\$587.6

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: SFWMD Invasive Animal Management
Project Name: SFWMD Python Removal Program

Project ID: 2831
Lead Agency: South Florida Water Management District
Authority: EFA
Funding Source: Ad valorem

Strategic Plan Goal(s) Addressed: 2:B.4

Measurable Output(s): Number of pythons removed from Everglades landscape

Project Synopsis: The District's Python Removal Program was implemented on March 25, 2017, with the goal of deploying experienced python removal experts to specific areas and compensating them to go out often, collect useful data on search effort, and remove as many pythons as possible from public lands. Twenty-five contractors were selected for the program based upon relevant qualifications. Contractors are paid minimum wage for up to ten hours per day to survey the designated project area for target species and an additional incentive based on length for every animal removed: \$50.00 for the first four feet and an additional per foot above four feet. Contractors are also compensated an additional \$200.00 for each verified, viable nest found in the field. As of August 12, 2019, contractors have conducted over 23,000 survey hours, resulting in the removal of 2392 pythons, with an average of 10.00 hours of surveying per python caught. The mean body length of pythons removed by District contractors was 2.0 meters (6.5 feet), with the largest python being 5.3 meters (17.4 feet). Project area encompasses over 1.2 million acres occurring in Miami-Dade, Broward, Collier, Palm Beach, and Hendry Counties.

Current Status:

Currently funded through fiscal year 2018/2019.

Project Schedule:

Start Date: March, 2017

Finish Date: Ongoing

Detailed Project Budget Information

	Expenditures Thru 2019
Federal	
SFWMD	\$532,323
Local	
Total	\$532,323

Contact: Michael Kirkland, SFWMD

Project Name: C-4 Canal Bank Improvements
Project ID: 3600
Lead Agency: South Florida Water Management District
Authority: FEMA/DCA

Strategic Plan Goal(s) Addressed: 3.B.1

Measurable Output(s): Improve conveyance and level of service protection in the C-4 Basin

Project Synopsis:

Sweetwater Flood Protection Berm & Wall: This work involves the construction of a flood protection berm along the north side of the C-4 Canal from SW 107th Avenue to SW 97th Avenue. The north bank will be raised to a minimum elevation of 8.0 feet (NGVD). This will prevent canal overflows into the city during high canal stages and allow for a pumping system constructed by the city to provide flood protection. The project area is within the C-4 Canal right-of-way from SW 97th Avenue to SW 107th Avenue.

Belen Phase 2 Flood Protection Berm & Wall: This work involves the construction of a flood protection berm and wall along the north side of the C-4 Canal from SW 130th Avenue to SW 122nd Avenue. The north bank will be raised to a minimum elevation of 8.0 feet (NGVD). This will prevent canal overflows into the adjacent communities during high canal stages and allow for a pumping system being implemented by Miami-Dade County to provide flood protection. The project area is within the C-4 Canal right-of-way from SW 130th Avenue to SW 122nd Avenue.

Palmetto Flood Protection Berm & Wall (a.k.a. Miami-Dade Floodwall): This work involves the construction of a flood protection berm and wall along the north side of the C-4 Canal from SW 97th Avenue to the Palmetto Expressway. The north bank will be raised to a minimum elevation of 8.0 feet (NGVD). This will prevent canal overflows into the adjacent communities during high canal stages and allow for a pumping system constructed by Miami-Dade County to provide flood protection. This two-mile segment was identified as having low top of bank elevations that would need to be improved for the above improvements to be utilized. This two-mile segment has been surveyed to determine the specific areas where a flood protection berm or wall will be needed. This segment of the canal was not originally included in the C-4 Flood Mitigation Plan. The Palmetto Phase was split into two (2) phases at the final design stage due to easement needs in the Phase 2 portion of the project (SW 82nd Ave to SW 87th Ave).

Quick Start Floodwall: The portion of this project between SW 94th Avenue and SW 92nd Avenue is called the "Quick Start Floodwall" component and construction of this component was completed in January 2012. This component was constructed first, because there were very few right-of-way encroachments along this portion of the canal bank and construction was therefore easily expedited.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Current Status: All Construction activities are complete.

- Sweetwater Phase (SW 97th Ave to SW 107th Ave)
- Belen Phase 1 Floodwall (SW 122nd Ave. to the Florida Turnpike)
- Belen Phase 2 Flood Protection Berm and Wall (SW 122nd Ave to SW 130th Ave)
- Quick-Start Floodwall (SW 94th Ave. to SW 92nd Ave.)
- Palmetto Phase 1 (Palmetto Expressway to SW 82nd Ave, SW 87th Ave to SW 92nd Ave, and SW 94th Ave to SW 97th Ave)
- Palmetto Phase 2 includes the northerly portions of the C-4 Canal between SW 82nd Ave & SW 87th Ave.
- Updated C-4 Basin Model

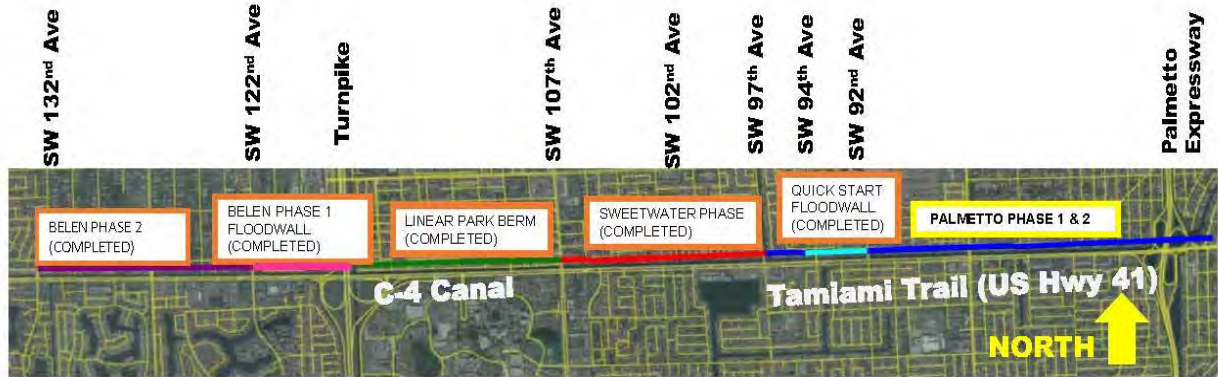
Project Schedule:

Start Date: January 2005
Finish Date: July 2019

Expenditures by SFWMD:

	Expenditures Fiscal Year 2003-4200709thru 2019-20
Federal	\$36,868
SFWMD	\$11,432,012
Total	\$11,468,880

Contact: Jesse VanEyck, SFWMD
561-682-2605



Completed Projects (7):

- Belen Phase 1 (2009)
- Belen Phase 2 (2015)
- Linear Park (2006)
- Sweetwater (2016)
- Quick-Start (2013)
- Palmetto Phase 1 (2017)
- Palmetto Phase 2 (2019)

C-4 Canal Bank Improvement Projects

(SW 8th Street, between the Palmetto Expressway and SW 130th Ave in Miami-Dade County)

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Infrastructure
Project Name: E&SF: Critical Projects - Florida Keys Carrying Capacity
Project ID: 4100
Lead Agency: USACE / FDCA
Authority: WRDA 1996

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Report

Project History: The carrying capacity study/analysis will develop information that will improve decision-making regarding development approvals and infrastructure investments, and its impact on the ecology and natural system in the Florida Keys and Florida Bay.

Project Synopsis: The development of a decision-making tool will provide a comprehensive basis for coordinating and strengthening water and land related planning efforts by local, state and federal agencies. The Study was completed March 2003.

Current Status: COMPLETED 2003

Est. Cost: \$ 6,000,000

Project Schedule:

1997 Start
2003 Completed

Detailed Project Budget Information (rounded)

Florida Keys Carrying Capacity	Expenditures Thru FY2017
USACE	\$2,993,067
FDCA	\$1,500,000
Total	\$4,493,067

Contact: Karen Tippett, Program Execution Branch Chief
Karen.S.Tippett@usace.army.mil

*On Hold/
Closed/
Discontinued
Projects*

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Restoration Program: Hydrology and Water Quality
Project Name: Taylor Creek Reservoir -- The SFWMD is implementing as part of Northern Everglades Project
Project ID: 1112
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source: Lake Okeechobee Trust Fund

Strategic Plan Goal(s) Addressed: 1.A.1 **Secondary:** 1.B.1

Measurable Output(s): 32,000 acre-ft of storage; 3-5 metric tons of phosphorus reduction

Project Synopsis: In 2007, the Florida legislature enacted the Northern Everglades Initiative, which expands the Lake Okeechobee Protection Act to the entire Northern Everglades system, including the Lake Okeechobee watershed as well as the Caloosahatchee and St. Lucie rivers and estuaries. The plan identifies five construction projects north of Lake Okeechobee, including the Taylor Creek Reservoir, as expedited projects. The Taylor Creek Reservoir project involves construction of a 4,000-acre reservoir in Taylor Creek, which will provide approximately 32,000 acre-feet of storage and 3-5 metric tons of phosphorus reduction.

Total Estimated Project Cost: \$TBD

Project Schedule:

Start Date: 2006
Finish Date: 2008

Detailed Project Budget Information

	Expenditures Thru 2008
Federal	
State	3,685,505
Tribal	
Local	
Other	
Total	3,685,505

Hyperlink: N/A

Contact: Pam Wade, SFWMD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Water Preserve Area Conveyance (XX Part 1)
A/k/a Water Preserve Area Conveyance
Project ID: 1113 (CERP Project WBS # 49)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.1

Measurable Output(s): 90,000 acre-feet reservoir

April 1999 (Restudy) Project Synopsis: Includes water control structures and modifications to the Dade-Broward Levee and associated conveyance system located in Miami-Dade County.

Current Project Synopsis: The purpose of this water preservation area is to reduce seepage losses to the east from the Pennsuco Wetlands and southern Water Conservation Area 3B, enhance hydroperiods in the Pennsuco Wetlands, and provide recharge to Miami-Dade County's Northwest Well field. This project adheres to the original concept outlined in the Restudy.

Current Status: This project is on hold.

Est. Cost: \$ 569,991,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

WPA Conveyance	Investment Thru FY 2020
USACE	\$227,451
SFWMD	\$0
Total	\$227,451

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Everglades National Park Seepage Management (V) (FF) (U) (BB)
Project ID: 1114 (CERP Project WBS # 27 and # 43)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*only 'BB' Programmatic Authority < \$25 M*); others not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.1

Measurable Output(s): 11,500 acre-feet storage

April 1999 (Restudy) Project Synopsis: Includes three components: (1) L-31N Improvements for Seepage Management (Component FF), (2) S-356 Structures (Component V), and (3) the Bird Drive Recharge Area. These three components will improve water deliveries to Northeast Shark River Slough (NESRS) and restore wetland hydroperiods and hydropatterns in ENP via seepage management. Groundwater flows during the wet season are captured by ground water wells adjacent to L-31N and pumped to ENP. The CERP L-31N improvements for seepage management and S-356 structures components included relocating and enhancing L-31N, groundwater wells and sheetflow delivery system adjacent to ENP in Miami-Dade County. Detailed planning, design, and pilot studies were to be conducted to determine the appropriate technology to control seepage from ENP. Also included was a feature to relocate the Modified Water Deliveries structure S-357 to provide more effective water deliveries to ENP.

The original project description includes pumps, water control structures, canals, and an aboveground recharge area with a total storage capacity of approximately 11,500 acre-feet. The initial design of the recharge feature assumed 2,877 acres (water level fluctuating up to 4-feet above grade). Final design will enhance and maintain the continued viability of wetlands within the basin. Inflows from the western C-4 Canal Basin and from the proposed West Miami-Dade Wastewater Treatment Plant will be pumped into the Recharge Area. Recharge area outflows will be prioritized to meet: (1) groundwater recharge demands, (2) South Dade Conveyance System demands, and (3) Northeast Shark River Slough demands, when supply is available. Regional system deliveries will be routed through the seepage collection canal system of the Bird Drive Recharge Area to the South Dade Conveyance system.

Current Project Synopsis: The purpose of this feature is to improve water deliveries to Northeast Shark River Slough (NESRS) and restore wetland hydropatterns in ENP by reducing levee and groundwater seepage and increasing sheetflow. During the Corps planning process, evaluation of existing and future without project conditions was necessary as the Yellow Book description was limited. Detailed planning, design, and pilot studies [CERP L-31N (L-30) Seepage Management Pilot] will be conducted to determine the appropriate technology to control seepage from ENP and an appropriate amount of wet season groundwater flow control to minimize potential impacts to Miami-Dade County's west well field and freshwater flows to Biscayne Bay.

The Bird Drive Recharge Area feature was added in 2004 to recharge groundwater and reduce seepage from ENP buffer areas by increasing water table elevations east of Krome Avenue. The facility should provide C-4 flood peak attenuation and water supply deliveries to South Dade Conveyance System and NESRS. As of 2008, the project evaluates four of the 68 components in the Restudy: L-31N Improvements (V), S-356 Structure Relocation (FF), Drive Recharge Area (U) and Dade-Broward Levee/Pennsuco Wetlands (BB) (added from North Lake Belt Storage Area - WPA Conveyance Area project).

Project 1114 C&SF: CERP ENP Seepage Management Page 1 of 3

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Current Status: This project is on hold.

Est. Cost: \$613,941,000

Project Schedule: TBD.

Detailed Project Budget Information (rounded):

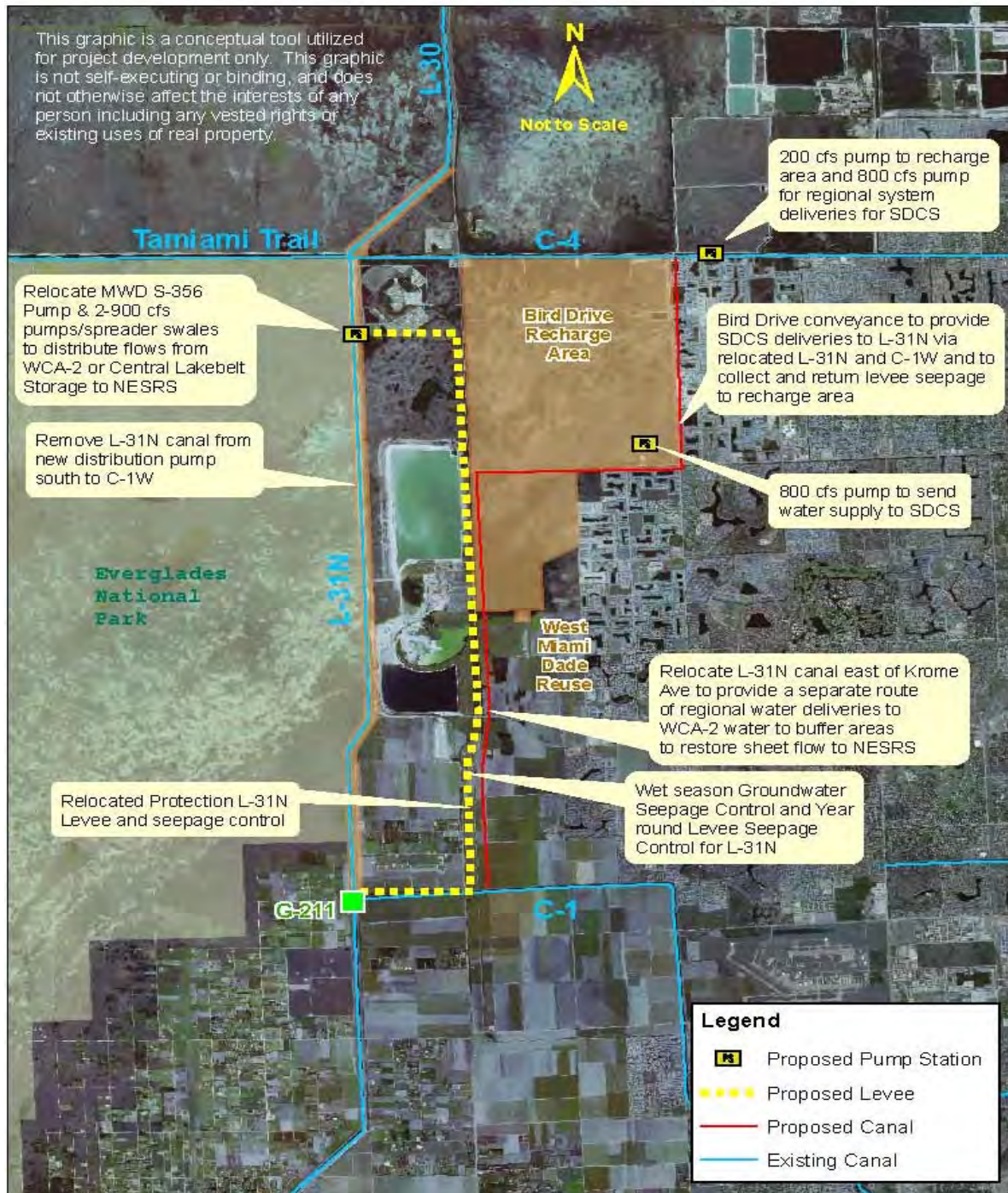
ENP Seepage Management	Investment Thru FY 2020
USACE	\$2,385,000
SFWMD	\$318,000
Total	\$2,703,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19. Schedule is updated based on the approved *Integrated Delivery Schedule Through 2020* (December 2016)

Additional Information: (see next page)



Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Project Name: C&SF: CERP North Palm Beach County - Part 2 (LL) (K P2)
Project ID: 1200 (CERP Project WBS # 18)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): 220 million gallons per day of ASR wells (.220 billion gallons per day)

April 1999 (Restudy) Project Synopsis: Included two separable elements: (1) the C-51 Regional Groundwater ASR system and (2) the L-8 Basin Aquifer Storage and Recovery (ASR) system to provide additional long-term storage within the North Palm Beach County region.

Current Project Synopsis: The purpose of this feature is to capture and store excess flows from the C-51 Canal, currently discharged to the Lake Worth Lagoon, for later use during dry periods.

- **C-51 Regional Groundwater Aquifer Storage and Recovery (LL)** includes a series of aquifer storage and recovery wells with a capacity of 170 million gallons per day as well as associated pre- and post-water quality treatment to be constructed along the C-51 Canal in Palm Beach County. The initial design of the wells assumed 34-well clusters, each with a capacity of 5 million gallons per day with chlorination for pre-treatment and aeration for post-treatment. The ASR facilities will be used to inject and store surficial aquifer ground water adjacent to the C-51 Canal into the upper Floridan Aquifer instead of discharging the canal water out to tide. Water will be returned to the C-51 Canal to help maintain canal stages during the dry-season. If water is not available in the ASR system, existing rules for water delivery to this region will be applied.
- **L-8 Basin Aquifer Storage and Recovery (K Part 2)** includes ASR wells with a capacity of 50 million gallons per day and associated pre- and post- water quality treatment to be constructed within the L-8 Basin or along the City of West Palm Beach water supply conveyance and storage system or a combination of both. The initial design of the wells assumed 10 wells, each with a capacity of 5 million gallons per day with chlorination for pre-treatment and aeration for post-treatment. During periods when the West Palm Beach Catchment Area is above desirable stages, 50 million gallons per day will be diverted to Lake Mangonia for storage in the ASR wells.

Current Status: This project is on hold.

Est. Cost: \$ 370,269,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

North Palm Beach County-Part 2	Investment thru FY 2020
USACE	\$0
SFWMD	\$0
Total	\$0

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

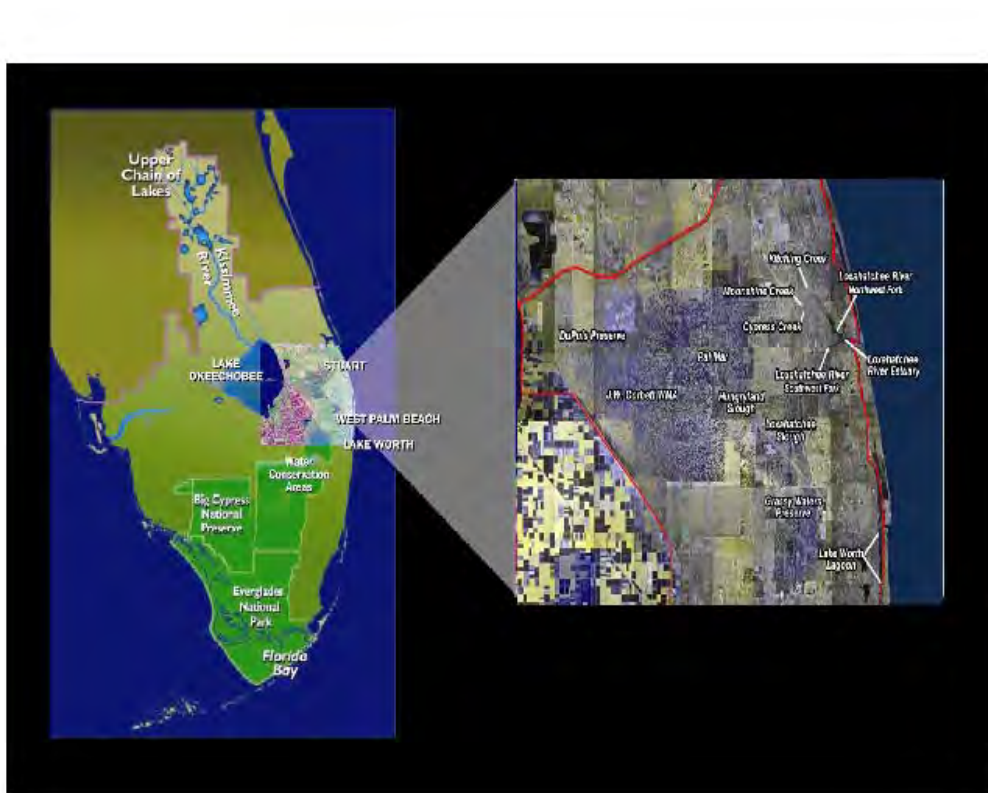
Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Beth Kacvinsky, Project Manager, SFWMD
bkacvins@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Hillsboro Aquifer Storage and Recovery (M P2)
Project ID: 1202 (CERP Project WBS # 22)
Lead Agency: USACE / SFWMD
Authority: WRDA 1999, 2000, 2007
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.2

Measurable Output(s): 150 million gallons per day (.150 billion gallons per day) at full build-out. Present configuration stores 5 million gallons per day (0.005 billion gallons per day)

April 1999 (Restudy) Project Synopsis: *Site 1 Impoundment and Aquifer Storage and Recovery* (M) included both an above-ground reservoir and a series of aquifer storage and recovery (ASR) wells. The conceptual design of the ASR facility assumes 30 wells, each with a capacity of 5-million gallons per day with chlorination for pre-injection treatment and aeration for post-injection water quality treatment.

Current Project Synopsis: For purposes of project execution, the Restudy components were divided into two components: The Site 1 Impoundment, and the Hillsboro ASR. This is the latter piece, *Hillsboro ASR Phase 2* (M P2) (CERP project WBS #22, relates to the companion aquifer storage and recovery (ASR).

The purpose of the ASR project is to supplement water deliveries to the Hillsboro Canal during dry periods, thereby reducing demands on Lake Okeechobee and the Loxahatchee National Wildlife Refuge. Water coming from the WCA 1 (Loxahatchee) in the Hillsboro Canal basin, located in southern Palm Beach County, will be injected into ASR wells adjacent to the Site 1 reservoir location. The location, extent of treatment and number of ASR wells may be modified based on findings obtained from the Hillsboro ASR Pilot (WBS #34). Water will be released back to the Hillsboro Canal to help maintain canal stages during the dry-season with pre-injection and post-withdrawal injection water quality treatment And then water from the Hillsboro Canal may be pumped into the Site 1 reservoir should excess water be available.

Current Status: The Hillsboro ASR pilot project resulted in construction of a single ASR well and associated monitor wells plus surface facility. Construction was completed in 2008, and operational testing was completed in 2012. The Hillsboro ASR system currently is inactive. Planning and design of this Phase 2, which expands the present ASR system, is planned for the future. Hillsboro ASR system expansion may proceed after the completion of Phase 1 [see *Site 1 Impoundment* (M P1) (a/k/a *Fran Reich Preserve*) (CERP Project WBS #40)]. A pilot study and the ASR Regional Study provide information to support future implementation of ASR under this authorization. **This project is currently inactive.**

Est. Cost: \$ 222,827,000

Project Schedule: TBD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

Hillsboro ASR	Investment FY2020	Thru
USACE		\$0
SFWMD		\$0
Total		\$0

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/>

Contact: Bob Verrastro, Lead Hydrogeologist, SFWMD
bverras@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Lake Okeechobee and Estuary Recovery (LOER)
Project Name: Seminole Tribe Brighton Reservation Aquifer Storage and Recovery (ASR)
Pilot Project
Project ID: 1206
Lead Agency: SFWMD, Seminole Tribe of Florida

Strategic Plan Goal(s) Addressed: 1-A.2, Get the hydrology right

Measurable Output(s): A 1-well ASR pilot facility that is permitted, designed, constructed and tested.

Project Synopsis: The Seminole Tribe of Florida and the SFWMD have partnered on construction of a pilot Aquifer Storage and Recover Pilot (ASR) system at the Brighton Reservation, north of Lake Okeechobee. The objective of the project is to assure the Tribe of an alternative water supply during times when low lake levels make delivery to that part of the system difficult. The project involves permitting, design, construction and testing of the ASR system, the costs of which will be shared by the Tribe and the SFWMD.

Current Status:

Based on cost benefit analysis and due to lack of infrastructure, the Tribe does not plan to move forward with construction of this project at this time. The project has been inactive since 2010. The project status may be revisited in the future, when funding becomes available.

The following activities have been completed

- Constructed an exploratory/test well
- Evaluated location and project site
- Completed preliminary design and geotechnical evaluations
- Completed draft USEPA permit applications

Total Estimated Project Cost: \$2,500,000 (to be split 50-50 with the Seminole Tribe)

Project Schedule:

Start Date: January 2007

Finish Date: January 2010

Actual Expenditures to Date by SFWMD:

	Expenditures Thru 2010
SFWMD	450,000
TOTAL	450,000

Contact: Bob Verrastro, SFWMD



Seminole Tribe Brighton Reservation ASR Location Map

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Lake Okeechobee and Estuary Recovery (LOER)
Project Name: Taylor Creek (L63N) Aquifer Storage and Recovery (ASR) Project
Project ID: 1207
Lead Agency: SFWMD

Strategic Plan Goal(s) Addressed: 1-A.2, Get the hydrology right

Measurable Output(s): A 1-well ASR facility that is permitted, designed, constructed and tested.

Project Synopsis: This project consists of reactivating an existing ASR system that was constructed and operated 30 years ago by the SFWMD. Since that time, the system has been inactive. Project tasks will include mechanical evaluations of the existing system, permitting, design studies, construction of new appurtenances and eventual operation and maintenance of the system.

Current Status: This project has been inactive since 2011 due to lack of funding. The project status may be revisited in the future, when funding becomes available via the Lake Okeechobee Watershed Restoration Project.

The following activities have been completed:

- Tested mechanical integrity of the well system
- Completed pilot water treatment design studies
- Completed permit applications for construction of an ASR system
- Constructed a new Floridan aquifer monitoring well, in compliance with new regulatory criteria
- Finalized design for the reactivation components
- A petition for Aquifer Exemption is currently pending with the USEPA.

Total Estimated Project Cost: \$2,000,000

Project Schedule:

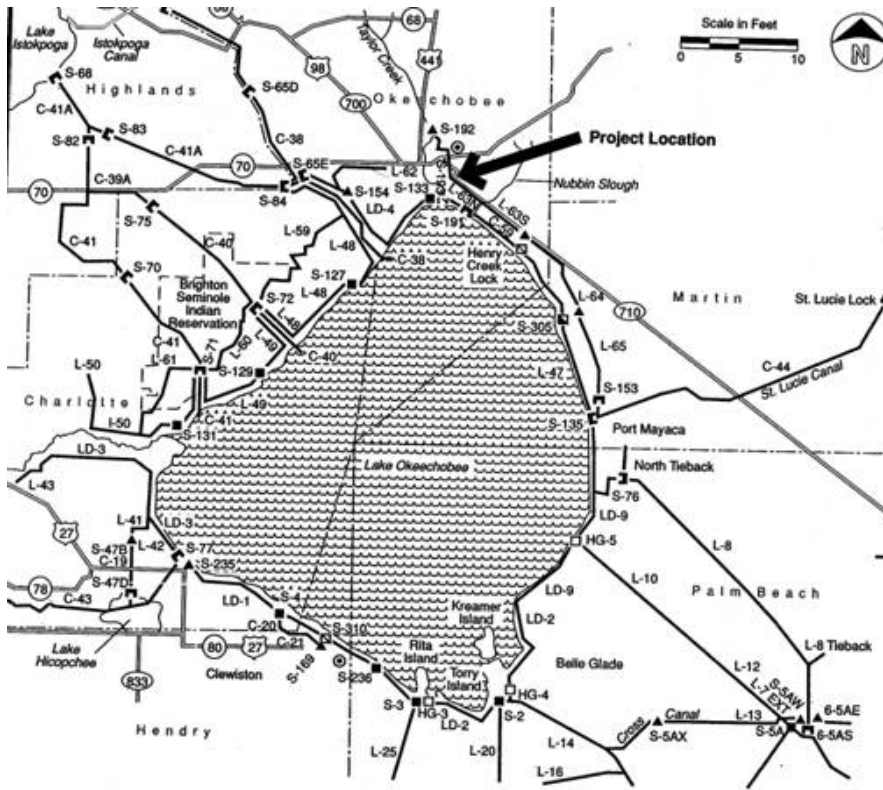
Start Date: June 2006
Finish Date: June 2010

Actual Expenditures to Date by SFWMD:

	Expenditures Thru 2010
SFWMD	850,000
TOTAL	850,000

Contact: Bob Verrastro, SFWMD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021



Taylor Creek ASR Project Location Map.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Northern Everglades and Estuaries Protection Program
Project Name: **Fisheating Creek Feasibility Study**
Project ID: 1208
Lead Agency: SFWMD, State of Florida
Funding Source: Lake Okeechobee Trust Fund

Strategic Plan Goal(s) Addressed: 1-A.2, Get the hydrology right

Measurable Output(s): Complete a feasibility study to improve hydrology and water quality through storage and treatment features in Fisheating Creek (FEC) Sub-watershed.

Project Synopsis: The Coordinating Agencies [South Florida Water Management District (SFWMD), Florida Department of Environmental Protection (FDEP), and Florida Department of Agriculture and Consumer Services (FDACS)] initiated the feasibility study in FEC Sub-watershed, which is one of the major sources of phosphorus loading to Lake Okeechobee, under the Northern Everglades and Estuaries Protection Program (Section 373.4595, Florida Statutes). The purpose of the feasibility study is to identify the best combination of storage and water-quality features to help improve the hydrology and water quality within the sub-watershed.

Current Status: Through extensive involvement with stakeholder groups and interagency coordination, a significant amount of information was compiled and synthesized. For example, a pre-drainage land use data set for the sub-watershed was developed, and preliminary planning targets for achieving water-storage and water-quality improvements (for phosphorus-load reduction) were established.

Initially, at stakeholders' request, the project was postponed until a sufficient level of design information was available on the United States Department of Agriculture's Natural Resources Conservation Service's Fisheating Creek Special Wetland Reserve Project, which encompasses a significant part of the FEC Sub-watershed. The information was needed to determine the magnitude of water storage and water quality improvements remaining after implementation of the Wetland Reserve project. At approximately the same time and also at stakeholder's request, the Coordinating Agencies initiated a related Lake Okeechobee (Lake O) Pre-Drainage Feasibility Study, to establish sub-watershed goals concurrently for the remaining five sub-watersheds north of Lake Okeechobee.

Model refinements, as recommended by an independent modeling peer-review panel, began on the Watershed Assessment Model (WAM), which was being used for both the FEC Feasibility Study and the Lake O Pre-Drainage Feasibility Study. As the model refinements are expected to improve confidence and understanding of the model and its output, the Coordinating Agencies collectively decided that it was in the best interest of the projects to wait until the model refinements are complete before re-commencing. It was also agreed upon that the FEC Feasibility Project be merged into the related Lake O Pre-Drainage Feasibility Study so that it will encompass all six sub-watersheds north of the lake.

Currently, the Lake O Pre-Drainage Feasibility Study is identified as a specific task in DEP's Lake Okeechobee Basin Management Action Plan (BMAP) (DEP, December 2014). The BMAP also includes the WAM revisions, as recommended by an independent modeling peer-review panel, as a task to be funded by the Coordinating Agencies. Once the WAM refinements are complete, it is expected that the Coordinating Agencies will discuss the Lake O Pre-Drainage Feasibility Study and revisit the project scope based on the needs and priorities of current watershed restoration efforts. Furthermore, the information already gained will be utilized, as appropriate, in current and future planning efforts.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Total Estimated Project Cost: \$ 1,036,230 (Phase I and II)

Project Schedule:

Start Date: Phase I August 30, 2008
Phase II May 1, 2009
Finish Date: Phase I February 27, 2009
Phase II TBD

Actual Expenditures to Date by SFWMD:

	Expenditures 2008 - 2016
Phase I	\$264,918
Phase II	\$528,003
Total	\$792,921

* Total and projected expenditures as of June 12, 2015 per SFWMD fiscal year (October 1st through September 30th)

Contact: Pam Wade, SFWMD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Florida Keys Tidal Restoration (OPE)
Project ID: 1302 (CERP Project WBS # 31)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.3

Measurable Output(s): 0.6 miles of impediments removed

April 1999 (Restudy) Project Synopsis: The purpose of this feature is to restore the tidal connection that was eliminated in the early 1900s during the construction of Flagler's railroad. Restoring the circulation to areas of surface water that have been impeded and stagnant for decades will significantly improve water quality, benthic floral and faunal communities, larval distribution of both recreational and commercial species (i.e. spiny lobster), and the overall hydrology of Florida Bay.

The project includes the use of bridges or culverts to restore the tidal connection between Florida Bay and the Atlantic Ocean in Monroe County. The four locations are as follows: (1) Tarpon Creek, just south of Mile Marker 54 on Fat Deer Key (width 150 feet); (2) Unnamed Creek between Fat Deer Key and Long Point Key, south of Mile Marker 56 (width 450 feet); (3) tidal connection adjacent to Little Crawl Key (width 300 feet); and (4) tidal connection between Florida Bay and Atlantic Ocean at Mile Marker 57 (width 2,400 feet).

Current Project Synopsis: Since issuance of the Restudy, various studies and other projects have refined this project's scope.

This project provides for the removal of approximately 0.6 miles of impediments and will restore an historic flow way between the Atlantic Ocean and the Gulf of Mexico that were blocked during the early construction of US Highway 1. An existing tidal creek restoration project near the proposed restoration project was fully successful.

A tidal creek near Marathon, Florida was selected for restoration. Culverts to maximize flow will be located, sized, and placed under U.S. 1 between Fat Deer Key and Long Point Key (MM56) to allow tidal exchange and flushing. Monitoring of water quality, benthic community composition, and sediment particle size will be performed before construction, at six months, and one year after construction completion. Additional tidal flow way restoration projects will be subsequently identified based upon the results.

Current Status: Suspended.

Est. Cost: \$ 22,606,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Florida Keys Tidal Restoration	Investment Thru FY 2020
USACE	\$847,000
SFWMD	\$549,000
Total	\$1,396,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:

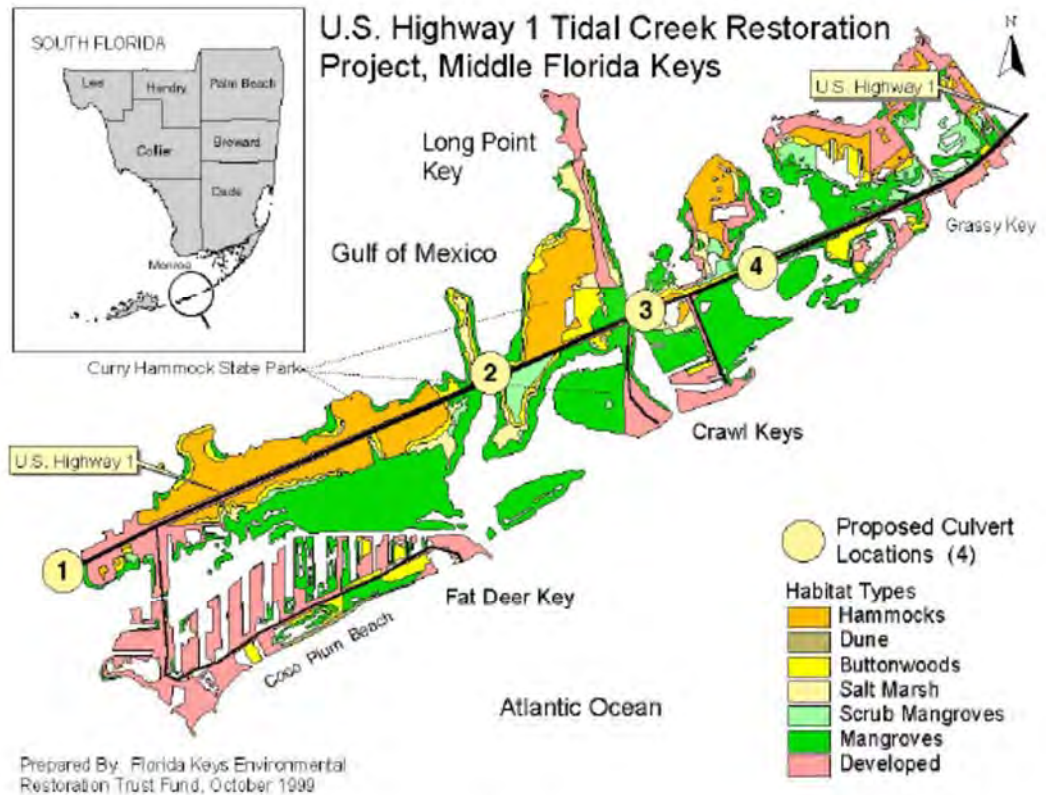


Figure 1
 Florida Keys Tidal Restoration Project Area

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: E&SF: Critical Projects Southern CREW Project Addition/ Imperial River Flowway
Southern CREW (also included as a CERP OPE)
Project ID: 1303
Lead Agency: USACE / SFWMD
Authority: WRDA 1996 (Critical Project), WRDA 2000 (*in CERP Plan; limitation of watershed addition outside of the CERP*), WRDA 2007 (*modified Critical Project cap*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary 1-A.3 Secondary: 2-A.3

Measurable Output(s): 4,090 acres of restored wetlands (*proposed footprint*)

Project History: As noted in the Restudy, WRDA 1996 authorizes the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the south Florida ecosystem. The SFEER Task Force nominated 35 projects with input from the Governor’s Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study and produced a report transmitted to the Secretary of the Army for approval. This is one of the 12 restoration “Critical Projects” having the Secretary of the Army’s approval (WRDA 1996). However, funding caps under WRDA 1996 and later revised under WRDA 2007 limit spending per project and for the group.

April 1999 (Restudy) Project Synopsis: The *Central and Southern Florida Project Comprehensive Review Study* (Restudy) included an (OPE) under Programmatic Authority for the acquisition and restoration of 4,670 acres of land, replacement of the Imperial Bonita Estates Bridge on the Imperial River, and replacement of the Kehl Canal Weir in southern Lee County, adjacent to Corkscrew Sanctuary; clearing and snagging on Imperial River, Estero River and Halfway Creek, reconnection of Spring Creek and Halfway Creek under U.S. I-75, and replacement of the Imperial Bonita Estates bridge.

WRDA 2000 approved this project as part of the Plan (CERP), but with the limitation that the Southern Corkscrew regional ecosystem “watershed addition should be accomplished outside of the scope of the Plan”.

Current Project Synopsis: This project will re-establish historical sheetflow, hydroperiods and wetland storage on project lands and the Corkscrew Regional Ecosystem Watershed (CREW) and Corkscrew Sanctuary wetlands to the east; reduce excessive freshwater discharges to Estero Bay during the rainy season; improve habitat for other wildlife; reduce nutrient loads and pollutants to the Imperial River and Estero Bay, and mitigate flooding of homes and private lands west of the project area. The effort includes the removal of agricultural canals and road berms, house foundational pads and the filling of ditches. It also includes acquisition of 4,670 acres and restoration of the land to a natural state.

Because of escalating land costs in the region, particularly near Bonita Beach Road, and the difficulty in restoring hydrology in areas south of Kehl Canal, a change to the proposed footprint was approved at the March 2009 SFWMD Governing Board meeting. Changes exclude the southern half of Sections 32 and 33 that are south of the Kehl Canal and some areas along the western boundary of the project site that may be impacted by the proposed alignment of County Road 951. Approximately 45 acres in the NW corner of Section 32 and 15 acres in the SW corner of Section 34 were also removed from the project.

Even with a smaller footprint, the SFWMD will be able to maintain a flowway and corridor along the Kehl Canal and Imperial River connecting and restoring lands within Southern CREW and CREW Trust lands.

Project 1303 E&SF: Critical Projects Southern CREW Project Addition/ Imperial River Flowway Page 1 of 2

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

However, cost estimates for this project, in combination with the other eight Critical Projects, exceeded the USACE appropriation cap of \$95 million (WRDA 2000).

Current Status: The Federal project is currently on hold. SFWMD has been proceeding with the project focusing on land acquisition and the structural work required. Land acquisition has been accomplished with state and federal cost sharing. Exotic species removal has taken place on over 2,560 acres, primarily treatment of Melaleuca trees. In addition, a number of canals have been plugged, berms breached, and dirt roads removed enabling sheet flow in areas of the project footprint, restoring hydropatterns on approximately 640 acres of wetlands.

Est. Cost: \$78,774,000

Project Schedule:

1999 Start design work
2015 Finish construction.

Detailed Project Budget Information (rounded):

Southern CREW	Investment Thru FY2020
USACE	\$302,000
SFWMD	\$1,075,000
Total	\$1,377,000

Hyperlink: <http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration.aspx>

Contacts: Michael Collis, Senior Program Manager, Programs and Project Management Division,
USACE, Michael.J.Collis@usace.army.mil

Janet Starnes, Principal Project Manager, SFWMD
jstarne@sfwmd.gov

Source: Original project description (OPE) summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: E&SF: Critical Projects Tamiami Trail Culverts
Additional Water Conveyance Structures under Tamiami Trail
Project ID: 1308
Lead Agency: USACE / SFWMD
Authority: WRDA 1996; WRDA 2007 (*modified Critical Projects cap*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-A.3

Measurable Output(s): 16 miles of impediments removed

Project History: WRDA 1996 authorizes the Secretary of the Army to expeditiously implement restoration projects deemed critical to the restoration of the south Florida ecosystem. The SFEER Task Force nominated 35 projects with input from the Governor’s Commission for a Sustainable South Florida and the public. Based on the set of priorities, the USACE conducted an abbreviated study of and produced a report transmitted to the Secretary of the Army for approval. This is one of the 12 restoration “Critical Projects” having the Secretary of the Army’s approval (WRDA 1996). In the Restudy, this project was anticipated to be one of the top five funded under the funding cap restrictions of WRDA 1996, later revised under WRDA 2007, that limit spending.

Current Project Synopsis: In 1928, the Tamiami Trail (roadway) was completed between Miami and Naples. To obtain fill material for the roadbed, a borrow canal was excavated on the northern side of the road. The long term effect has been to intercept existing north-south flowways to the Big Cypress National Preserve, and channelize flows through just a few bridges/culverts. Wetland habitats receive too much or too little fresh water and normal seasonal hydropatterns are interrupted.

This project will increase the number of north-south flowways by adding conveyance structures (77 culverts under Tamiami Trail (U.S. 41) in 30 locations) restoring natural hydropatterns impacting sheetflow of surface water within the watersheds of the Ten Thousand Islands National Wildlife Refuge & Aquatic Preserve, Southern Golden Gate Estates, Fakahatchee Strand State Preserve, Big Cypress National Preserve and Everglades National Park enhancing biological restoration of the region. This directly supports objectives for other south Florida projects such as the L-28 Modification and the Picayune Strand Restoration.

There are *two* phases.

Phase I involves planning, project design and construction of 62 culverts and associated improvements of hydrologic sheetflow under 16 miles of Tamiami Trail (US 41) and 15 culverts under the Loop Road between SR 92 and the Collier/Miami-Dade County line. Phase I will not increase the flows, but redistribute them from the northern side of the road to the southern side. Other components include specific plug sites with simple large earthen ditch blocks that could serve as driveway access across the canal. Some existing driveways have pipe culverts that need either to be removed or replaced if the culvert size is found to be substandard. These additional culverts under Tamiami Trail along with a more diffuse flowway beneath artificial barriers will provide a more natural hydropattern both north and south of the highway, enhancing biological restoration in the region.

Phase II involves resurfacing of the roadway of the Tamiami Trail pursuant to construction of the culverts.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

During planning, the scope of the project was modified due to budget and time constraints. Cost estimates for completion of the remainder of the project, in combination with the other eight Critical Projects, exceeded the USACE appropriation cap of \$95 million (WRDA 2000). The SFWMD completed the acquisition of land and has been constructing the project according to the *revised* plan. Per the revised plan and scope of work: The Tamiami Trail Culvert -- Phase I project currently extends from the intersection of US 41 (Tamiami Trail) and CR 92 and extends from this intersection eastward along the Tamiami Trail corridor to the intersection of US 41 and SR 29, a distance of approximately 16 miles.

Construction of the western portion of Phase I, located west of State Road 92 was begun in June 2004 and completed in March 2006 encompassing the placement of 9 culverts.

Current Status: The western portion of Phase I has been incorporated as a component of the CERP Picayune Strand Restoration project, authorized for construction by Congress as part of WRDA 2007, making this portion of the culvert project eligible for federal cost-share.

Current Status: This balance of the project is currently on hold.

Est. Cost: \$3,574,000 for Phase I

Project Schedule:

1998	Start
2004	Revisions on design
TBD	Finish

Detailed Project Budget Information (rounded):

Tamiami Trail	Investment Thru FY 2020
UACE	\$2,622,000
SFWMD	\$953,000
Total	\$3,575,000

Hyperlink:

[http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/PicayuneStrandRestorationProject.aspx_\(Picayune Strand\)](http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/PicayuneStrandRestorationProject.aspx_(Picayune%20Strand))

Contact: Michael Collis, Senior Program Manager, Programs and Project Management Division, USACE, Michael.J.Collis@usace.army.mil

Janet Starnes, Principle Project Manager, SFWMD
jstarnes@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Biscayne Bay Feasibility Study
Project ID: 1401
Lead Agency: USACE / Miami-Dade County
Authority: WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Current Project Synopsis: Biscayne Bay is a shallow, well-mixed estuary located along the southeastern coast of Florida. It includes most of Biscayne National Park, and adjacent lands provide fresh surface- or groundwater to the Bay. The Central and Southern Florida (C&SF) Project impacted the timing, distribution and amount of freshwater reaching the bay affecting natural salinity patterns and ecology.

The Comprehensive Everglades Restoration Plan (CERP) is modifying the C&SF project to improve flows needed for the environment, including Biscayne Bay. Proposed modifications to this connected hydrologic system may also affect Biscayne Bay. Although not part of CERP, this study will allow Miami-Dade County resource managers to assess potential impacts and determine if further studies are needed. Miami-Dade County is sharing the cost.

Current Status: This project is on hold. A Reconnaissance report was completed in July 1995. A hydrodynamic/salinity model and associated surface and groundwater model of the study area. Existing data was compiled, evaluated, and a scope of work developed for creation of a water quality model.

Est. Cost: TBD

Project Schedule:

1996 Start
TBD Finish

Detailed Project Budget Information (rounded):

Biscayne Bay Feasibility Study	Obligations Thru FY 2017
USACE	\$2,550,036
Total	\$2,550,036

Reconnaissance Study (100% Federal, not included in Estimated Cost or Expenditures): \$470,000

Hyperlink: <http://www.saj.usace.army.mil/rwp/index.html>

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Current status information was provided by the project manager. Cost estimate information is updated to reflect current price levels in October 2009 dollars.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Broward Co. Secondary Canal System (CC)
Project ID: 1403 (CERP Project WBS # 24)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Water control structures, pumps, and canal improvements

April 1999 (Restudy) Project Synopsis: Includes a series of water control structures, pumps, and canal improvements located in the C-9, C-12 and C-13 Canal basins and east basin of the North New River Canal in central and southern Broward County. Excess water in the basins will be pumped into the coastal canal systems to maintain canal stages at optimum levels. To maintain these stages, water will be drawn from other sources such as Site 1 Impoundment and North Lake Belt Storage Area, Lake Okeechobee and the Water Conservation Area when basin water is insufficient.

Current Project Synopsis: The purpose of this feature is to reduce water shortages by recharging local well fields and stabilizing the saltwater interface.

Current Status: This project is on hold.

Est. Cost: \$ 32,379,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Broward Secondary System	Co. Canal	Investment Thru FY 2020
USACE		\$20,000
SFWMD		\$42,000
Total		\$62,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Loxahatchee National Wildlife Refuge Internal Canal Structures (KK)
Project ID: 1408 (CERP Project WBS # 14)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*Programmatic Authority <\$25 M*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other

Measurable Output(s): Water control structures

April 1999 (Restudy) Project Synopsis: Two water control structures in the northern ends of the perimeter canals encircling the Loxahatchee National Wildlife Refuge (Water Conservation Area 1) located in Palm Beach County.

Current Project Synopsis: The purpose of this feature is to improve the timing and location of water depths within the Loxahatchee National Wildlife Refuge. It is assumed that these structures will remain closed except to pass Stormwater Treatment Area 1 East and Stormwater Treatment Area 1 West outflows and water supply deliveries to the coastal canals.

WRDA 2000 specified that this project was approved as part of the Plan with a limitation that the Federal share for land acquisition to enhance existing wetland systems along the Loxahatchee Wildlife Refuge, including the Strazzulla tract, should be funded through the budget of the Department of the Interior (DOI).

Current Status: This project is on hold.

Est. Cost: \$14,818,000

Project Schedule:
TBD

Detailed Project Budget Information (rounded):

Loxahatchee NWR-ICS	Investment Thru FY 2020
USACE	\$49,000
SFWMD	\$0
Total	\$49,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP C-43 Aquifer Storage and Recovery Pilot
F/k/a Caloosahatchee (C-43) River ASR Pilot
Project ID: 1411 (CERP Project WBS # 33)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (pilot project); WRDA 2007 (modified cost)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 1-A.2

Measurable Output(s): Pilot (output is temporary)

April 1999 Project Synopsis: Included Aquifer Storage and Recovery (ASR) wells to maximize the benefits associated with the Caloosahatchee River Storage Reservoir. A pilot project for these wells is necessary to evaluate and reduce the technical and regulatory uncertainties of implementing the full-scale Caloosahatchee ASR Project. The pilot will identify the most suitable sites for the aquifer storage and recovery wells near the reservoir and determine the optimum configuration of those wells. It will provide information regarding the characteristics of the aquifer system within the Caloosahatchee River Basin as well as determine the hydro-geological and geotechnical characteristics of the upper Floridan Aquifer. The pilot will also determine the specific water quality characteristics of waters to be injected and the water quality characteristics and the amount of water to be recovered from the receiving aquifer.

Current Project Synopsis: This pilot was initially sited just west of LaBelle, along the Caloosahatchee River, on SFWMD-owned land in western Hendry County. The pilot includes the construction of one five-million gallons per day ASR well and associated monitoring wells and surface facilities. The full-scale project includes the construction of up to 220 mgd of ASR capacity (approximately 44 ASR wells) and a surface water reservoir (impoundment). The full-scale system will store excess water from the Caloosahatchee River Basin when available (typically in the wet season) and release water into the Caloosahatchee River during dry periods.

The project was refined to include information regarding the hydro-geological and geotechnical characteristics of the Hawthorn Aquifer. A Pilot Project Design Report (PPDR) was completed in September 2004 and an exploratory well drilled. However, geological formations including a sand aquifer at the site were not appropriate for open-hole high-capacity ASR wells. The well has been plugged.

WRDA 2007 amended section 601 (b) (2) (B) of WRDA 2000 and increased the authorization for pilot implementation to \$8.2 Million (previously \$6.0 M).

Current Status: This project is currently on hold.

Est. Cost: \$7,427,000

Project Schedule:

2002	Start of feasibility work
2013	Construction completed

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

C-43 ASR Pilot	Investment Thru FY 2020
USACE	\$1,207,000
SFWMD	\$2,049,000
Total	\$3,256,000

Hyperlink:

[http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/AquiferStorageandRecovery\(ASR\)RegionalStudy.aspx](http://www.saj.usace.army.mil/Missions/Environmental/EcosystemRestoration/AquiferStorageandRecovery(ASR)RegionalStudy.aspx)

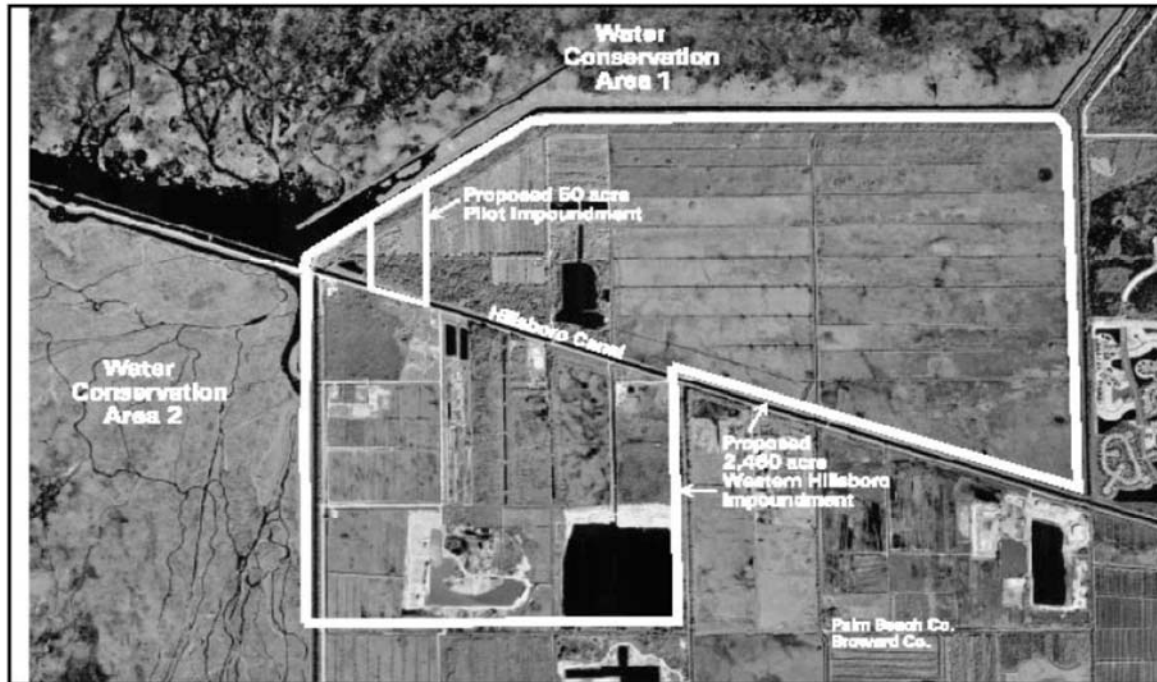
Contact:

Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE,
Jeffery.D.Couch@usace.army.mil

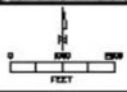
Bob Verrastro, Lead Hydrogeologist, SFWMD
bverras@sfwmd.gov

Source:

Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

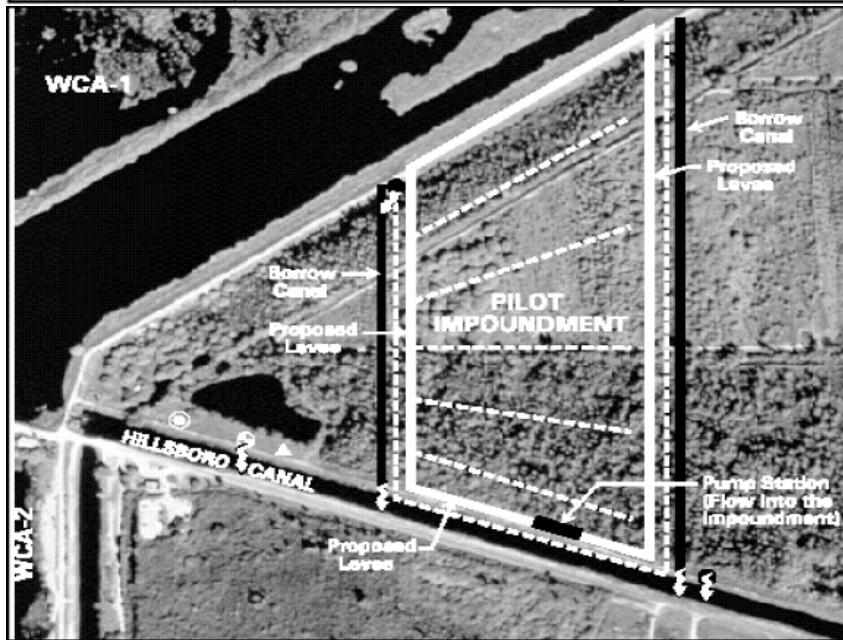


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DRAWN BY: DSB	DATE: 04/20/00
REVISION BY:	DATE:
DIVISION: TRT	DIVISION # 4370
SO. FLORIDA WATER MGMT. DIST.	



**Figure 2
Site Map**

SFWMD



- LEGEND**
- ⊙ Existing Floridan Aquifer Monitor Well
 - ▲ Surficial Aquifer Monitor Well
 - ⊕ Existing Exploratory/ ASR Well
 - Proposed ASR Well
 - Horizontal Well (ASR Source Water)
 - ⚡ Discharge Points for Water Recovered from ASR Well (Includes Aeration)

DRAWING NAME:	171-Fig3.mxd
DRAWN BY: DSB	DATE: 05/10/00
REVISION BY: DSB	DATE: 01/17/01
DIVISION: TRT	DIVISION # 4370
SO. FLORIDA WATER MGMT. DIST.	



**Figure 3
Project Layout**

SFWMD

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP WCA 2B Flows to ENP (*Everglades National Park*) (YY)
Project ID: 1412 (CERP Project WBS # 48)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 2-A.3 and 1=B.1

Measurable Output(s): Water control structures, canals, pumps and canal improvements

April 1999 (Restudy) Project Synopsis: “Diverting Water Conservation Area 2 and 3 Flows to Central Lake Belt”, originally included two features (YY) and (ZZ) in the Yellow Book. “This feature includes pumps, water control structures, canals, and conveyance improvements located adjacent to Water Conservation Areas 2 and 3 in Broward County.” The final size and configuration of the facilities will be determined through the Water Preserve Areas Feasibility Study. “The purpose of this feature is to attenuate high stages in WCA 2 and 3 and transport this excess water to the Central Lake Belt Storage Area where it will be stored to meet downstream demands in Shark River Slough, Water Conservation Area 3B or Biscayne Bay.

Current Project Synopsis: ZZ has since been combined into the DECOMP project (WBS #12). The remaining (YY) component will store excess water from WCA 2 in the Central Lake Belt Storage Area through control structures and conveyance features and supplement environmental water supply deliveries to: (1) Northeast Shark River Slough, (2) WCA 3B, and (3) to Biscayne Bay, in that order, if available.

Current Status: This project is on hold.

Est. Cost: \$ 158,254,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

WCA 2B Flows to ENP	Investment Thru FY2020
USACE	\$284,000
SFWMD	\$0
Total	\$284,000

Hyperlink: http://www.evergladesplan.org/pm/projects/proj_48_wca_2b.cfm

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy)* (1999). Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Lake Belt In-Ground Reservoir Technology Pilot
Project ID: 1417 (CERP Project WBS # 35)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*pilot project*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 1-A.2

Measurable Output(s): Pilot (*output is temporary*)

April 1999 (Restudy) Project Synopsis: The initial design of these reservoirs includes subterranean seepage barriers around their perimeter in order to enable drawdown during dry periods, prevent seepage losses, and prevent water quality impacts due to transmissivity of the aquifer in these areas. The pilot is required to determine construction technologies, storage efficiencies, impacts on local hydrology, and water quality effects.

Current Project Synopsis: Several features recommend the use of areas where lime rock mining will have occurred. The pilot project is required to determine construction technologies, storage efficiencies, impacts on local hydrology, and water quality effects. Water quality assessments will include a determination as to whether the in-ground reservoirs and seepage barriers will allow for storage of untreated waters without concern for groundwater contamination. This project adheres to the original concept outlined in the Restudy.

Current Status: The Project Management Plan is completed. The project is planned for the future.

Est. Cost: \$ 43,118,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Lake Belt In-Ground Res Pilot	Investment Thru FY 2020
USACE	\$1,387,000
SFWMD	\$532,000
Total	\$1,919,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

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Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Florida Bay Florida Keys Feasibility Study (FBFKFS)
Project ID: 1426
Lead Agency: USACE / SFWMD
Authority: WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 2-A.3

Measurable Output(s): Recommendations

April 1999 (Restudy) Project Synopsis: Construction of Flagler’s railroad to Key West and subsequent conversion into U.S. Highway 1 (US-1) involved the placement of fill material in wetlands and open water to build the numerous causeways between keys. These causeways altered tidal flows between Florida Bay and the Atlantic Ocean, resulting in adverse water quality and fish and wildlife habitat impacts.

One of the House of Representatives Committee on Public Works and Transportation resolutions of September 24, 1992 requested that the USACE conduct a study of Florida Bay, including a comprehensive, coordinated ecosystem study with hydrodynamic modeling of Florida Bay and its connections to the Everglades, the Gulf of Mexico, and the Florida Keys Coral Reef ecosystem. The Plan recognized that more thorough investigations of regional water resource problems was needed, and directed these to be conducted under the authority of WRDA 1996 that allows for the continuation of studies and analyses necessary. A comprehensive feasibility study was recommended to evaluate Florida Bay and to determine the types of modifications needed to restore water quality and ecological conditions of the Bay.

Current Project Synopsis: The study goal is to “Evaluate Florida Bay and its connections to the Everglades, the Gulf of Mexico and the Florida Keys marine ecosystem to determine the modifications that are needed to successfully restore water quality and ecological conditions of the Bay, while maintaining or improving these conditions in the Keys’ marine ecosystem.”

Similarly, the PDT has determined that the objectives of the FB&FK FS are:

- Determine the quantity, timing, distribution and quality of freshwater that should flow to Florida Bay and provide recommendations for any modifications of water deliveries that will result from current CERP plans for Everglades’ wetlands.
- Determine the nutrient sources and loads to the study area, evaluate their impacts to reef and bay ecosystems, and recommend restoration targets and implementation plans.
- Establish water quality and ecological performance measures.
- Evaluate the effects of restoring historical connectivity between Florida Bay and the Atlantic Ocean.
- Evaluate management alternatives in a holistic manner employing, where necessary, hydrodynamic, water quality and ecological models.

Various models were completed in 2006 and early results of these models were reviewed by the PDT. The focus was on refinement and documentation of the models for reevaluation of the issues in a holistic manner. No Tentatively Selected Plan has been chosen. A draft "letter" report was completed to document the work completed as of January 2007 and the project was suspended.

Current Status: **Suspended.** The project is planned for the future.
Est. Cost: \$ 6,500,000

Project Schedule: TBD

Project 1426 C&SF: CERP Florida Bay Florida Keys Feasibility Study Page 1 of 2

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Detailed Project Budget Information (rounded):

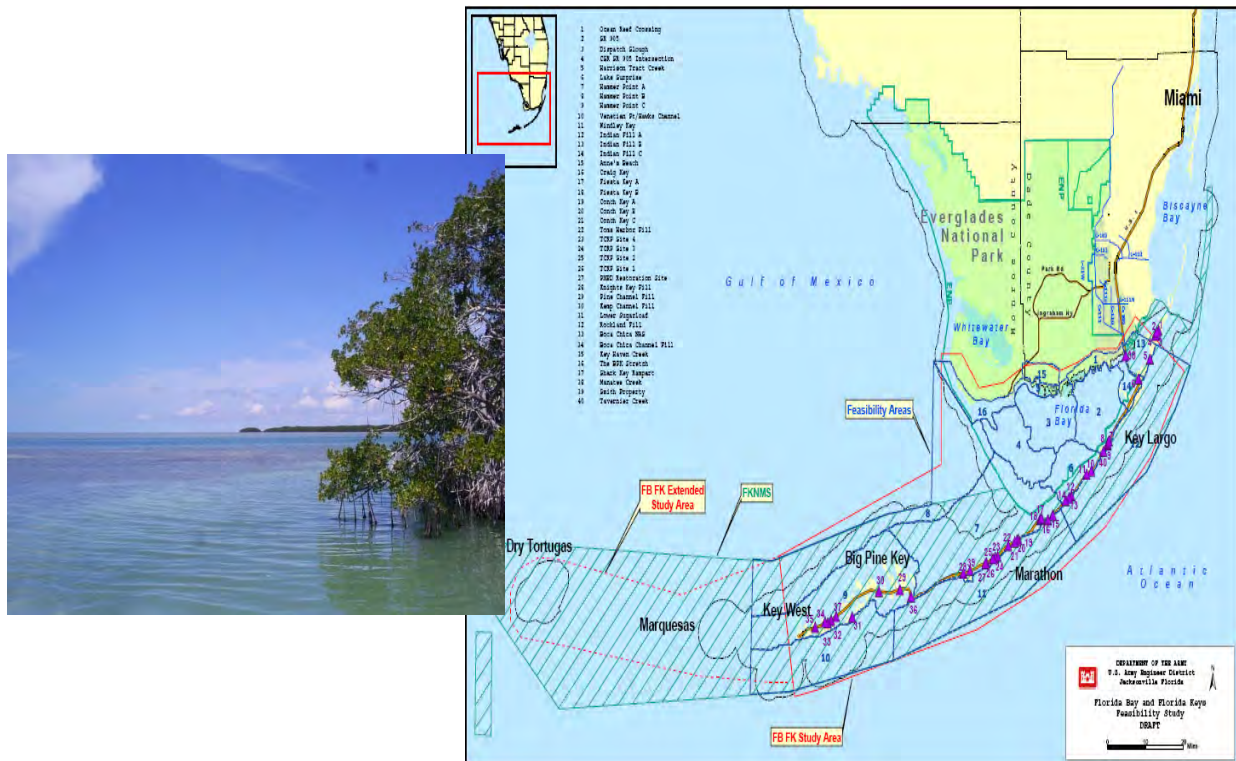
Florida Bay Florida Keys	Investment Thru FY 2020
USACE 100% RECON	\$156,000
Feasibility (50/50)	\$1,843,000
SFWMD	\$4,128,000
Total	\$6,127,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Dewey Worth, Project Manager, SFWMD
dworth@sfwmd.gov

Sources: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept, 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Southwest Florida Feasibility Study (SWFCWP)
Project ID: 1431 (CERP Feasibility Study WBS # 516)
Lead Agency: USACE / SFWMD
Authority: WRDA 1992, WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 3-A.4

Measurable Output(s): Regional Plan

April 1999 (Restudy) Project Synopsis: The Plan recognized that more thorough investigations of regional water resource problems was needed, and directed these to be conducted under the authority of WRDA 1996 that allows for the continuation of studies and analyses necessary.

The purpose of the study was to determine the feasibility of and provide a framework for making structural, non-structural, and operational modifications and improvements in the region in the interest of environmental quality, water supply, and other purposes and investigate water resources problems and opportunities.

Current Project Synopsis: The Southwest Florida Feasibility Study (currently known as the Southwest Florida Comprehensive Watershed Plan) was tasked with developing a comprehensive regional plan of action to address the health of aquatic and upland ecosystems; the quantity, quality, timing, and distribution of water flows; agricultural, environmental, and urban water supply; the sustainability of economic and natural resources; flood protection; fish and wildlife; biological diversity; and natural habitat.

The Restudy recognized the lack of hydrologic data available for southwest Florida and recommended a comprehensive evaluation of the environmental, agricultural and municipal water resource needs for the region. The area encompasses 4,300 square miles including all of Lee County, much of Collier and Hendry counties, and portions of Charlotte, Glades, and Monroe counties. The northern boundary of the study area parallels the northern drainage extent of the Caloosahatchee River Basin, while the eastern boundary is the drainage divide between the Big Cypress Swamp and the Everglades system.

The study has been underway since 2002, with the assistance of an interagency and interdisciplinary planning team. Issues addressed by the CWMP include loss of habitat, fragmentation of natural areas, alteration of natural freshwater flows to wetlands and estuaries (altered surface water hydrology), invasion of exotics, loss of groundwater recharge and water quality degradation in surface waters.

The study will provide a Comprehensive Watershed Plan that will incorporate projects recommended by a multi-agency PDT to restore natural hydrologic connections, improve habitat and landscape connectivity, enhance existing natural areas, and maintain water supply and flood control throughout the study area. From this Master Plan the PDT will develop a method of tiering to illustrate those components which would be viable as USACE Interest (Tier 1), State/Federal Interest (Tier 2), and Local Interest (Tier 3). Utilizing this method, and coupled with the historic USACE plan formulation process, the watershed plan will highlight specific Tier 1 interests for consideration and acquisition by a possible cost sharing partner.

Current Status: This project is on hold. The Final report was resubmitted to HQUSACE in 2014 for final review and approval.

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Est. Cost: \$ 17,000,000

Project Schedule:

2001 Start
 2012 Complete

Detailed Project Budget Information (rounded):

Southwest Florida Comprehensive Feasibility Study	Florida - Phase	Investment Thru FY 2020
USACE Reconnaissance (100% Federal)	-	\$235,000
USACE- Feasibility		\$8,193,000
SFWMD - Feasibility		\$8,193,000
Total		\$16,621,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Janet Starnes, Project Manager Principal, SFWMD
jstarne@sfwmd.gov

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:



Figure 2: Watersheds in the SWWFS Area

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Project Name: C&SF: CERP C-4 Control Structures (T)
Project ID: 1435 (CERP Project WBS # 46)
Lead Agency: USACE / SFWMD
Authority: Not authorized
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 1-A.2

Measurable Output(s): Well field recharge; seepage reduction

April 1999 (Restudy) Project Synopsis: Includes two water control structures located in the C-4 Canal in Miami-Dade County. The purpose of this feature will be to enhance wetland hydroperiods and enhance recharge to Miami-Dade County’s Northwest Well field.

Current Project Synopsis: The eastern C-4 structure (S-380E) will be operated to reduce regional system deliveries by diverting dry season stormwater flows to the C-2 Canal to provide salt-water intrusion protection and recharge to downstream ground water well fields. The structure can be operated to maximize the flow in both canals during the wet season to mitigate flooding.

The existing western structure, being implemented under the E&SF Critical Projects (WRDA 1996) program, will be operated to control water levels in the C-4 Canal at a higher elevation to reduce seepage losses from the Pennsuco Wetlands and areas to the west of the structure. This project adheres to the original concept outlined in Restudy.

Current Status: This project is on hold.

Est. Cost: \$ 6,509,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

C-4 Control Structures	Investment Thru FY 2020
USACE	\$92,000
SFWMD	\$21,000
Total	\$113,000

Hyperlink: http://www.evergladesplan.org/pm/projects/proj_46_c4_structure.cfm

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999). Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

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Program Name: Restoration Program: Hydrology
Project Name: **Permanent Forward Pumps - Expedited Project** -The SFWMD is implementing as part of Northern Everglades Project
Project ID: 1436
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source: State Funds

Strategic Plan Goal(s) Addressed: Other (Hydrology)

Measurable Output(s): Forward pumps to provide water supply

Project Synopsis: The USACE has initiated a process for revising the Lake Okeechobee regulation schedule. The new regulation schedule is expected to result in lower lake levels, which have the potential to affect water supply. This potential exists because constraints occur on gravity water supply releases when the Lake reaches 10.5 ft NGVD or less. Therefore, forward pumps are being designed to provide water supply deliveries when lake levels are between 10.5-7.5 ft NGVD.

Cost:
Total \$135,000,000

Current Status: Project on hold pending further action by SFWMD.

Start Date: January 2006
Finish Date: June 2010

Detailed Project Budget Information (rounded):

	Investment thru FY 2018
USACE	
SFWMD	135,200,000
Total	135,200,000

Hyperlink: N/A

Contact: Joseph Albers

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: C&SF: CERP PLA/Master Recreation Plan (MRP)
Program ID: 1440
Lead Agency: USACE / SFWMD
Authority: WRDA 1996, WRDA 2000

Strategic Plan Goal(s) Addressed: Supports 3-A2

Measurable Output(s): Critical planning document

April 1999 (Restudy) Program Synopsis: This programmatic need was not initially identified in the *Central and Southern Florida Project Comprehensive Review Study* (Plan); however, recreation is an authorized purpose of the Central & Southern Florida Project. The purpose of the Master Recreation Plan (MRP) is to support the implementation of the CERP Projects while maintaining and protecting the authorized purpose of recreation.

Current Program Synopsis: A significant part of recreation in South Florida is water based. As CERP projects are implemented, the impact to recreation opportunities will be addressed along with the additional recreation opportunities that may be made available by the CERP. A Master Recreation Plan (MRP) is under development to identify the best locations for regional recreation sites within the CERP area. This effort takes a system-wide approach to identify, evaluate, and address the impacts of CERP implementation on existing recreational use within the South Florida Ecosystem and to identify and evaluate potential new recreation, public use and public educational opportunities. A particular focus is on the identification of additional public use and recreational opportunities to compensate for public use facilities that may be lost as a result of CERP implementation.

Opportunities may be recommended for further evaluation during the development of Project Implementation Reports for specific CERP Projects; for implementation through other cost-share arrangements between federal, state, local, and not-for-profit entities; or as stand-alone Congressional authorizations. Specific recreation features will not be recommended; however, opportunities to address deficiencies identified through the Florida Statewide Comprehensive Outdoor Recreation Plan (SCORP) and public involvement will be identified on a regional basis through Conceptual Regional Plans.

Initial suitability mapping for the MRP began in June 2005. A mapping study looked at nine key recreation activities and how they might mesh with the surrounding landscape and restoration purposes in each of the projects. After the maps were complete, the USACE and the SFWMD held 18 "listen and learn" public scoping workshops throughout South Florida, gathering input regarding recreation demand and emerging recreation issues. Following the workshops, regional program analysis and conceptual recreation plans were created. After public review and comment during the spring of 2008, the regional conceptual recreation plans were finalized.

Current Status: A draft MRP was revised. **However, project was placed on hold.**

Detailed Project Budget Information: *Funding is part of the overall Program-Level Activities budget.*

Hyperlink: [N/A](#)

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil
Jerry Krenz, Project Manager, SFWMD
jkrenz@sfwmd.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Henderson Creek-Belle Meade Restoration (OPE)
Project ID: 1518 (CERP Project WBS # 93)
Lead Agency: USACE/FDEP
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 1-B.1

Measurable Output(s): 10-acre stormwater lake/marsh filtering system

April 1999 (Restudy) Project Synopsis: Includes multiple individual elements to complement each other to form a larger-scale combined effect: a 10-acre stormwater lake/marsh filtering system; four culverts under State Road 951; hydrologic restoration around Manatee Basin including culverts, ditching, removal of some roadbed; invasive, exotic plant removal; a public access point and interpretive boardwalk; construction of a swale and spreader system; and removal of the Road-to-Nowhere.

Current Project Synopsis: The area known as Belle Meade is the primary drainage basin for the Henderson Creek Estuary, which drains into Rookery Bay. Changes in land use within the primary watersheds draining into Rookery Bay have been identified as the highest priority resource issue that threatens the long-term preservation of the research reserve's estuarine resources. The purpose of this feature in Collier County is to restore historic sheetflow to the estuary, treatment of stormwater, improvement of water quality and increase in habitat value and wetland functions.

Current Status: This project is currently on hold.

Est. Cost: \$ 10,908,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Henderson Creek-Belle Meade	Investment Thru FY 2020
USACE	\$128,000
SFWMD	\$0
Total	\$128,000

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C-43 Water Quality Treatment and Testing Project
Project ID: 1519
Lead Agency: South Florida Water Management District
Authority: Chapter 373, Florida Statutes
Funding Source: State Funds

Strategic Plan Goal(s) Addressed: 1.B.1

Measurable Output(s): Water Quality Treatment and Testing Facility

Project Synopsis: In 2007, the Florida legislature enacted, and, in 2016, amended the Northern Everglades and Estuaries Protection Program (NEEPP; Section 373.4595, Florida Statutes), which expanded the Lake Okeechobee Protection Act to the entire Northern Everglades system, including the Lake Okeechobee watershed as well as the Caloosahatchee and St. Lucie rivers and estuaries. The C-43 Water Quality Treatment and Testing Project (C43-WQTTP) is identified as a watershed construction project in the 2009 Caloosahatchee River Watershed Protection Plan, and is included as a Basin Management Action Plan (BMAP) project (CA-05 for Phase II Test Cells) in the FDEP BMAP 2020 Update. This project is also identified as a key project in the state's 20-year plan for Everglades restoration and protection. Overall, the objective of the C43-WQTTP is to demonstrate and implement cost-effective, constructed wetland-based strategies for reducing nutrient discharges, particularly nitrogen, to the Caloosahatchee River and its downstream estuarine ecosystems. It is also anticipated that this project may generate nutrient reduction strategies that apply to other South Florida river and estuarine systems. The C43-WQTTP is being conducted using a multi-scaled approach, including the Phases I and II study demonstrations, which findings are anticipated to provide the basis to design, build and operate an effective full-scale constructed wetland treatment facility in the future.

Current Status: In 2007, approximately 2,000 acres of land at the Boma property were acquired with funds from Lee County as well as from the SFWMD and State of Florida in support of this project. In October 2015, the District executed an agreement with FDEP using Federal Clean Water Act Section 319 (h) grant funds for the incremental design and construction of the testing facility (Phase I). The Phase I demonstrations involved quantifying biologically available dissolved oxygen (BDON) through bioassays and studying mesocosms to assess potential surface water nitrogen removal rates using different plant communities, soil types, and hydrologic loading rates. In 2016, the District proceeded with the first phase of the project. Mesocosm construction was completed in June 2016. The Phase I study began in July 2016 and field operations and sampling were completed in December 2018. As part of Phase I efforts, a denitrification study was also completed in 2018 to help determine how vegetation, hydraulic load rates and soil treatments affect denitrification rates in the mesocosms. Final reporting for the Phase I study results was completed in August 2019.

Phase I study findings identified BDON reduction as the principal limiting factor for achieving high total nitrogen load reductions. In the next phase of this project, the scale up to test cells provides an opportunity to further explore options to remove nitrogen from surface water including making BDON more bioavailable for uptake and removal. The primary objective of the Phase II study is to evaluate nitrogen removal treatment technologies to optimize efficiencies and improve upon the general understanding of nitrogen reduction in constructed wetland systems. Under Phase II, the planned test cell facility has been re-sited to the SFWMD-owned Spoil Management Site in Moore Haven, in order to accommodate the planned Flow Equalization Basin (FEB) construction at the Boma property.

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Phase II planning began in January 2020 for defining the study objective and hypotheses and outlining the design criteria for the test cells. The full design of the test cells is planned to be completed in 2021. Ultimately, it is anticipated that the knowledge gained from the phased demonstrations can be used to construct a full treatment facility. The Phase II demonstration (test cell construction and operation) and full treatment facility are both contingent on future legislative funding and project authorization.

Total Estimated Project Cost: \$41.3M (includes land acquisition, planning, conceptual design, and Phase I demonstrations); future demonstrations TBD.

Project Schedule: Start Date: September 2007
 Finish Date: 2019 for Phase I - Bioassays/Mesocosms, 2021 for Phase II - Test Cell design; by 2025 for Phase II Test Cell Facility construction, operations and monitoring

Expenditures by SFWMD:

	Expenditures Fiscal Years 2006 -07 thru 2018-19
Federal	\$878,642
State	\$28,672,874
SFWMD	\$1,722,499
Other	\$10,000,000
TOTAL	\$41,274,015

Data Source: All expenses in JI50 and JI51, Funded Programs 100078 (FY2007-FY11), 100769 (FY12-FY14), and 100911 (FY14-FY18).

Contact: Stacey Ollis, SFWMD



Location map for the C-43 Water Quality Treatment and Testing Project.

[Note: ★ depicts location of Phase I mesocosm demonstrations.]

Project Name: C&SF: CERP Comprehensive Integrated Water Quality Plan (CIWQP)
Project ID: 1701
Lead Agency: USACE / FDEP
Authority: WRDA 1996
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Other – supports 3-A.4

Measurable Output(s): Recommendations

April 1999 (Restudy) Project Synopsis: There was no comprehensive plan for achieving water quality restoration in south Florida, which links together water quality restoration programs in the context of comprehensive planning for ecosystem restoration. Achieving all of the water quality goals for ecosystem restoration in all use-impaired water bodies within the study area will depend on actions outside the scope of the *Central and Southern Florida Project Comprehensive Review Study* (Restudy). The degree to which some of the existing water quality improvement programs have been implemented has been limited. To ensure that south Florida ecosystem restoration objectives are achieved, a Comprehensive Integrated Water Quality (CIWQ) Plan that links water quality restoration targets and remediation programs to the hydrologic restoration objectives of the recommended plan must be developed for the entire study area.

In its July, 1998 Interim Report on the C&SF Project Restudy (GCSSF, 1998), the Governor's Commission recommended that a water quality implementation plan for the Restudy be developed with Florida Department of Environmental Protection (FDEP) as the lead agency, in cooperation with the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, South Florida Water Management District, the Seminole and Miccosukee Native American Tribes, and local governments. In order to resolve water quality problems on an ecosystem wide basis, the Governor's Commission recommended that a comprehensive water quality plan be initiated as a feature of the Restudy. The 1999 Restudy recommended this plan to be conducted under the authority of WRDA 1996 that allows for the continuation of studies and analyses. The Restudy recognized the need for a comprehensive water quality plan that would integrate the Comprehensive Everglades Restoration Plan (CERP) projects and other federal, state and local government programs.

Current Project Synopsis: The Comprehensive Integrated Water Quality Plan for south Florida involves identifying pollution-impaired water bodies, quantifying types and sources of pollution, establishing interim and final pollution load reduction targets necessary to achieve ecosystem restoration, recommendations for development of potential source reduction programs, recommendations for baseline and future water quality monitoring programs to assess ecological responses to water quality changes, and recommendations for designing and constructing water quality treatment facilities, if necessary.

Although the scope of the study was not fully developed, it was envisioned that this feasibility study would also address other issues. Recommendations would address fragmented, uncoordinated water quality sampling, data quality, and climatological effects and trends; practices for oversight and support of improved water quality modeling efforts in south Florida; development of additional water quality restoration targets, where needed; remediation programs to achieve those targets; Best Management Practices in specific agricultural and urban areas where appropriate (including identifying those urban areas where participation in the NPDES municipal stormwater program is needed); and, synchronizing water quality restoration programs with the implementation schedule for the Plan components.

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The Comprehensive Integrated Water Quality Plan may also include recommendations for locations of water storage and treatment areas and design features to optimize recommended plan components to achieve water quality restoration targets the determination of additional features (e.g., polishing cells, operational features) for the larger recommended plan components currently lacking specific water quality performance elements.

FDEP agreed to participate in the Project Management Plan (PMP) phase of the feasibility study as the local sponsor. The Project Delivery Team identified the issues for the feasibility study, and a Draft Project Management Plan (PMP) was prepared in 2003 and approved by the project's Design Coordination Team.

In 1999, the same year the Restudy was published, the Watershed Restoration Act of 1999 (section 403.067 F.S.) directed the FDEP to scientifically evaluate the quality of Florida's surface waters and promote the mechanisms necessary to clean up pollution. The Act was created specifically to implement the federal Total Maximum Daily Load (TMDL) program, which is a systematic approach to establishing how much pollution water bodies can assimilate while still meeting water quality standards. This act had a direct effect on the suspension of work on the Comprehensive Integrated Water Quality Plan. To streamline the TMDL program, FDEP adopted a five-year cycle that divides Florida into five groups in which different activities take place each year and the cycle is reiterated continuously. Activities include:

- Preliminary basin assessments;
- Identification of pollutant-impaired waters;
- Targeted water quality monitoring and data analysis;
- TMDL development and adoption;
- Basin planning with local stakeholders to establish the actions necessary to reduce pollution; and
- Implementation through regulatory action, funding, pollution prevention strategies and other measures.

The FDEP also adopted an Impaired Waters Rule establishing the methods by which surface waters are evaluated and the need for TMDLs is determined.

Current Status: The FDEP has completed the whole 5-year cycle once and is finishing up the second cycle. FDEP developed and adopted, by rule, 92 TMDLs as of June 2009; another 87 TMDLs have been proposed or are in draft, all of which must also be adopted by rule. Of these, as many as 16 final TMDLs and 5 draft TMDLs are in the CERP study area.

At the same time, FDEP has worked with the Florida Department of Agriculture and Consumer Services (FDACS) and the state's five water management districts to improve the mechanisms local governments, utilities, industries and agricultural operations can use to implement pollution reductions and improve water quality. FDACS has invested significant resources in targeting best management practices to particular agricultural commodity groups and demonstrating why it is in their best long-term economic and social interests to implement them. FDEP has invested over \$17.5 million on research and development of non-agricultural best management practices and implementation of targeted monitoring expressly for the TMDL program. FDEP has awarded another \$26 million in federal section 319 grants to local governments to implement better urban stormwater treatment projects and practices.

At the same time, the SFWMD and the Monitoring Assessment Plan (MAP) have gone through significant efforts to coordinate water quality monitoring in the CERP study area in order to increase efficiency and decrease duplication of effort. The Interagency Modeling Center was established between the SFWMD and the USACE to better coordinate modeling efforts in south Florida.

This project is currently on hold.

Project 1701 C&SF: CERP Comprehensive Integrated Water Quality Plan Page 2 of 4

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Est. Cost: \$ 8,100,000

Project Schedule: TBD

Detailed Project Budget Information (rounded):

Comprehensive Integrated Water Quality Study	Investment Thru FY 2020
USACE Recon (100%)	\$735,000
Feasibility (50/50)	\$0
FDEP	\$0
Total	\$735,000

Hyperlink: [N/A](#)

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Sources: Original project description was summarized from the original PMP and discussion documents. Estimated project costs are fully funded estimates as of October 2019. Current status of the TMDL program is from the report "*Florida's Total Maximum Daily Load Program: the First 5 Years.*"

Additional Information: The study area encompasses 17,500 square miles from Orlando to the Florida Reef Tract. The Kissimmee River, Lake Okeechobee and the Everglades are the dominant watersheds that connect a mosaic of wetlands, uplands, coastal areas, and marine areas. The study area includes all or part of 19 counties: Monroe, Miami-Dade, Broward, Collier, Palm Beach, Hendry, Indian River, Martin, St. Lucie, Brevard, Volusia, Glades, Lee, Charlotte, Highlands, Okeechobee, Osceola, Orange, and Polk. The project boundary corresponds to that of the SFWMD and the Indian River Lagoon (IRL) North Feasibility Study.

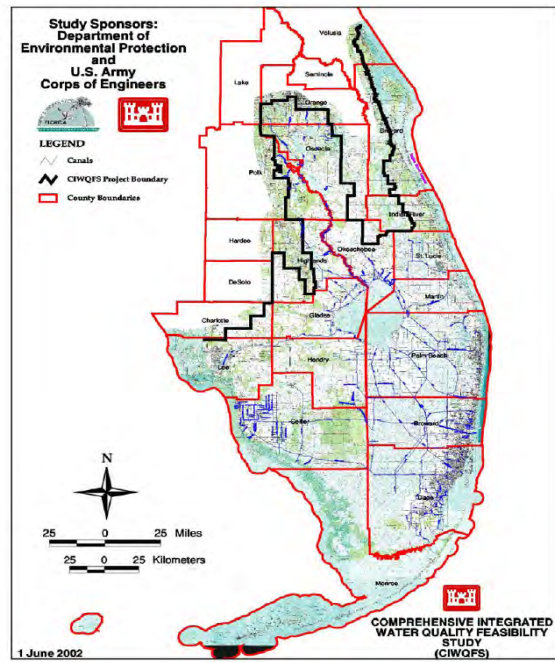
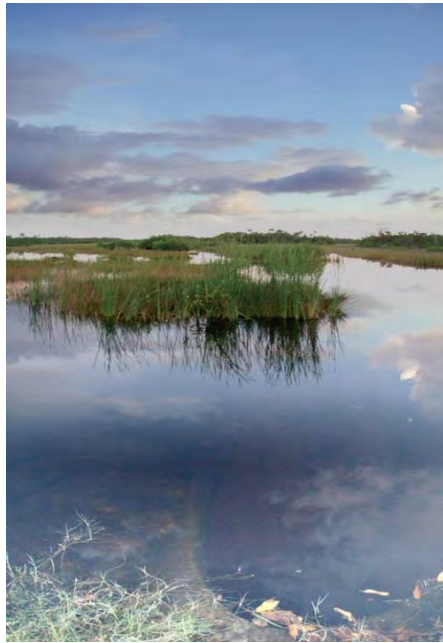


Figure 1.1 STUDY AREA BOUNDARY

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Management
Project name: Floridan Aquifer Restoration
Project ID: 1707
Lead Agency: USDA - NRCS
Authority: PL-46

Strategic Plan Goal(s) Addressed: Primary: Other

Measurable Output(s): Reduced Aquifer Contamination

Project Synopsis: Saline aquifer water will cause well casings to corrode and eventually leak causing cross aquifer contamination caused by artesian flow from the Floridan. This project seeks to permanently decommission irrigation wells via plugging in St. Lucie County in order to reduce saline water from the Floridan Aquifer by leaking well casings transferring groundwater into the surficial aquifer used for drinking. This project has been put on hold due to a lack of funding.

Cost:

Total:
 \$900,000
 Project Development
 Land Acquisition
 Implementation \$900,000
 Operations and maintenance:

Project Schedule:

Start Date: 2002
 Finish Date: TBD

Detailed Project Budget Information (\$1000s)

	Thru 2004	2005	2006	2007	2008	2009	2010	Total
Federal	\$50	\$100	\$100					\$250
State	\$150	\$150	\$150					\$450
Tribal								
Local								
Other	\$100	\$50	\$50					\$200
Total	\$300	\$300	\$300					\$900

Hyperlink: N/A

Contact: Donna Smith -USDA - NRCS

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Winsberg Farm Wetlands Restoration (OPE)
Project ID: 2301
Lead Agency: USACE / Palm Beach County's Water Utilities District (PBCWUD)
Authority: WRDA 2000 (*Programmatic Authority < \$25 M*)
Funding Source: Federal/County

Strategic Plan Goal(s) Addressed: Primary: 2-A.3

Measurable Output(s): 114 acres of improved wetlands

April 1999 (Restudy) Project Synopsis: The Winsberg Farm wetlands project was included in the Restudy as an "Other Project Element". Projects in the "Other Project Element" category were determined to be consistent with Restudy planning objectives and have a Federal interest, but were too small in scale to evaluate from a system-wide perspective. The original concept for this feature includes the construction of a 175-acre wetland east of Loxahatchee Wildlife Preserve in Palm Beach County using water that would normally be lost to deep well injection or any future beneficial use.

Current Project Synopsis: The project involves restoration of approximately 114 acres of wetlands on former agricultural lands. Wetlands would reduce the amount of treated wastewater coming from the Palm Beach County's Water Utilities District (PBCWUD) Southern Region Water Reclamation Facility (SRWRF) lost to deep injection wells by further treating and recycling the water. Treated wastewater will instead be reused to recharge the local aquifer system, create a new ecologically significant wildlife habitat and extend the function of the nearby Wakodahatchee Wetland. The initial configuration would include a Phase 1 design and construction with approximately 72 acres of wetlands created in the western half of the project. The remaining 42 acres of the project on the eastern half, considered Phase 2, would work similarly. As a result of the 2003 real estate purchase agreement (175 acres) between PBCWUD, the non-federal sponsor and the Winsberg family, PBCWUD completed construction of Phase 1 in 2004. This included 72 acres of wetlands, plus a parking lot, visitor center, and recreational access features and was completed without Federal funds. The local sponsor refers to this portion of the project as "Green Cay Wetlands".

The 2005 Tentatively Selected Plan (TSP), presented at AFB, was configured assuming constant inflow of water to maintain continuous inundation. Refinements during the formulation process provide for the project to be located on approximately 165 acres of farmland just east of the Southern Region Water Reclamation Facility (SRWRF). Approximately 114 of the 165 acres would be hydrated using treated wastewater from the SRWRF resulting in the creation of a wetland system approximately three times the size of the adjacent Wakodahatchee Wetlands, and its location and proximity would leverage the recently created ecosystem restoration benefits by expanding the constructed wetland into an integrated system having even greater regional significance. Water levels will be allowed to fluctuate seasonally, within a 1- to 2-foot range throughout the entire project, in response to the natural seasonal variation of rainfall. This variation in the depth of project hydration will influence the growth and distribution of various plant species within the wetland area.

Effluent enters the site from the western half of the project (Phase 1). To circulate flow throughout the project, several control structures and pumps would be integrated in various locations and can be operated to allow flow in three ways:

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1. To the eastern half of the project (Phase 2), or
2. Circulate flow in the eastern half of the project by a 15-hp recirculation pump, or
3. Send flow to deep well injection by a 250-hp discharge pump in the event pool elevations rise beyond a set point due to direct rainfall.

A draft PIR was completed in February 2008 and released for public and agency comment. The draft report recommended credit for PBCWUD's share of the project, and was submitted to the Secretary of the Army to authorize Federal funds to construct the Phase 2 portion of the project (approximately 42 acres to be constructed to the same design elevations as Phase 1).

Current Status: During summer 2008, the sponsor declined to continue support of the project; in part based on the requirement made to revise embankment heights to the new Federal standards and the need to remove landscaping on sections of the Phase 1 embankment that otherwise sacrifices its structural integrity. Such a removal was also viewed as potentially impacting existing habitats or disrupting to public recreational use. **Project close out was announced by Public Notice in 2009. CLOSED OUT 2009.**

Est. Cost: \$ 16,736,000

Project Schedule:

2009 Discontinued; **CLOSED OUT.**

Detailed Project Budget Information (rounded):

Winsberg Farms Restoration	Investment Thru FY2020
USACE	\$1,855,670,000
SFWMD	\$1,978,110
Total	\$3,833,780

Contact: Jeff Couch, Ecosystem Projects Section, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999). Actual expenditures include all federal expenditures through FY19 (Sept. 2019) and sponsor expenditures on design.

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Project Name: C&SF: S-169/Nine Mile Canal Basin
Project ID: 2311
Lead Agency: USACE / SFWMD
Authority: Central and Southern Florida Project; Section 203 Flood Control Act (1948)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: 2-A.3

Measurable Output(s): Improved structures

Current Project Synopsis: The S-169 project, located in Hendry County, was to include enlarging culverts, an access bridge, converting 5 flap-gates telemetric-controlled gates, stabilizing canal banks, replacing two pump stations and installing a manatee protection barrier. This effort was related to high water stages of HHD that required operational discharges and an effort to moderate discharges to an industrial canal used for agricultural purposes.

A draft General Reevaluation Report/EA (2005) was completed, but was discontinued. The study phase was also completed.

Current Status: A determination was made that the project had “no further Federal interest”. The project has been ‘closed out’.

Est. Cost: \$ 13,600,000 (for the original project (Oct 2007 dollars))

Project Schedule:

2001 Start
2009 **Discontinued; Closeout completed.**

Detailed Project Budget Information (rounded):

S-169/Nine Mile	Investment Thru FY 2020
USACE	\$1,200,000
SFWMD	\$0
Total	\$1,200,000

Hyperlink:

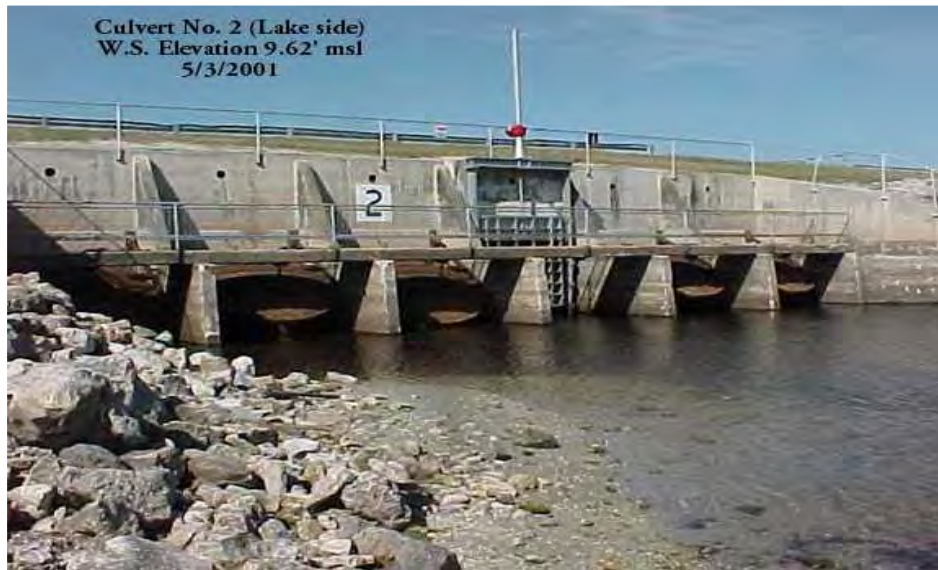
Contact: Jeff Couch, Ecosystem Projects Section, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description is summarized from the *DRAFT General Reevaluation Report and Environmental Assessment (2005)*. Initial cost estimate was based on the GRR description and was last calculated for inflation in October 2007 dollars.

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Project 2311 C&SF: S-169/Nine Mile Canal Basin Page 1 of 2

**Additional
Information:**



Project 2311 C&SF: S-169/Nine Mile Canal Basin Page 2 of 2

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Program Name: Brown Marmorated Stink Bug
Project ID: 2500
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: The Brown Marmorated Stink Bug, *Halyomorpha halys* (Heteroptera: Pentatomidae) was accidentally introduced in Pennsylvania in 1998 from Asia probably in packing material. By 2013 it had spread or been reported in 38 states and it is has been intercepted several time in the last years in Florida. Its host range includes temperate & tropical fruits, vegetables, legumes, ornamentals and weedy plants. This insect survives the winter by invading houses and other enclosed structures becoming a household nuisance pest. In the spring, adults migrate into field crops where they develop high populations and cause significant feeding damage.

The egg parasitoid *Trissolcus halyomorphae* (Hymenoptera: Scelionidae) was found and collected in China and brought back into quarantine facilities in the U.S. as a potential biological control agent of the Brown Marmorated Stink Bug.

As part of the risk assessment, host-specificity tests (choice, no-choice) are conducted at the quarantine facilities in Gainesville, Florida exposing *T. halyomorphae* adult females to several species of stink bugs including phytophagous and predators in the Pentatomidae, Plataspidae and Scutelleridae families. A single adult female *T. halyomorphae* is exposed to an egg mass in a small clear plastic container in a growth chamber on a 16-hour photoperiod (16:8 h L/D) at 20°C and 60% RH for 24 hours.

Results of the host-specificity tests (choice, no-choice) with the egg-parasitoid *Trissolcus halyomorphae* indicated that the higher level of parasitoid emergence (>80%) was obtained with *Halyomorpha halys*, the target pest. Risk assessment continues with *T. halyomorphae* as well as several other potential natural enemies.

Current Status: This project is not active.

Project Schedule:

Start Date: 8/4/2014
Finish Date: 8/3/2015

Detailed Project Budget Information

	Expenditures Thru 2015
Federal	432,127
Total	432,127

Contact: Dr. Greg Hodges, Assistant Director, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Hyperlink: <http://www.freshfromflorida.com/Divisions-Offices/Plant-Industry/Science/Biological-Control/Brown-Marmorated-Stink-Bug-Biological-Control>

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Program Name: Exotic Psyllids and *Liberibacter* species
Project ID: 2504
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.1
Invasive Species Strategic Action Framework Goal: 1

Project Synopsis: This project is aimed at the early detection of exotic psyllid (Hemiptera: Psyllidae) species and *Liberibacter* species that may be present in their bodies. Psyllids are well known as vectors of *Liberibacter* species such as *L. asiaticus*, *L. africanus*, *L. americanus* (citrus greening diseases) and *L. solanacearum* (zebra chip in potatoes). To date, the only *Liberibacter* species affecting Florida agriculture is *L. asiaticus* (citrus greening, Huanglongbing). Introduction of exotic psyllid species could lead to the accidental introduction of exotic *Liberibacter* species to Florida agricultural crops. The project involves the creation of different type of traps that can be utilized in detecting psyllids and also survey activities around different agricultural crops grown in Florida.

Current Status: This project is no longer active.

Project Schedule:

Start Date: 7/15/2014
Finish Date: 7/14/2015

Detailed Project Budget Information

	Expenditures Thru 2014
Federal	\$58,460
SFWMD**	
Local	
Total	\$58,460

Contact: Dr. Greg Hodges, Assistant Director, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

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Program Name: Exotic Management
Project Name: Mexican Red Bellied Squirrel Eradication on the Islands in Biscayne National Park
Project ID: 2602
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 2-B.2 and 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 2 and 3

Measurable Output(s): The ongoing eradication program includes systematic squirrel nest surveys, removal, camera trapping and nest box monitoring.

Project Synopsis:

Biscayne National Park initiated an eradication program of the invasive Mexican Red Bellied Squirrel in 2008. The programs main goals were to protect the natural resources of Biscayne National Park while preventing MRBS from expanding its range to other islands or to the US mainland, where it could compete with native wildlife such as native squirrels and state and federally listed species such as the Key Largo woodrat. The potential damage to Florida’s agricultural industry was also of concern as MRBS is a significant agricultural pest in its native range.

Current Status: Since 2006, EPMT has found 1,814 dreys, 49 squirrels, over 1,760 hours. It has been four years since any work has been done with no funding. The population is coming back and is ripe for eradication if funding is applied. USDA has been contacted as a possible partner, but no official activity has yet resulted. The park has also submitted a proposal requesting NPS funds to support two GS-5 bio-techs to conduct intensive squirrel-focused activities for six-months, however this project has not yet been approved for funding and likely will remain unfunded as other park projects have been ranked as being of higher priority.

Project Schedule:

Start Date: 2008
Finish Date: ongoing

Estimated Project Cost: \$26,000

Detailed Project Budget Information

	Expenditures 2014 - 2016
Federal	\$25,917
Total	\$25,917

Contact: Vanessa McDonough, 786-335-3649

Information for the 2021 Integrated Financial Plan
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Program Name: Critical Ecosystem Science Initiative (CESI) and National Park Service Base Funding
Project Name: Development of comprehensive fish monitoring programs in Everglades National Park

Project ID: 2603

Lead Agency: NPS

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Exotic Species Strategic Action Framework Goal: 2

Measurable Output(s): Projects provide data on relative abundance and distribution of non-native fishes and contribute to early detection monitoring in Everglades National Park.

Project Synopsis: Freshwater fish and invertebrates are an integral link in Everglades food webs, providing food for wading birds, larger fish, otters, alligators, and other wildlife (Science Subgroup 1996). However, the construction of canals, imposition of agriculture, and the encroachment of urban development has highly impacted the Everglades ecosystem by loss of habitat and unnatural water quality, quantity, and timing. Altered water timing and flow dynamics and lowering of water levels have likely influenced the dynamics of the freshwater communities in Everglades National Park (EVER; Loftus and Eklund 1994). Understanding the influence of habitat and hydrology on fish assemblages will help provide the knowledge needed to guide restoration programs in the Everglades. Freshwater fisheries monitoring efforts in EVER date back to the 1960's. Most of the long-term monitoring efforts have been designed to track the status and trends of the most common species, understand the influence of habitat and hydrology on fish assemblage structure, and to develop performance measures to evaluate hydrological management and restoration actions. However, very few fish monitoring projects have been designed with the objectives to detect, track the abundance of, or evaluate the impacts of non-native fishes.

Hydrologic restoration alone will not solve the non-native species problem in south Florida's National Parks. In addition, some of the water management actions needed to achieve hydroperiod restoration may pose a threat of introducing new non-native species. As of 2007, 34 species of non-native fishes were reproducing in Florida (Shafland et al 2008). Since 1965, 17 non-native freshwater fish species have been observed in Everglades National Park and 16 of the 17 species were first established in canals outside the boundaries of EVER prior to colonizing inside (Loftus 1988, Kline et al. 2014). After water management actions that changed inflows from canals to EVER, Kline et al (2014) observed increases in the number of new non-native species observed suggesting fish are spreading from canals into EVER marshes (Kline et al. 2014). Although the effects of exotic fishes in the Everglades marshes are largely unstudied and unknown (Schofield and Loftus 2014), when studied by Harrison et al. (2013) the abundance of several small native fishes were inversely related to the abundance of a non-native fish species, and an increase in the abundance, proportion, or number of species of non-native fish indicates adverse conditions for the restoration of EVER. Approximately 25% of EVER's internal freshwater monitoring efforts have been designed with objectives to assess changes in the relative abundance or distribution of non-native fishes. One project in particular, the Parkwide Monitoring effort was designed with the objective to contribute to early detection and tracking the distribution of non-native fishes on the freshwater marsh.

Current Status: Several new non-native species were detected since 2000. The spread, distribution, and fluctuations in relative abundance of the new non-native fishes have been documented throughout the freshwater marshes. Monitoring efforts have ceased due to personnel shortages and other logistical challenges imposed by the COVID-19 pandemic. Reevaluation of aquatics monitoring is being considered as part of strategic and science planning efforts. **This project is on hold.**

Project Schedule:

Start Date: 1999

Finish Date: November 2019

Project 2603: Development of comprehensive fish monitoring programs in Everglades National Park Page 1 of 2

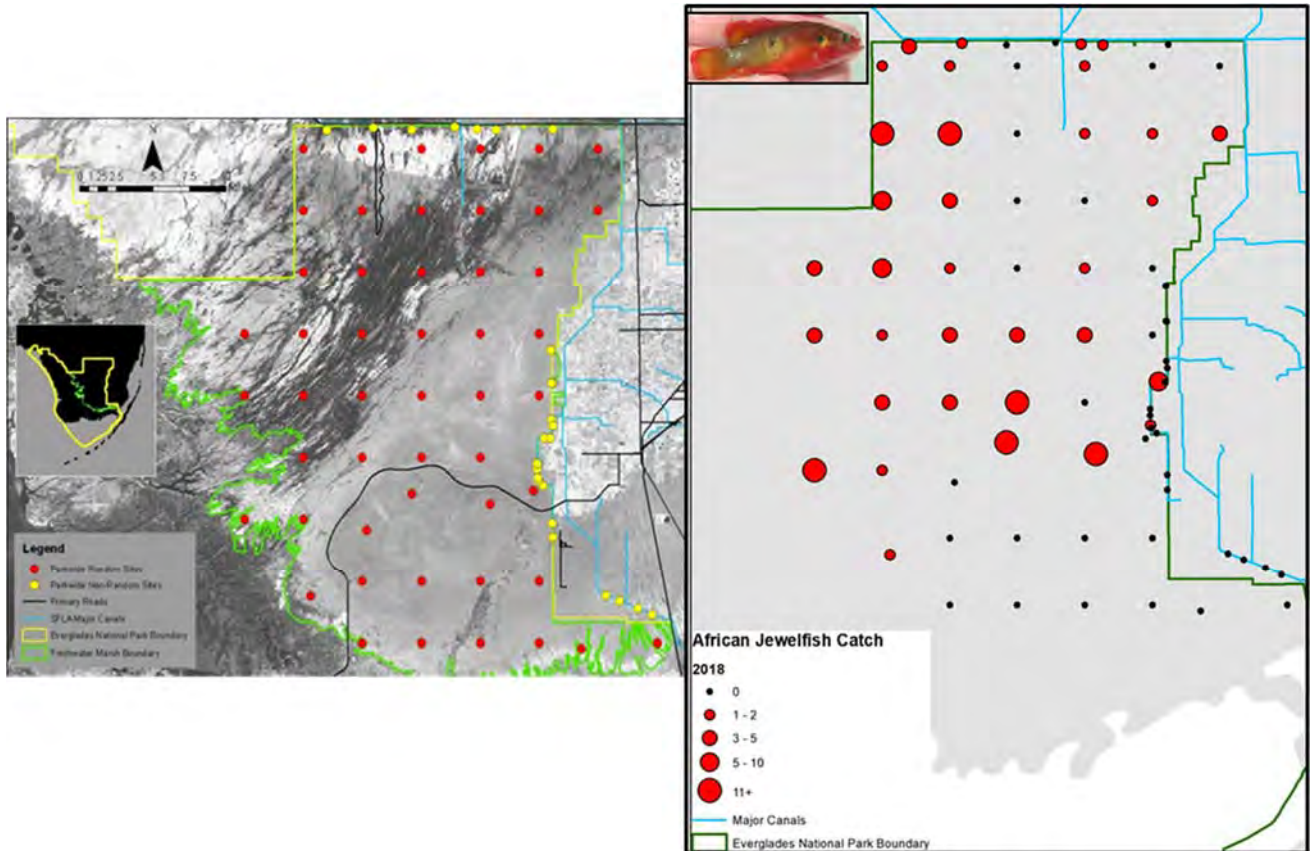
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Detailed Project Budget Information

	Expenditures July 2020-June 2021
Federal	\$0
Total	\$0

Contact: Jeff Kline, SFNRC, Everglades National Park

Map of area: Map of EVER's Parkwide monitoring effort and the catch of African Jewelfish in 2018.



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Program Name: Invasive Species Population Management
Project Name: **Metagenomic survey in south Florida waters**
Project ID: 2606
Lead Agency: USDA/ APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.2
Invasive Exotic Species Strategic Action Framework Goal: 2

Measurable Output(s): Taxa identified from water in and near ENP

Project Synopsis: Metagenomics uses the technology of genome sequencing to obtain sequences of every piece of DNA in a single environmental sample. These are then compared to publicly available databases such as the National Center for Biotechnology Information to assess taxonomic diversity and abundance, from bacteria to birds, within a sample. This is a powerful tool for detecting species that are found in low numbers and/or are difficult to detect through traditional field methods. We have applied this tool, using cutting-edge technology, to samples of water from Everglades National Park and surrounding areas to identify the suite of invasive, native, and endangered species within the Park. The metagenomics approach could be applied as a regular monitoring tool and would be extremely powerful used in conjunction with traditional surveillance methods to measure and preserve biodiversity in our natural communities.

Current Status: Water samples were analyzed using the Titan supercomputer at Oak Ridge National Laboratory. Tentative identifications were made on thousands of taxa from viruses to mammals. These include many disease organisms and invasive species. Positive taxonomic identifications require specific genetic verifications which have yet to be performed, pending NPS input and recommendations.

Discussions with NPS scientists resulted in no definitive guidance for pursuing this line of research. At this time, continuation of the research will depend on availability of funding from sources outside USDA.

Project Schedule:

Start Date: 2014

Finish Date: ongoing

Estimated Project Cost: \$12,000 annually

Detailed Project Budget Information

Expenditures 2014 - 2018	
Federal	\$72,000
Total	\$72,000

Contact: USDA APHIS National Wildlife Research Center

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Program Name: Invasive Species Population Management
Project Name: **Development of eDNA for Nile Monitor detection and removal**
Project ID: 2607
Lead Agency: USDA APHIS National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.2 and 2B.3
Invasive Exotic Species Strategic Action Framework Goal: 2 and 3

Measurable Output(s): (1) Development and publication of methodology to identify Nile monitor eDNA in water samples; (2) Collection and analyses of water samples from south Florida canals to detect presence of Nile monitors.

Project Synopsis: Determining the extent of the range of this invasive reptile currently depends on direct sightings of animals in the field. Assaying water from south Florida canals for presence of DNA will expand detection probabilities and will increase chances of locating incipient populations before they are fully established. Once the analytical method is developed and verified, the method will be implemented in canals and other waterways of south Florida, within the current known range as well as beyond it, to supplement information obtained from visual surveys.

Current Status: **This project is completed.**

The development of an eDNA methodology for detecting Nile monitors in south Florida waterways is proceeding.

Project Schedule:

Start Date: 2014, method development and verification.

Finish Date: ongoing, field applications 2015

Estimated Project Cost: TBD

Detailed Project Budget Information

Expenditures 2014 - 2018	
Federal	\$76,000
Total	\$76,000

Contact: Michael Avery USDA APHIS National Wildlife Research Center

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Program Name: Invasive Species Population Management
Project Name: **Burmese python eDNA development and application**
Project ID: 2608
Lead Agency: USDA/ APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.2, 2-B.3, and 2-B.4

Invasive Exotic Species Strategic Action Framework Goal: 2, 3 and 4

Measurable Output(s): (1) Development and publication of methodology to identify Burmese python eDNA in water samples; (2) Collection and analyses of water samples from south Florida canals to detect presence of pythons.

Project Synopsis: Using captive animals, we developed a technique to detect DNA from Burmese pythons in water (Piaggio et al. 2014. Molecular Ecology Resources 14:374-380). The method we developed is efficient, inexpensive, and does not produce false positives. We are now applying this method to survey South Florida waterways to detect the presence of this cryptic species. Sample collection is taking place in conjunction with on-going surveys conducted by University of Florida (UF) researchers along routes that are part of their Everglades Invasive Reptile and Amphibian Monitoring Program (EIRAMP). We will initially use two of the survey routes, one along the Tamiami Trail (US Route 41) in the heart of the known Burmese python range, and the other along the L-5 canal 64 km to the north in an area where pythons have seldom been recorded. Each of the sampling transects will be 25 km long, and we will sample at 1-km intervals. At each sampling location, we will collect 5 independent samples. Sampling will occur quarterly to document seasonal changes. Samples will be analyzed at the UF wildlife genetics lab in Gainesville following methodology described by Piaggio et al. (2014). We will apply occupancy modeling to the findings. As new information is acquired, survey locations will likely change to address updated needs.

Current Status: **This project is completed.** Methodology developed and published in 2013/2014; field sample collections and analyses are on-going. Field samples from south Florida continue to be processed at University of Florida.

Project Schedule:

Start Date: 2014

Finish Date: Ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

Expenditures 2014 - 2018	
Federal	\$91,000
Total	\$91,000

Contact: Michael Avery USDA APHIS National Wildlife Research Center

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Program Name: Invasive Species Population Management
Project Name: Population suppression and biology of Black spiny-tailed Iguanas *Ctenosaura similis*
Project ID: 2701
Lead Agency: USDA APHIS

Strategy and Biennial Report Objective Addressed: 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3

Measurable Output(s): (1) Animals removed and (2) population trend.

Project Synopsis: *Ctenosaura similis* was introduced to Florida in 1979. Currently, there are populations in south Florida and the Keys. The largest population, on Gasparilla Island in SW Florida, has been controlled since 2008 resulting in removal of >20,000 animals using methods applicable to other populations. Information obtained from specimens is summarized for 2008-2011 (Avery et al. 2014. Biology and control of invasive black spiny-tailed iguanas, *Ctenosaura similis*, Gasparilla Island, Florida. Integrative Zoology. In press). Analysis of food habits derived from stomach contents is in preparation.

Current Status: **This project is completed.** Ctenosaurs continue to be removed from Gasparilla Island (Charlotte County) by USDA Wildlife Services personnel. Necropsies are being performed to document additional aspects of the biology of the invasive population.

The results from Gasparilla Island operational control were published: Avery, M.L., E.A. Tillman, C. Spurfeld, R.M. Engeman, K.P. Maciejewski, J.D. Brown, and E.A. Fetzer. 2014. [Invasive black spiny-tailed iguanas \(*Ctenosaura similis*\) on Gasparilla Island, Florida](#), USA. Integrative Zoology 9:590-597. USDA Wildlife Services continues to remove ctenosaurs in Charlotte County through an agreement with the county. Publication of food habits analysis is in preparation.

Project Schedule:

Start Date: 2014
Finish Date: 2018

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Federal	\$25,500
Total	\$25,500

Contact: Michael Avery USDA APHIS Wildlife Services

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Program Name: An Integrated Early Detection, Rapid Response, Management, and Monitoring Program for Everglades Invasive Reptiles and Amphibians
Project Name: **Improve probability of detection and removal of pythons and other invasive reptiles**
Project ID: 2703
Lead Agency: University of Florida with USGS, funded by UF, the SFWMD

Strategic Plan Goal(s) Addressed: Objective 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3.B1 and 4A1

Measurable Output(s):

Probability of detection is estimated using various statistical and modeling approaches from repetitive, spatially referenced field surveys targeted towards specific taxa. Improvement of detection probabilities through adaptive management and structured decision making can be measured.

Project Synopsis:

Estimates of probability of detection are used to calculate unbiased estimates of occupancy, density, and abundance. Detection probability is the probability of detecting the species given that it is present. Estimates of occupancy, density, and abundance are the basis for developing performance measures to determine effects of management plans on invasive exotic animals. We can also look at probability of detection in relation to factors such as season, time of day, habitat, weather conditions, and method of survey (among others) to refine and improve our ability to detect pythons.

For pythons we need a method for estimating abundance or occupancy that accounts for imperfect detection. The problem is there are no models for abundance where animals are removed when observed without any marked animals being released. This means we need a way to increase captures to a point where we can estimate these things, and this means we need to boost detection probability, not just the numbers that are detected. To do this we plan on evaluating current capture records to determine if there are better circumstances for detecting pythons. In addition we will evaluate new techniques such as eDNA analysis for their potential for increased detection

However, we do have data with increased rate of capture for tegus, chameleons, and Nile monitors that may allow for estimation of detection probability. Those data also will be analyzed as part of this project.

Current Status: Currently funded through fiscal year 2015/16.

Project Schedule:

Start Date: March 2008
Finish Date: Will be determined on availability of funds

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Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2013 - 2018
State (SFWMD)	\$100,000*
UF	\$25,000
Total	\$125,000

*Dependent on availability of funds.

Contact: Frank Mazzotti, fjma@ufl.edu, Mike Cherkiss, mcherkiss@usgs.gov

Hyperlink: <http://crocdoc.ifas.ufl.edu/projects/eiramp/>

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Program Name: Invasive Species Population Management
Project Name: Feral Swine Impacts and Control
Project ID: 2704
Lead Agency: USDA/APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3

Measurable Output(s): Reduction of feral swine impacts.

Project Synopsis: Cooperative projects with State, local, and other agencies will address specific impacts caused by feral swine populations, including damage to natural resources, disease and pathogen transmission, damage to agriculture, and damage to levees and other infrastructure. Projects will include quantifying swine damage before and after control measures are implemented so that efficacy of control actions can be measured.

Current Status: **This project is completed.** Feral swine removal projects using federal and state cooperative funds are being carried out on St. Vincent Island and on Cayo Costa, and recently completed at Avon Park AFB. These projects are not necessarily within the Everglades ecosystem. The latest paper produced by the recently completed project at Avon Park is: Engeman, R. M., S. L. Orzell, R. K. Felix, E. A. Tillman, G. Killian, and M. L. Avery. 2016. Feral swine damage to globally imperiled wetland plant communities in a significant biodiversity hotspot in Florida. *Biodiversity and Conservation* 25:1879-1898.

Project Schedule:

Start Date: FY 2014
Finish Date: Ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

Expenditures 2014 - 2018	
Federal	\$625,000
Total	\$625,000

Contact: Michael Avery USDA/APHIS Wildlife Services National Wildlife Research Center

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Program Name: Invasive Species Population Management
Project Name: **Tegu trap and lure evaluation**
Project ID: 2707
Lead Agency: USDA/ APHIS Wildlife Services National Wildlife Research Center

Strategy and Biennial Report Objective Addressed: 2-B.3
Invasive Exotic Species Strategic Action Framework Goal: 3

Measurable Output(s): Trap and lure alternatives for capturing tegus

Project Synopsis: The “standard” capture method for black-and-white tegus (*Tupinambis merianae*) seems to be a live trap baited with a chicken egg. In this study we are exposing captive tegus to alternative traps and lures to determine if a more efficient capture method might be possible. An alternative which performs better in pen tests than the standard method will be evaluated in field trials.

Current Status: This project is completed. Low-cost PVC traps were found to be effective with captive tegus, but corroboration through appropriately controlled field tests remains to be performed. Manuscript describing the trap test results is to be published by Southeastern Naturalist.

Project Schedule:
Start Date: 2014
Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Federal	\$27,500
Total	\$27,500

Contact: Michael Avery USDA APHIS National Wildlife Research Center

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Program Name: Miami-Dade County Parks, Recreation and Open Spaces/Zoo Miami
Conservation and Research Department Invasive Species Management
Project Name: **Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (*Boa constrictor spp.*) at the Charles Deering Estate at Cutler in Miami-Dade County, Florida**
Project ID: 2708
Lead Agency: Miami-Dade County

Strategic Plan Goal(s) Addressed: Objective 2B.3

Measurable Output(s): Determine the impact on the ecosystems of the Charles Deering Estate at Cutler by the non-native boa constrictor.

Use radiotelemetry and visual surveys to determine habitat preference of the boa constrictor.
Develop a management and/or eradication plan for this species based on data collected from the research conducted on the population. Based on the preliminary radiotelemetry study results of habitat usage, FWC is partnering with Zoo Miami to conduct new survey and removal protocols.

Collect genetic samples to determine the introduction pathway for the population, the genetic diversity of the population to determine relatedness, and develop a reference genetic profile for the population that will allow identification of individuals found outside the site as dispersers or unrelated releases. The genetic sequencing has been completed and a manuscript is being finalized for submission for publication.

Analyze gut contents and fecal samples to learn about its prey base, possible impacts on the local wildlife populations, and possible implications if the population were to ever disperse to other natural areas. A large enough sample size has been obtained and this stage of the project will be conducted by a FIU student through the Tropical Conservation Institute.

Discover any pathology, viruses or parasites that are endemic in the population that may pose a risk to native wildlife.

Project Synopsis: There are currently 3 species of large constrictors (Boidae) established in South Florida, the Burmese Python (*Python molurus bivittatus*), Northern African Rock Python (*Python sebae*), and the Common Boa Constrictor (*Boa constrictor spp.*). Of the three species, only the Burmese python and Northern African rock python have ongoing research and management programs.

The population of boa constrictors is established and reproducing on the grounds of the Deering Estate at Cutler. It has been at the site since the early 1990s with anecdotal reports as early as the 1970s. At least 157 boas have been captured at the Deering Estate or within 2km of the property, since 1989. Of those 157 boas, 41 were captured since October 2012, which suggests that this population is still established and reproducing.

Project 2708: Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (Boa constrictor spp.) at the Charles Deering Estate at Cutler in Miami-Dade County, Florida Project Page 1 of 5

From 2011-2012, the Florida Fish and Wildlife Conservation Commission (FWC) began surveys for Boa constrictors at the Deering Estate. During these surveys, there were no animals encountered, despite at least 9 survey attempts. These surveys were conducted during summer, fall, and winter during both daytime and nighttime.

Because of the lack of success with surveys, a radio-telemetry project which would allow us to understand the temporal and spatial habitat use of this species was conducted between 2012-2014. Through the use of radio telemetry with non-native species in South Florida, researchers have learned a tremendous amount of behavioral and habitat use information (Snow 2007, Pernas 2012). By learning how this species is utilizing the property, we hope to discover when they are the most easily detected, what methods of detection are most likely to be successful, and what habitat characteristics are the most desirable.

We were able to track 2.2.2 (2 male, 2 female, and 2 juvenile) boa constrictors for a minimum of 10 months for each individual in the radio telemetry study. Any additional boas encountered are captured and permanently removed from the Deering Estate. Morphometrics and genetic samples will be taken on all specimens during the study period. Once an individual had completed the radiotelemetry tracking period of the study, or any other specimens encountered and removed from the area, are humanely euthanized utilizing a pentobarbital solution injection. Genetic samples of the liver and skin are preserved in alcohol, gut contents are frozen and saved for dietary analysis, any parasites encountered are preserved in alcohol for identification. Plasma is frozen for virology, and a full representative tissue set is preserved in formalin for histopathology. All specimens are vouchered with photographs and tissue samples through the Florida Museum of Natural History. A photograph and general location for each specimen captured is also uploaded onto ivegot1.com/eddmaps.com.

To date, we have only found one published study utilizing radio-telemetry with boa constrictors (Reed et al. 2007). In this study, 76% of boas were encountered in arboreal situations. The preliminary results of this study show the established population of snakes is utilizing a much different ecosystem type and exhibiting different behavior at the Deering Estate.

This study aims to provide managers and policymakers valuable information on the most effective means and methodology of detection, distribution on property, and potential ecosystem impacts for this introduced population. The genetic profiling and disease evaluation will help shape a more thorough risk assessment for the species.

There will be a component of public outreach, education and awareness building through public lectures, website development, scientific papers, and guided nature tours that will address the issue of non-native species in South Florida and impacts to native ecosystems. In addition, the naturalists at the Deering Estate were able to utilize the telemetry project during their classes and tours and will also be able to utilize future management strategies being developed for public education.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Current Status: Currently, the data of the radiotelemetry study is being processed and prepared for publication. Thirty genetic samples from confirmed and vouchered boa constrictors within the study site are being analyzed at the Florida Museum of Natural History to help determine the source population, possible entry route to the wild, if multiple introductions have led to their establishment, and provide a management tool to determine if other boa constrictors are found within Miami-Dade County are dispersing from this source established population. Any boa constrictors from the Deering Estate and surrounding properties are brought to Zoo Miami for humane euthanasia, necropsy and sample collection to build the sample size of the remaining portions of the study looking at prey, disease, and parasites in the species.

Project Schedule:

Start Date: October 2012
Finish Date: Ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Local	\$11,060
Total	\$11,060

Contact: Frank Ridgley DVM; frid@miamidade.gov

Hyperlink: <https://www.zoomiami.org/consERVE>

Pictures:



Project 2708: Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (Boa constrictor spp.) at the Charles Deering Estate at Cutler in Miami-Dade County, Florida Project Page 3 of 5



Map of area:



Project 2708: Temporal and Spatial Habitat Use, Genetics, Diet and Disease Survey of the Boa Constrictor (Boa constrictor spp.) at the Charles Deering Estate at Cutler in Miami-Dade County, Florida Project Page 5 of 5

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Development and Evaluation of Biological Control Agents for Invasive Species Threatening the Everglades and other Natural and Managed Systems
Project ID: 2709
Lead Agency: U.S. Department of Agriculture – Agricultural Research Service
Authority: ARS

Strategic Plan Goal(s) Addressed: 2.B.3

Measurable Output(s): Number and Impacts of Biological Control Agents Developed and Released

Project Synopsis. Many of the weeds in the United States are of foreign origin, introduced without natural enemies from their native habitat. These invasive plants replace natural and cultivated plant communities, causing the disruption of ecosystem processes necessary for the sustenance of urban, agriculture, and natural areas. Although herbicides remain the primary method for controlling invasive weeds, applications are not always economically feasible and can cause collateral damage to non-target plants. The introduction of host-specific, coevolved natural enemies can be an effective part of an integrated management solution, with a stand-alone benefit:cost ratio of about 35:1. The research serves the interests of specific Federal, State, and private landowners impacted by invasive weed species. For example, without long-term sustainable management of weeds like melaleuca (*Melaleuca quinquenervia*), old world climbing fern (*Lygodium microphyllum*), downy rose myrtle (*Rhodomyrtus tomentosa*), air potato (*Dioscorea bulbifera*) skunk vine (*Paederia foetida*), Brazilian pepper (*Schinus terebinthifolius*), giant and common salvinia (*Salvinia molesta* and *S. minima*), waterhyacinth (*Eichhornia crassipes*), waterlettuce (*Pistia stratiotes*), and other invasive plants, large parts of the country, including the Everglades, will be permanently degraded causing a tremendous loss of biodiversity, with less water available for agricultural and urban needs. This research supports the Comprehensive Everglades Restoration Plan which will sustain agricultural production and improve environmental quality. **This project is on hold.**

Cost: Total:
Land Acquisition: \$0 – long term lease with University of Florida
Operations and maintenance: not yet included in budget

Project Schedule:

Start Date: 1997
First Agent released: 1997
Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

Agency	Expenditures 1997 - 2018
SFWMD	\$475,000
USCAE	\$250,000
Total	\$725,000

Point of Contact: Philip W. Tipping, philip.tipping@usda.ars.gov

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Enhanced Mitigation Techniques for the Control of Several Whitefly Species
Project ID: 2804
Lead Agency: Florida Department of Agriculture and Consumer Services Division of Plant Industry

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Species Strategic Action Framework Goal: 4

Project Synopsis: This is the second year of this project in which FDACS-DPI is coordinating with researchers and extension specialists from the University of Florida to identify and enhance existing natural enemies for the rugose spiraling whitefly (*Aleurodicus rugioperculatus*), Bondar's nesting whitefly (*Paraleyrodes bondari*) and ficus whitefly (*Singhiella simplex*). These three whitefly species are fairly recent exotic introductions into Florida and have become serious landscape pests. The goal of this project is to identify potential natural enemies for each of these species that exist in Florida and to enhance their populations to a level that good biological control can be obtained.

Current Status: Project is no longer funded.

Project Schedule:

Start Date: 8/9/2014
Finish Date: 8/9/2015

Detailed Project Budget Information

	Expenditures Thru 2019
Federal	395,933
Total	395,933

Contact: Dr. Greg Hodges, Assistant Director, Division of Plant Industry, Florida Department of Agriculture and Consumer Services.

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Invasive Species Population Management
Project Name: Genetic analyses of invasive reptiles in Florida
Project ID: 2816
Lead Agency: UF Museum of Natural History

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Project Synopsis: Few studies have performed some degree of molecular comparisons of species from their native range to introduced Florida populations. A major impediment has been the lack of data availability for native range populations for comparisons. Molecular data from recent phylogenetic studies from native populations are now available for certain taxonomic groups, including *Ctenosaura similis* and *Agama agama* complex. In this study, molecular data are examined to determine the native geographic origins of Florida populations of *C. similis* and *Agama a. africana*. Additionally, molecular data are examined to determine species identity of skin, skeletal, and egg samples from unknown giant constrictor species.

Current Status: Genetic sequencing of *Agama* (15 specimens), *Ctenosaura* (22 specimens) and *Python sebae* (21 specimens) are ongoing.

Genetic analyses for this project has been completed and 3 manuscripts (one addressing each taxon) from the MS student's thesis are being prepared for publication. **This project is on hold.**

Project Schedule:

Start Date: 2014
Finish Date: 2018

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Federal	\$18,000
Total	\$18,000

Contact: Kenney Krysko UF Museum of Natural History; Michael Avery USDA APHIS

Information for the 2021 Integrated Financial Plan
 Data provided should be as of June 30, 2021

Program Name: Invasive Exotic Species Management
Project Name: Aquatic and Upland Invasive Plant Management
Project ID: 2821
Lead Agency: Florida Fish and Wildlife Conservation Commission
Authority: Chapter 369, F.S.
Funding Source: Invasive Plant Control Trust Fund

Strategic Plan Goal(s) Addressed: 2.B.2

Measurable Output(s): Acres of upland and aquatic invasive plants controlled¹

Acres Controlled:

Aquatics Program	40,806
Uplands Program	85,014

Project Synopsis: The Fish and Wildlife Conservation Commission is the lead agency in Florida responsible for coordinating and funding two statewide programs controlling invasive aquatic and upland plants on public conservation lands and waterways throughout the state. The aquatic plant management program designs, funds, coordinates, and contracts invasive non-native aquatic plant control efforts in Florida's 1.25 million acres of public waters. The upland plant management program coordinates and funds invasive plant removal projects on 11 million acres of public conservation lands, which include federal, state, and local government owned lands.

Current Status: It is difficult if not impossible to eradicate invasive plants once they have become established. Therefore, it is unrealistic to characterize invasive plant management as a restoration activity. It is more accurately described as management that is necessary in perpetuity. FWC strives to manage, on a continuous basis, invasive aquatic plants in public water bodies and invasive upland plants on public conservation lands within the SFWMD region at levels that support and promote healthy populations of native plants for the benefit of fish, wildlife and people. **This project is on hold.**

Cost:

Total (operations and maintenance)¹:

Aquatics Program	\$9,299,684
Uplands Program	\$11,127,954

Project Schedule:

Start Date: annual
 Finish Date: TBD

Detailed Project Budget Information:

	Expenditures 2003 - 2018
Federal	\$8,847,000
State	\$307,120,000
Local	\$439,000
Total	\$307,120,000

¹Within the 16-county SFWMD region during the previous state fiscal year

²Includes \$1 million match from SFWMD for melaleuca control

Contact: William E. Caton

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Big Cypress National Preserve Long-term Maintenance and Control of Invasive Exotic Plants
Project Name: BICY Long-term Exotic Plant Maintenance and Control
Project ID: 2825
Lead Agency: Big Cypress National Preserve

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): All major, exotic plant species' population levels within Big Cypress National Preserve are perpetually maintained and controlled. Measureable output will be acres of the Preserve that remain free from infestation of exotic plants, and no new species become established.

Project Synopsis: Big Cypress National Preserve will continue to treat known areas containing invasive exotic plants and, upon detection of new areas conduct treatments using guidance within the South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement. Terrestrial invasive exotic plant treatment is primarily focused on Australian pine (*Casuarina*), old world climbing fern (*Lygodium*), melaleuca (*Melaleuca quinquenervia*), and Brazilian pepper (*Schinus terebinthifolius*).

Following achieving a management level of exotic plant control, and in order to prevent re-occurrence of exotic plant invasion into previously treated areas, the Preserve will conduct systematic reconnaissance to detect and eradicate exotic plant species throughout the Preserve, in accordance with the South Florida and Caribbean Parks Exotic Plant Management Plan and Environmental Impact Statement and newer guidance as it is developed.

Current Status: Efforts to control invasive plant species in the Preserve began 1984. Currently, Australian pine is at maintenance level; *Lygodium* is the Preserve's highest priority exotic; melaleuca is at or near maintenance level; and Brazilian pepper while being addressed in all existing exotic plant treatment contracts, is far from a maintenance level. About 20% of the Preserve acreage remains infested with invasive exotic plants. New threats from exotic plant invasion are eminent. Untreated areas outside the Preserve boundary provide a seed source for new infestations to become established. Two major highways bisect the Preserve, providing opportunity for exotic species to find their way into the Preserve, requiring constant, perpetual vigilance. **This project is on hold.**

Project Schedule:
Start Date: 2014
Finish Date: 2018

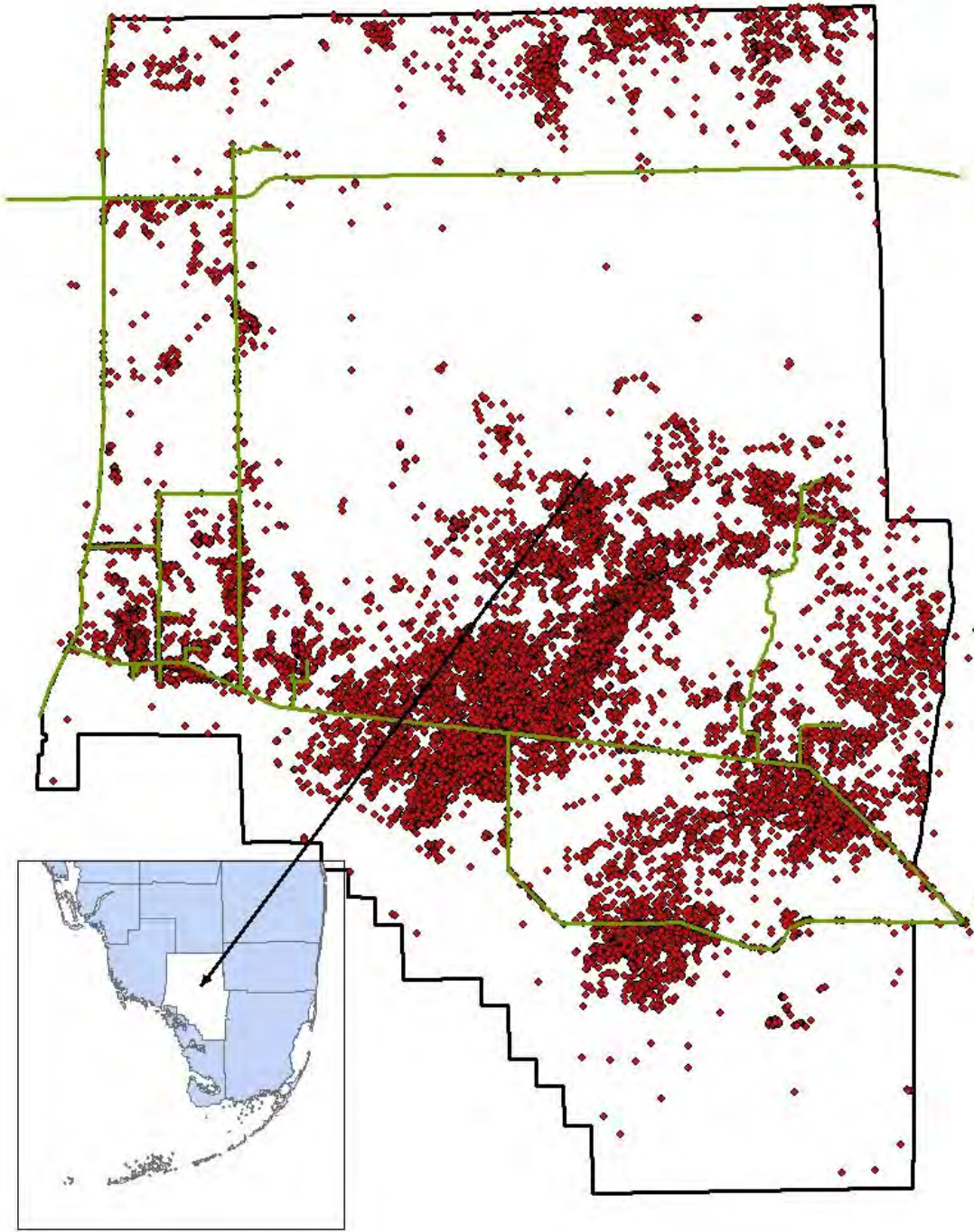
Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Federal	\$1,900,000
DEP	\$750,000
Total	\$2,650,000

Contact: Ron Clark, Ron.Clark@nps.gov, 239-695-1106

Pictures: Map of Big Cypress National Preserve Current and Past Treatment Areas



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Farm Bill, FY 14
Project Name: Mitigating the ecological and cultural effects of Laurel wilt in the Everglades
Project ID: 2826
Lead Agency: USDA-APHIS and University of Florida

Strategy and Biennial Report Objective Addressed: 2-B.4
Invasive Exotic Species Strategic Action Framework Goal: 4

Measurable Output(s): 1. Identify, propagate and preserve culturally significant swamp bay trees in south Florida. 2. Identify, propagate and screen swamp bay germplasm with putative laurel wilt-resistance for Everglades restoration 3. Ensure cross-generational sustainability of genetic resistance and local adaptation in future Everglades restoration plantings

Project Synopsis:

Laurel wilt (LW) is a highly destructive exotic disease that threatens several native *Persea* species with extinction and poses a major threat to cultivated avocado, a high-value commercial crop. We aim to propagate native *Persea* species (redbay, *P. borbonia*, silkbay, *P. humilis* and swamp bay, *P. palustris*) and evaluate restoration approaches to meet both ecological and cultural needs. To achieve this goal, we are focusing on the following objectives: 1) propagate and evaluate potentially resistant trees and 2) propagate culturally significant swamp bay and distribute these to the Native American community in Florida. By safeguarding the existing population of culturally significant trees prior to their loss from the disease and developing resistant germplasm for restoration efforts, we provide direct and immediate mitigation against this damaging exotic threat. The deployment of resistant trees will not only preserve the ecological and cultural functions of the species, but also reduce the potential for this species to serve as a reservoir for the disease (and its vector) that increases the risk to adjacent avocado production areas, worth more than \$60 million in south Florida. In addition, the development of host resistance is critical for mitigation of the disease in the Everglades, because swamp bay is a keystone canopy species in the tree islands. In addition to Goal 6, this work supports Goal 4 as native plant nurseries and conservation agencies will be able to use resistant planting stock. Goal 5 is also supported as part of this project focuses on education, outreach and technology transfer to Native American communities who rely on swamp bay as a major component of traditional tribal medicine.

Current Status:

The project was funded in August of 2014, so the work is ongoing. Second year funding is pending approval for FY 15 Farm Bill. **This project is on hold.**

Project Schedule:

Start Date: August 4, 2014 Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

	Expenditures 2014 - 2018
Federal	\$135,379
Total	\$135,379

Contact: Jason Smith, University of Florida (jasons@ufl.edu); Eduardo Varona, USDA-APHIS (eduardo.varona@aphis.usda.gov)

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: C&SF: CERP Wastewater Reuse Technology Pilot
Project ID: 3902 (CERP Project WBS # 37)
Lead Agency: USACE / SFWMD
Authority: WRDA 2000 (*pilot project*)
Funding Source: Federal/State

Strategic Plan Goal(s) Addressed: Primary: 3-C.2 Secondary: 2-A.3

Measurable Output(s): 3,500 acres of wetlands restored and created

April 1999 (Restudy) Project Synopsis: The original concept addresses water quality issues associated with discharging reclaimed water into natural areas such as the West Palm Beach Water Catchment Area, Biscayne National Park, and the Bird Drive Basin as well as determine the level of superior treatment and the appropriate methodologies for that treatment. A series of studies will be conducted to help determine the level of treatment needed.

Current Project Synopsis: Pilot facilities will be constructed to determine the ecological effects of using superior, advanced treated reuse water to replace and augment freshwater flows to Biscayne Bay and to determine the level of superior, advanced treatment required to prevent degradation of freshwater and estuarine wetlands and Biscayne Bay. The constituents of concern in wastewater will be identified and the ability of superior, advanced treatment to remove those constituents will be determined.

In addition, a pilot facility in Palm Beach County will be constructed to treat wastewater from the east central regional wastewater treatment facility using improved wastewater treatment processes to remove nitrogen and phosphorus. After treatment, the wastewater will be used toward restoring 1,500 acres of wetlands and to recharge wetlands surrounding the city of West Palm Beach's well field. A portion of the treated wastewater will be used for recharge of a residential lake system surrounding the city's well field and a Palm Beach County well field.

Besides serving as a pilot project for wetlands-based water reclamation, this feature will reduce a portion of the city's dependence on surface water from Lake Okeechobee during dry or drought events. Another 2,000 acres of wetlands would be created or restored. Other benefits include aquifer recharge and replenishment, reduction of water disposed in deep injection wells and a reduction of stormwater discharge to tide.

Current Status: This project is currently listed for de-authorization.

Est. Cost: \$ 49,073,000

Project Schedule: TBD

Detailed Project Budget Information

Wastewater Reuse Technology Pilot	Investment thru FY 2020
USACE	\$1,208,000
SFWMD	\$668,000
Total	\$1,876,000

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Contact: Jeff Couch, Ecosystem Projects Section Chief, Programs and Project Management Division, USACE, Jeffery.D.Couch@usace.army.mil

Source: Original project description summarized from the *Central and Southern Florida Project Comprehensive Review Study (Restudy) (1999)*. Estimated project costs are fully funded estimates as of October 2019. Investment costs are through FY19 (Sept. 2019) and sponsor verified and recorded in kind credit through 4th quarter FY19.

Additional Information:

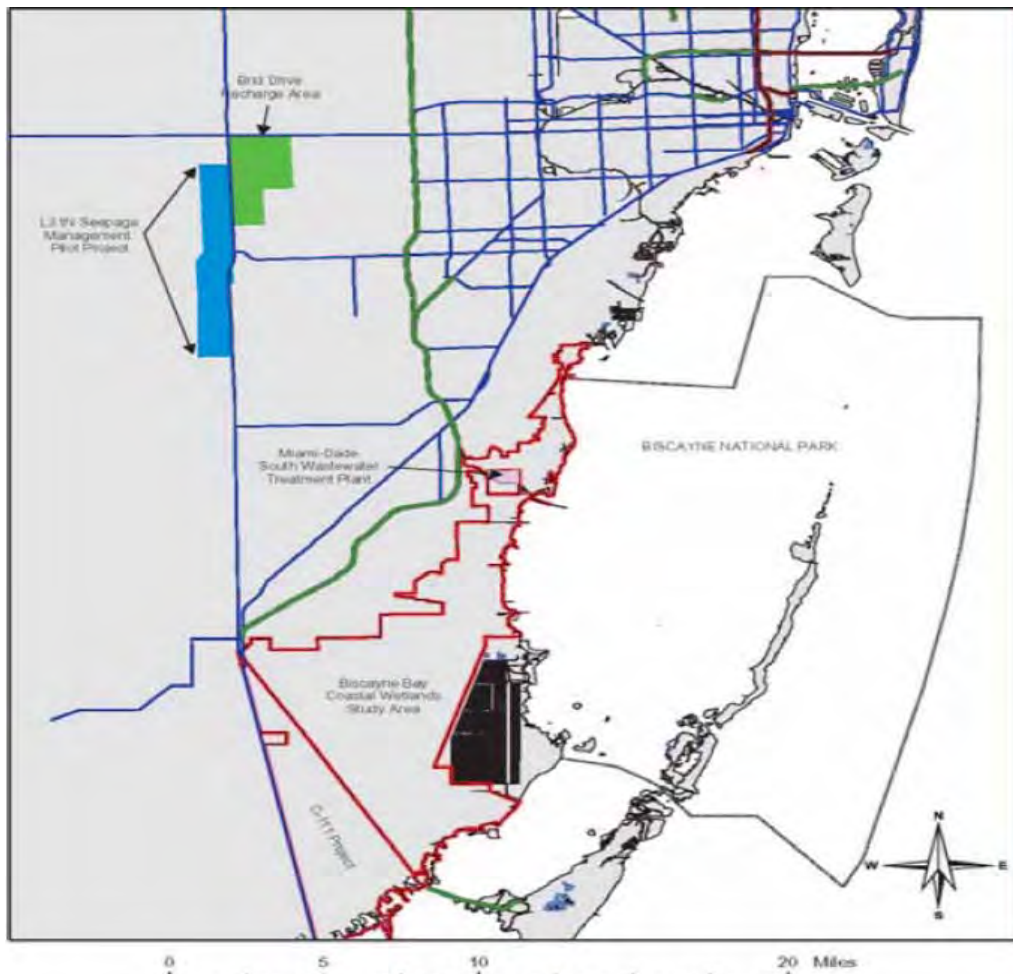


FIGURE B-1: PRELIMINARY PROJECT STUDY AREA

Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Project Name: Everglades Non-Native Fish Round Up
Project ID: 4201
Lead Agency: National Park Service

Strategy and Biennial Report Objective Addressed: 3-D.1
Invasive Exotic Species Strategic Action Framework Goal: 2 and 4

Measurable Output(s): We are able to monitor if there are any new invasive fish species in our freshwater canals by involving the community. Any new species are reported to FWC.

Project Synopsis: The Round Up is a one-day event open to all anglers (shore or boat) who fish in the Everglades area. The purposes of this event are to raise public awareness about the potential negative impacts of releasing nonnative fish into Florida waters, and to encourage anglers to target these nonnative species for sport. The Round Up will also gather data on nonnative fish distribution and abundance, which can assist in their management.

This project could be increased in scope through enhanced communication (advertising) coupled with funds for NPS staff to attend/support the event (i.e. insert information into database and document results). Up to \$10,000 per year could be spent to enhance this project. **This project is on hold.**

Current Status: Due to Covid 2020 this).

Project Schedule:

Start Date: 2010

Finish Date: ongoing

Estimated Project Cost: TBD

Detailed Project Budget Information

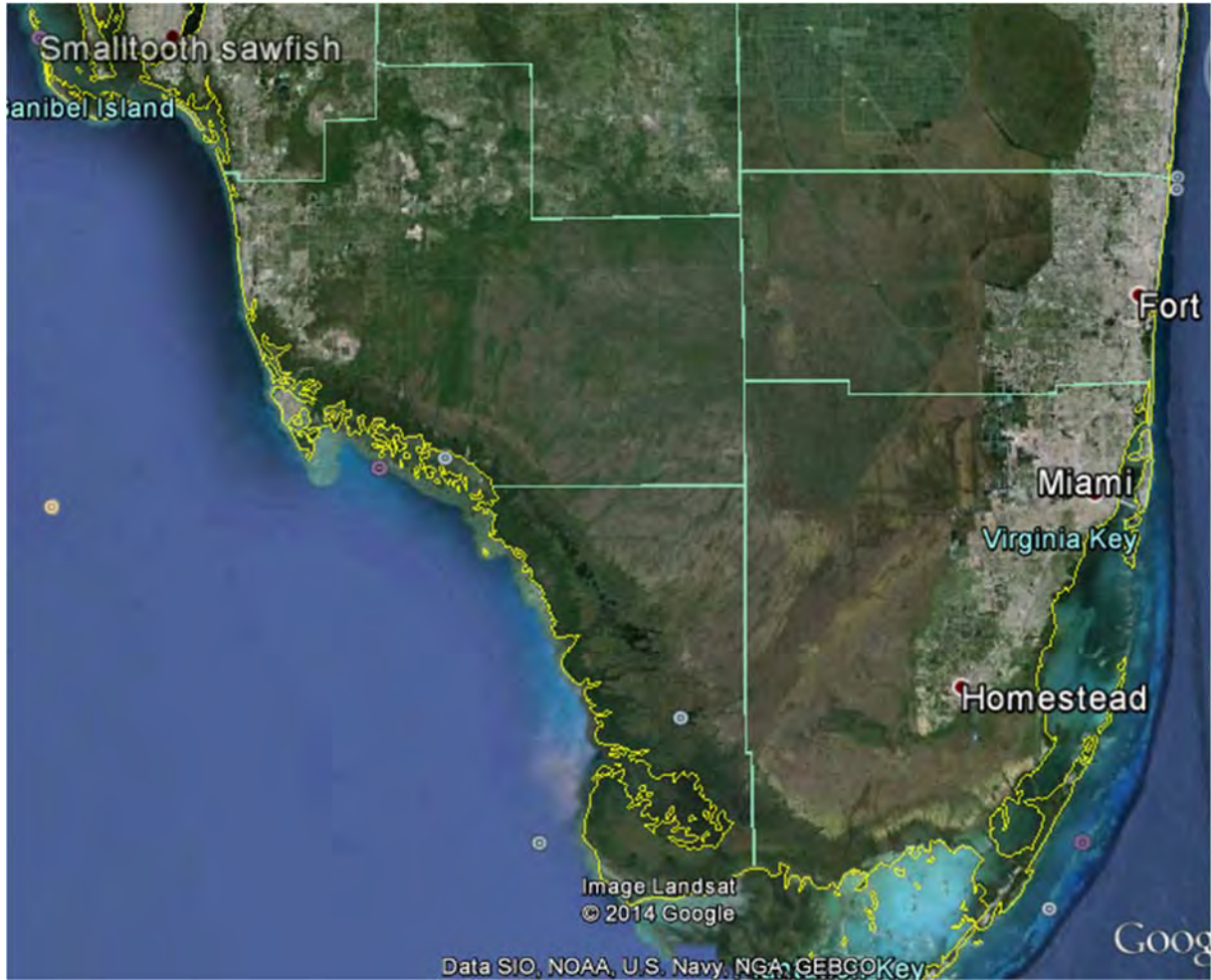
Expenditures 2014 - 2018	
Federal	\$10,619
Total	\$10,619

Contact: Tony Pernas NPS

Pictures:



Map of Area:



Information for the 2021 Integrated Financial Plan
Data provided should be as of June 30, 2021

Program Name: Aquatic Nuisance Species Task Force
Project Name: HABITATTITUDE
Project ID: 4302
Lead Agency: U.S. Fish and Wildlife Service

Strategy and Biennial Report Objective Addressed: 3-D.2
Invasive Exotic Species Strategic Action Framework Goal: 1

Measurable Output(s): Habitattitude™ is a public awareness campaign that seeks to inspire and empower people to explore the connection between responsible pet ownership and environmental stewardship. With the right attitude, pet owners will develop responsible habits that can minimize the effect invasive species have on habitats, the economy, and human health.

Project Synopsis: Habitattitude™ is a national public awareness campaign developed by the Aquatic Nuisance Species Task Force and its partner organizations. It stems from a 2009 Memorandum of Understanding between the U.S. Department of the Interior (DOI) and the Pet Industry Joint Advisory Council (PIJAC) to establish a general framework for cooperation and collaboration between DOI and PIJAC to collaborate on mutually beneficial education and public awareness initiatives with respect to threats that invasive species pose to natural ecosystems, human health, and the economy and the need for the pet owning public to responsibly enjoy their companion animals while at the same time preventing the release of their animals and plants into the environment.

The U.S. Fish and Wildlife Service serves as the lead federal agency for Habitattitude™ with the significant support and involvement of the pet and aquarium trade industry. In addition to the involvement of these industries, other key partners include the National Park Service and National Oceanic and Atmospheric Administration.

Habitattitude™ has been designed to unify interested organizations and agencies that have a stake in protecting our aquatic resources and leverage their participation in promoting an increased awareness of the growing aquatic invasive species challenge and responsible consumer behaviors that can prevent their spread.

Current Status: Currently funded by Congressional appropriation nationwide, though the amount provided to the state of Florida is unknown. Partners are in the process of updating the website. **This project is on hold.**

Project Schedule:
Start Date: TBD
Finish Date: TBD

Estimated Project Cost: TBD

Detailed Project Budget Information

Expenditures 2014 - 2018	
Federal	
Total	\$0

Contact: John Galvez
Hyperlink: <http://habitattitude.net/>