SCCF December Board Meeting

Intro and What I do

December 01, 2021

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* Position co-funded by/shared with Conservancy of Southwest Florida

Use cursor keys for navigation, press "O" for a slide Overview

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I use my process level understanding of:

- hydrology (i.e. rainfall/run-off, residence time),
- water quality (i.e. nutrients),
- data (i.e. S79 discharge),
- water management,
- restoration, and
- models (i.e. RSM)

...to provide technical input needed to advocate for our coastal ecosystems.

- Started March 2021
- Prior experience includes:
  - FDEP (Everglades Restoration Group)
  - FWC/FWRI (Seagrass Monitoring and Assessment)
  - Harbor Branch Environmental Lab
  - Mote Marine Lab
- Education includes:
  - BSc Biochemistry
  - MSc Environmental Science
  - PhD Soil and Water Science
- Likes long walks on the beach

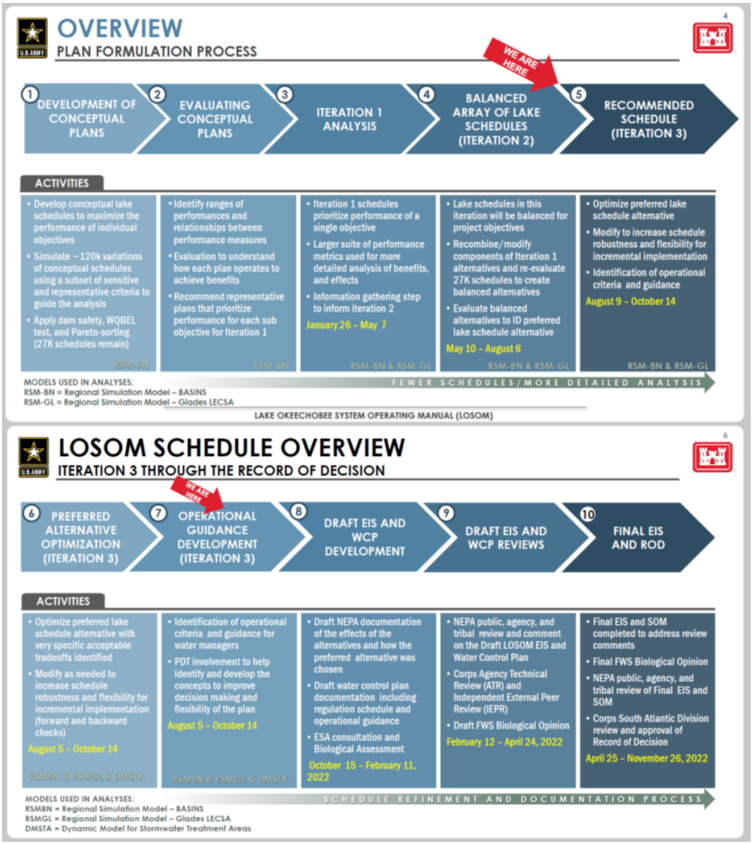
Link to full CV

Projects, Tasks and Achievements

- Lake Okeechobee System Operating Manual
- Weekly conditions reports/Data consolidation (Data Science)
- Triennial Review of Water Quality Standards
- Environmental Resource Permit Review (CoSWFL)
- Picayune Strand Restoration Project & WQ Technical Working Group (CoSWFL)
- Conference attendance/Presentations
- Peer-Review Science

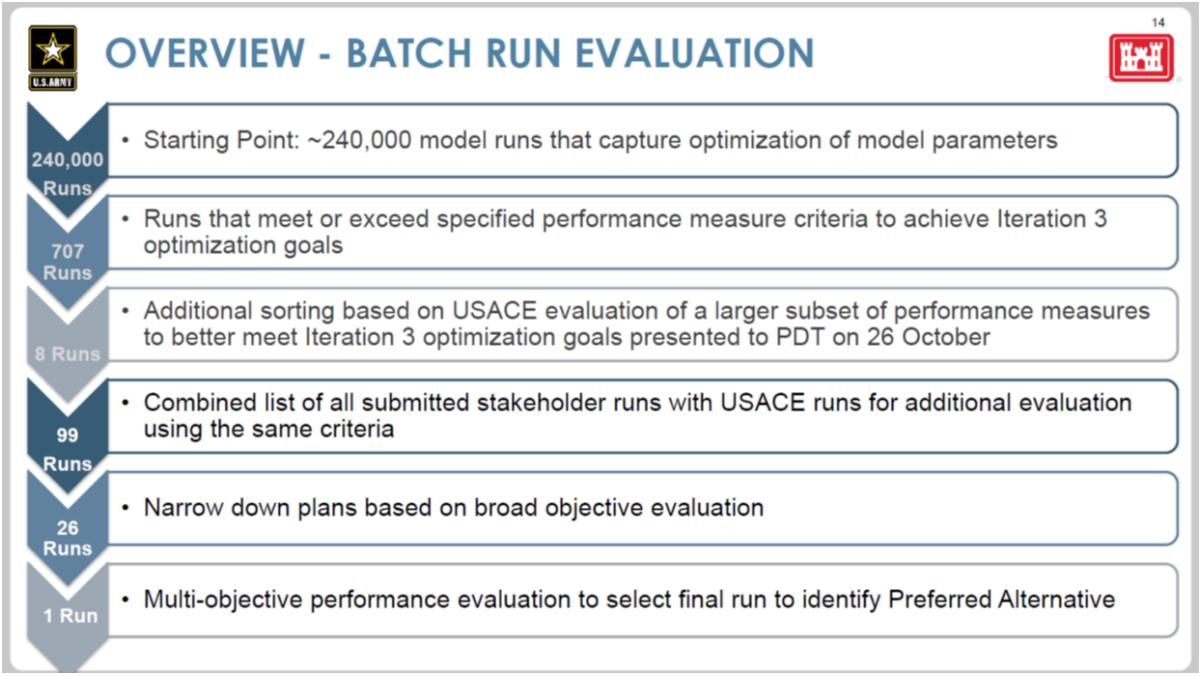
Lake Okeechobee System Operating Manual

- LOSOM process started with Scoping Meetings - Feb 2019
- LOSOM Public Workshops – Sept 2019



From USACE PDT 09 Aug 2021 meeting presentation

Lake Okeechobee System Operating Manual



- Involved with Project Delievery Team (PDT) and Stakeholders the whole way
- Meetings with USACE, SFWMD, FDEP, and stakeholder groups to provide data summaries and information as needed.

From USACE PDT 16 Nov 2021 meeting presentation

Lake Okeechobee System Operating Manual

Sanibel-Captiva Conservation Foundation
Technical Github Webpage

SCCF
SANIBEL-CAPTIVA
CONSERVATION FOUNDATION

Site Update 2021-11-16

Want to contribute to this page? Create an issue here (**must have a Github account**).

Reporting | Respositories | Presentations/Tech Report | Resources

LOSOM

- USACE project webpage https://www.saj.usace.army.mil/LOSOM/
- Related work:
  - DRAFT - Estuary Nutrient Loading Model (Caloosahatchee Estuary) | Link | Source | Addendum Presentation |
  - DRAFT - Estuary Nutrient Loading Model (St Lucie Estuary) | Link | Source |
- Iteration 1 modeling:
  - DRAFT - Estuary Nutrient Loading Model results | Link | Source |

    Download CRE ENLM results | Download SLE ENLM results
  - DRAFT - Iteration 1 Modeling Evaluation | Link | Source |
    - Iternation 1 Modeling Evaluation Interactive tool | Link |
  - Pareto Re-evalution | Link |
  - Iteration 2 Framework Evaluation | Link |
- Iteration 2 modeling:
  - DRAFT - Modeling Evaluation | Link |
  - Evaluation Technical Workshop (2021-06-22) | Link | PDF|
  - Evaluation Technical Workshop - Climate Consideration (2021-06-30) | Link | PDF |
  - Lake & Estuary Summary | Link |
  - Estuary Nutrient Loading Model results | Link | PDF |

    Download CRE ENLM results | Download SLE ENLM results
  - S77/S308 Nutrient Loading estimates | Link | PDF |
  - Evaluation with SR3.5 | Link | PDF |
  - Estuary Summary | Link | PDF |
  - Post Iteration 2 Eval | Link | PDF |
  - Post Iteration 2 Eval - Everglades Foundation Optimization | Link | PDF |
  - Post Iteration 2 Eval - Briefing | Link | PDF |
- Sept 2021 - LOSOM Update (Captiva Comunity Panel & Collier County Board of Commissioners) | PDF |
- Iteration 3 modeling:
- Phase 1 - Initial Sensitivity Runs |
  - Initial Evaluation - bulk data analysis | Link | PDF |
  - Independent Analysis - using raw outputs | Link | PDF |
  - Slidedeck for discussion with FDEP | Link | PDF |
- Phase 2 - Batch Optimization |
  - Batch Optimization - model screening | Link | PDF |
  - Batch Optimization - Selected Alternative | Link | PDF |

Link to Page

Weekly conditions reports

- Assist policy team in providing information for weekly conditions report (link).

Caloosahatchee and Okeechobee Conditions Report

SCCF SANIBEL-CAPTIVA CONSERVATION FOUNDATION

Updated: 2021-12-01 07:14:00 EST

Purpose

This webpage/report is intended to aggregate information from different agencies (i.e. USACE, SFWMD, FWC, USGS and NOAA) into one spot to help inform local government agencies and stakeholders on conditions within Lake Okeechobee, the Caloosahatchee River and Estuary and Coastal southwest Florida. The data provided here should be considered preliminary and are subject to change.

USACE Data Summary

Daily discharge volume in Acre-Feet per day for the last 14-days. Data Source: USACE

Date	S77	S78	S79	S310	S351	S352	S354	L8	S308	S80	NthLake[1]	WCA1	WCA2	WCA3	ENP[2]
11-30	3003	2692	3943	3	780	0	668	-179	0	65	1513	222	335	702	3,403.635
11-29	2465	2534	3942	0	0	0	186	-379	0	296	1799	240	353	835	3,502.808
11-28	2200	2398	3654	1	0	0	196	-276	0	490	1569	67	409	837	3,538.510
11-27	1974	2198	3876	3	0	0	228	-440	0	49	1400	167	563	837	3,548.428
11-26	1868	2081	3345	-2	0	0	758	-532	0	238	1533	60	536	837	3,750.742
11-25	1896	2075	3554	7	0	0	0	-571	0	148	1418	337	688	1168	4,663.138
11-24	2711	2807	4114	9	0	0	0	-768	0	572	1672	968	774	857	5,278.014
11-23	2190	2657	4064	-1	0	0	0	-801	0	886	1720	1214	1095	1083	4,155.370
11-22	2301	2283	4493	10	0	0	0	-855	0	940	2543	720	407	2130	3,518.676
11-21	2249	2568	3669	-0	0	0	0	-750	0	913	3741	676	567	2144	3,516.692
11-20	1164	2031	3498	66	0	0	0	-426	0	21	4350	637	649	2465	3,683.304

Triennial Review of Water Quality Standards

- FDEP held a virtual public workshop on proposed changes to water quality standards (May 5th 2021).
- SCCF and CoSWFL provided written comment including an in depth analysis of proposed changes to dissolved oxygen site-specific alternate criteria (Link to Analysis).

Environmental Resource Permit Review (CoSWFL)

- Assisted CoSWFL in reviewing Water Quality Nutrient Analysis report in Bellmar ERP application.
    - Bellmar is a proposed development in Collier County (east of Orange Tree and west of Ave Maria) that will convert agriculture to multi-family, light commercial and industrial land-uses.
- Identified numerous discrepancies in calculations thereby over estimating the pre- versus post- development improvements.
- Written comments and analysis provided by CoSWFL Sept 22, 2021

Conference attendance/Presentations

- Greater Everglades Ecossystem Restoration (April 2021)
    - Presentation title: *I'm Calling To You Like A Long-Lost Friend: Legacy Phosphorus In Lake Okeechobee*
- Society of Freshwater Science (May 2021)
    - Presentation title: *Big Water, Big Nutrients. The tale of legacy Phosphorus in Lake Okeechobee*
- Florida Groundwater Trust (Sept 2021)
    - Presentation title: *Past, present, and future role of groundwater in the Everglades ecosystem*
- Coastal & Estuarine Research Federation (Nov 2021)
    - Presentation title: *The water sustains me without even trying: Seasonal and hydrologic influences on nearshore Karenia brevis blooms in southwest Florida.*

Peer-Review Science

- Everglades Stormwater Treatment Area Publications
  - Julian, et al. (2021) Knowing your limits: evaluating aquatic metabolism in a subtropical treatment wetland. Hydrobiologia. doi: 10.1007/s10750-021-04617-7
  - Julian, et al. (*Submitted*) Seal tightly and store in a cool dry place: Exploring soil phosphorus storage in a subtropical treatment wetland. Wetlands.
- Caloosahatchee Optical Model Evaluation (*In Progress*)
  - Evaluating light attenuation, chlorophyll-a, turbidity and color conditions within the Caloosahatchee Estuary.
  - Help track conditions for seagrasses within estuary
- LOSOM Evaluation (*In Progress*)
  - Assess Lake Okeechobee and Estuary conditions under the new water control plan.
- Review: Harmful Algal Bloom biomonitoring a multi-prong approach (*In Progress*)
  - Provide a robust review of freshwater (blue-green algae) and marine (red tide) monitoring.
- Everglades-Florida Bay-West Florida Shelf-Keys WQ trend analysis (*In Progress*)
  - System-wide assessment of water quality trends from various monitoring network (~300 sites over ~20 years).
  - Collaborating with FIU, SFWMD and DOI staff.