

Water Quality Conditions for ARM Loxahatchee NWR 2024-2025 ... continued ...

Technical Oversight Committee
September 15, 2026

RECAP - September 2025

Initial Discussion of WQ Challenges at the Refuge

- Since September 2025 TOC meeting – SFWMD started preliminary discussion of sampling results for 10/2024 and 2/2025 and their evaluation.
- Two hours of presentation and conversations are available for review.
- USFWS made suggestion to implement additional meetings to further review information that could aid in determining causes along with potential pathways forward. Any potential TOC decisions should await results of those meetings.
- All parties amenable to the additional data collection and continuing dialogue.



<https://www.sfwmd.gov/sites/default/files/documents/Refuge-Water-Quality-Conditions-202509.pdf>

SFWMD & USFWS MEETING HISTORY

Date	Theme	SFWMD Groups/Speakers
December 16, 2025	LOX8 WQ investigations and affirmation of joint interest in continuing monthly dialogue	Compliance Assessment & Reporting (CAR)
January 13, 2026	Ionic comparisons of perimeter and interior marsh surface waters	CAR & Applied Science Bureau (ASB)
February 20, 2026	Discussion of USFWS contractor efforts to date, and topics that USFWS would like to discuss further. Discussion of various WQ models and their limitations. Interest in hearing from STA and water management staff also raised by USFWS.	CAR & ASB
March 20, 2026	Review of what was learned, including strategy for pre-briefing for other TOC agencies	CAR & ASB
April 23, 2026	STA 1E & 1W status and operational strategy. Discussion of pumping system components and their scale (flood control vs. water supply).	CAR & ASB STA team and Water Managers
June 3, 2026	Canal/marsh stage analysis/discussion by water management staff	CAR & ASB STA team and Water Managers
July 17, 2026	Results of LOX 8 preliminary analysis.	CAR & ASB

USFWS & SFMWD monthly technical meetings (December 2025 – July 2026) reviewed and discussed the following:

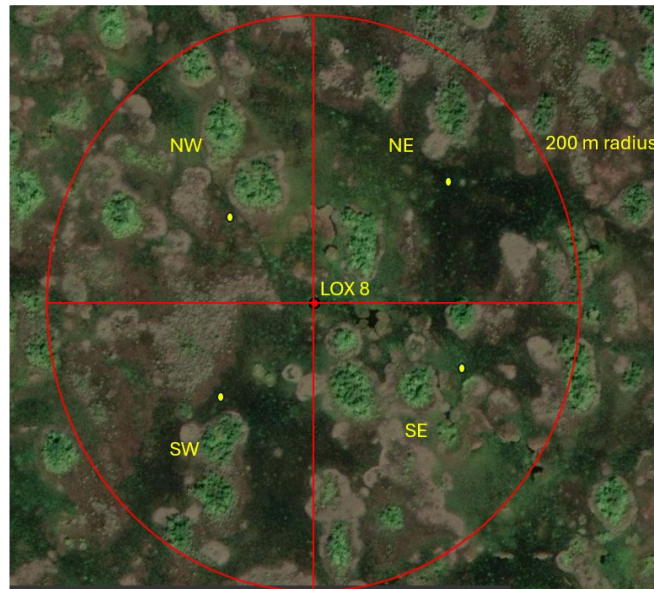
- Ionic balance profiles across the marsh and associated trends.
- Transect phosphorous profiles and relative linear distances to attain background concentrations.
- Evaluate the opportunity to model real-world practices, initial conversations for which model to use are ongoing.
- Current operational status and goals for SFWMD stormwater treatment areas – including updates on Expansion 2. (Fully operational as of June 2026).



USFWS & SFMWD monthly technical meetings (December 2025 – July 2026) reviewed and discussed the following:



SFWMD/DEP LOX8 investigation



- Wildlife cameras deployed at LOX8 to monitor local disturbances.
- Soil and floc chemistry from LOX8 and four proximate compliance monitoring locations.
- Current and historic pumping rates and utilization of SFWMD water management infrastructure.
- Outlier analyses of monitoring results data set – for several periods and perspectives.
- *Concurrent Principal-level discussions of potential options to cooperatively minimize potential marsh impacts: i.e., canal/marsh stage differential.*

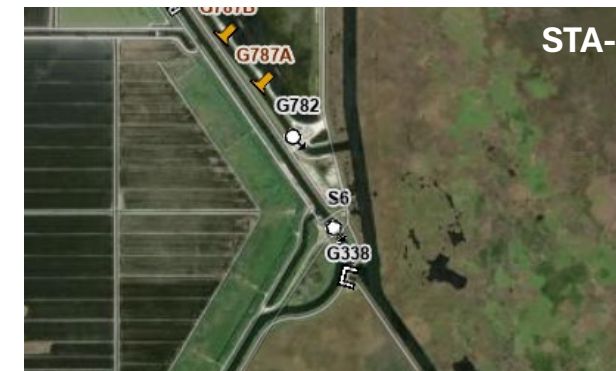
Current Status

- Results from both agencies have recently been shared with the other TOC agencies for their awareness and feedback.
- Exact causes of recent WQ variability remain undetermined.
- Continued investigations are necessary to conclusively resolve remaining uncertainty.
- Shared commitment to further explore/investigate and build upon this current productive interagency collaboration.



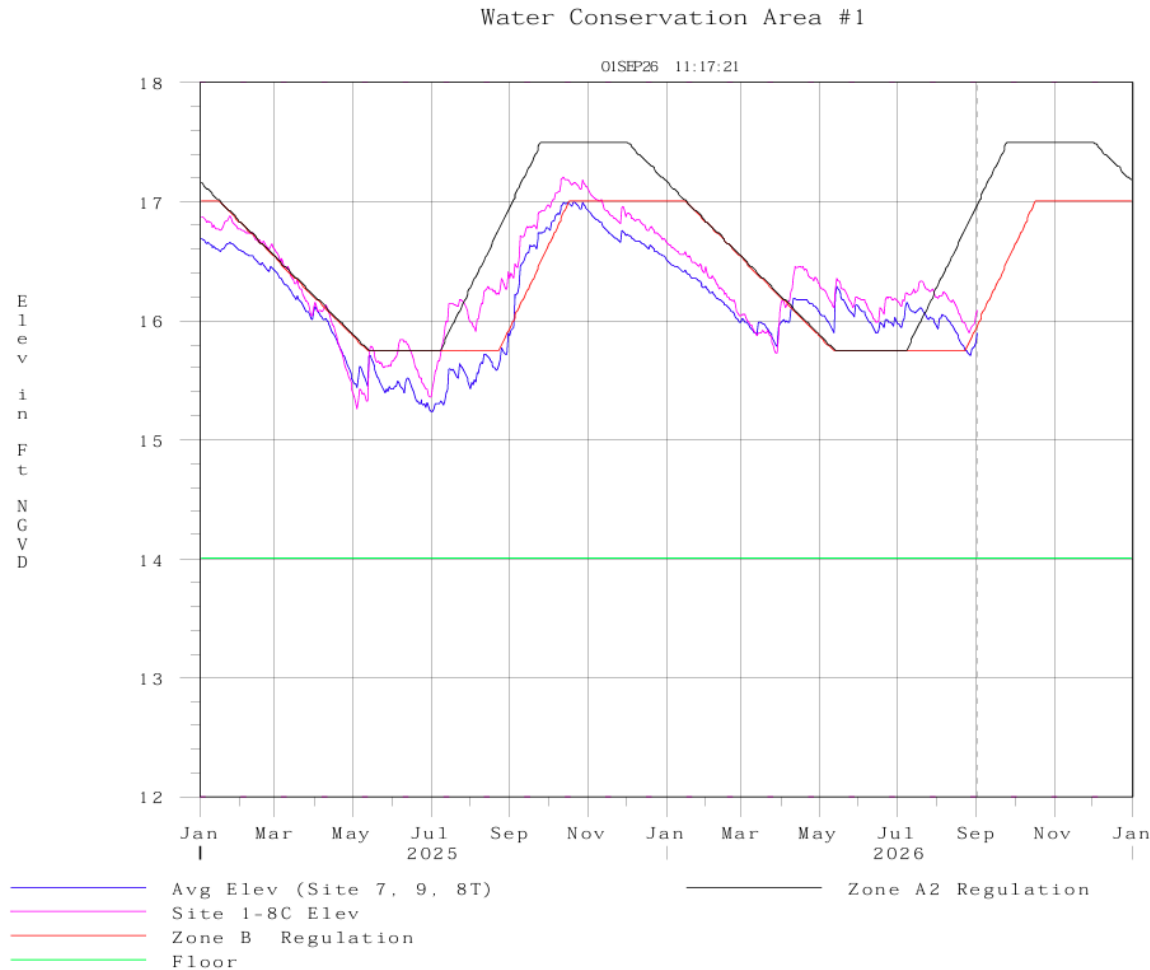
Collaboratively Moving Forward

- Increase the understanding of flow dynamics and potential nutrient transport/cycling under varying environmental and operational conditions.
- Further investigation opportunities currently include:
 - Apply models to better understand flow-driven effects and associated canal/marsh stage differential and STA discharge flow rate relationships
 - Vegetation community mapping (in progress)
 - Update soil P maps
 - Additional surface water monitoring



Collaboratively Moving Forward

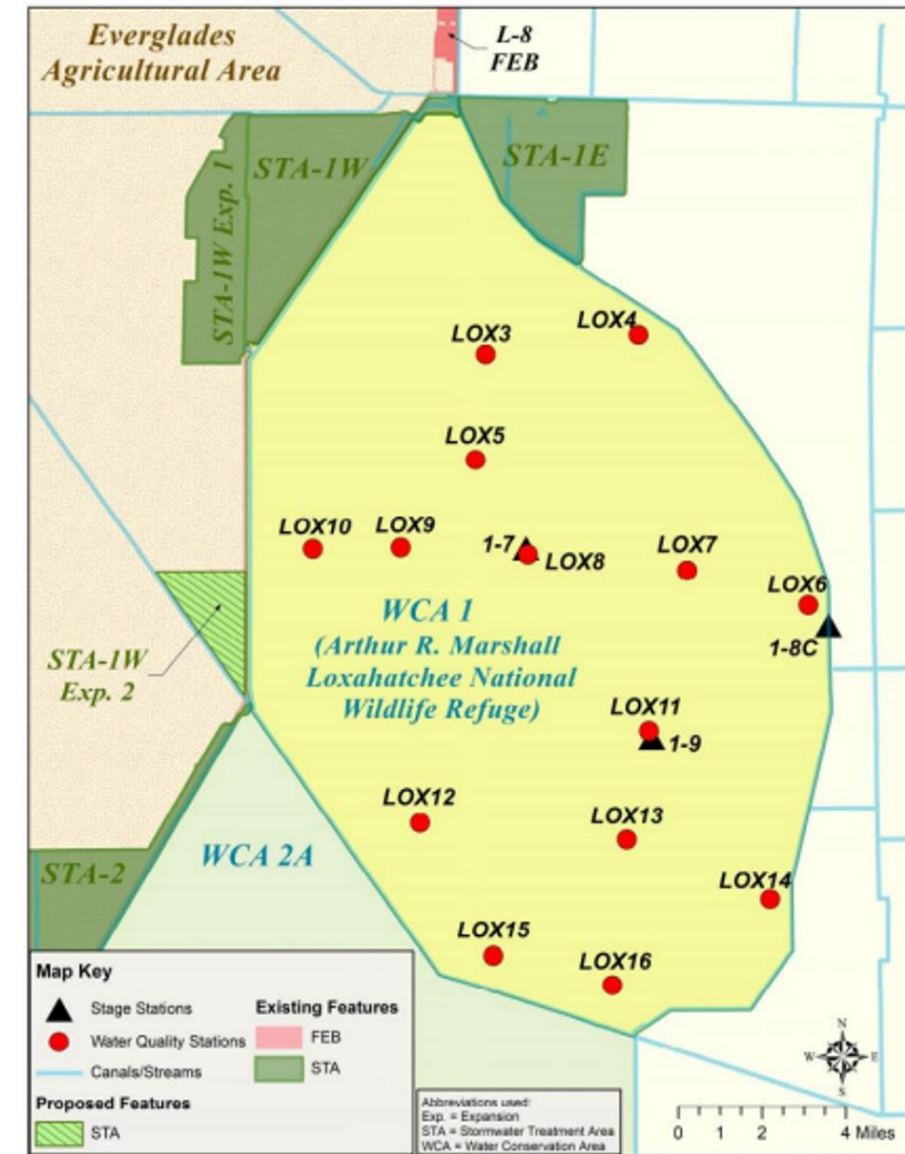
Consideration for experimental operational strategy



- Evaluate the following:
 - STA capacities and performance (water quality)
 - Canal/marsh stage differential
 - Ability/willingness of Lake Worth Drainage District to receive water
- When conditions are present that could impact canal/marsh differential undesirably, seek opportunities to lower the risk of impacts to the adjacent Refuge - including (but not limited to) sending additional water to Lake Worth Drainage District.

SFWMD and USFWS Collaboration

- Continue full engagement from Principals and the monthly technical team meetings
- Proceed with implementing newly constructed STA infrastructure (e.g. STA-1W Expansion 2).
- Monitor experimental operational strategies to understand the combined influence of canal-marsh stage differences and STA discharge flow rates/water quality on marsh ecology.
- Encourage other activities to support WQ decision-making in the protection of WCA1.



QUESTIONS