



SETTLEMENT AGREEMENT QUARTERLY REPORT

October - December 2023

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Technical Oversight Committee

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SUMMARY

Month	Mean Stage (ft NGVD29)	Long-Term Level (ppb)	Geometric Mean TP Concentration (ppb)	Number of Samples	
Arthur R. Marshall Loxahatchee National Wildlife Refuge					
Oct-23	17.55	7.2	6.8	14	
Nov-23	17.15	7.2	6.3	8	
Dec-23	17.29	7.2	6.9	14	
12-Month Period Ending	Total Flow (kac-ft)	Long-Term Limit (ppb)	12-Month TP FWMC (ppb)	Percent of Sampling Events Greater than 10 ppb	
				Guideline (%)	Observed (%)
Everglades National Park – Shark River Slough – PROVISIONAL DATA and RESULTS					
Oct-23	1,250.4	7.6	9.0	40.1	42.3
Nov-23	1,251.2	7.6	9.1	40.1	46.2
Dec-23	1,278.4	7.6	9.1	40.1	48.0
Everglades National Park – Taylor Slough and Coastal Basins					
Oct-23	347.8	11.0	4.8	53.1	0.0
Nov-23	358.2	11.0	4.8	53.1	0.0
Dec-23	363.3	11.0	4.9	53.1	0.0

FWMC for SRS - computed as $S12s + [S333 + S333N + S355A + S355B + \min(S356, S335) - S334]$.

S334 flow is not excluded from the total flow for long-term limit calculations.

FWMC for TS and CB – computed as $(S332D - S332DX1 - S328) + S328 + G737 + S18C$.

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Refuge TP Compliance Tracking with Outlook

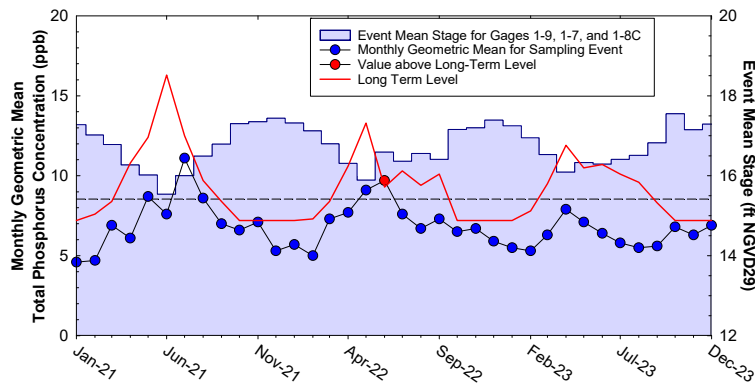
Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb) Effective 12/31/2006	Average Stage (feet NGVD29)	Number of Samples
4th Quarter 2023 Compliance Tracking				
Oct-2023	6.8	7.2	17.55	14
Nov-2023	6.3	7.2	17.15	8
Dec-2023	6.9	7.2	17.29	14
Preliminary Data Outlook				
Jan-2024	4.3	7.2	17.44	14
Feb-2024	6.1	8.1	16.87	14
Mar-2024	6.9	8.3	16.82	14
Apr-2024	6.7	10.5	16.32	12
May-2024	10.6	14.2	15.78	6

Note: 17.14 ft NGVD29 was used for the long-term level calculation when the average stage of the month exceeded the threshold of 17.14 ft.

Only 8 stations were sampled in November 2023 due to bad weather conditions at LOX6 and LOX11 through LOX16.

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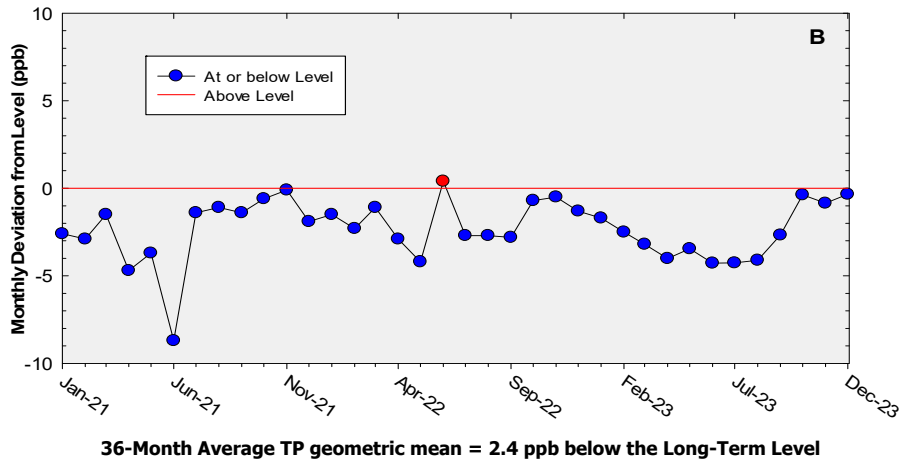
A.R.M Loxahatchee National Wildlife Refuge Monthly Total Phosphorus Geometric Mean Concentrations



36-Month Average TP Geometric Mean = 6.8 ppb
 36-Month Average TP Long-term Level is = 9.2 ppb

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A.R.M Loxahatchee National Wildlife Refuge Deviation of monthly geometric mean total phosphorus concentrations with calculated long-term levels



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Shark River Slough TP Concentration Compliance Tracking and Outlook

WY2024 Flow Data for S12s are Provisional.

12-Month Period	Total Flow (kac-ft)	Long-Term Limit (ppb) <i>Effective 12/31/2006</i>	Flow-Weighted Mean TP Concentration (ppb)	Percent of Sampling Events Greater than 10 ppb	
				Guideline (%)	Observed (%)
4th Quarter 2023 Compliance Tracking					
Nov 2022 - Oct 2023	1,250.4	7.6	9.0	40.1	42.3
Dec 2022 - Nov 2023	1,251.2	7.6	9.1	40.1	46.2
Jan 2023 - Dec 2023	1,278.4	7.6	9.1	40.1	46.2
Outlook					
Feb 2023 - Jan 2024	1,322.9	7.6	8.8	40.1	46.2
Mar 2023 - Feb 2024	1,381.4	7.6	8.6	40.1	42.3
Apr 2023 - Mar 2024	1,445.7	7.6	8.2	40.1	36.0
May 2023 - Apr 2024	1,493.8	7.6	7.9	40.1	28.0
Jun 2023 - May 2024	1,486.0	7.6	7.6	40.1	28.0

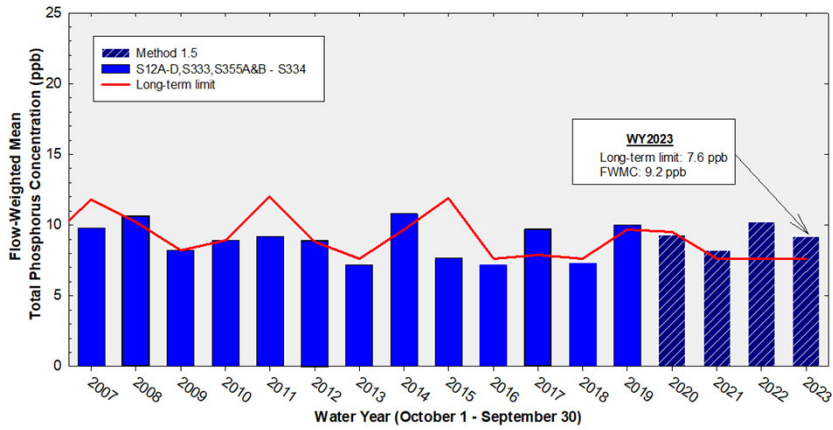
Shark River Slough PROVISIONAL RESULTS:

FWMC computed as S12A + S12B + S12C + S12D + [S333 + S333N + S355A + S355B + minimum of (S356, S335) - S334] using all flow and TP grabs on bi-weekly compliance sampling dates.

S334 flow was not excluded from the flow for long-term limit calculations.

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Annual Flow-weighted Mean Concentrations of Inflows to ENP through Shark River Slough

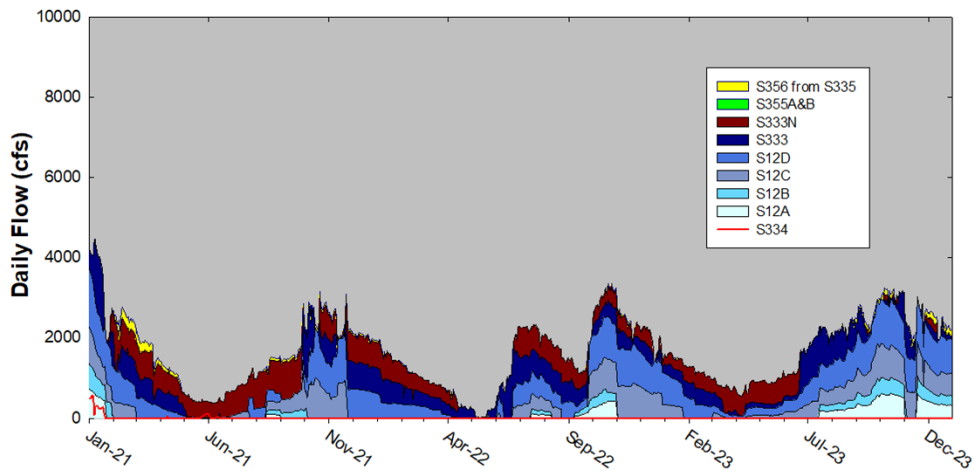


12-month FWMC at the end of each water year compared to the TP interim and long-term limits

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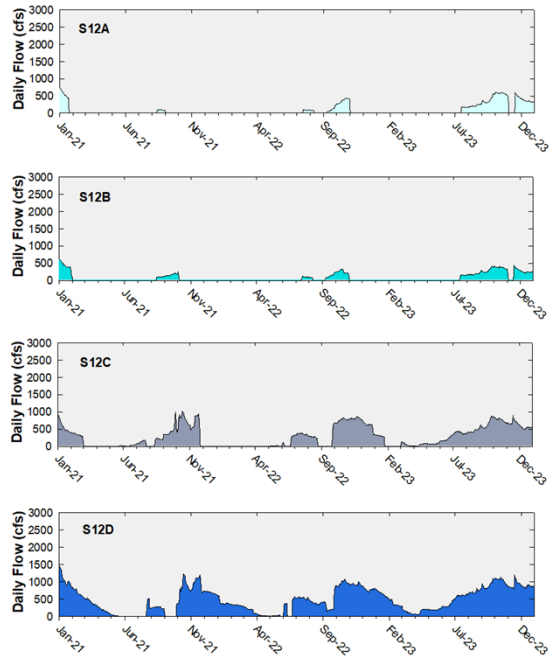
Shark River Slough Structure Daily Flows

WY2024 Flow Data for S12s are Provisional.



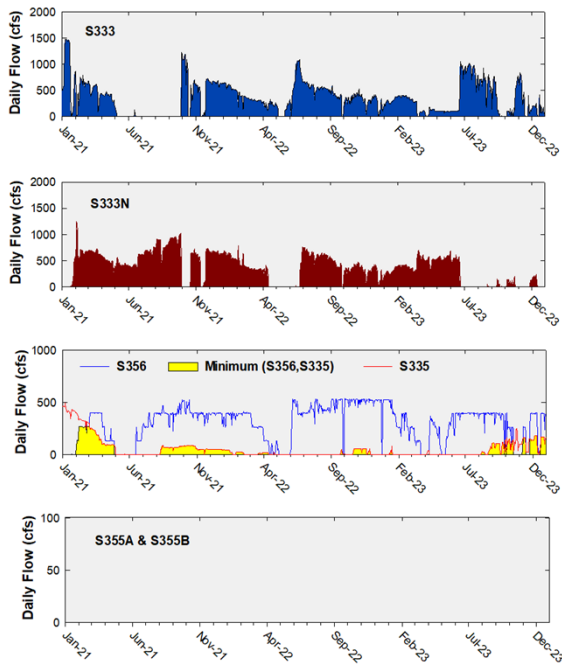
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Daily Flows at S12 Structures to Shark River Slough

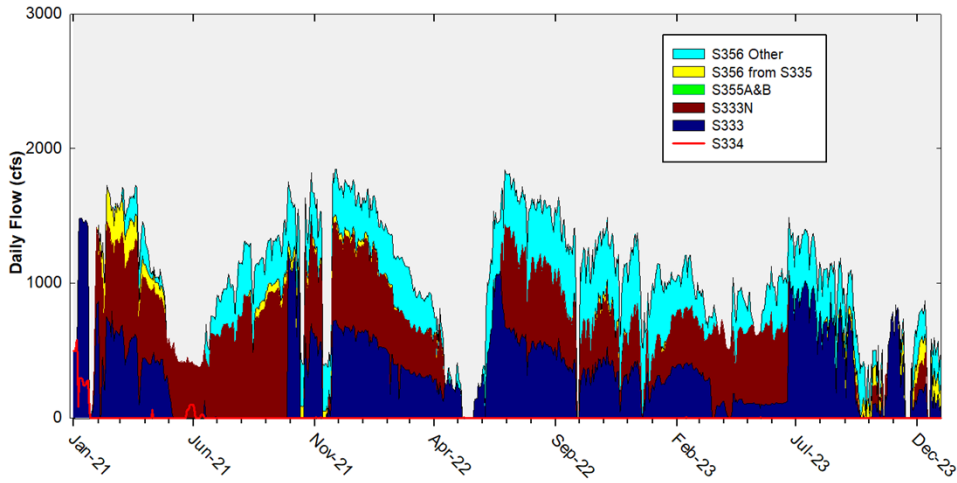


Daily Flows at Individual Inflow Structures to Shark River Slough

(Note: There was no flow at S355A or S355B during the period)

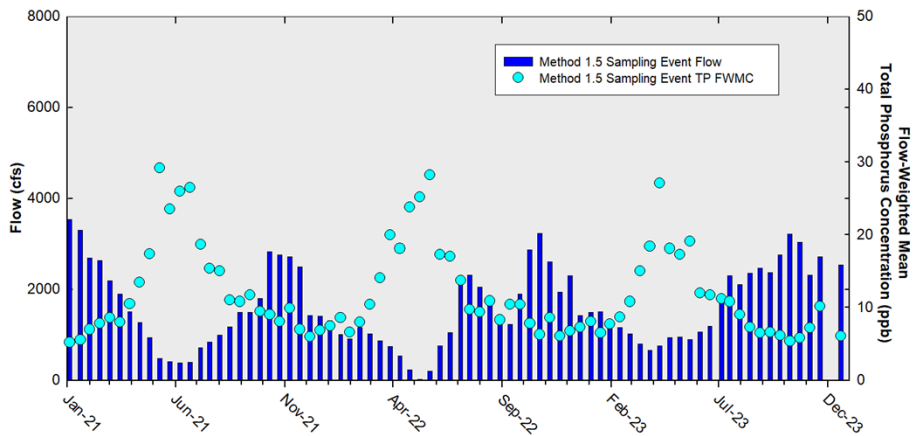


Daily Flows Into Shark River Slough through S333&S333N, S355A&B, and S356 and Out through S334



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Shark River Slough Sampling Event Flow and FWMC

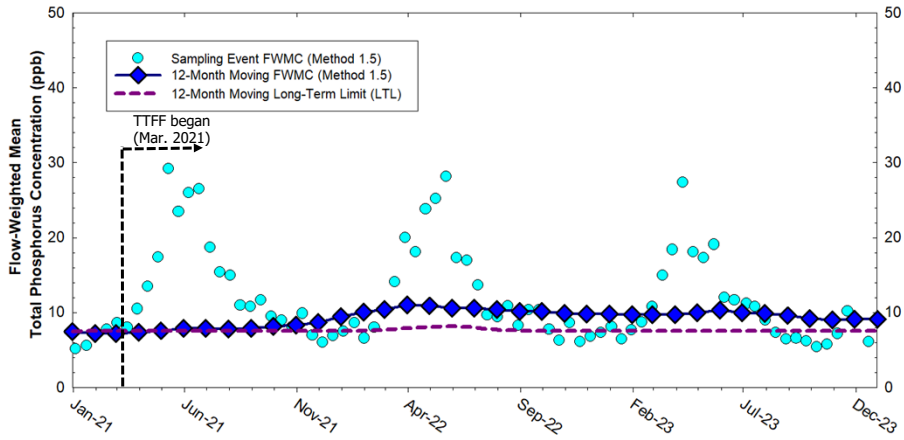


Flow to Shark River Slough and the corresponding TP FWMCs for individual sampling events

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Shark River Slough

12-month Moving Flow-Weighted Mean TP and Long-Term Limit

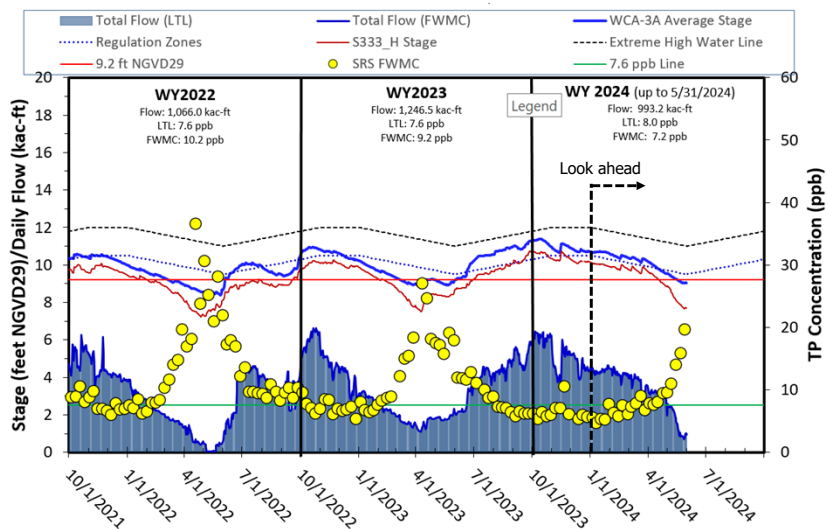


The composite TP concentration and 12-month FWMC at the end of each month for each sampling event

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Stage, Flow, and TP FWMC

Inflows to ENP through Shark River Slough



* WY2024 results are Provisional

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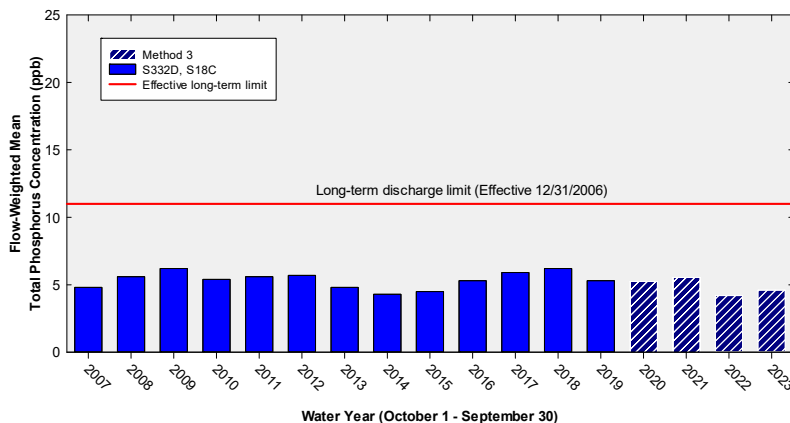
Taylor Slough and Coastal Basins TP Concentration Compliance Tracking

12-Month Period	Total Flow (kac-ft)	Flow-Weighted Mean TP Concentration in ppb LTL = 11.0 ppb Effective 12/31/2006	Observed Percent of Sampling Events Greater than 10 ppb Guideline = 53.1%
Nov 2022 - Oct 2023	347.8	4.8	0.0
Dec 2022 - Nov 2023	358.2	4.8	0.0
Jan 2023 - Dec 2023	363.3	4.8	0.0

FWMC computed as [(S332D-S332DX1-S328)+S328+G737+S18C] using all flow and TP grabs on weekly sampling.

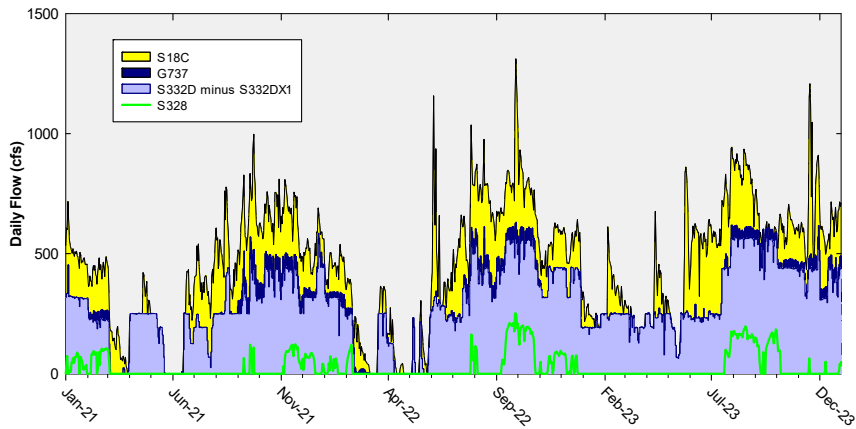
Total flow is (S332D-S332DX1)+G737+S18C]

Annual Flow-Weighted Mean Concentrations of Inflows to the ENP through Taylor Slough and Coastal Basins



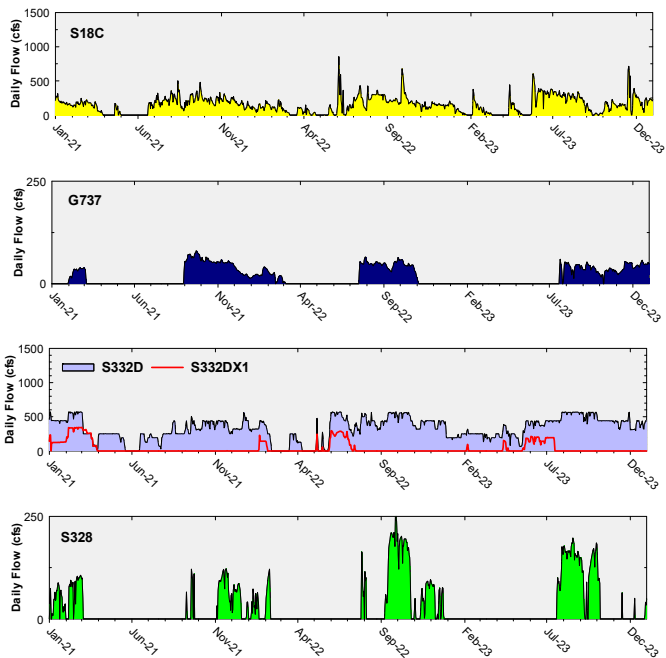
The 12-month FWMC at the end of each water year compared to the 11 ppb long-term TP limit

Daily Flows at Taylor Slough and Coastal Basins Structures into ENP



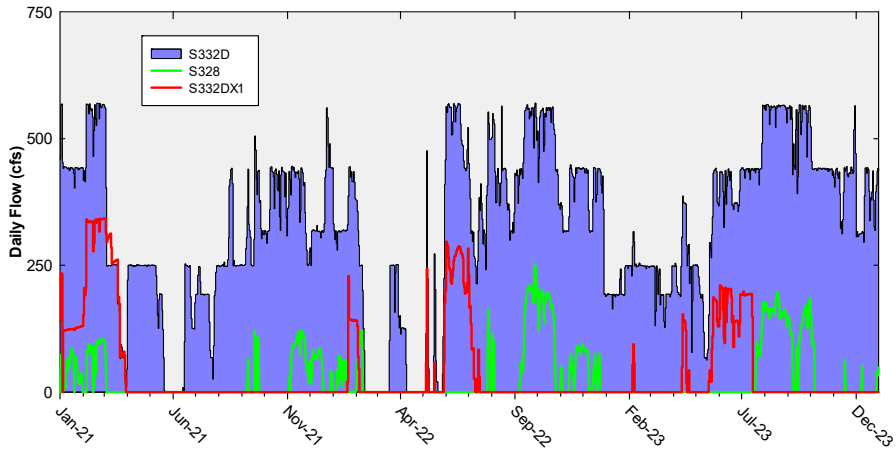
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Daily Flows at Individual Taylor Slough and Coastal Basins Structures



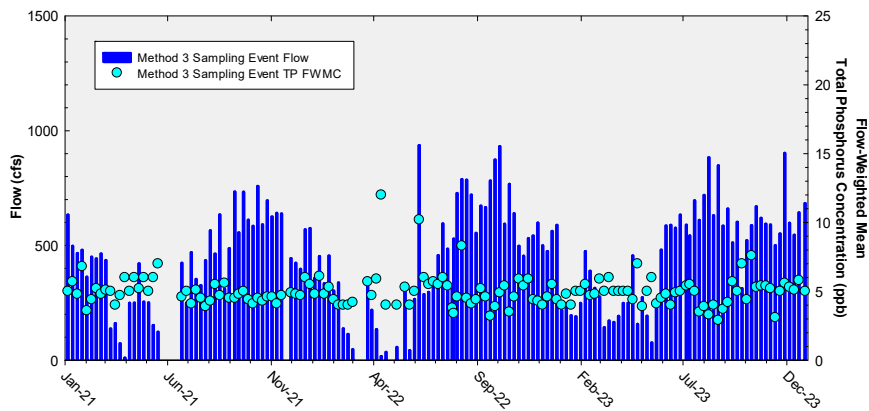
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Daily Flows In and Out of S332D Flowway



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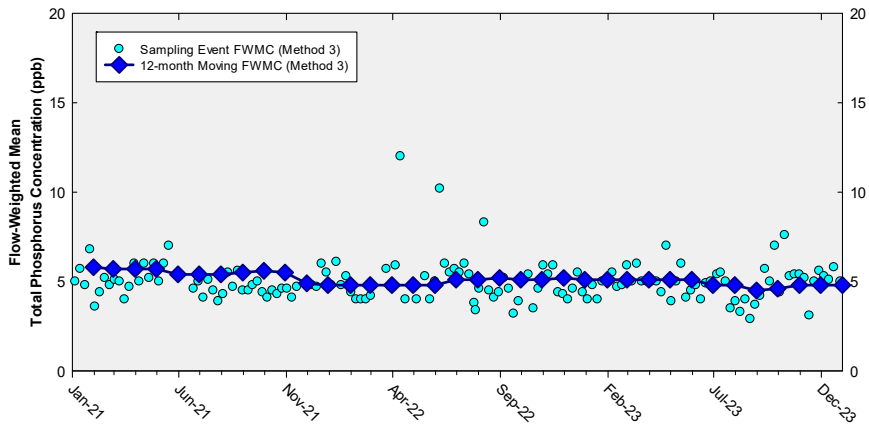
Taylor Slough and Coastal Basins Sampling Event Flow and FWMC



Flow at Taylor Slough and Coastal Basins structures and the corresponding TP FWMCs for individual sampling events

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Taylor Slough and Coastal Basins 12-month Moving Flow-Weighted Mean TP and Long-Term Limit



The 12-month FWMC at the end of each month and the composite TP concentration for each sampling event

Thank You

