



SETTLEMENT AGREEMENT QUARTERLY REPORT

July – September 2019

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Compliance Assessment & Reporting Section

Water Quality Bureau

Technical Oversight Committee

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sfwmd.gov

SUMMARY

Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb)	Mean Stage (feet NGVD29)	Number of Samples	
Arthur R. Marshall Loxahatchee National Wildlife Refuge					
Jul 2019	7.3	10.5	16.33	14	
Aug 2019	7.1	9.3	16.58	14	
Sep 2019	7.1	9.2	16.61	14	
12-Month Period Ending	Total Flow (kac-ft)	12-Month TP FWMC (ppb)	Long-Term Limit (ppb)	Percent of Sampling Events Greater than 10 ppb	
				Guideline	Observed
Everglades National Park – Shark River Slough – <i>PROVISIONAL DATA and RESULTS</i>					
Jul 2019	712.4 (785.8)	9.4 (8.9)	9.4 (9.0)	48.8 (46.7)	50.0 (45.8)
Aug 2019	665.4 (754.2)	10.0 (9.2)	9.6 (9.2)	50.1 (47.6)	54.2 (50.0)
Sep 2019	646.8 (741.1)	10.0 (9.4)	9.7 (9.2)	50.7 (48.0)	52.0 (48.0)
Everglades National Park – Taylor Slough and Coastal Basins					
Jul 2019	257.3 (294.8, 293.0)	6.3 (6.1, 5.9)	11.0	53.1	3.8 (3.8, 3.8)
Aug 2019	266.2 (293.1, 291.3)	6.3 (6.2, 5.9)	11.0	53.1	3.8 (3.8, 3.8)
Sep 2019*	237.8 (250.4, 248.6)	5.3 (5.2, 4.9)	11.0	53.1	1.9 (1.9, 1.9)

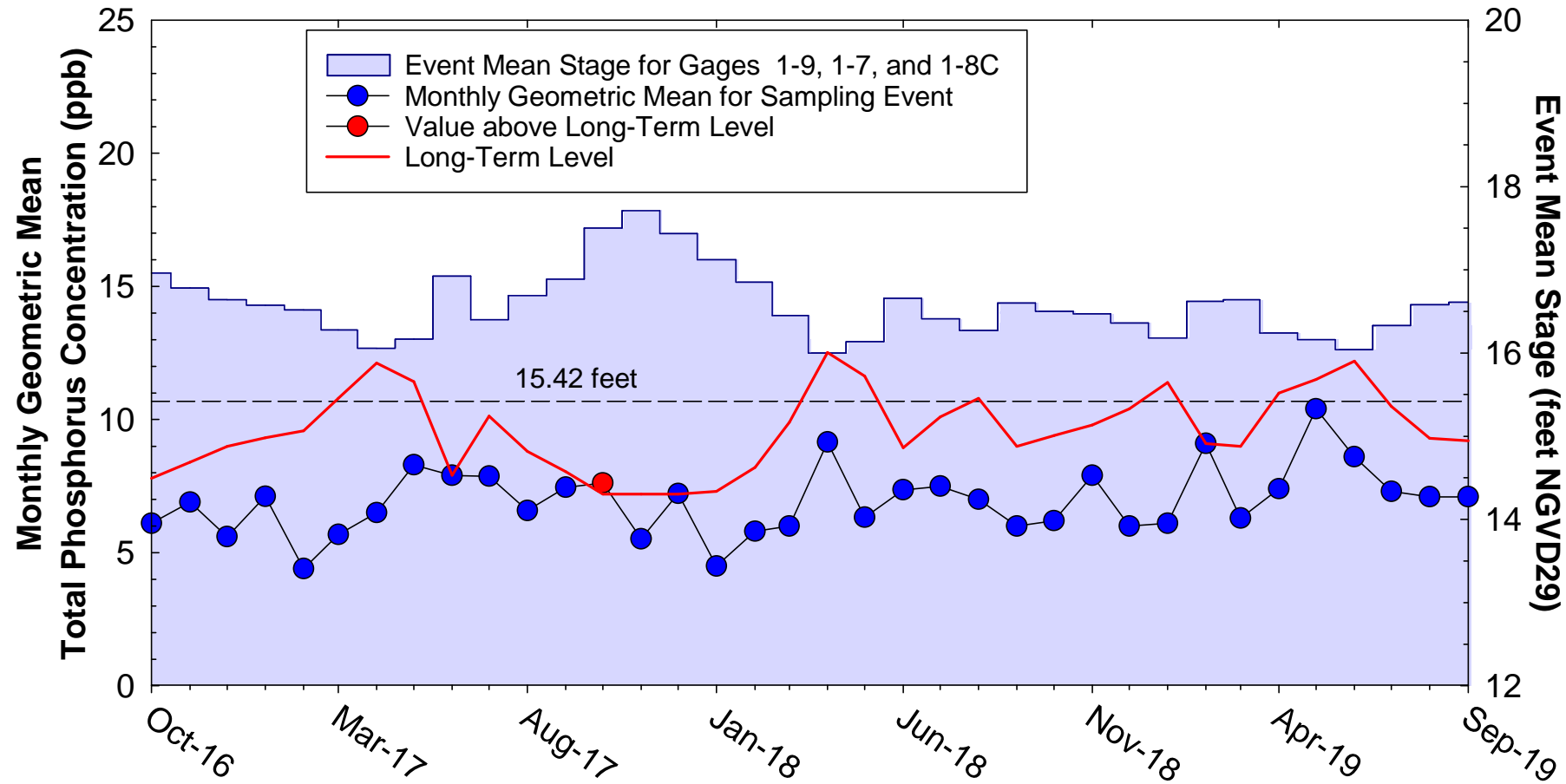
SRS - Method 1 (left values) computed as $S12s+(S333+S355A+S355B-S334)$ and Method 2 (values in parentheses) computed as $S12s+(S333+S355A+S355B+S356-S334)$. Neither method excludes S334 flow from the total flow for long-term limit calculations.

TS and CB - Method 1 (left values) computed as $S332D+S18C$, Method 2 (first values in parentheses) computed as $S332D+S18C+G737$, and Method 3 as $(S332D-S332DX1-S328)+S328+G737+S18C$.

* Daily flow data are missing for S18C from September 23 to 30, 2019, including the sampling event date September 24, 2019.

A.R.M Loxahatchee National Wildlife Refuge

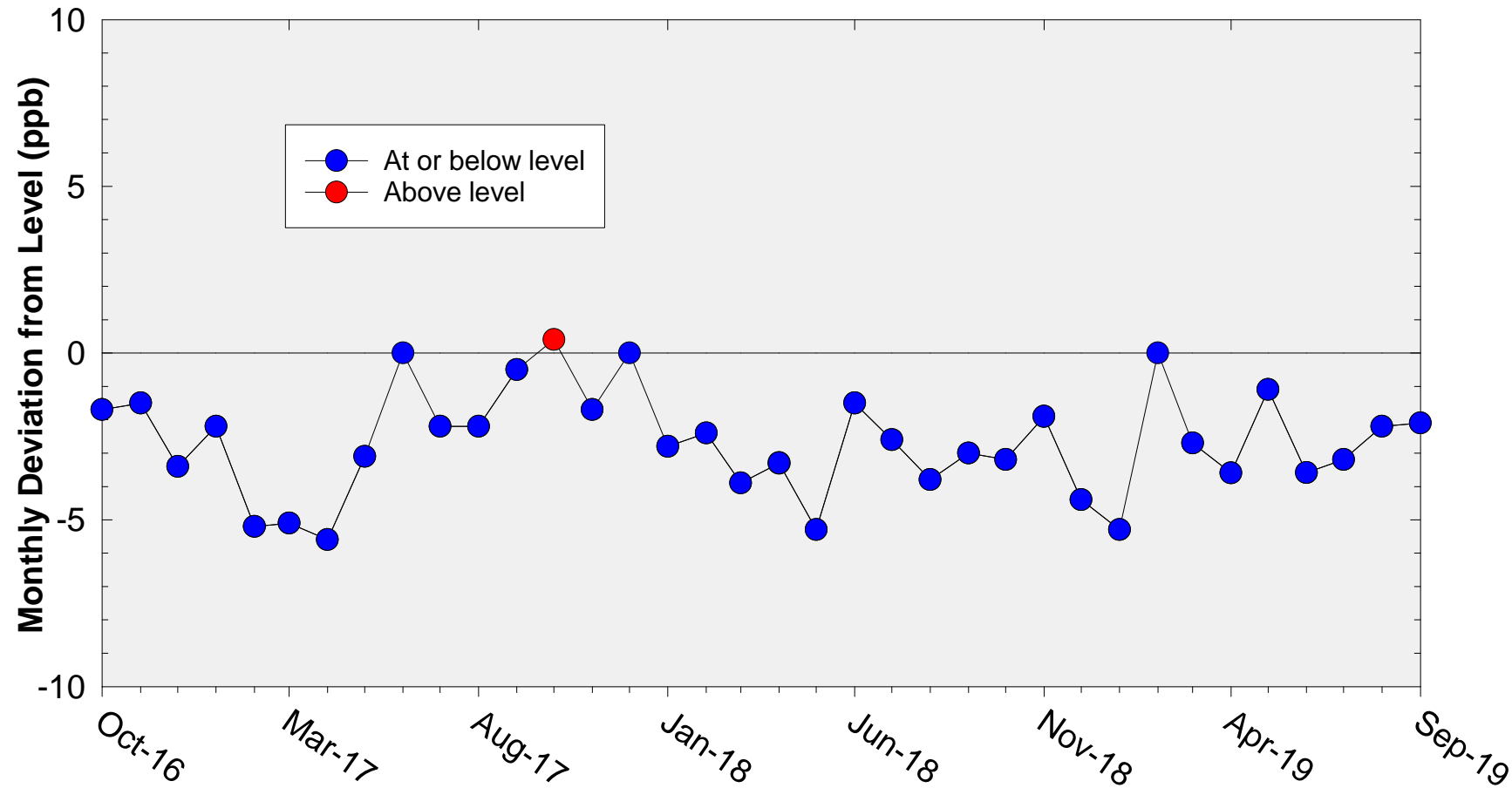
Monthly Total Phosphorus Geometric Mean Concentrations



36 Month Average TP Geometric Mean = 6.9 ppb

A.R.M Loxahatchee National Wildlife Refuge

Deviation of monthly geometric mean total phosphorus concentrations with calculated long-term levels



Average TP geometric mean = 2.8 ppb below the Long-Term Level

Refuge TP Compliance Tracking

For July 2019 – January 2020

Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb) Effective 12/31/2006	Average Stage (feet NGVD 29)	Number of Samples
3rd Quarter 2019 Compliance Tracking				
Jul-2019	7.3	10.5	16.33	14
Aug-2019	7.1	9.3	16.58	14
Sep-2019	7.1	9.2	16.61	14
Preliminary Data Outlook				
Oct-2019	6.7	9.8	16.47	14
Nov-2019	5.6	8.6	16.75	14
Dec-2019	5.2	9.3	16.59	14
Jan-2020	4.8	8.7	16.73	14

Shark River Slough

TP Concentration Compliance Tracking

Water Year 2019 (October 1, 2018 – September 30, 2019). Flow Data for S12s are Provisional.

12-Month Period	Total Flow (kac-ft)	Flow-Weighted Mean TP Concentration (ppb)	Long-Term Limit (ppb) <i>Effective 12/31/2006</i>	Percent of Sampling Events Greater than 10 ppb	
				Guideline	Observed
Aug 2018 - Jul 2019	712.4 (785.8)	9.4 (8.9)	9.4 (9.0)	48.8 (46.7)	50.0 (45.8)
Sep 2018 - Aug 2019	665.4 (754.2)	10.0 (9.2)	9.6 (9.2)	50.1 (47.6)	54.2 (50.0)
Oct 2018 - Sep 2019	646.8 (741.1)	10.0 (9.4)	9.7 (9.2)	50.7 (48.0)	52.0 (48.0)

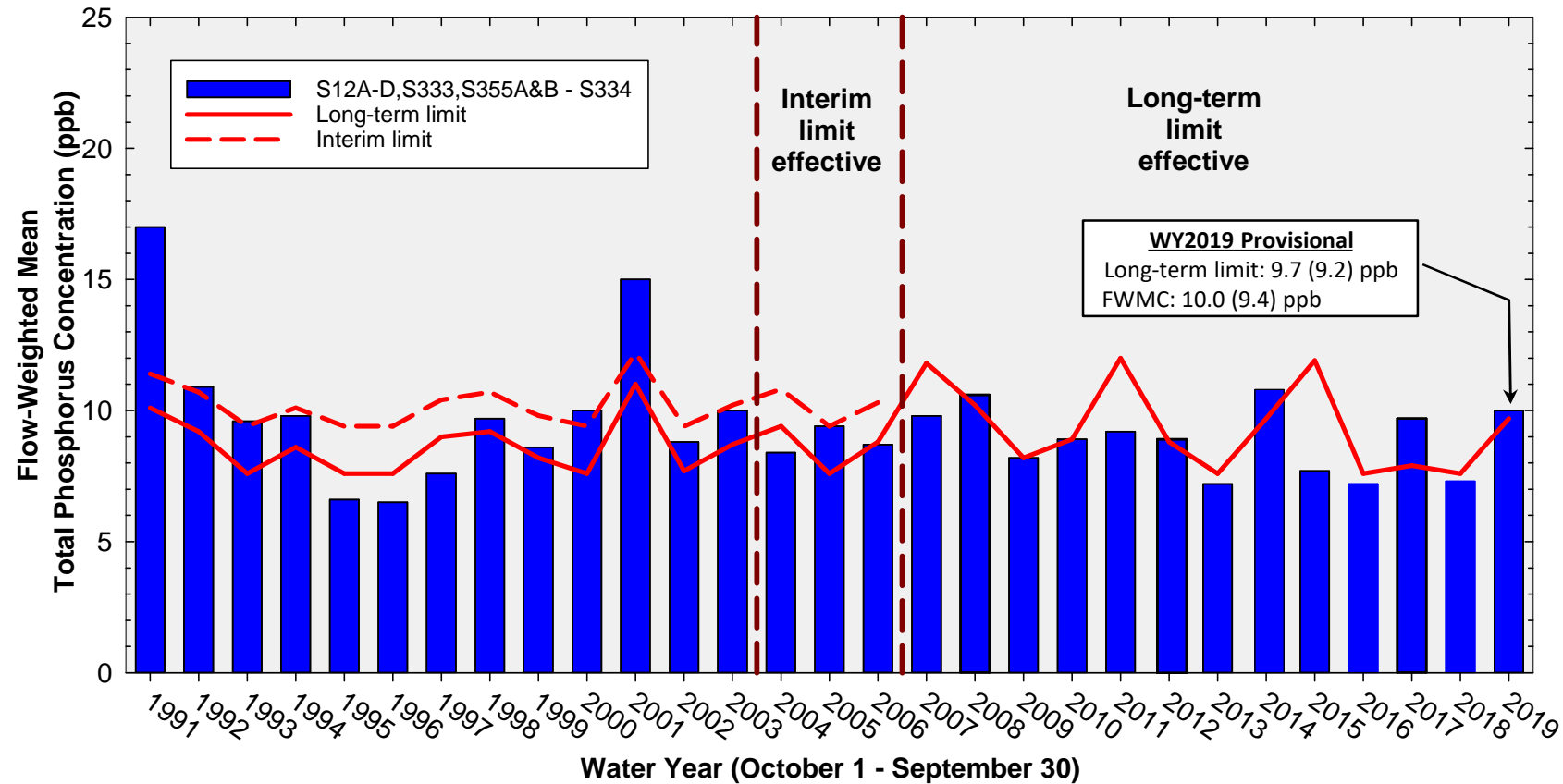
Shark River Slough PROVISIONAL RESULTS:

Method 1 (left values) FWMC computed as S12s+(S333+S355A&B-S334) and Method 2 (in parenthesis) FWMC computed as S12s+(S333+S355A&B+S356-S334) using all flow and TP grabs on bi-weekly compliance sampling dates.

Neither method excludes S334 flow from the flow for long-term limit calculations.

Annual Flow-weighted Mean Concentrations

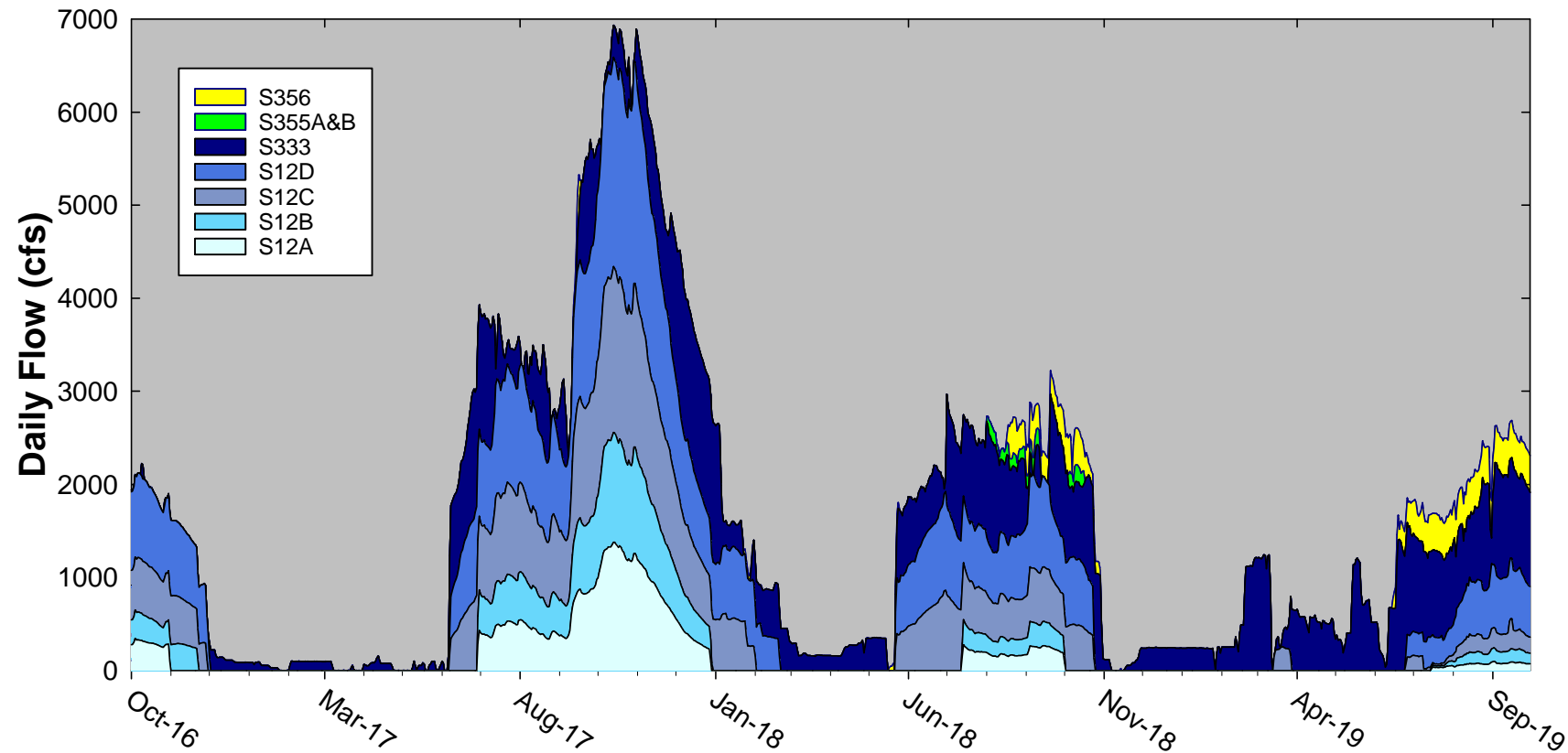
Inflows to ENP through Shark River Slough



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

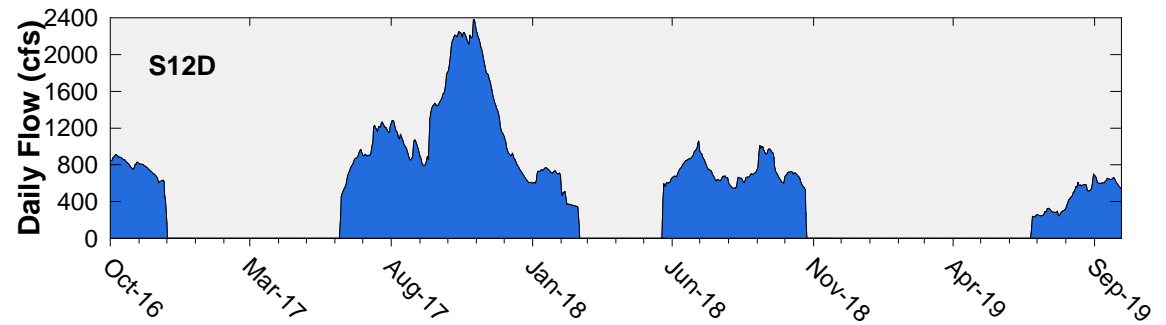
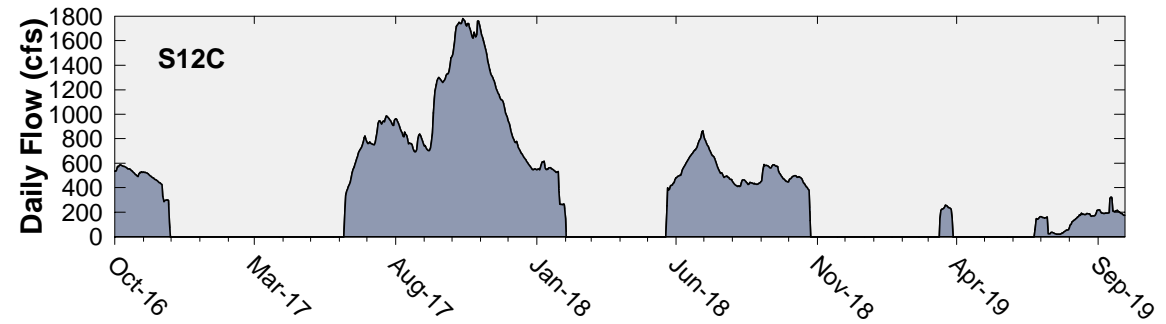
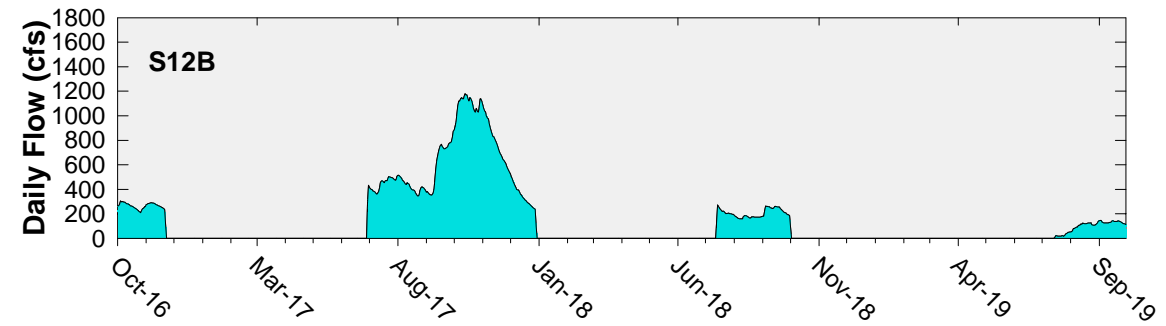
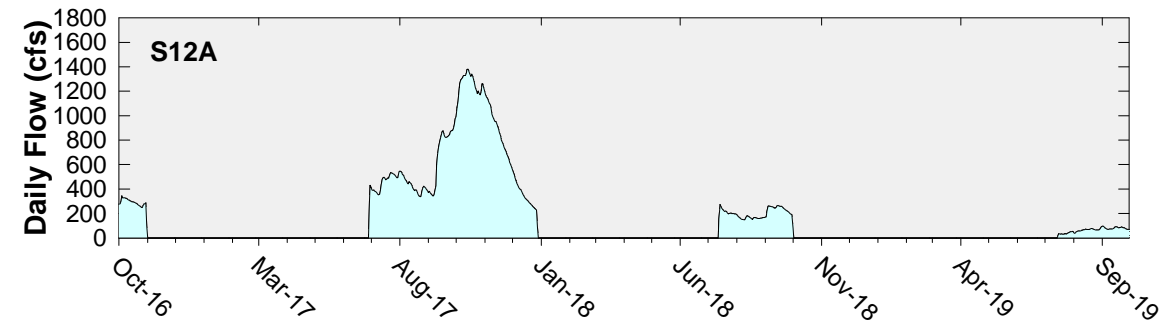
Shark River Slough Structure Daily Flows

WY2019 (October 1, 2018 – September 30, 2019). Flow Data for S12s are Provisional.

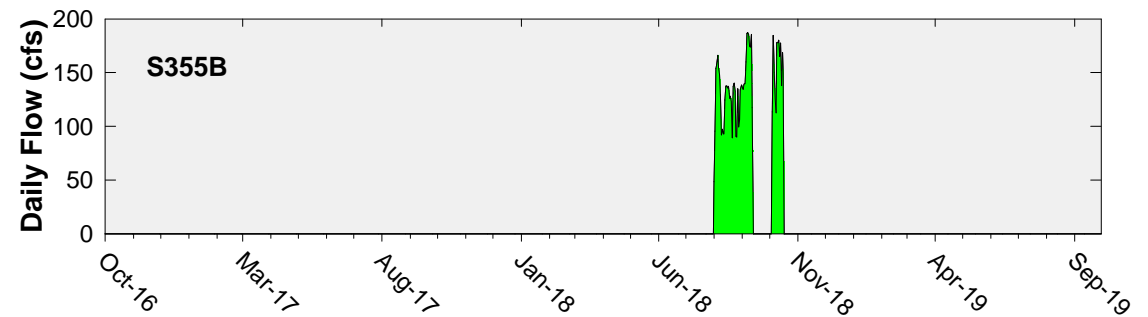
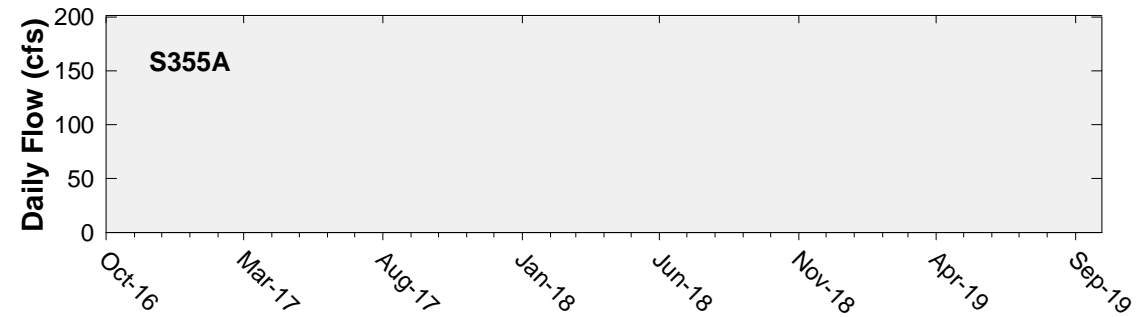
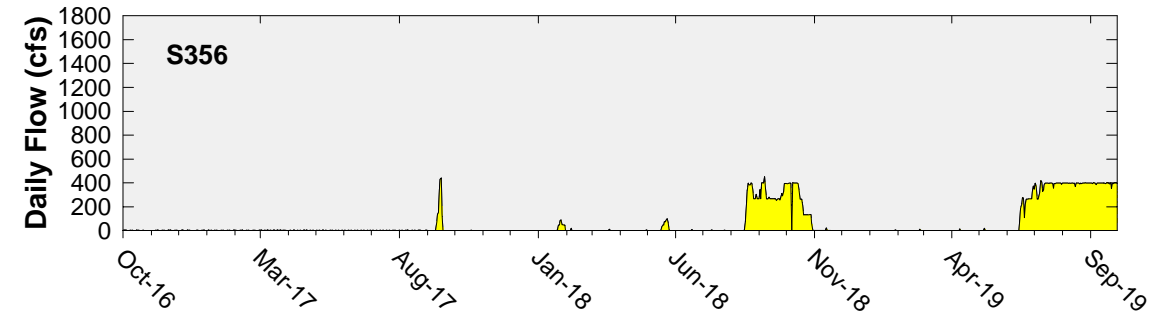
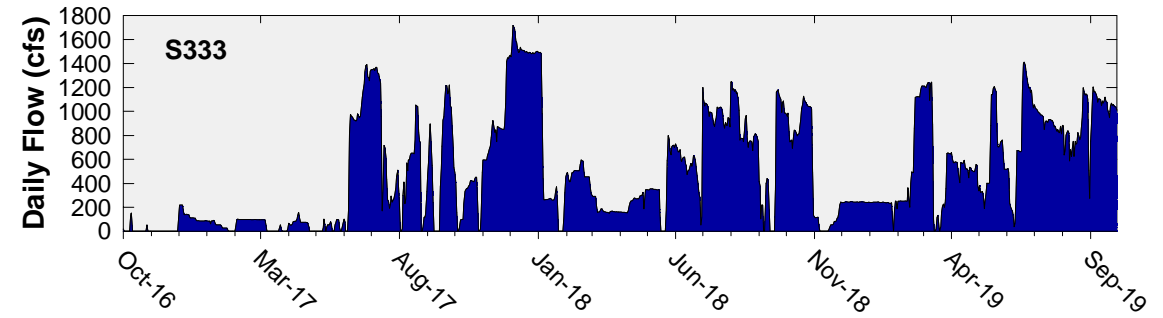


Daily Flows at S12 Structures to Shark River Slough

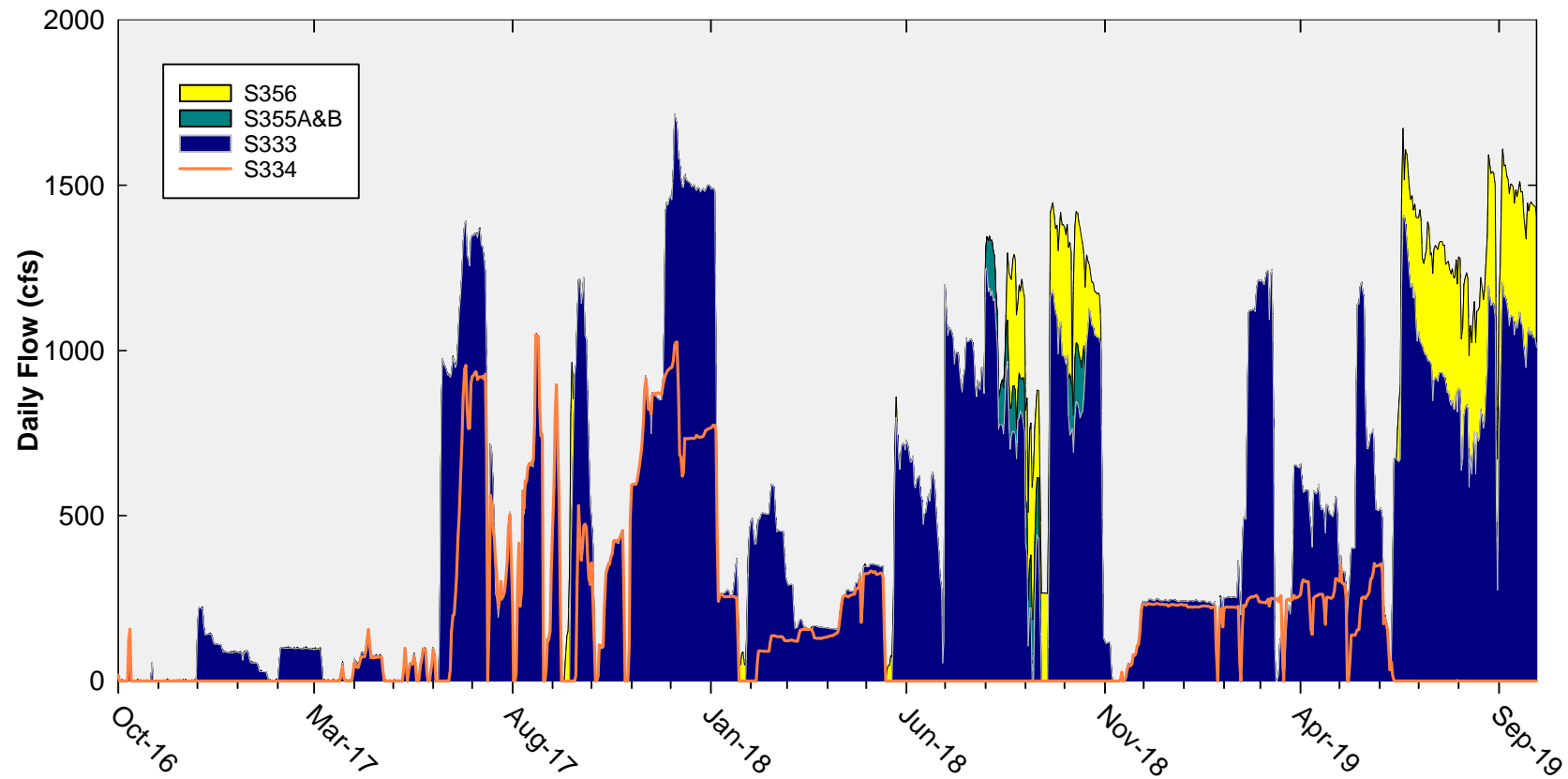
(WY2019 Flow Data are
Provisional)



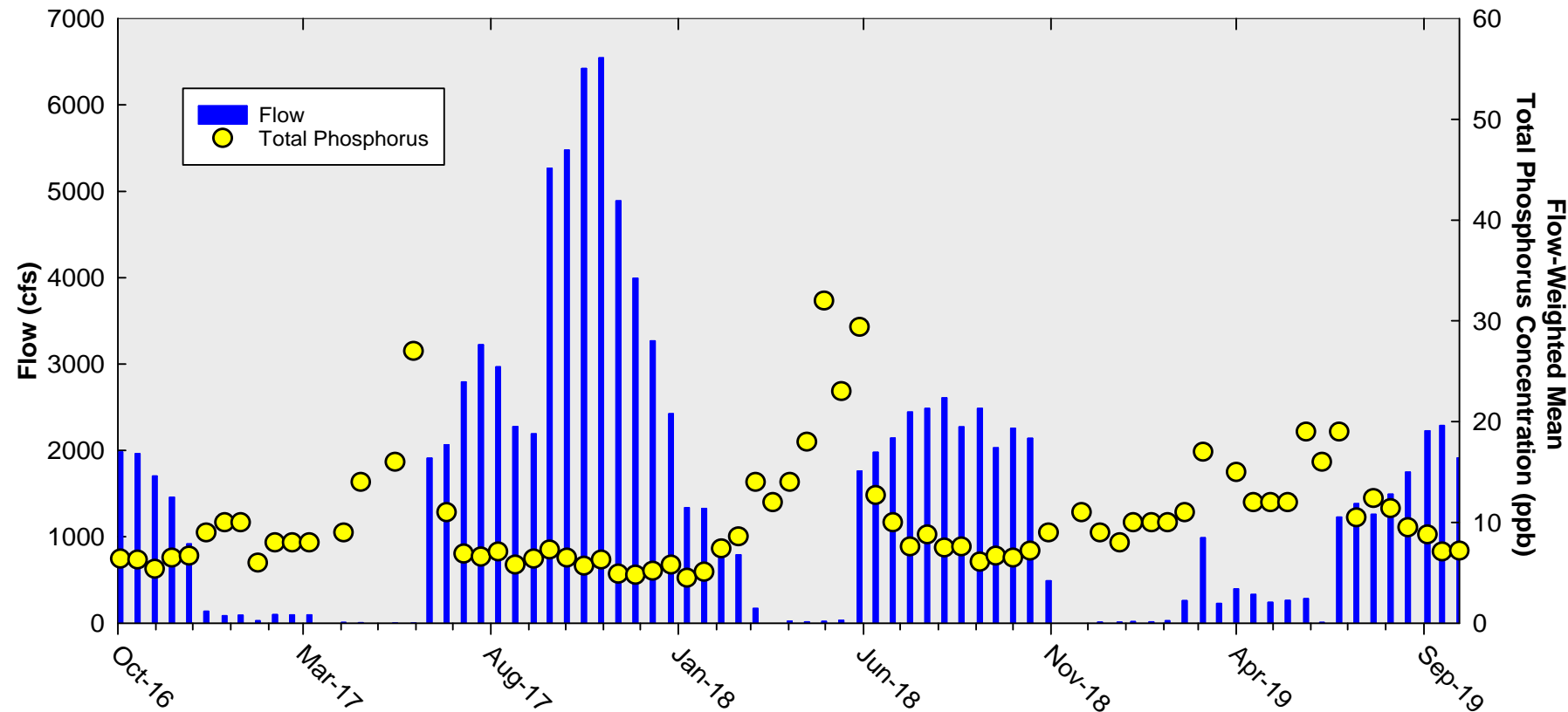
Daily Flows at Individual Inflow Structures to Shark River Slough



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



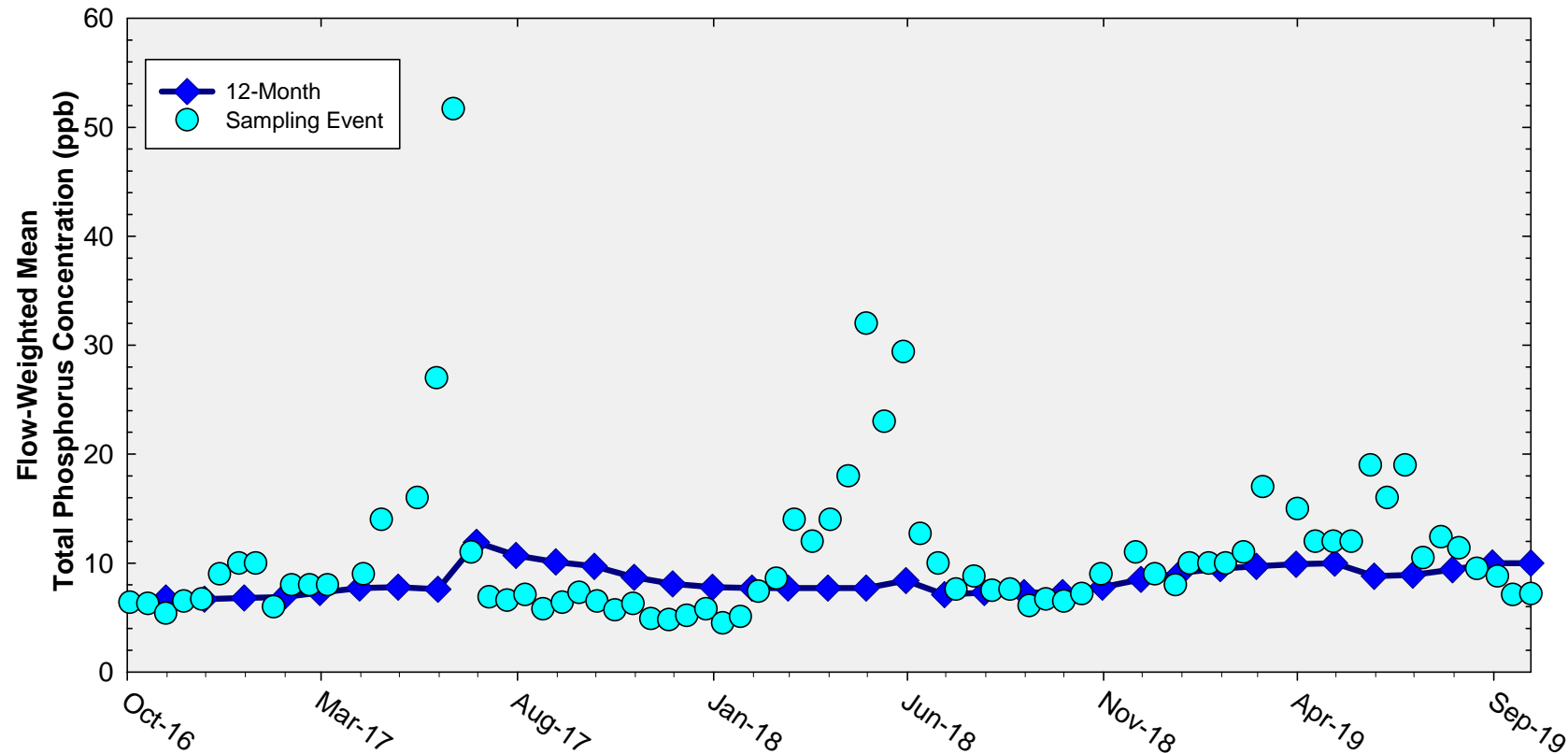
Shark River Slough Sampling Event Flow and FWMC



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

Note: Method 1 results illustrated. WY2019 Flow Data for S12s are Provisional.

Flow-Weighted Mean Concentrations Inflows to ENP through Shark River Slough



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

Note: Method 1 results illustrated. WY2019 Flow Data for S12s are Provisional.

Taylor Slough and Coastal Basins

TP Concentration Compliance Tracking

12-Month Period	Total Flow in 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%
Aug 2018 - Jul 2019	257.3 (294.8, 293.0)	6.3 (6.1, 5.9)	3.8 (3.8, 3.8)
Sep 2018 - Aug 2019	266.2 (293.1, 291.3)	6.3 (6.2, 5.9)	3.8 (3.8, 3.8)
Oct 2018 - Sep 2019*	237.8 (250.4, 248.6)	5.3 (5.2, 4.9)	1.9 (1.9, 1.9)

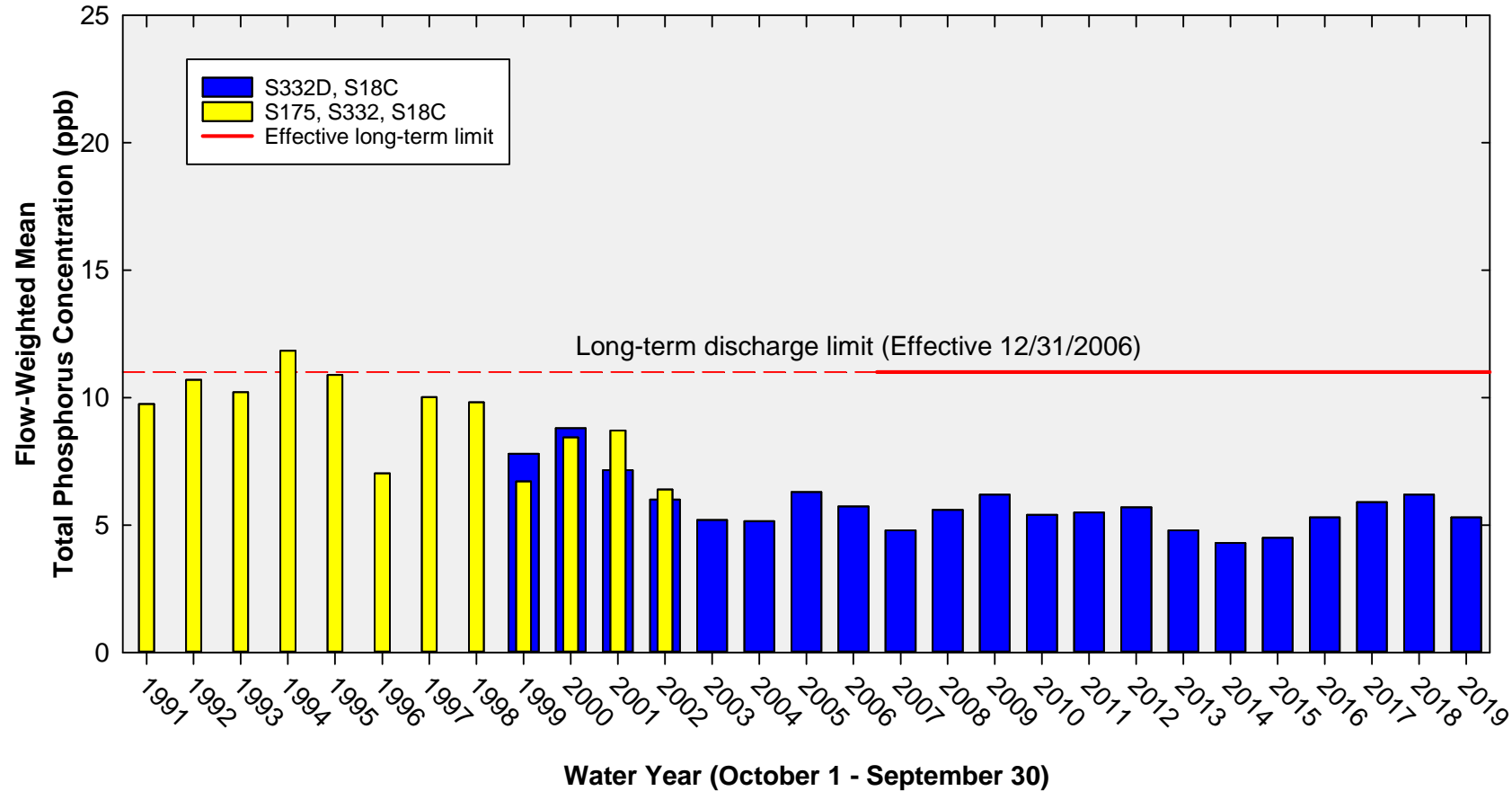
Method 1 (S332D+S18C) results are the left most values.

Method 2 (S332D+S18C+G737) results are the first values in parentheses.

Method 3 [(S332D-S332DX1-S328)+S328+G737+S18C] results are the second values in parentheses.

* Daily flow data are missing for S18C from September 23 to September 30, 2019, including the sampling event date September 24, 2019.

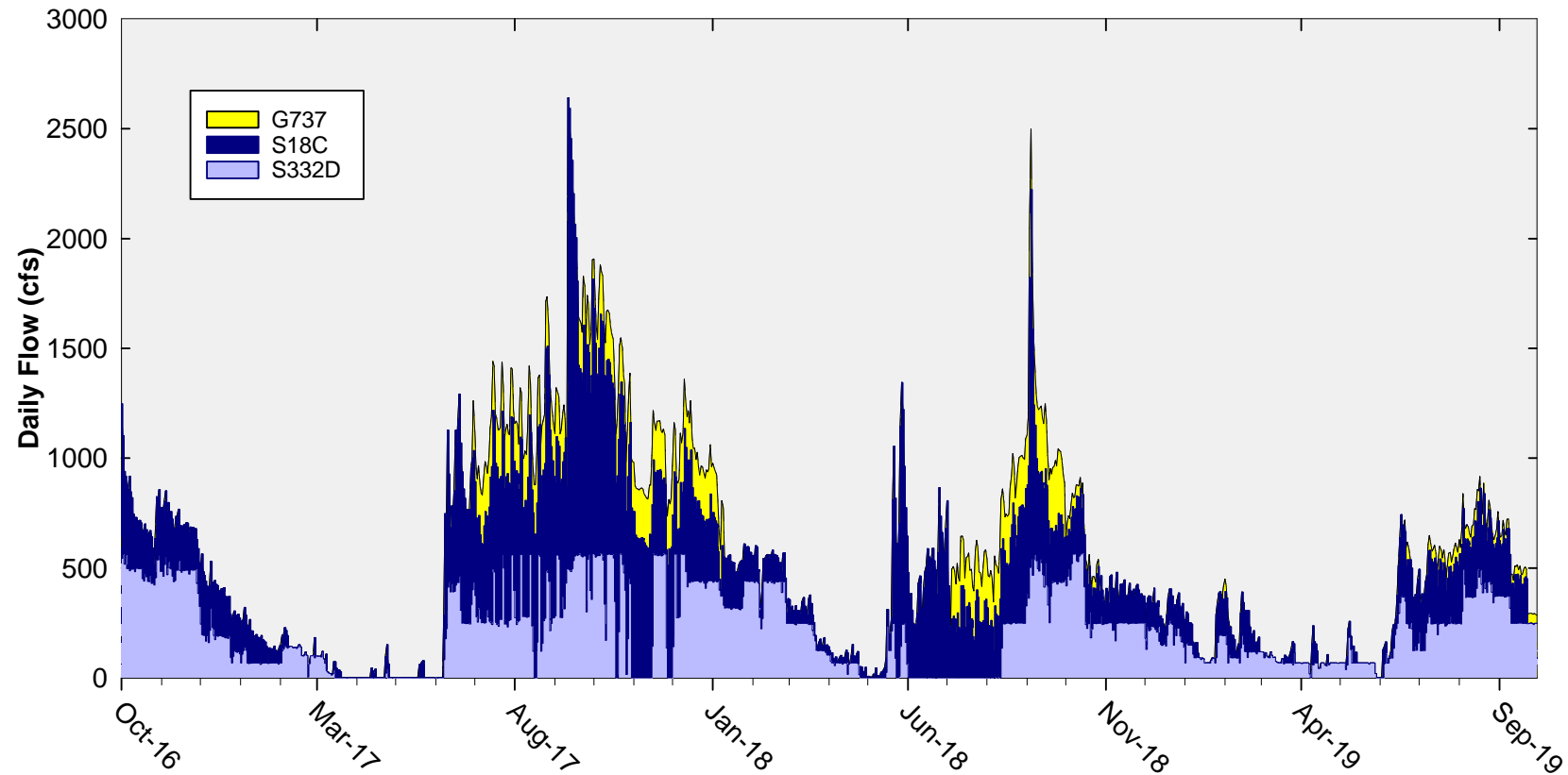
Annual Flow-Weighted Mean Concentrations Inflows to the ENP through Taylor Slough and Coastal Basins



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

Note: Blue bars show S332D, S18C, & S174 until September 2007 when S174 was plugged.

Daily Flows at Taylor Slough and Coastal Basins Structures into ENP



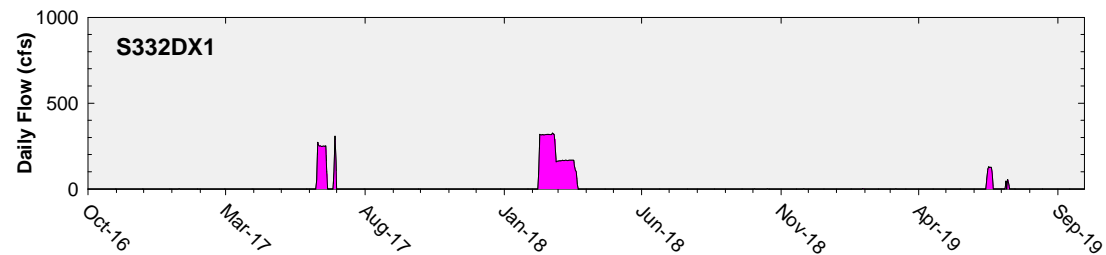
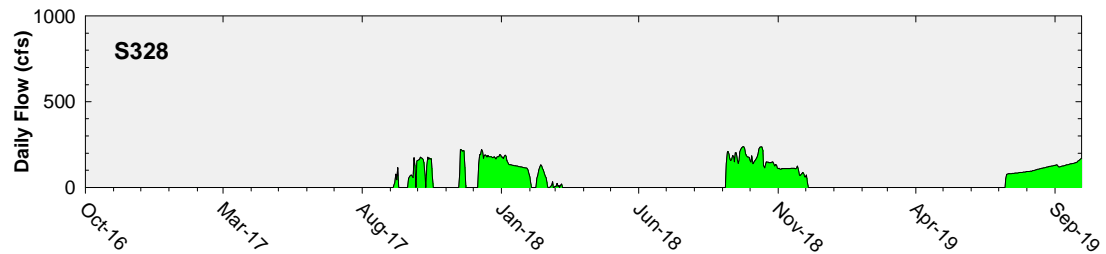
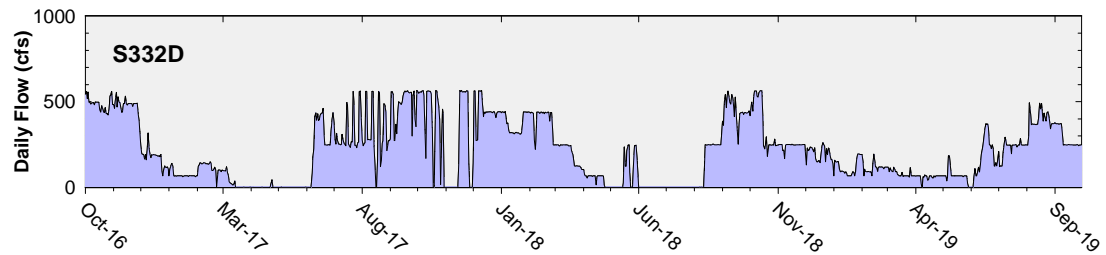
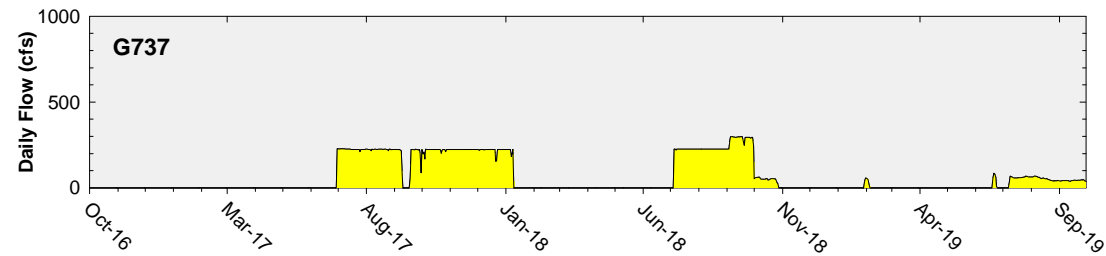
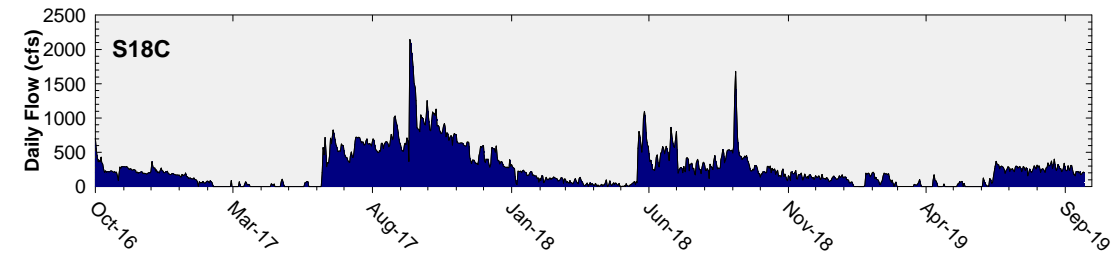
Note: Daily flow data are missing for S18C from September 23 to September 30, 2019.

Daily Flows at Individual Taylor Slough and Coastal Basins Structures into ENP

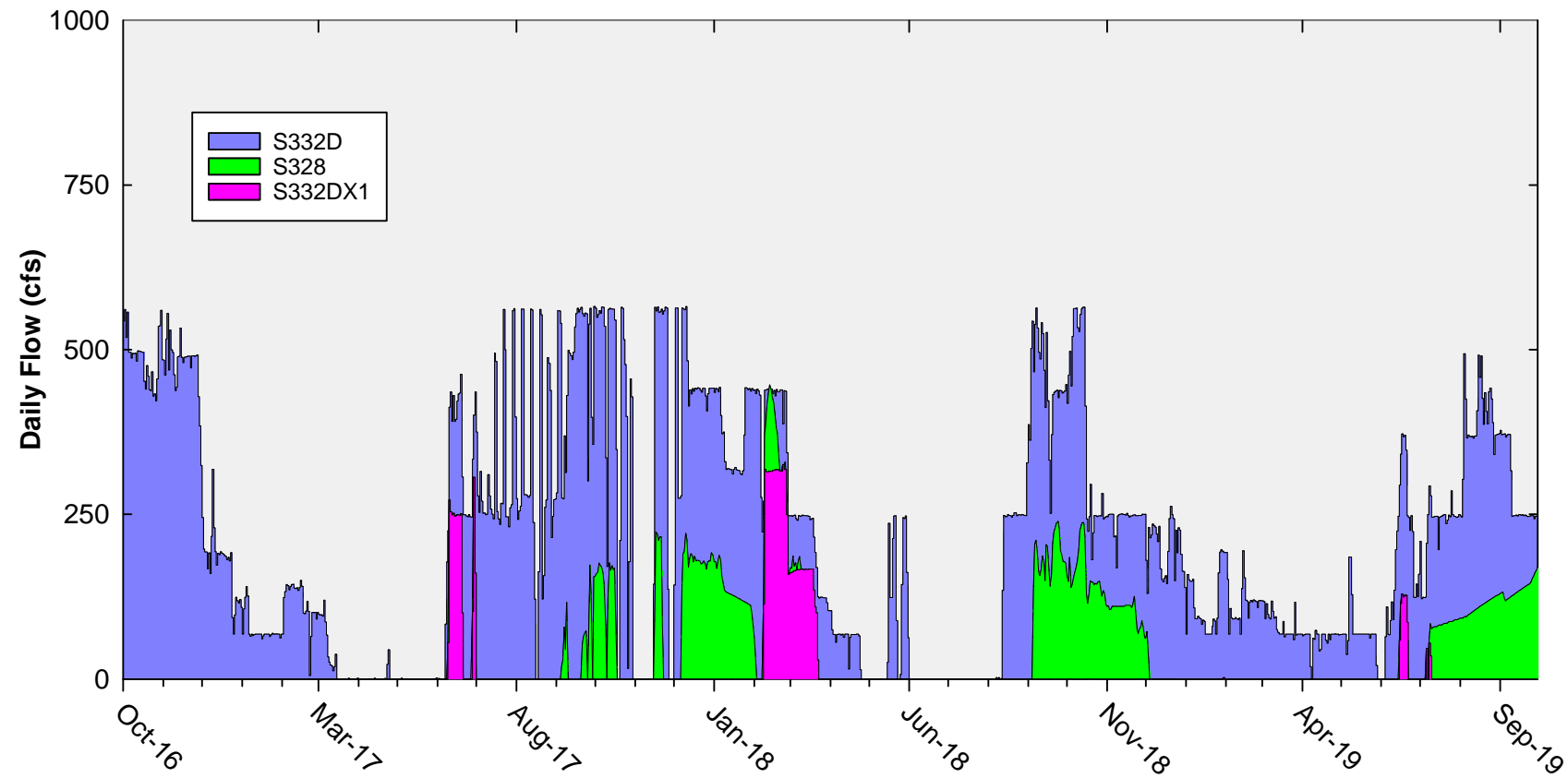
Note:

G737 flow prior to October 1, 2018, is based on S200 pump flow on days when G737 gate are open.

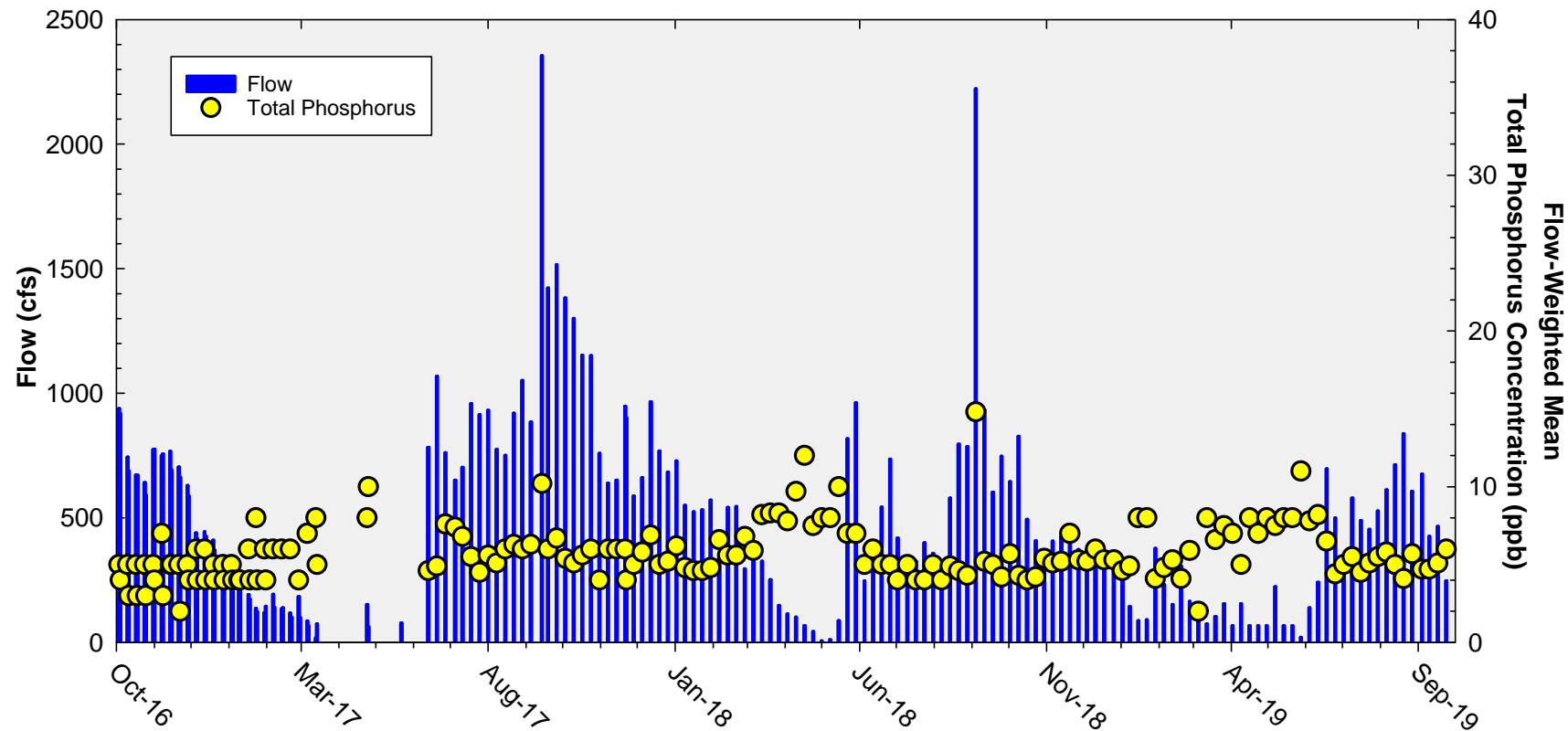
Daily flow data are missing for S18C from September 23 to September 30, 2019.



Daily Flows Into and Out of C-111 Detention Area



Taylor Slough and Coastal Basins Sampling Event Flow and FWMC

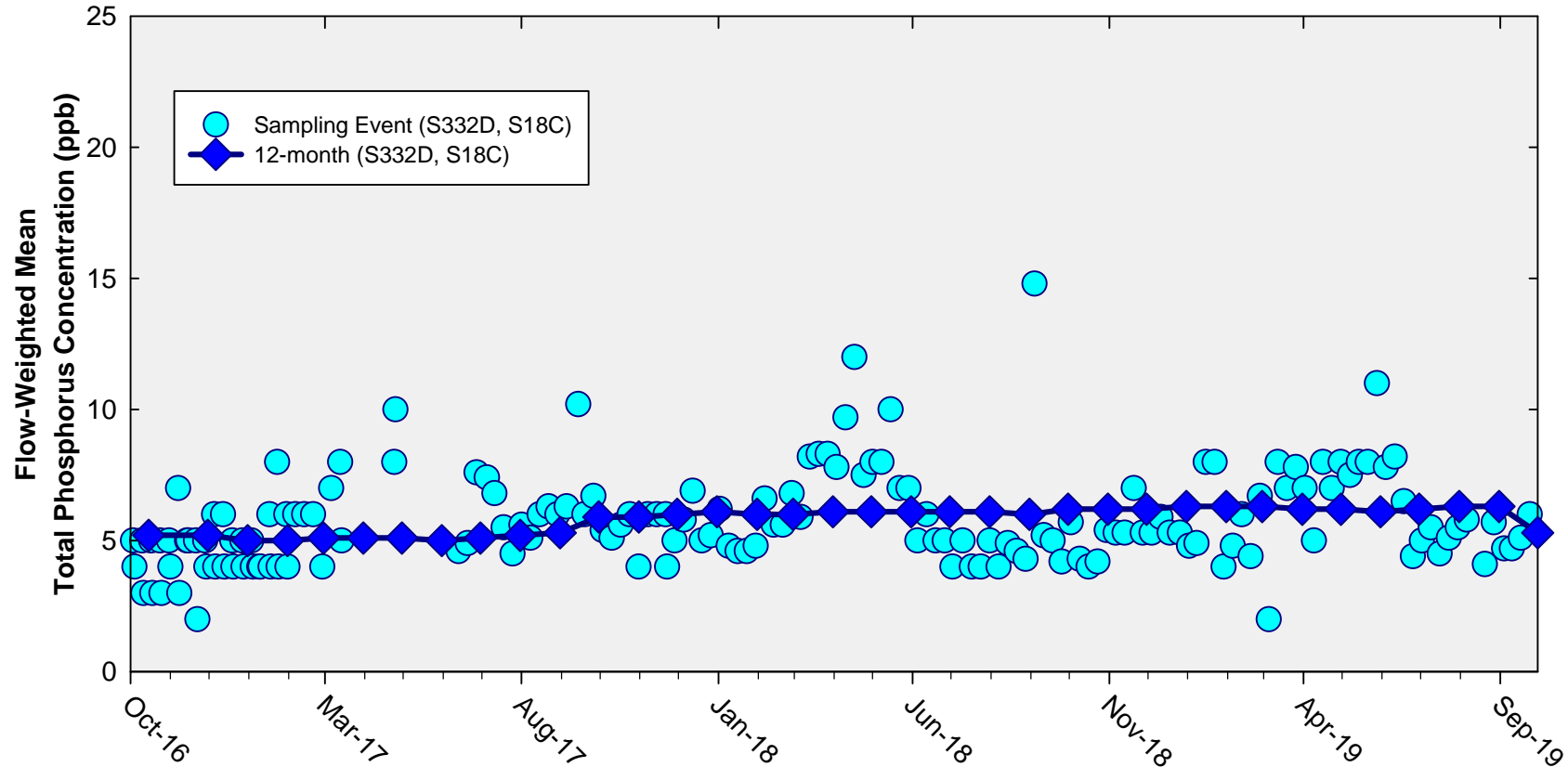


Flow at Taylor Slough and Coastal Basins structures and the corresponding TP FWMCs for individual sampling events

Note: Method 1 results illustrated. Daily flow data are missing for S18C from September 23 to September 30, 2019, including the sampling event date September 24, 2019.

Flow-Weighted Mean Concentrations

Inflows to the ENP through Taylor Slough and Coastal Basins



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

Note: Method 1 results illustrated. Daily flow data are missing for S18C from September 23 to September 30, 2019, including the sampling event date September 24, 2019.

Thank You

