

# SETTLEMENT AGREEMENT QUARTERLY REPORT

July – September 2016

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Technical Oversight Committee  
January 31, 2017



# SUMMARY

Month	Geometric Mean TP Concentration (ppb)	Long-term Level (ppb)	Mean Stage (feet NGVD29)	Number of Samples	
<b>Arthur R. Marshall Loxahatchee National Wildlife Refuge</b>					
Jul 2016	7.1	12.0	16.07	13	
Aug 2016	6.6	13.1	15.92	6	
Sept 2016	7.3	9.1	16.62	14	
12-Month Period Ending	Total Flow (kac-ft)	12-Month Flow-weighted Mean TP Concentration (ppb)	Long-term Limit (ppb)	Percent of Sampling Events Greater than 10 ppb	
				Guideline	Observed
<b>Everglades National Park – Shark River Slough – <i>PROVISIONAL DATA and RESULTS</i></b>					
<i>Jul 2016</i>	<i>1224.1 to 1293.9</i>	<i>7.5 to 7.4</i>	<i>7.6 to 7.6</i>	<i>40.1</i>	<i>22.7 to 22.7</i>
<i>Aug 2016</i>	<i>1317.1 to 1390.0</i>	<i>7.5 to 7.5</i>	<i>7.6 to 7.6</i>	<i>40.1</i>	<i>20.8 to 20.8</i>
<i>Sept 2016</i>	<i>1422.1 to 1489.4</i>	<i>7.5 to 7.4</i>	<i>7.6 to 7.6</i>	<i>40.1</i>	<i>19.2 to 19.2</i>
<b>Everglades National Park – Taylor Slough and Coastal Basins</b>					
Jul 2016	300.7	5.2	11.0	53.1	0.0
Aug 2016	330.9	5.2	11.0	53.1	0.0
Sept 2016	361.3	5.3	11.0	53.1	0.0

Note: Refer to slide 6 for explanation of Shark River Slough PROVISIONAL DATA and RESULTS ranges.

# Refuge TP Compliance Tracking

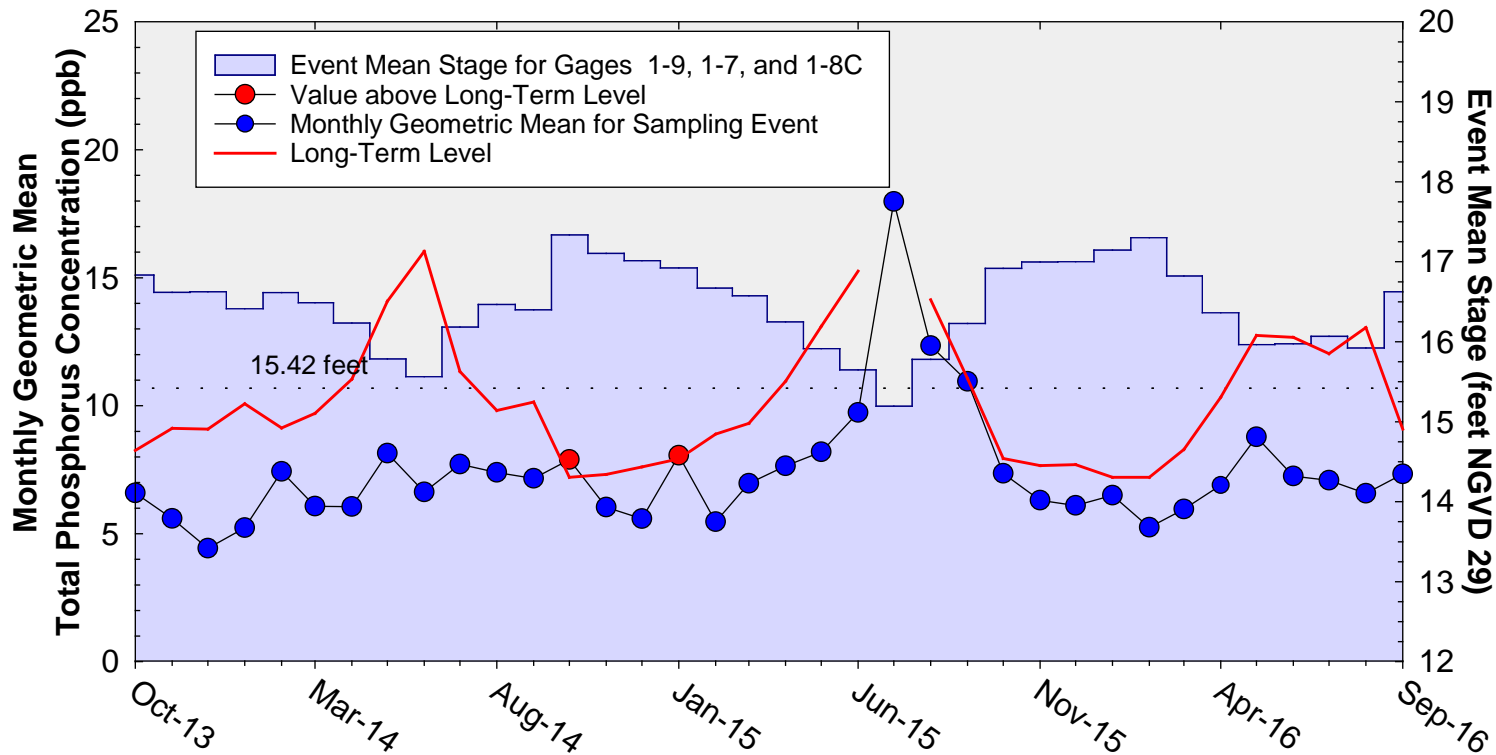
For July 2016 – December 2016

(October – December 2016 values are preliminary)

Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb) Effective 12/31/2006	Average Stage (feet NGVD 29)	Number of Samples
Jul-2016	7.1	12.0	16.07	13
Aug-2016	6.6	13.1	15.92	6
Sep-2016	7.3	9.1	16.62	14
Oct-2016	6.2	7.8	16.93	14
Nov-2016	6.9	8.4	16.73	14
Dec-2016	5.6	9.0	16.60	14

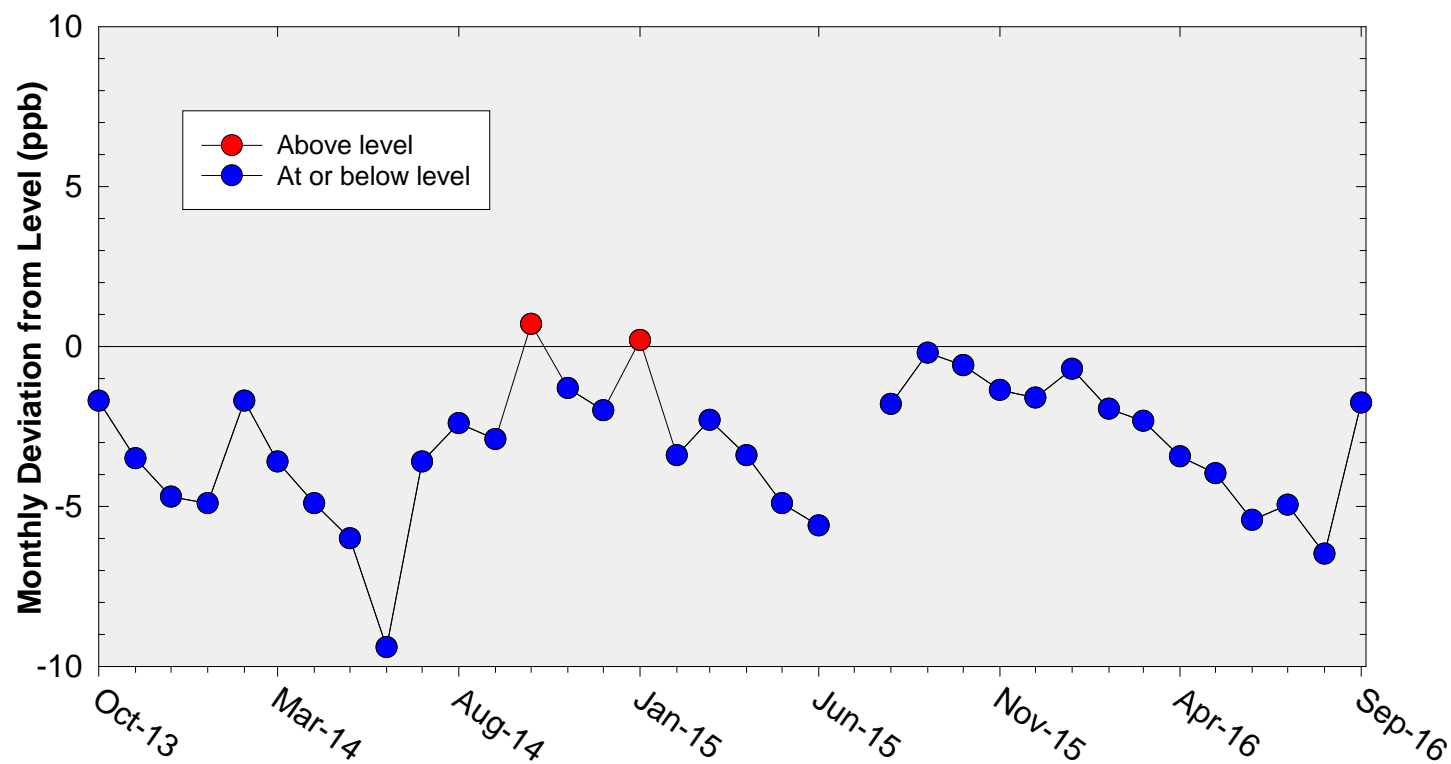
# A.R.M Loxahatchee National Wildlife Refuge

## Monthly Total Phosphorus Geometric Mean Concentrations



# A.R.M Loxahatchee National Wildlife Refuge

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



# Shark River Slough

## TP Concentration Compliance Tracking

(October 2015–September 2016 Flow Data are Provisional)

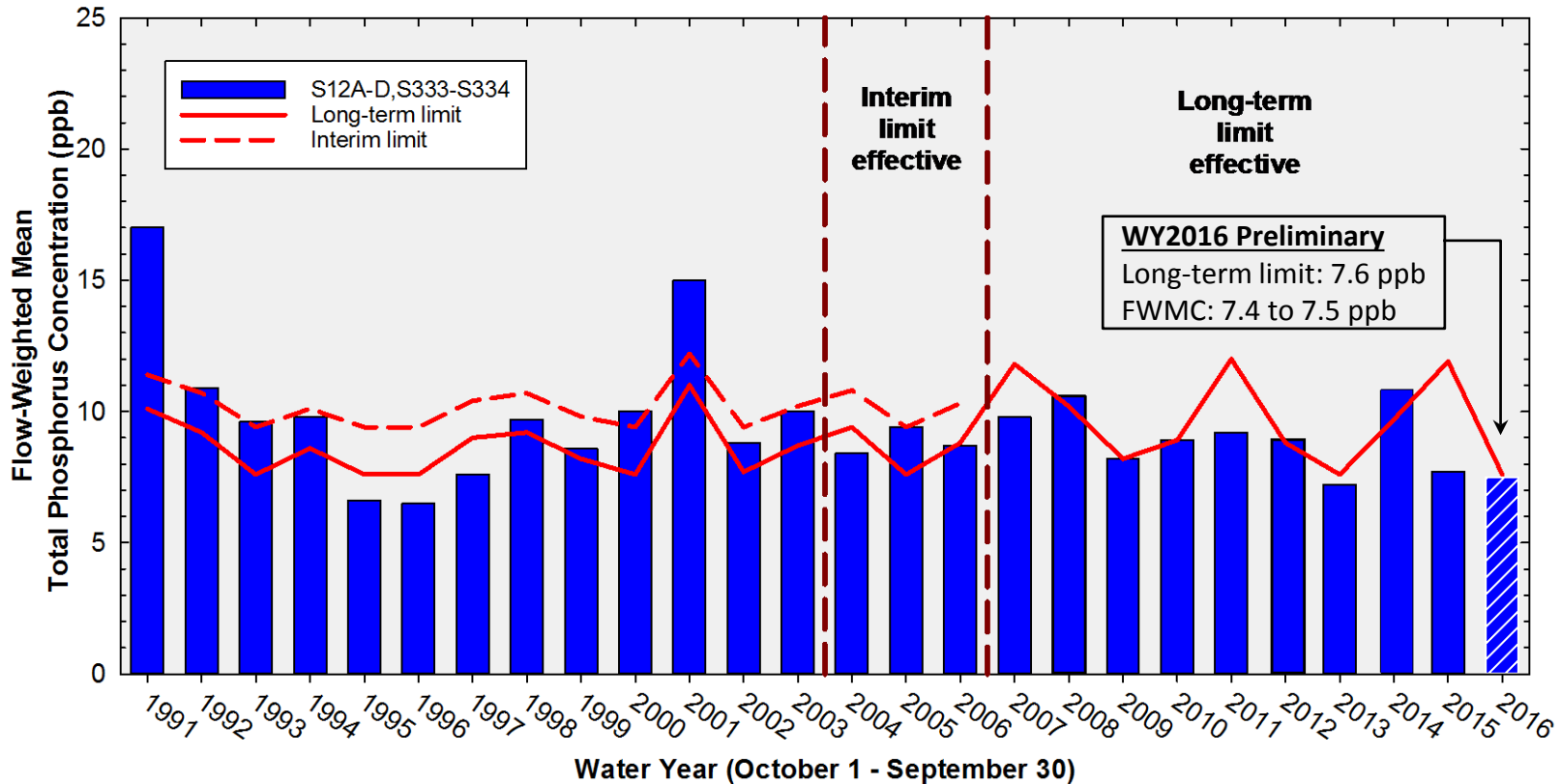
12-Month Period	Total Flow (kac-ft)	Flow-Weighted Mean TP Concentration (ppb)	Long-Term Limit (ppb) Effective 12/31/2006	Percent of Sampling Events Greater than 10 ppb	
				Guideline	Observed
Aug 2015 - Jul 2016	1224.1 to 1293.9	7.5 to 7.4	7.6 to 7.6	40.1	22.7 to 22.7
Sep 2015 - Aug 2016	1317.1 to 1390.0	7.5 to 7.5	7.6 to 7.6	40.1	20.8 to 20.8
Oct 2015 - Sep 2016	1422.1 to 1489.4	7.5 to 7.4	7.6 to 7.6	40.1	19.2 to 19.2

Shark River Slough PROVISIONAL RESULTS:

Method 1 (left values) computed as S12s+(S333-S334) and

Method 2 (right values) computed as S12s+(S333-S334)+S355A+S355B+S356 using all flow and TP grabs on bi-weekly compliance sampling dates.

# Annual Flow-weighted Mean Concentrations Inflows to ENP through Shark River Slough (WY2016 value is preliminary)

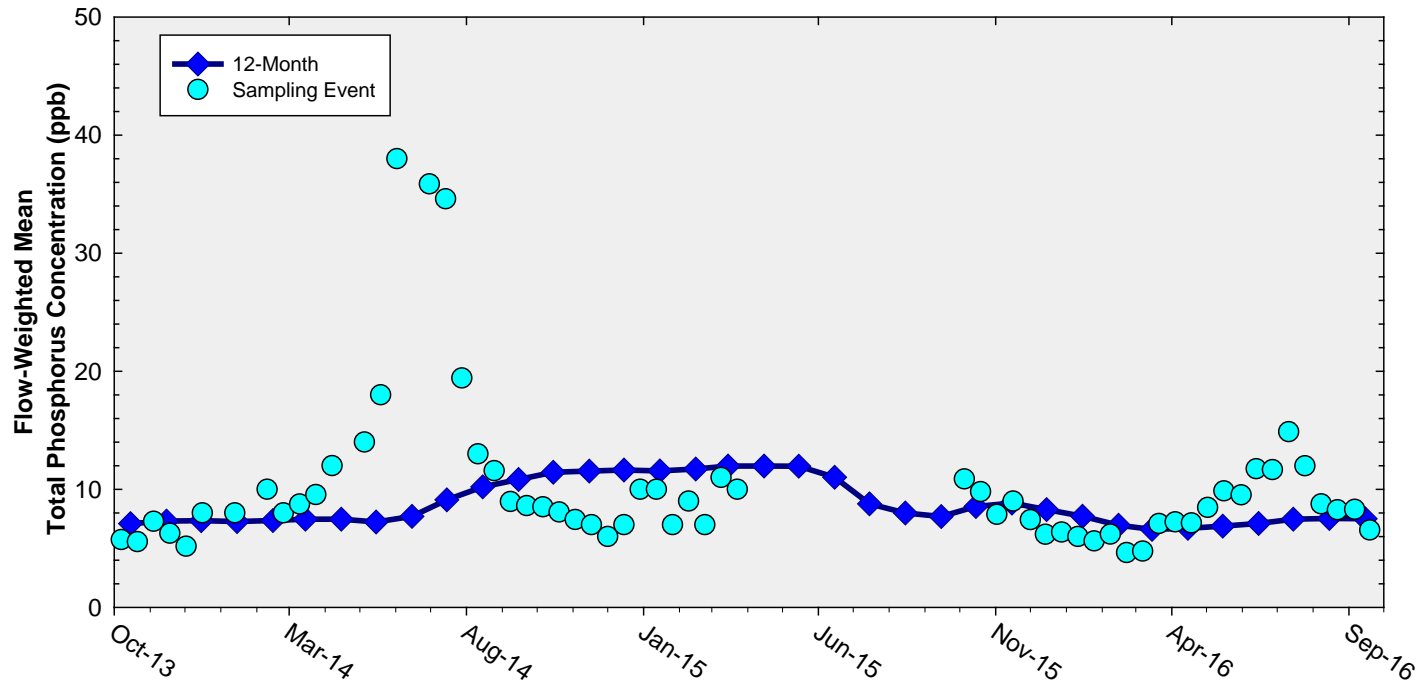


**Water year (12-month) FWMC compared to the TP interim and long-term limits**

# Flow-Weighted Mean Concentrations

## Inflows to ENP through Shark River Slough

(October 2015–September 2016 Flow Data for S12s are Provisional)

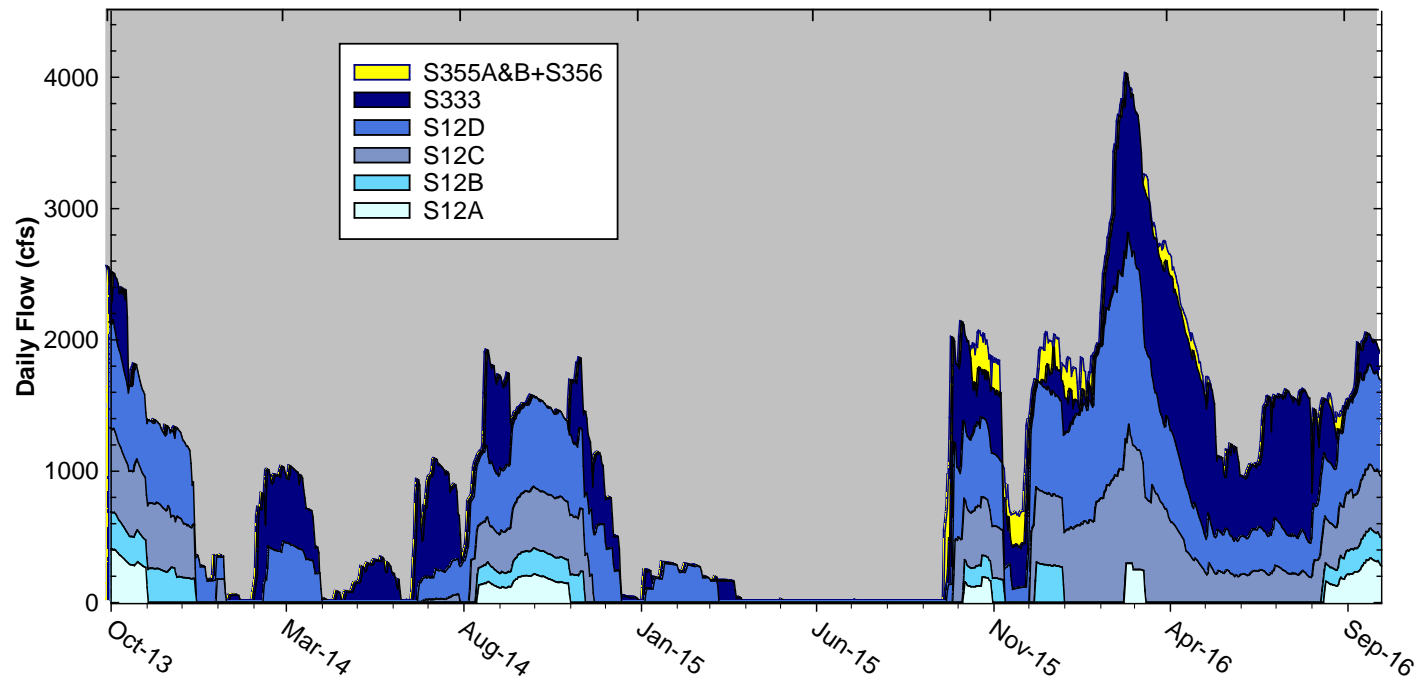


The composite TP concentration and 12-month FWMC at the end of each month for each sampling event



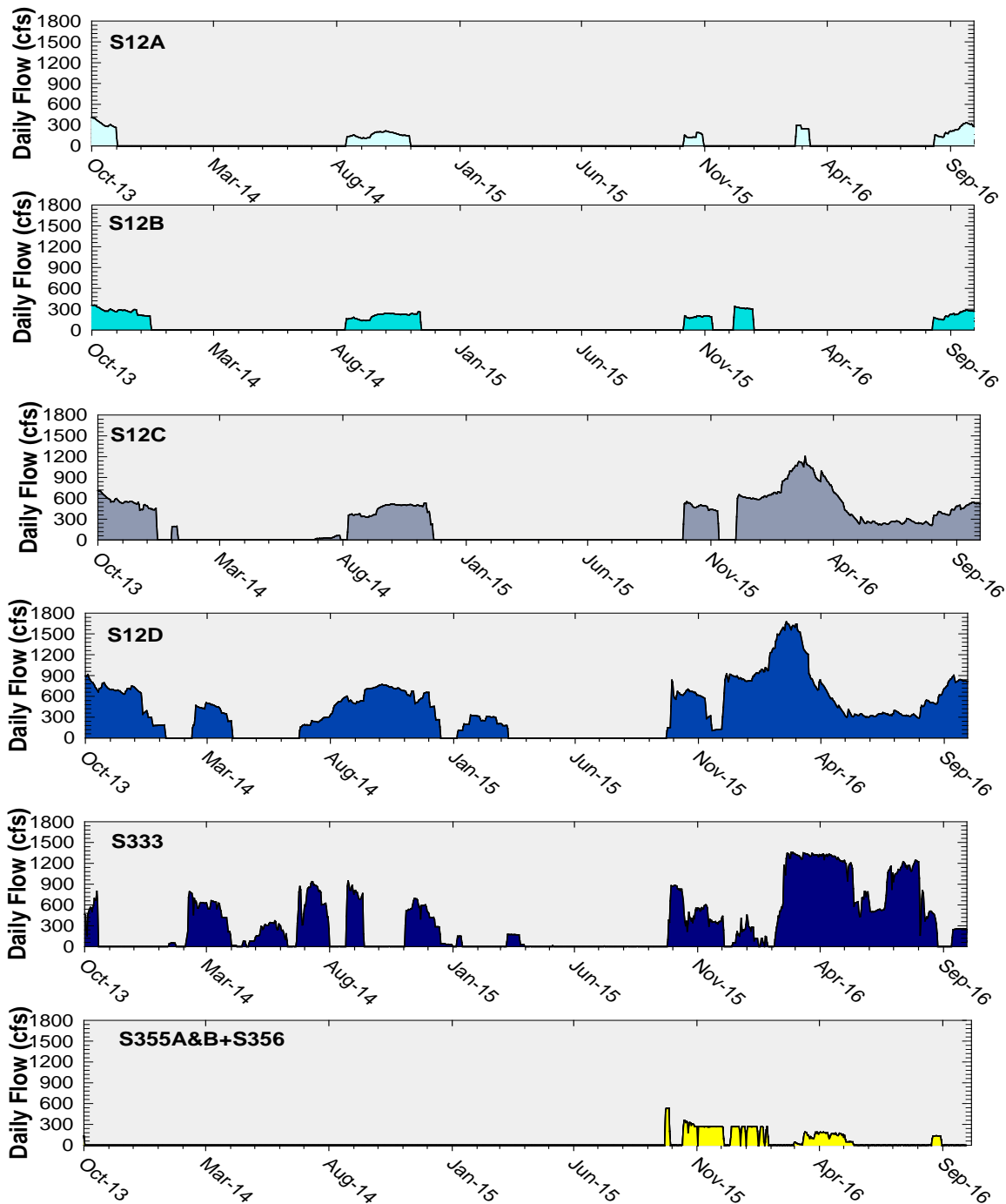
# Shark River Slough Daily Flows

(October 2015–September 2016 Flow Data for  
S12s, S355A&B, and S356 are Provisional)



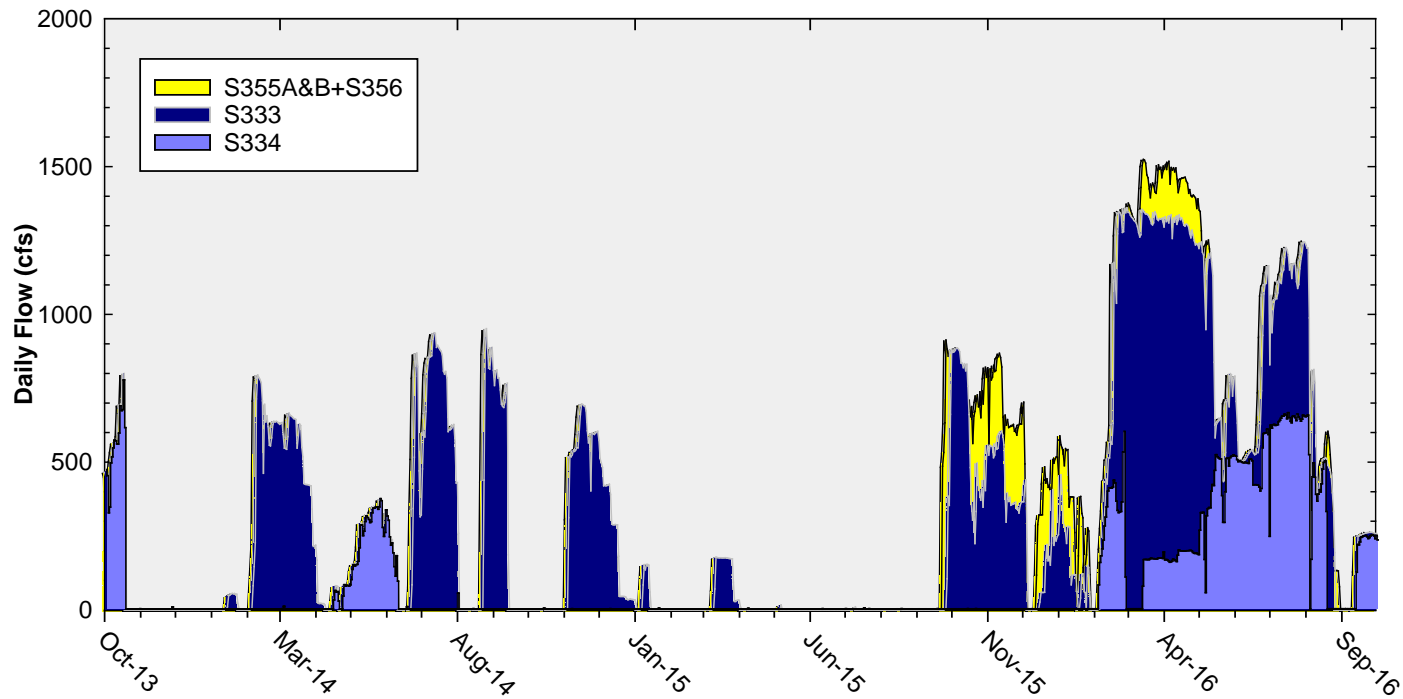
# Daily Flows at Individual Inflow Structures to Shark River Slough

(October 2015–September 2016 Flow Data for S12s, S355A&B, and S356 are Provisional)



# Daily Flows at S333, S334, S355A&B, and S356

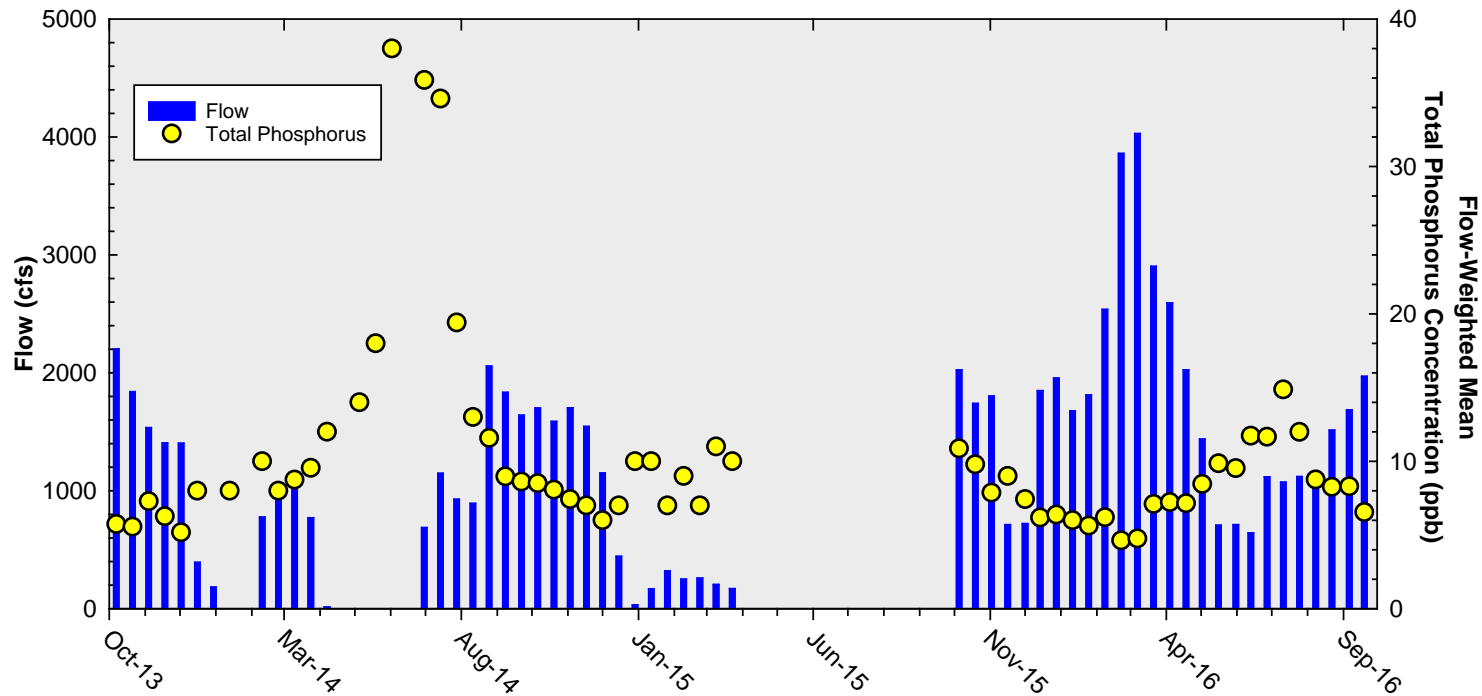
(October 2015–September 2016 Flow Data  
for S355A&B and S356 are Provisional)



# Shark River Slough

## Sampling Event Flow and FWMC

(October 2015 – September 2016 Flow Data for S12s are Provisional)



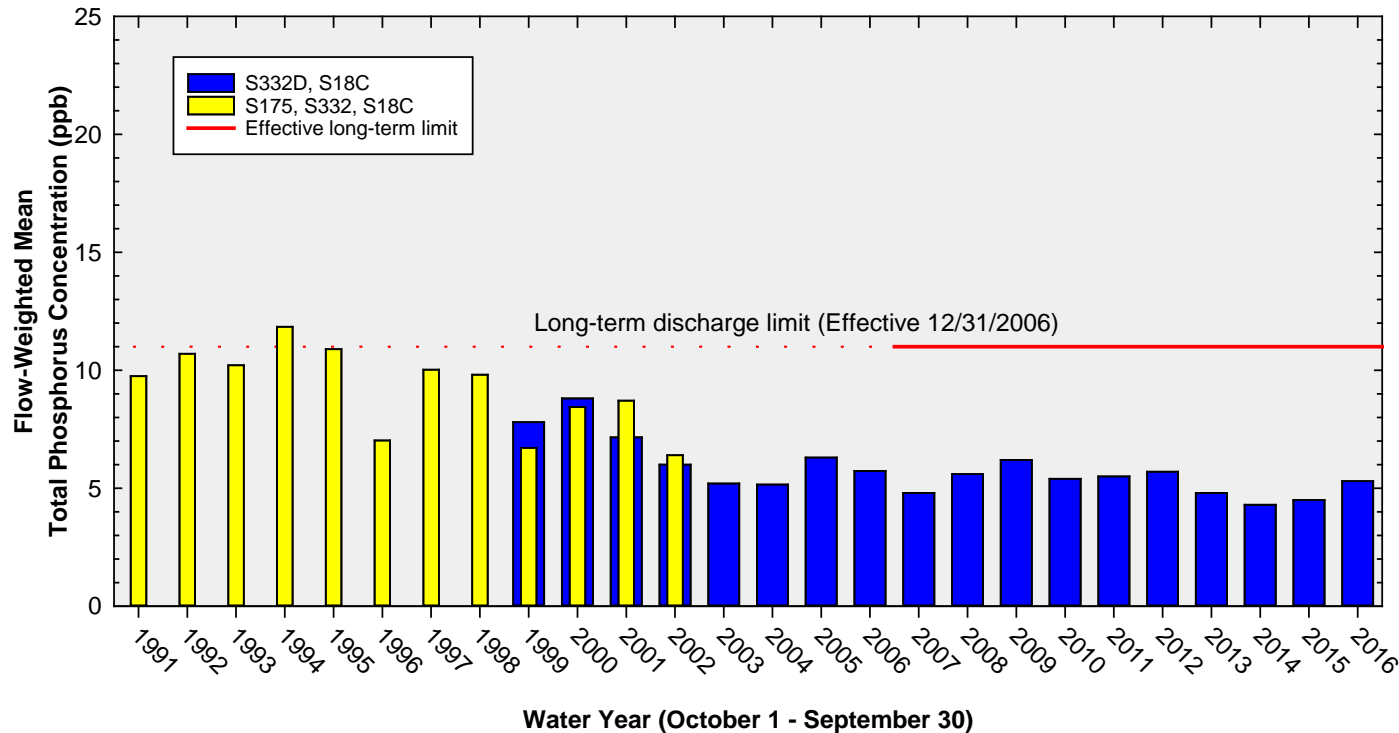
Flow at Shark River Slough structures and the corresponding TP FWMCs for individual sampling events

# Taylor Slough and Coastal Basins

## TP Concentration Compliance Tracking

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 2015 - Jul 2016	300.7	5.2	11.0	53.1	0.0
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# Annual Flow-Weighted Mean Concentrations Inflows to the ENP through Taylor Slough and Coastal Basins

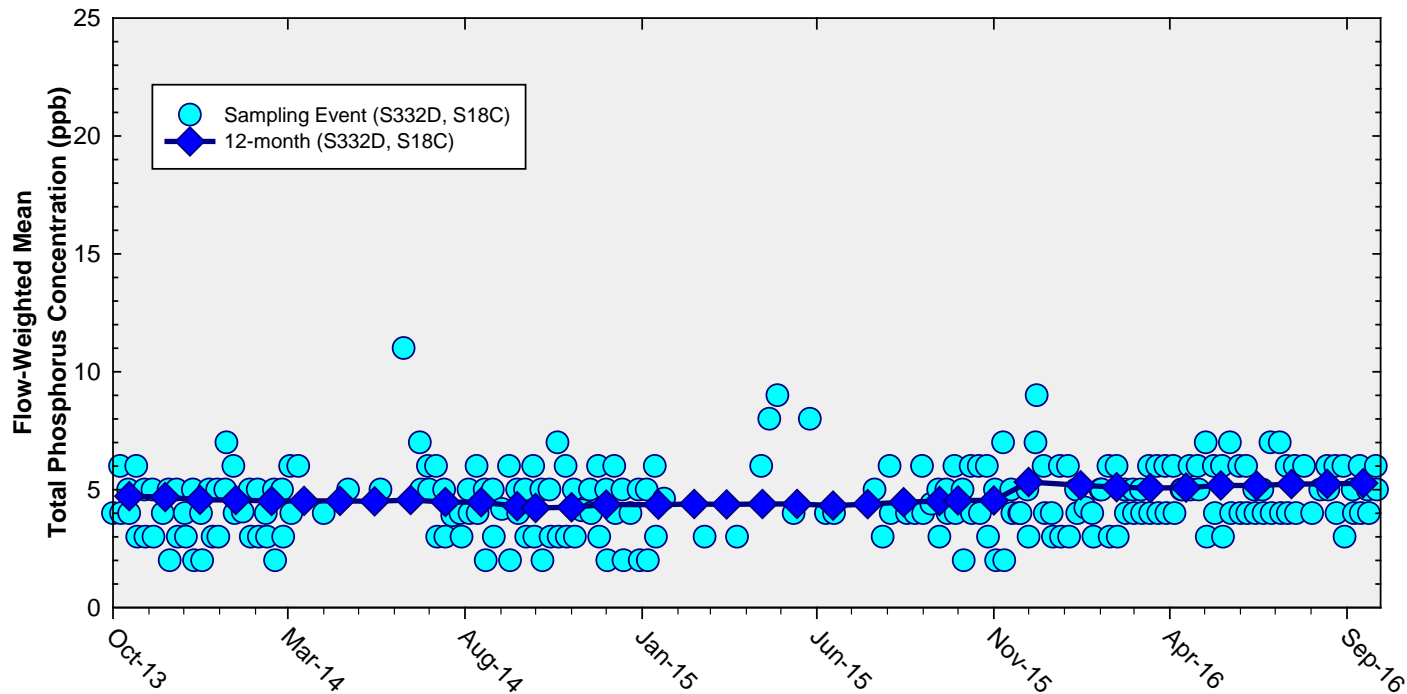


The 12-month FWMC at the end of each water year compared to the 11 ppb long-term TP limit

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

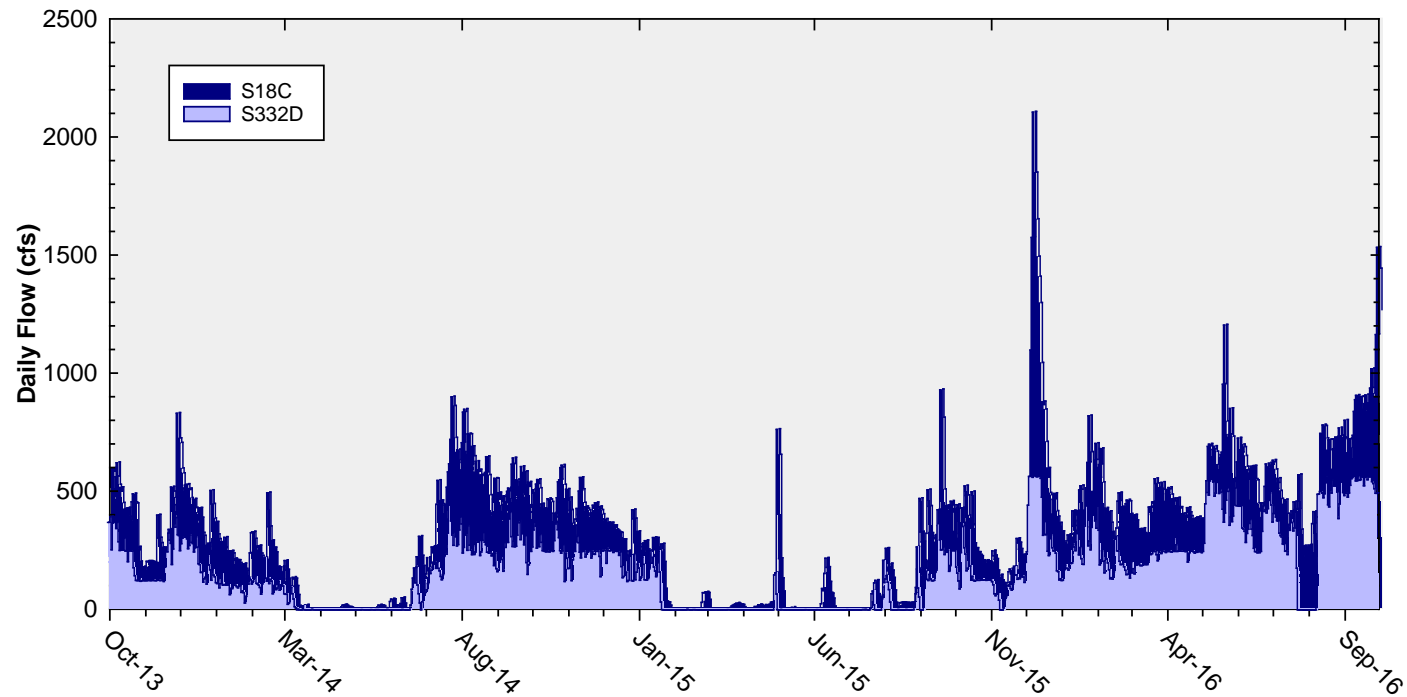
# Flow-Weighted Mean Concentrations

## Inflows to the ENP through Taylor Slough and Coastal Basins



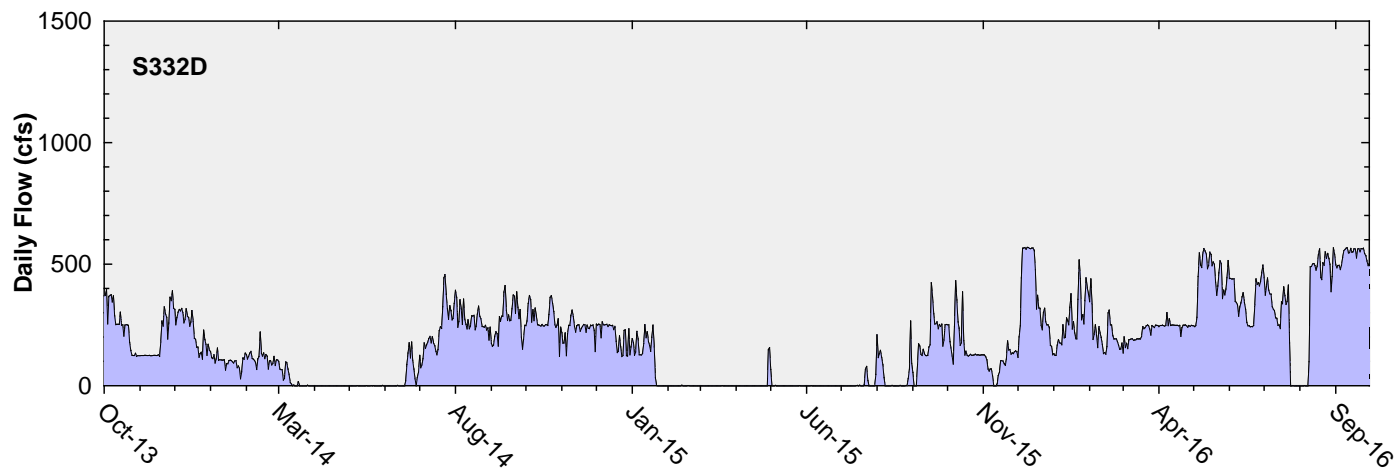
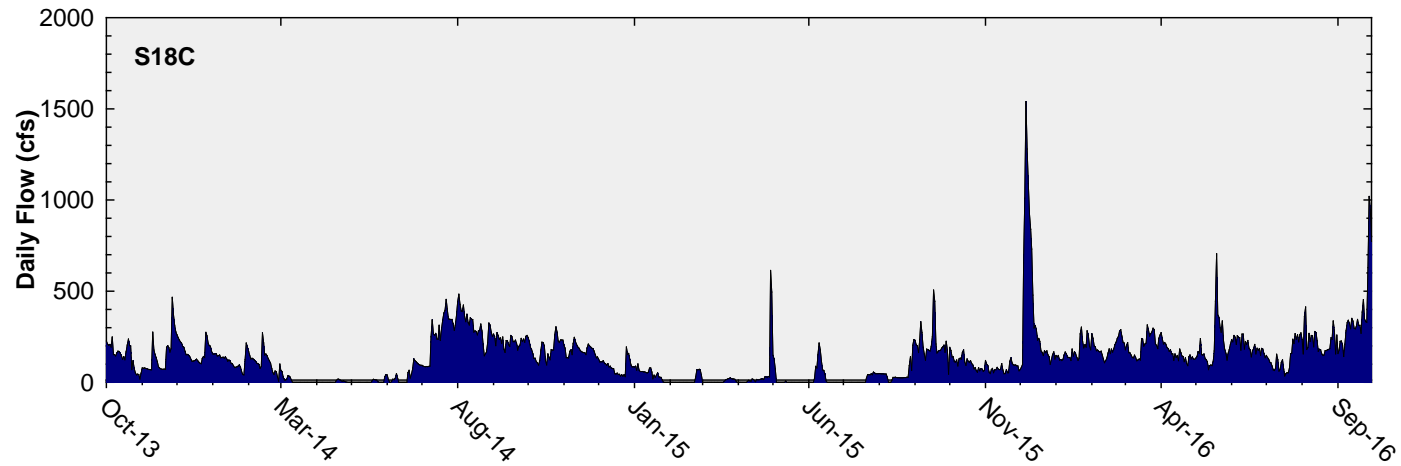
The 12-month FWMC at the end of each month and the composite TP concentration for each sampling event

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



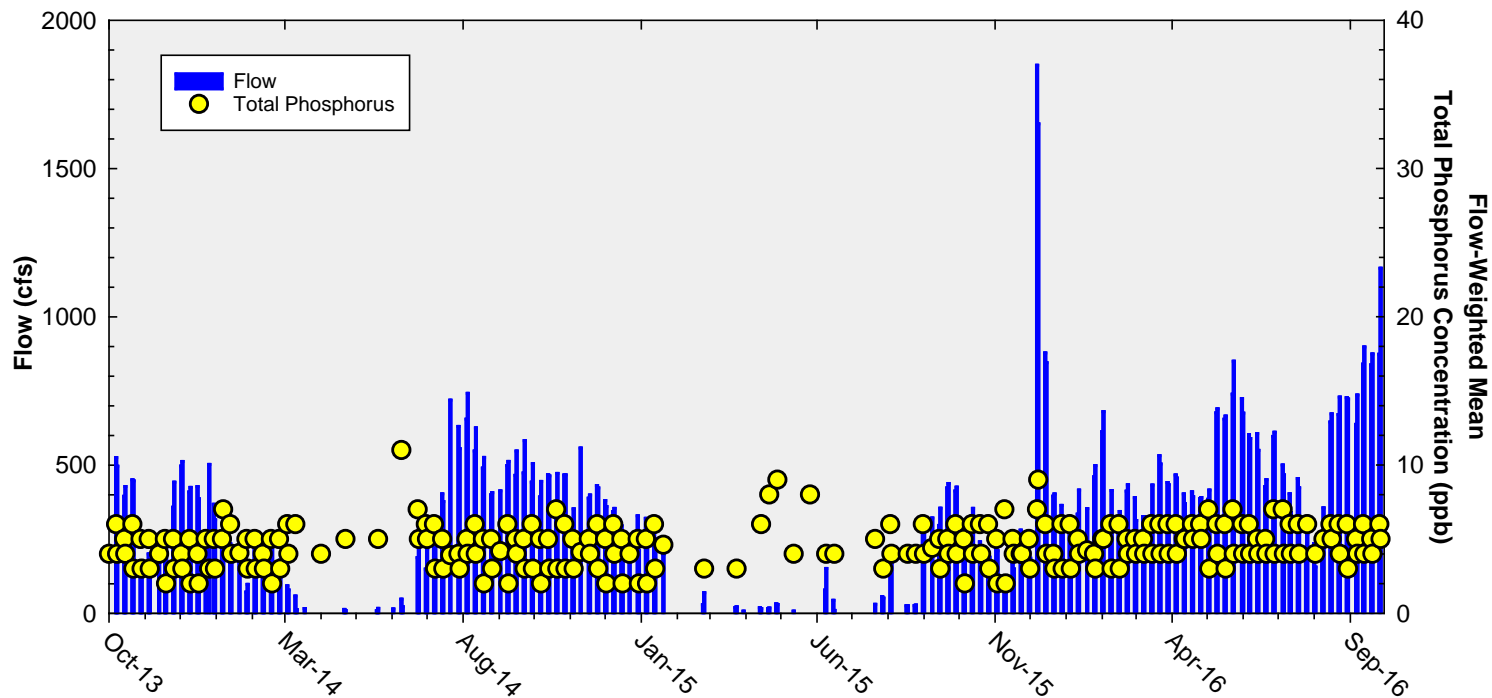


# Daily Flows at Individual Taylor Slough and Coastal Basins Structures into ENP



# 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**

Thank You

