



# SETTLEMENT AGREEMENT QUARTERLY REPORT

October – December 2020

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Section Leader

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Water Quality Bureau

Technical Oversight Committee

May 4, 2021



[sfwmd.gov](http://sfwmd.gov)

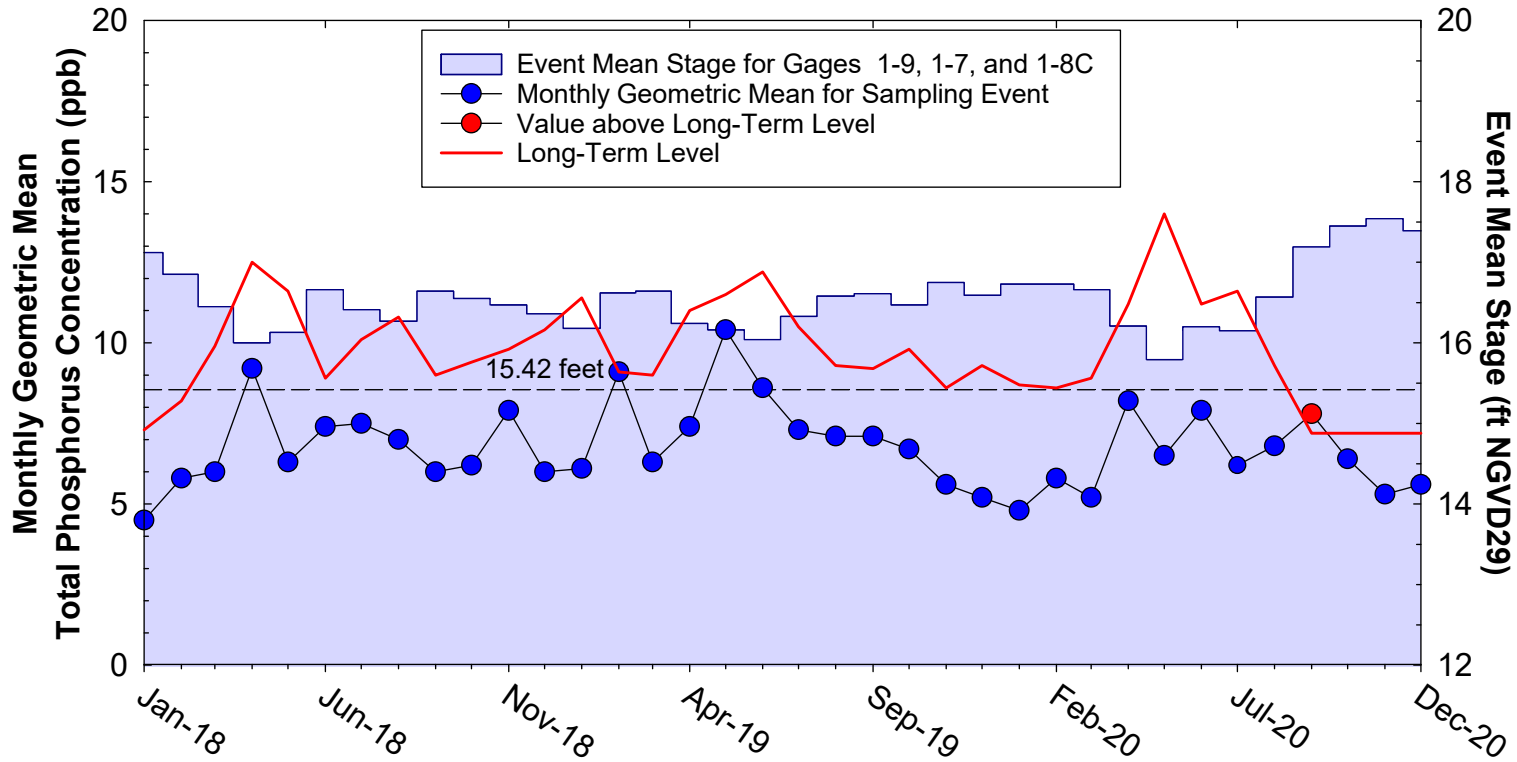
## SUMMARY

Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb)	Mean Stage (ft NGVD29)	Number of Samples	
<b>Arthur R. Marshall Loxahatchee National Wildlife Refuge</b>					
Oct 2020	6.4	7.2	17.45	14	
Nov 2020	5.3	7.2	17.54	14	
Dec 2020	5.6	7.2	17.39	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
<b>Everglades National Park – Shark River Slough – <i>PROVISIONAL DATA and RESULTS</i></b>					
Oct 2020	780.2	9.0	9.0	46.9	35.0
Nov 2020	1,129.1	8.2	7.6	40.1	35.0
Dec 2020	1,491.2	7.5	7.6	40.1	31.8
<b>Everglades National Park – Taylor Slough and Coastal Basins</b>					
Oct 2020	357.0	5.4	11.0	53.1	2.1
Nov 2020	416.5	5.8	11.0	53.1	4.3
Dec 2020	449.1	5.8	11.0	53.1	4.2

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.

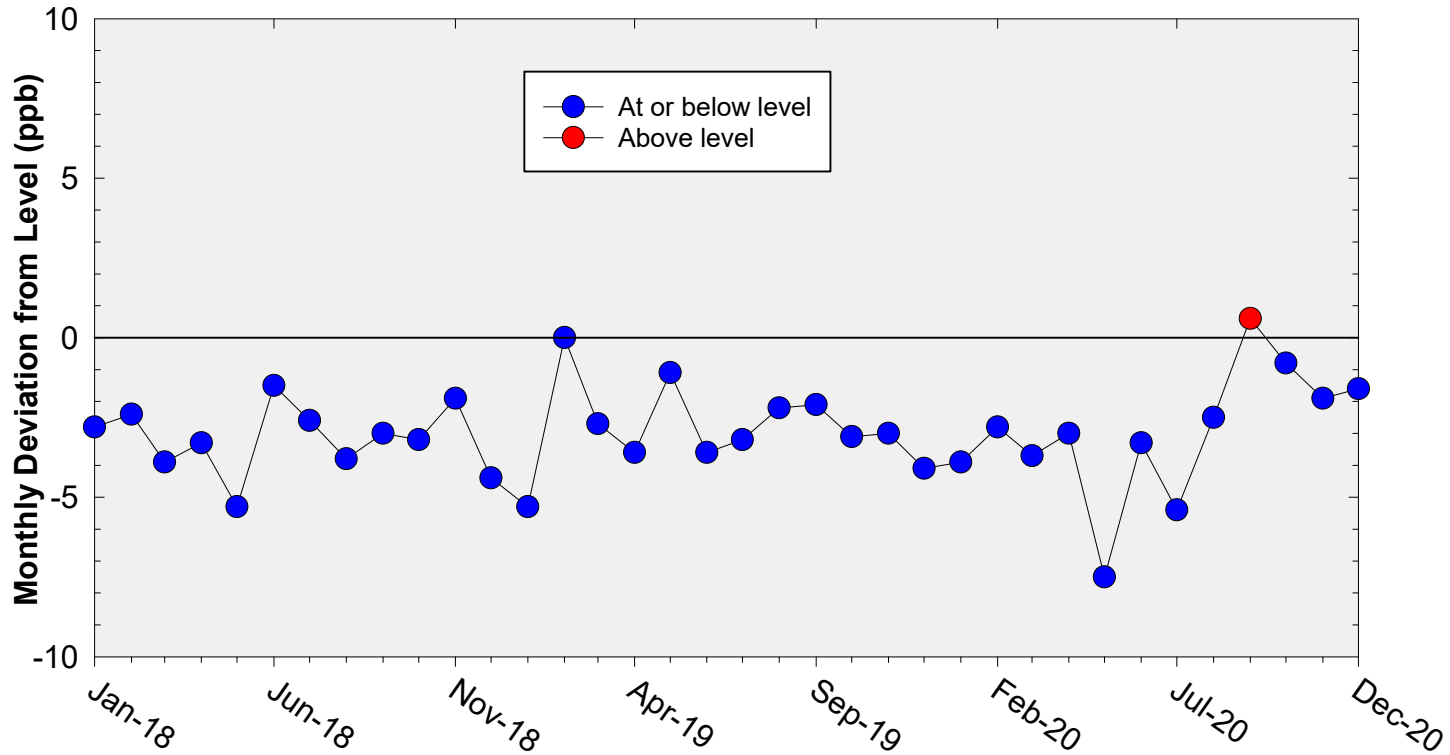
TS and CB – computed as  $(S332D - S332DX1 - S328) + S328 + G737 + S18C$ .

## 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 = 9.8 ppb**

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



**36-Month Average TP geometric mean = 3.0 ppb below the Long-Term Level**

## Refuge TP Compliance Tracking

### For October 2020 – April 2021

Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb) Effective 12/31/2006	Average Stage (feet NGVD29)	Number of Samples
<b>4th Quarter 2020 Compliance Tracking</b>				
<b>Oct-2020</b>	<b>6.4</b>	<b>7.2</b>	<b>17.45</b>	<b>14</b>
<b>Nov-2020</b>	<b>5.3</b>	<b>7.2</b>	<b>17.54</b>	<b>14</b>
<b>Dec-2020</b>	<b>5.6</b>	<b>7.2</b>	<b>17.39</b>	<b>14</b>
<b>Preliminary Data Outlook</b>				
<b>Jan-2021</b>	<b>4.6</b>	<b>7.2</b>	<b>17.28</b>	<b>14</b>
<b>Feb-2021</b>	<b>4.7</b>	<b>7.6</b>	<b>17.02</b>	<b>14</b>
<b>Mar-2021</b>	<b>6.9</b>	<b>8.4</b>	<b>16.78</b>	<b>14</b>
<b>Apr-2021</b>	<b>6.1</b>	<b>10.8</b>	<b>16.27</b>	<b>11</b>

Note: 17.14 ft NGVD29 was used for the long-term level calculation for October 2020 through January 2021.

## Shark River Slough TP Concentration Compliance Tracking

WY2021 (October 2020 to December 2020) Flow Data for S12s are Provisional.

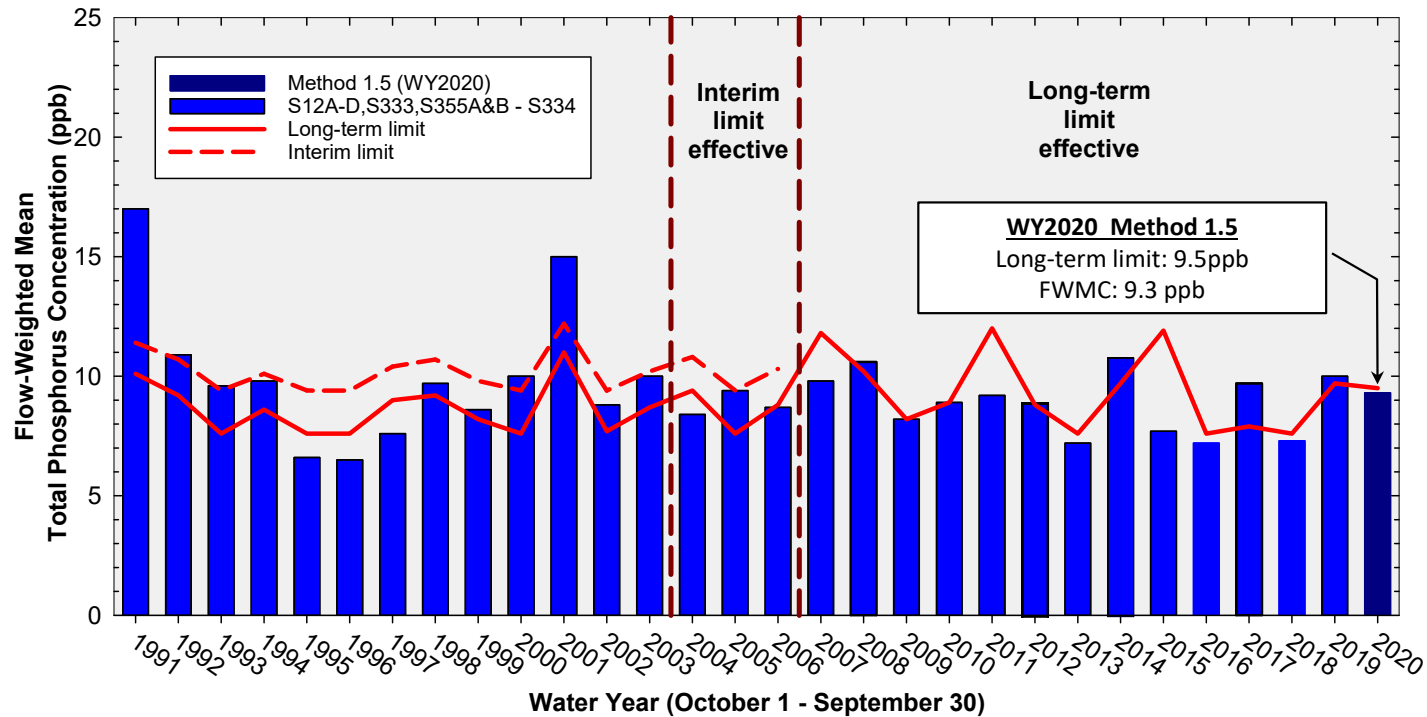
12-Month Period	Total Flow (kac-ft)	Flow-Weighted Mean TP Concentration (ppb)	Long-Term Limit (ppb) <i>Effective 12/31/2006</i>	Percent of Sampling Events Greater than 10 ppb	
				Guideline	Observed
<b>Nov 2019 - Oct 2020</b>	<b>780.2</b>	<b>9.0</b>	<b>9.0</b>	<b>46.9</b>	<b>35.0</b>
<b>Dec 2019 - Nov 2020</b>	<b>1,129.1</b>	<b>8.2</b>	<b>7.6</b>	<b>40.1</b>	<b>35.0</b>
<b><i>Jan 2020 - Dec 2020</i></b>	<b><i>1,491.2</i></b>	<b><i>7.5</i></b>	<b><i>7.6</i></b>	<b><i>40.1</i></b>	<b><i>31.8</i></b>

**Shark River Slough PROVISIONAL RESULTS:**

**FWMC computed as S12s + [S333 + S333N + S355A + S355B + minimum of (S356, S335) – S334] using all flow and TP grabs on bi-weekly compliance sampling dates.**

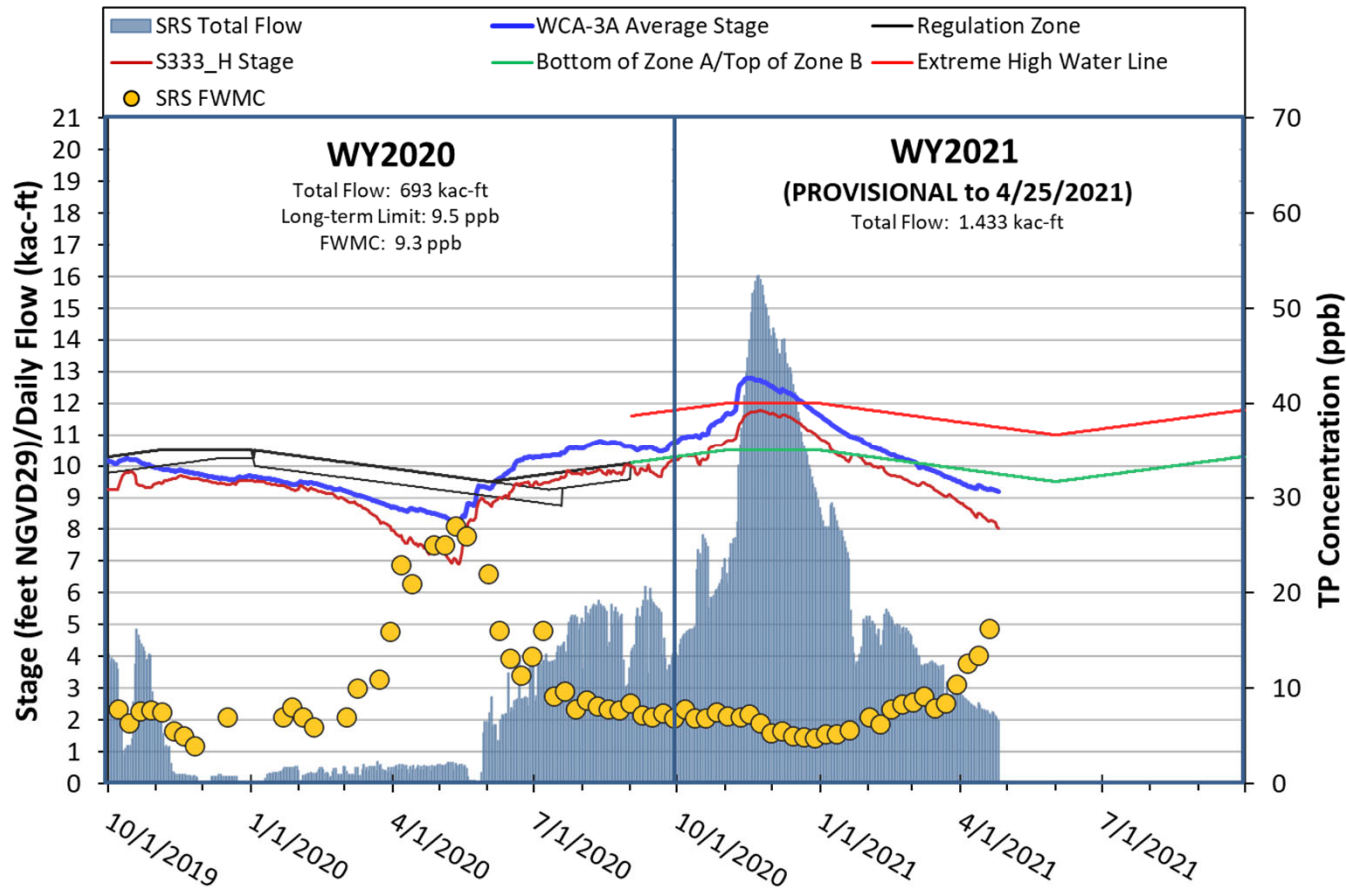
**S334 flow was not excluded from the flow for long-term limit calculations.**

## 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**

## WY2020 & 2021\* Flow, Stage, and TP FWMC Inflows to ENP through Shark River Slough

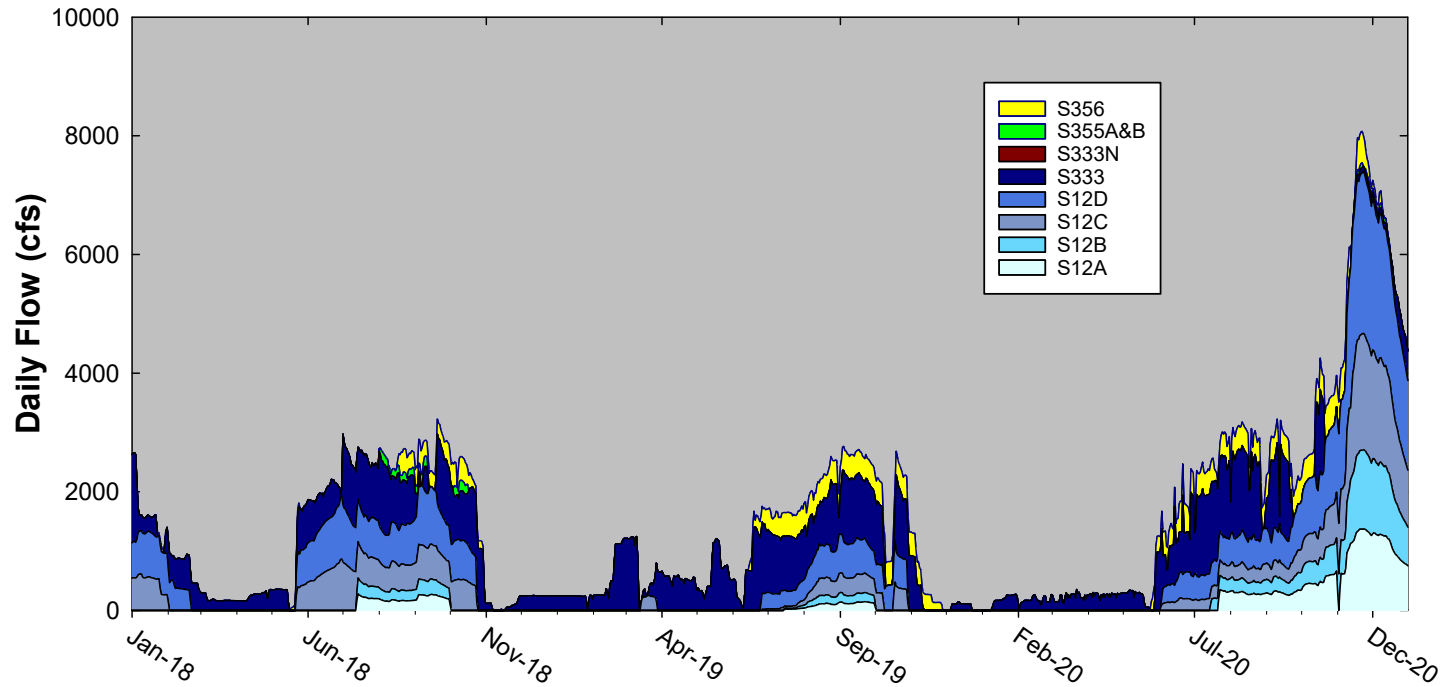


\* WY2021 Data is Provisional



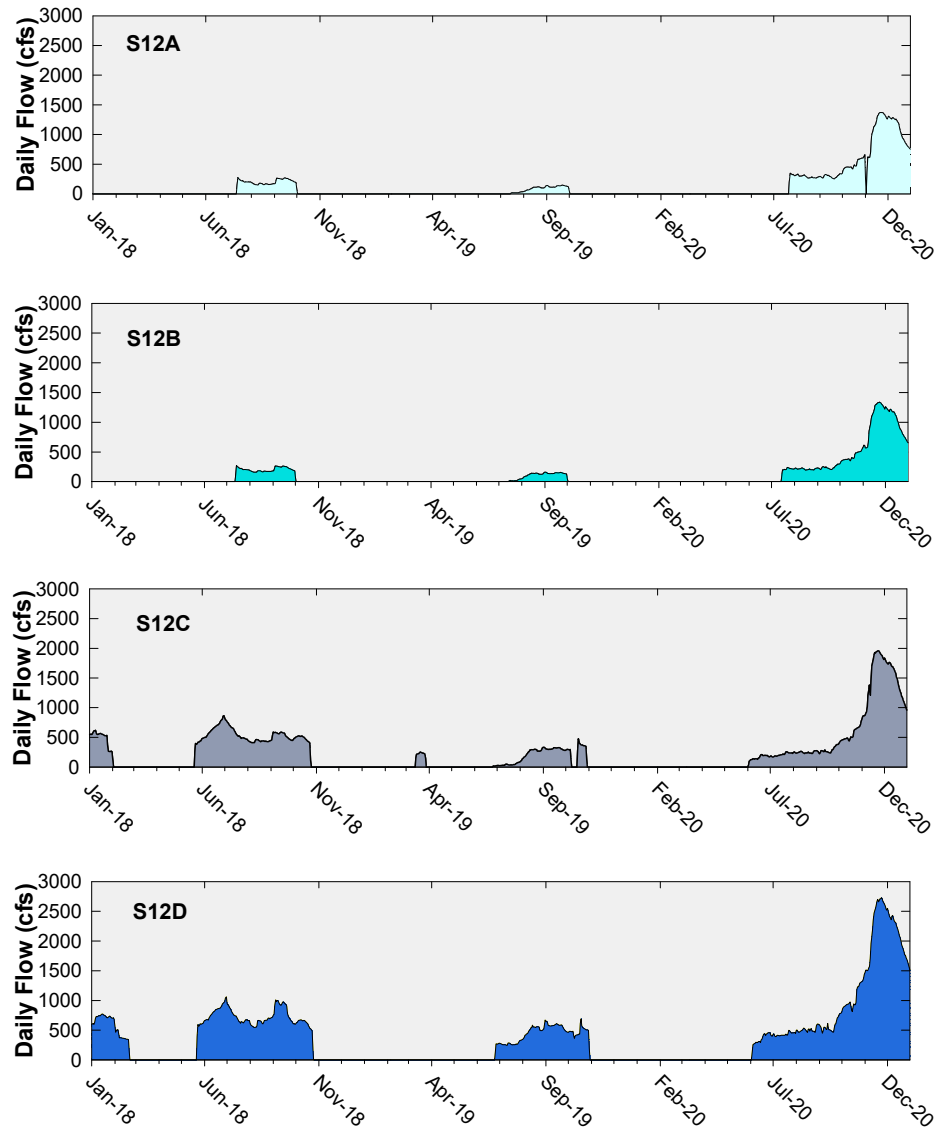
# Shark River Slough Structure Daily Flows

WY2021 (October to December 2020) Flow Data for S12s are Provisional.

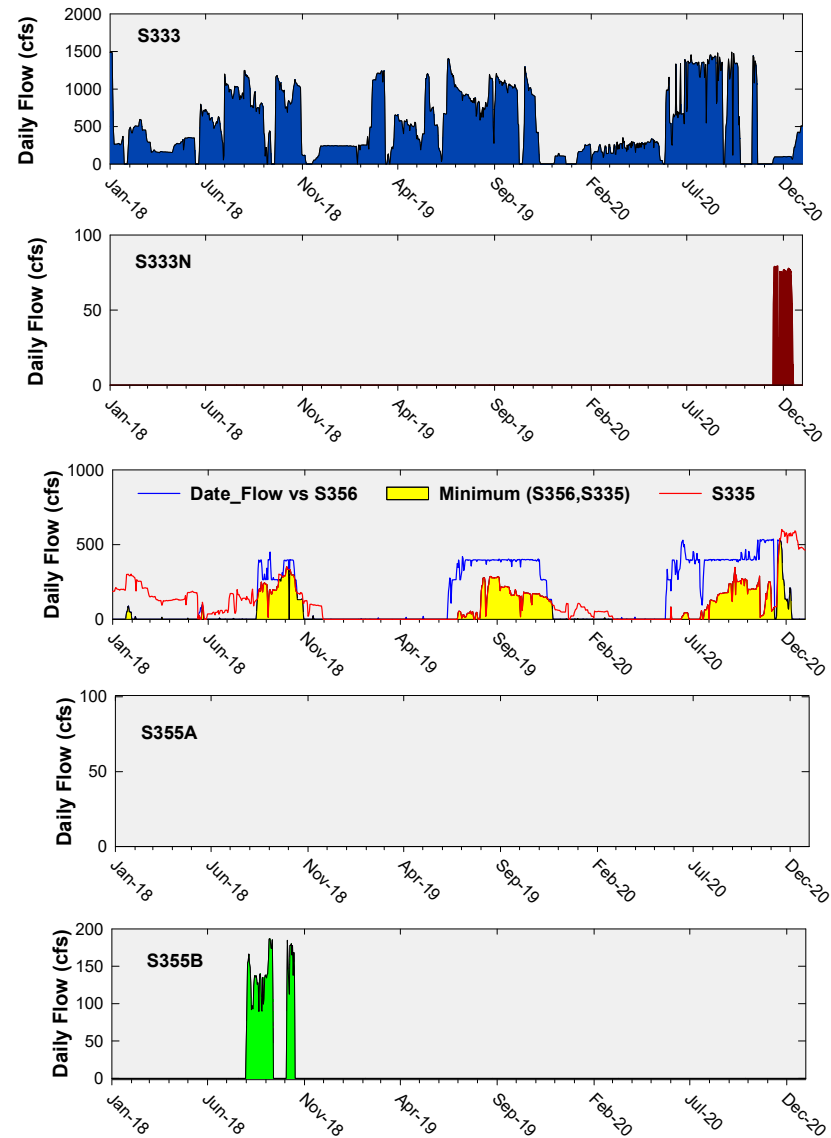


## Daily Flows at S12 Structures to Shark River Slough

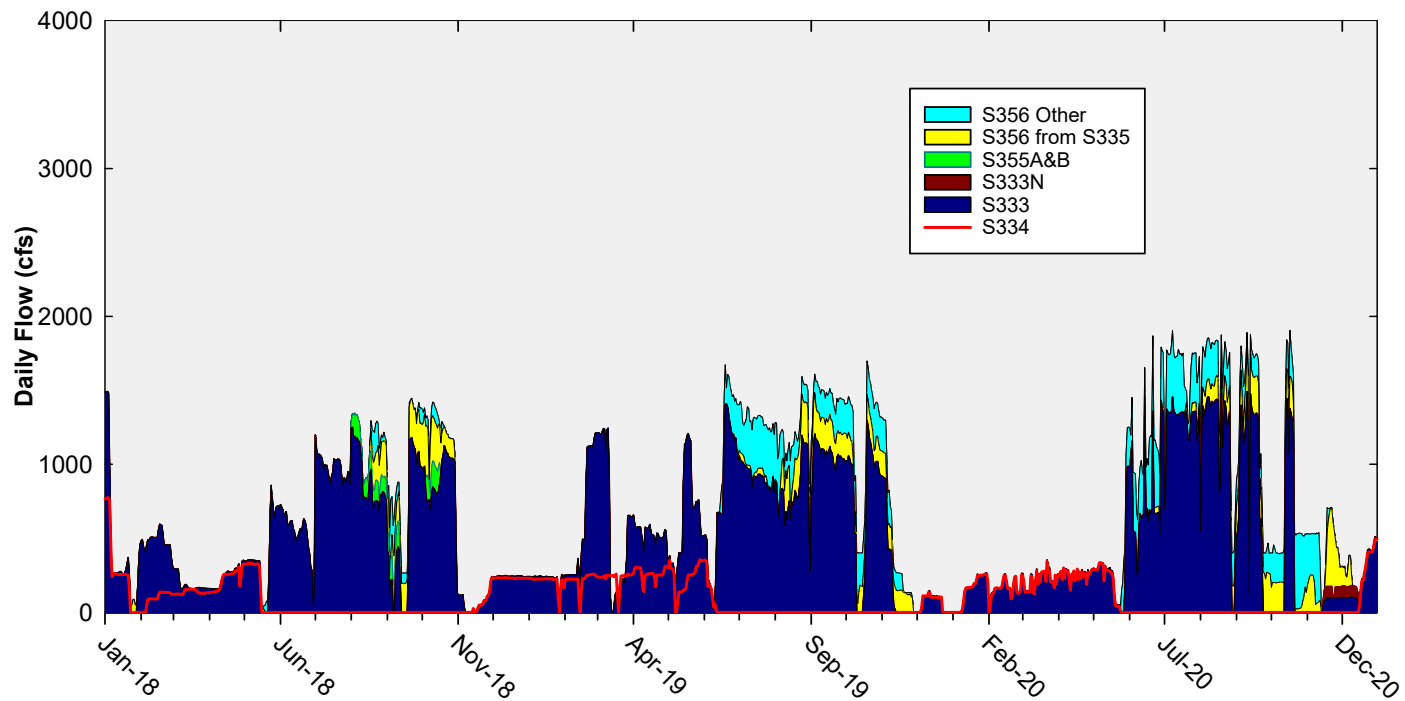
WY2021 (October to December 2020)  
Flow Data for S12s are Provisional.



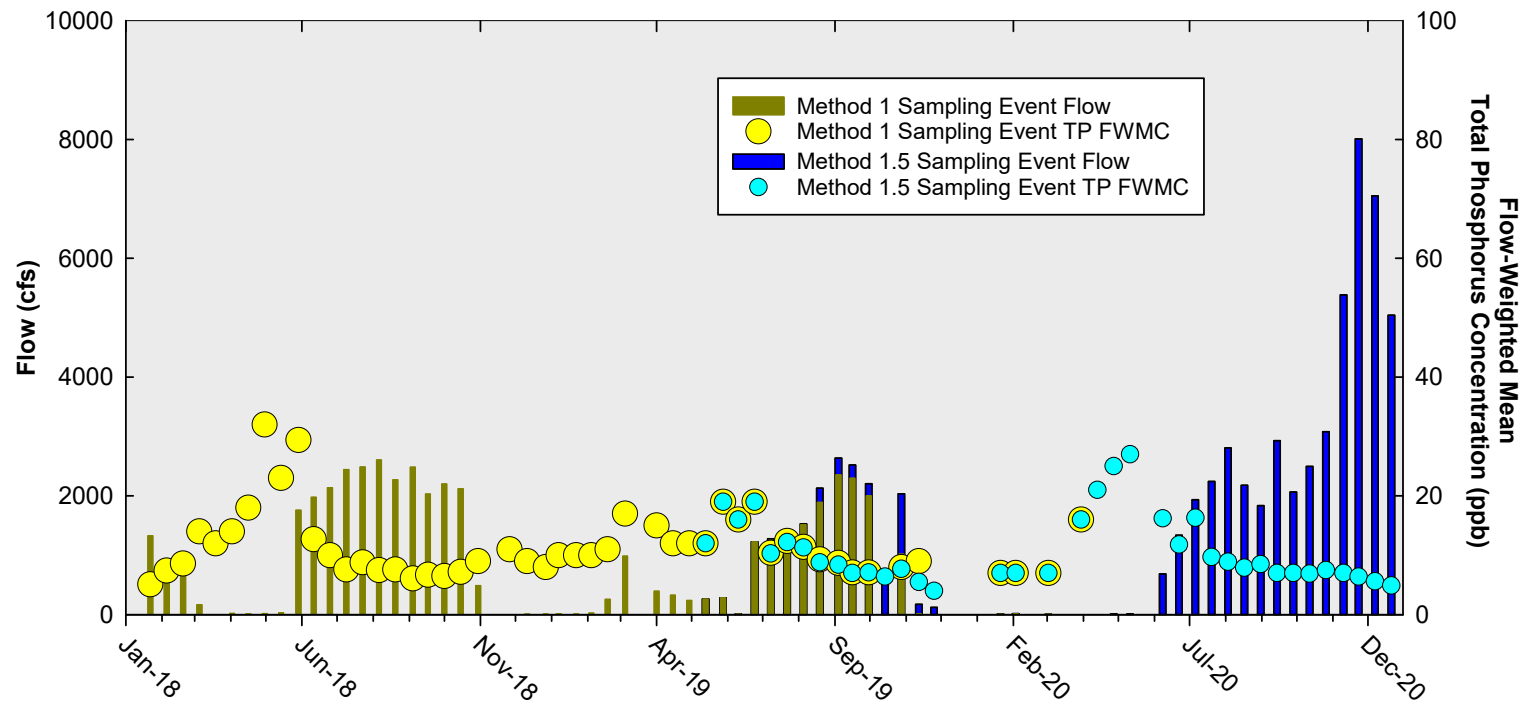
# Daily Flows at Individual Inflow Structures to Shark River Slough



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



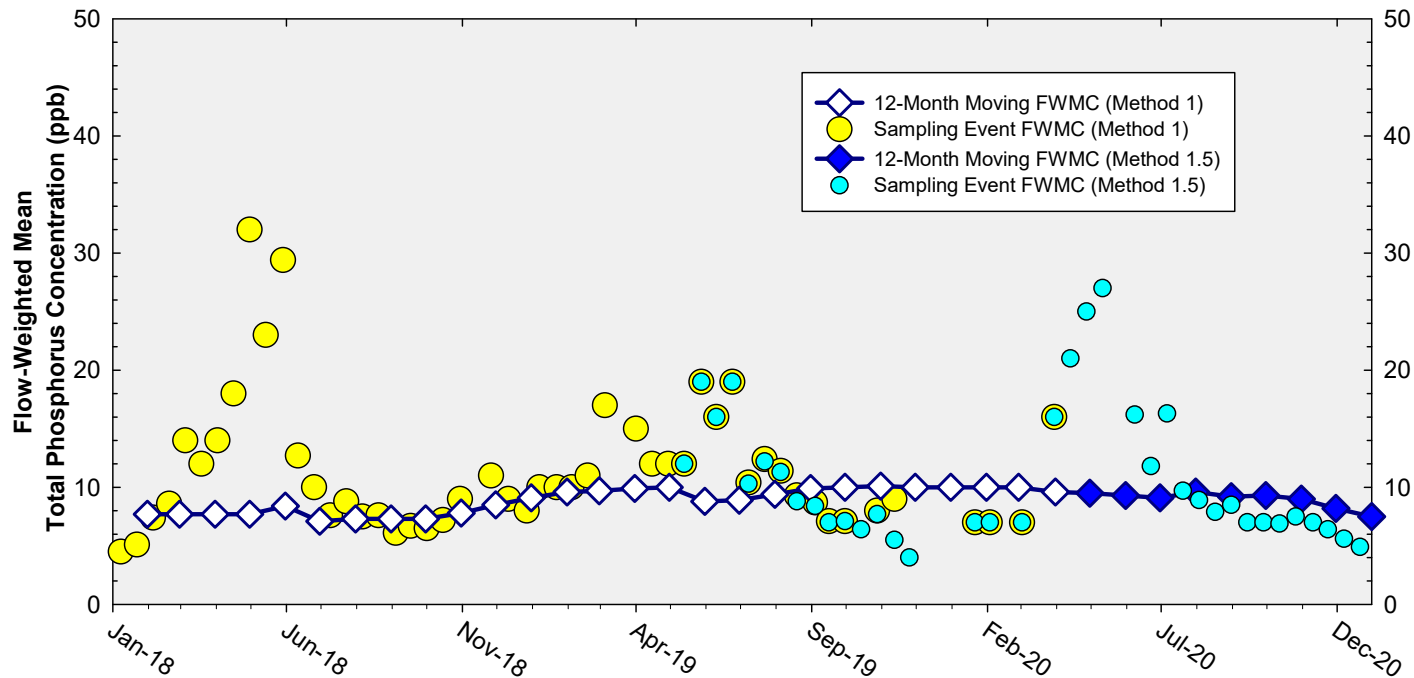
## Shark River Slough Sampling Event Flow and FWMC



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

**Note: WY2021 (October to December 2020) 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**

**WY2021 (October to December 2020) Flow Data for S12s are Provisional.**

## Taylor Slough and Coastal Basins

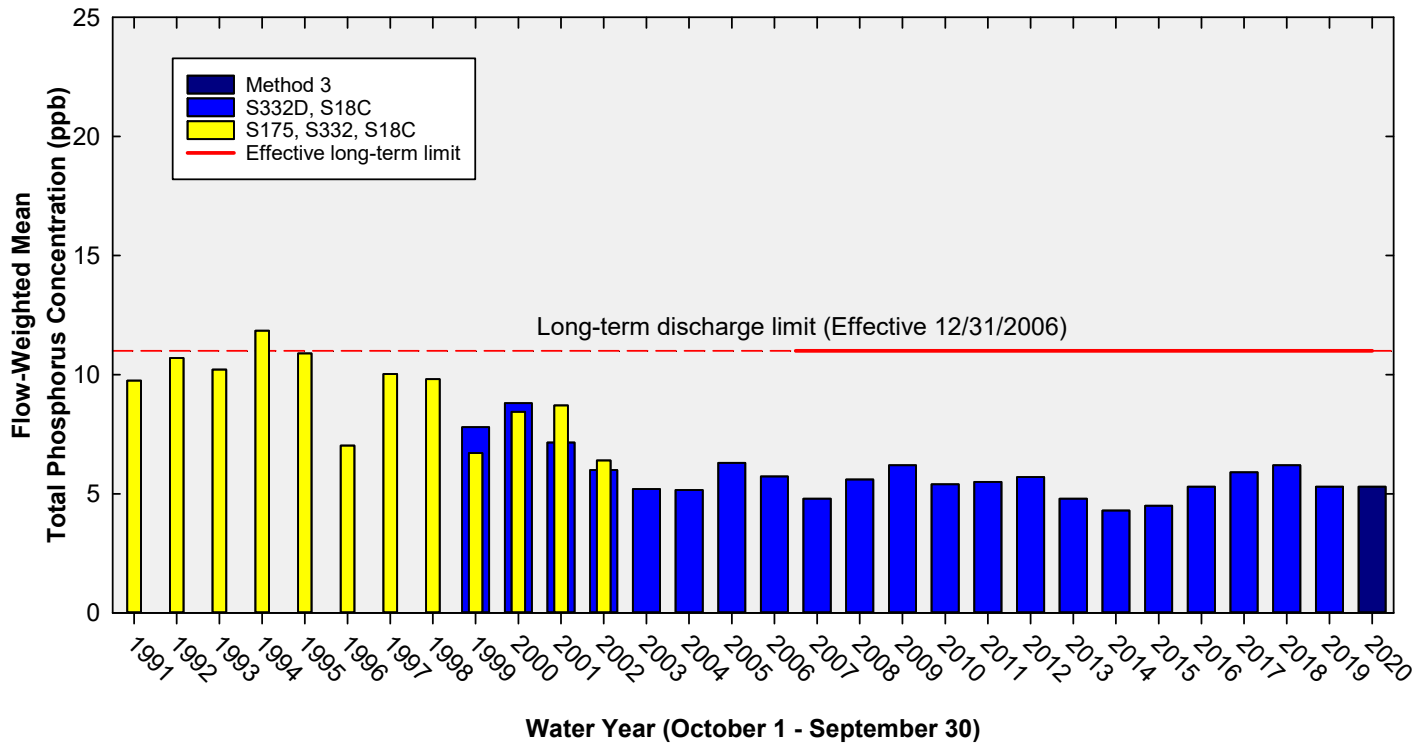
### TP Concentration Compliance Tracking

12-Month Period	Total Flow (kac-ft)	Flow-Weighted Mean TP Concentration in ppb LTL = 11.0 ppb	Observed Percent of Sampling Events Greater than 10 ppb Guideline = 53.1%
Nov 2019 - Oct 2020	<b>357.0</b>	<b>5.4</b>	<b>2.1</b>
Dec 2019 - Nov 2020	<b>416.5</b>	<b>5.8</b>	<b>4.3</b>
Jan 2020 - Dec 2020	<b>449.1</b>	<b>5.8</b>	<b>4.2</b>

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

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

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

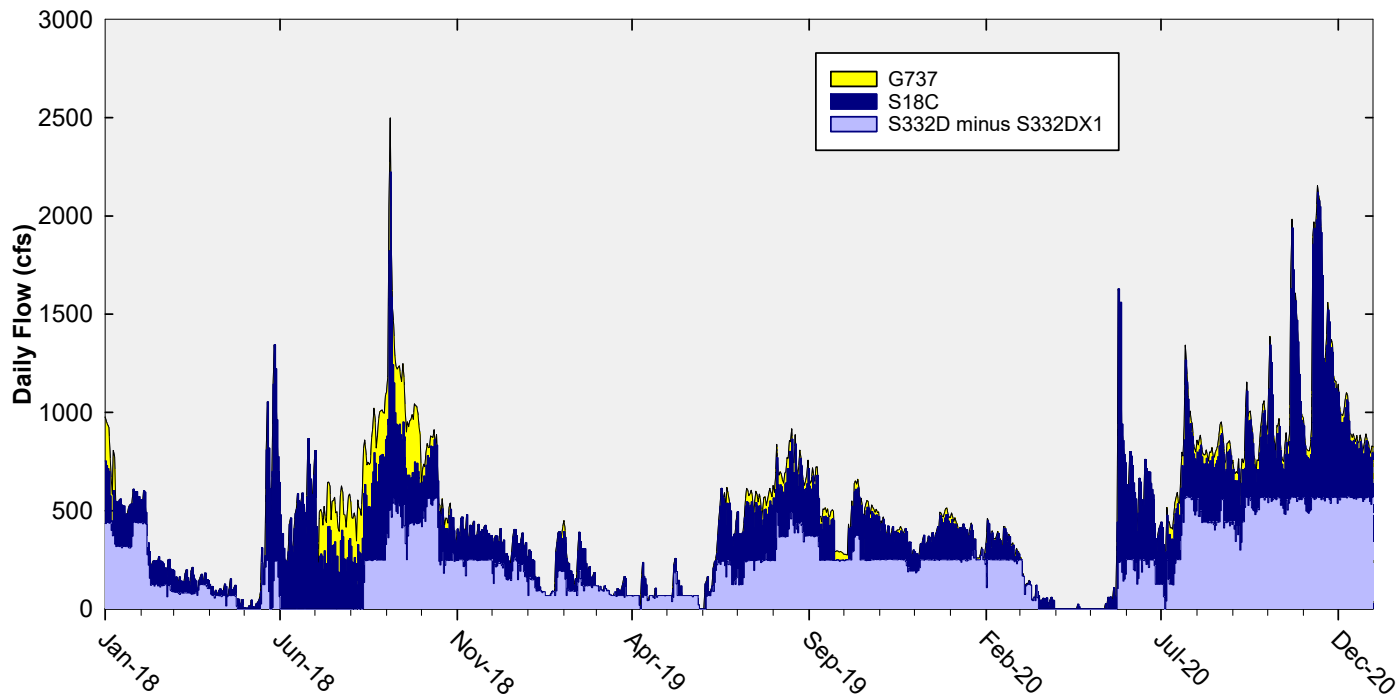


**The 12-month FWMC at the end of each water year  
compared to the 11 ppb long-term TP limit**

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

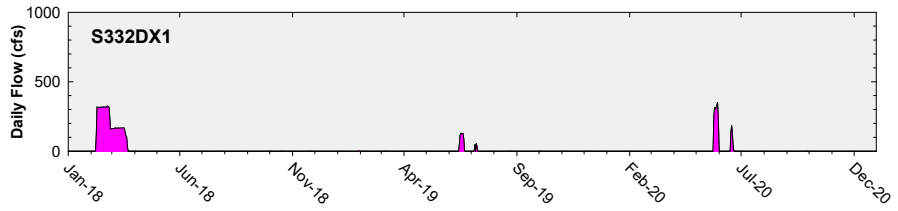
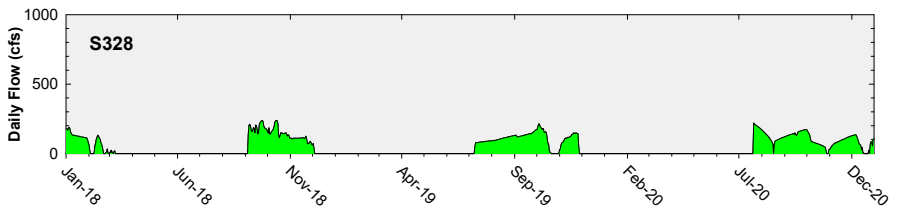
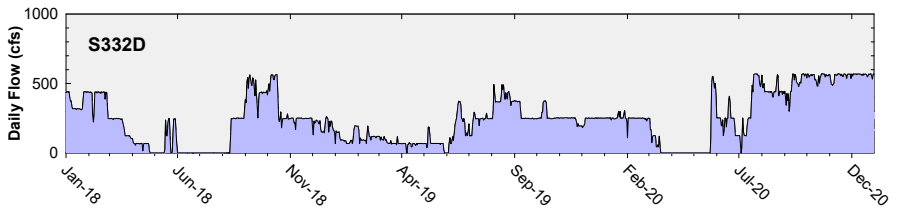
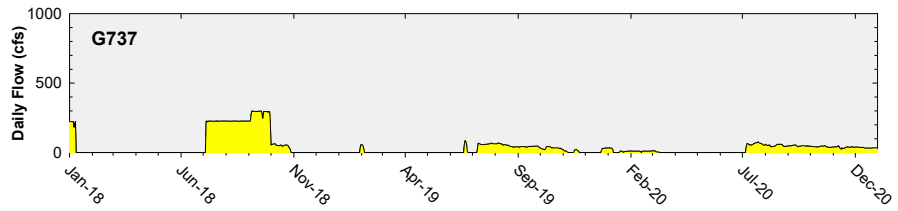
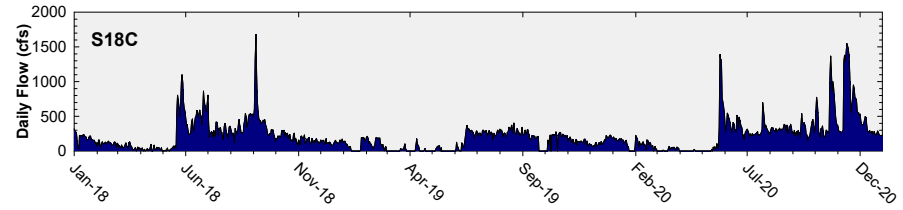


## Daily Flows at Taylor Slough and Coastal Basins Structures into ENP

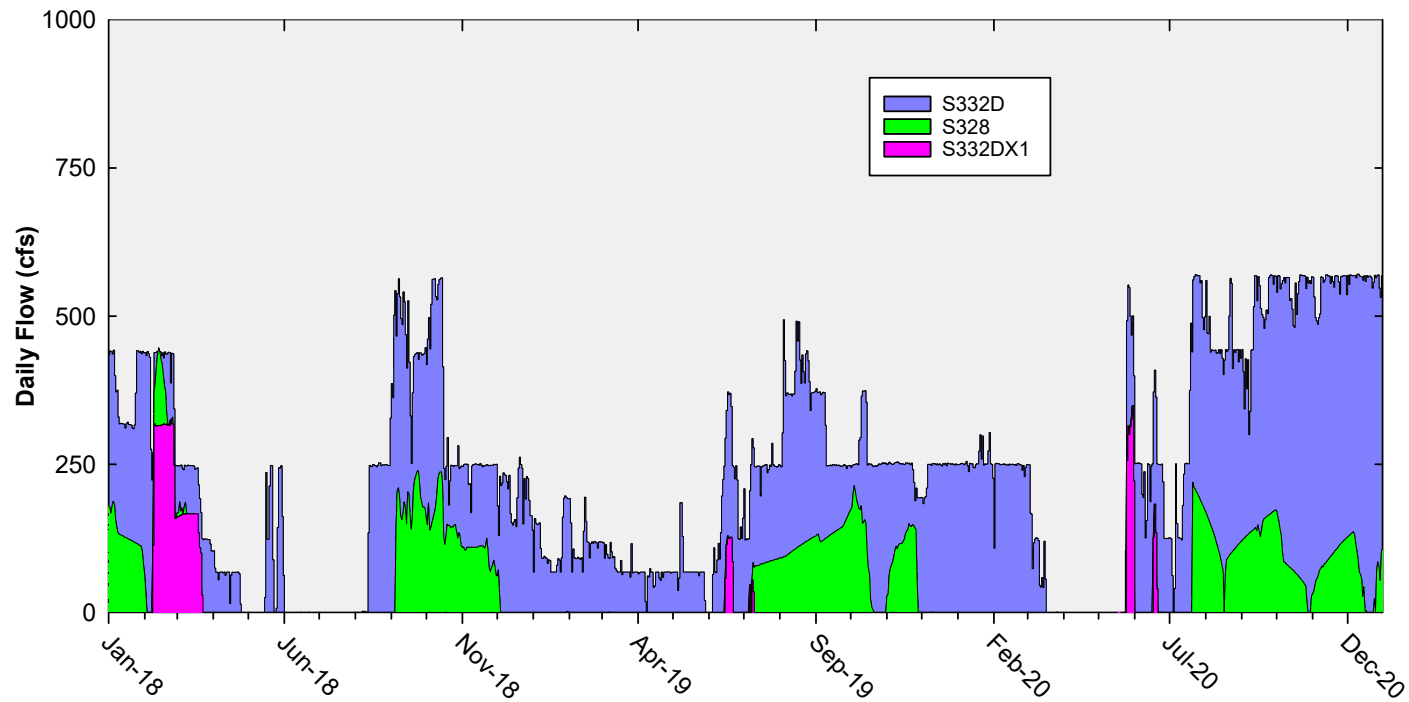


Note: Daily flow data are missing for S18C from September 23 to October 4, 2019.

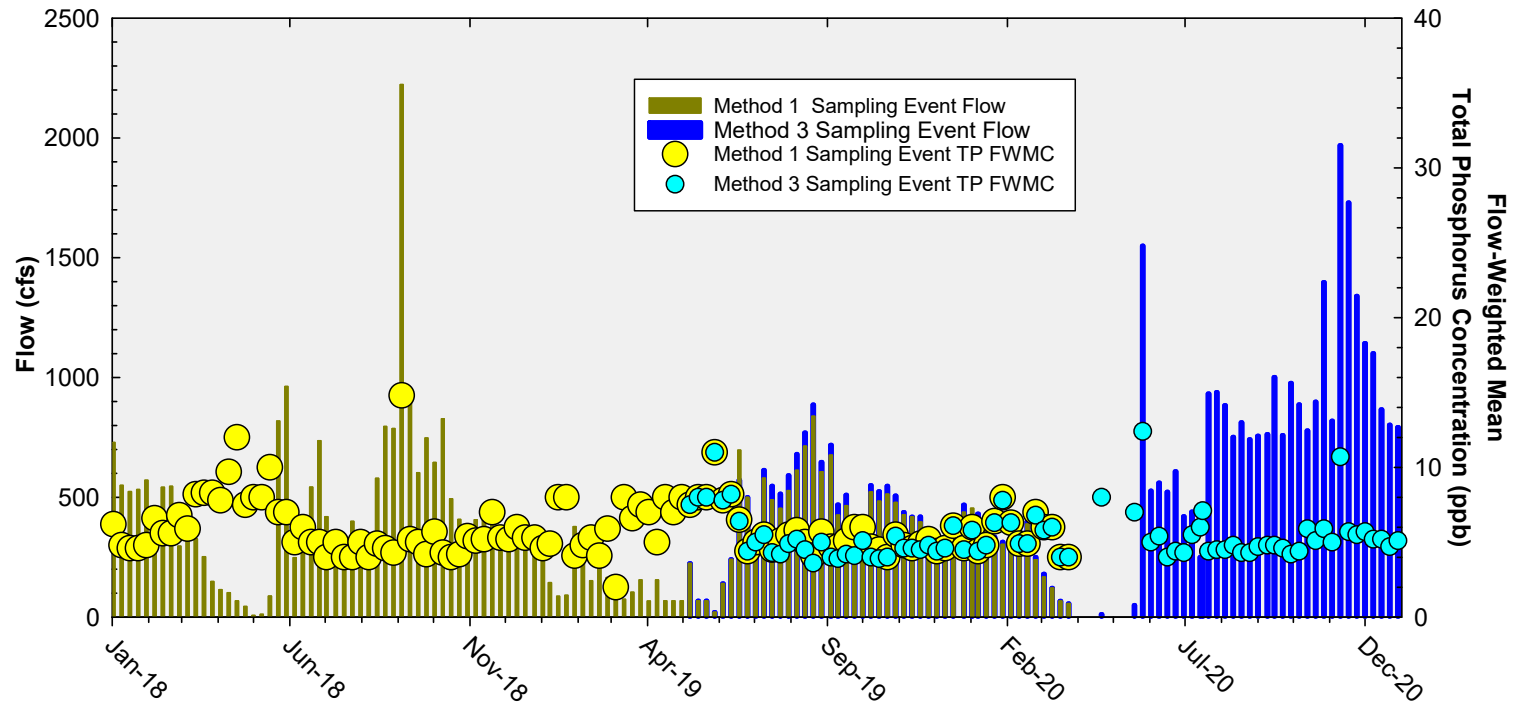
# Daily Flows at Individual Taylor Slough and Coastal Basins Structures



## Daily Flows Into and Out of C-111 Detention Area

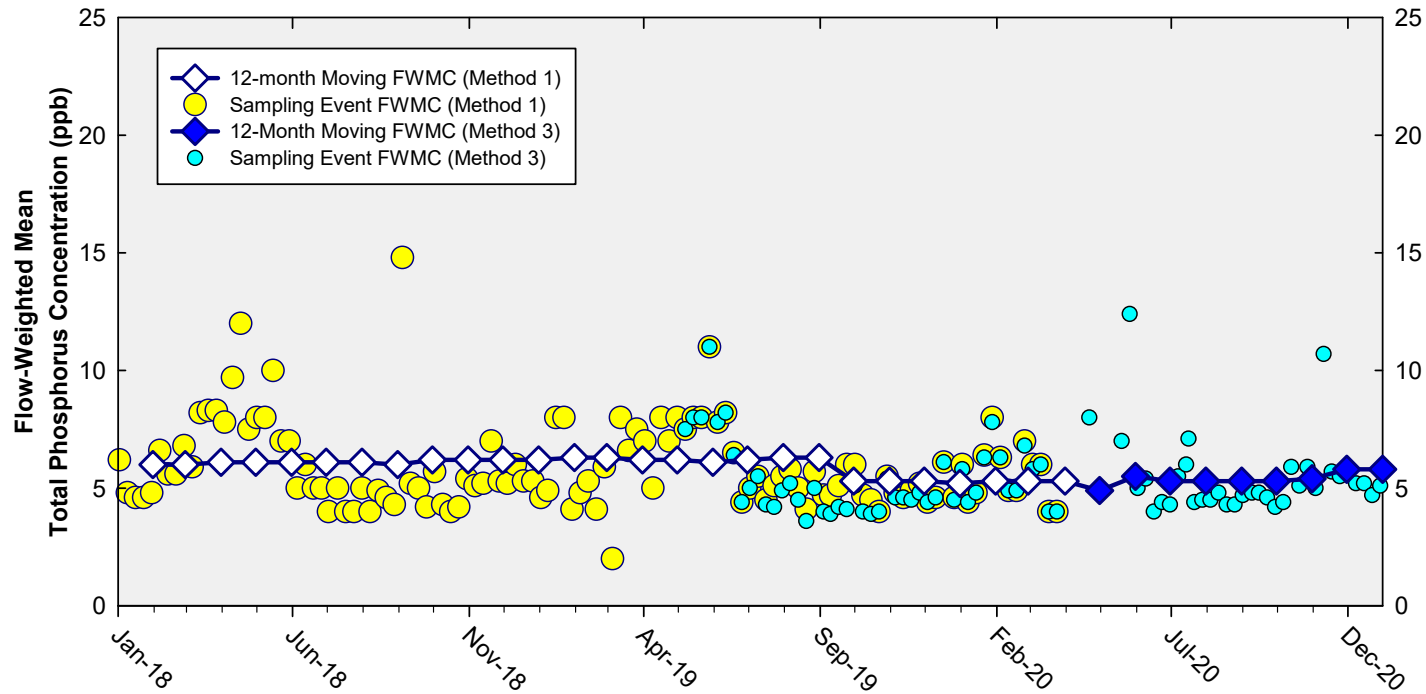


## Taylor Slough and Coastal Basins Sampling Event Flow and FWMC



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

## 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**

Thank You

