



# SETTLEMENT AGREEMENT QUARTERLY REPORT

July – September 2021

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Technical Oversight Committee

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

## SUMMARY

| Month                                                                               | Geometric Mean<br>TP Concentration (ppb) | Long-Term Level<br>(ppb)  | Mean Stage<br>(ft NGVD29) | Number of<br>Samples                              |               |
|-------------------------------------------------------------------------------------|------------------------------------------|---------------------------|---------------------------|---------------------------------------------------|---------------|
| Arthur R. Marshall Loxahatchee National Wildlife Refuge                             |                                          |                           |                           |                                                   |               |
| Jul 2021                                                                            | 11.1                                     | 12.5                      | 16.00                     | 8                                                 |               |
| Aug 2021                                                                            | 8.6                                      | 9.7                       | 16.49                     | 13                                                |               |
| Sep 2021                                                                            | 7.0                                      | 8.4                       | 16.79                     | 13                                                |               |
| 12-Month<br>Period Ending                                                           | Total Flow<br>(kac-ft)                   | 12-Month TP<br>FWMC (ppb) | Long-Term Limit<br>(ppb)  | Percent of Sampling Events<br>Greater than 10 ppb |               |
|                                                                                     |                                          |                           |                           | Observed (%)                                      | Guideline (%) |
| Everglades National Park – Shark River Slough – <i>PROVISIONAL DATA and RESULTS</i> |                                          |                           |                           |                                                   |               |
| Jul 2021                                                                            | 1,852.9                                  | 7.8                       | 7.6                       | 34.6                                              | 40.1          |
| Aug 2021                                                                            | 1,779.9                                  | 7.9                       | 7.6                       | 46.2                                              | 40.1          |
| Sep 2021                                                                            | 1,732.7                                  | 8.2                       | 7.6                       | 50.0                                              | 40.1          |
| Everglades National Park – Taylor Slough and Coastal Basins                         |                                          |                           |                           |                                                   |               |
| Jul 2021                                                                            | 430.1                                    | 5.4                       | 11.0                      | 2.1                                               | 53.1          |
| Aug 2021                                                                            | 410.1                                    | 5.5                       | 11.0                      | 2.0                                               | 53.1          |
| Sep 2021                                                                            | 399.5                                    | 5.6                       | 11.0                      | 2.1                                               | 53.1          |

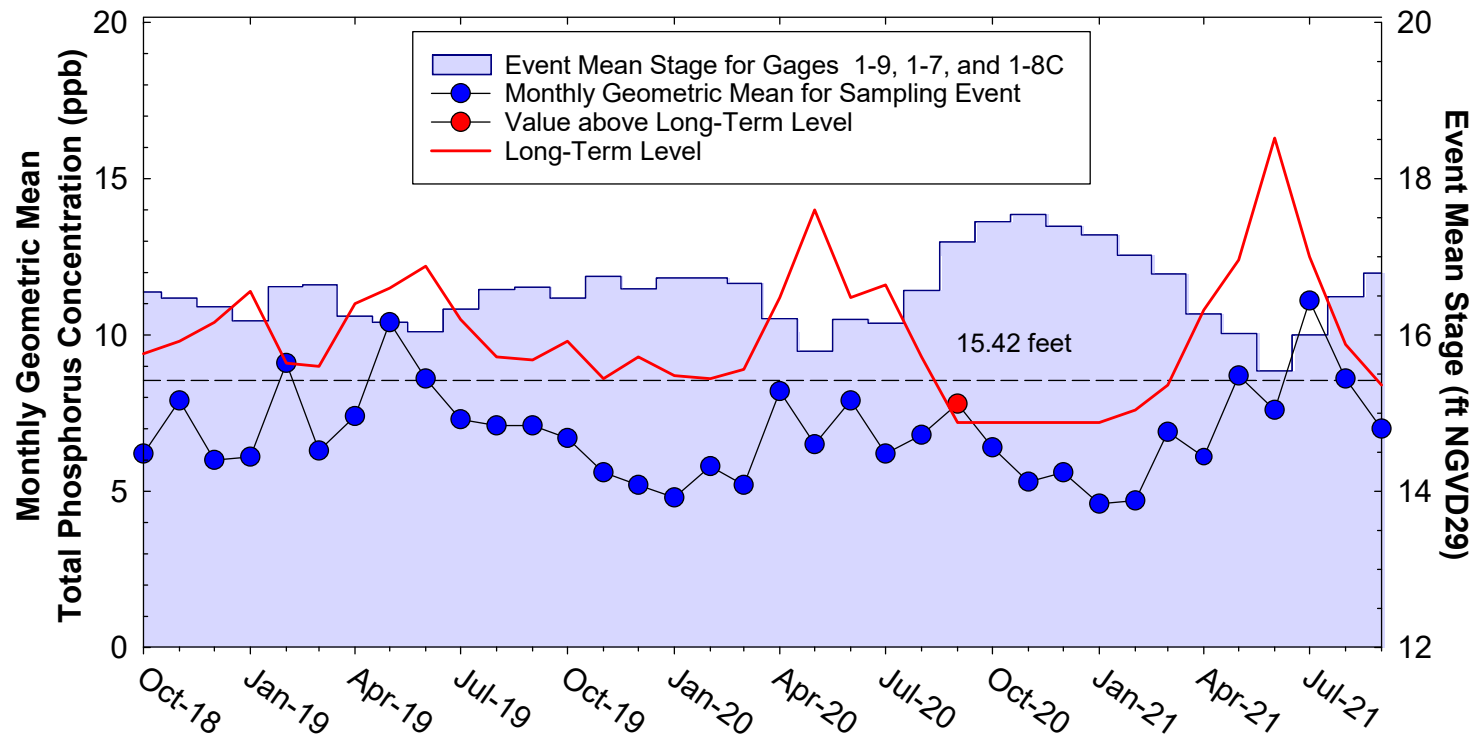
**SRS - computed as  $S12s + [S333 + S333N + S355A + S355B + \min(S356, S335) - S334]$ .**

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

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

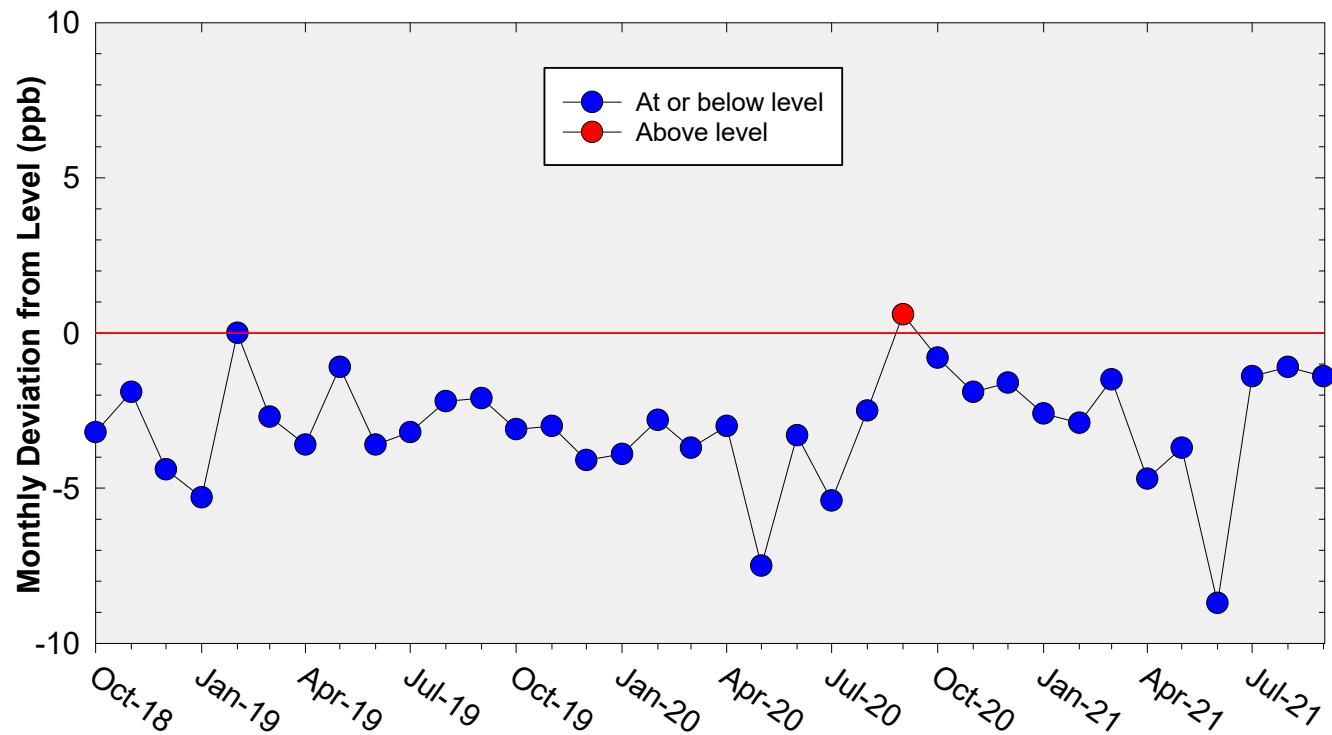
## A.R.M Loxahatchee National Wildlife Refuge

### Monthly Total Phosphorus Geometric Mean Concentrations



## 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 July – December 2021

| Month                                       | Geometric Mean<br>TP<br>Concentration<br>(ppb) | Long-Term<br>Level (ppb)<br>Effective<br>12/31/2006 | Average Stage<br>(feet NGVD29) | Number of<br>Samples |
|---------------------------------------------|------------------------------------------------|-----------------------------------------------------|--------------------------------|----------------------|
| <b>2nd Quarter 2021 Compliance Tracking</b> |                                                |                                                     |                                |                      |
| <b>Jul-2021</b>                             | <b>11.1</b>                                    | <b>12.5</b>                                         | <b>16.00</b>                   | <b>8</b>             |
| <b>Aug-2021</b>                             | <b>8.6</b>                                     | <b>9.7</b>                                          | <b>16.49</b>                   | <b>13</b>            |
| <b>Sep-2021</b>                             | <b>7.0</b>                                     | <b>8.4</b>                                          | <b>16.79</b>                   | <b>13</b>            |
| <b>Preliminary Data Outlook</b>             |                                                |                                                     |                                |                      |
| <b>Oct-2021</b>                             | <b>6.6</b>                                     | <b>7.2</b>                                          | <b>17.30</b>                   | <b>14</b>            |
| <b>Nov-2021</b>                             | <b>7.1</b>                                     | <b>7.2</b>                                          | <b>17.35</b>                   | <b>14</b>            |
| <b>Dec-2021</b>                             | <b>5.3</b>                                     | <b>7.2</b>                                          | <b>17.44</b>                   | <b>14</b>            |

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

## Shark River Slough TP Concentration Compliance Tracking

WY2021 (October 2020 to June 2021) Flow Data for S12s are Provisional.

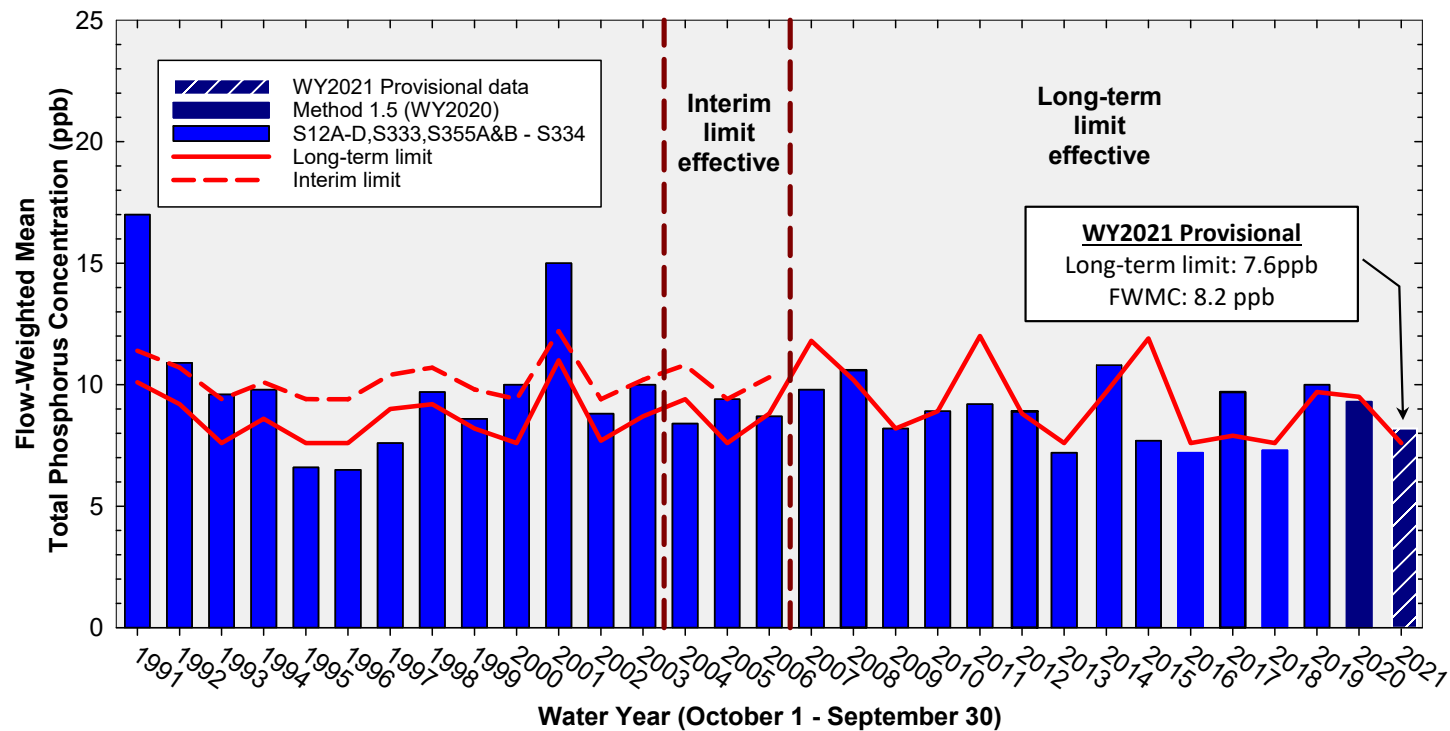
| 12-Month Period     | Total Flow<br>(kac-ft) | Flow-Weighted<br>Mean TP<br>Concentration<br>(ppb) | Long-Term<br>Limit (ppb)<br><i>Effective<br/>12/31/2006</i> | Percent of Sampling Events Greater<br>than 10 ppb |               |
|---------------------|------------------------|----------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------|---------------|
|                     |                        |                                                    |                                                             | Observed (%)                                      | Guideline (%) |
| Aug 2020 - Jul 2021 | 1,852.9                | 7.8                                                | 7.6                                                         | 34.6                                              | 40.1          |
| Sep 2020 - Aug 2021 | 1,779.9                | 7.9                                                | 7.6                                                         | 46.2                                              | 40.1          |
| Oct 2020 - Sep 2021 | 1,732.7                | 8.2                                                | 7.6                                                         | 50.0                                              | 40.1          |

### 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.

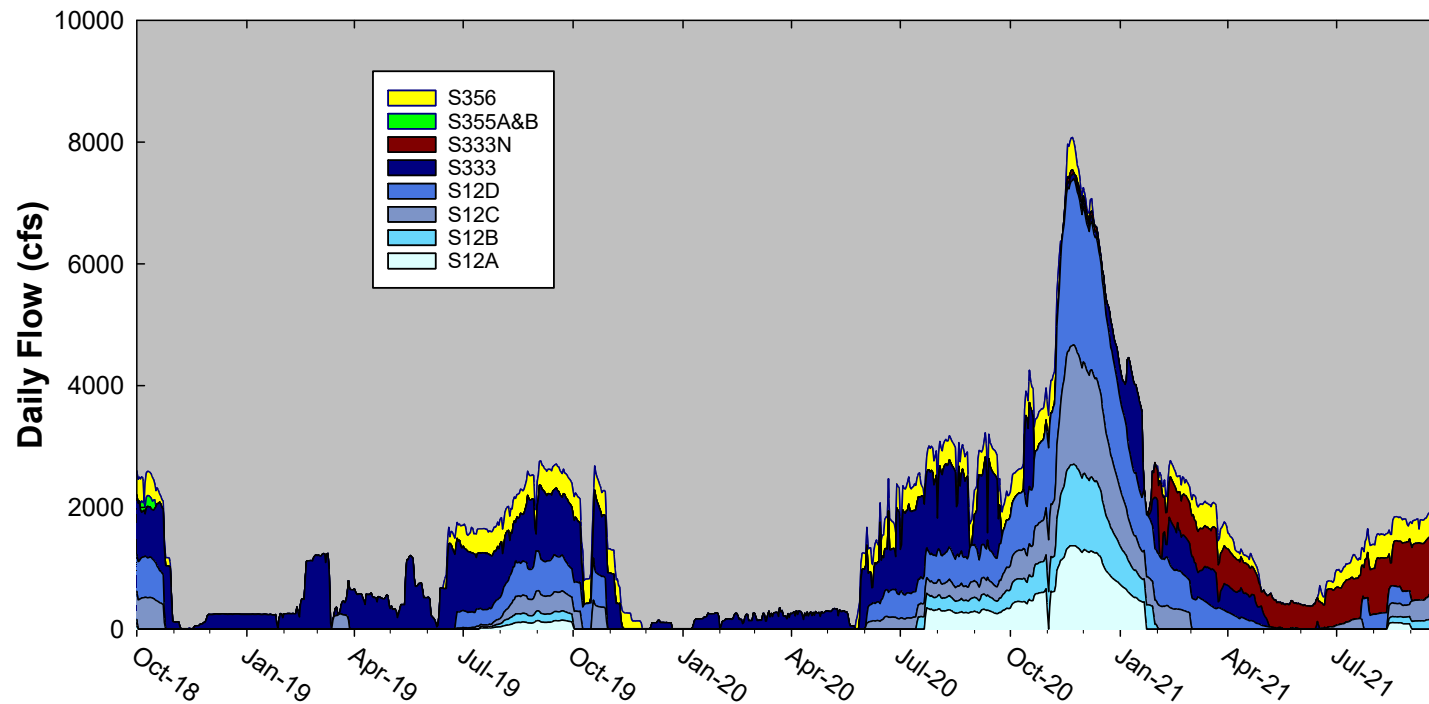
## Annual Flow-weighted Mean Concentrations Inflows to ENP through Shark River Slough



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

## Shark River Slough Structure Daily Flows

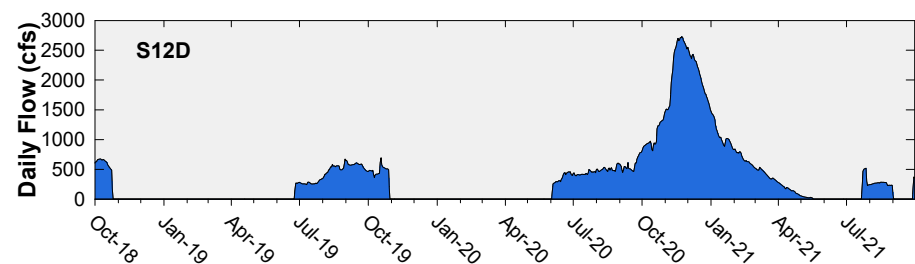
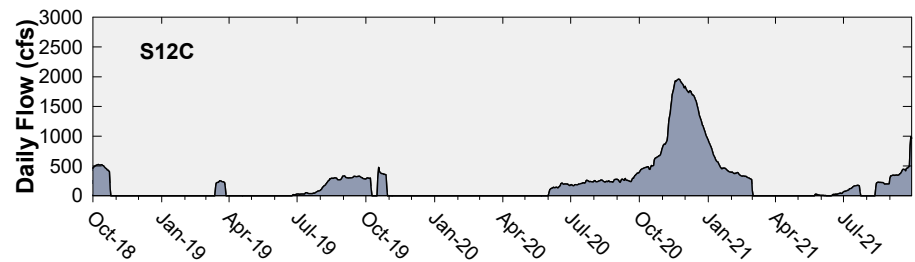
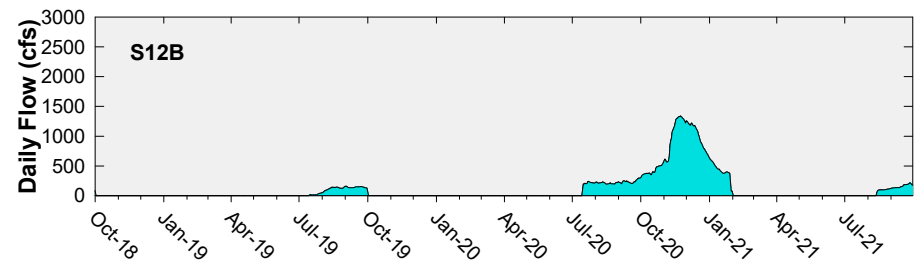
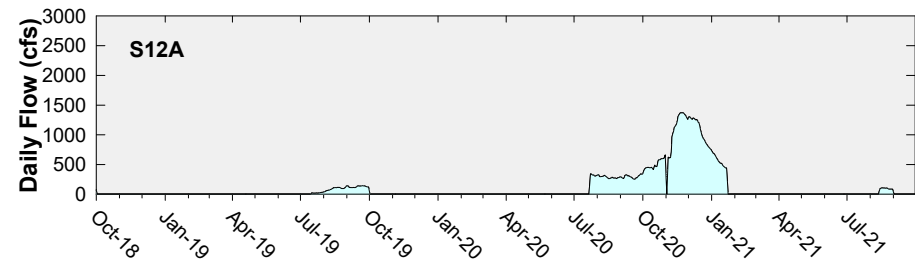
WY2021 (October 1, 2020, to September 30, 2021) Flow Data for S12s are Provisional.



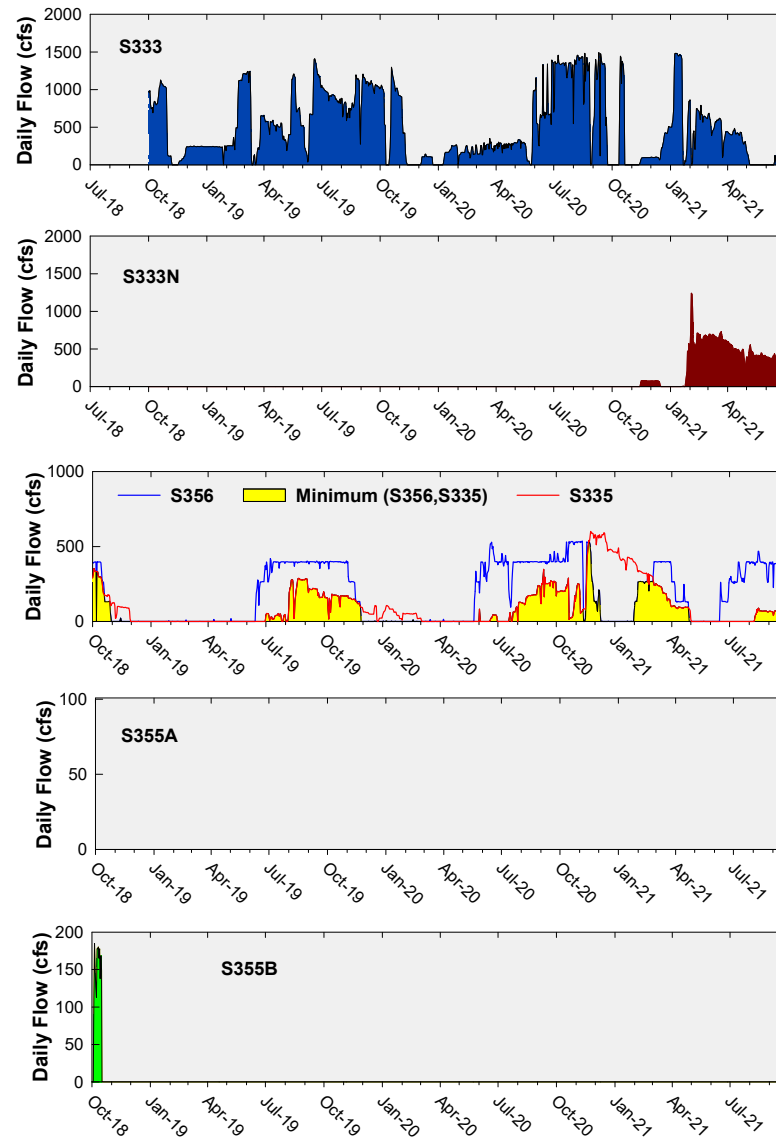


## Daily Flows at S12 Structures to Shark River Slough

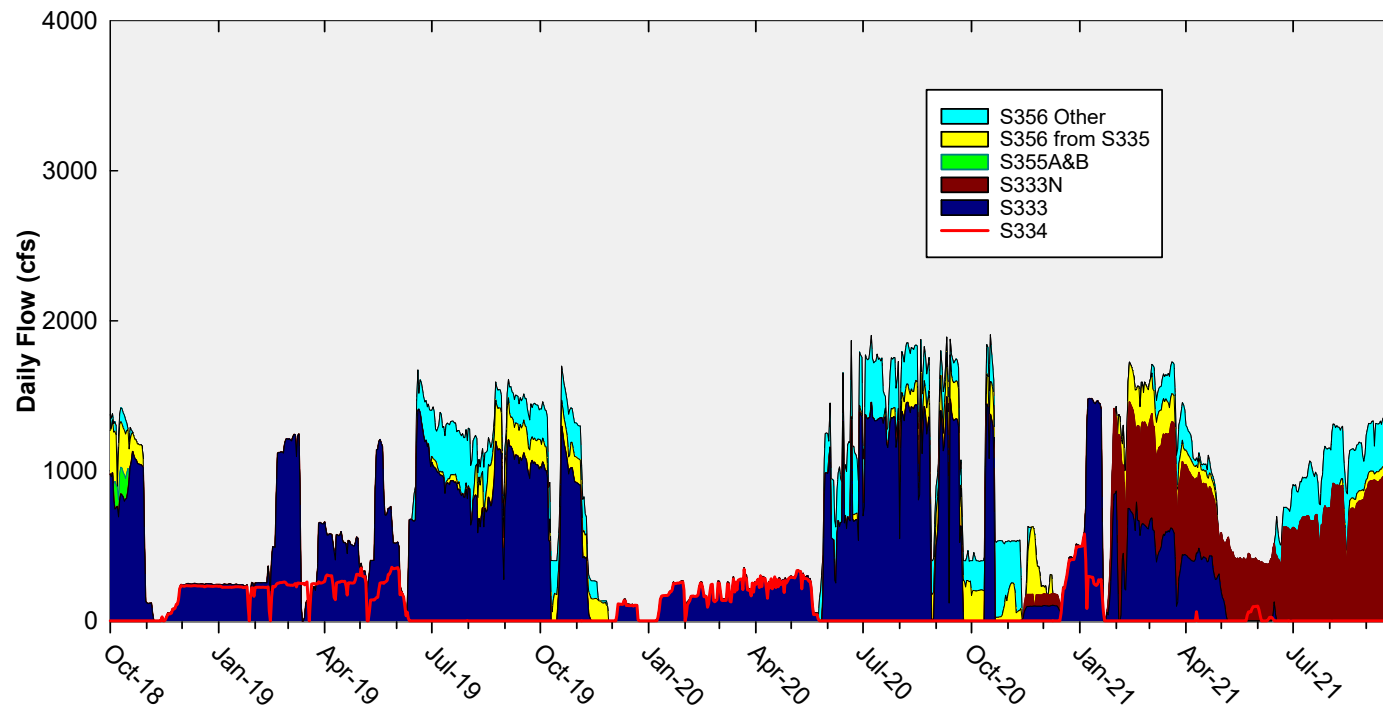
**WY2021 (October 1, 2020, to  
September 30, 2021) Flow Data for  
S12s are Provisional.**



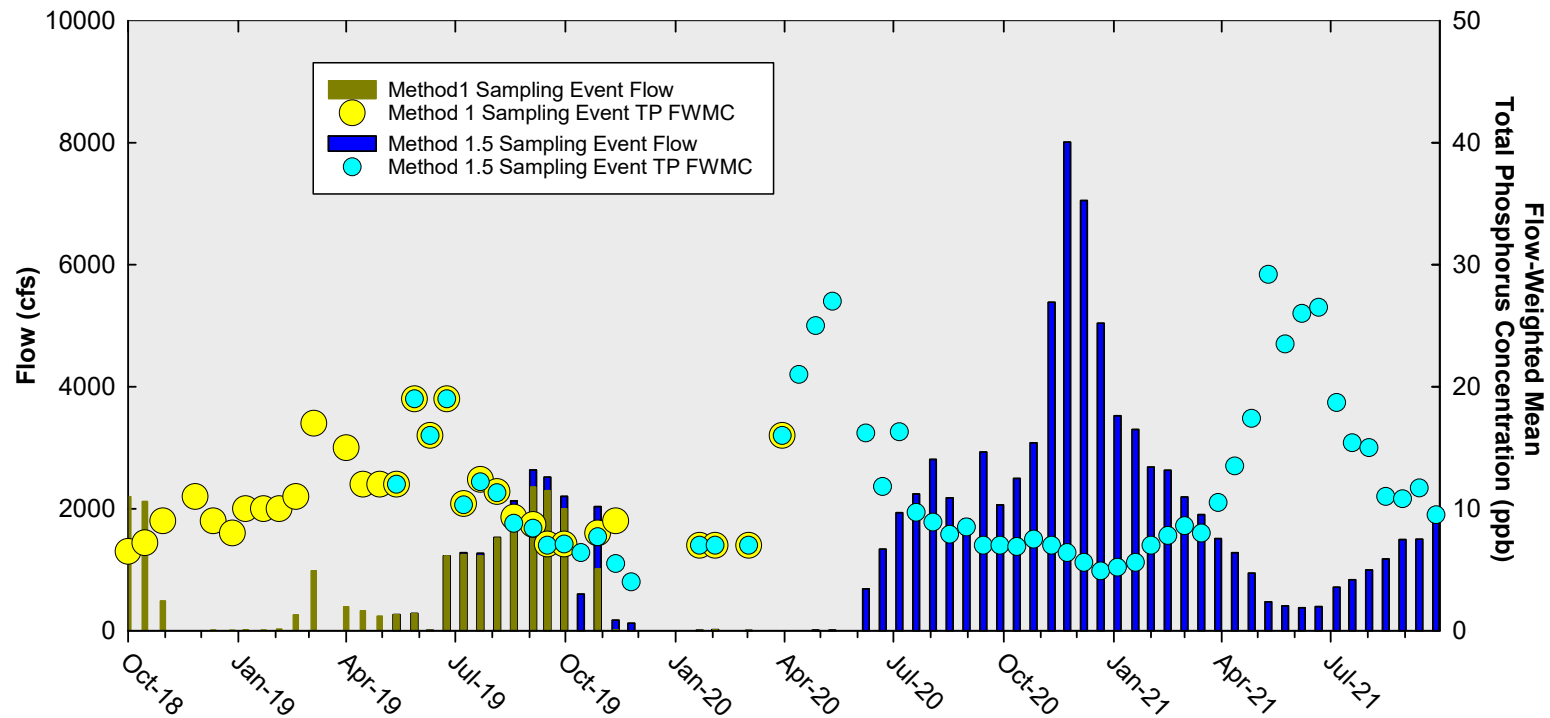
## Daily Flows at Individual Inflow Structures to Shark River Slough



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



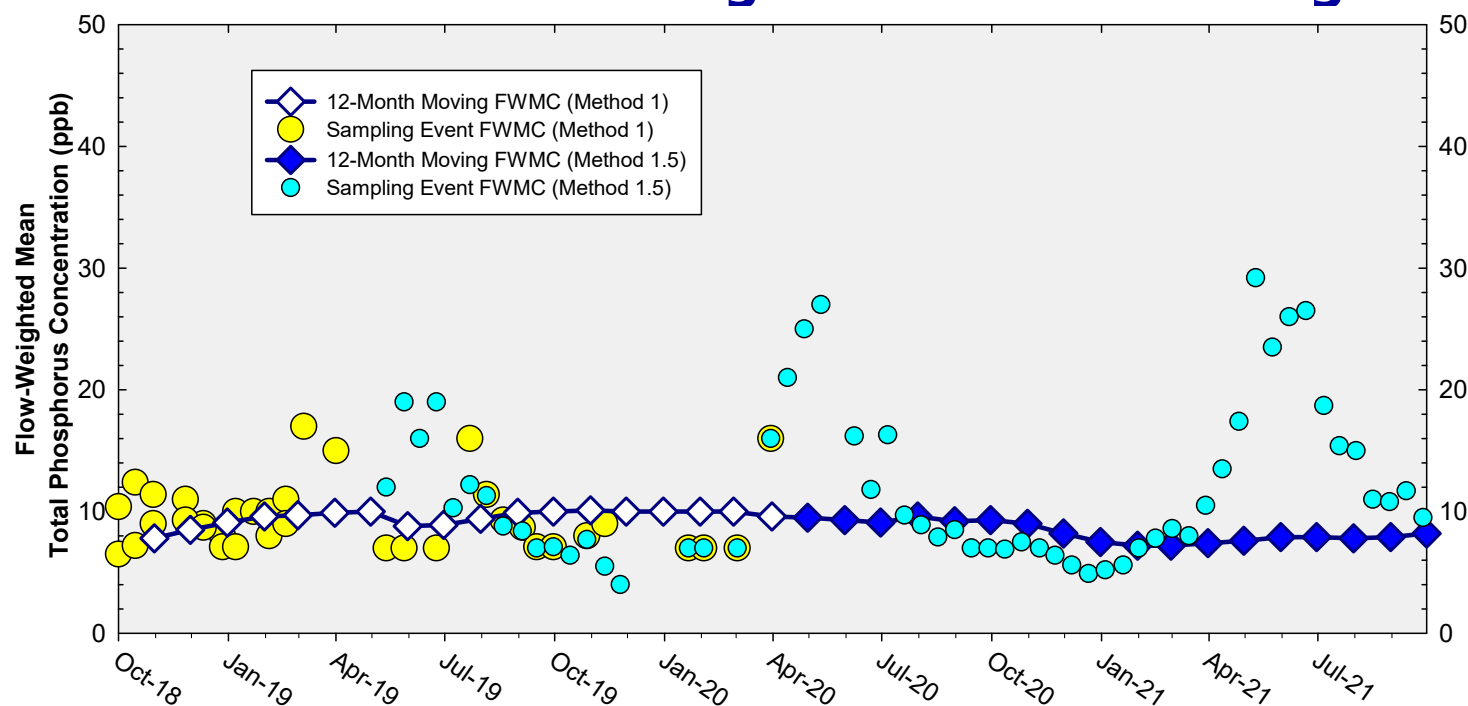
## Shark River Slough Sampling Event Flow and FWMC



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

**Note: WY2021 (October 1, 2020, to September 30, 2021) Flow Data for S12s are Provisional.**

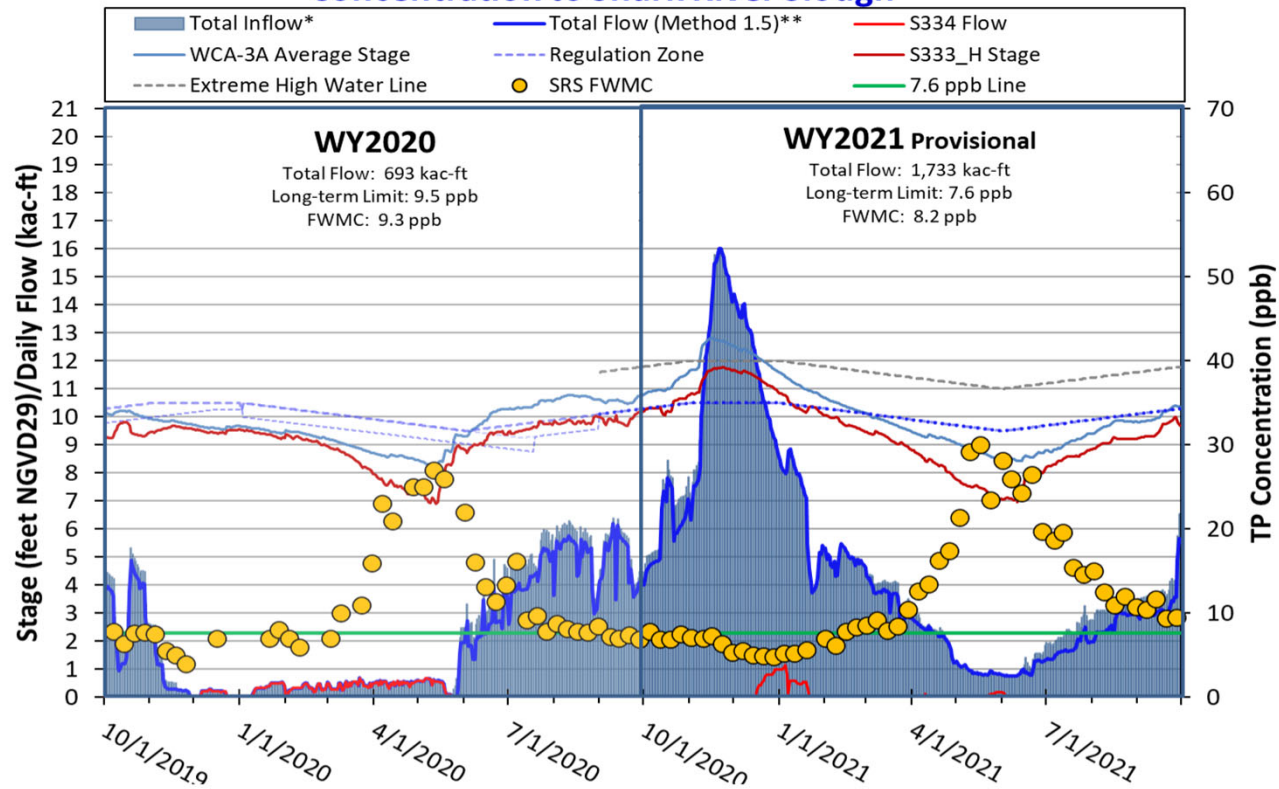
## Flow-Weighted Mean Concentrations Inflows to ENP through Shark River Slough



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

**WY2021 (October 1, 2020, to September 30, 2021) Flow Data for S12s are Provisional.**

### WCA-3A Average Stage, Flow and TP Flow-weighted Mean Concentration to Shark River Slough



\* Total Inflow = S12s + S333&S333N + S355A&B + S356

\*\* Total Flow (Method 1.5) = S12s + S333&S333N + S355A&B + min(S356,S335)

**\* WY2021 results are PROVISIONAL**

## Taylor Slough and Coastal Basins

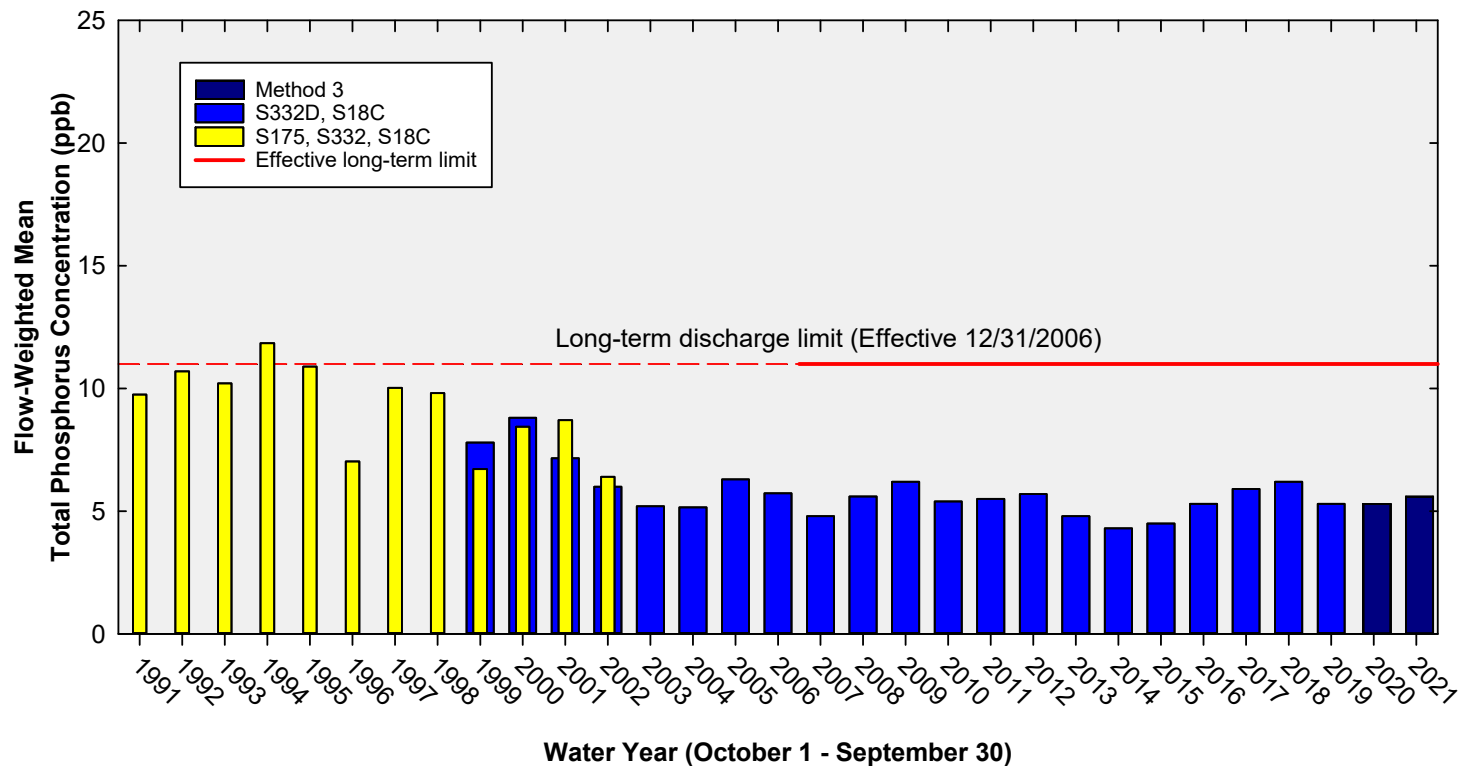
### TP Concentration Compliance Tracking

| 12-Month Period     | Total Flow<br>(kac-ft) | Flow-Weighted Mean<br>TP<br>Concentration in ppb<br>LTL = 11.0 ppb<br>Effective 12/31/2006 | Observed Percent of<br>Sampling Events<br>Greater than 10 ppb<br>Guideline = 53.1% |
|---------------------|------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Aug 2020 - Jul 2021 | 430.1                  | 5.4                                                                                        | 2.1                                                                                |
| Sep 2020 - Aug 2021 | 410.1                  | 5.5                                                                                        | 2.0                                                                                |
| Oct 2020 - Sep 2021 | 399.5                  | 5.6                                                                                        | 2.1                                                                                |

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

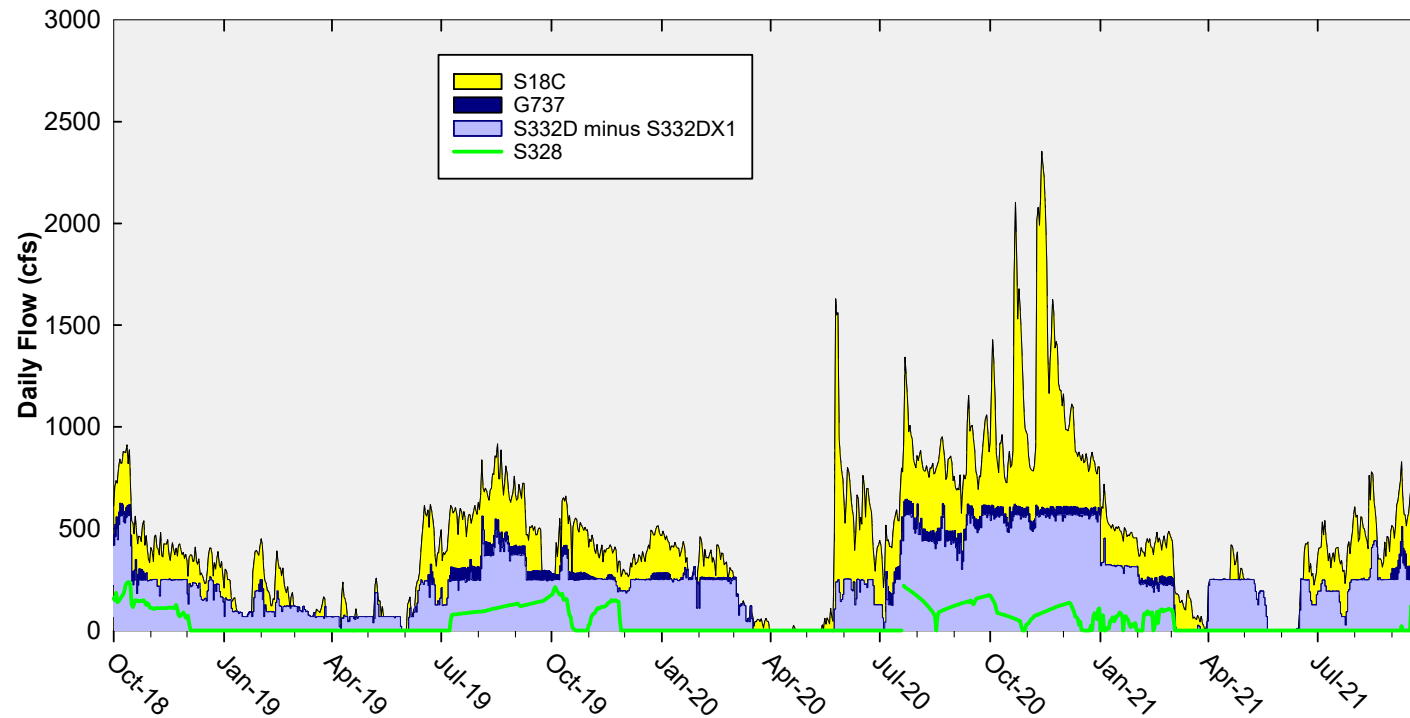


**The 12-month FWMC at the end of each water year  
compared to the 11 ppb long-term TP limit**

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

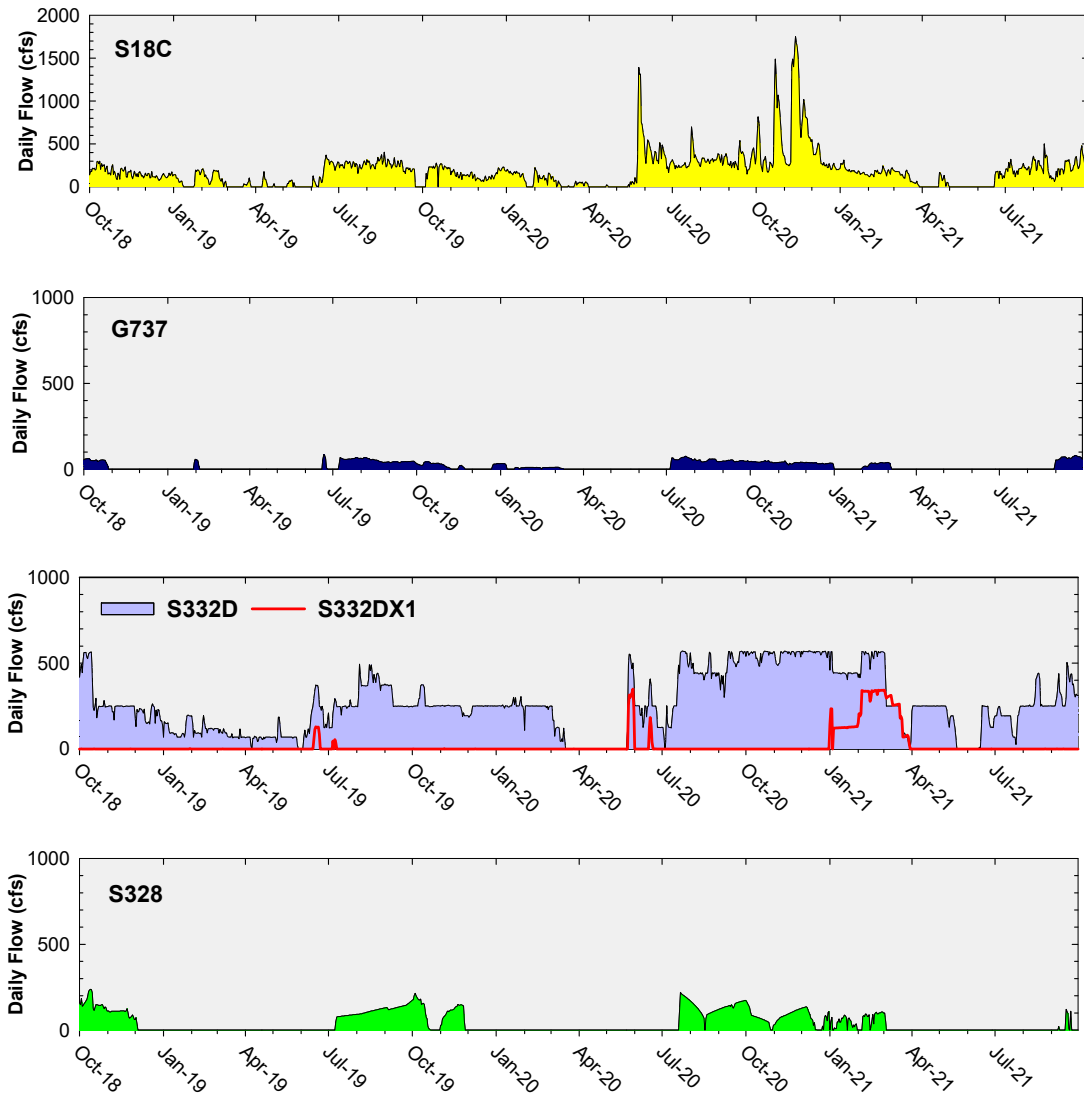


## Daily Flows at Taylor Slough and Coastal Basins Structures into ENP

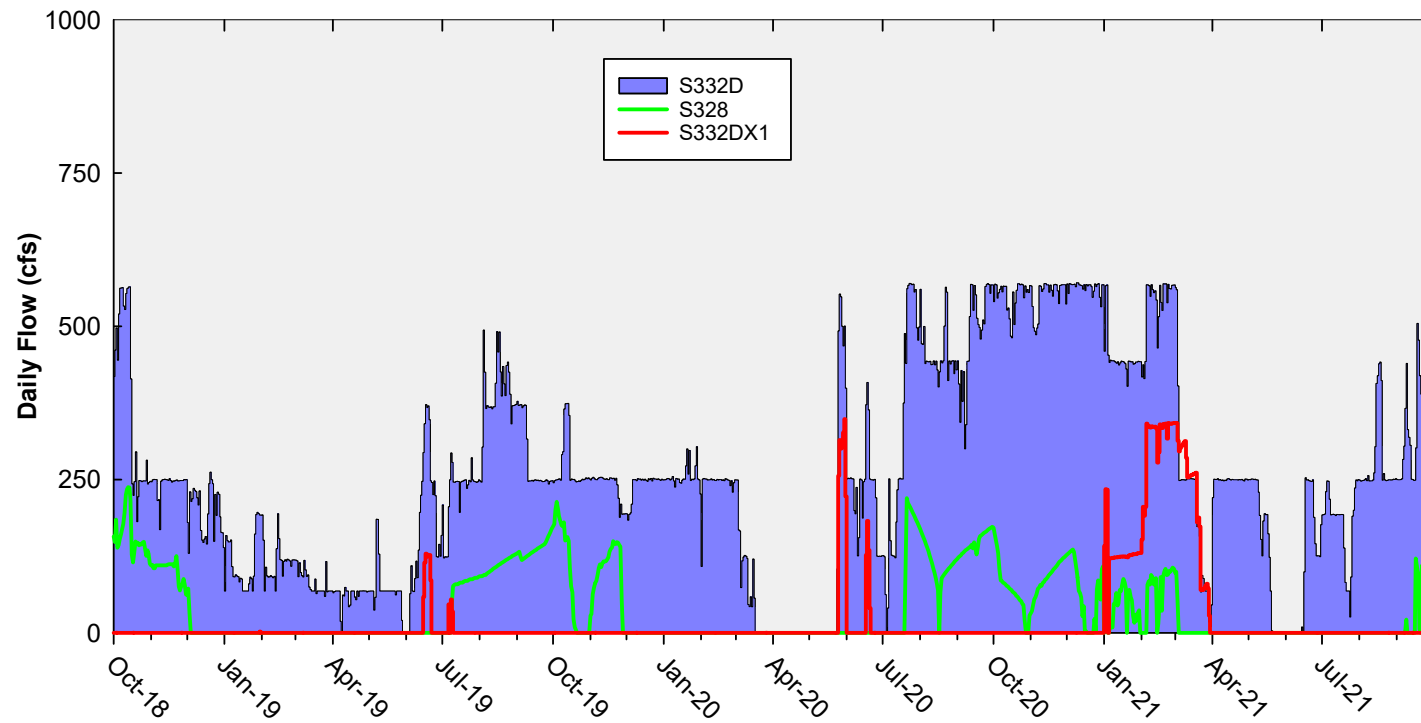


**Note: Daily flow data are missing for S18C from September 23 to October 4, 2019.**

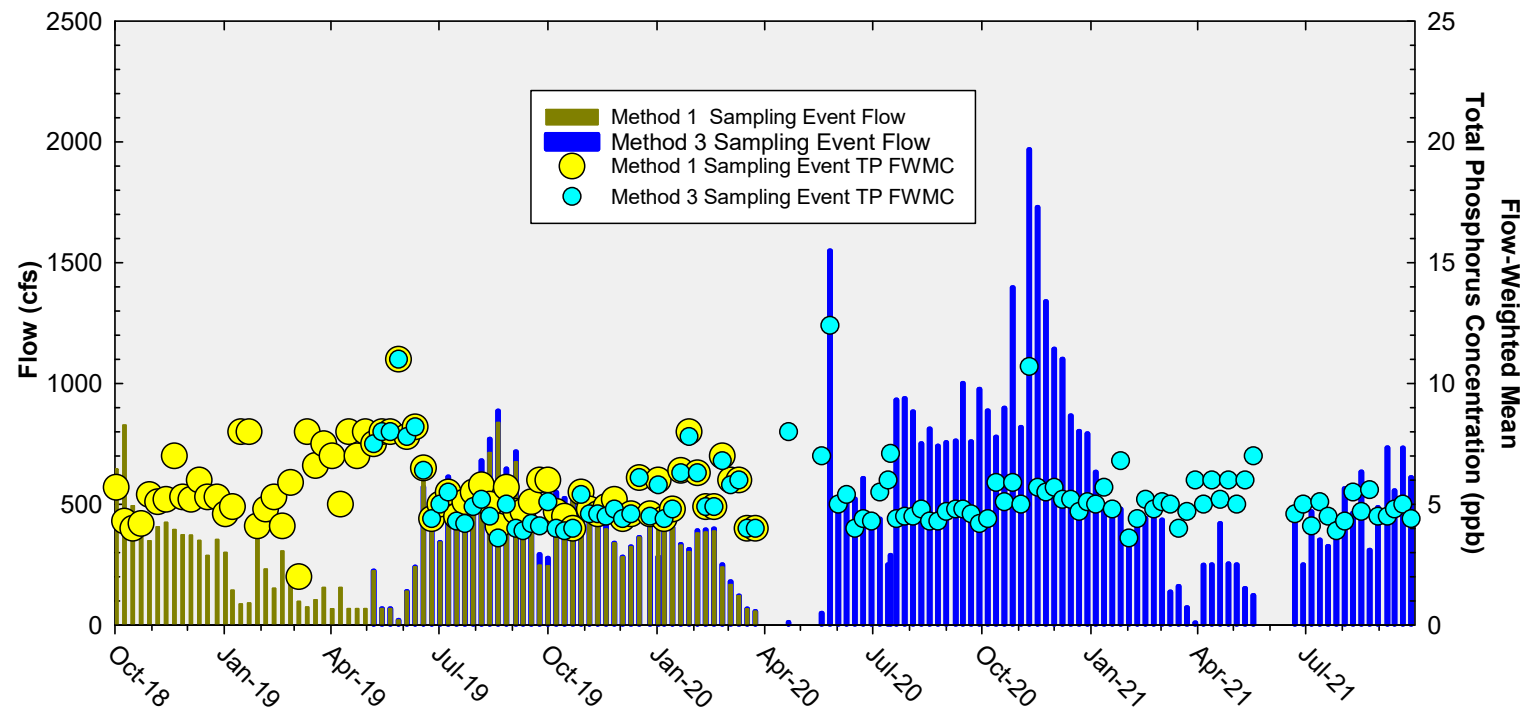
## Daily Flows at Individual Taylor Slough and Coastal Basins Structures



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



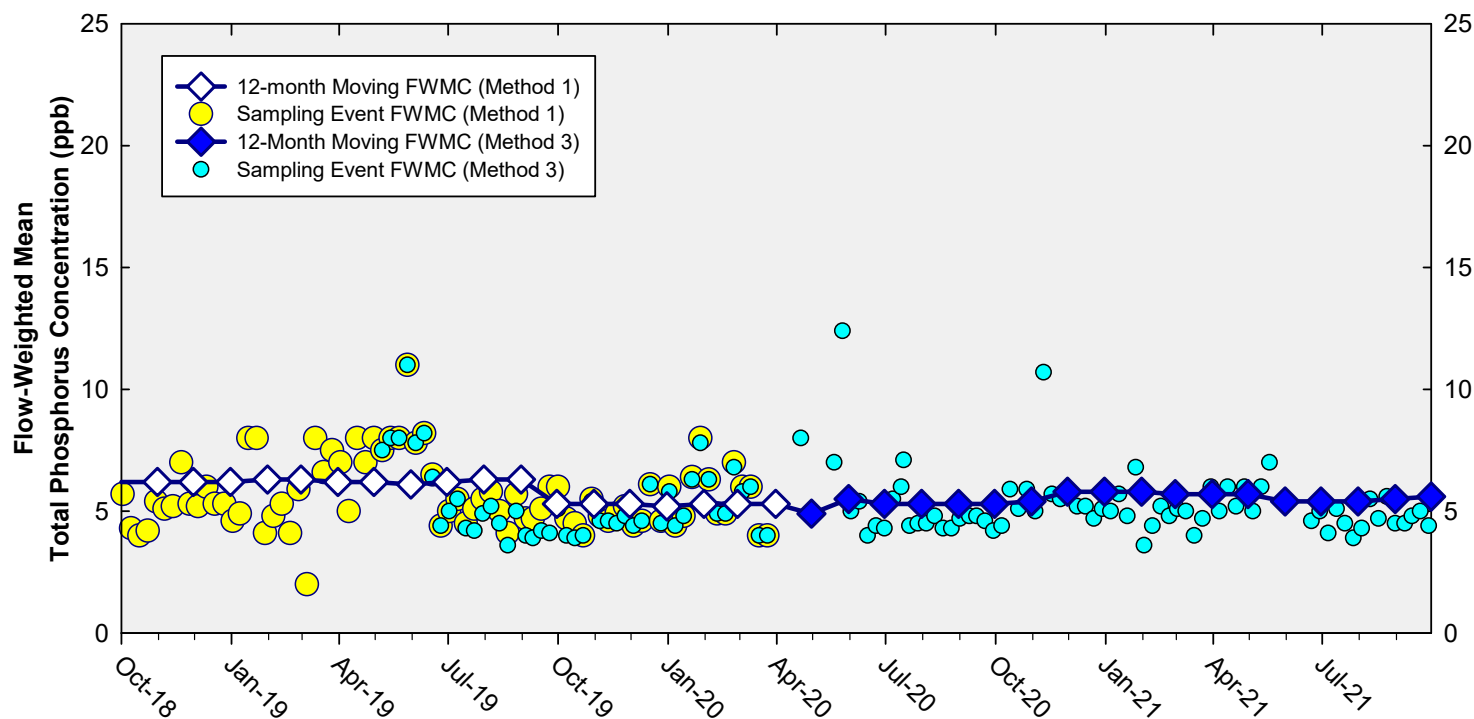
## Taylor Slough and Coastal Basins Sampling Event Flow and FWMC



**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

