



# SETTLEMENT AGREEMENT REPORT

January - March 2012

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Compliance Assessment & Reporting Section  
Water Quality Bureau

Technical Oversight Committee  
May 30, 2012



# SUMMARY

| Month  | Geometric Mean TP Concentration (ppb) | Long-term Level (ppb)                              | Mean Stage (ft NGVD 29) | Number of Samples                              |  |
|--|---------------------------------------|--|-------------------------|--|--|
| <b>Arthur R. Marshall Loxahatchee National Wildlife Refuge</b>     |                                       |  |                         |  |  |
| Jan 2012   | 6.0                                   | 10.0   | 16.43                   | 14   |  |
| Feb 2012   | 7.5                                   | 11.1   | 16.23                   | 13   |  |
| Mar 2012   | 6.3                                   | 12.8   | 15.96                   | 10   |  |
| 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</b>               |                                       |  |                         |  |  |
| Jan 2012   | 488.4                                 | 9.3 (9.5 <sup>*</sup> )                            | 10.6                    | 55.6   | 61.9 <sup>a</sup> (61.9 <sup>a,*</sup> ) |
| Feb 2012   | 495.5                                 | 9.4 (9.5 <sup>*</sup> )                            | 10.6                    | 55.4   | 63.6 <sup>a</sup> (63.6 <sup>a,*</sup> ) |
| Mar 2012   | 485.8                                 | 9.4 (9.5 <sup>*</sup> )                            | 10.6                    | 55.7   | 57.1 <sup>a</sup> (57.1 <sup>a,*</sup> ) |
| <b>Everglades National Park – Taylor Slough and Coastal Basins</b> |                                       |  |                         |  |  |
| Jan 2012   | 169.5                                 | 6.4 (6.3 <sup>**</sup> )                           | 11.0                    | 53.1   | 10.0 (13.2 <sup>**</sup> )               |
| Feb 2012   | 170.2                                 | 6.4 (6.3 <sup>**</sup> )                           | 11.0                    | 53.1   | 9.3 (13.5 <sup>**</sup> )                |
| Mar 2012   | 169.5                                 | 6.4 (6.3 <sup>**</sup> )                           | 11.0                    | 53.1   | 9.5 (14.7 <sup>**</sup> )                |

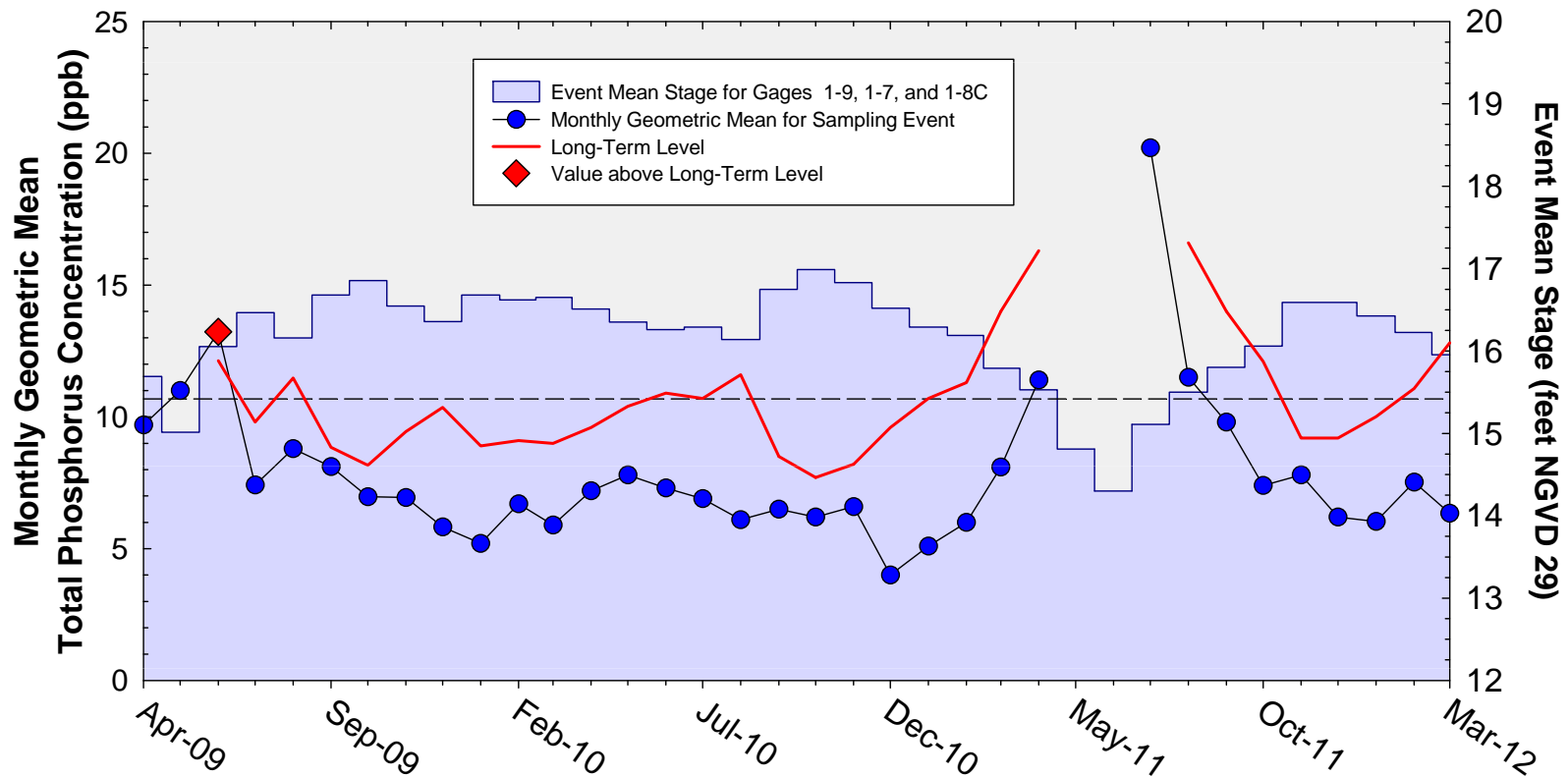
\* Excluding re-sampled datum

\*\* Including qualified data

<sup>a</sup> Value exceeded the guideline percentage.

# A.R.M Loxahatchee National Wildlife Refuge

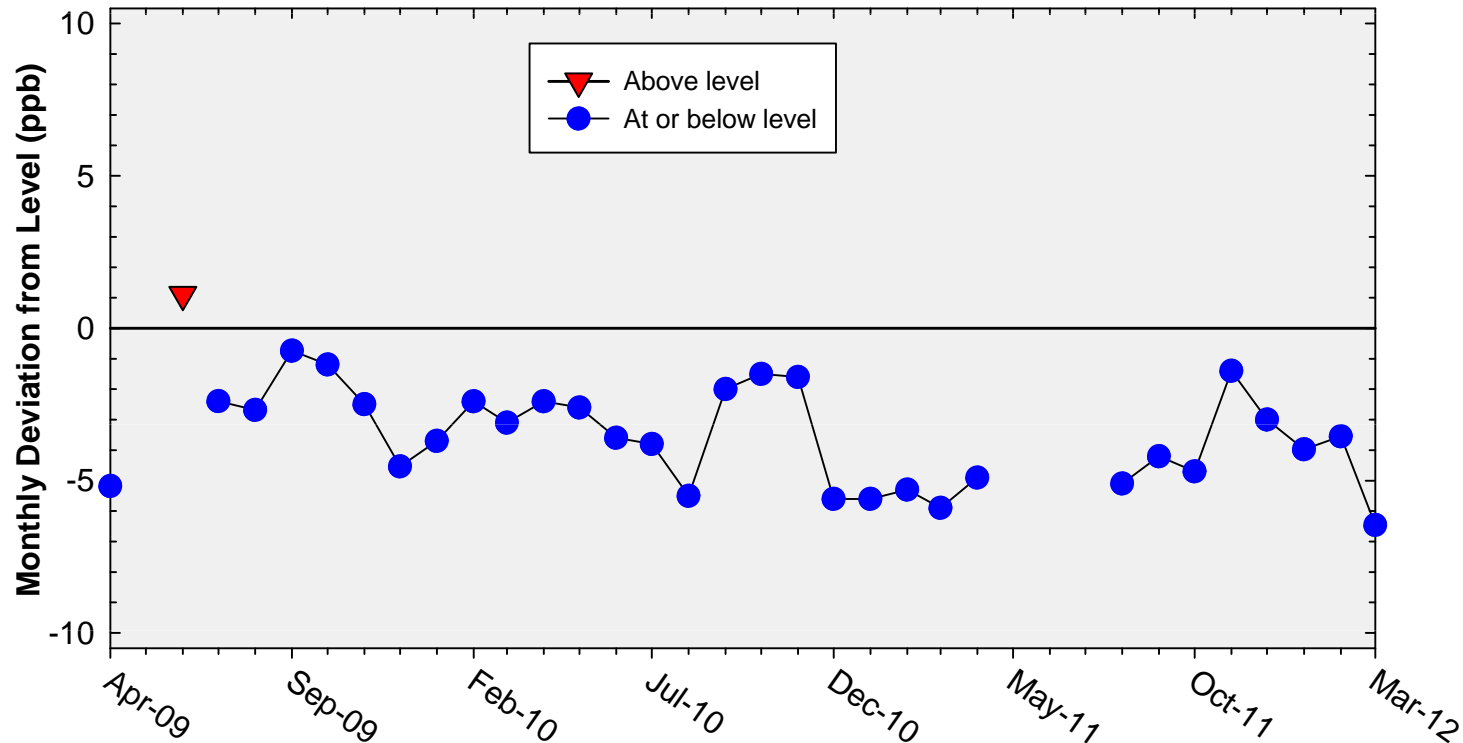
## Monthly Total Phosphorus Geometric Mean Concentrations



Note: Long-term level was not applicable for May 2009, May 2011, June 2011, and July 2011 (average stage < 15.42 ft).

# A.R.M Loxahatchee National Wildlife Refuge

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



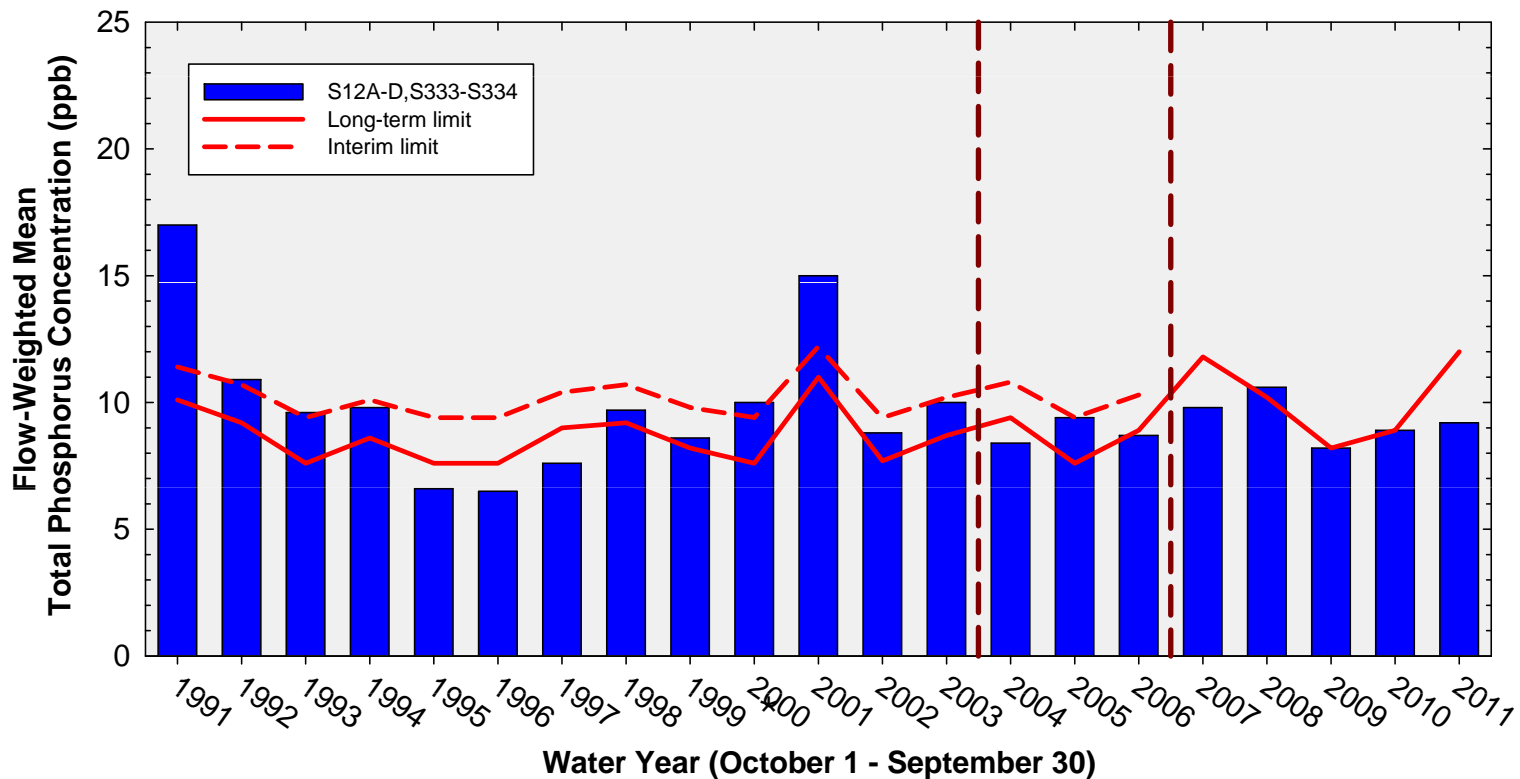
Note: Long-term level was not applicable for May 2009, May 2011, June 2011, and July 2011 (average stage < 15.42 ft).

## Refuge TP Compliance Tracking For January 2012 – April 2012

| Month    | Geometric Mean TP Concentration (ppb) | Long-Term Level (ppb)<br>Effective 12/31/2006 | Average Stage (ft NGVD 29) | Number of Samples |
|----------|---------------------------------------|---|----------------------------|-------------------|
| Jan-2012 | 6.0                                   | 10.0  | 16.43                      | 14                |
| Feb-2012 | 7.5                                   | 11.1  | 16.23                      | 13                |
| Mar-2012 | 6.3                                   | 12.8  | 15.95                      | 10                |
| Apr-2012 | 8.1                                   | 13.1  | 15.92                      | 10                |

Note: April 2012 values are preliminary.

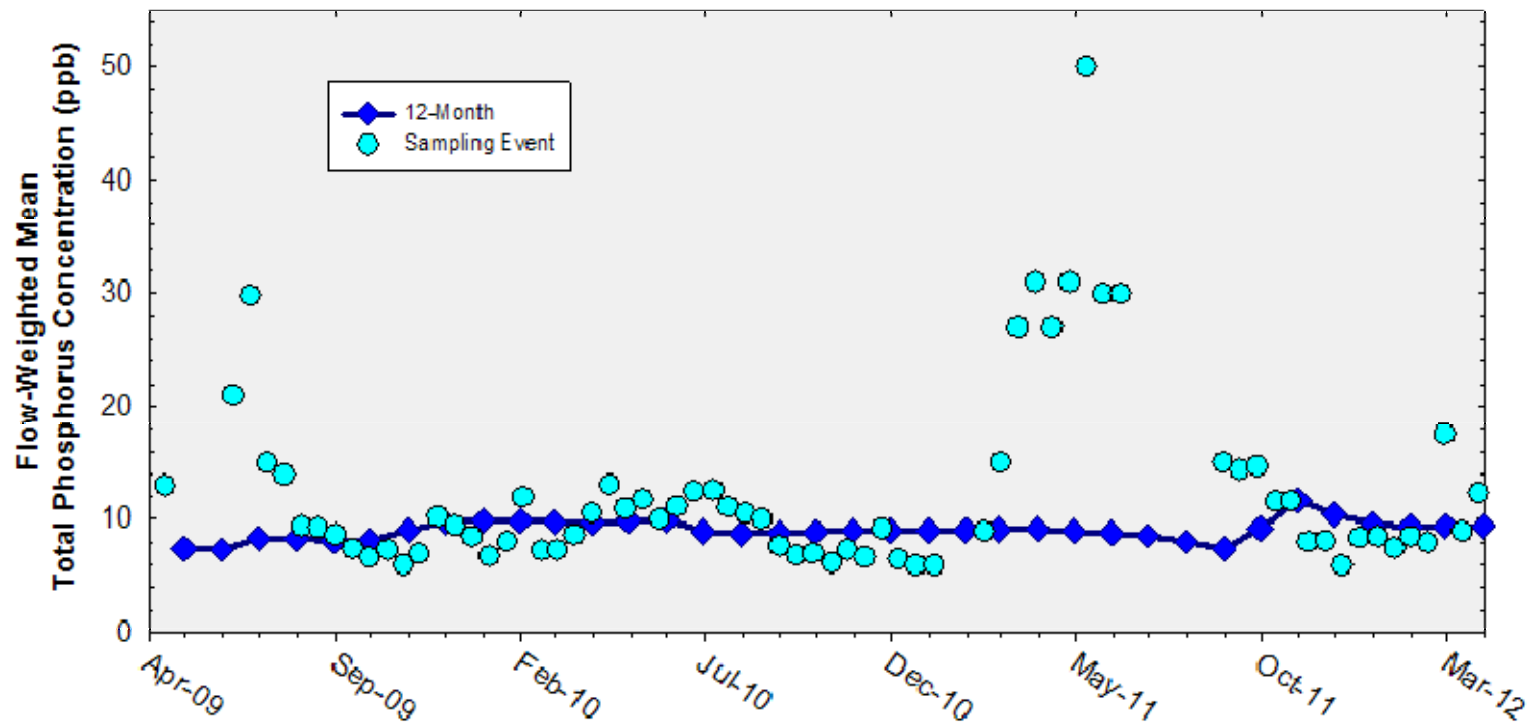
# Annual Flow-weighted Mean Concentrations Inflows to ENP through Shark River Slough



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

\* TOC determined 2008 exceedance did not constitute a violation of the long-term limit.

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



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

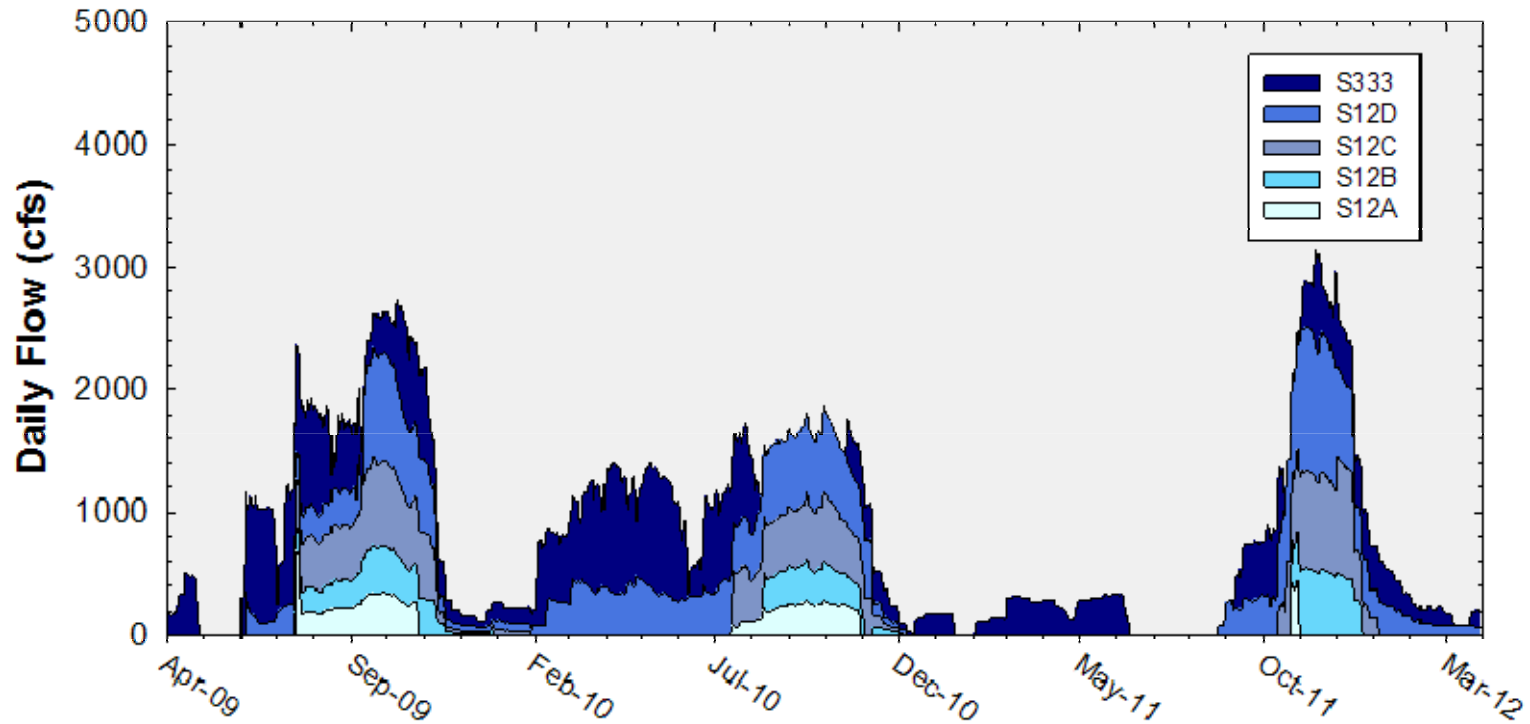
## Shark River Slough TP Concentration Compliance Tracking for January 2012 – March 2012

| 12-Month<br>Period  | Total Flow<br>(kac-ft) | Flow-Weighted<br>Mean TP<br>Concentration<br>(ppb) | Long-Term<br>Limit (ppb)<br><i>Effective 12/31/2006</i> | Percent of Sampling Events<br>Greater than 10 ppb |              |
|---------------------|------------------------|--|---|---|--------------|
|                     |                        |  |   | Guideline   | Observed     |
| Feb 2011 - Jan 2012 | 488.4                  | 9.3 (9.5*)   | 10.6  | 55.6  | 61.9 (61.9*) |
| Mar 2011 - Feb 2012 | 495.5                  | 9.4 (9.5*)   | 10.6  | 55.4  | 63.6 (63.6*) |
| Apr 2011 - Mar 2012 | 485.8                  | 9.4 (9.5*)   | 10.6  | 55.7  | 57.1 (57.1*) |

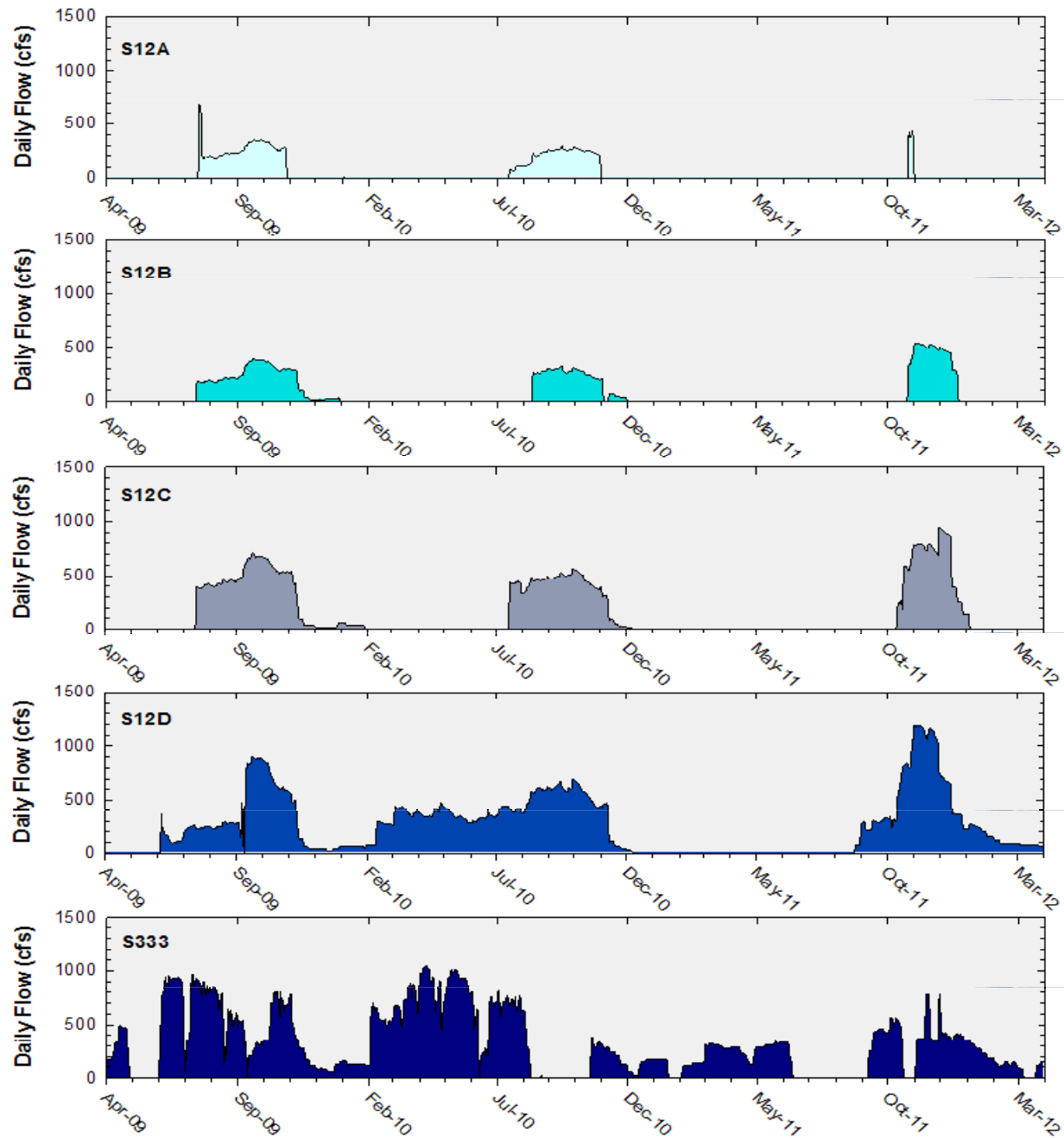
\* Excluding the re-sampled datum (7 ppb) at S12D on December 8, 2011



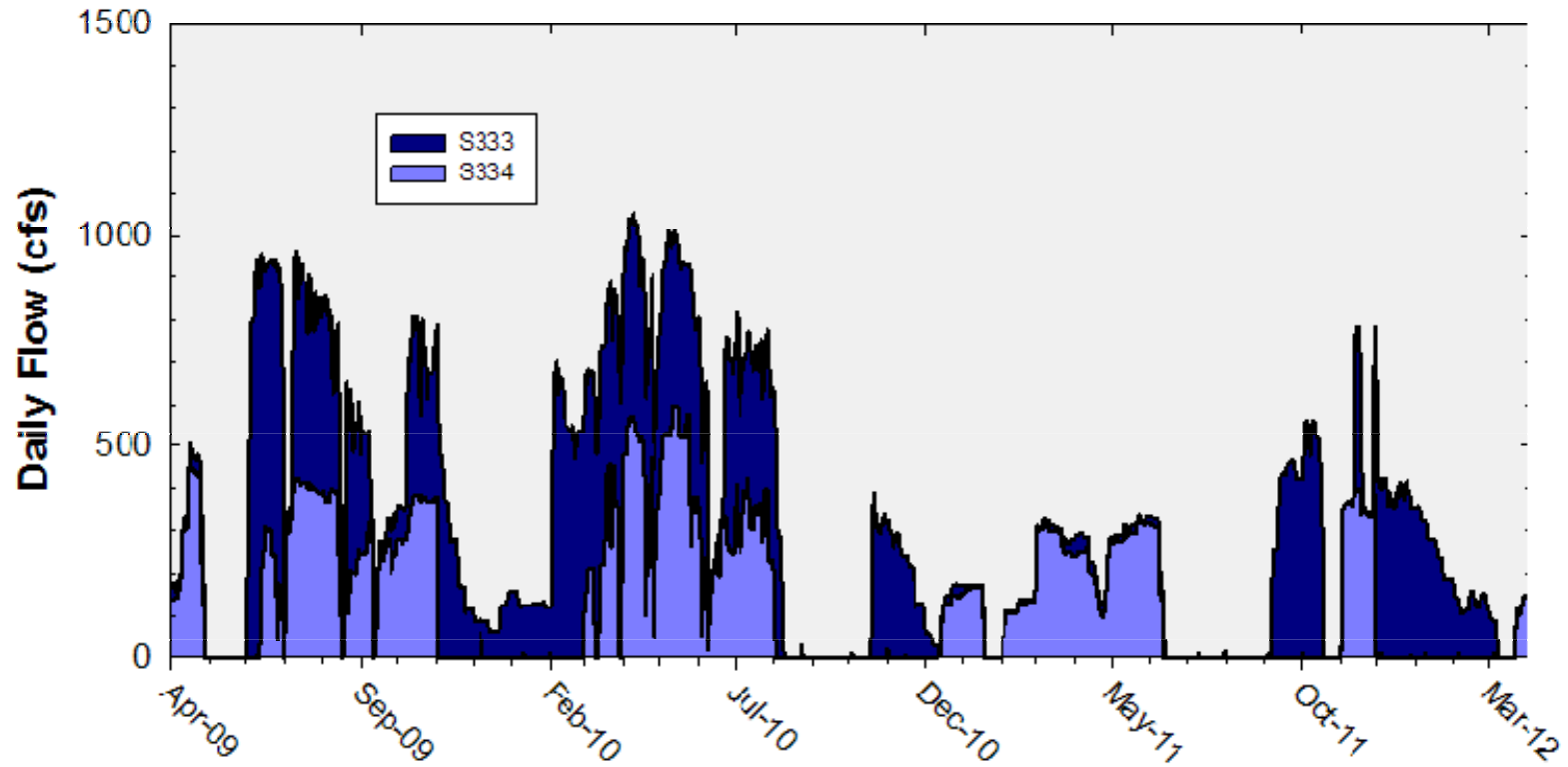
## Shark River Slough Daily Flows



# Daily Flows at individual inflow structures to Shark River Slough

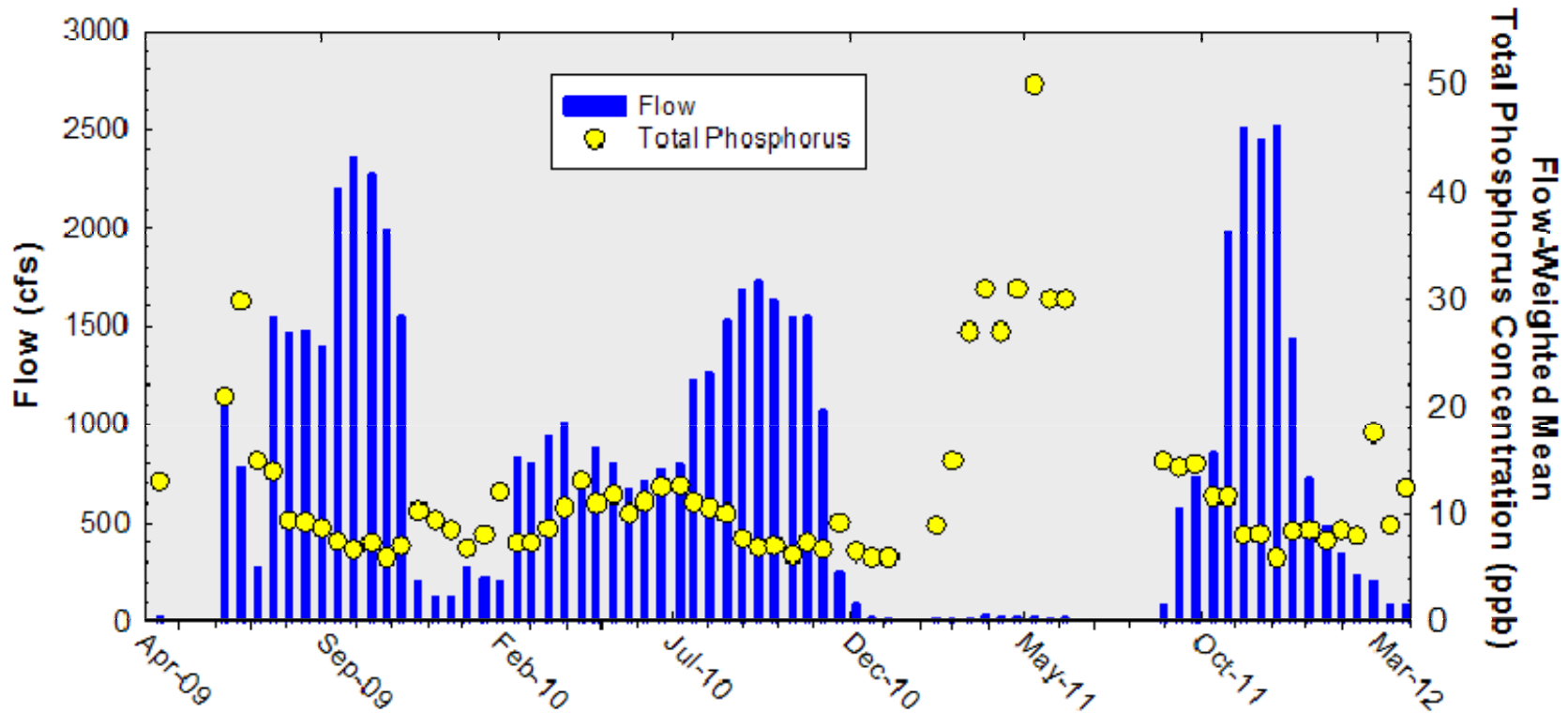


## Daily Flows at S333 and S334



# Shark River Slough

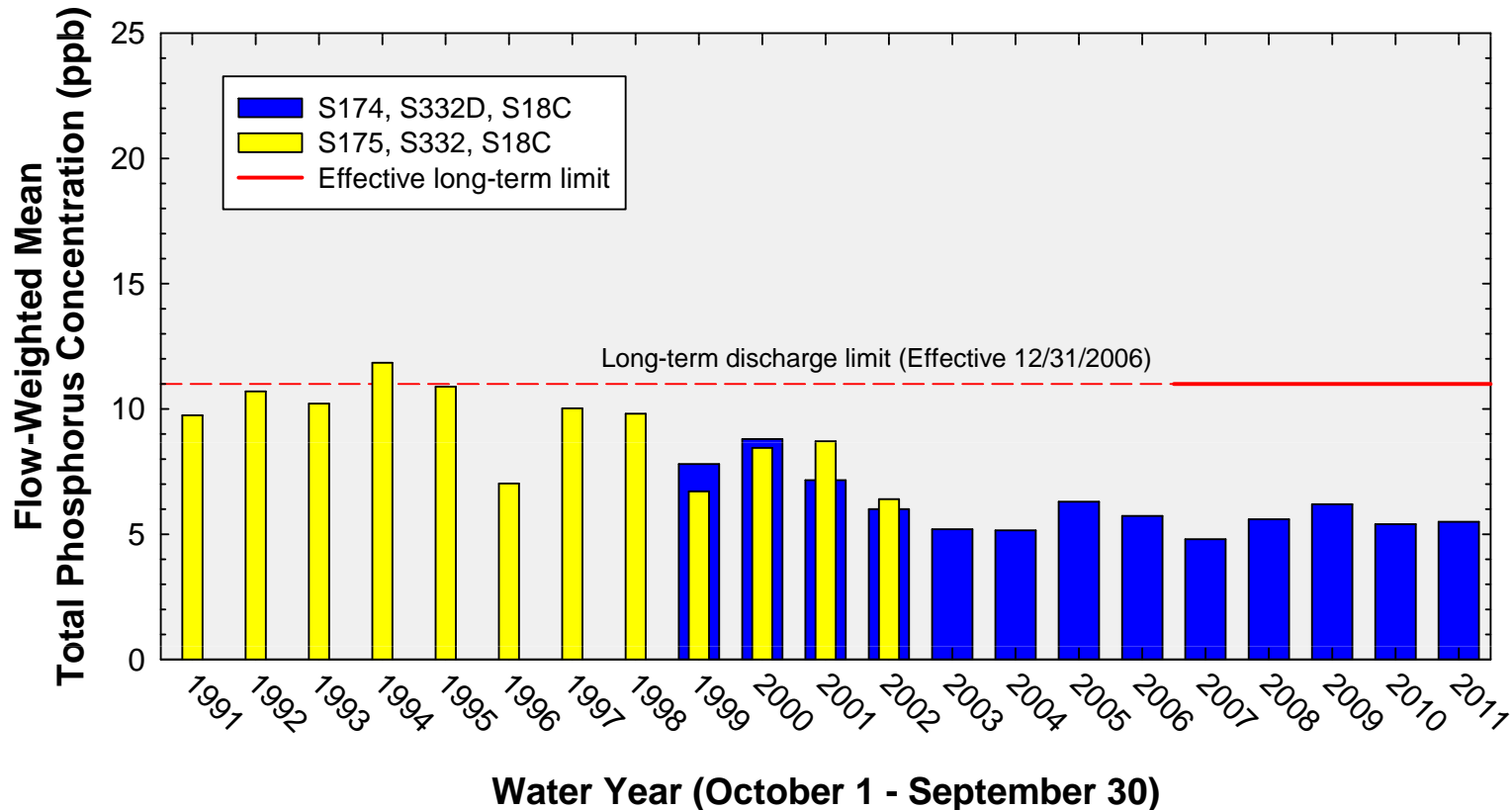
## Sampling Event Flow and FWMC



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

# Annual Flow-Weighted Mean Concentrations

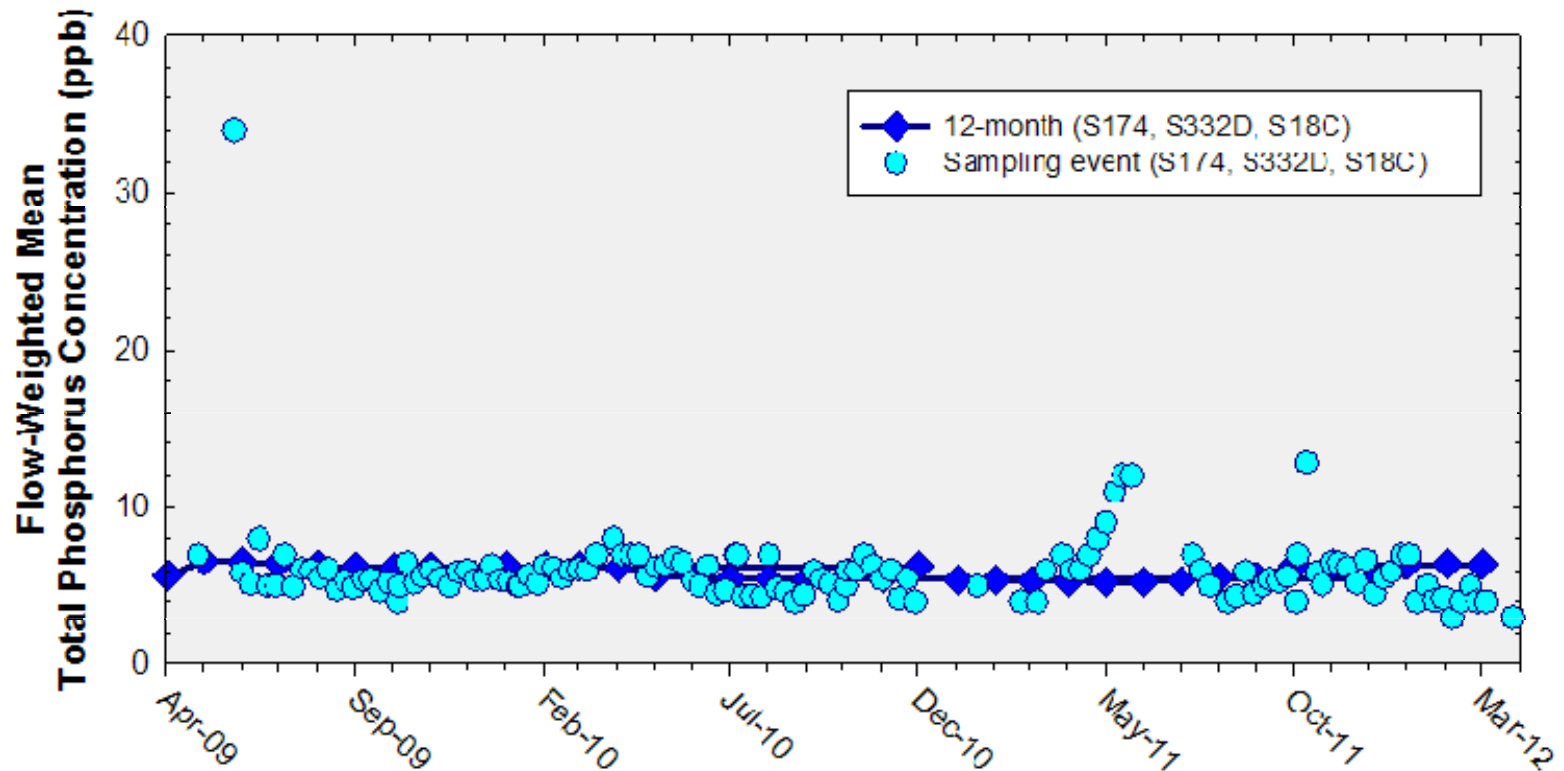
## Inflows to the ENP through Taylor Slough and Coastal Basins



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

# 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

# Taylor Slough and the Coastal Basins

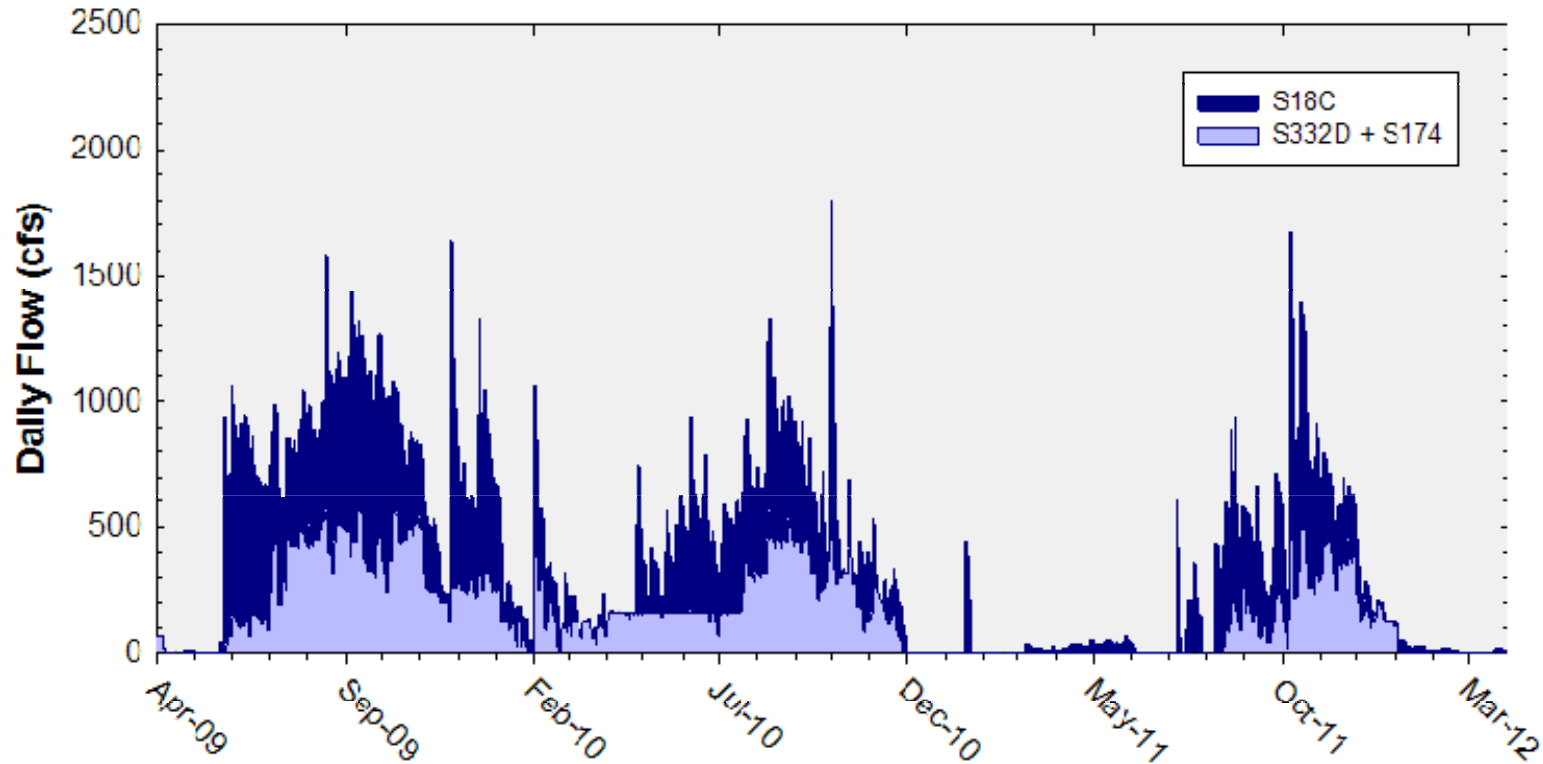
## TP Concentration Compliance Tracking

### for January 2012 – March 2012

| 12-Month<br>Period  | Total Flow<br>(kac-ft) | Flow-Weighted<br>Mean TP<br>Concentration (ppb) | Long-Term<br>Limit (ppb)<br><i>Effective<br/>12/31/2006</i> | Percent of Sampling Events<br>Greater than 10 ppb |              |
|---------------------|------------------------|---|---|---|--------------|
|                     |                        |   |   | Guideline   | Observed     |
| Feb 2011 - Jan 2012 | 169.5                  | 6.4 (6.3*)                                      | 11.0  | 53.1  | 10.0 (13.2*) |
| Mar 2011 - Feb 2012 | 170.2                  | 6.4 (6.3*)                                      | 11.0  | 53.1  | 9.3 (13.5*)  |
| Apr 2011 - Mar 2012 | 169.5                  | 6.4 (6.3*)                                      | 11.0  | 53.1  | 9.5 (14.7*)  |

\* Including the 5 qualified sample data collected in Water Year 2011

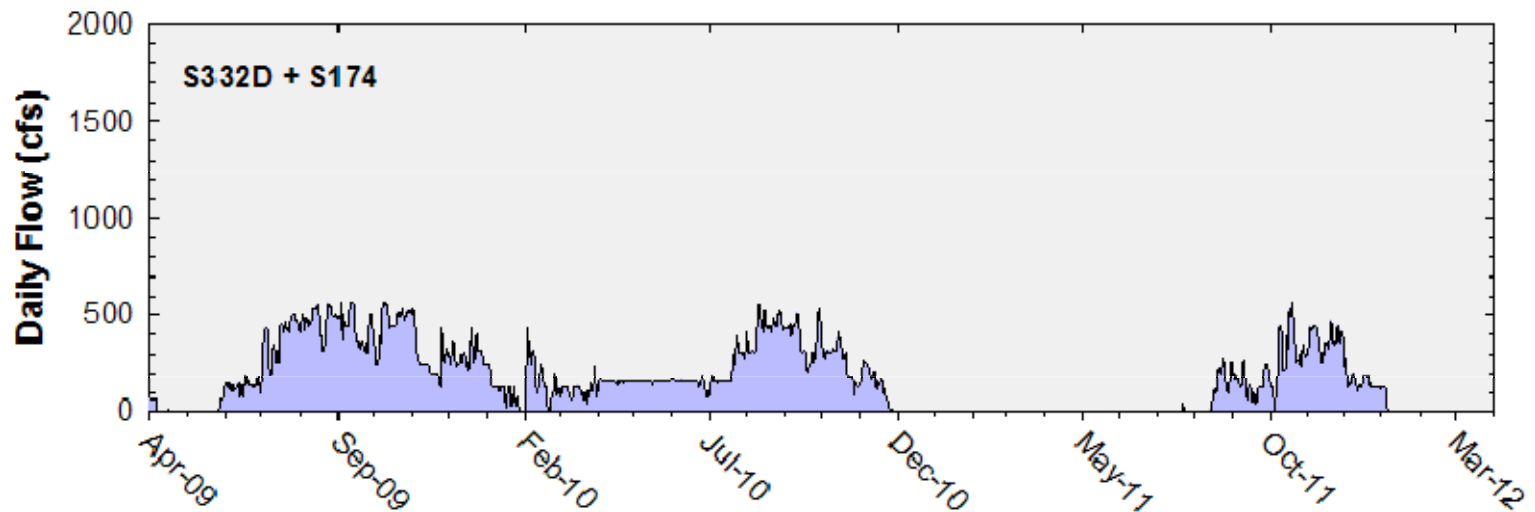
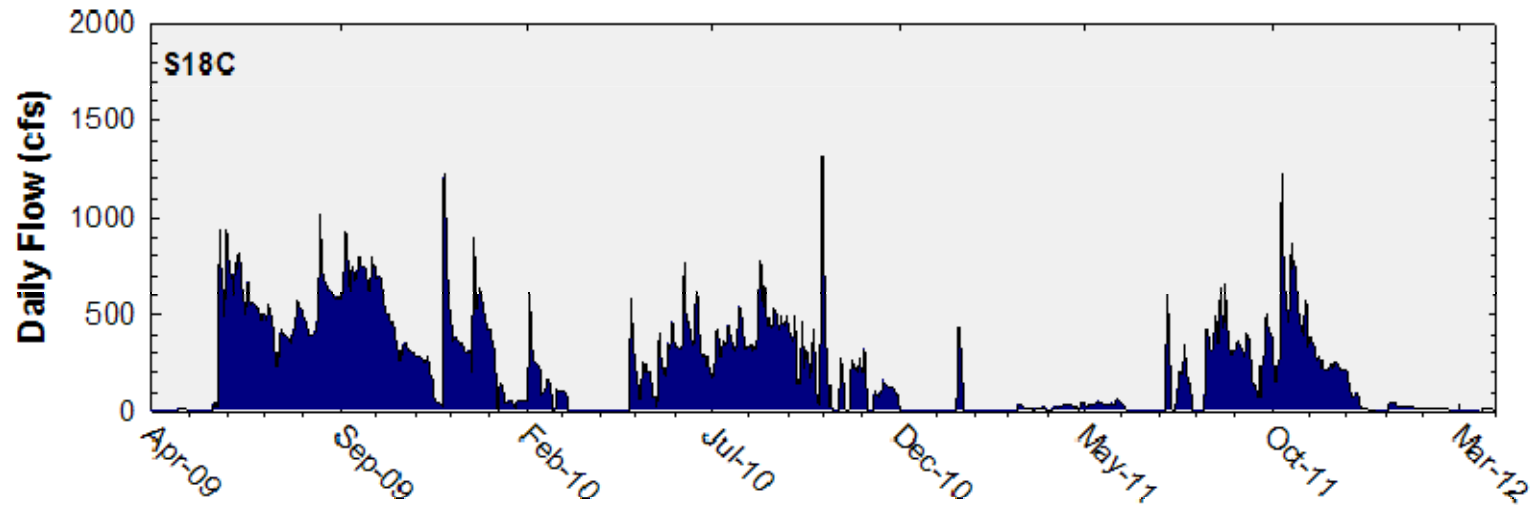
# Taylor Slough and Coastal Basins Daily Flows



**Daily flows into Everglades National Park through Taylor Slough and Coastal Basins**



## Daily Flows at individual Taylor Slough and Coastal Basins structures into the ENP





Thank You

