

# Settlement Agreement

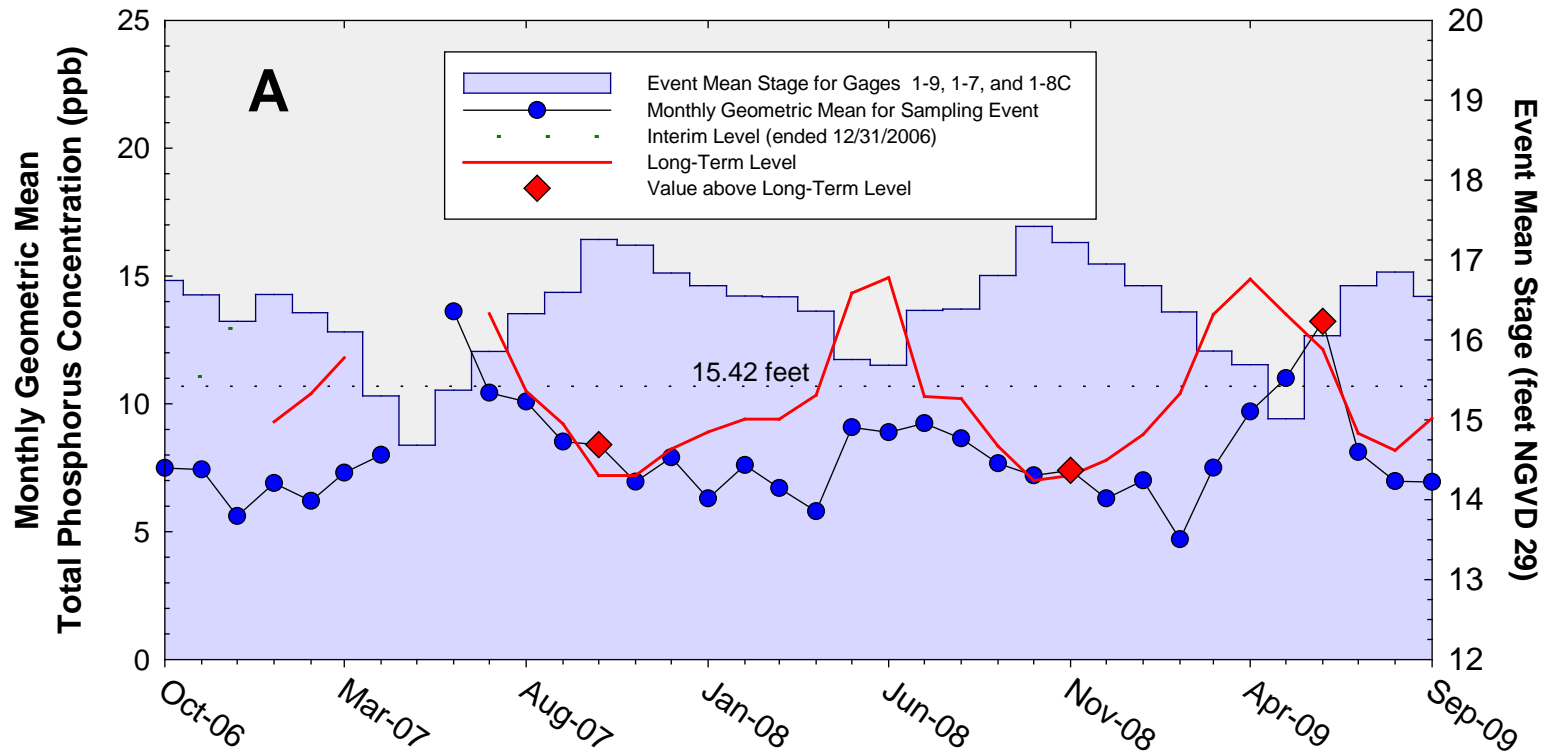
April - September 2009

Prepared for the  
Technical Oversight Committee  
December 15, 2009

# SUMMARY

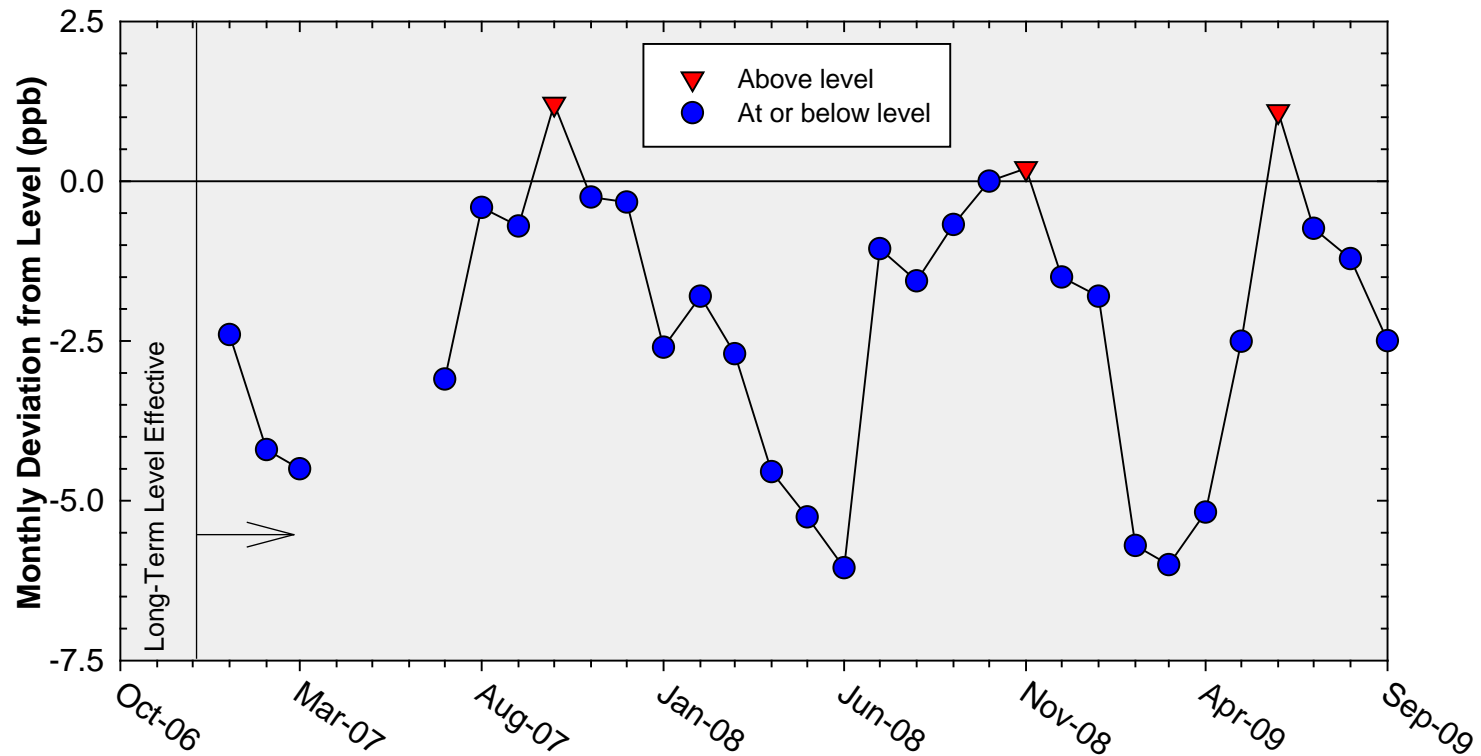
| Month  | Geometric Mean TP Concentration (ppb) | Long-term Level (ppb)                              | Mean Stage (ft NGVD 29) | Number of Samples                              |             |
|--|---------------------------------------|--|-------------------------|--|-------------|
| <b>Arthur R. Marshall Loxahatchee National Wildlife Refuge</b>         |                                       |  |                         |  |             |
| Jul-2009   | 7.4                                   | 9.8  | 16.47                   | 14   |             |
| Aug-2009   | 8.8                                   | 11.5   | 16.16                   | 14   |             |
| Sep-2009   | 8.1                                   | 8.9  | 16.68                   | 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</b>                   |                                       |  |                         |  |             |
| Jul-2009   | 1047.8                                | 8.3  | 7.7                     | 40.4   | 36.4        |
| Aug-2009   | 1022.2                                | 8.1  | 7.8                     | 41.0   | 27.3        |
| <i>Sep-2009</i>  | <i>948.0</i>                          | <i>8.2</i>   | <i>8.2</i>              | <i>42.7</i>                                    | <i>26.1</i> |
| <b>Everglades National Park – Taylor Slough and the Coastal Basins</b> |                                       |  |                         |  |             |
| Jul-2009   | 388.8                                 | 6.5  | 11.0                    | 53.1   | 1.9         |
| Aug-2009   | 398.6                                 | 6.3  | 11.0                    | 53.1   | 1.9         |
| <i>Sep-2009</i>  | <i>411.4</i>                          | <i>6.2</i>   | <i>11.0</i>             | <i>53.1</i>                                    | <i>2.2</i>  |

# 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



**Loxahatchee  
National Wildlife  
Refuge**

**Total Phosphorus  
Compliance  
Tracking**

| Month                       | Geometric Mean TP Concentration (ppb) | Interim Level (ppb)<br>2/1/1999-12/30/2006 | Long-Term Level (ppb)<br>Effective 12/31/2006 | Average Stage <sup>a</sup><br>(ft NGVD 29) | Number of Samples |
|-----------------------------|---------------------------------------|--|---|--|-------------------|
| Oct-2006                    | 7.5                                   | 10.1                                       |   | 16.74                                      | 14                |
| Nov-2006                    | 7.4                                   | 11.1                                       |   | 16.56                                      | 14                |
| Dec-2006                    | 5.6                                   | 13.4                                       |   | 16.23                                      | 11                |
| Jan-2007                    | 6.9                                   |  | 9.3   | 16.57                                      | 14                |
| Feb-2007                    | 6.2                                   |  | 10.4  | 16.34                                      | 13                |
| Mar-2007                    | 7.3                                   |  | 11.8  | 16.10                                      | 10                |
| Apr-2007                    | 8.0                                   |  | N/A <sup>b</sup>                              | 15.30                                      | 3                 |
| May-2007                    | ---                                   |  | N/A <sup>b</sup>                              | 14.68                                      | 0                 |
| Jun-2007                    | 13.6                                  |  | N/A <sup>b</sup>                              | 15.37                                      | 4                 |
| Jul-2007                    | 10.4                                  |  | 13.5  | 15.86                                      | 13                |
| Aug-2007                    | 10.1                                  |  | 10.5  | 16.33                                      | 13                |
| Sep-2007                    | 8.5                                   |  | 9.2   | 16.59                                      | 14                |
| <b>Oct-2007</b>             | <b>8.4</b>                            |  | <b>7.2</b>                                    | <b>17.26</b>                               | <b>14</b>         |
| Nov-2007                    | 7.0                                   |  | 7.2   | 17.19                                      | 14                |
| Dec-2007                    | 7.9                                   |  | 8.2   | 16.84                                      | 14                |
| Jan-2008                    | 6.3                                   |  | 8.9   | 16.68                                      | 14                |
| Feb-2008                    | 7.6                                   |  | 9.4   | 16.55                                      | 14                |
| Mar-2008                    | 6.7                                   |  | 9.4   | 16.54                                      | 14                |
| Apr-2008                    | 5.8                                   |  | 10.3  | 16.36                                      | 14                |
| May-2008                    | 9.1                                   |  | 14.3  | 15.76                                      | 9                 |
| Jun-2008                    | 8.9                                   |  | 14.9  | 15.68                                      | 8                 |
| Jul-2008                    | 9.2                                   |  | 10.3  | 16.37                                      | 14                |
| Aug-2008                    | 8.6                                   |  | 10.2  | 16.39                                      | 14                |
| Sep-2008                    | 7.7                                   |  | 8.3   | 16.81                                      | 14                |
| Oct-2008                    | 7.2                                   |  | 7.2   | 17.42                                      | 14                |
| <b>Nov-2008</b>             | <b>7.4</b>                            |  | <b>7.2</b>                                    | <b>17.22</b>                               | <b>14</b>         |
| Dec-2008                    | 6.3                                   |  | 7.8   | 16.95                                      | 14                |
| Jan-2009                    | 7.0                                   |  | 8.8   | 16.68                                      | 14                |
| Feb-2009                    | 4.7                                   |  | 10.4  | 16.35                                      | 12                |
| Mar-2009                    | 7.5                                   |  | 13.5  | 15.86                                      | 9                 |
| Apr-2009                    | 9.7                                   |  | 14.9  | 15.69                                      | 8                 |
| May-2009                    | 11.0                                  |  | N/A <sup>b</sup>                              | 15.01                                      | 1                 |
| <b>Jun-2009<sup>c</sup></b> | <b>13.2</b>                           |  | <b>12.1</b>                                   | <b>16.05</b>                               | <b>12</b>         |
| Jul-2009                    | 7.4                                   |  | 9.8   | 16.47                                      | 14                |
| Aug-2009                    | 8.8                                   |  | 11.5  | 16.16                                      | 14                |
| Sep-2009                    | 8.1                                   |  | 8.9   | 16.68                                      | 14                |

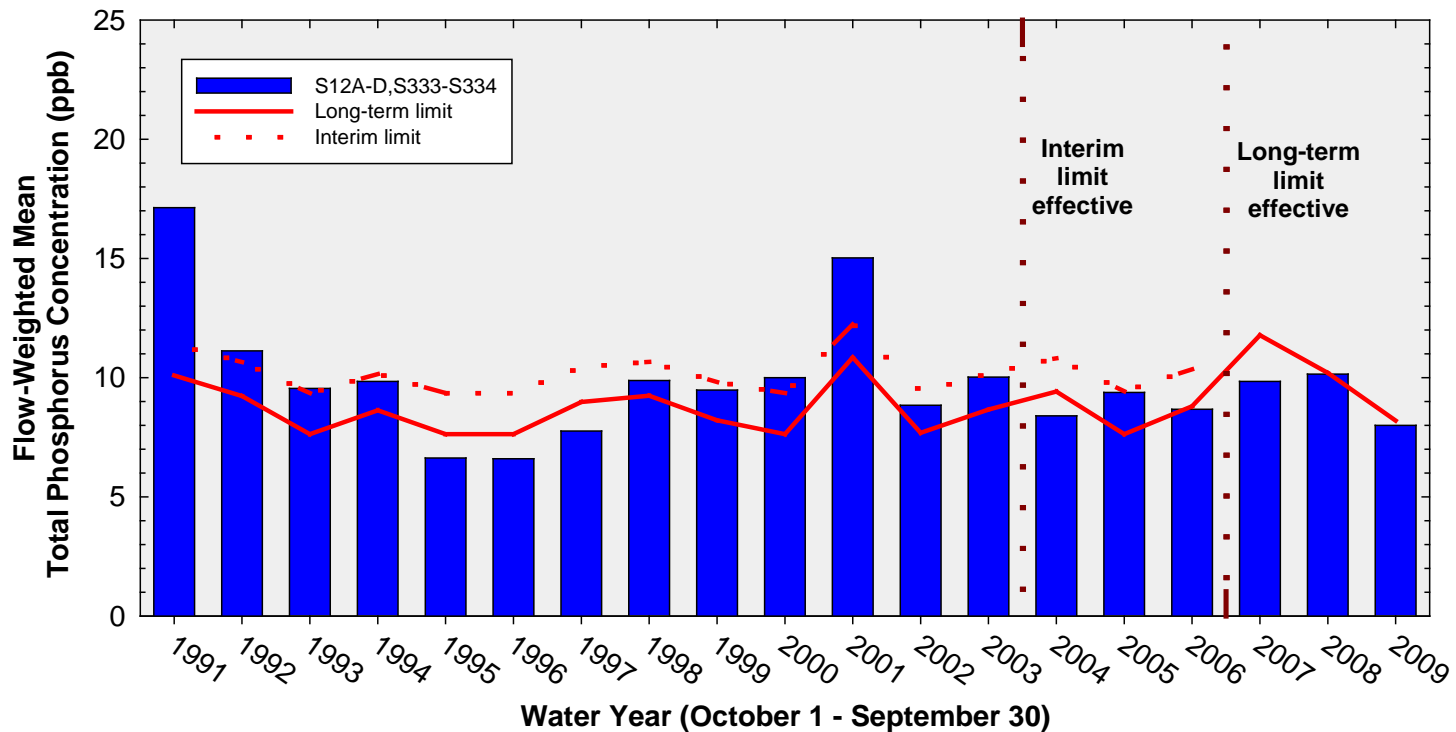
## Refuge TP Compliance Tracking for April 2009 – December 2009

| Month                   | Geometric Mean TP Concentration (ppb) | Long-Term Level (ppb) | Average Stage <sup>a</sup> (ft NGVD 29) | Number of Samples |
|-------------------------|---------------------------------------|-----------------------|---|-------------------|
| Apr-2009                | 9.7                                   | 14.9                  | 15.69                                   | 8                 |
| May-2009                | 11.0                                  | N/A <sup>b</sup>      | 15.01                                   | 1                 |
| <b><i>Jun-2009*</i></b> | <b><i>13.2</i></b>                    | <b><i>12.1</i></b>    | <b><i>16.05</i></b>                     | <b><i>12</i></b>  |
| Jul-2009                | 7.4                                   | 9.8                   | 16.47                                   | 14                |
| Aug-2009                | 8.8                                   | 11.5                  | 16.16                                   | 14                |
| Sep-2009                | 8.1                                   | 8.9                   | 16.68                                   | 14                |
| Oct-2009                | 7.0                                   | 8.2                   | 16.85                                   | 14                |
| Nov-2009                | 6.9                                   | 9.4                   | 16.55                                   | 14                |
| Dec-2009                | 5.8                                   | 10.4                  | 16.36                                   | 12                |

\* June 1 and 2, 2009, compliance sampling data.

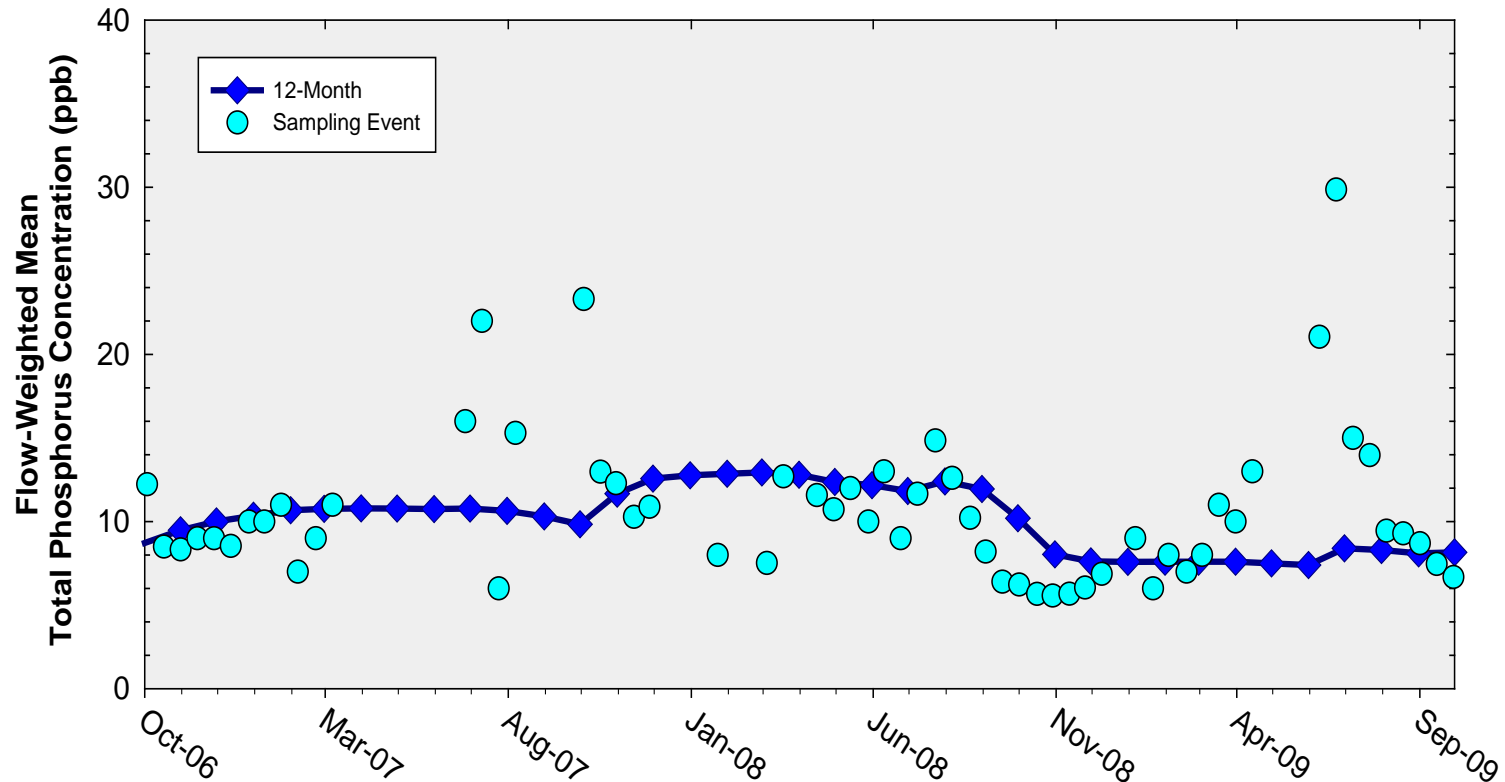
Note: October through December 2009 values are preliminary.

## 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.

## 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.**



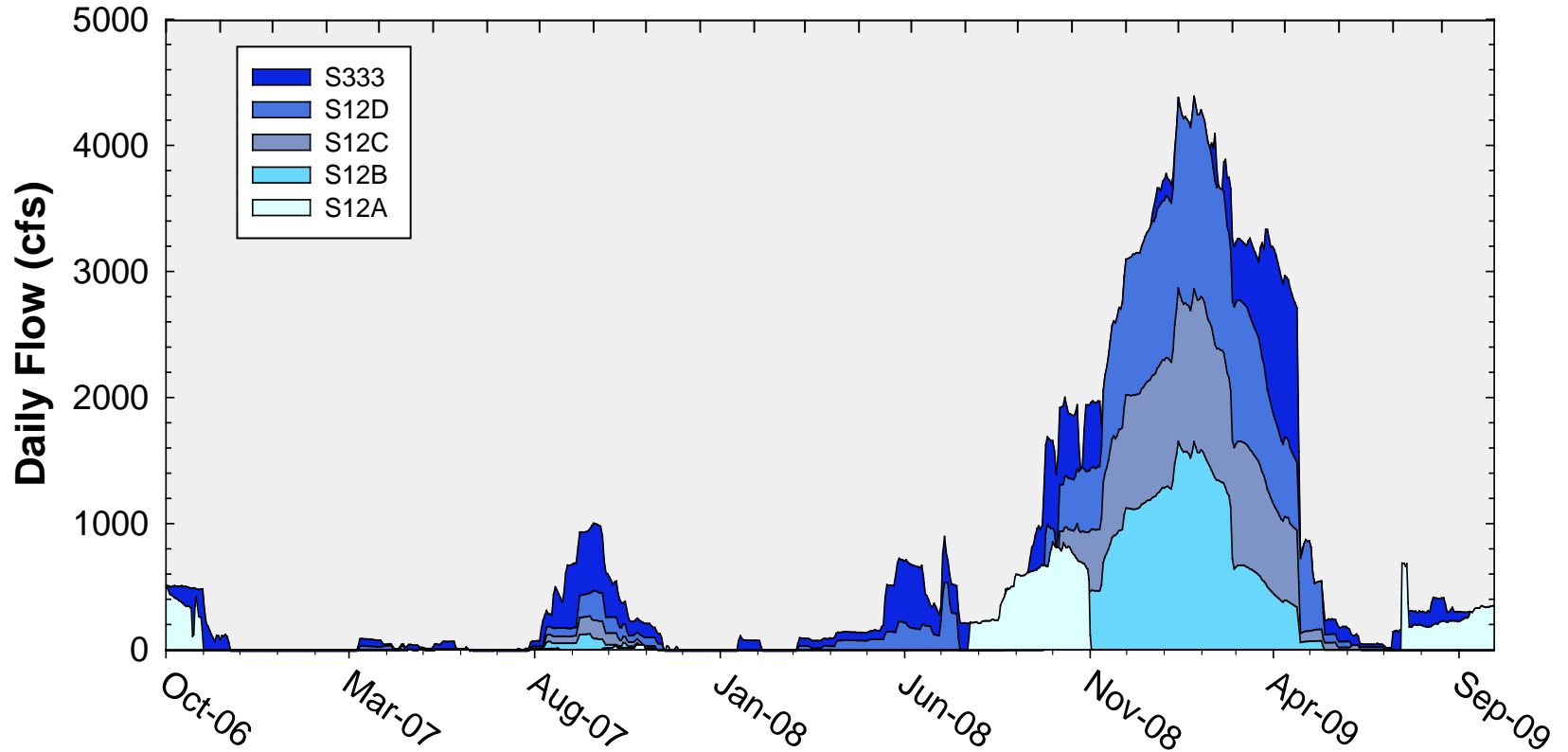
# Shark River Slough TP Concentration Compliance Tracking

| 12-Month Period            | Total Flow (kac-ft)  | Flow-Weighted Mean TP Concentration (ppb) | Interim Limit (ppb)<br><i>10/1/2003-12/30/2006</i> | Long-Term Limit (ppb)<br><i>Effective 12/31/2006</i> | Percent of Sampling Events Greater than 10 ppb |                         |
|----------------------------|----------------------|---|--|--|--|-------------------------|
|                            |                      |   |  |  | Guideline                                      | Observed                |
| Nov 2005 - Oct 2006        | 779.6 <sup>a,b</sup> | 9.5                                       | 10.5   |  | 46.9   | 50.0 <sup>c</sup>       |
| Dec 2005 - Nov 2006        | 642.8 <sup>a,b</sup> | 10.0                                      | 11.1   |  | 50.8   | 50.0                    |
| Jan 2006 - Dec 2006        | 507.9 <sup>a,b</sup> | 10.3                                      | 11.8   |  | 55.0   | 50.0                    |
| Feb 2006 - Jan 2007        | 446.1 <sup>a,b</sup> | 10.7                                      |  | 10.9   | 57.0   | 55.0                    |
| Mar 2006 - Feb 2007        | 442.4 <sup>b</sup>   | 10.8                                      |  | 10.9   | 57.2   | 52.4                    |
| Apr 2006 - Mar 2007        | 456.0 <sup>b</sup>   | 10.8                                      |  | 10.8   | 56.7   | 57.1 <sup>c</sup>       |
| May 2006 - Apr 2007        | 449.5 <sup>b</sup>   | 10.8                                      |  | 10.8   | 56.9   | 52.6                    |
| Jun 2006 - May 2007        | 445.5 <sup>b</sup>   | 10.7                                      |  | 10.9   | 57.1   | 47.1                    |
| Jul 2006 - Jun 2007        | 447.6 <sup>b</sup>   | 10.8                                      |  | 10.8   | 57.0   | 50.0                    |
| Aug 2006 - Jul 2007        | 444.6 <sup>b</sup>   | 10.6                                      |  | 10.9   | 57.1   | 47.4                    |
| Sep 2006 - Aug 2007        | 401.0                | 10.3                                      |  | 11.1   | 58.6   | 44.4                    |
| <b>Oct 2006 - Sep 2007</b> | <b>289.7</b>         | <b>9.8</b>                                |  | <b>11.8</b>  | <b>62.6</b>                                    | <b>37.5</b>             |
| Nov 2006 - Oct 2007        | 147.9                | 11.7                                      |  | 12.7   | 67.9   | 50.0                    |
| Dec 2006 - Nov 2007        | 121.2                | 12.6                                      |  | 12.8   | 68.9   | 62.5                    |
| Jan 2007 - Dec 2007        | 118.2                | 12.8                                      |  | 12.8   | 69.1   | 71.4 <sup>c</sup>       |
| Feb 2007 - Jan 2008        | 115.8                | 12.9                                      |  | 12.9   | 69.2   | 69.2                    |
| Mar 2007 - Feb 2008        | 106.8                | 12.9                                      |  | 12.9   | 69.5   | 81.8 <sup>c</sup>       |
| Apr 2007 - Mar 2008        | 88.9                 | 12.8                                      |  | 13.0   | 70.2   | 75.0 <sup>c</sup>       |
| May 2007 - Apr 2008        | 110.9                | 12.4                                      |  | 12.9   | 69.4   | 78.6 <sup>c</sup>       |
| Jun 2007 - May 2008        | 142.3                | 12.2                                      |  | 12.7   | 68.1   | 75.0 <sup>c</sup>       |
| Jul 2007 - Jun 2008        | 153.6                | 11.8                                      |  | 12.6   | 67.7   | 70.6 <sup>c</sup>       |
| Aug 2007 - Jul 2008        | 227.4                | 12.4                                      |  | 12.2   | 64.9   | 76.5 <sup>c</sup>       |
| Sep 2007 - Aug 2008        | 356.8                | 12.0                                      |  | 11.4   | 60.1   | 77.8 <sup>c</sup>       |
| <b>Oct 2007 - Sep 2008</b> | <b>562.0</b>         | <b>10.2</b>                               |  | <b>10.2</b>  | <b>53.3</b>                                    | <b>70.0<sup>c</sup></b> |
| Nov 2007 - Oct 2008        | 775.9                | 8.0                                       |  | 9.0  | 47.0   | 55.0 <sup>c</sup>       |
| Dec 2007 - Nov 2008        | 935.4                | 7.6                                       |  | 8.2  | 43.0   | 45.0 <sup>c</sup>       |
| Jan 2008 - Dec 2008        | 1003.1               | 7.6                                       |  | 7.9  | 41.4   | 42.9 <sup>c</sup>       |
| Feb 2008 - Jan 2009        | 1007.1               | 7.6                                       |  | 7.9  | 41.3   | 40.9                    |
| Mar 2008 - Feb 2009        | 1021.5               | 7.6                                       |  | 7.8  | 41.0   | 37.5                    |
| Apr 2008 - Mar 2009        | 1030.3               | 7.6                                       |  | 7.8  | 40.8   | 36.0                    |
| May 2008 - Apr 2009        | 1024.2               | 7.5                                       |  | 7.8  | 40.9   | 33.3                    |
| Jun 2008 - May 2009        | 992.8                | 7.4                                       |  | 8.0  | 41.6   | 31.8                    |
| Jul 2008 - Jun 2009        | 1035.1               | 8.4                                       |  | 7.8  | 40.7   | 36.4                    |
| Aug 2008 - Jul 2009        | 1047.8               | 8.3                                       |  | 7.7  | 40.4   | 36.4                    |
| Sep 2008 - Aug 2009        | 1022.2               | 8.1                                       |  | 7.8  | 41.0   | 27.3                    |
| <b>Oct 2008 - Sep 2009</b> | <b>948.0</b>         | <b>8.2</b>                                |  | <b>8.2</b>   | <b>42.7</b>                                    | <b>26.1</b>             |

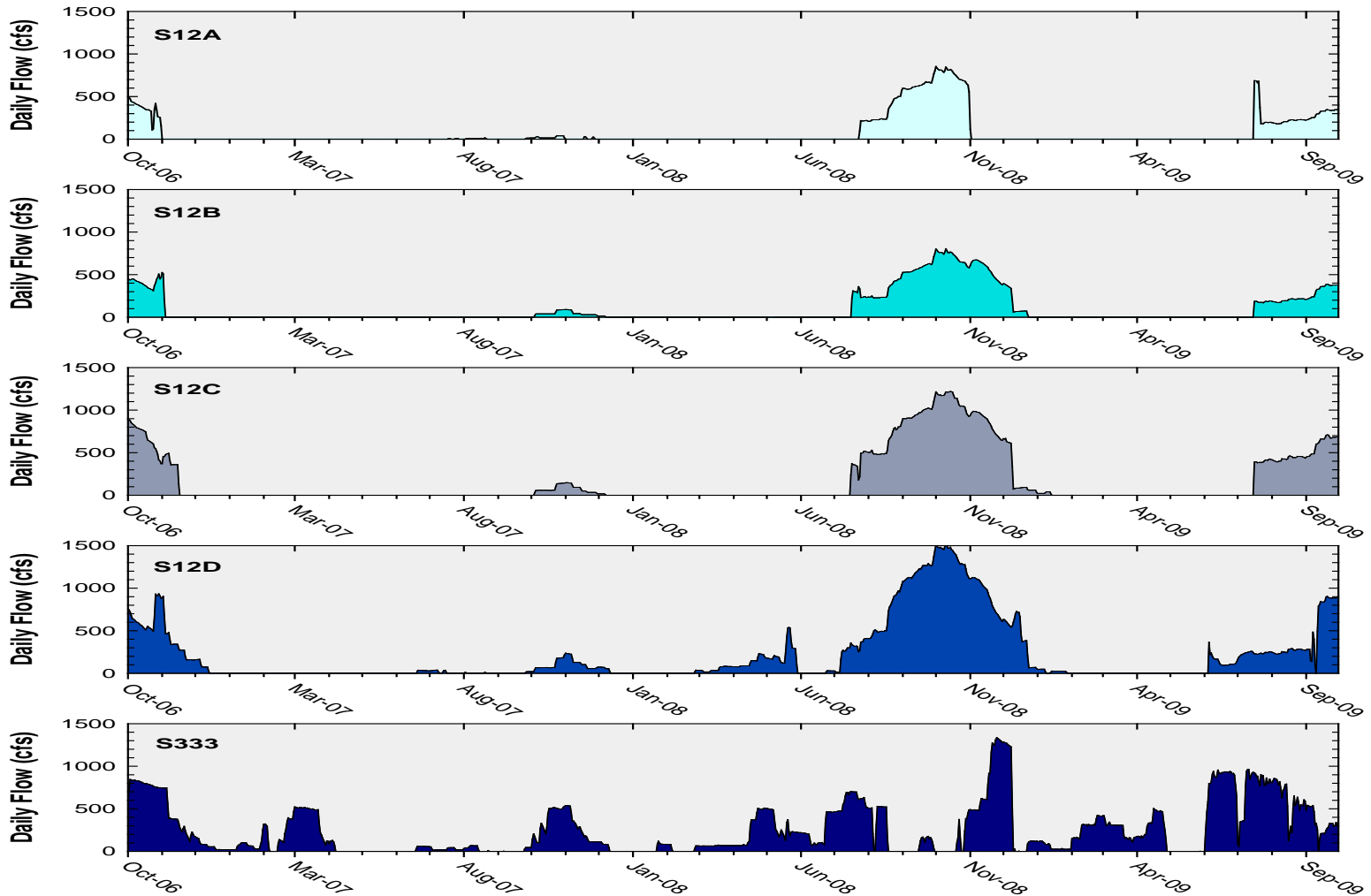
## Shark River Slough TP Concentration Compliance Tracking for April 2009 – September 2009

| 12-Month Period                   | Total Flow (kac-ft) | Flow-Weighted Mean TP Concentration (ppb) | Long-Term Limit (ppb)<br><i>Effective 12/31/2006</i> | Percent of Sampling Events Greater than 10 ppb |                    |
|-----------------------------------|---------------------|---|--|--|--------------------|
|                                   |                     |   |  | Guideline                                      | Observed           |
| May 2008 - Apr 2009               | 1024.2              | 7.5                                       | 7.8  | 40.9   | 33.3               |
| Jun 2008 - May 2009               | 992.8               | 7.4                                       | 8.0  | 41.6   | 31.8               |
| Jul 2008 - Jun 2009               | 1035.1              | 8.4                                       | 7.8  | 40.7   | 36.4               |
| Aug 2008 - Jul 2009               | 1047.8              | 8.3                                       | 7.7  | 40.4   | 36.4               |
| Sep 2008 - Aug 2009               | 1022.2              | 8.1                                       | 7.8  | 41.0   | 27.3               |
| <b><i>Oct 2008 - Sep 2009</i></b> | <b><i>948.0</i></b> | <b><i>8.2</i></b>                         | <b><i>8.2</i></b>                                    | <b><i>42.7</i></b>                             | <b><i>26.1</i></b> |

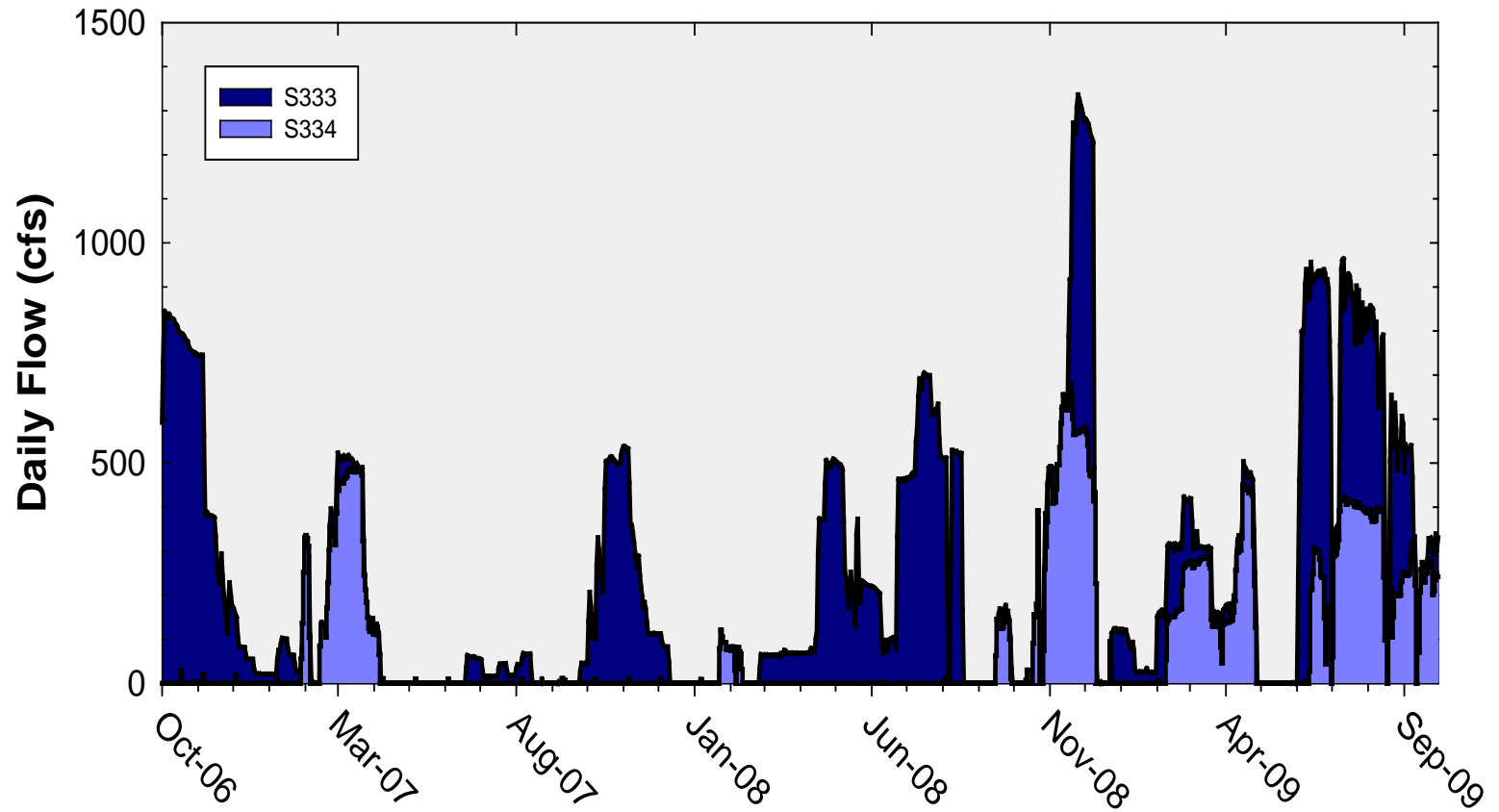
## Shark River Slough Daily Flows



# Daily Flows at individual inflow structures to Shark River Slough

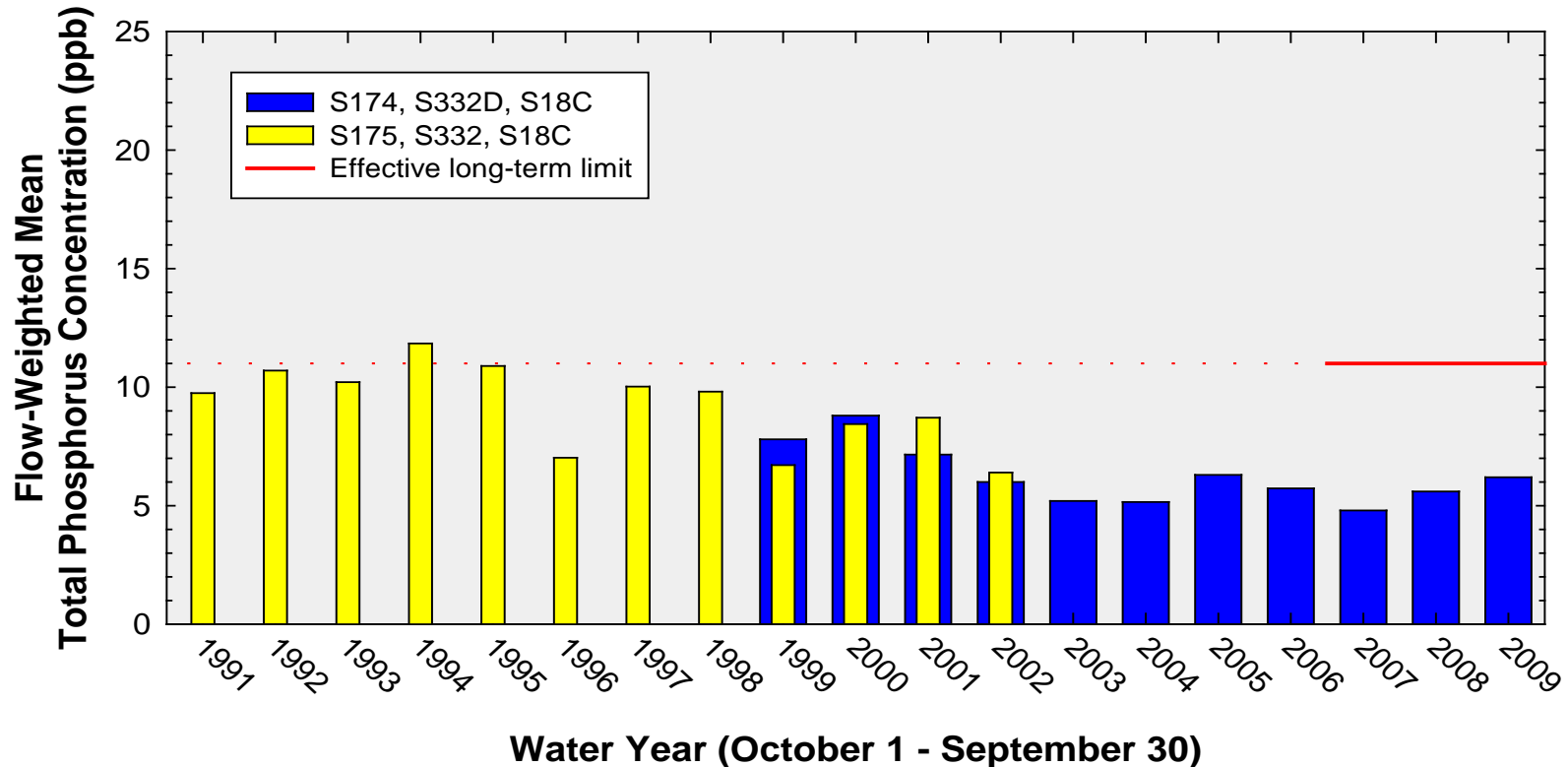


## Daily Flows at S333 and S334





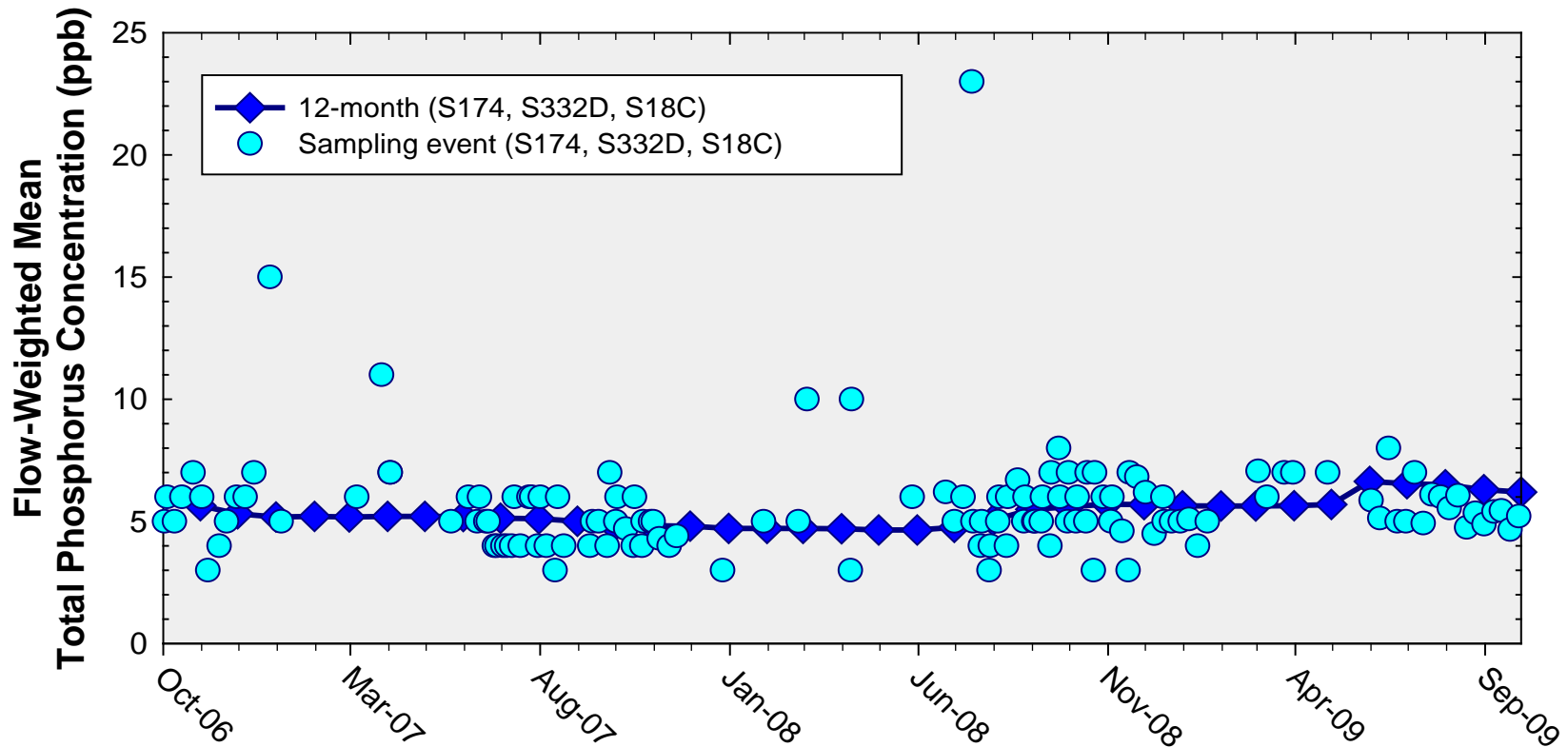
# TP Flow-Weighted Mean Concentrations Inflows to the ENP through Taylor Slough and the Coastal Basins



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

# TP Flow-Weighted Mean Concentrations

## Inflows to the ENP through Taylor Slough and the 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

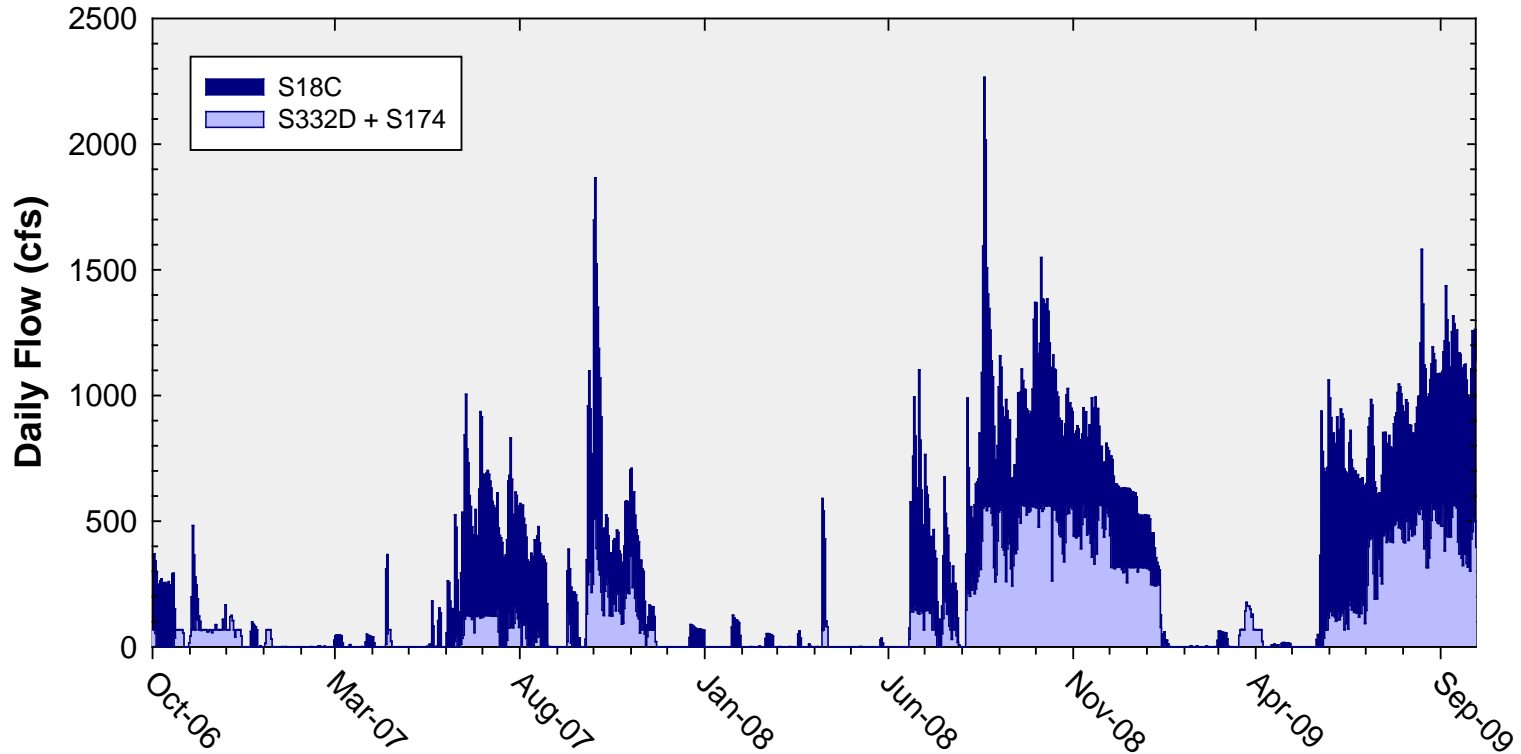
## Compliance Tracking

| 12-Month Period                   | Total Flow (kac-ft) | Flow-Weighted Mean TP Concentration (ppb) | Long-Term Limit (ppb)<br><i>Effective 12/31/2006</i> | Percent of Sampling Events Greater than 10 ppb |                   |
|-----------------------------------|---------------------|---|--|--|-------------------|
|                                   |                     |   |  | Guideline                                      | Observed          |
| Nov 2005 - Oct 2006               | 179.5               | 5.6                                       | 11.0   | 53.1   | 3.9               |
| Dec 2005 - Nov 2006               | 158.8               | 5.3                                       | 11.0   | 53.1   | 3.9               |
| Jan 2006 - Dec 2006               | 137.4               | 5.2                                       | 11.0   | 53.1   | 6.0               |
| Feb 2006 - Jan 2007               | 127.6               | 5.2                                       | 11.0   | 53.1   | 6.4               |
| Mar 2006 - Feb 2007               | 125.4               | 5.2                                       | 11.0   | 53.1   | 7.0               |
| Apr 2006 - Mar 2007               | 123.8               | 5.2                                       | 11.0   | 53.1   | 10.0              |
| May 2006 - Apr 2007               | 125.4               | 5.2                                       | 11.0   | 53.1   | 10.0              |
| Jun 2006 - May 2007               | 126.0               | 5.2                                       | 11.0   | 53.1   | 7.5               |
| Jul 2006 - Jun 2007               | 153.0               | 5.1                                       | 11.0   | 53.1   | 6.5               |
| Aug 2006 - Jul 2007               | 153.4               | 5.1                                       | 11.0   | 53.1   | 6.4               |
| Sep 2006 - Aug 2007               | 143.5               | 5.0                                       | 11.0   | 53.1   | 6.5               |
| <b><i>Oct 2006 - Sep 2007</i></b> | <b><i>120.7</i></b> | <b><i>4.8</i></b>                         | <b><i>11.0</i></b>                                   | <b><i>53.1</i></b>                             | <b><i>4.7</i></b> |
| Nov 2006 - Oct 2007               | 150.3               | 4.8                                       | 11.0   | 53.1   | 4.3               |
| Dec 2006 - Nov 2007               | 155.7               | 4.8                                       | 11.0   | 53.1   | 4.4               |
| Jan 2007 - Dec 2007               | 154.6               | 4.7                                       | 11.0   | 53.1   | 2.3               |
| Feb 2007 - Jan 2008               | 155.5               | 4.7                                       | 11.0   | 53.1   | 2.3               |
| Mar 2007 - Feb 2008               | 156.1               | 4.7                                       | 11.0   | 53.1   | 2.3               |
| Apr 2007 - Mar 2008               | 155.4               | 4.7                                       | 11.0   | 53.1   | 0.0               |
| May 2007 - Apr 2008               | 157.1               | 4.6                                       | 11.0   | 53.1   | 0.0               |
| Jun 2007 - May 2008               | 155.9               | 4.6                                       | 11.0   | 53.1   | 0.0               |
| Jul 2007 - Jun 2008               | 145.0               | 4.8                                       | 11.0   | 53.1   | 0.0               |
| Aug 2007 - Jul 2008               | 130.0               | 5.0                                       | 11.0   | 53.1   | 2.6               |
| Sep 2007 - Aug 2008               | 165.6               | 5.5                                       | 11.0   | 53.1   | 2.5               |
| <b><i>Oct 2007 - Sep 2008</i></b> | <b><i>207.7</i></b> | <b><i>5.6</i></b>                         | <b><i>11.0</i></b>                                   | <b><i>53.1</i></b>                             | <b><i>2.2</i></b> |
| Nov 2007 - Oct 2008               | 234.8               | 5.7                                       | 11.0   | 53.1   | 2.3               |
| Dec 2007 - Nov 2008               | 273.0               | 5.7                                       | 11.0   | 53.1   | 2.2               |
| Jan 2008 - Dec 2008               | 308.8               | 5.6                                       | 11.0   | 53.1   | 2.0               |
| Feb 2008 - Jan 2009               | 317.1               | 5.6                                       | 11.0   | 53.1   | 1.9               |
| Mar 2008 - Feb 2009               | 316.5               | 5.6                                       | 11.0   | 53.1   | 1.9               |
| Apr 2008 - Mar 2009               | 320.0               | 5.6                                       | 11.0   | 53.1   | 1.8               |
| May 2008 - Apr 2009               | 317.6               | 5.7                                       | 11.0   | 53.1   | 1.9               |
| Jun 2008 - May 2009               | 329.2               | 6.6                                       | 11.0   | 53.1   | 3.7               |
| Jul 2008 - Jun 2009               | 358.3               | 6.5                                       | 11.0   | 53.1   | 3.5               |
| Aug 2008 - Jul 2009               | 388.8               | 6.5                                       | 11.0   | 53.1   | 1.9               |
| Sep 2008 - Aug 2009               | 398.6               | 6.3                                       | 11.0   | 53.1   | 1.9               |
| <b><i>Oct 2008 - Sep 2009</i></b> | <b><i>411.4</i></b> | <b><i>6.2</i></b>                         | <b><i>11.0</i></b>                                   | <b><i>53.1</i></b>                             | <b><i>2.2</i></b> |

## Taylor Slough and the Coastal Basins TP Concentration Compliance Tracking for April 2009 – September 2009

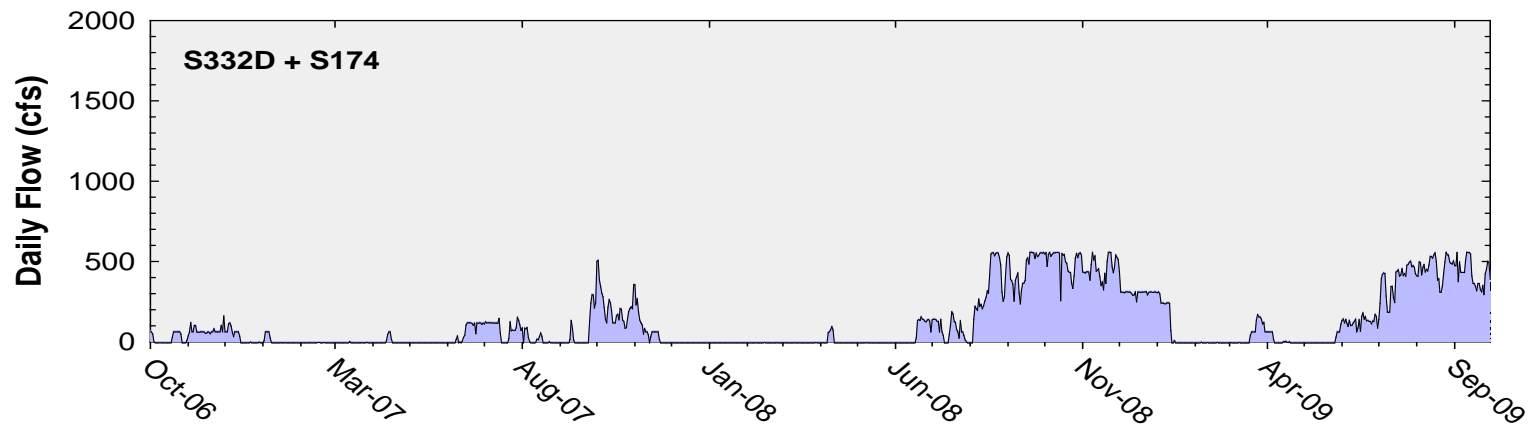
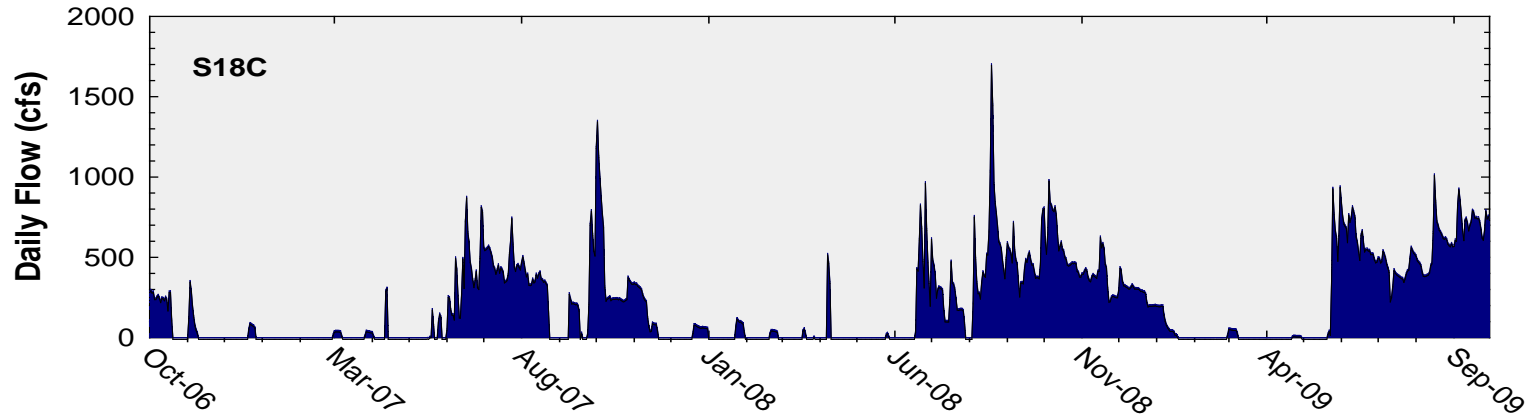
| 12-Month Period            | Total Flow<br>(kac-ft) | Flow-<br>Weighted<br>Mean TP<br>Concentration<br>(ppb) | Long-Term<br>Limit (ppb)<br><i>Effective<br/>12/31/2006</i> | Percent of Sampling Events<br>Greater than 10 ppb |            |
|----------------------------|------------------------|--|---|---|------------|
|                            |                        |  |   | Guideline   | Observed   |
| May 2008 - Apr 2009        | 317.6                  | 5.7  | 11.0  | 53.1  | 1.9        |
| Jun 2008 - May 2009        | 329.2                  | 6.6  | 11.0  | 53.1  | 3.7        |
| Jul 2008 - Jun 2009        | 358.3                  | 6.5  | 11.0  | 53.1  | 3.5        |
| Aug 2008 - Jul 2009        | 388.8                  | 6.5  | 11.0  | 53.1  | 1.9        |
| Sep 2008 - Aug 2009        | 398.6                  | 6.3  | 11.0  | 53.1  | 1.9        |
| <i>Oct 2008 - Sep 2009</i> | <i>411.4</i>           | <i>6.2</i>   | <i>11.0</i>   | <i>53.1</i>                                       | <i>2.2</i> |

## Taylor Slough and S18C Daily Flows

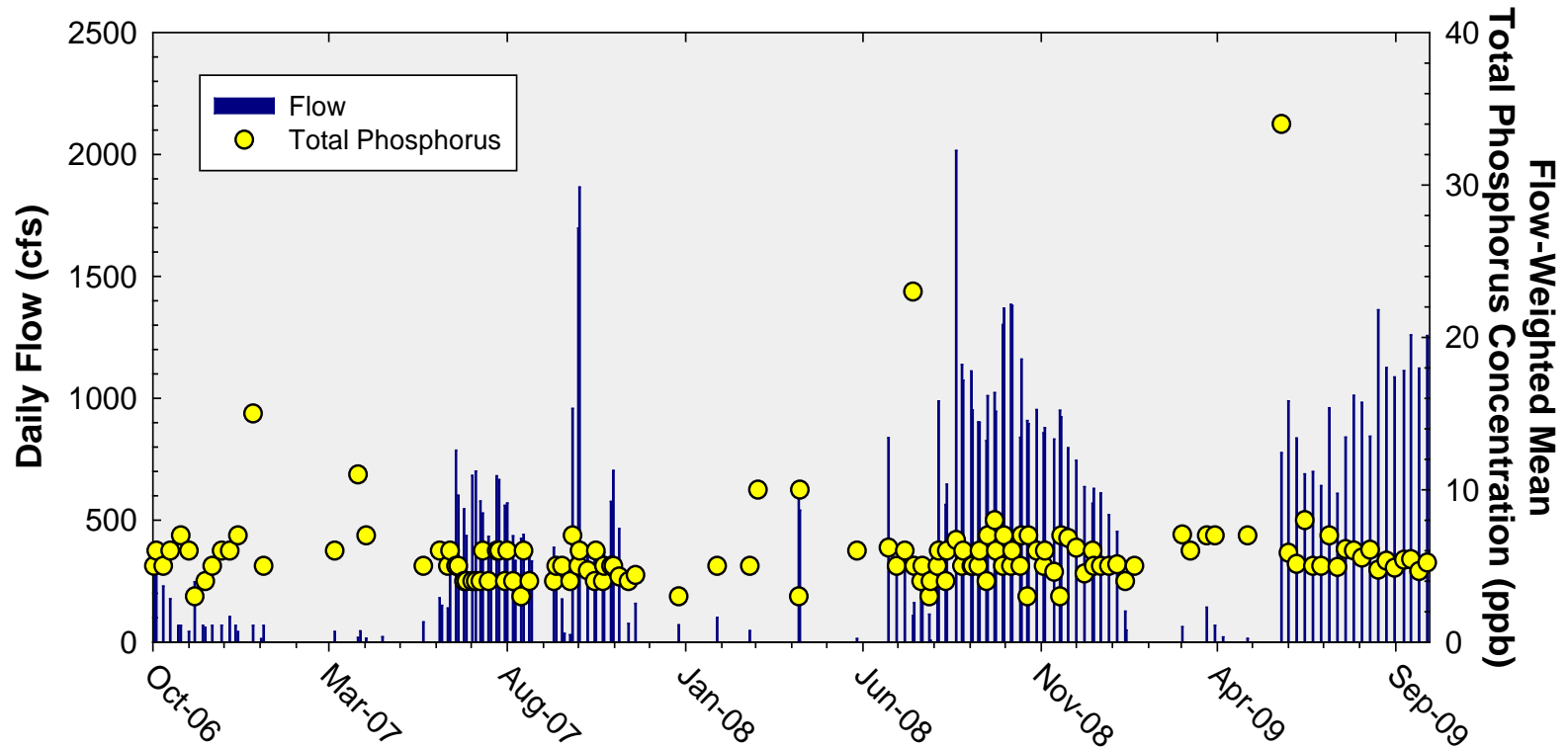


**Daily flows into Everglades National Park through Taylor Slough and S18C.**

## Daily Flows at individual Taylor Slough structures into the ENP



## Taylor Slough and S18C Sampling Event Flows and FWMC



Daily flows at Taylor Slough structures and S18C and the corresponding TP for individual sampling events.