#### **Technical Oversight Committee**

February 28, 2012

### SETTLEMENT AGREEMENT REPORT

October - December 2011

**Stuart Van Horn** 

Section Leader, Compliance Assessment and Reporting Section Water Quality Bureau



### **SUMMARY**

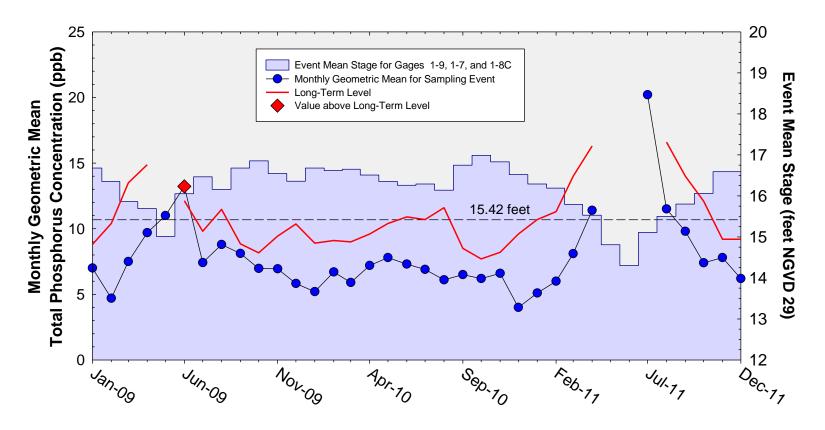
Month			netric Mean Long-ter entration (ppb) (pp			Mean Stage (ft NGVD 29)		Number of Samples	
Arthur R. Marshall Loxahatchee National Wildlife Refuge									
Oct 2011			7.4	12.1		16.06		11	
Nov 20:	Nov 2011		7.8 9.3		2	16.59		14	
Dec 20:	Dec 2011		2 (7.0*) 9.2		2	16.59 (16.59*)		7 (14*)	
Derind 1		l Flow	Flow-weighted l		lean Long-term		Percent of Sampling Events Greater than 10 ppb		
		c-ft)	TP Concentra		(pp	b)	Guidelin	е	Observed
Everglades National Park — Shark River Slough									
Oct 2011	22	28.4	11.7		12.	2	64.8		68.4
Nov 2011	36	52.0	10.4		11.	3	59.9		68.4
Dec 2011	46	53.0	9.5 (9.6**)		10.	8	56.5		68.4 (68.4**)
Everglades National Park - Taylor Slough and Coastal Basins									
Oct 2011	13	34.6	6.3	3	11.	0	53.1		12.1
Nov 2011	/ 2011 157.9		6.4		11.	0	53.1		12.5
Dec 2011	c 2011 170.2		6.3	3	11.	0	53.1		11.1

<sup>\*</sup> Including qualified data

<sup>\*\*</sup> Excluding re-sampled datum



#### A.R.M Loxahatchee National Wildlife Refuge Monthly Total Phosphorus Geometric Mean Concentrations

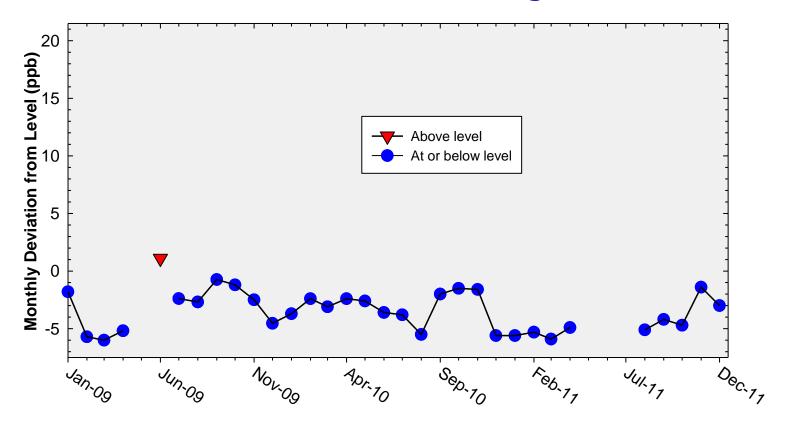


Note: Long-term level was not applicable for May 2009, May 2011, June 2011, and July 2011 (average stage < 15.42 ft).



#### 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 October 2011 – January 2012

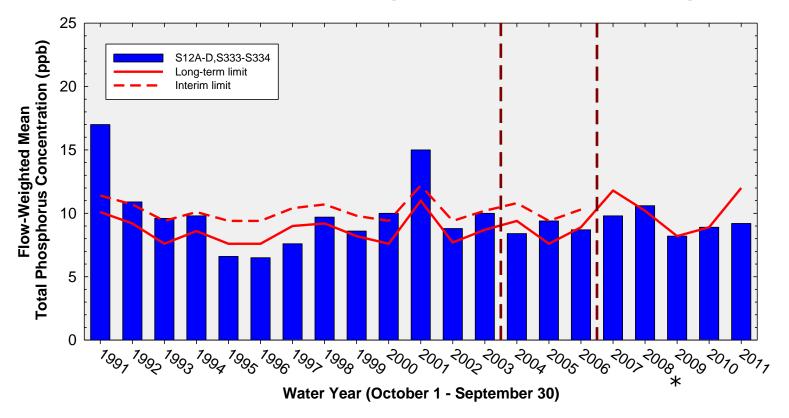
Month	Geometric Mean TP Concentration (ppb)	Long-Term Level (ppb) Effective 12/31/2006	Average Stage (ft NGVD 29)	Number of Samples
Oct-2011	7.4	12.1	16.06	11
Nov-2011	7.8	9.2	16.59	14
Dec-2011	6.2 (7.0*)	9.2	16.59 (16.59*)	7 (14*)
Jan-2012	6.0	10.0	16.43	14

<sup>\*</sup> Including qualified data

Note: January 2012 values are preliminary.



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

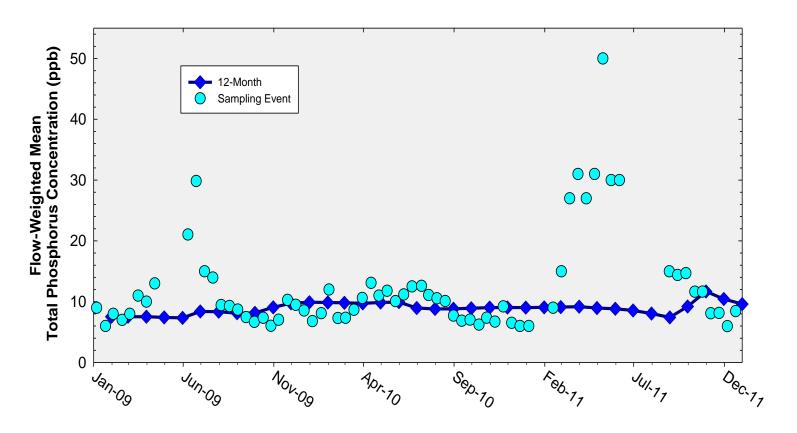


12-month FWMC at the end of each water year compared to the TP interim and long-term limits

\* 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



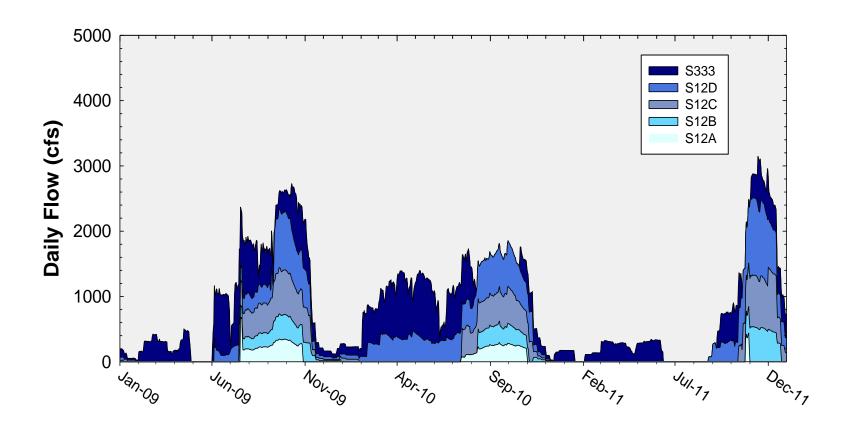
## **Shark River Slough TP Concentration Compliance Tracking for October 2011 – December 2011**

12-Month	Total Flow	Flow-Weighted  Mean TP	Long-Term Limit (ppb) Effective 12/31/2006	Percent of Sampling Events Greater than 10 ppb	
Period	(kac-ft)	Concentration (ppb)		Guideline	Observed
Nov 2010 - Oct 2011	228.4	11.7	12.2	64.8	68.4
Dec 2010 - Nov 2011	362.0	10.4	11.3	59.9	68.4
Jan 2011 - Dec 2011	463.0	9.5 (9.6*)	10.8	56.5	68.4 (68.4*)



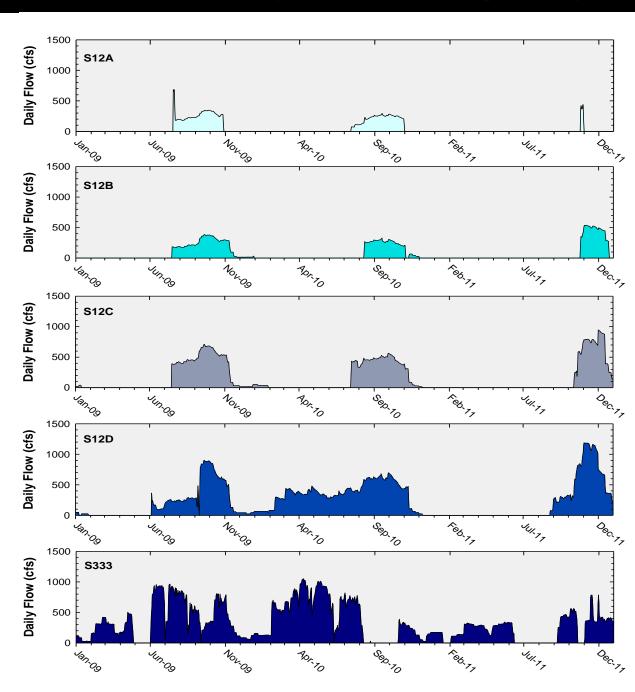
<sup>\*</sup> Excluding the re-sampled datum (7 ppb) at S12D on December 8, 2011

#### **Shark River Slough Daily Flows**



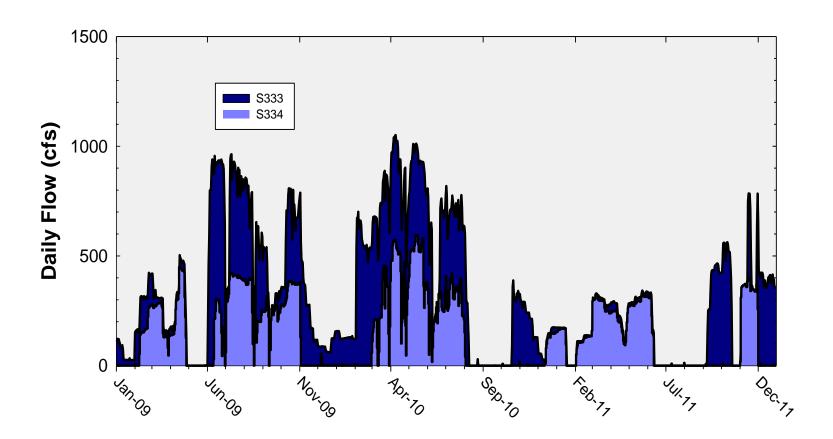


Daily Flows at individual inflow structures to Shark River Slough



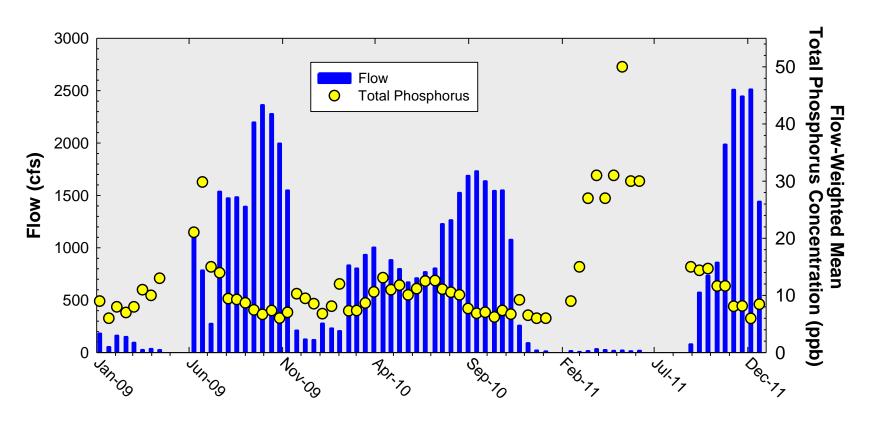


#### Daily Flows at S333 and S334





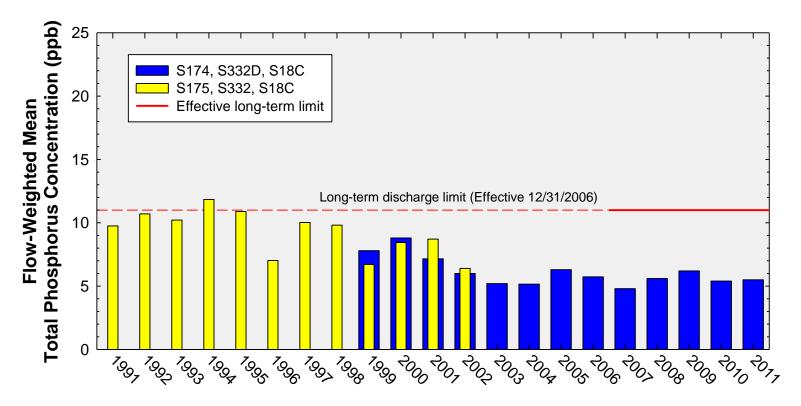
## **Shark River Slough Sampling Event Flow and FWMC**



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



## **Annual Flow-Weighted Mean Concentrations**Inflows to the ENP

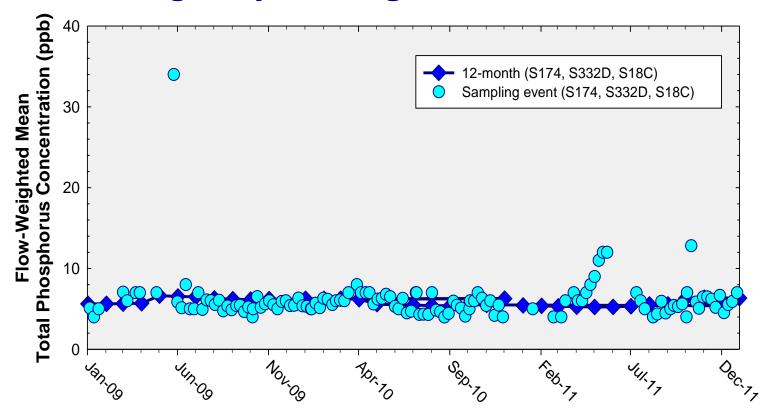


Water Year (October 1 - September 30)

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

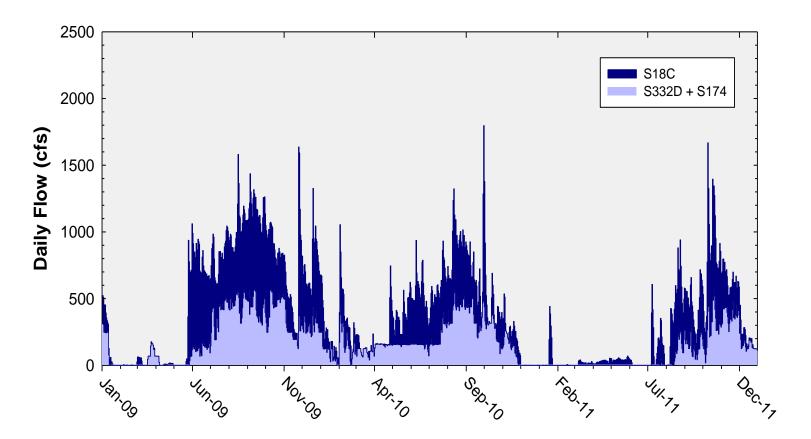


## Taylor Slough and the Coastal Basins TP Concentration Compliance Tracking for October 2011 – December 2011

12-Month	Total Flow	Flow-Weighted Mean TP	Long-Term Limit (ppb)	Percent of Sampling Events Greater than 10 ppb	
Period	(kac-ft)	Concentration (ppb)	Effective 12/31/2006	Guideline	Observed
Nov 2010 - Oct 2011	134.6	6.3	11.0	53.1	12.1
Dec 2010 - Nov 2011	157.9	6.4	11.0	53.1	12.5
Jan 2011 - Dec 2011	170.2	6.3	11.0	53.1	11.1



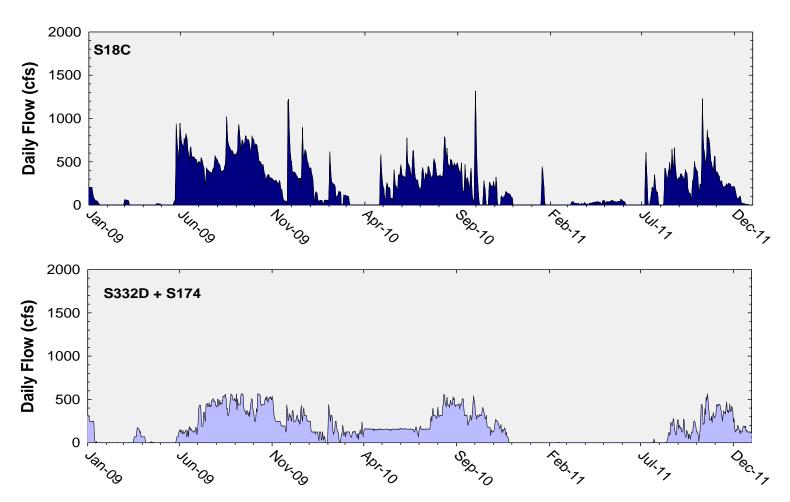
#### **Taylor Slough and Coastal Basins Daily Flows**



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

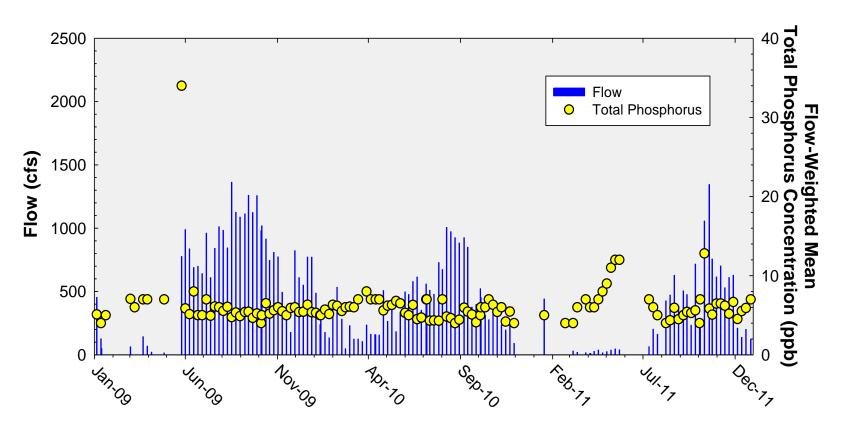


## Daily Flows at individual Taylor Slough and Coastal Basins structures into the ENP





## **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

