

## TCNS - S-135 BASIN TECHNICAL SHEET

<b>Subwatershed:</b> Taylor Creek/Nubbin Slough			
<b>Basin:</b> S-135	<b>Flow Issues<sup>1</sup>:</b> NO	<b>Water Quality Issues<sup>2</sup>:</b>	NO

**Monitored Structure(s):** S135

**Inflow loads:** S191 through Lakeside Ranch STA

**Acreage:** 17,756

**Percentage of Subwatershed Acreage:** 9%

**Percentage of Lake Okeechobee Watershed:** 0.5%

**<sup>1</sup>Flow Issues:**

- There were no statistically significant trends in flows.

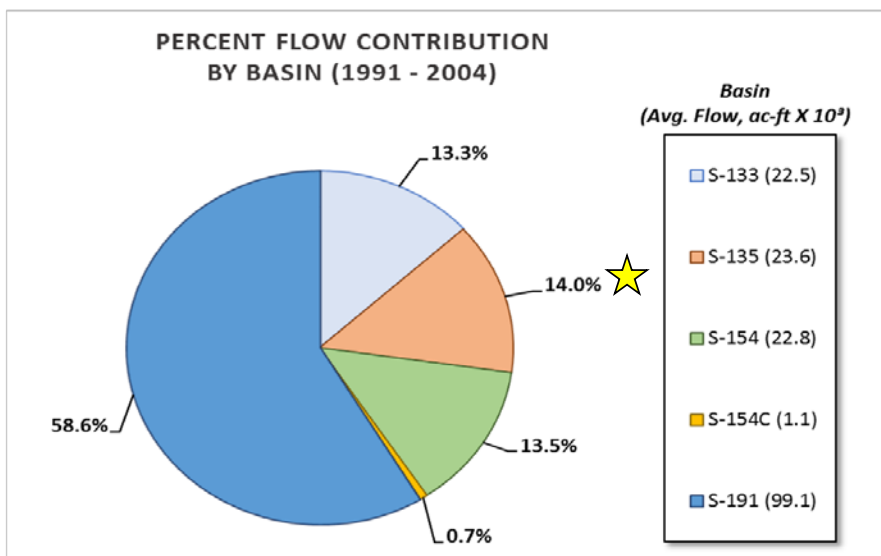
- Need to determine if the pump operation is representative of the runoff. In other words, is the water sometimes moved for water management activities. Also, it is uncertain how much water exchange occurs at the locks.

**<sup>2</sup>Water Quality Issues:**

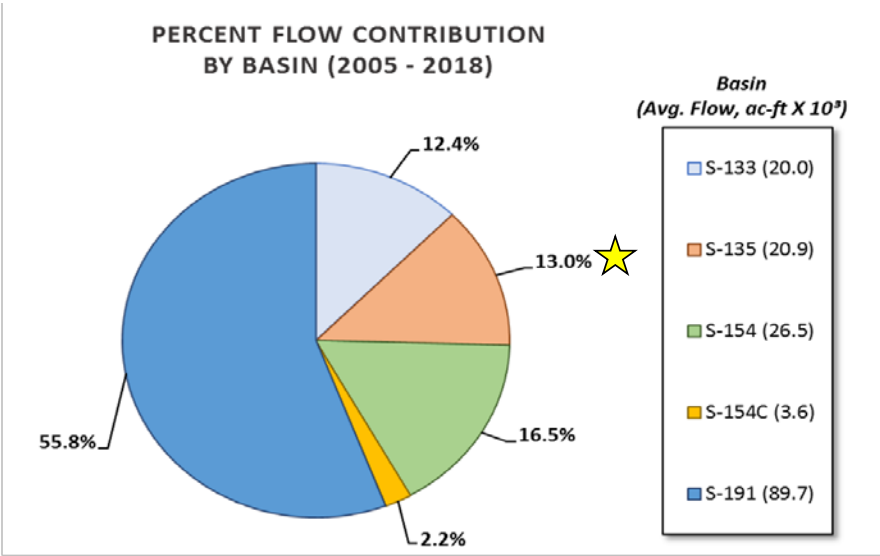
- The total phosphorus (TP) flow-weighted mean concentrations (FWMC) appear to be in a relatively good range (154 µg/L during the post-protection plan period) and are relatively low overall compared to other areas of the Taylor Creek/Nubbin Slough Subwatershed.

- The data indicates that there have been spikes in TP FWMC that appear to correspond to weather events.

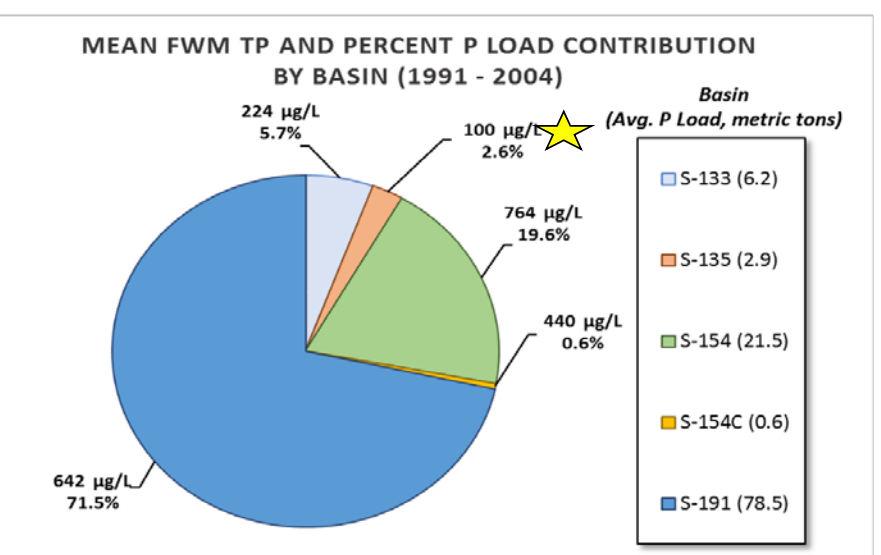
**Pre-Protection Plan Flows**



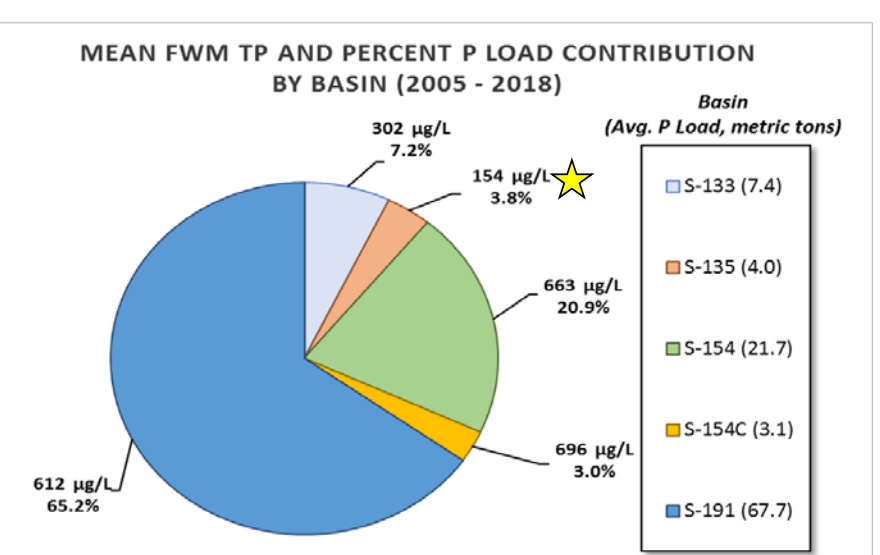
**Post-Protection Plan Flows**



**Pre-Protection Plan Loads**



**Post-Protection Plan Loads**



S-135 BASIN - MAP



REG/EREG 01-NOV-2012 CMISSAU \\ad.sfwmd.gov\dfsroot\data\err\_gis\projects\EVG\lok\kEdgemon\_LOK\_PerformanceMeasures\mxd\S135\_PerformanceMeasures\_TinyMap\_cm1.mxd

## S-135 BASIN - STATISTICS

Summary Statistics				
	Period of Record	Pre-Protection Plan	Post-Protection Plan	
	WY1991-WY2018	WY1991-WY2004	WY2005-WY2018	
<b>Averages</b>				
Avg. Flow (acft/yr)	22,241	23,606	20,876	
Avg. Load (mt/yr)	3.44	2.90	3.98	
FWMC (ug/L)	125	100	154	
Avg. UAL (lbs/acre/yr)	0.43	0.36	0.49	
<b>Medians</b>				<b>Mann-Whitney Results p-values<sup>3</sup></b>
Median Flow (acft/yr)	21,972	22,494	21,082	0.5201
Median Load (mt/yr)	2.43	2.26	2.47	0.7828
Median FWMC (ug/L)	85.72	86	87	0.9633
Median UAL (lbs/acre/yr)	0.30	0.28	0.31	0.7295

Highlighted cells indicate statistical significance

<sup>3</sup>The Mann-Whitney test is a non-parametric test alternative to the two sample t-test. It is used to test the equality around the central tendency of two data sets (pre-protection plan period and post-protection plan period). A p-value of less than 0.05 indicates that a significant difference between pre-protection plan period and post-protection plan period exists. A comparison of the median values identifies which period is higher. A median is a value at the mid-point of a distribution of observed data.

Sub-watershed Taylor Creek/Nubbin Slough - Seasonal Kendall  $\tau$  Results for Total Monthly Flow (ac-ft) by Basin over Three Water Year Ranges

Sub-watershed/Basin	1991-2018					1991-2004					2005-2018				
	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value
<i>S-135 Basin</i>	0.0%	-0.049	0.00	703	0.582	0.0%	0.038	3.40	943	0.776	0.0%	0.229	22.97	143	0.066

Sub-watershed Taylor Creek/Nubbin Slough - Seasonal Kendall  $\tau$  Results for Total Monthly P Load (kg) by Basin over Three Water Year Ranges

Sub-watershed/Basin	1991-2018					1991-2004					2005-2018				
	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value
<i>S-135 Basin</i>	0.0%	-0.050	0.00	68	0.576	0.0%	0.026	0.12	98	0.852	0.0%	0.226	1.82	13	0.080

Sub-watershed Taylor Creek/Nubbin Slough - Seasonal Kendall  $\tau$  Results for Monthly FWM TP ( $\mu\text{g/L}$ ) by Basin over Three Water Year Ranges

Sub-watershed/Basin	1991-2018					1991-2004					2005-2018				
	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value	% Missing Months	Kendall's $\tau$	Sen Slope	Intercept	p-value
<i>S-135 Basin</i>	25.3%	0.011	0	87	0.918	14.3%	0.000	0	85	1.000	36.3%	0.075	2	75	0.672

*Italic red font cells* indicate statistical significance

Note: The Seasonal Kendall Tau analyzes data for monotonic trends (consistent upward or downward trend) and accounts for seasonality. Typically monthly data are used to identify seasons. Probability values (p-values) are derived from the tau-statistic which identifies the direction of the trend. A p-value less than 0.05 detects statistically significant trends for a period of interest. The Sen Slope provides an indication of the magnitude of the observed trend.

## S-135 BASIN - MONTHLY DATA AND SKT TRENDS

