

# WRAC October 4, 2018 Agenda Item 5 Handout - Northern Everglades Tributary Basins Data

**Table 1.** Lake Okeechobee Watershed tributary basin annual flow volumes with TP and TN loads and FWMCs, WY2014-WY2018.

	East Lake	Fisheating Creek	Indian Prairie	Taylor Creek Nubbin Slough	South Lake	West Lake	Lake Istokpoga	Upper Kissimmee	Lower Kissimmee	Total
<b>Flow, acre-feet x 10<sup>3</sup></b>										
<b>WY2014</b>	56.44	403.02	491.69	190.90	81.92	0.54	319.31	765.55	518.76	2,828.14
<b>WY2015</b>	71.41	180.29	342.37	167.62	41.28	0.00	446.21	1,170.54	443.78	2,863.50
<b>WY2016</b>	31.67	466.19	333.91	196.06	88.57	0.00	498.49	941.59	455.64	3,012.13
<b>WY2017</b>	12.29	296.70	297.83	170.59	22.82	0.00	349.35	856.13	479.51	2,485.22
<b>WY2018</b>	175.09	312.24	430.10	254.70	207.34	0.12	426.94	972.23	644.58	3,423.34
<b>5-Yr Avg.</b>	69.38	331.69	379.18	195.97	88.38	0.13	408.06	941.21	508.45	2,922.46
<b>5-Yr %</b>	2%	11%	13%	7%	3%	0.005%	14%	32%	17%	100.00%
<b>TP load (metric tons)</b>										
<b>WY2014</b>	11.10	103.08	124.53	107.59	24.75	0.06	30.19	72.38	100.50	574.18
<b>WY2015</b>	15.38	27.21	89.51	77.04	8.66	0.00	42.82	90.92	63.42	414.96
<b>WY2016</b>	5.65	70.99	85.85	92.14	34.57	0.00	60.99	98.60	59.40	508.19
<b>WY2017</b>	3.67	50.89	67.60	104.86	6.46	0.00	41.03	72.65	101.44	448.61
<b>WY2018</b>	48.25	109.83	145.05	186.45	70.34	0.03	63.41	117.90	304.89	1,046.14
<b>5-Yr Avg.</b>	16.81	72.40	102.51	113.62	28.96	0.02	47.69	90.49	125.93	598.42
<b>5-Yr %</b>	3%	12%	17%	19%	5%	0.003%	8%	15%	21%	100%
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>										
<b>WY2014</b>	0.159	0.207	0.205	0.457	0.245	0.095	0.077	0.077	0.157	0.165
<b>WY2015</b>	0.175	0.122	0.212	0.373	0.170		0.078	0.063	0.116	0.117
<b>WY2016</b>	0.145	0.123	0.208	0.381	0.316		0.099	0.085	0.106	0.137
<b>WY2017</b>	0.242	0.139	0.184	0.498	0.230		0.095	0.069	0.172	0.146
<b>WY2018</b>	0.223	0.285	0.273	0.593	0.275	0.205	0.120	0.098	0.383	0.248
<b>5-Yr Avg.</b>	0.189	0.175	0.217	0.460	0.247	0.150	0.094	0.078	0.187	0.163
<b>5-Yr FWMC</b>	0.196	0.177	0.219	0.470	0.266	0.115	0.095	0.078	0.201	0.166
<b>TN load (metric tons)</b>										
<b>WY2014</b>	155.45	787.35	1,281.23	461.00	396.19	0.88	522.39	1,174.84	737.88	5,517.20
<b>WY2015</b>	196.81	356.53	823.33	378.11	123.38	0.00	835.82	1,616.22	627.69	4,957.89
<b>WY2016</b>	69.81	772.36	971.78	418.58	588.42	0.00	936.56	1,260.71	623.91	5,642.13
<b>WY2017</b>	34.08	474.81	669.85	390.75	55.30	0.00	634.56	1,148.20	658.38	4,065.92
<b>WY2018</b>	393.41	625.79	1,417.45	596.08	1,043.22	0.40	918.45	1,891.52	625.82	7,512.14
<b>5-Yr Avg.</b>	169.91	603.37	1,032.73	448.90	441.30	0.25	769.55	1,418.30	654.74	5,539.06
<b>5-Yr %</b>	3%	11%	19%	8%	8%	0.005%	14%	26%	12%	100.00%
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>										
<b>WY2014</b>	2.23	1.58	2.11	1.96	3.92	1.31	1.33	1.24	1.15	1.58
<b>WY2015</b>	2.23	1.60	1.95	1.83	2.42		1.52	1.12	1.15	1.40
<b>WY2016</b>	1.79	1.34	2.36	1.73	5.39		1.52	1.09	1.11	1.52
<b>WY2017</b>	2.25	1.30	1.82	1.86	1.96		1.47	1.09	1.11	1.33
<b>WY2018</b>	1.82	1.62	2.67	1.90	4.08	2.72	1.74	1.58	0.79	1.78
<b>5-Yr Avg.</b>	2.06	1.49	2.18	1.85	3.55	2.01	1.52	1.22	1.06	1.52
<b>5-Yr FWMC</b>	1.99	1.47	2.21	1.86	4.05	1.56	1.53	1.22	1.04	1.54

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**Table 2.** Lake Okeechobee Watershed tributary basin WY2018 monthly flows, TP and TN loads and FWMC.

	East Lake O	Fisheating Creek	Indian Prairie	Taylor Creek Nubbin Slough	South Lake O	West Lake O	Lake Istokpoga	Upper Kissimmee	Lower Kissimmee	Total
<b>Flow, acre-feet x 10<sup>3</sup></b>										
May-17	9.00	0.47	8.71	0.00	4.13	0.05	0.00	13.83	-2.45	33.74
Jun-17	72.42	22.52	35.90	9.74	68.32	0.07	20.80	13.00	40.66	283.42
Jul-17	33.47	29.13	24.09	5.76	14.88	0.00	23.19	23.63	46.70	200.86
Aug-17	21.47	24.96	37.67	19.35	4.40	0.00	49.25	61.89	76.15	295.14
Sep-17	27.44	110.54	142.19	82.85	105.25	0.00	158.78	414.32	170.94	1,212.31
Oct-17	8.87	70.37	99.74	97.10	8.18	0.00	85.74	214.48	220.62	805.12
Nov-17	0.05	39.58	38.30	26.27	0.78	0.00	43.49	67.20	61.05	276.73
Dec-17	0.10	10.01	11.58	9.09	0.10	0.00	23.05	29.98	18.62	102.53
Jan-18	0.02	1.79	2.36	3.50	0.12	0.00	10.95	36.15	10.94	65.83
Feb-18	0.00	1.37	8.19	1.00	0.07	0.00	9.24	49.76	6.08	75.72
Mar-18	0.00	0.91	5.69	0.01	0.52	0.00	0.00	25.92	-1.47	31.58
Apr-18	2.26	0.58	15.69	0.02	0.57	0.00	2.44	22.06	-3.26	40.36
<b>WY2018</b>	<b>175.09</b>	<b>312.24</b>	<b>430.10</b>	<b>254.70</b>	<b>207.34</b>	<b>0.12</b>	<b>426.94</b>	<b>972.23</b>	<b>644.58</b>	<b>3,423.34</b>
<b>WY %</b>	<b>5%</b>	<b>9%</b>	<b>13%</b>	<b>7%</b>	<b>6%</b>	<b>0.003%</b>	<b>12%</b>	<b>28%</b>	<b>19%</b>	<b>100.00%</b>
<b>TP load (metric tons)</b>										
May-17	2.39	0.09	1.17	0.00	1.46	0.01	0.00	2.11	-0.58	6.65
Jun-17	24.48	14.70	9.38	6.53	18.52	0.02	3.23	5.94	8.28	91.08
Jul-17	9.84	8.65	6.02	4.07	2.26	0.00	2.35	5.60	17.49	56.28
Aug-17	6.03	10.01	12.18	11.54	1.00	0.00	4.75	9.87	31.26	86.64
Sep-17	4.00	48.61	72.26	62.42	42.87	0.00	27.55	55.32	149.29	462.30
Oct-17	0.96	18.24	27.93	82.58	3.43	0.00	13.84	18.10	77.83	242.91
Nov-17	0.00	7.31	10.46	15.19	0.27	0.00	5.23	5.77	15.69	59.93
Dec-17	0.02	1.48	0.50	3.12	0.03	0.00	4.02	2.48	3.78	15.43
Jan-18	0.00	0.26	-0.19	0.74	0.06	0.00	1.60	2.90	1.95	7.34
Feb-18	0.00	0.25	1.39	0.24	0.02	0.00	0.55	4.23	1.30	7.99
Mar-18	0.00	0.14	0.92	0.00	0.21	0.00	0.00	2.61	-0.20	3.69
Apr-18	0.52	0.08	3.02	0.01	0.22	0.00	0.28	2.97	-1.21	5.90
<b>WY2018</b>	<b>48.25</b>	<b>109.83</b>	<b>145.05</b>	<b>186.45</b>	<b>70.34</b>	<b>0.03</b>	<b>63.41</b>	<b>117.90</b>	<b>304.89</b>	<b>1,046.14</b>
<b>WY %</b>	<b>5%</b>	<b>10%</b>	<b>14%</b>	<b>18%</b>	<b>7%</b>	<b>0.003%</b>	<b>6%</b>	<b>11%</b>	<b>29%</b>	<b>100.00%</b>
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>										
May-17	0.215	0.157	0.109	0.503	0.287	0.205		0.124		0.160
Jun-17	0.274	0.529	0.212	0.544	0.220	0.205	0.126	0.370	0.165	0.261
Jul-17	0.238	0.241	0.203	0.574	0.123		0.082	0.192	0.304	0.227
Aug-17	0.228	0.325	0.262	0.483	0.183		0.078	0.129	0.333	0.238
Sep-17	0.118	0.356	0.412	0.611	0.330		0.141	0.108	0.708	0.309
Oct-17	0.087	0.210	0.227	0.689	0.340		0.131	0.068	0.286	0.245
Nov-17	0.074	0.150	0.221	0.469	0.274		0.098	0.070	0.208	0.176
Dec-17	0.188	0.120	0.035	0.278	0.241		0.141	0.067	0.165	0.122
Jan-18	0.079	0.117		0.172	0.412		0.119	0.065	0.145	0.090
Feb-18		0.149	0.137	0.196	0.209		0.048	0.069	0.174	0.086
Mar-18		0.122	0.132	0.222	0.331			0.082		0.095
Apr-18	0.188	0.118	0.156	0.363	0.311		0.093	0.109		0.119
<b>WY2018</b>	<b>0.223</b>	<b>0.285</b>	<b>0.273</b>	<b>0.593</b>	<b>0.275</b>	<b>0.205</b>	<b>0.120</b>	<b>0.098</b>	<b>0.383</b>	<b>0.248</b>
<b>TN load (metric tons)</b>										
May-17	20.43	1.30	17.16	0.00	12.12	0.17	0.00	31.40	-16.09	66.49
Jun-17	153.30	71.48	103.54	22.22	439.85	0.23	59.93	22.95	79.80	953.31
Jul-17	71.59	75.08	42.42	11.97	46.22	0.00	52.19	40.25	111.52	451.23
Aug-17	44.12	60.74	82.36	48.05	15.13	0.00	107.37	105.25	176.57	639.59
Sep-17	75.65	185.59	739.92	170.08	486.34	0.00	373.99	974.42	-168.43	2,837.57
Oct-17	22.07	123.28	234.46	247.65	35.14	0.00	154.07	323.87	325.07	1,465.60
Nov-17	0.12	79.87	112.25	63.44	3.77	0.00	66.42	103.18	98.76	527.82
Dec-17	0.25	19.21	10.74	22.82	0.32	0.00	61.21	46.02	41.23	201.81
Jan-18	0.06	3.58	2.44	7.60	0.43	0.00	25.83	58.69	14.93	113.56
Feb-18	0.00	2.58	20.47	2.18	0.20	0.00	13.12	80.36	0.55	119.47
Mar-18	0.00	1.79	15.24	0.03	1.65	0.00	0.00	54.62	-18.42	54.91
Apr-18	5.83	1.28	36.44	0.06	2.03	0.00	4.30	50.52	-19.68	80.78
<b>WY2018</b>	<b>393.41</b>	<b>625.79</b>	<b>1,417.45</b>	<b>596.08</b>	<b>1,043.22</b>	<b>0.40</b>	<b>918.45</b>	<b>1,891.52</b>	<b>625.82</b>	<b>7,512.14</b>
<b>WY %</b>	<b>5%</b>	<b>8%</b>	<b>19%</b>	<b>8%</b>	<b>14%</b>	<b>0.005%</b>	<b>12%</b>	<b>25%</b>	<b>8%</b>	<b>100.00%</b>
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>										
May-17	1.84	2.25	1.60	1.48	2.38	2.72		1.84		1.60
Jun-17	1.72	2.57	2.34	1.85	5.22	2.72	2.34	1.43	1.59	2.73
Jul-17	1.73	2.09	1.43	1.69	2.52		1.82	1.38	1.94	1.82
Aug-17	1.67	1.97	1.77	2.01	2.79		1.77	1.38	1.88	1.76
Sep-17	2.24	1.36	4.22	1.66	3.75		1.91	1.91		1.90
Oct-17	2.02	1.42	1.91	2.07	3.48		1.46	1.22	1.19	1.48
Nov-17	2.07	1.64	2.38	1.96	3.89		1.24	1.24	1.31	1.55
Dec-17	2.11	1.56	0.75	2.03	2.69		2.15	1.24	1.80	1.60
Jan-18	1.99	1.62	0.84	1.76	2.85		1.91	1.32	1.11	1.40
Feb-18		1.52	2.03	1.76	2.37		1.15	1.31	0.07	1.28
Mar-18		1.60	2.17	2.02	2.57			1.71		1.41
Apr-18	2.09	1.79	1.88	2.07	2.87		1.43	1.86		1.62
<b>WY2018</b>	<b>1.82</b>	<b>1.62</b>	<b>2.67</b>	<b>1.90</b>	<b>4.08</b>	<b>2.72</b>	<b>1.74</b>	<b>1.58</b>	<b>0.79</b>	<b>1.78</b>

**Table 3.** St. Lucie Estuary sources annual flow volumes with TP and TN loads and FWMCs, WY2014-WY2018.

	Lake O*	C-44 Basin	C-23 Basin	C-24 Basin	Ten Mile Creek Basin	Tidal Basin	Total St. Lucie	St. Lucie Basin**
<b>Flow (10<sup>3</sup> x acre-feet)</b>								
<b>WY2014</b>	418.56	257.15	169.43	107.68	84.33	267.83	1,304.98	618.59
<b>WY2015</b>	80.25	107.98	104.99	104.55	84.17	268.67	750.61	401.69
<b>WY2016</b>	369.84	188.57	106.70	176.61	114.44	262.56	1,218.72	586.32
<b>WY2017</b>	338.21	78.82	65.89	97.94	127.76	236.53	945.15	370.41
<b>WY2018</b>	585.62	79.84	219.65	221.14	152.86	316.85	1,575.96	673.49
<b>5-Yr Avg.</b>	358.50	142.47	133.33	141.58	112.71	270.49	1,159.08	530.10
<b>5-Yr %</b>	31%	12%	12%	12%	10%	23%	100%	46%
<b>TP load (metric tons)</b>								
<b>WY2014</b>	70.95	106.15	93.20	44.29	22.51	37.87	374.97	266.15
<b>WY2015</b>	13.34	37.12	57.22	41.59	19.22	30.61	199.10	155.15
<b>WY2016</b>	83.59	63.74	53.50	59.85	41.92	30.58	333.18	219.01
<b>WY2017</b>	56.83	30.03	28.49	34.28	51.65	28.56	229.84	144.45
<b>WY2018</b>	160.50	68.24	100.02	111.37	70.32	45.32	555.77	349.95
<b>5-Yr Avg.</b>	77.04	61.06	66.49	58.28	41.12	34.59	338.57	226.94
<b>5-Yr %</b>	23%	18%	20%	17%	12%	10%	100%	67%
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>								
<b>WY2014</b>	0.137	0.335	0.446	0.333	0.216	0.115	0.233	0.349
<b>WY2015</b>	0.135	0.279	0.442	0.323	0.185	0.092	0.215	0.313
<b>WY2016</b>	0.183	0.274	0.406	0.275	0.297	0.094	0.222	0.303
<b>WY2017</b>	0.136	0.309	0.351	0.284	0.328	0.098	0.197	0.316
<b>WY2018</b>	0.222	0.693	0.369	0.408	0.373	0.116	0.286	0.421
<b>5-Yr FWMC</b>	0.174	0.347	0.404	0.334	0.296	0.104	0.237	0.347
<b>TN load (metric tons)</b>								
<b>WY2014</b>	660.22	528.89	360.62	189.52	95.95	318.49	2,153.69	1,174.98
<b>WY2015</b>	124.66	174.73	201.61	189.81	92.98	265.42	1,049.21	659.13
<b>WY2016</b>	717.23	289.09	204.47	326.50	149.67	303.72	1,990.68	969.73
<b>WY2017</b>	621.26	62.18	113.89	162.11	159.26	257.53	1,376.23	497.44
<b>WY2018</b>	1,345.52	256.64	457.48	457.19	228.69	389.72	3,135.24	1,400.00
<b>5-Yr Avg.</b>	693.78	262.31	267.61	265.03	145.31	306.98	1,941.01	940.26
<b>5-Yr %</b>	36%	13%	14%	14%	7%	16%	100%	48%
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>								
<b>WY2014</b>	1.28	1.67	1.73	1.43	0.92	0.96	1.34	1.54
<b>WY2015</b>	1.26	1.31	1.56	1.47	0.90	0.80	1.13	1.33
<b>WY2016</b>	1.57	1.24	1.55	1.50	1.06	0.94	1.32	1.34
<b>WY2017</b>	1.49	0.64	1.40	1.34	1.01	0.88	1.18	1.09
<b>WY2018</b>	1.86	2.61	1.69	1.68	1.21	1.00	1.61	1.69
<b>5-Yr FWMC</b>	1.57	1.49	1.63	1.52	1.05	0.92	1.36	1.44

\*Due to sensor error resulting in the USGS data being unavailable, flow volumes reported from Lake Okeechobee to the C-44 Basin through S-308 for the period October 8 through December 6, 2018, are sourced from USACE flow records. Based upon measured rainfall in the basin, the flow data available to estimate runoff from the C-44 Basin for this period, computed from the difference in S-308 flow and S-80 flow, appears to overestimate contributions from Lake Okeechobee and underestimate C-44 Basin runoff.

\*\*St. Lucie Basin is comprised of C-44, C-23, C-24, and Ten Mile Creek Basins.

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Table 4. St. Lucie Watershed Estuary sources WY2018 monthly flows, TP and TN loads and FWMC.

	Lake O*	C-44 Basin	C-23 Basin	C-24 Basin	Ten Mile Creek Basin	Tidal Basin	Total St. Lucie	St. Lucie Basin**
<b>Flow (10<sup>3</sup> x acre-feet)</b>								
May-17	0.00	0.00	0.10	0.00	2.81	10.14	13.05	2.91
Jun-17	0.00	0.15	28.27	22.74	20.31	55.12	126.60	71.48
Jul-17	0.00	0.00	11.01	11.19	10.97	29.98	63.15	33.17
Aug-17	0.00	0.00	15.45	19.56	12.93	33.13	81.07	47.93
Sep-17	97.36	35.86	61.35	71.98	30.53	46.84	343.92	199.71
Oct-17	216.43	30.81	74.94	57.45	31.62	57.78	469.02	194.81
Nov-17	209.79	3.69	19.09	21.53	16.69	38.60	309.39	61.00
Dec-17	61.58	6.25	6.58	11.28	8.01	11.08	104.78	32.12
Jan-18	0.35	2.85	2.84	4.61	6.73	11.19	28.56	17.03
Feb-18	0.00	0.23	0.03	0.81	4.32	6.12	11.50	5.38
Mar-18	0.12	0.00	0.00	0.00	3.84	4.46	8.42	3.84
Apr-18	0.00	0.00	0.00	0.00	4.09	12.40	16.50	4.10
WY2018 Tot.	585.62	79.84	219.65	221.14	152.86	316.85	1,575.96	673.50
WY2018 %	37%	5%	14%	14%	10%	20%	100%	43%
<b>TP load (metric tons)</b>								
May-17	0.00	0.00	0.02	0.00	0.47	1.31	1.80	0.49
Jun-17	0.00	0.03	19.06	13.51	15.99	8.34	56.93	48.59
Jul-17	0.00	0.00	8.11	5.84	4.41	3.38	21.74	18.36
Aug-17	0.00	0.00	8.18	6.73	4.08	3.12	22.11	18.99
Sep-17	20.86	20.42	24.06	52.31	21.77	9.41	148.84	118.57
Oct-17	55.25	30.20	29.39	23.79	15.15	9.82	163.61	98.54
Nov-17	68.79	9.97	7.49	6.16	4.65	5.86	102.93	28.28
Dec-17	15.51	5.82	2.58	2.33	1.55	1.13	28.92	12.28
Jan-18	0.09	0.92	1.11	0.62	0.87	0.90	4.51	3.52
Feb-18	0.00	0.88	0.01	0.08	0.49	0.52	1.98	1.46
Mar-18	0.01	0.00	0.00	0.00	0.41	0.32	0.75	0.41
Apr-18	0.00	0.00	0.00	0.00	0.46	1.22	1.68	0.46
WY2018 Tot.	160.50	68.24	100.02	111.37	70.32	45.32	555.79	349.96
WY2018 %	29%	12%	18%	20%	13%	8%	100%	63%
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>								
May-17	NA	NA	0.131	0.250	0.136	0.105	0.112	0.136
Jun-17	NA	0.162	0.547	0.482	0.638	0.123	0.365	0.551
Jul-17	NA	NA	0.597	0.423	0.326	0.091	0.279	0.449
Aug-17	NA	NA	0.429	0.279	0.256	0.076	0.221	0.321
Sep-17	0.174	0.462	0.318	0.589	0.578	0.163	0.351	0.481
Oct-17	0.207	0.795	0.318	0.336	0.389	0.138	0.283	0.410
Nov-17	0.266	2.189	0.318	0.232	0.226	0.123	0.270	0.376
Dec-17	0.204	0.755	0.318	0.167	0.157	0.083	0.224	0.310
Jan-18	0.205	0.262	0.318	0.109	0.104	0.065	0.128	0.167
Feb-18	NA	3.145	0.318	0.083	0.093	0.069	0.140	0.221
Mar-18	0.069	NA	NA	NA	0.087	0.059	0.072	0.087
Apr-18	NA	NA	0.318	NA	0.092	0.080	0.083	0.092
WY2018	0.222	0.693	0.369	0.408	0.373	0.116	0.286	0.421
<b>TN load (metric tons)</b>								
May-17	0.00	0.00	0.12	0.00	2.03	10.21	12.36	2.15
Jun-17	0.00	0.20	63.53	50.73	43.22	72.45	230.13	157.68
Jul-17	0.00	0.00	25.54	22.69	15.57	33.40	97.19	63.79
Aug-17	0.00	0.00	32.86	37.39	16.70	35.50	122.45	86.95
Sep-17	223.62	90.27	124.85	167.36	54.17	63.76	724.03	436.65
Oct-17	483.58	86.96	152.51	114.55	54.70	76.57	968.87	408.72
Nov-17	533.73	39.53	38.84	39.64	21.52	48.81	722.08	139.54
Dec-17	103.84	29.74	13.40	17.48	5.77	13.81	184.04	66.39
Jan-18	0.64	7.01	5.77	6.39	5.51	12.25	37.58	24.69
Feb-18	0.00	2.93	0.05	0.96	3.18	6.35	13.48	7.12
Mar-18	0.12	0.00	0.00	0.00	3.00	4.61	7.73	3.00
Apr-18	0.00	0.00	0.01	0.00	3.30	11.99	15.30	3.31
WY2018 Tot.	1,345.52	256.64	457.48	457.19	228.69	389.72	3,135.24	1,400.00
WY2018 %	43%	8%	15%	15%	7%	12%	100%	45%
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>								
May-17	NA	NA	0.95	1.39	0.59	0.82	0.77	0.60
Jun-17	NA	1.09	1.82	1.81	1.73	1.07	1.47	1.79
Jul-17	NA	NA	1.88	1.64	1.15	0.90	1.25	1.56
Aug-17	NA	NA	1.72	1.55	1.05	0.87	1.22	1.47
Sep-17	1.86	2.04	1.65	1.88	1.44	1.10	1.71	1.77
Oct-17	1.81	2.29	1.65	1.62	1.40	1.07	1.67	1.70
Nov-17	2.06	8.68	1.65	1.49	1.05	1.03	1.89	1.85
Dec-17	1.37	3.86	1.65	1.26	0.58	1.01	1.42	1.68
Jan-18	1.49	1.99	1.65	1.13	0.66	0.89	1.07	1.18
Feb-18	NA	10.50	1.65	0.97	0.60	0.84	0.95	1.07
Mar-18	0.80	NA	NA	NA	0.63	0.84	0.74	0.63
Apr-18	NA	NA	1.65	NA	0.65	0.78	0.75	0.66
WY2018	1.86	2.61	1.69	1.68	1.21	1.00	1.61	1.69

\*Due to sensor error resulting in the USGS data being unavailable, flow volumes reported from Lake Okeechobee to the C-44 Basin through S-308 for the period October 8 through December 6, 2018, are sourced from USACE flow records. Based upon measured rainfall in the basin, the flow data available to estimate runoff from the C-44 Basin for this period, computed from the difference in S-308 flow and S-80 flow, appears to overestimate contributions from Lake Okeechobee and underestimate C-44 Basin runoff.

\*\*St. Lucie Basin is comprised of C-44, C-23, C-24, and Ten Mile Creek Basins.

# WRAC October 4, 2018 Agenda Item 5 Handout - Northern Everglades Tributary Basins Data

**Table 5.** Caloosahatchee Estuary sources annual flow volumes with TP and TN loads and FWMCs, WY2014-WY2018.

	Lake O to Estuary	C-43 and S-4 to Estuary	Tidal Basin	Total
<b>Flow (10<sup>3</sup> x acre-feet)</b>				
WY2014	1,145.72	1,377.05	499.82	3,022.59
WY2015	486.60	747.58	199.58	1,433.75
WY2016	849.55	956.70	570.49	2,376.73
WY2017	1,010.07	929.40	392.76	2,332.23
WY2018	1201.05	1391.91	474.37	3,067.33
5-Yr Avg.	938.60	1,080.53	427.40	2,446.53
5-Yr %	38%	44%	18%	100%
<b>TP load (metric tons)</b>				
WY2014	107.96	268.81	41.80	418.57
WY2015	47.70	144.90	22.90	215.50
WY2016	105.94	139.96	55.77	301.66
WY2017	103.93	175.12	38.38	317.43
WY2018	194.73	372.77	75.55	643.05
5-Yr Avg.	112.05	220.31	46.88	379.24
5-Yr %	30%	58%	12%	100%
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>				
WY2014	0.076	0.158	0.068	0.112
WY2015	0.079	0.157	0.093	0.122
WY2016	0.101	0.119	0.079	0.103
WY2017	0.083	0.153	0.079	0.110
WY2018	0.131	0.217	0.129	0.170
5-Yr Avg.	0.094	0.161	0.090	0.123
5-Yr FWMC	0.097	0.165	0.089	0.126
<b>TN load (metric tons)</b>				
WY2014	1,879.48	2,365.90	842.00	5,087.38
WY2015	725.22	1,171.20	182.53	2,078.94
WY2016	1,589.53	1,349.65	627.33	3,566.51
WY2017	1,559.24	1,464.67	392.94	3,416.85
WY2018	2,115.18	2,641.36	572.5	5,329.04
5-Yr Avg.	1,573.73	1,798.56	523.46	3,895.75
5-Yr %	40%	46%	14%	100%
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>				
WY2014	1.33	1.39	1.37	1.36
WY2015	1.21	1.27	0.74	1.18
WY2016	1.52	1.14	0.89	1.22
WY2017	1.25	1.28	0.81	1.19
WY2018	1.43	1.54	0.98	1.41
5-Yr Avg.	1.36	1.35	0.99	1.29
5-Yr FWMC	1.36	1.35	0.99	1.29

**Table 6.** Caloosahatchee Estuary sources WY2018 monthly flows, TP and TN loads and FWMC.

	Lake O to Estuary	C-43 and S-4 to Estuary	Tidal Basin	Total
<b>Flow (10<sup>3</sup> x acre-feet)</b>				
May-17	11.93	10.03	2.07	24.03
Jun-17	0.00	194.99	92.95	287.94
Jul-17	0.87	87.76	113.17	201.81
Aug-17	0.37	128.66	95.27	224.30
Sep-17	146.10	459.41	80.80	686.32
Oct-17	406.76	280.77	45.86	733.39
Nov-17	363.66	119.92	19.48	503.06
Dec-17	154.85	58.09	8.44	221.38
Jan-18	27.75	17.50	5.92	51.17
Feb-18	24.91	12.27	4.13	41.31
Mar-18	29.83	11.32	3.58	44.73
Apr-18	34.02	11.19	2.69	47.90
WY2018 Tot.	1,201.05	1,391.91	474.37	3,067.33
WY2018 %	39%	45%	16%	100%
<b>TP load (metric tons)</b>				
May-17	1.39	2.42	0.34	4.14
Jun-17	0.00	56.94	19.51	76.45
Jul-17	0.22	25.98	20.22	46.41
Aug-17	0.07	28.18	10.57	38.82
Sep-17	41.70	148.02	13.44	203.15
Oct-17	58.33	72.07	6.97	137.36
Nov-17	51.10	22.21	2.12	75.43
Dec-17	24.95	8.16	0.98	34.09
Jan-18	4.24	3.13	0.50	7.87
Feb-18	3.43	2.09	0.35	5.87
Mar-18	4.39	1.78	0.30	6.48
Apr-18	4.92	1.81	0.26	6.99
WY2018 Tot.	194.73	372.77	75.55	643.06
WY2018 %	30%	58%	12%	100%
<b>TP flow-weighted mean concentration (FWMC, mg/L)</b>				
May-17	0.094	0.195	0.131	0.140
Jun-17	0.177	0.237	0.170	0.215
Jul-17	0.200	0.240	0.145	0.186
Aug-17	0.158	0.178	0.090	0.140
Sep-17	0.231	0.261	0.135	0.240
Oct-17	0.116	0.208	0.123	0.152
Nov-17	0.114	0.150	0.088	0.122
Dec-17	0.131	0.114	0.094	0.125
Jan-18	0.124	0.145	0.068	0.125
Feb-18	0.112	0.138	0.069	0.115
Mar-18	0.119	0.127	0.069	0.117
Apr-18	0.117	0.131	0.077	0.118
WY2018 FWMC	0.131	0.217	0.129	0.170
<b>TN load (metric tons)</b>				
May-17	19.66	15.18	2.18	37.02
Jun-17	0.00	379.69	125.60	505.30
Jul-17	1.81	143.78	169.43	315.02
Aug-17	1.03	228.04	97.65	326.71
Sep-17	304.31	756.91	81.75	1142.96
Oct-17	721.79	648.54	48.76	1419.09
Nov-17	628.38	274.89	24.06	927.33
Dec-17	257.98	110.08	8.99	377.05
Jan-18	45.12	33.13	5.09	83.35
Feb-18	36.97	20.19	3.71	60.87
Mar-18	44.54	17.52	3.07	65.13
Apr-18	53.60	13.41	2.21	69.22
WY2018 Tot.	2,115.18	2,641.36	572.50	5,329.04
WY2018 %	40%	49%	11%	100%
<b>TN flow-weighted mean concentration (FWMC, mg/L)</b>				
May-17	1.34	1.23	0.85	1.25
Jun-17	1.61	1.58	1.10	1.42
Jul-17	1.68	1.33	1.21	1.27
Aug-17	2.26	1.44	0.83	1.18
Sep-17	1.69	1.34	0.82	1.35
Oct-17	1.44	1.87	0.86	1.57
Nov-17	1.40	1.86	1.00	1.49
Dec-17	1.35	1.54	0.86	1.38
Jan-18	1.32	1.54	0.70	1.32
Feb-18	1.20	1.33	0.73	1.19
Mar-18	1.21	1.25	0.69	1.18
Apr-18	1.28	0.97	0.67	1.17
WY2018 FWMC	1.43	1.54	0.98	1.41





