Partial Calendar Year 2018 Summary of Flows and Loads – through 7/31/2018

Updated 8/10/2018

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Data are preliminary and subject to revision

SUMMARY

- Heavy rains from during May raised the water level of Lake Okeechobee to such an extent that the US Corps of Engineers began making regulatory discharges to the coastal estuaries beginning in June 2018. Between June 1 and July 31, approximately 183 billion gallons of polluted Lake water was discharged to the estuaries, including the Lake Worth Lagoon.
    - A massive bloom of toxic blue-green algae was reported to cover up to 90% of the Lake, yet discharges continue. The basin with the largest phosphorus load to the Lake was the Indian Prairie sub-watershed, located along the northwest shore of the lake.
    - Approximately 39 billion gallons of polluted Lake water was discharged to the St. Lucie River and Estuary.
        - The Lake discharges to the St. Lucie River and Estuary contained more than 75,000 pounds of phosphorus, more than 624,000 pounds of nitrogen, and more than 26 million pounds of suspended sediment.
        - Massive algae blooms from Lake Okeechobee are present in the St. Lucie River and Estuary.
    - Approximately 136 billion gallons of polluted Lake water was discharged to the Caloosahatchee Estuary.
        - The Lake discharges to the Caloosahatchee Estuary contained more than 226,000 pounds of phosphorus, more than 1.5 million pounds of nitrogen, and more than 10 million pounds of suspended sediment.
        - Massive algae blooms from Lake Okeechobee are present in the Caloosahatchee River and Estuary.
    - Approximately 8 billion gallons of polluted Lake water was discharged to the Lake Worth Lagoon.
- Through July 31, 2018, it is estimated that the St. Lucie River and Estuary received more than 362,000 pounds of phosphorus, more than 1.8 million pounds of nitrogen, and more than 32 million pounds of suspended sediment from the Lake and local watersheds, which are predominately agricultural.
    - The water quality of Lake discharges to the St. Lucie Estuary is particularly polluted: in addition to toxic algae, the phosphorus concentrations have averaged above 229 parts per billion – more than 5 times the target for the Lake.
    - Nitrogen loading from septic tanks is estimated at approximately 134,000 pounds, or about 7 percent of the total nitrogen loading to the St. Lucie River and Estuary.
    - Despite the destructive magnitude of Lake discharges, stormwater runoff from agricultural lands in the St. Lucie watershed contributed approximately twice the nitrogen and phosphorus loads to the estuary than Lake discharges.
- During the previous year, Lake discharges to the STAs were at their lowest level in 5 years, at less than one-half of the anticipated average flow.

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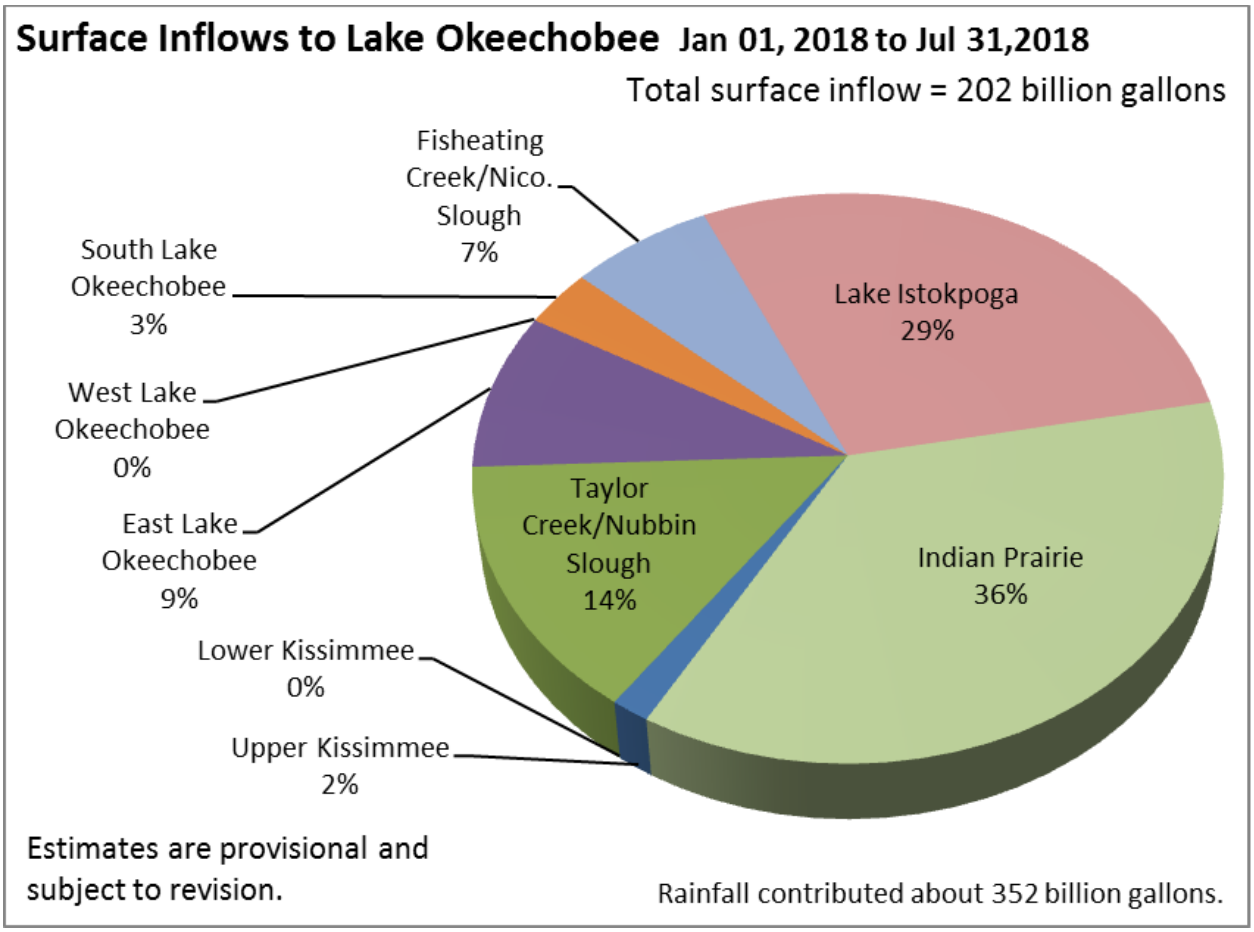

Sub-watershed	Basins
Upper Kissimmee	Upper Kissimmee
Lower Kissimmee	Kissimmee River Valley
Taylor Creek/Nubbin Slough	S-154, S-154C, S-191, S-133, S-135
Fisheating Creek/Nico. Slough	Fish Easting Creek, Nicodemus Slough
Indian Prairie	Arbuckle Creek, Josephine Creek, Lake Istokpoga
Lake Istokpoga	Indian Prairie
East Lake Okeechobee	L-8, C-44 (St. Lucie Canal)
South Lake Okeechobee	S-2, S-3, S-5A, Ch. 298 Districts, S-4/Industrial Canal
West Lake Okeechobee	East Caloosahatchee River

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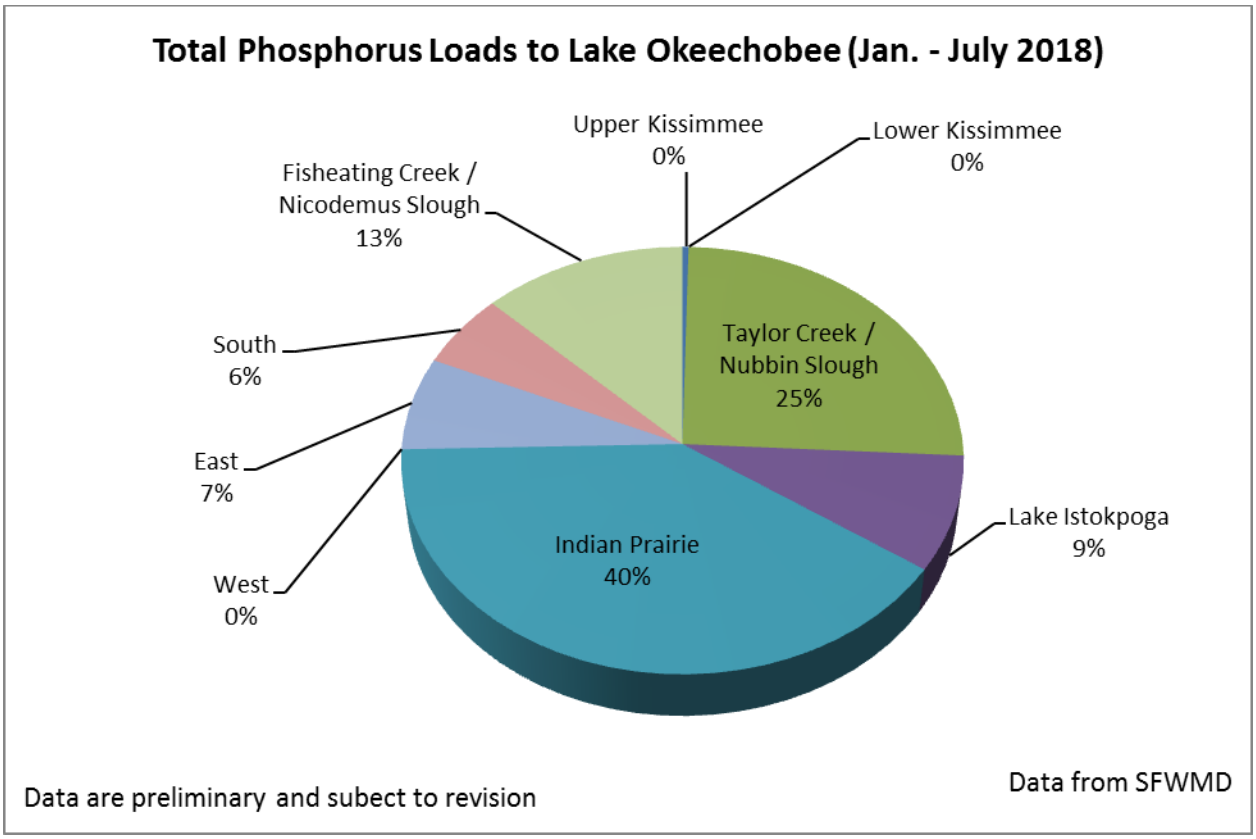

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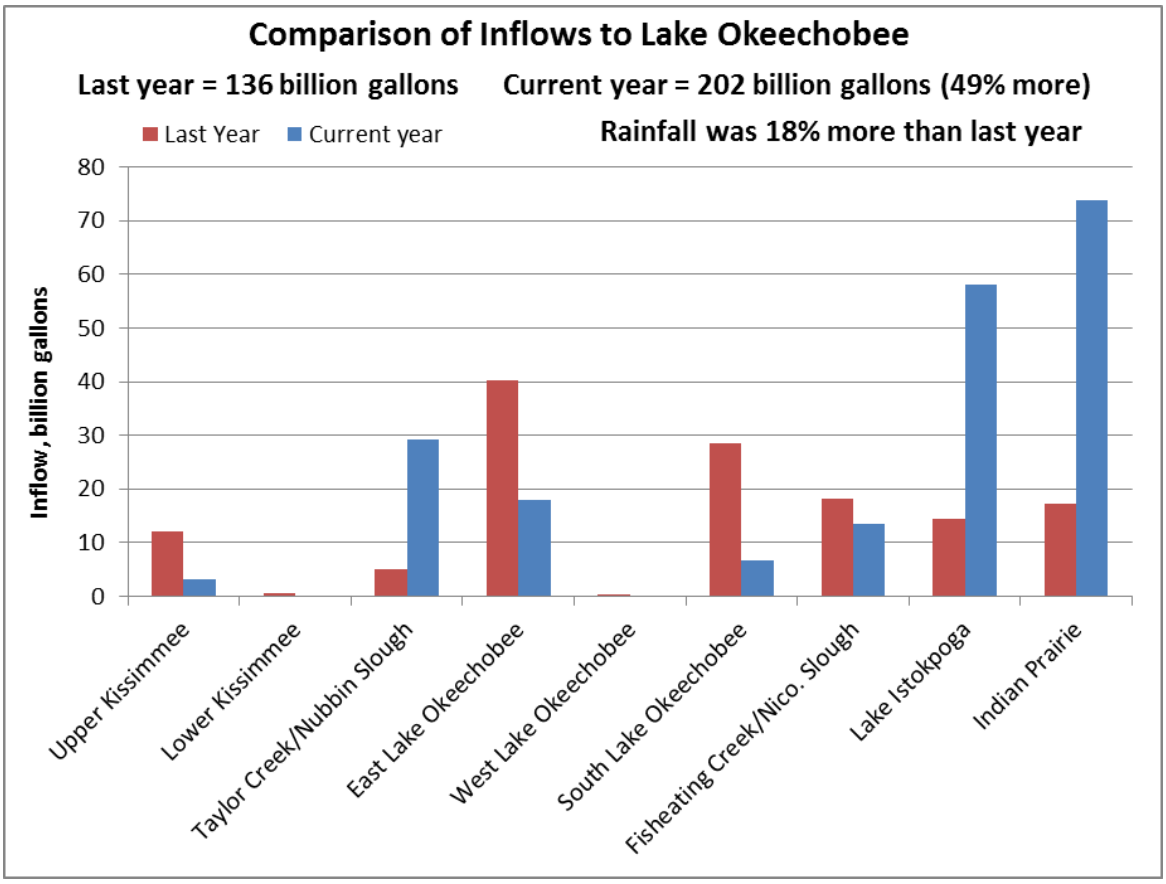
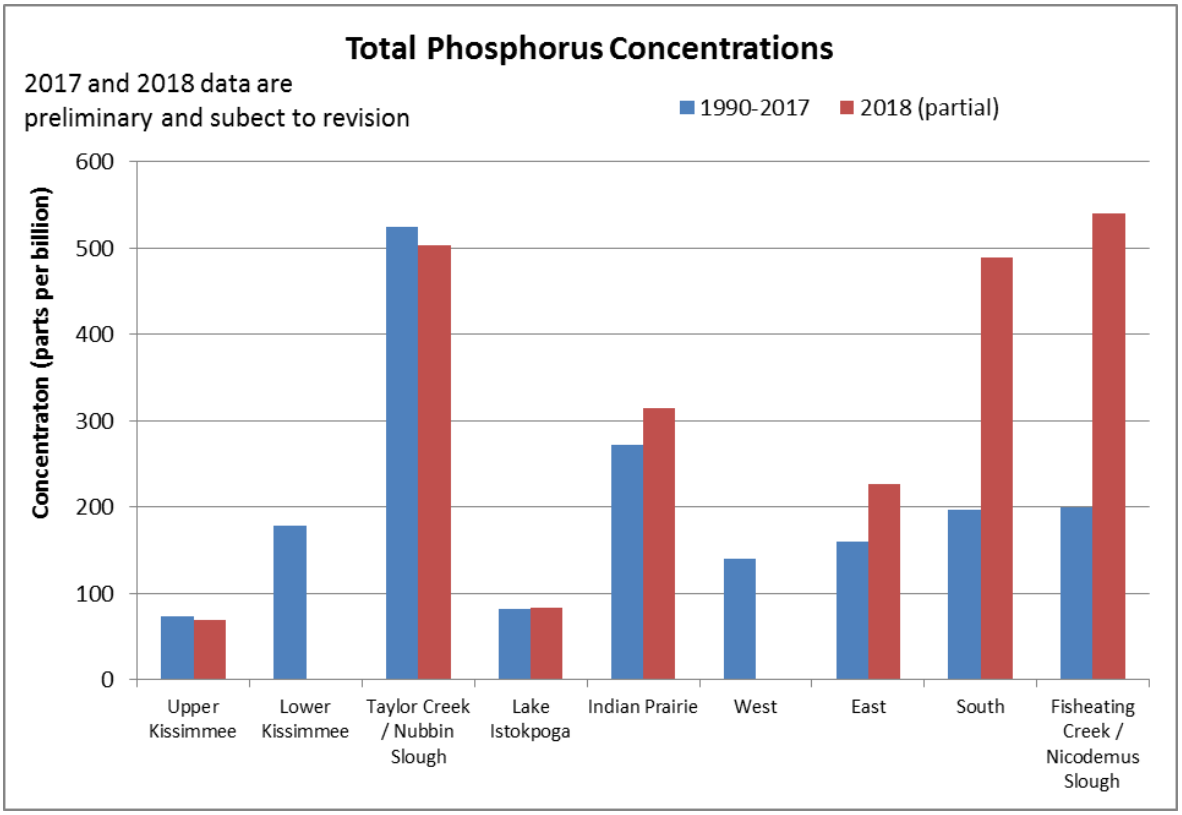
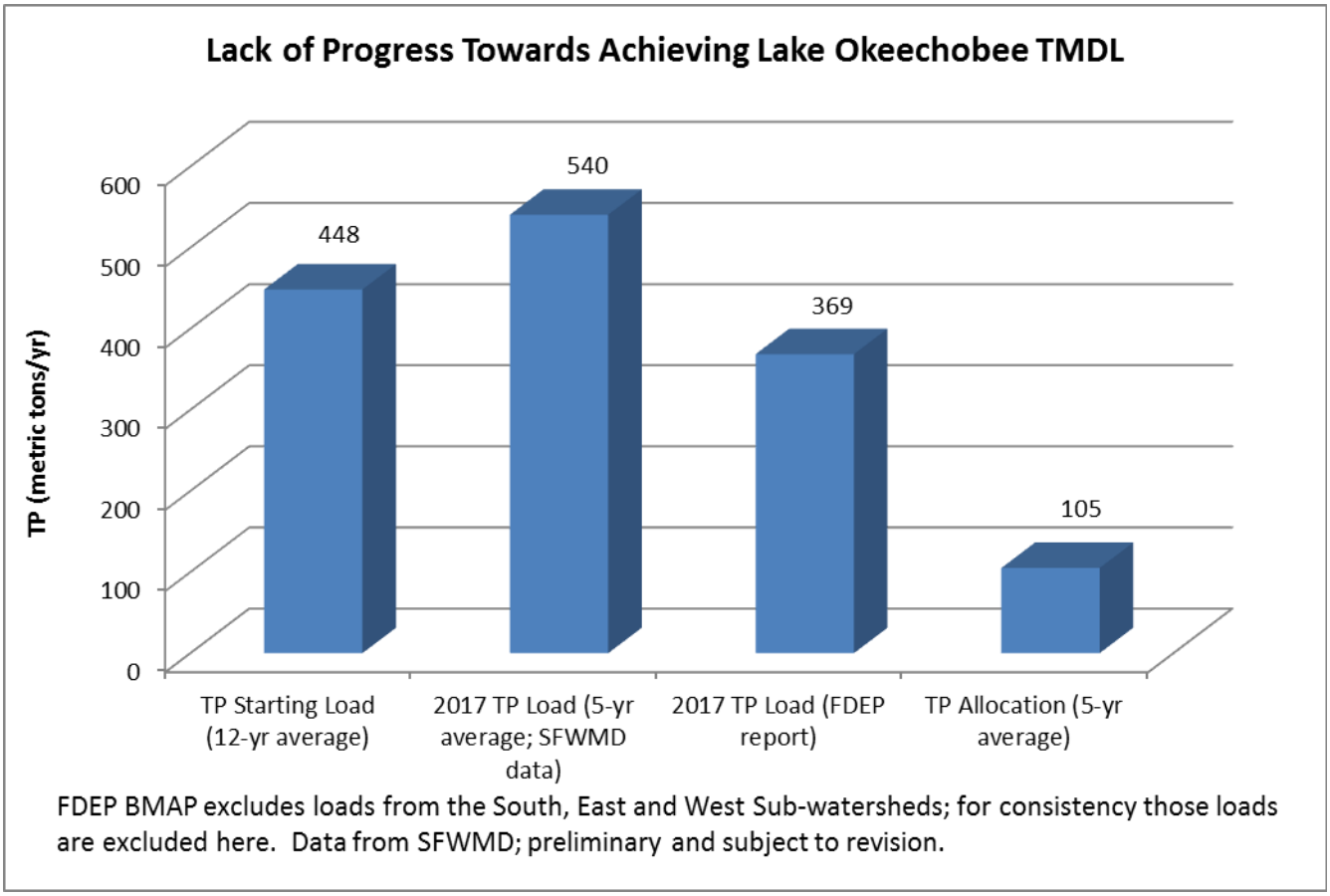
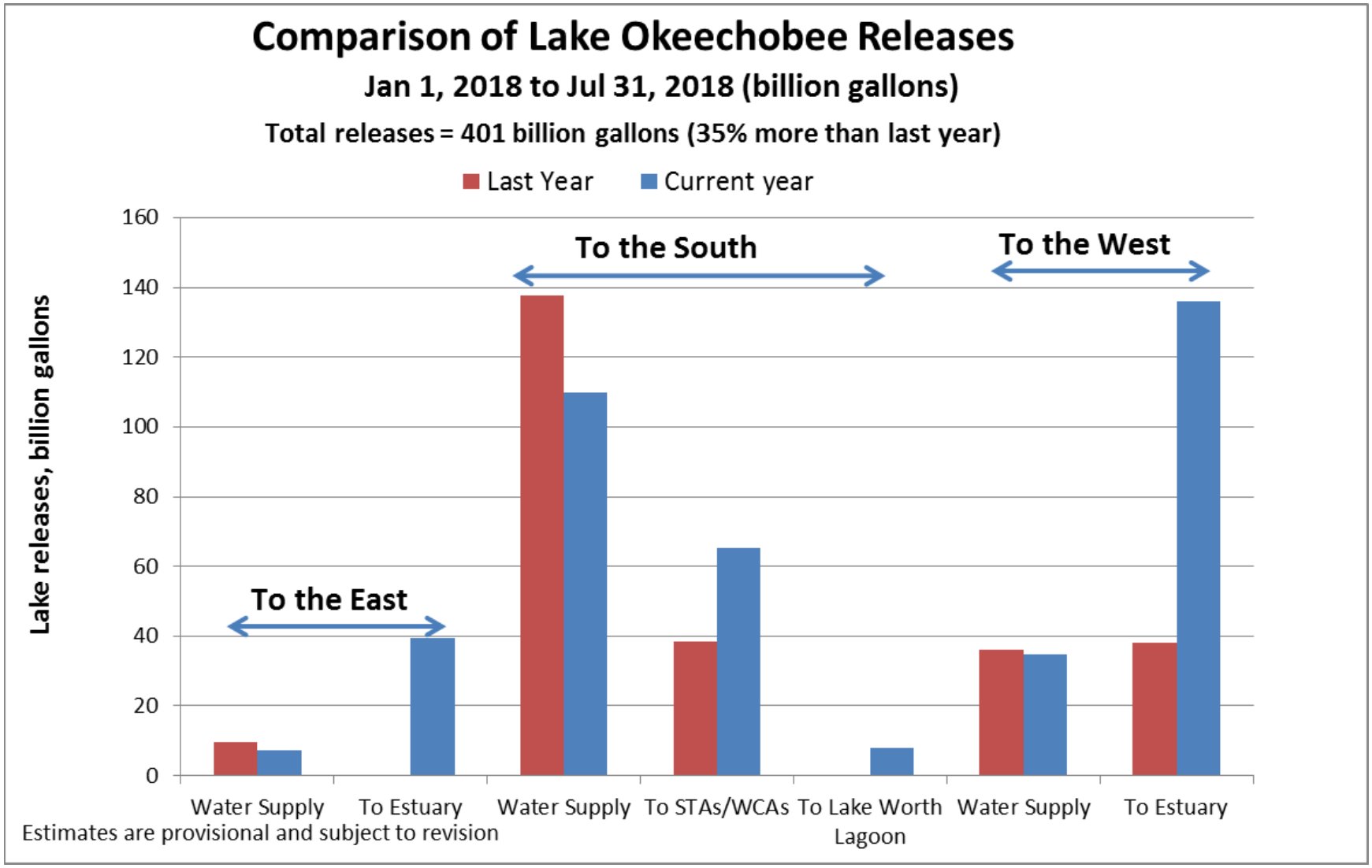
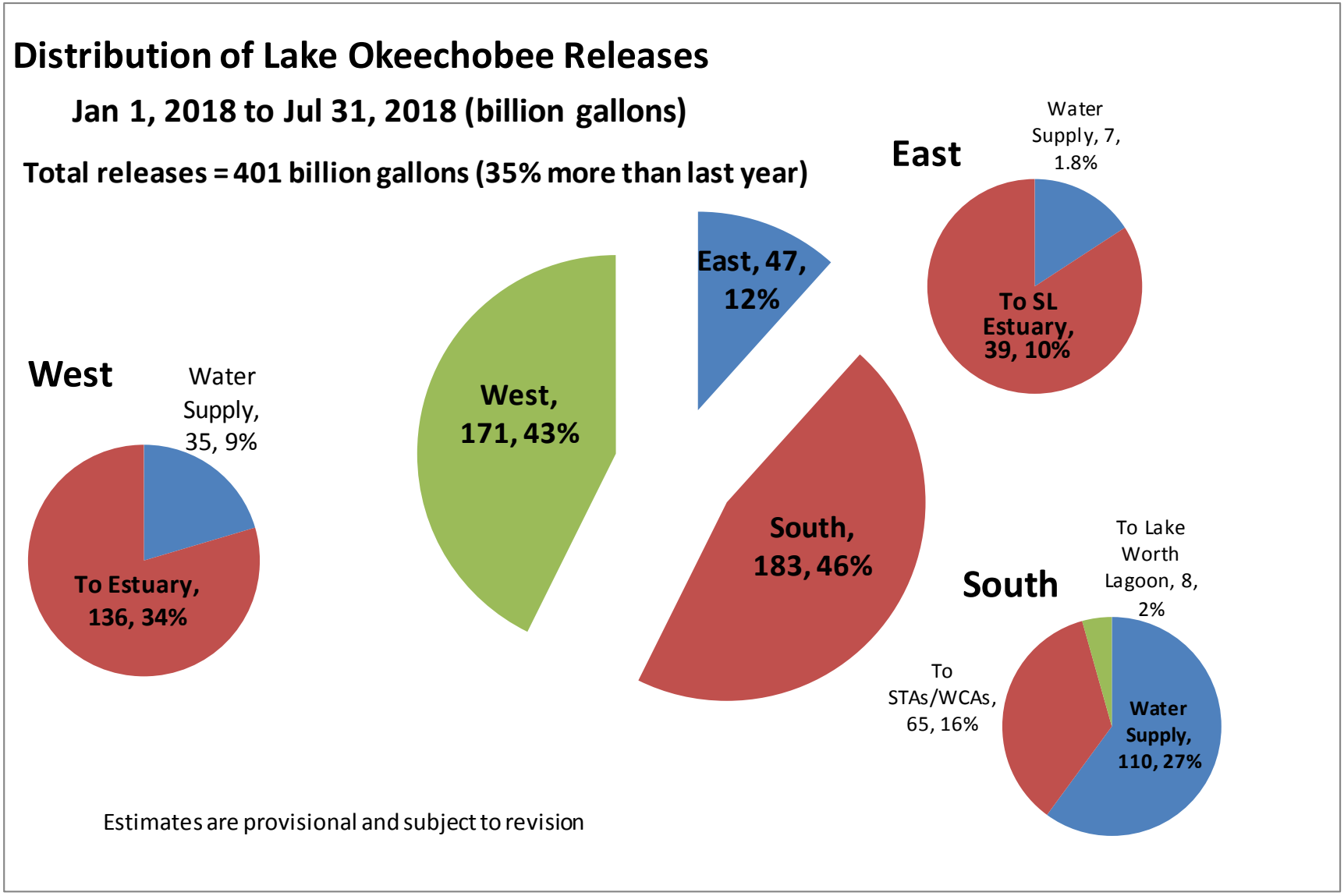






The FDEP BMAP progress report for 2017 indicated phosphorus loading to the lake decreased – yet this claim conflicts with the measured loads to the lake, e.g., the 5-yr average annual load in 2017 was almost 50% higher than reported by FDEP and was about 20 percent higher than the "starting period" used by FDEP.


Comparison of Lake Okeechobee Releases
Jan 1, 2018 to Jul 31, 2018 (billion gallons)
Total releases = 401 billion gallons (35% more than last year)
Last Year
Current year
Lake releases, billion gallons
160
140
120
100
80
60
40
20
0
To the East
To the South
To the West
Water Supply
To Estuary
Water Supply
To STAs/WCAs
To Lake Worth Lagoon
Water Supply
To Estuary
Estimates are provisional and subject to revision


Distribution of Lake Okeechobee Releases
Jan 1, 2018 to Jul 31, 2018 (billion gallons)
Total releases = 401 billion gallons (35% more than last year)
East
Water Supply, 7, 1.8%
To SL Estuary, 39, 10%
East, 47, 12%
West
Water Supply, 35, 9%
To Estuary, 136, 34%
West, 171, 43%
South, 183, 46%
South
To Lake Worth Lagoon, 8, 2%
To STAs/WCAs, 65, 16%
Water Supply, 110, 27%
Estimates are provisional and subject to revision

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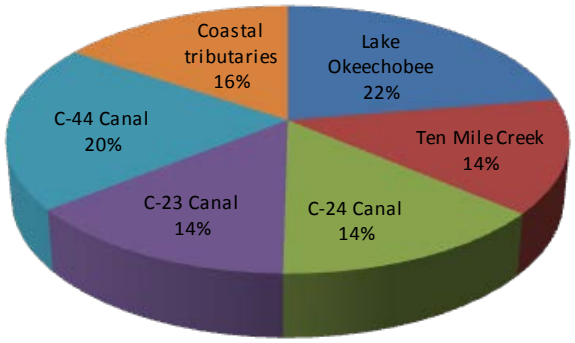
Flow to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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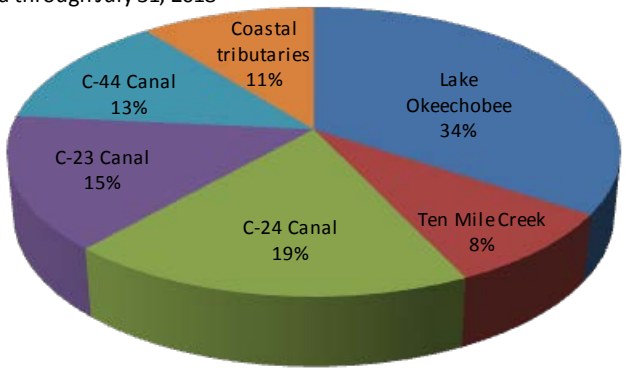
Nitrogen Load to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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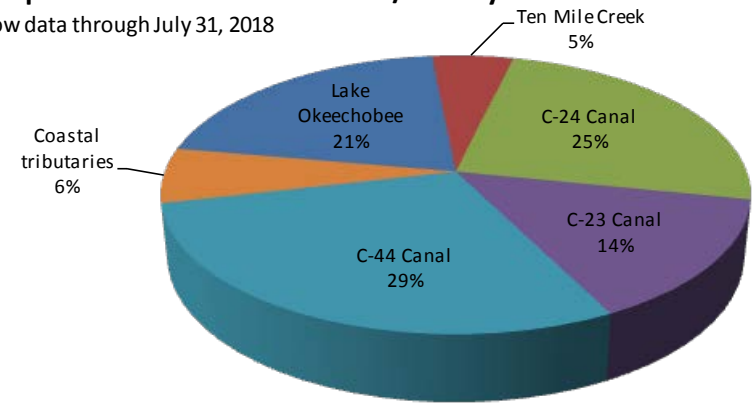
Phosphorus Load to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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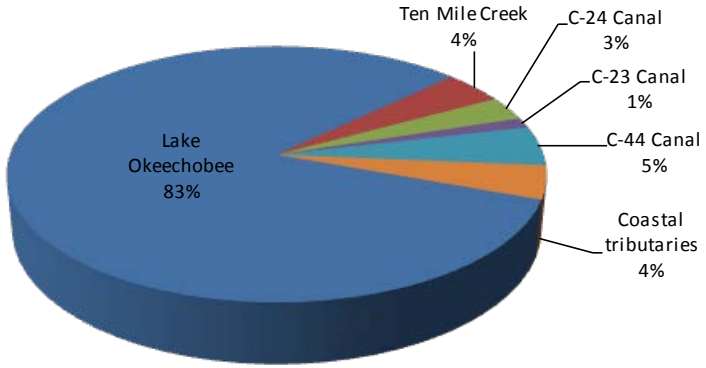
Suspended Solids Load to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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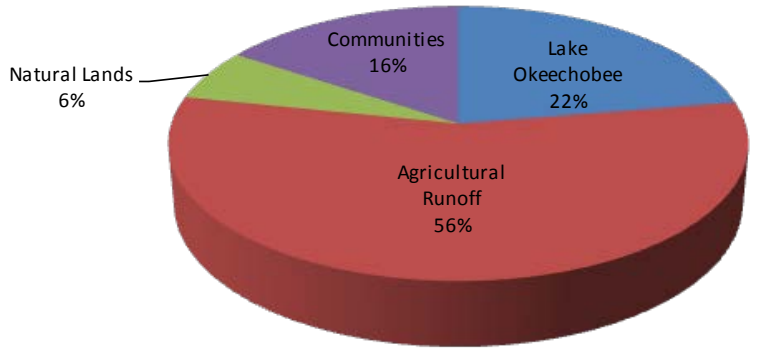

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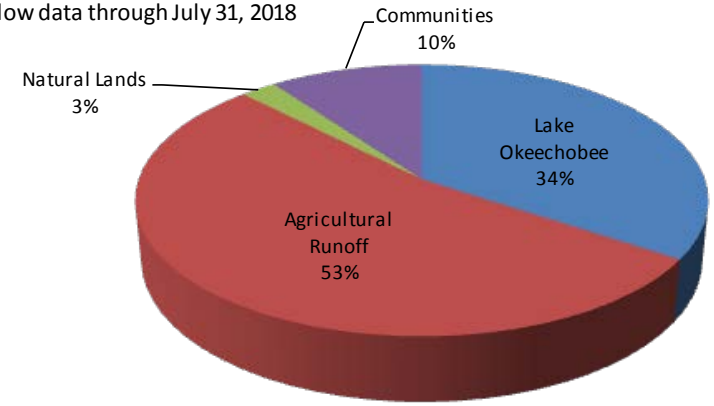
Nitrogen Load to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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Phosphorus Load to St. Lucie River/Estuary: 2018

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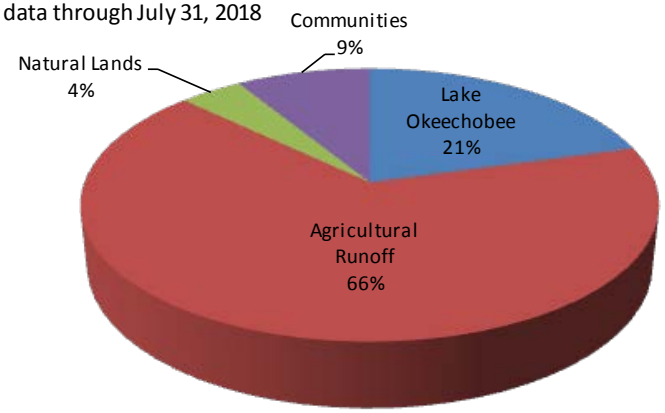

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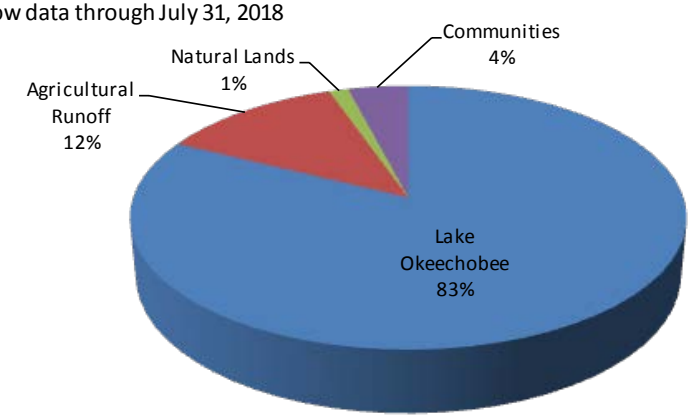
Suspended Solids Load to St. Lucie River/Estuary: 2018

Flow data through July 31, 2018



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Preliminary estimates of flows and loads to the St. Lucie Estuary – through July 31, 2018

2018 Source	Flow, Billion Gallons	TN loads, pounds	TP loads, pounds	TSS loads, pounds	TN conc ppb	TP conc ppb	TSS conc ppb
Lake Okeechobee	39.3	624,727	75,023	26,544,265	1,904	229	80,879
Ten Mile Creek	24.2	156,558	18,933	1,345,082	774	94	6,652
C-24 Canal	24.6	339,017	88,767	978,874	1,652	432	4,769
C-23 Canal	24.7	272,133	52,003	411,719	1,322	253	2,000
C-44 Canal	35.4	233,036	104,603	1,603,211	789	354	5,430
Coastal tributaries	27.3	194,181	23,193	1,358,514	853	102	5,964
Total	***175.5***	***1,819,650***	***362,522***	***32,241,665***	***1,242***	***248***	***22,015***
Lake Okeechobee	39.3	624,727	75,023	26,544,265	1,904	229	80,879
Agricultural Runoff	98.0	969,846	240,659	3,969,576	1,186	294	4,854
Natural Lands	10.6	42,533	14,969	421,301	479	169	4,746
Communities	27.5	182,545	31,870	1,306,523	794	139	5,684
Total	***175.5***	***1,819,650***	***362,522***	***32,241,665***	***1,242***	***248***	***22,015***

Preliminary estimates of flows and loads to the Caloosahatchee Estuary – through July 31, 2018

2018 Source	Flow Billion Gallons	Total Nitrogen Load pounds	Total Phosphorus Load pounds	Total Suspended Solids Load pounds	Total Nitrogen Conc ppb	Total Phosphorus Conc ppb	Total Suspended Solids Conc ppb
Lake Okeechobee	136.0	1,579,279	226,109	10,330,012	1,391	199	9,100
C-43 Basin	166.0	2,378,698	277,077	0	1,718	200	0
Total	***302.0***	***3,957,977***	***503,186***	***10,330,012***	***1,571***	***200***	***2,116***

Note: Zero load values indicate sedimentation within canals

Data are preliminary and subject to revision

This period:	July 31, 2018
Begin	January 1, 2018
End	July 31, 2018
Duration (days)	212

Data and calculations are DRAFT and subject to revision.

	This period				1 year earlier				Difference with 1 year ago			
Hydrologic Unit	**Total To Lake, AF**	**From Lake, AF**	**Total Runoff and Other, AF**	**Lake inflow as % of total**	**Total To Lake, AF**	**From Lake, AF**	**Total Runoff and Other, AF**	**Lake inflow as % of total**	**Total To Lake, AF**	**From Lake, AF**	**Total Runoff and Other, AF**	**% Change in Flows from Lake**
Miami Canal	0	180,142	164,938	52%	7,895	168,501	150,509	53%	-7,895	11,641	14,428	7%
NNR/Hillsboro Canal	24	222,800	373,820	37%	45,763	204,124	368,816	36%	-45,739	18,675	5,004	9%
WPB Canal	0	104,285	171,792	38%	1,896	110,790	128,278	46%	-1,896	-6,505	43,515	-6%
L-8 Canal	51,222	54,366	91,071	37%	51,183	57,514	47,275	55%	39	-3,148	43,796	-5%
STA-1E	N/A	20,761	76,303	21%	N/A	12,618	62,767	17%	N/A	8,143	13,536	65%
STA-1W	N/A	10,637	84,926	11%	N/A	10,207	87,520	10%	N/A	430	-2,594	4%
STA-2	N/A	31,933	206,844	13%	N/A	23,750	183,678	11%	N/A	8,183	23,167	34%
STA-3/4 & EAA A-1 FEB	N/A	136,405	394,326	26%	N/A	71,693	297,104	19%	N/A	64,712	97,222	90%
STA-5/6	N/A	0	66,250	TBD	N/A	0	41,337	TBD	N/A	0	24,913	
Holey Land WMA	N/A	7	1,058	1%	N/A	0	504	0%	N/A	7	554	
Rotenberger WMA (Note 1)	N/A	0	11,490	0%	N/A	0	4,469	0%	N/A	0	7,021	
WCA-1 (diversion)	N/A	0	0	0%	N/A	0	0	0%	N/A	0	0	
WCA-2A (diversion)	N/A	0	0		N/A	0	0	0%	N/A	0	0	
WCA-3A (diversion)	N/A	60	0		N/A	0	0	7%	N/A	60	0	304100%
Lake Worth Lagoon	N/A	24,525	308,091	7%	N/A	185	86,154	0%	N/A	24,340	221,938	13168%
City of WPB	N/A	32,293	3,748	90%	N/A	26,650	17,069	61%	N/A	5,643	-13,322	21%
C-51 Basin	N/A	31,543	208,774	13%	N/A	13,809	19,122	TBD	N/A	17,734	189,652	128%
Other basins to Lake	549,158				310,695				238,463			77%
Total to Lake	600,404				417,432				182,972			44%
Total to STAs		199,736	828,649	19%		118,268	672,405	15%		81,468	156,245	69%
Total to WMAs		7	12,548	0%		0	4,973	0%		7	7,575	
Total diverted to WCAs		60	0	100%		0	1	2%		60	-1	304100%
Total to WCAs		199,803	841,197	19%		118,268	677,378	15%		81,536	163,819	69%
Total from Lake to EAA & L-8		561,592				540,930				20,662		4%
Total EAA runoff and other			801,621				694,878				106,743	

Note 1. Inflow to Rotenberger consists primarily of treated discharges from the STAs - not stormwater runoff.

Percent of STA inflow		19%	81%			15%	85%					

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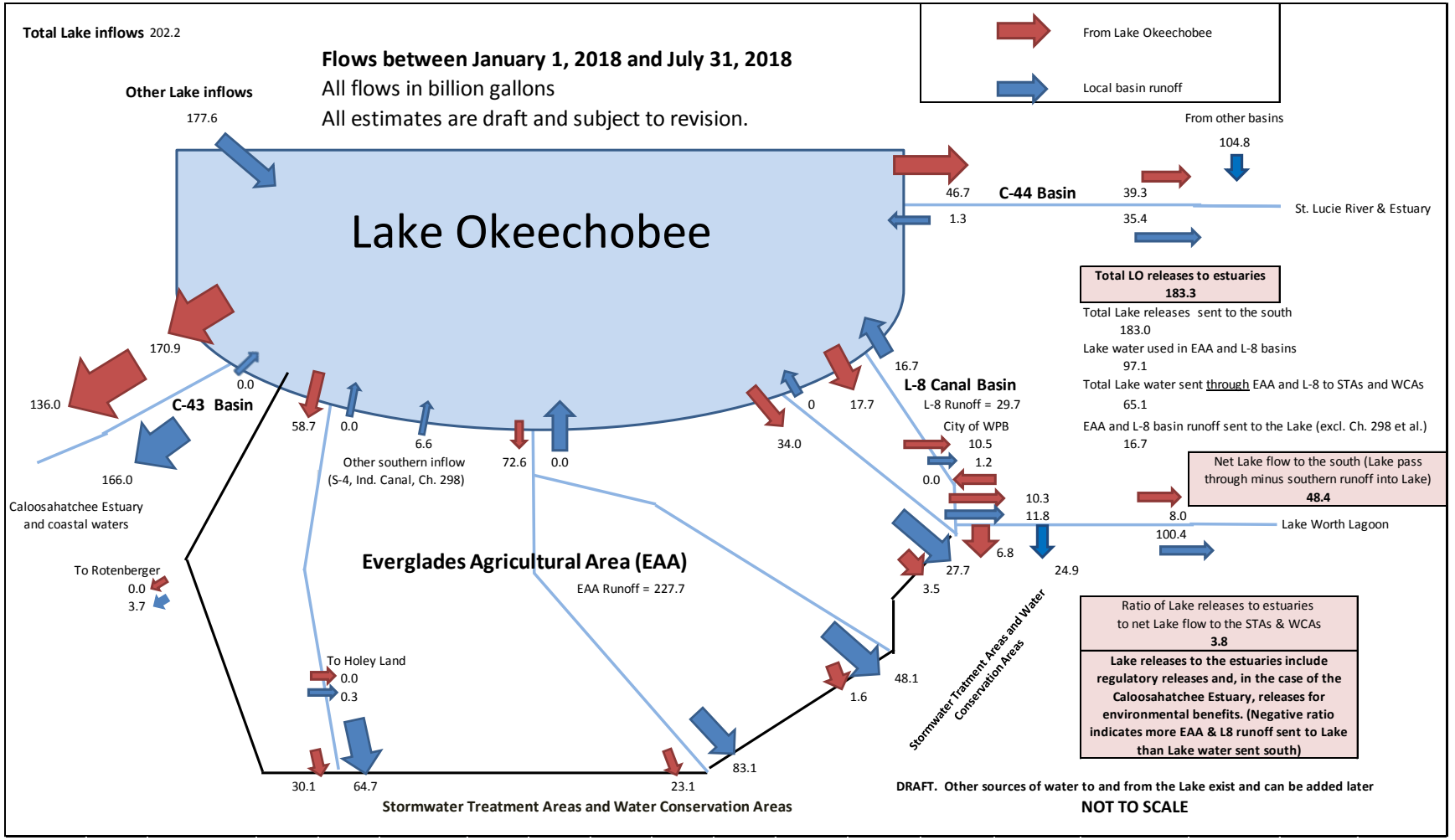

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