

# Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 5/22/2017 (ENSO Neutral Condition)

## Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method<sup>1</sup>, the SFWMD empirical method<sup>2</sup>, a sub-sampling of Neutral years<sup>3</sup> and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with Neutral ENSO years<sup>4</sup>. The results for Croley's method and the SFWMD empirical method are based on the [CPC Outlook](#).

Table of the Lake Okeechobee Net Inflow Outlooks in feet of equivalent depth. All methods are updated on a weekly basis with observed net inflow for the current month.

Season	Croley's Method <sup>1*</sup>		SFWMD Empirical Method <sup>2</sup>		Sub-sampling of Neutral ENSO Years <sup>3</sup>		Sub-sampling of AMO Warm + Neutral ENSO Years <sup>4</sup>	
	Value (ft)	<a href="#">Condition</a>	Value (ft)	<a href="#">Condition</a>	Value (ft)	<a href="#">Condition</a>	Value (ft)	<a href="#">Condition</a>
Current (Jun-Nov)	N/A	N/A	2.26	Very Wet	2.46	Very Wet	3.57	Very Wet
Multi Seasonal (Jun-Apr)	N/A	N/A	2.55	Wet	3.37	Wet	3.88	Wet

**\*Croley's Method Not Produced For This Report**

See [Seasonal](#) and [Multi-Seasonal](#) tables for the classification of Lake Okeechobee Outlooks.

The recommended methods and values for estimating the Lake Okeechobee Net Inflow Outlook are shaded and should be used in the LORS2008 Release Guidance Flow Charts.

## [Tributary Hydrologic Conditions Graph:](#)

**-3593 cfs** 14-day running average for Lake Okeechobee Net Inflow through 5/22/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

**-3.75** for Palmer Index on 5/21/2017.

According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Very Dry.

The wetter of the two conditions above is **Dry**.

## [LORS2008 Classification Tables:](#)

### Lake Okeechobee Stage on 5/22/2017

Lake Okeechobee Stage: **11.16 feet**

[USACE Report for Lake Okeechobee](#)

[Lake Okeechobee Stage Hydrograph](#)

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.20	
Operational Band	High sub-band	15.66	
	Intermediate sub-band	15.08	
	Low sub-band	13.11	
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.64	← 11.16
Water Shortage Management Band			

**[Part C of LORS2008: Discharge to WCA's](#)**

Release Guidance Flow Chart Outcome: No releases to the WCAs.

**[Part D of LORS2008: Discharge to Tidewater](#)**

Release Guidance Flow Chart Outcome: No releases to the Estuaries.

**Technical Input Summaries from:**

- [Lake Okeechobee Division](#)
- [Coastal Ecosystems](#)
- [Everglades Ecosystems Division](#)
- [Water Supply Department](#)
- [Water Resource Management Release Recommendation](#)
- [Kissimmee Watershed Environmental Conditions](#)
- [Operations Department](#)

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**[Back to U.S. Army Corps of Engineers LORSS Homepage](#)**

## LORS2008 Implementation on 5/22/2017 (ENSO Neutral Condition):

### Status for week ending 5/22/2017:

District wide, Raindar rainfall was 0.40 inches for the week. Lake stage on 5/22/2017 was 11.16 ft, down 0.27 ft from last week.

The updated May 2017 SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Beneficial Use Operational Sub-Band.

The LORS2008 tributary [indices](#) are classified as **Dry**. The PDSI indicates very dry condition and the LONIN is Dry. The classification is based on the wetter of the two.

### Water Supply Risk Evaluation

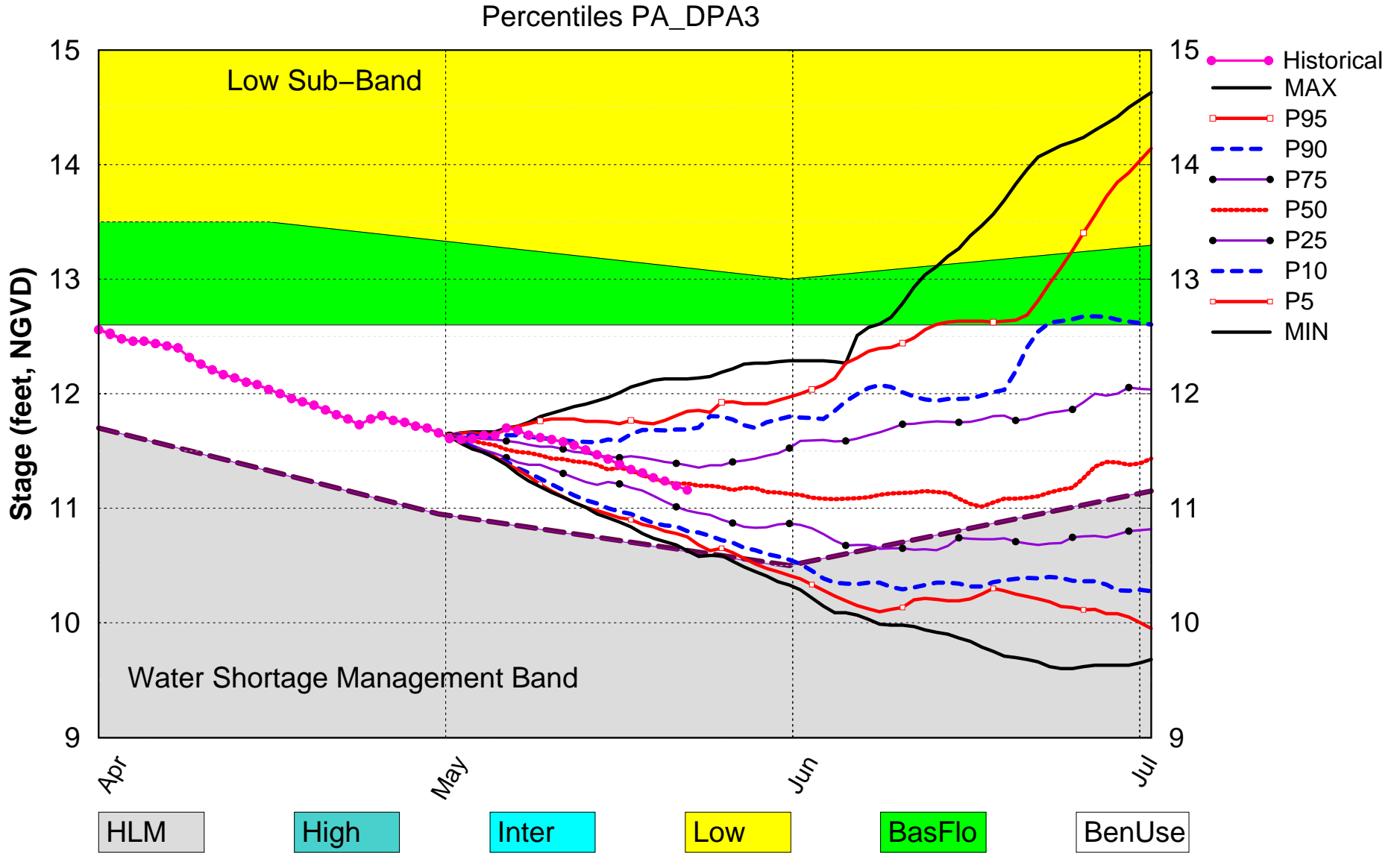
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use Sub-Band	M
	Palmer Index for LOK Tributary Conditions	-3.75 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	2.46 ft (Normal)	L
	ENSO La Nina Years		
	LOK Multi-Seasonal Net Inflow Outlook	3.37 ft (Wet)	L
ENSO La Nina Years			
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (15.90 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (11.67 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (8.57 ft)	L
LEC	Service Area 1	Year-Round Irrigation Rule in effect	L
	Service Area 2	Year-Round Irrigation Rule in effect	L
	Service Area 3	Year-Round Irrigation Rule in effect	L

Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.

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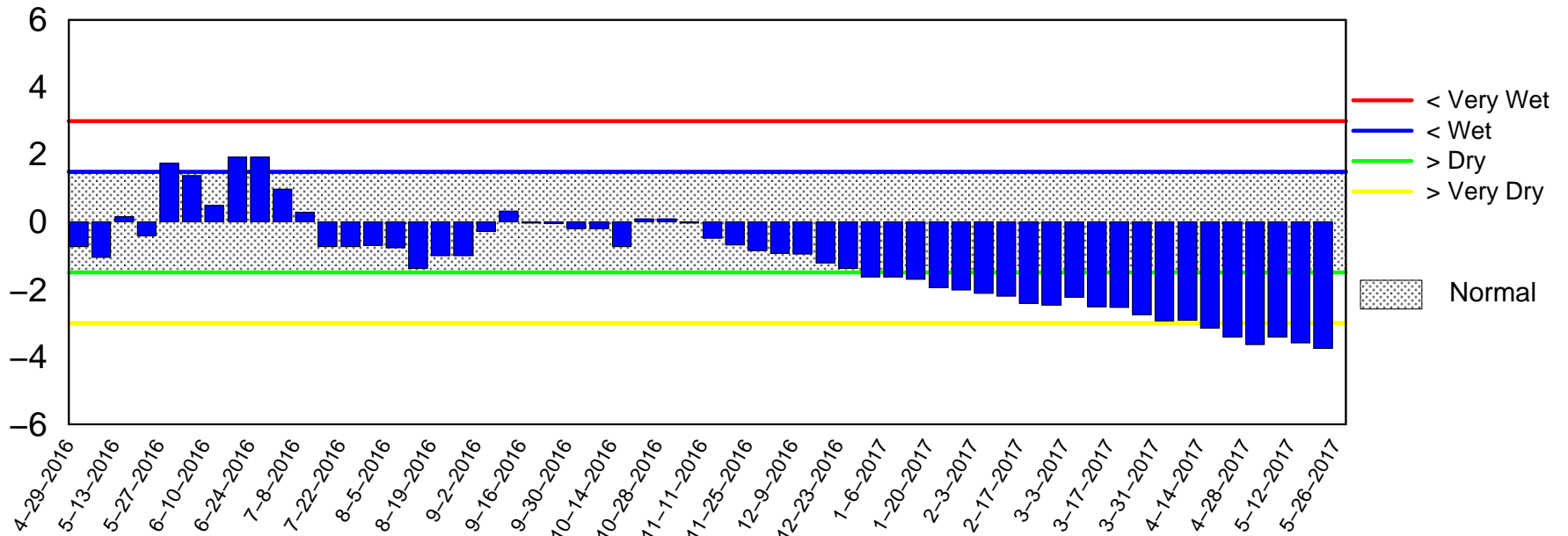
# Lake Okeechobee SFWMM May 2017 Dynamic Position Analysis



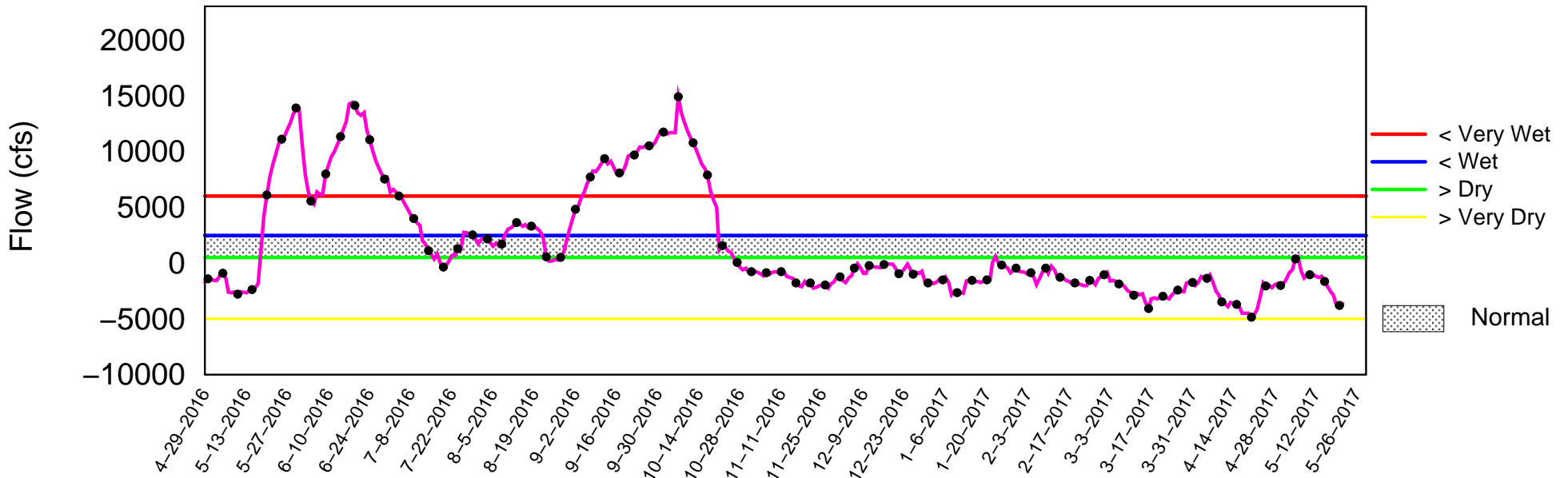
(See assumptions on the Position Analysis Results website)

# Tributary Basin Condition Indicators as of May 22 2017

## Palmer Index

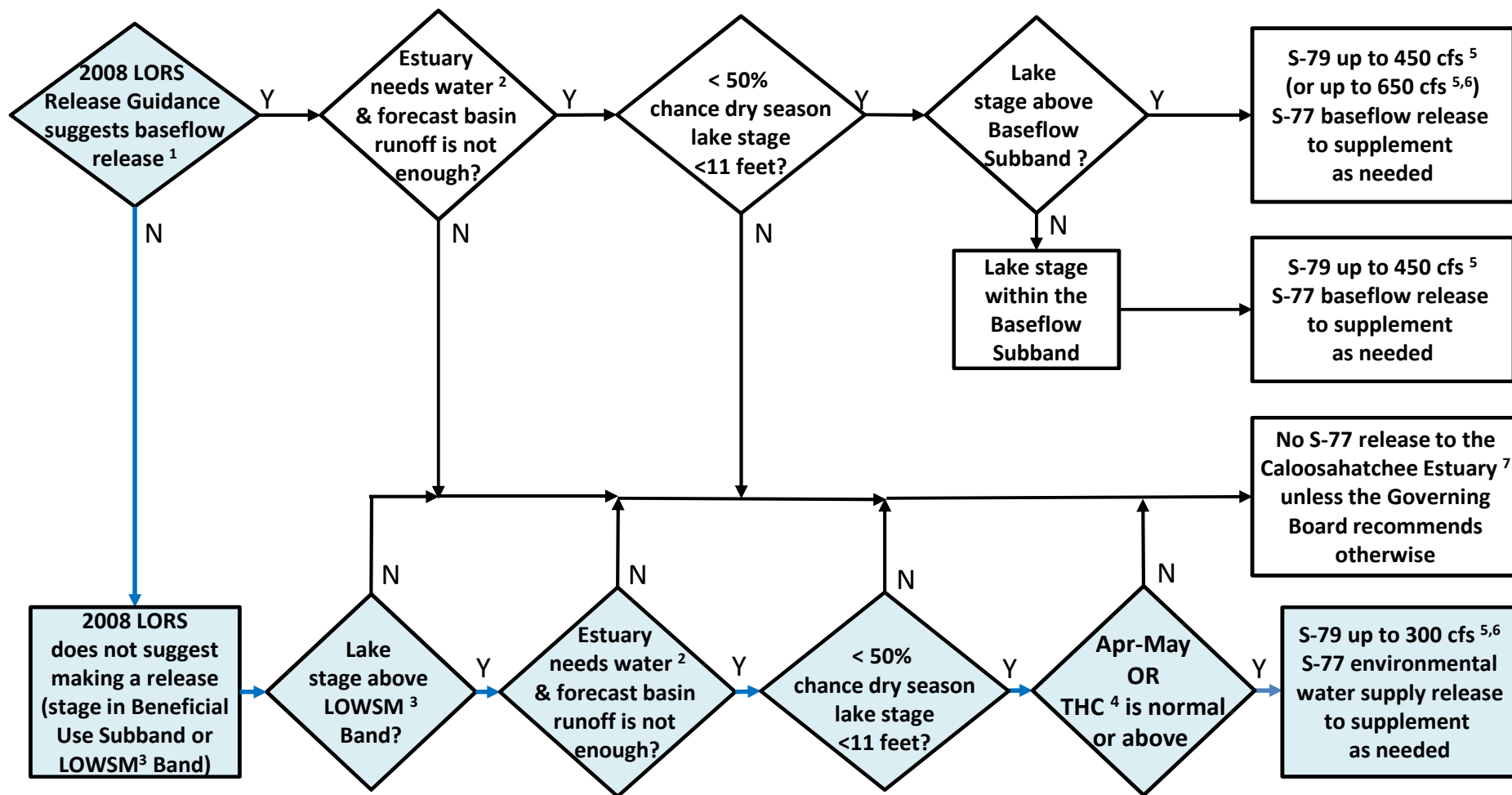


## Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon May 22 14:44:10 EDT 2017

# Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply (revised 9-Aug-2012)



<sup>1</sup>The 2008 LORS Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow Subbands.

<sup>2</sup>Estuary “needs” water when the 30-day moving average salinity at I-75 bridge is projected to exceed 5 practical salinity units (psu) within 2 weeks.

<sup>3</sup>LOWSM = Lake Okeechobee Water Shortage Management.

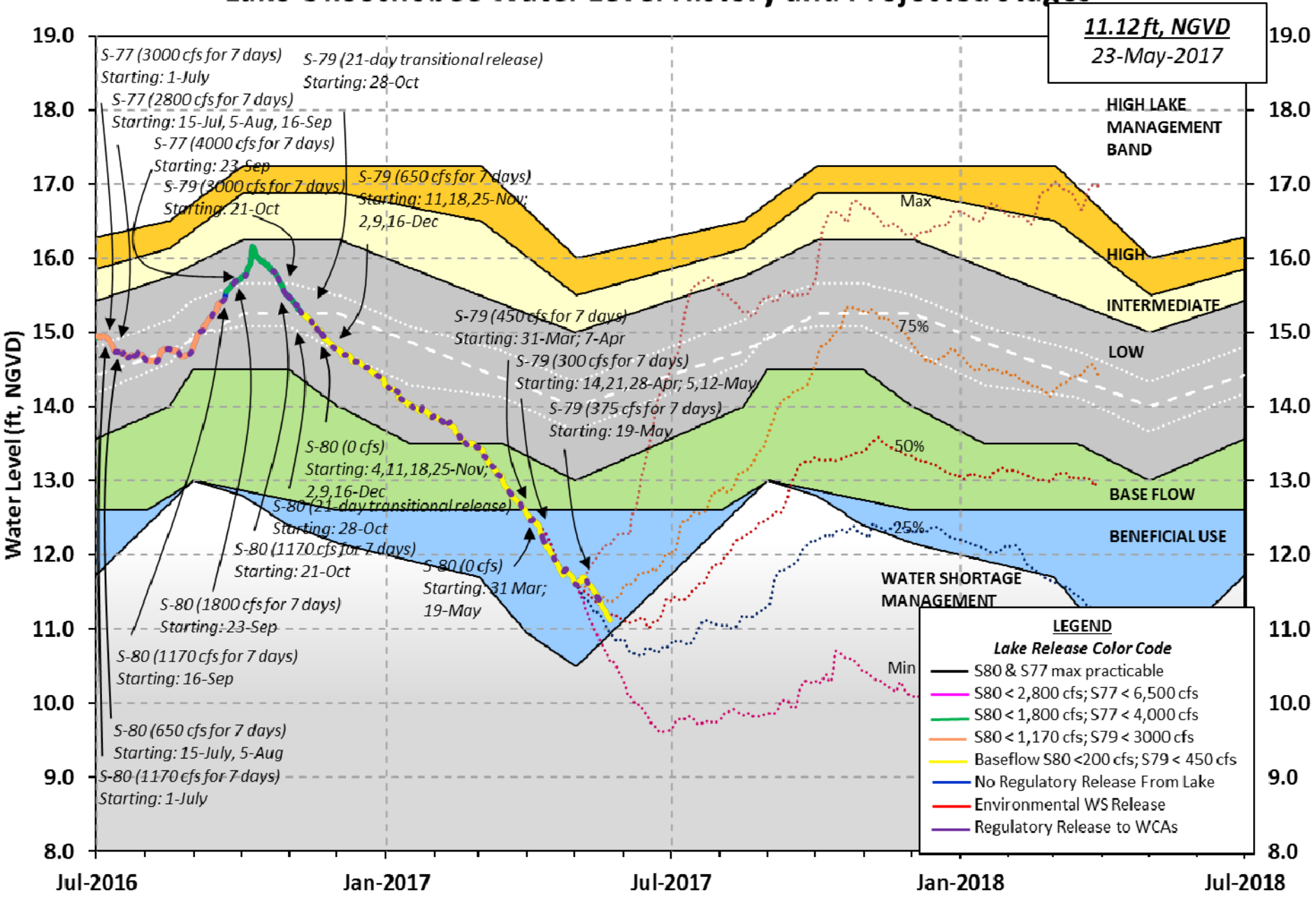
<sup>4</sup>Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

<sup>5</sup>Can release less than the “up to” limit if lower release is sufficient to reach or sustain desired estuary salinity; cfs = cubic feet per second.

<sup>6</sup>After reviewing conditions in Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs), ENP, St. Lucie Estuary and Lake Okeechobee.

<sup>7</sup>Should this condition be reached, the Governing Board will be briefed at their next regularly scheduled meeting as part of the State of the Water Resources agenda item

# Lake Okeechobee Water Level History and Projected Stages









S169:	11.09	10.98	200	5.0	5.0	5.0			
S310:	11.00		242						
S3 Pumps:	10.89	11.16	0	0	0	0			(cfs)
S354:	11.16	10.89	596	3.9	3.9				
S2 Pumps:	10.69	11.14	0	0	0	0	0		(cfs)
S351:	11.14	10.69	879	3.7	3.7	3.9			
S352:	11.19	10.65	443	2.3	2.2				
C10A:	-NR-	11.42		8.0	8.0	8.0	0.0	0.0	
L8 Canal PT		11.25	-218						

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S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.69	11.14	879	-NR--NR--NR--NR--NR--NR-
S352:	10.65	11.19	443	-NR--NR--NR--NR-
S354:	10.89	11.16	596	-NR--NR--NR--NR-

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Caloosahatchee River (S77, S78, S79)

S47B:	12.50	10.85		0.0	0.0
S47D:	10.93	10.92	-7	6.2	

S77:

Spillway and Sector Flow:							
	11.13	10.97	708.00	3.5	3.5	3.5	3.5
Flow Due to Lockages+:			0				

S77 Below USGS Flow Gage 1152

S78:

Spillway and Sector Flow:							
	10.79	2.60	527	0.0	0.0	0.0	1.5
Flow Due to Lockages+:			13				

S79:

Spillway and Sector Flow:										
	2.77	1.58	600	0.0	0.0	0.0	0.0	1.0	1.0	1.0

0.0

Flow Due to Lockages+:			7
Percent of flow from S77			118%
Chloride (ppm)			96

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:							
	11.05	10.88	0.00	0.0	0.0	0.0	0.0
Flow Due to Lockages+:			0				

S308 Below USGS Flow Gage -NR-

S153:	18.56	10.65	0	0.0	0.0
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S80:

Spillway and Sector Flow:									
	10.92	0.32	0	0.0	0.0	0.0	0.0	0.0	0.0
Flow Due to Lockages+:			23						
Percent of flow from S308		NA	%						

Steele Point Top Salinity (mg/ml) \*\*\*\*\*

Steele Point Bottom Salinity (mg/ml) \*\*\*\*

Speedy Point Top Salinity (mg/ml) \*\*\*\*

Speedy Point Bottom Salinity (mg/ml) \*\*\*\*

+ Flow Due to lockages is computed utilizing average daily headwater and tailwater along with total number of lockages for the day to calculate a volume which is then converted to an average discharge in cfs.

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Daily Precipitation Totals	1-Day	3-Day	7-Day	----- Wind ---	
Speed	(inches)	(inches)	(inches)	Direction	
(mph)				(Degø)	
S133 Pump Station:	-NR-	0.00	0.00		
S193:	-NR-	0.00	0.00	-NR-	-NR-
Okeechobee Field Station:	-NR-	0.00	0.00		
S135 Pump Station:	-NR-	0.00	0.00		
S127 Pump Station:	-NR-	0.00	0.00		
S129 Pump Station:	-NR-	0.00	0.00		
S131 Pump Station:	-NR-	0.00	0.00		
S77:	0.00	0.15	0.15	270	0
S78:	0.00	0.00	0.00	248	0
S79:	0.39	0.41	0.42	300	0
S4 Pump Station:	-NR-	0.00	0.00		
Clewiston Field Station:	-NR-	0.00	0.00		
S3 Pump Station:	-NR-	0.00	0.00		
S2 Pump Station:	-NR-	0.00	0.00		
S308:	0.52	0.52	0.72	146	3
S80:	0.00	0.00	0.06	232	1
Okeechobee Average	0.26	0.05	0.07		
(Sites S78, S79 and S80 not included)					
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Oke Nexrad Basin Avg	0.04	0.07	0.19		
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Okeechobee Lake Elevations	21 MAY 2017	11.16	Difference from	
21MAY17				
21MAY17 -1 Day =	20 MAY 2017	11.20		0.04
21MAY17 -2 Days =	19 MAY 2017	11.24		0.08
21MAY17 -3 Days =	18 MAY 2017	11.27		0.11
21MAY17 -4 Days =	17 MAY 2017	11.31		0.15
21MAY17 -5 Days =	16 MAY 2017	11.34		0.18
21MAY17 -6 Days =	15 MAY 2017	11.38		0.22
21MAY17 -7 Days =	14 MAY 2017	11.43		0.27
21MAY17 -30 Days =	21 APR 2017	11.78		0.62
21MAY17 -1 Year =	21 MAY 2016	14.24		3.08
21MAY17 -2 Year =	21 MAY 2015	13.12		1.96

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Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 5.02

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Lake Okeechobee Net Inflow (LONIN)

		Average Flow over the previous 14 days			Avg-Daily Flow
21MAY17	Today =	21 MAY 2017	-3544	MON	-4433
21MAY17	-1 Day =	20 MAY 2017	-3690	SUN	-4187
21MAY17	-2 Days =	19 MAY 2017	-3624	SAT	-2155
21MAY17	-3 Days =	18 MAY 2017	-2699	FRI	-3687
21MAY17	-4 Days =	17 MAY 2017	-2412	THU	-1822
21MAY17	-5 Days =	16 MAY 2017	-1894	WED	-3374
21MAY17	-6 Days =	15 MAY 2017	-1424	TUE	-5877
21MAY17	-7 Days =	14 MAY 2017	-942	MON	-4640
21MAY17	-8 Days =	13 MAY 2017	-1025	SUN	-4566
21MAY17	-9 Days =	12 MAY 2017	-972	SAT	-4155
21MAY17	-10 Days =	11 MAY 2017	-750	FRI	-2832
21MAY17	-11 Days =	10 MAY 2017	-831	THU	-2356
21MAY17	-12 Days =	09 MAY 2017	-846	WED	-2372
21MAY17	-13 Days =	08 MAY 2017	-1084	TUE	-3153

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S65E

		Average Flow over previous 14 days			Avg-Daily Flow
21MAY17	Today=	21 MAY 2017	0	MON	0
21MAY17	-1 Day =	20 MAY 2017	0	SUN	0
21MAY17	-2 Days =	19 MAY 2017	0	SAT	0
21MAY17	-3 Days =	18 MAY 2017	0	FRI	0
21MAY17	-4 Days =	17 MAY 2017	0	THU	0
21MAY17	-5 Days =	16 MAY 2017	0	WED	0
21MAY17	-6 Days =	15 MAY 2017	0	TUE	0
21MAY17	-7 Days =	14 MAY 2017	0	MON	0
21MAY17	-8 Days =	13 MAY 2017	0	SUN	0
21MAY17	-9 Days =	12 MAY 2017	0	SAT	0
21MAY17	-10 Days =	11 MAY 2017	0	FRI	0
21MAY17	-11 Days =	10 MAY 2017	0	THU	0
21MAY17	-12 Days =	09 MAY 2017	0	WED	0
21MAY17	-13 Days =	08 MAY 2017	0	TUE	0

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S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
21MAY17	Today=	21 MAY 2017	178	MON	194
21MAY17	-1 Day =	20 MAY 2017	178	SUN	193
21MAY17	-2 Days =	19 MAY 2017	180	SAT	193
21MAY17	-3 Days =	18 MAY 2017	186	FRI	193
21MAY17	-4 Days =	17 MAY 2017	191	THU	157
21MAY17	-5 Days =	16 MAY 2017	202	WED	169
21MAY17	-6 Days =	15 MAY 2017	213	TUE	171
21MAY17	-7 Days =	14 MAY 2017	217	MON	149
21MAY17	-8 Days =	13 MAY 2017	222	SUN	189
21MAY17	-9 Days =	12 MAY 2017	223	SAT	200
21MAY17	-10 Days =	11 MAY 2017	224	FRI	171
21MAY17	-11 Days =	10 MAY 2017	228	THU	176
21MAY17	-12 Days =	09 MAY 2017	230	WED	171

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 Lake Okeechobee Outlets Last 14 Days

	S-77	Below S-77	S-78	S-79
	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL DAY)	(ALL DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
21 MAY 2017	1399	2285	1071	1200
20 MAY 2017	1947	1828	1189	1199
19 MAY 2017	1186	1075	525	590
18 MAY 2017	1372	1147	266	12
17 MAY 2017	1335	1017	34	140
16 MAY 2017	1792	1871	316	463
15 MAY 2017	2233	2565	1064	689
14 MAY 2017	2011	2321	1054	1382
13 MAY 2017	1545	1998	1055	1175
12 MAY 2017	1948	2271	1070	237
11 MAY 2017	1730	1839	660	10
10 MAY 2017	1204	1338	370	81
09 MAY 2017	723	727	391	347
08 MAY 2017	745	612	227	550

	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
21 MAY 2017	479	1791	821	1146	-431
20 MAY 2017	354	1999	797	1295	-258
19 MAY 2017	338	2376	1001	1759	-295
18 MAY 2017	570	2538	922	1924	-282
17 MAY 2017	473	2469	1126	1900	-199
16 MAY 2017	263	2439	1178	2029	-124
15 MAY 2017	324	1412	876	1483	-245
14 MAY 2017	305	1051	775	1140	-365
13 MAY 2017	279	1364	992	1237	-276
12 MAY 2017	251	1711	950	1384	3
11 MAY 2017	207	1148	547	1196	126
10 MAY 2017	43	873	56	228	62
09 MAY 2017	-21	867	111	464	17
08 MAY 2017	-175	0	0	0	-57

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
21 MAY 2017	0	-NR-	46
20 MAY 2017	-83	-NR-	43
19 MAY 2017	187	401	30
18 MAY 2017	83	476	24
17 MAY 2017	186	430	41
16 MAY 2017	-237	183	27
15 MAY 2017	-1	-66	25
14 MAY 2017	-1	-1	30
13 MAY 2017	-3	-241	34
12 MAY 2017	-6	-187	42

11 MAY 2017	-8	-256	55
10 MAY 2017	-9	-117	41
09 MAY 2017	-10	33	56
08 MAY 2017	-6	30	49

\*\*\* NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

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(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

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\* On 11 May 1999, Lake Okeechobee Elevation was switched from Instantaneous 2400 value to an average-daily lake average. On 14 Mar 2001, due to the isolation of various gages within the standard 10 stations, the average of the interior 4 station gages was used as the Lake Okeechobee Elevation. On 05 November 2010, Lake Okeechobee Elevation was switched to a 9 gage mix of interior and edge gages to obtain a more reliable representation of the lake level. On 09 May 2011, Lake Okeechobee Elevation was switched to a 8 gage mix of interior and edge gages to obtain a more reliable representation of the lake level due to isolation of S135 from low lake levels. Today Lake Okeechobee elevation is determined from the 4 Int & 4 Edge stations

++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

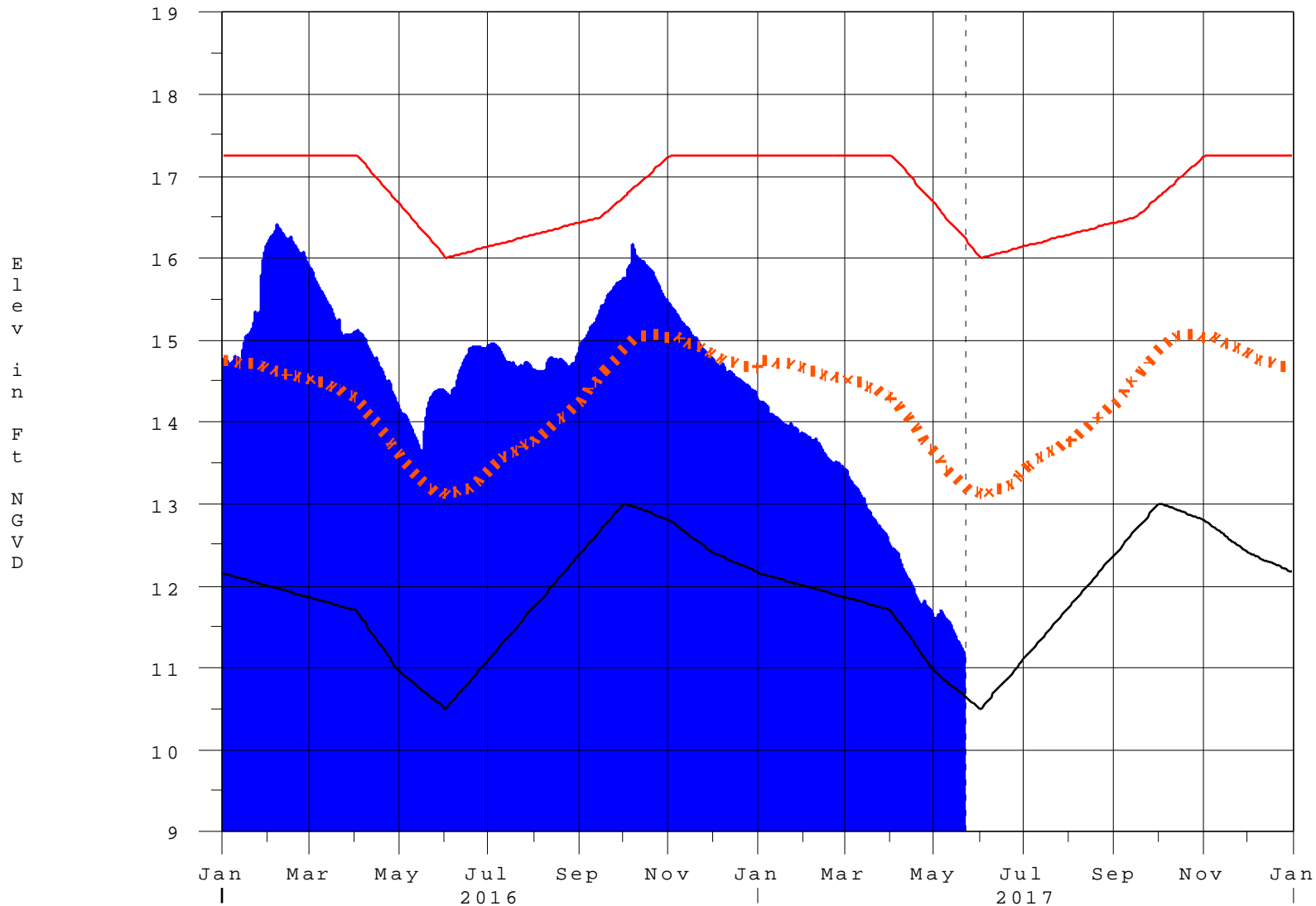
\$ For information regarding Lake Okeechobee Service Area water restrictions please refer to [www.sfwmd.gov](http://www.sfwmd.gov)

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Report Generated 22MAY2017 @ 12:38 \*\* Preliminary Data - Subject to Revision  
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# Lake Okeechobee

22MAY17 12:30:23



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- High Lake Management
- Okeechobee Avg Elev
- Average Elev [1965-2007]
- Water Shortage Management



# Classification Tables

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Supplemental Tables used in conjunction with the LORS2008 Release

Guidance Flow Charts

- [Class Limits for Tributary Hydrologic Conditions](#)

Table K-2 in the Lake Okeechobee Water Control Plan

- [6-15 Day Precipitation Outlook Categories](#)

Table ?? in the Lake Okeechobee Water Control Plan

- [Classification of Lake Okeechobee Net Inflow for Seasonal Outlook](#)

Table K-3 in the Lake Okeechobee Water Control Plan

- [Classification of Lake Okeechobee Net Inflow for Multi-Seasonal Outlook](#)

Table K-4 in the Lake Okeechobee Water Control Plan

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Tributary Hydrologic Classification*	Palmer Index Class Limits	2-wk Mean L.O. Net Inflow Class Limits
Very Wet	3.0 or greater	Greater $\geq$ 6000 cfs
Wet	1.5 to 2.99	2500 - 5999 cfs
Near Normal	-1.49 to 1.49	500 - 2499 cfs
Dry	-2.99 to -1.5	-5000 – 500 cfs
Very Dry	-3.0 or less	Less than -5000 cfs

\* use the wettest of the two indicators

**Classification of Lake Okeechobee Net Inflow Seasonal Outlook\***

<b>Lake Net Inflow Prediction</b> <b>[million acre-feet]</b>	<b>Equivalent Depth**</b> <b>[feet]</b>	<b>Lake Okeechobee Net Inflow Seasonal Outlook</b>
> 0.93	> 2.0	Very Wet
0.71 to 0.93	1.51 to 2.0	Wet
0.35 to 0.70	0.75 to 1.5	Normal
< 0.35	< 0.75	Dry

**\*\*Volume-depth conversion based on average lake surface area of 467,000 acres**

## Classification of Lake Okeechobee Net Inflow Multi-Seasonal Outlook\*

<b>Lake Net Inflow Prediction</b> <b>[million acre-feet]</b>	<b>Equivalent Depth**</b> <b>[feet]</b>	<b>Lake Okeechobee</b> <b>Net Inflow</b> <b>Multi-Seasonal Outlook</b>
> 2.0	> 4.3	Very Wet
1.18 to 2.0	2.51 to 4.3	Wet
0.5 to 1.17	1.1 to 2.5	Normal
< 0.5	< 1.1	Dry

**\*\*Volume-depth conversion based on average lake surface area of 467,000 acres**

**6-15 Day Precipitation Outlook Categories\***

<b>6-15 Day Precipitation Outlook Categories</b>	<b>WSE Decision Tree Categories</b>
Above Normal	Wet to Very Wet
Normal	Normal
Below Normal	Dry

\* Corresponds to Table 7-6 in the Lake Okeechobee Water Control Plan

Under Construction