

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 5/15/2017 (ENSO Neutral Condition)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method¹, the SFWMD empirical method², a sub-sampling of Neutral years³ and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with Neutral ENSO years⁴. 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 ^{1*}		SFWMD Empirical Method ²		Sub-sampling of Neutral ENSO Years ³		Sub-sampling of AMO Warm + Neutral ENSO Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (May-Oct)	N/A	N/A	2.26	Very Wet	2.60	Very Wet	3.50	Very Wet
Multi Seasonal (May-Apr)	N/A	N/A	2.72	Wet	3.70	Wet	4.13	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:](#)

-1171 cfs 14-day running average for Lake Okeechobee Net Inflow through 5/15/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

-3.58 for Palmer Index on 5/14/2017.

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 5/15/2017

Lake Okeechobee Stage: **11.43 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		16.35	
Operational Band	High sub-band	15.78	
	Intermediate sub-band	15.14	
	Low sub-band	13.18	
Base Flow sub-band		12.60	
Beneficial Use sub-band		10.74	← 11.43
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](#)

[Back to Lake Okeechobee Operations Main Page](#)

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

LORS2008 Implementation on 5/15/2017 (ENSO Neutral Condition):

Status for week ending 5/15/2017:

District wide, Raindar rainfall was 0.08 inches for the week. Lake stage on 5/15/2017 was 11.43 ft, down 0.21 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

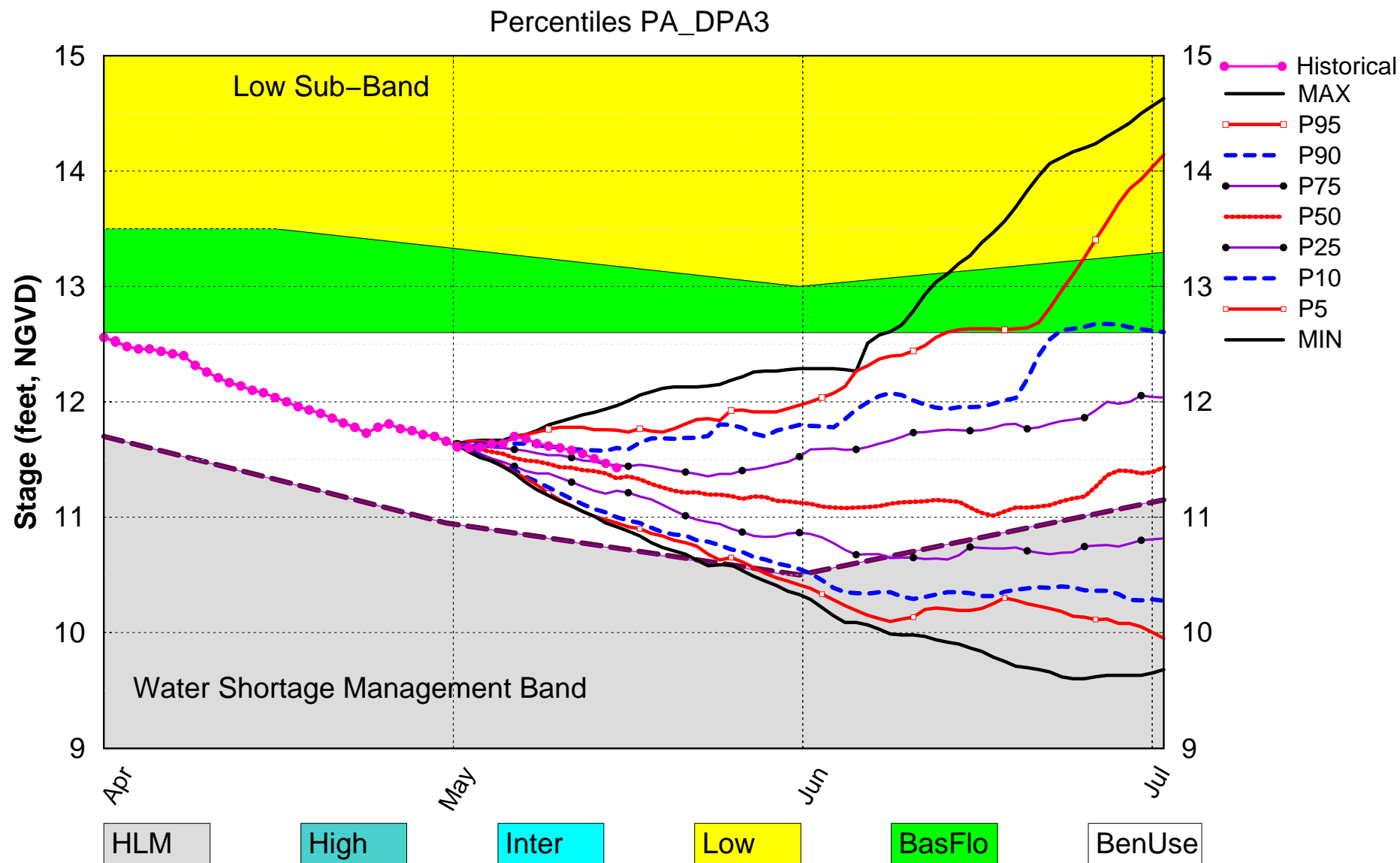
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use Sub-Band	M
	Palmer Index for LOK Tributary Conditions	-3.58 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	2.60 ft (Normal)	L
	ENSO La Nina Years		L
	LOK Multi-Seasonal Net Inflow Outlook		L
WCAs	ENSO La Nina Years	3.70 ft (Wet)	L
	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.03 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (11.41 ft)	L
LEC	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (8.66 ft)	L
	Service Area 1	Year-Round Irrigation Rule in effect	L
	Service Area 2	Year-Round Irrigation Rule in effect	L
LEC	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.

[Back to Lake Okeechobee Operations Main Page](#)

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

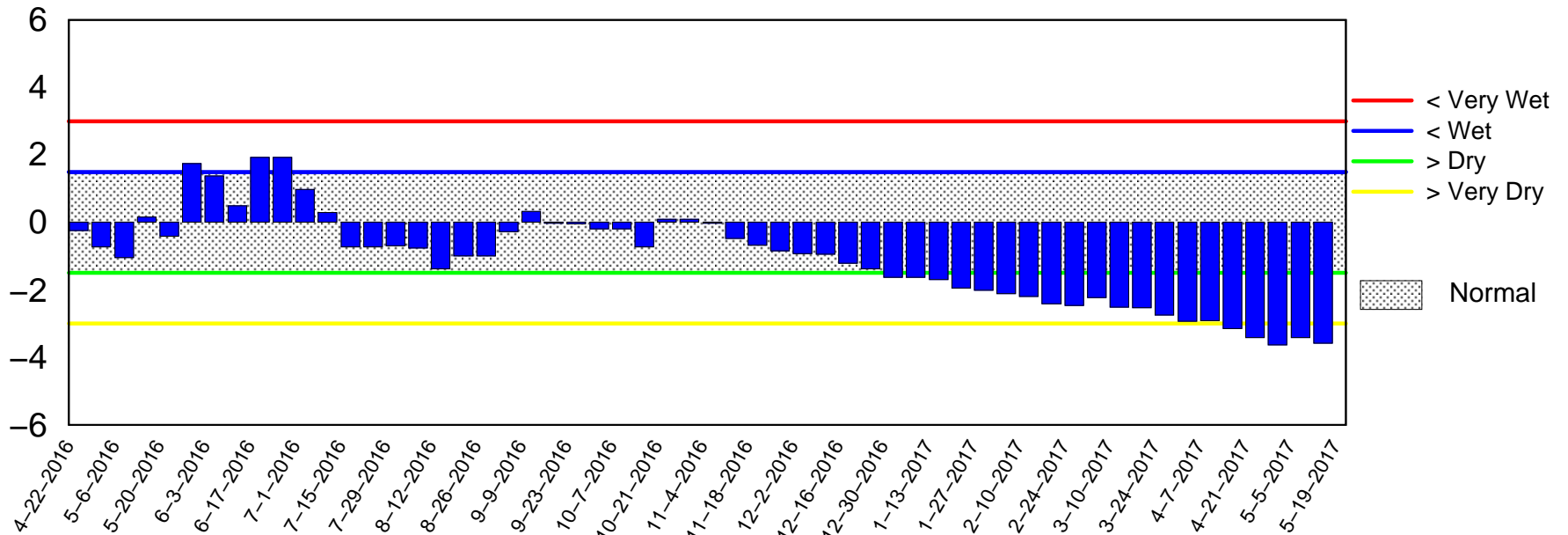
Lake Okeechobee SFWMM May 2017 Dynamic Position Analysis



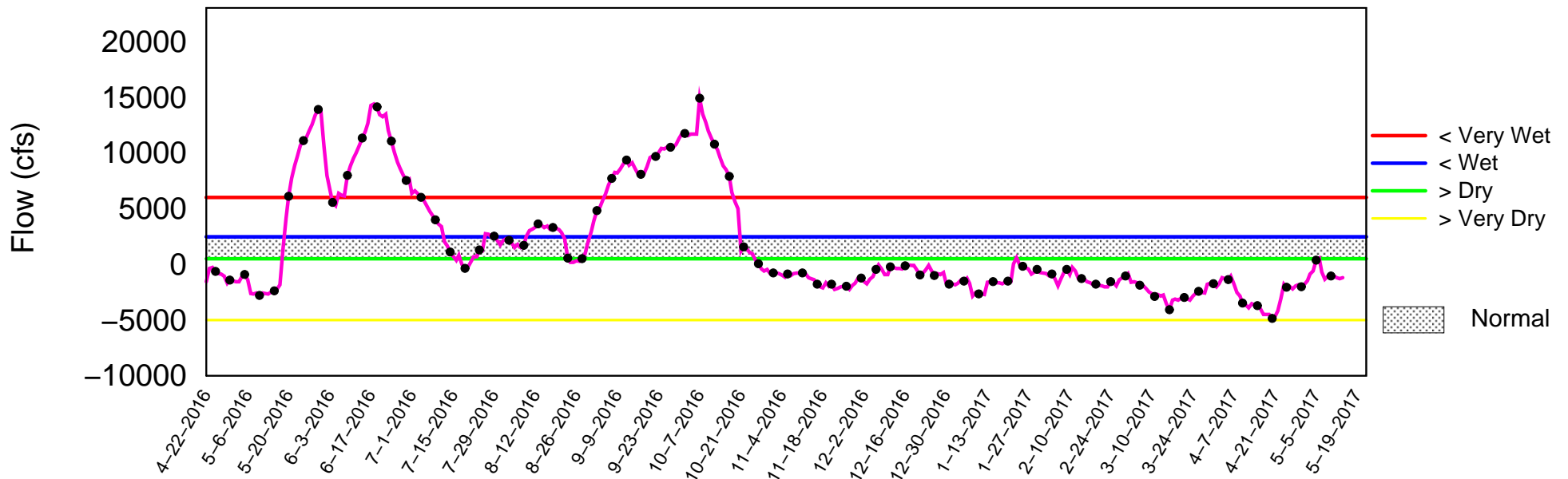
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of May 15 2017

Palmer Index

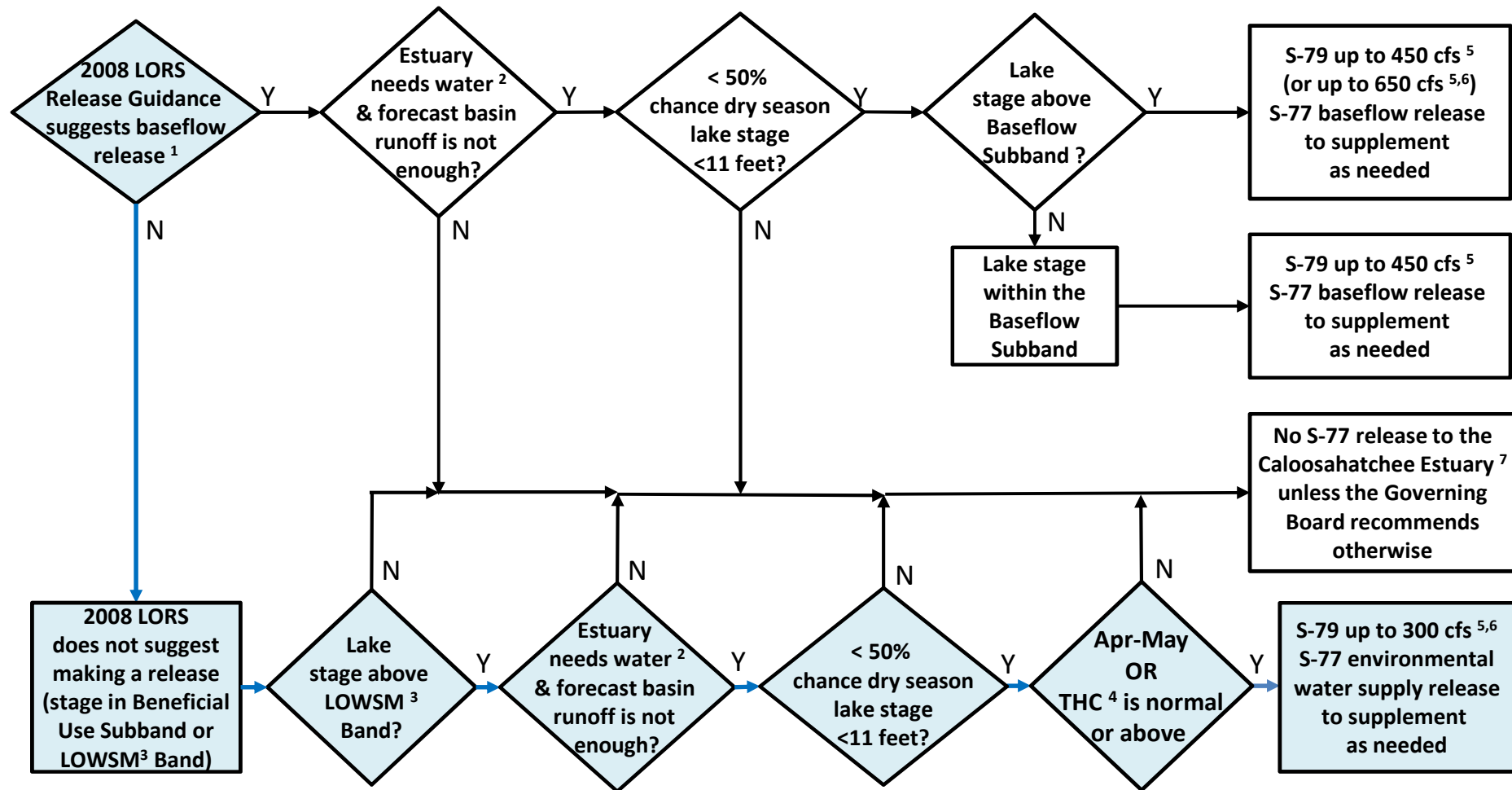


Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



Mon May 15 12:23:20 EDT 2017

for 2008 LORS Baseflow & for Environmental Water Supply (revised 9-Aug-2012)



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

²Estuary “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.

³LOWSM = Lake Okeechobee Water Shortage Management.

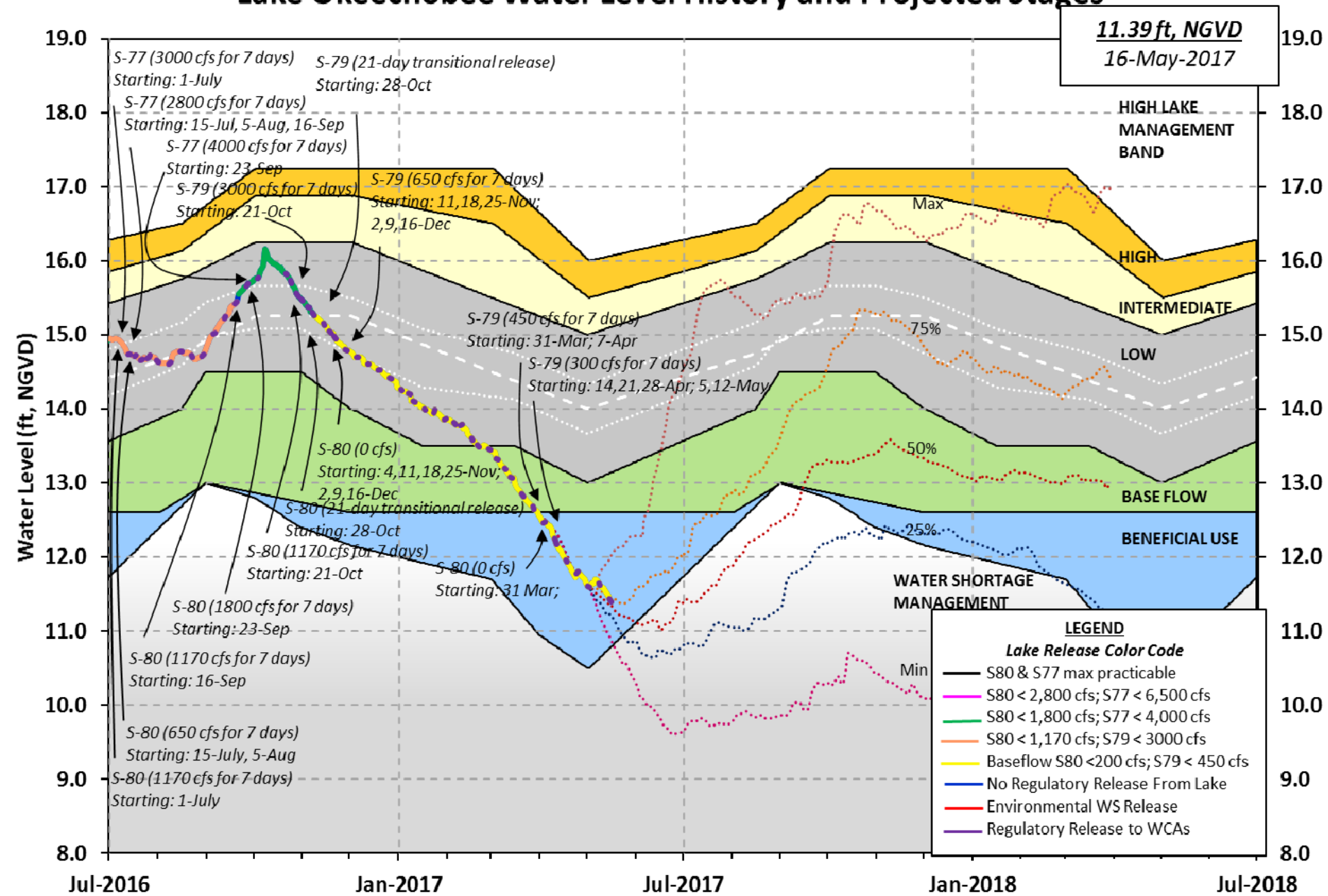
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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

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

⁷Should 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



LORS-2008

Adopted by USACE 28-April-2008

Projected Stage Percentiles From
SFWMD-HESM Position Analysis

U. S. Army Corps of Engineers, Jacksonville District
Lake Okeechobee and Vicinity Report
** Preliminary Data - Subject to Revision **

Data Ending 2400 hours 14 MAY 2017

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	11.43	13.72	13.45 (Official Elv)
Bottom of High Lake Mngmt= 16.37 Top of Water Short Mngmt= 10.75			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000] 12.11
Difference from Average LORS2008 -0.68

14MAY (1965-2007) Period of Record Average 13.31
Difference from POR Average -1.88

Today Lake Okeechobee elevation is determined from the 4 Int & 4 Edge stations

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷
5.37'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷
3.57'

Bridge Clearance = 51.74'

4 Interior and 4 Edge Okeechobee Lake Average (Avg-Daily values):

L001	L005	L006	LZ40	S4	S352	S308	S133
11.35	11.44	11.46	11.42	11.35	11.55	11.43	11.44

*Combination Okeechobee Avg-Daily Lake Average = 11.43
(*See Note)

Okeechobee Inflows (cfs):

S65E	0	S65EX1	149	Fisheating Cr	0
S154	0	S191	0	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0
Total Inflows:	149				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	639	S77	1008
S127 Culverts	0	S351	553	S308	-1
S129 Culverts	0	S352	419		
S131 Culverts	0	L8 Canal Pt	-184		
Total Outflows:	2435				

S4 Pumps: 11.24 11.23 0 0 0 0 (cfs)

S169:	11.34	11.31	137	5.0	5.0	5.0			
S310:	11.42		154						
S3 Pumps:	10.74	11.23	0	0	0	0			(cfs)
S354:	11.23	10.74	639	2.7	2.8				
S2 Pumps:	10.67	11.32	0	0	0	0	0		(cfs)
S351:	11.32	10.67	553	2.0	0.4	2.0			
S352:	11.58	10.73	419	1.1	1.1				
C10A:	-NR-	11.69		0.0	8.0	8.0	8.0	8.0	
L8 Canal PT		11.49	-184						

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.67	11.32	553	-NR--NR--NR--NR--NR--NR-
S352:	10.73	11.58	419	-NR--NR--NR--NR-
S354:	10.74	11.23	639	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	13.12	11.02		0.0	0.0
S47D:	11.04	11.04	17	6.2	

S77:

Spillway and Sector Flow:

11.32	11.11	*****	4.0	4.0	4.0	4.0
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Flow Due to Lockages+: 0

S77 Below USGS Flow Gage 1170

S78:

Spillway and Sector Flow:

10.90	2.66	524	0.0	0.0	0.0	1.5
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Flow Due to Lockages+: 7

S79:

Spillway and Sector Flow:

2.76	0.95	701	0.0	0.0	0.0	0.0	1.0	1.0	0.0
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0.0

Flow Due to Lockages+: 6

Percent of flow from S77 144%

Chloride (ppm) 113

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

11.32	11.76	0.00	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: -1

S308 Below USGS Flow Gage -1

S153:	18.53	11.53	0	0.0	0.0
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S80:

Spillway and Sector Flow:

11.81	0.77	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 15

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.

----- Wind ---					

Daily Precipitation Totals	1-Day	3-Day	7-Day	Direction	
Speed	(inches)	(inches)	(inches)	(Degø)	
(mph)					
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	0.00	0.00	50	0
S78:	0.00	0.00	0.00	216	1
S79:	0.00	0.05	0.05	295	2
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:	0.00	0.00	0.00	63	5
S80:	0.00	0.00	0.00	143	0
Okeechobee Average	0.00	0.00	0.00		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.03	0.04	0.04		

Okeechobee Lake Elevations	14 MAY 2017	11.43	Difference from
14MAY17			
14MAY17 -1 Day =	13 MAY 2017	11.47	0.04
14MAY17 -2 Days =	12 MAY 2017	11.51	0.08
14MAY17 -3 Days =	11 MAY 2017	11.55	0.12
14MAY17 -4 Days =	10 MAY 2017	11.58	0.15
14MAY17 -5 Days =	09 MAY 2017	11.60	0.17
14MAY17 -6 Days =	08 MAY 2017	11.62	0.19
14MAY17 -7 Days =	07 MAY 2017	11.64	0.21
14MAY17 -30 Days =	14 APR 2017	12.04	0.61
14MAY17 -1 Year =	14 MAY 2016	13.72	2.29
14MAY17 -2 Year =	14 MAY 2015	13.45	2.02

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

Lake Okeechobee Net Inflow (LONIN)					
Average Flow over the previous 14 days					Avg-Daily Flow
14MAY17	Today =	14 MAY 2017	-942	MON	-4640
14MAY17	-1 Day =	13 MAY 2017	-1025	SUN	-4566
14MAY17	-2 Days =	12 MAY 2017	-972	SAT	-4155
14MAY17	-3 Days =	11 MAY 2017	-750	FRI	-2832
14MAY17	-4 Days =	10 MAY 2017	-831	THU	-2356
14MAY17	-5 Days =	09 MAY 2017	-846	WED	-2372
14MAY17	-6 Days =	08 MAY 2017	-1084	TUE	-3153
14MAY17	-7 Days =	07 MAY 2017	-432	MON	-6486
14MAY17	-8 Days =	06 MAY 2017	799	SUN	-3265
14MAY17	-9 Days =	05 MAY 2017	613	SAT	10805
14MAY17	-10 Days =	04 MAY 2017	-413	FRI	322
14MAY17	-11 Days =	03 MAY 2017	-694	THU	5430
14MAY17	-12 Days =	02 MAY 2017	-1306	WED	3216
14MAY17	-13 Days =	01 MAY 2017	-1614	TUE	871

S65E					
Average Flow over previous 14 days					Avg-Daily Flow
14MAY17	Today=	14 MAY 2017	0	MON	0
14MAY17	-1 Day =	13 MAY 2017	0	SUN	0
14MAY17	-2 Days =	12 MAY 2017	0	SAT	0
14MAY17	-3 Days =	11 MAY 2017	0	FRI	0
14MAY17	-4 Days =	10 MAY 2017	0	THU	0
14MAY17	-5 Days =	09 MAY 2017	0	WED	0
14MAY17	-6 Days =	08 MAY 2017	0	TUE	0
14MAY17	-7 Days =	07 MAY 2017	0	MON	0
14MAY17	-8 Days =	06 MAY 2017	0	SUN	0
14MAY17	-9 Days =	05 MAY 2017	0	SAT	0
14MAY17	-10 Days =	04 MAY 2017	0	FRI	0
14MAY17	-11 Days =	03 MAY 2017	0	THU	0
14MAY17	-12 Days =	02 MAY 2017	0	WED	0
14MAY17	-13 Days =	01 MAY 2017	0	TUE	0

S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
14MAY17	Today=	14 MAY 2017	217	MON	149
14MAY17	-1 Day =	13 MAY 2017	222	SUN	189
14MAY17	-2 Days =	12 MAY 2017	223	SAT	200
14MAY17	-3 Days =	11 MAY 2017	224	FRI	171
14MAY17	-4 Days =	10 MAY 2017	228	THU	176
14MAY17	-5 Days =	09 MAY 2017	230	WED	171
14MAY17	-6 Days =	08 MAY 2017	235	TUE	161
14MAY17	-7 Days =	07 MAY 2017	243	MON	205
14MAY17	-8 Days =	06 MAY 2017	248	SUN	221
14MAY17	-9 Days =	05 MAY 2017	250	SAT	265
14MAY17	-10 Days =	04 MAY 2017	248	FRI	271
14MAY17	-11 Days =	03 MAY 2017	248	THU	306
14MAY17	-12 Days =	02 MAY 2017	245	WED	328

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)	
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	-NR-	
09 MAY 2017	723	727	391	-NR-	
08 MAY 2017	745	612	227	543	
07 MAY 2017	1130	970	504	1103	
06 MAY 2017	537	352	1328	-NR-	
05 MAY 2017	417	234	368	7	
04 MAY 2017	640	520	373	564	
03 MAY 2017	243	-179	390	2557	
02 MAY 2017	1059	920	369	415	
01 MAY 2017	1292	1040	559	644	

	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)
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
07 MAY 2017	-377	0	0	0	-174
06 MAY 2017	-534	0	0	0	-347
05 MAY 2017	-578	0	0	0	-355
04 MAY 2017	-766	0	0	0	-330
03 MAY 2017	-564	0	0	0	-289
02 MAY 2017	84	581	32	775	4
01 MAY 2017	270	1715	145	1333	-118

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
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
07 MAY 2017	-15	37	60
06 MAY 2017	-8	-250	63
05 MAY 2017	-2	-309	35

04 MAY 2017	-2	-388	45
03 MAY 2017	-1	-444	59
02 MAY 2017	621	342	42
01 MAY 2017	625	583	48

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

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

* 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 Okechobee elevation is determined from the 4 Int & 4 Edge stations

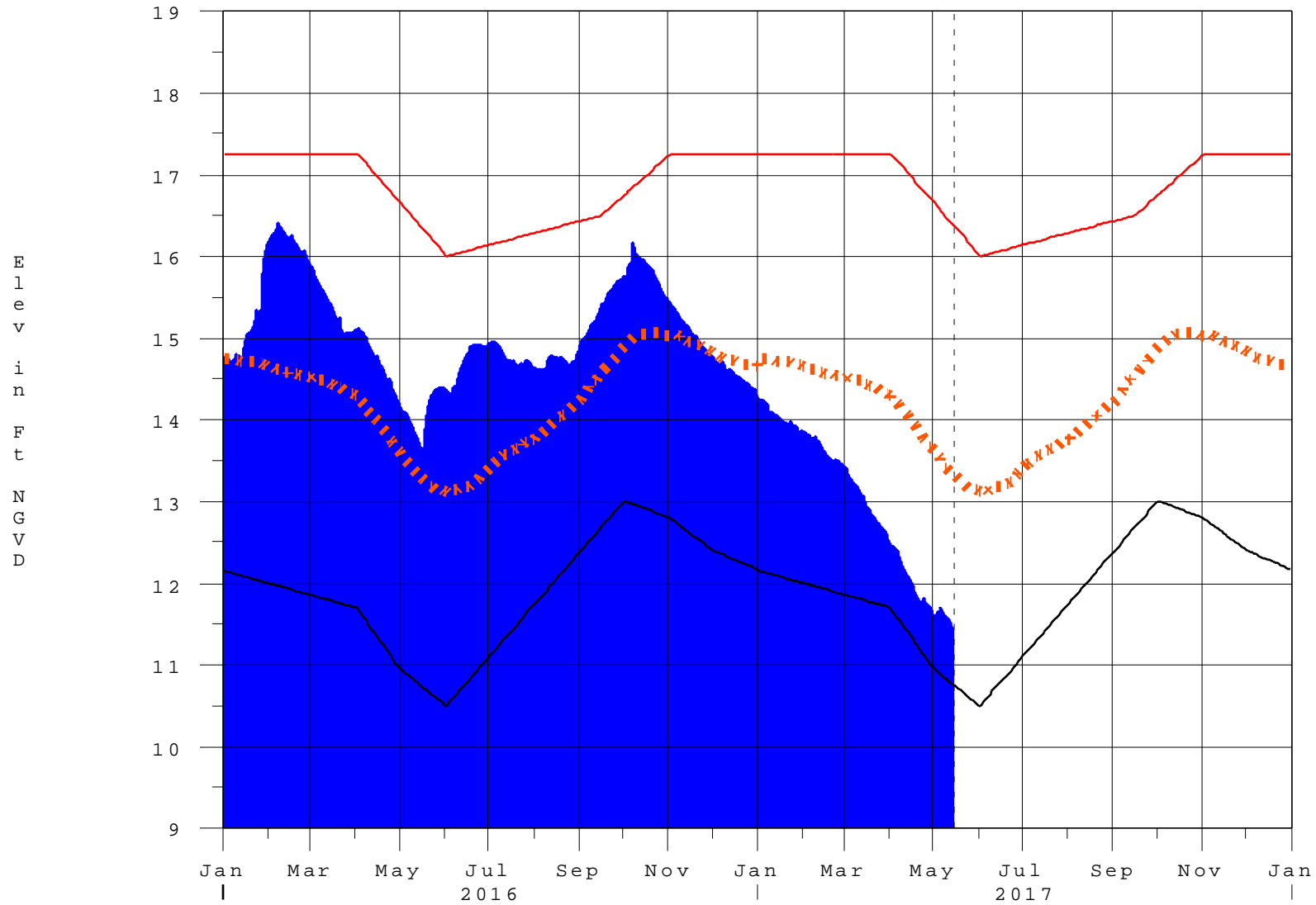
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

\$ For information regarding Lake Okeechobee Service Area water restrictions please refer to www.sfwmd.gov

Report Generated 15MAY2017 @ 11:38 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

15MAY17 11:45:17



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

Classification Tables

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

[Back to Lake Okeechobee Operations Main Page](#)

[Back to U.S. Army Corps of Engineers Lake Okeechobee Operations Homepage](#)

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*

Lake Net Inflow Prediction [million acre-feet]	Equivalent Depth** [feet]	Lake Okeechobee Net Inflow Seasonal Outlook
> 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^{*}

Lake Net Inflow Prediction [million acre-feet]	Equivalent Depth^{**} [feet]	Lake Okeechobee Net Inflow Multi-Seasonal Outlook
> 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*

6-15 Day Precipitation Outlook Categories	WSE Decision Tree Categories
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