

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 11/27/2017 (ENSO La Nina 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 La Nina 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 (Nov-Apr)	N/A	N/A	1.42	Normal	1.13	Normal	0.91	Normal
Multi Seasonal (Nov-Oct)	N/A	N/A	3.76	Wet	3.79	Wet	3.37	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:](#)

779 cfs 14-day running average for Lake Okeechobee Net Inflow through 11/27/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Normal.

1.94 for Palmer Index on 11/25/2017.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 11/27/2017

Lake Okeechobee Stage: **16.26 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		17.25	
Operational Band	High sub-band	16.88	
	Intermediate sub-band	16.25	← 16.26
	Low sub-band	14.50	
Base Flow sub-band		12.75	
Beneficial Use sub-band		12.45	
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: S-77 Up to 4000 cfs & S-80 Up to 1800 cfs

Technical Input Summaries from:

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

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

LORS2008 Implementation on 11/27/2017 (ENSO Neutral Condition):

Status for week ending 11/27/2017:

District wide, Raindar rainfall was 0.52 inches for the week. Lake stage on 11/27/2017 was 16.26 ft, down 0.23 ft from last week.

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

The 2008 LORS Tributary Hydrologic Condition (THC) tributary is classified as **Wet**. The PDSI indicates Wet condition and the LONIN is Normal. The THC classification is based on the wetter of the two [indices](#) .

Water Supply Risk Evaluation

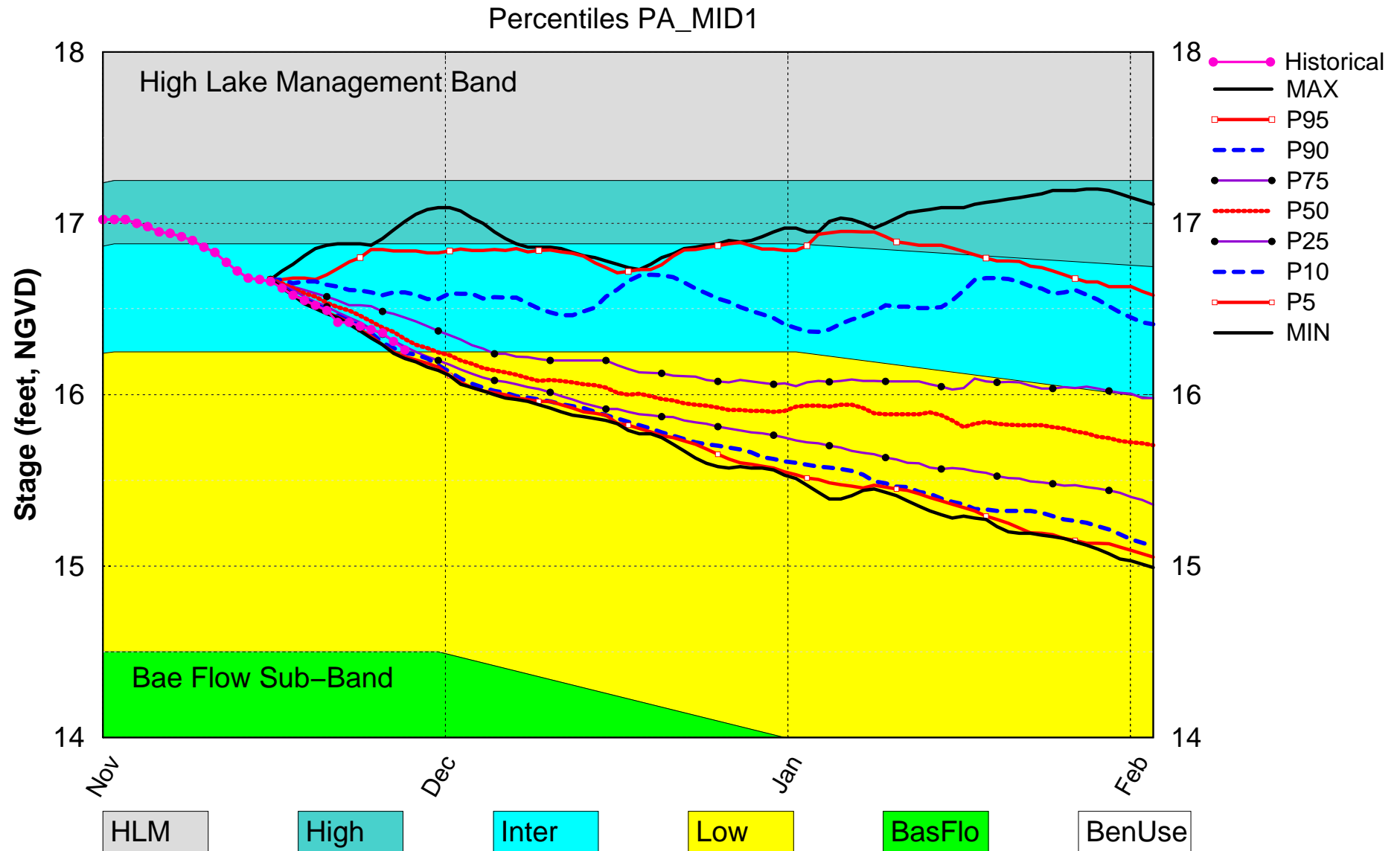
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub Band	M
	Palmer Index for LOK Tributary Conditions	1.94 (Normal)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	1.13 ft (Normal)	L
	ENSO La Nina Years		
	LOK Multi-Seasonal Net Inflow Outlook	3.79 ft (Normal)	L
	ENSO La Nina Years		
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (17.48 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (13.50 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (11.60 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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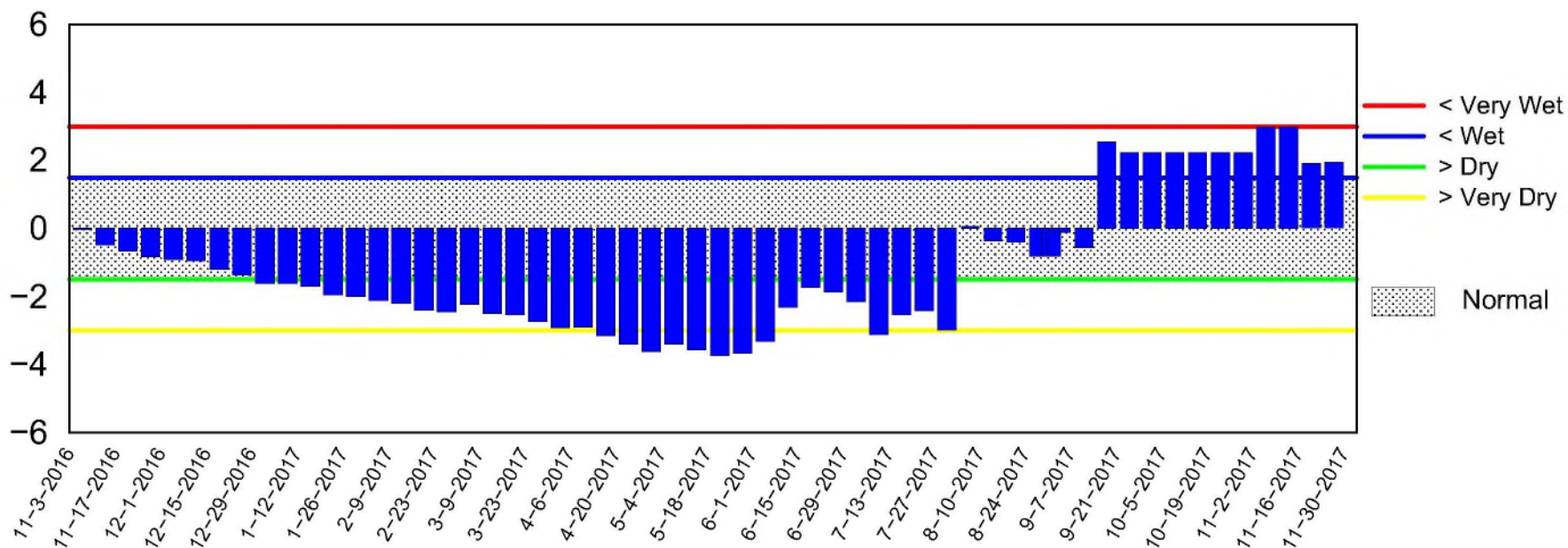
Lake Okeechobee SFWMM November 15 2017 Position Analysis



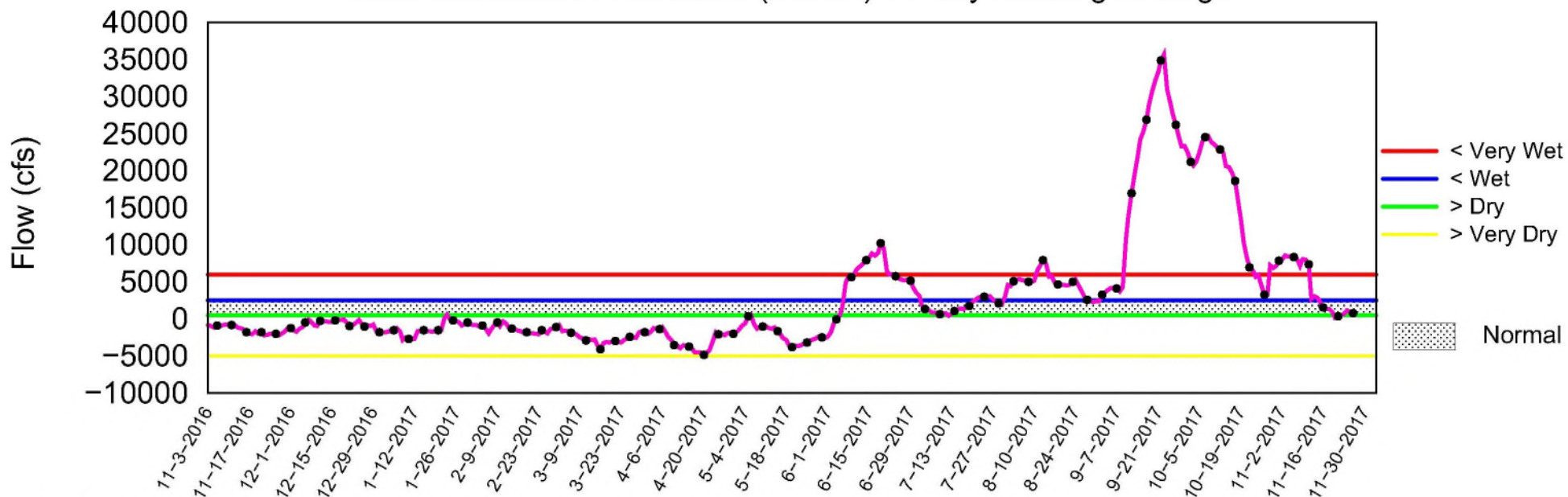
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of November 27 2017

Palmer Index



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



Mon Nov 27 13:34:18 EST 2017

2008 LORS

Part C: Establish Allowable Lake Okeechobee Releases to the Water Conservation Areas

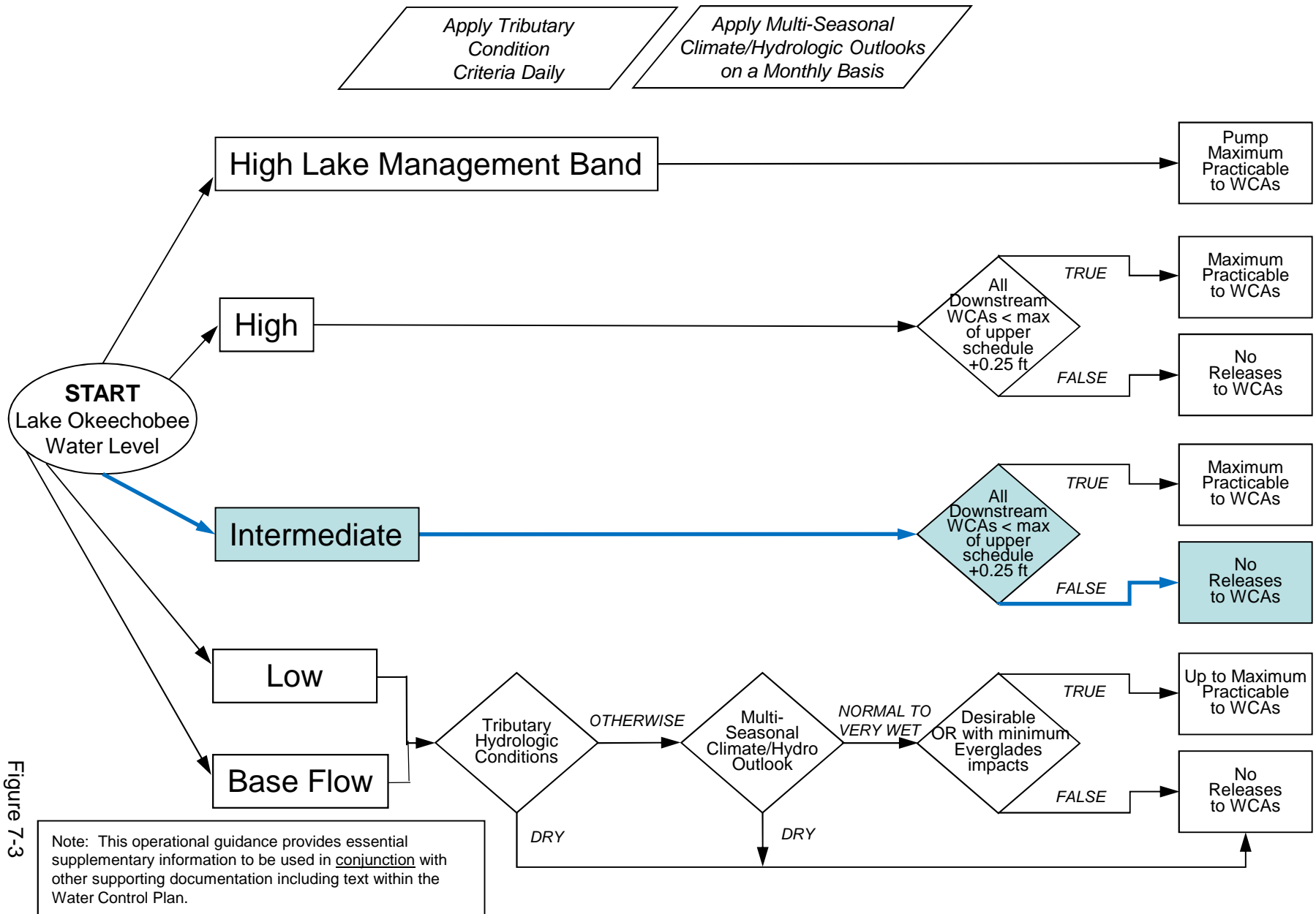


Figure 7-3

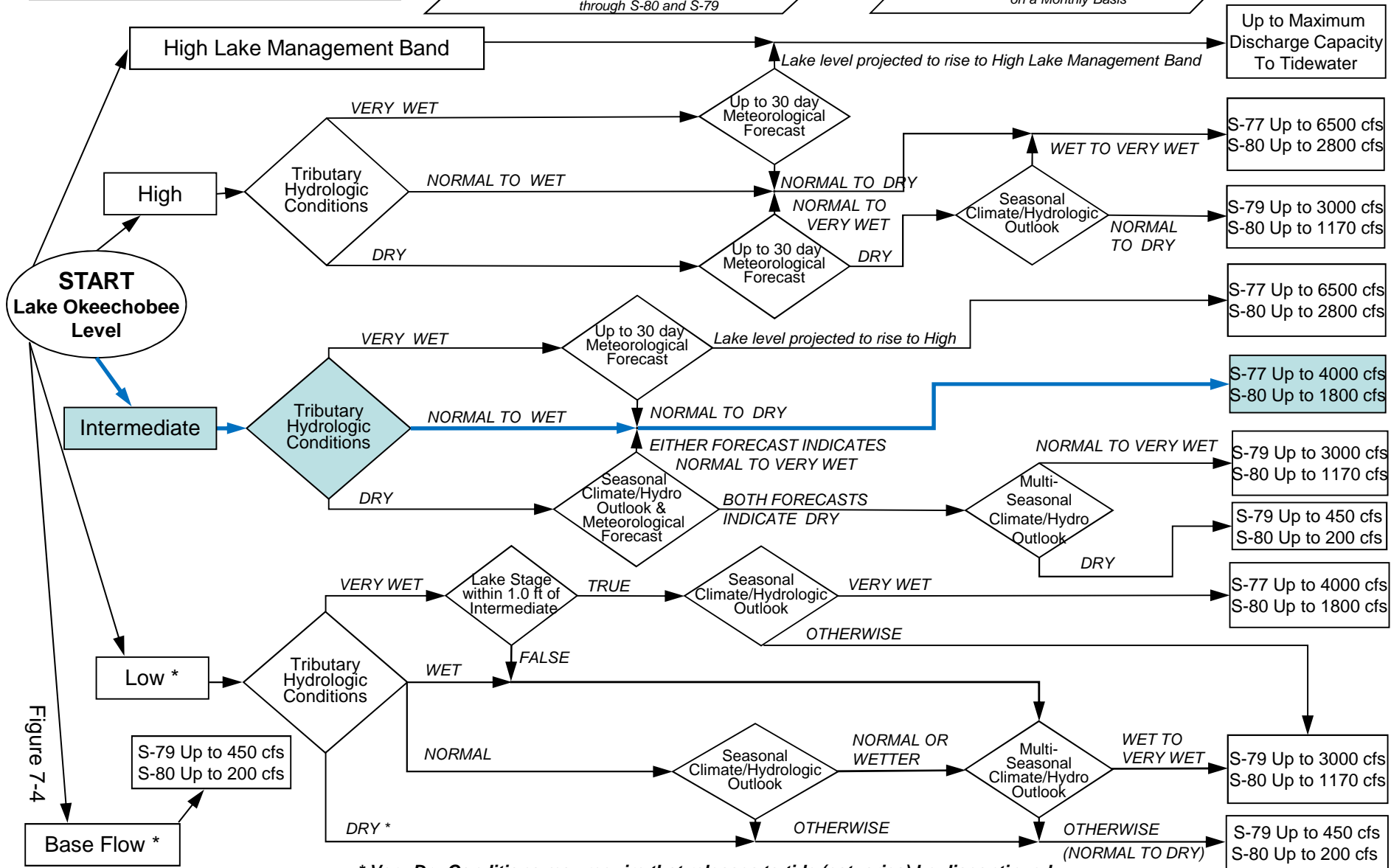
2008 LORS

Part D: Establish Allowable Lake Okeechobee Releases to Tide (Estuaries)

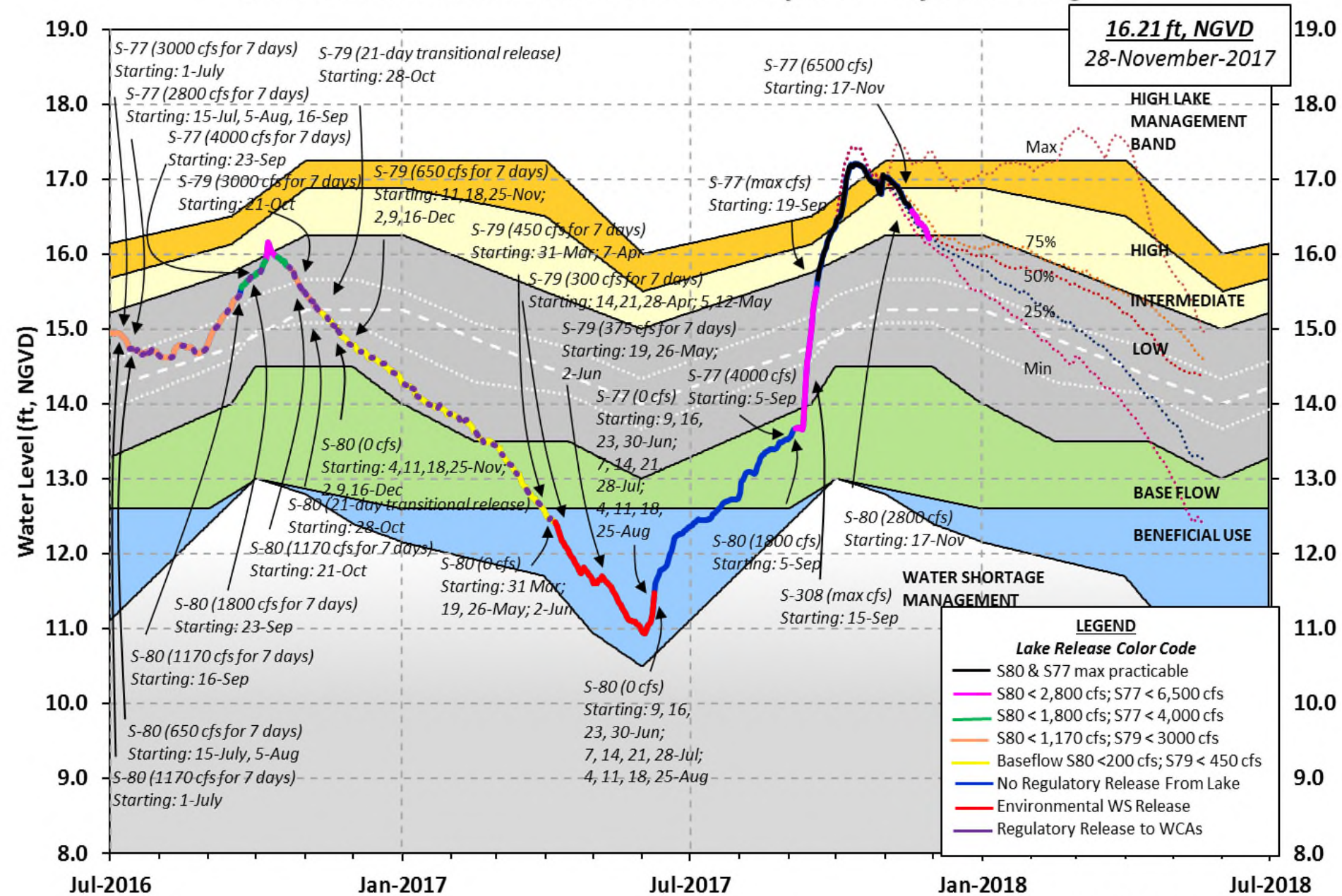
Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



Lake Okeechobee Water Level History and Projected Stages



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

Data Ending 2400 hours 26 NOV 2017

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	16.26	14.85	14.47 (Official Elv)
Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.45			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.81
Difference from Average LORS2008	2.45

26NOV (1965-2007) Period of Record Average	14.87
Difference from POR Average	1.39

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 10.20'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 8.40'

Bridge Clearance = 48.06'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
16.18	16.44	16.28	16.21	16.29	16.38	16.17	16.12

*Combination Okeechobee Avg-Daily Lake Average = 16.26
 (*See Note)

Okeechobee Inflows (cfs):

S65E	1256	S65EX1	0	Fisheating Cr	121
S154	13	S191	79	S135 Pumps	0
S84	599	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	62	S3 Pumps	0
S71	157	S129 Pumps	0	S4 Pumps	0
S72	51	S131 Pumps	0	C5	0
Total Inflows:		2339			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	5992
S127 Culverts	0	S351	0	S308	1491
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-NR-		
Total Outflows:		7484			

S3 Pumps:	9.24	16.30	0	0	0	0		(cfs)
S354:	16.30	9.24	0	0.0	0.0			
S2 Pumps:	9.99	16.27	0	0	0	0	0	(cfs)
S351:	16.27	9.99	0	0.0	0.0	0.0		
S352:	16.35	9.46	0	0.0	0.0			
C10A:	-NR-	12.96		8.0	8.0	8.0	0.0	0.0
L8 Canal PT			-NR-					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	9.99	16.27	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	9.46	16.35	0	-NR-	-NR-	-NR-	-NR-		
S354:	9.24	16.30	0	-NR-	-NR-	-NR-	-NR-		

Caloosahatchee River (S77, S78, S79)

S47B:	13.40	10.79		0.0	0.0
S47D:	10.81	10.80	83	6.6	

S77:

Spillway and Sector Flow:

15.76	11.10	*****	5.5	5.5	5.5	5.0
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Flow Due to Lockages+: 4

S77 Below USGS Flow Gage 5988

S78:

Spillway and Sector Flow:

10.33	3.29	6038	5.0	5.0	5.0	5.0
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Flow Due to Lockages+: 10

S79:

Spillway and Sector Flow:

2.98	1.67	7386	3.0	3.0	3.0	3.5	4.0	3.0	3.0
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3.0

Flow Due to Lockages+: 9

Percent of flow from S77 81%

Chloride (ppm) 42

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:

16.13	15.44	*****	4.5	4.5	4.5	4.5
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Flow Due to Lockages+: 2

S308 Below USGS Flow Gage 1489

S153:	18.86	15.20	101	0.2	0.2
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S80:

Spillway and Sector Flow:

14.02	1.00	2771	0.0	2.5	0.0	2.5	2.5	0.0	2.0
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Flow Due to Lockages+: 20

Percent of flow from S308 54%

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

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

Speedy Point Top Salinity (mg/ml) 3250
 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	0.01	0.47	49	4	
S78:	0.00	0.00	0.43	25	2	
S79:	0.00	0.00	0.39	185	1	
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	0.10	81	3	
S80:	0.00	0.00	0.00	2	3	
Okeechobee Average	0.00	0.00	0.04			
(Sites S78, S79 and S80 not included)						

Oke Nexrad Basin Avg	-NR-	0.00	0.55			

Okeechobee Lake Elevations	26 NOV 2017	16.26	Difference from
26NOV17			
26NOV17 -1 Day =	25 NOV 2017	16.31	0.05
26NOV17 -2 Days =	24 NOV 2017	16.36	0.10
26NOV17 -3 Days =	23 NOV 2017	16.38	0.12
26NOV17 -4 Days =	22 NOV 2017	16.40	0.14
26NOV17 -5 Days =	21 NOV 2017	16.42	0.16
26NOV17 -6 Days =	20 NOV 2017	16.42	0.16
26NOV17 -7 Days =	19 NOV 2017	16.49	0.23
26NOV17 -30 Days =	27 OCT 2017	16.81	0.55
26NOV17 -1 Year =	26 NOV 2016	14.85	-1.41
26NOV17 -2 Year =	26 NOV 2015	14.47	-1.79

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 2.47

Lake Okeechobee Net Inflow (LONIN)

Average Flow over the previous 14 days					Avg-Daily Flow
26NOV17	Today =	26 NOV 2017	1139	MON	-NR-
26NOV17	-1 Day =	25 NOV 2017	1030	SUN	-3948
26NOV17	-2 Days =	24 NOV 2017	1146	SAT	2777
26NOV17	-3 Days =	23 NOV 2017	627	FRI	2671
26NOV17	-4 Days =	22 NOV 2017	600	THU	2845
26NOV17	-5 Days =	21 NOV 2017	395	WED	7218
26NOV17	-6 Days =	20 NOV 2017	144	TUE	-8200
26NOV17	-7 Days =	19 NOV 2017	969	MON	551
26NOV17	-8 Days =	18 NOV 2017	1325	SUN	697
26NOV17	-9 Days =	17 NOV 2017	1360	SAT	2959
26NOV17	-10 Days =	16 NOV 2017	1540	FRI	-3488
26NOV17	-11 Days =	15 NOV 2017	2156	THU	-1412
26NOV17	-12 Days =	14 NOV 2017	2916	WED	6288
26NOV17	-13 Days =	13 NOV 2017	3106	TUE	5847

S65E

Average Flow over previous 14 days					Avg-Daily Flow
26NOV17	Today=	26 NOV 2017	1482	MON	1394
26NOV17	-1 Day =	25 NOV 2017	1526	SUN	1396
26NOV17	-2 Days =	24 NOV 2017	1567	SAT	1457
26NOV17	-3 Days =	23 NOV 2017	1600	FRI	1480
26NOV17	-4 Days =	22 NOV 2017	1630	THU	1477
26NOV17	-5 Days =	21 NOV 2017	1656	WED	1340
26NOV17	-6 Days =	20 NOV 2017	1689	TUE	1279
26NOV17	-7 Days =	19 NOV 2017	1742	MON	1279
26NOV17	-8 Days =	18 NOV 2017	1804	SUN	1318
26NOV17	-9 Days =	17 NOV 2017	1884	SAT	1393
26NOV17	-10 Days =	16 NOV 2017	1975	FRI	1516
26NOV17	-11 Days =	15 NOV 2017	2070	THU	1609
26NOV17	-12 Days =	14 NOV 2017	2182	WED	1789
26NOV17	-13 Days =	13 NOV 2017	2279	TUE	2028

S65EX1

Average Flow over previous 14 days					Avg-Daily Flow
26NOV17	Today=	26 NOV 2017	366	MON	0
26NOV17	-1 Day =	25 NOV 2017	394	SUN	0
26NOV17	-2 Days =	24 NOV 2017	421	SAT	103
26NOV17	-3 Days =	23 NOV 2017	456	FRI	113
26NOV17	-4 Days =	22 NOV 2017	500	THU	136
26NOV17	-5 Days =	21 NOV 2017	555	WED	311
26NOV17	-6 Days =	20 NOV 2017	609	TUE	514
26NOV17	-7 Days =	19 NOV 2017	652	MON	578
26NOV17	-8 Days =	18 NOV 2017	693	SUN	576
26NOV17	-9 Days =	17 NOV 2017	734	SAT	577
26NOV17	-10 Days =	16 NOV 2017	780	FRI	581
26NOV17	-11 Days =	15 NOV 2017	829	THU	574
26NOV17	-12 Days =	14 NOV 2017	883	WED	572
26NOV17	-13 Days =	13 NOV 2017	954	TUE	492

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)
26 NOV 2017			12317	11875	11997	14692
25 NOV 2017			12178	11873	12408	14185
24 NOV 2017			11922	11646	12505	16099
23 NOV 2017			12014	11771	12533	14462
22 NOV 2017			12222	12057	12386	15565
21 NOV 2017			12433	12109	12256	14748
20 NOV 2017			12583	12269	12420	14637
19 NOV 2017			12460	11813	12201	15671
18 NOV 2017			12313	12210	12263	15549
17 NOV 2017			12113	12399	12443	15265
16 NOV 2017			12044	12408	12363	14634
15 NOV 2017			10741	10818	10959	13700
14 NOV 2017			12298	12796	12926	15578
13 NOV 2017			12645	13025	12579	15615

			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)
26 NOV 2017			136	0	0	0	-NR-
25 NOV 2017			133	0	0	0	0
24 NOV 2017			93	0	0	0	-8
23 NOV 2017			20	0	0	0	12
22 NOV 2017			26	0	0	0	10
21 NOV 2017			16	0	0	0	1
20 NOV 2017			41	0	0	0	18
19 NOV 2017			22	0	0	0	-7
18 NOV 2017			47	0	0	0	22
17 NOV 2017			16	0	0	0	21
16 NOV 2017			-11	0	0	0	23
15 NOV 2017			5	0	0	0	25
14 NOV 2017			2	0	0	0	30
13 NOV 2017			-6	0	0	0	24

			S-308	Below S-308	S-80
			Discharge	Discharge	Discharge
			(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE			(AC-FT)	(AC-FT)	(AC-FT)
26 NOV 2017			5365	2953	5533
25 NOV 2017			5401	2794	5568
24 NOV 2017			5295	2859	5598
23 NOV 2017			5425	2512	5555
22 NOV 2017			5577	2573	5516
21 NOV 2017			5006	2203	5610
20 NOV 2017			5379	2946	5844
19 NOV 2017			5624	2777	5878
18 NOV 2017			5574	2647	5912
17 NOV 2017			4823	2447	5746
16 NOV 2017			6195	3146	5866
15 NOV 2017			8398	4353	7373
14 NOV 2017			8116	4143	8527

13 NOV 2017 8081 3044 8326

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

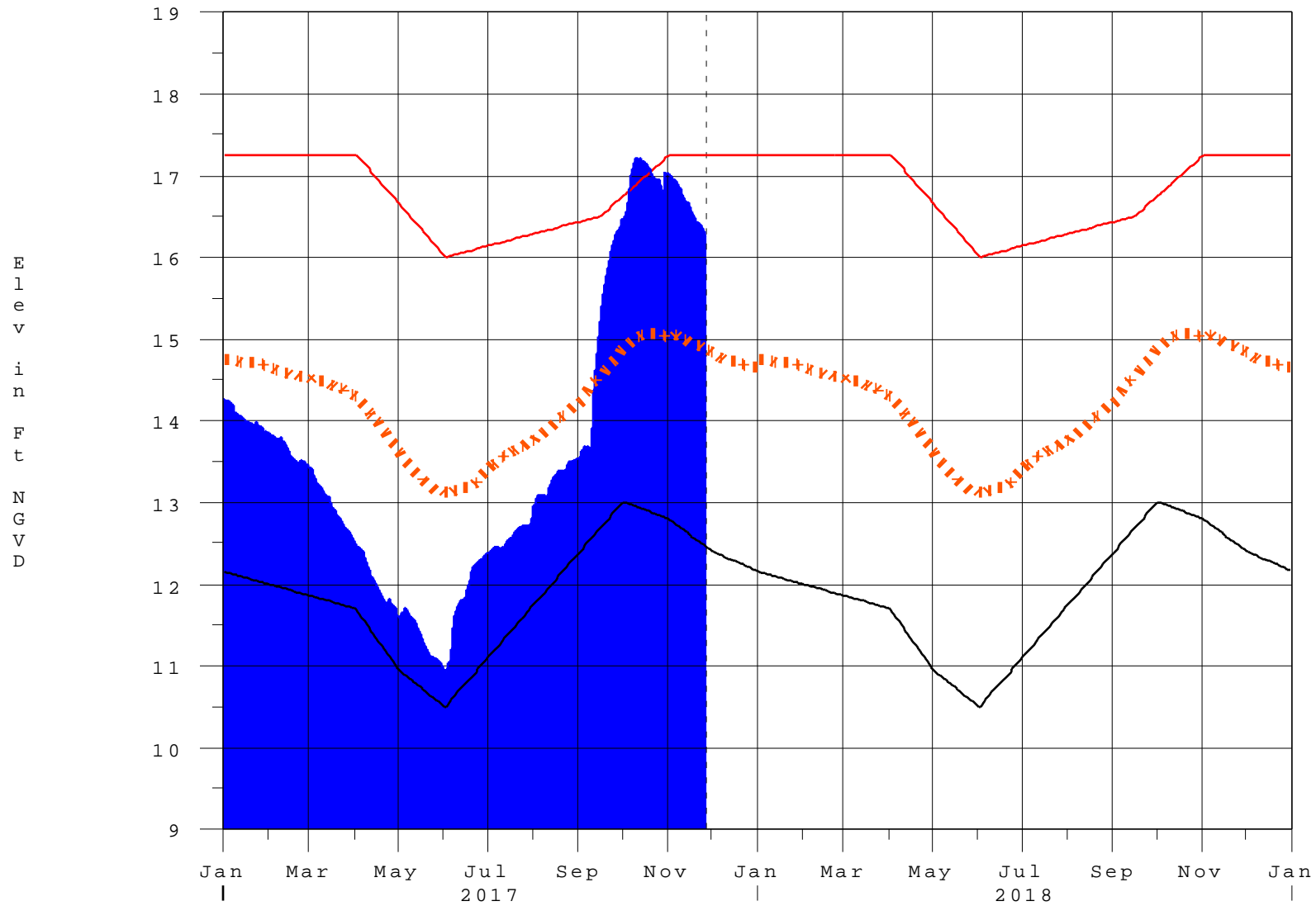
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(I) - Flows preceded by "I" signify an instantaneous
 flow computed from the single value reported for the day

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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 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 27NOV2017 @ 10:15 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

27NOV17 10:30:32



- 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

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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*

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