

# Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 10/16/2017 (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 (Oct-Mar)	N/A	N/A	1.96	Wet	1.89	Wet	3.03	Very Wet
Multi Seasonal (Oct-Apr)	N/A	N/A	1.92	Normal	1.78	Normal	2.97	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:](#)

**20510 cfs** 14-day running average for Lake Okeechobee Net Inflow through 10/15/2017. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Very Wet.

**2.24** for Palmer Index on 10/14/2017.

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

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

### [LORS2008 Classification Tables:](#)

#### Lake Okeechobee Stage on 10/16/2017

Lake Okeechobee Stage: **17.18 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		16.98	← 17.18
Operational Band	High sub-band	16.61	
	Intermediate sub-band	16.07	
	Low sub-band	14.50	
Base Flow sub-band		12.94	
Beneficial Use sub-band		12.91	
Water Shortage Management Band			

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

Release Guidance Flow Chart Outcome: Up to maximum practicable to the WCAs if desirable or with minimum everglades impacts, otherwise no releases.

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

Release Guidance Flow Chart Outcome: Up to maximum discharge capacity to tidewater.

### **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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## LORS2008 Implementation on 10/16/2017 (ENSO Neutral Condition):

### Status for week ending 10/16/2017:

District wide, Raindar rainfall was 2.26 inches for the week. Lake stage on 10/16/2017 was 17.18 ft, up 0.02 ft from last week.

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

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

### Water Supply Risk Evaluation

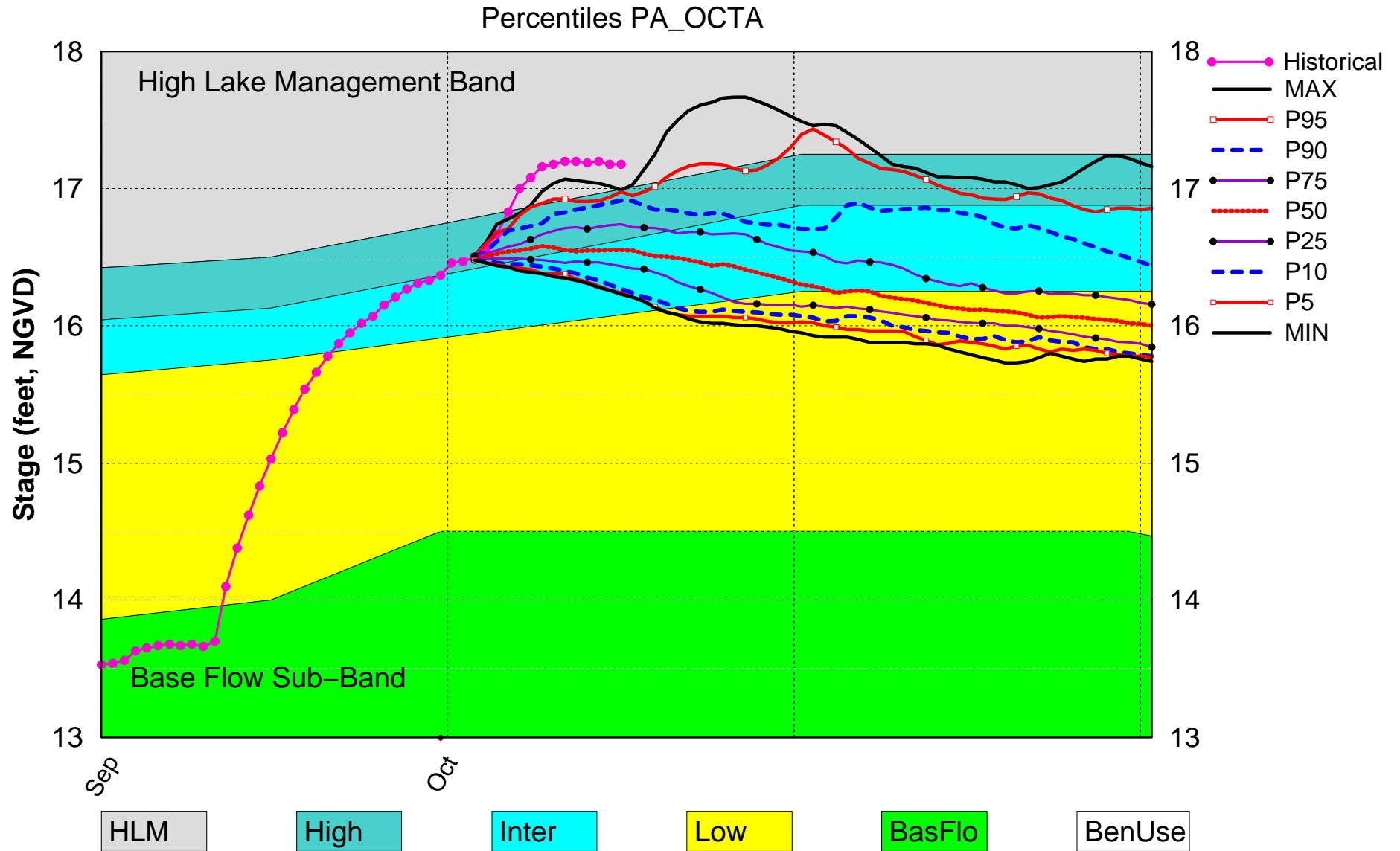
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	High Sub Band	L
	Palmer Index for LOK Tributary Conditions	2.24 (Normal)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	1.89 ft (Normal)	L
	ENSO La Nina Years		
	LOK Multi-Seasonal Net Inflow Outlook	1.78 ft (Normal)	M
ENSO La Nina Years			
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (17.57 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (14.07 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (12.56 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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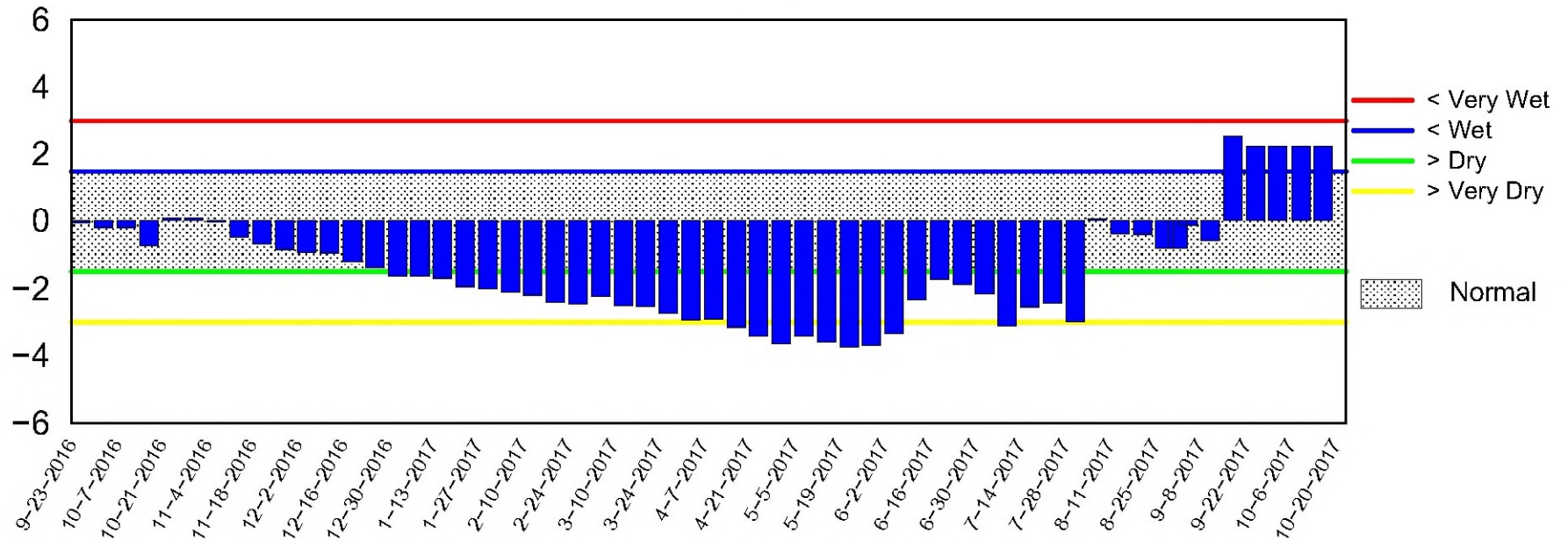
# Lake Okeechobee SFWMM Oct 2017 Dynamic Position Analysis



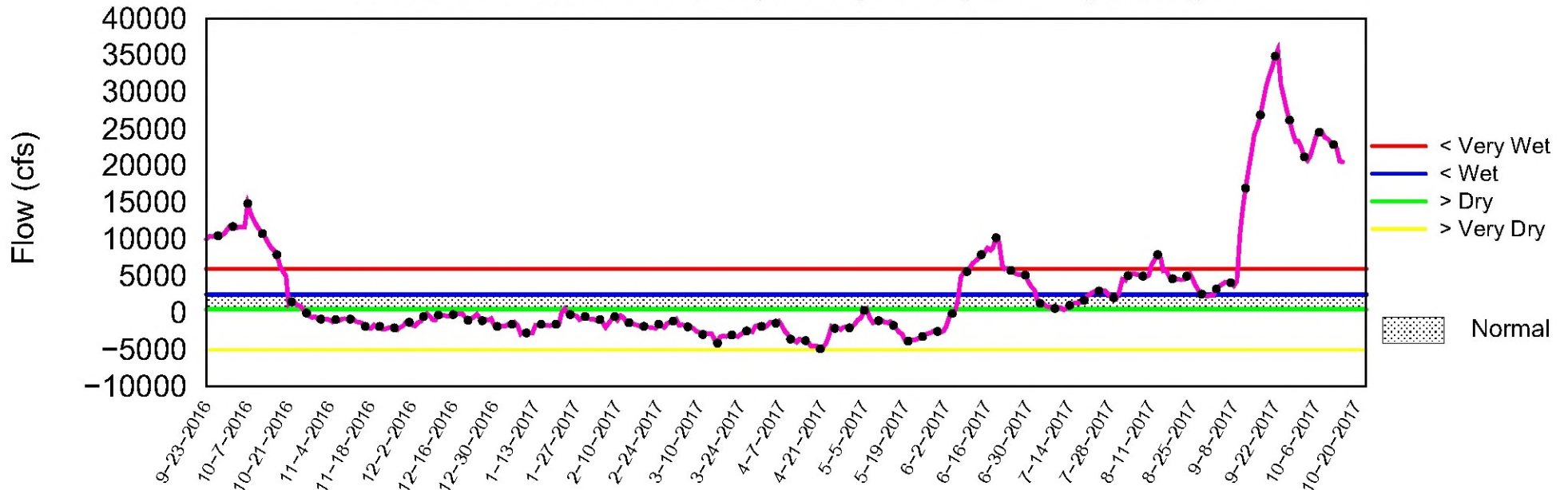
(See assumptions on the Position Analysis Results website)

# Tributary Basin Condition Indicators as of October 16 2017

## Palmer Index



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



# 2008 LORS

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

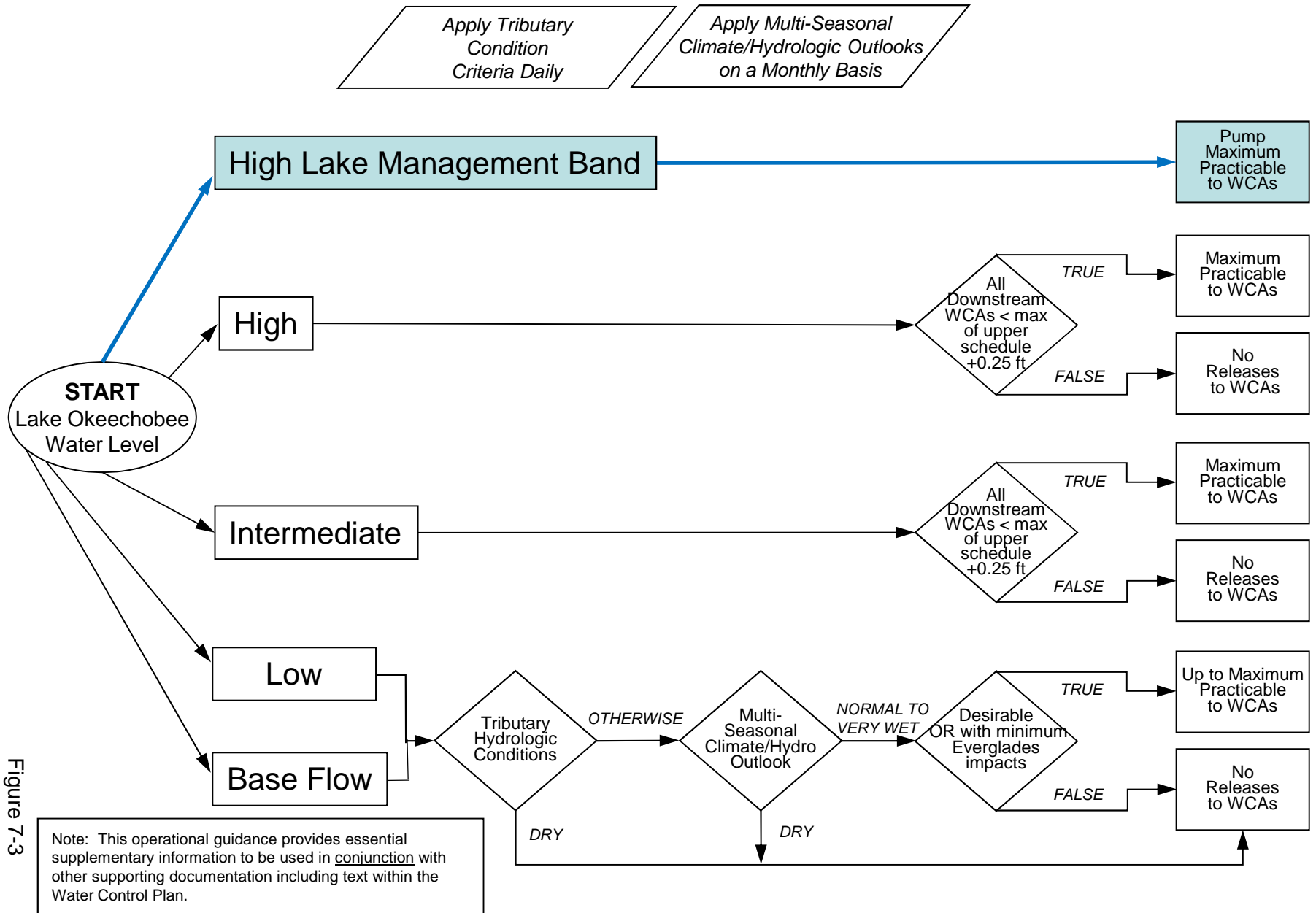


Figure 7-3

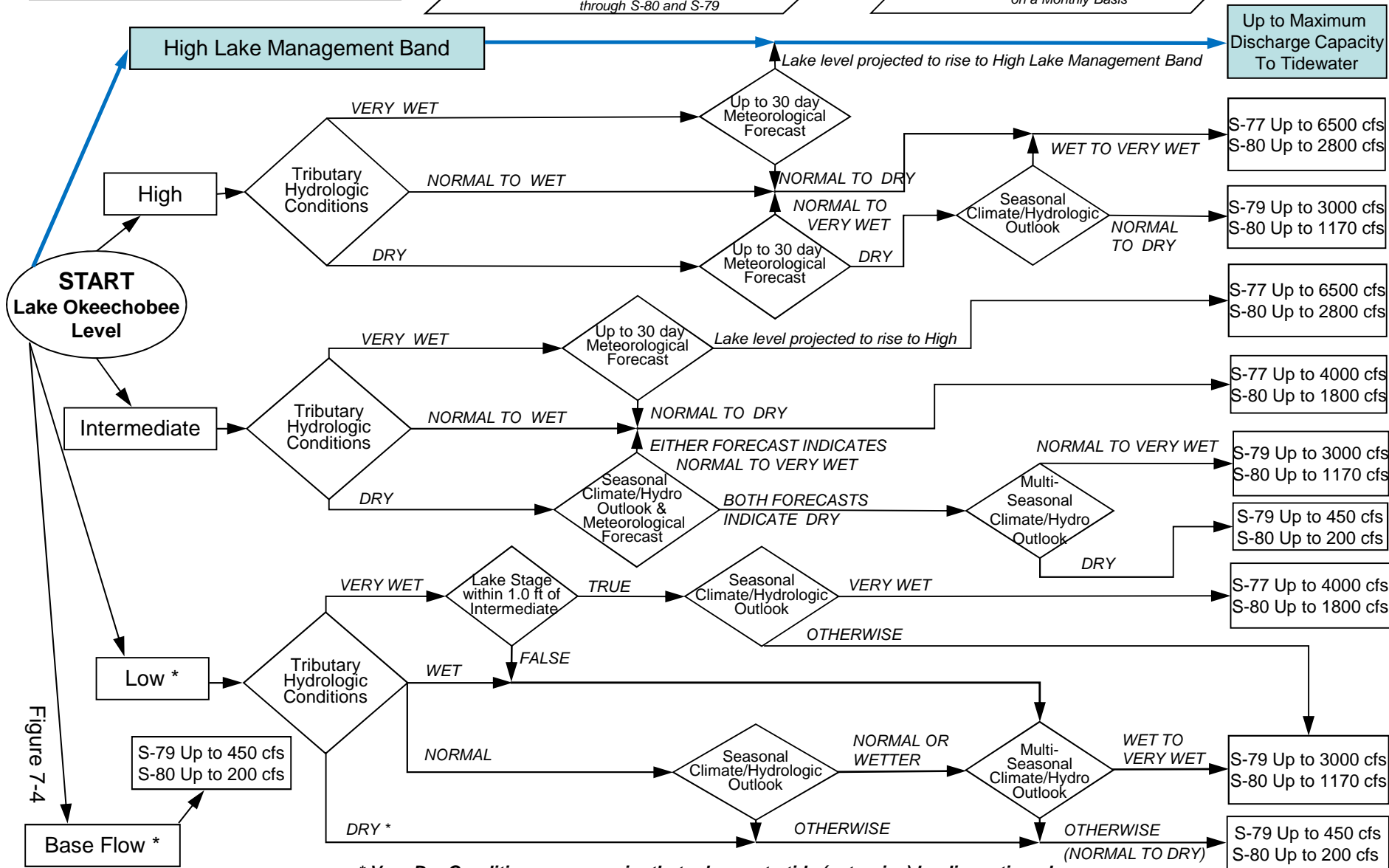
# 2008 LORS

## 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

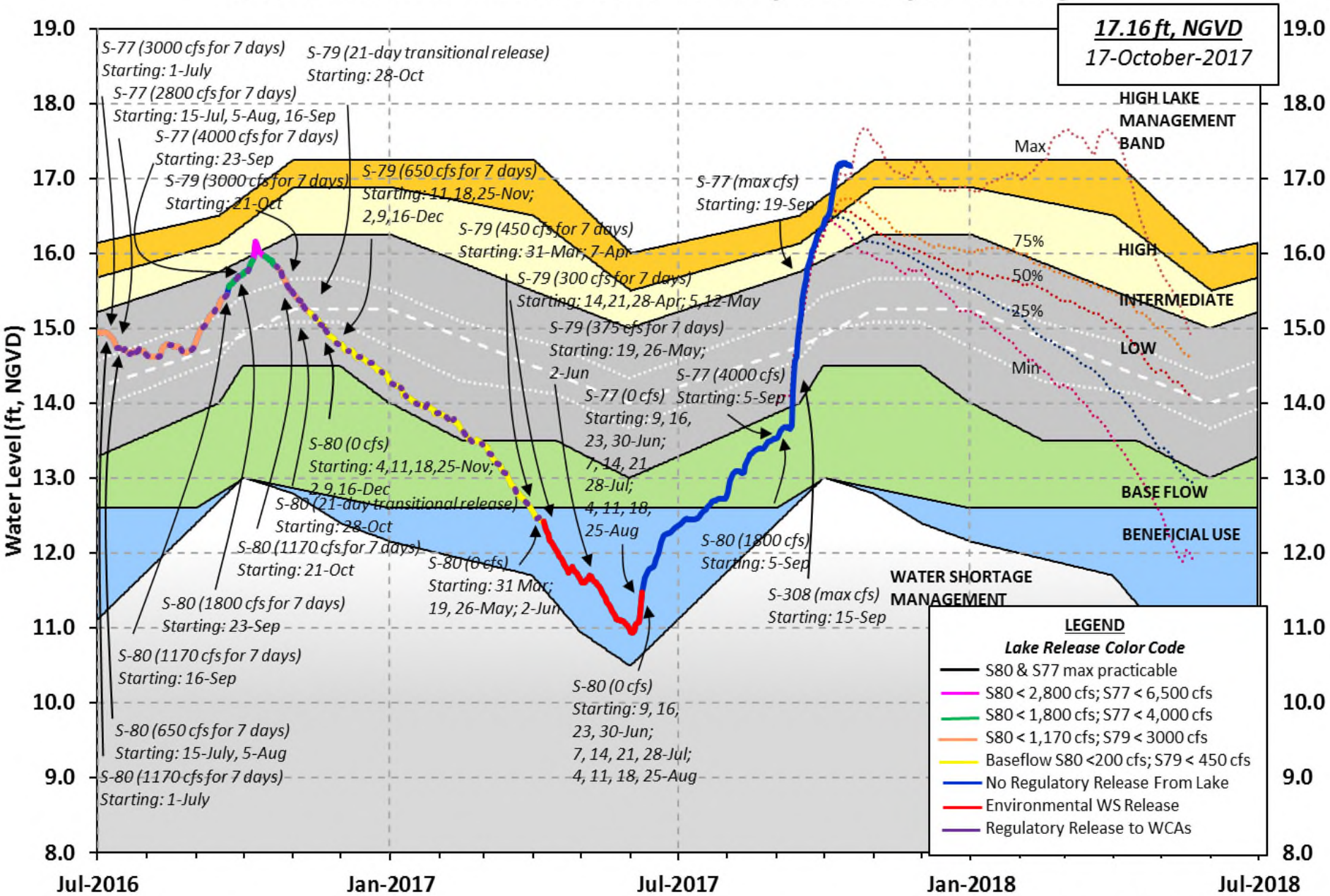


\* Very Dry Conditions may require that releases to tide (estuaries) be discontinued

Figure 7-4



# Lake Okeechobee Water Level History and Projected Stages



LORS-2008

Adopted by USACE 28-April-2008

Projected Stage Percentiles From  
SFWMD-HESM Position Analysis





S3 Pumps:	9.68	17.15	0	0	0	0			(cfs)
S354:	17.15	9.68	0	0.0	0.0				
S2 Pumps:	9.80	17.22	0	0	0	0	0		(cfs)
S351:	17.22	9.80	0	0.0	0.0	0.0			
S352:	17.25	10.23	0	0.0	0.0				
C10A:	-NR-	-NR-		8.0	8.0	8.0	0.0	0.0	
L8 Canal PT		17.38	-384						

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S351 and S352 Temporary Pumps/S354 Spillway

S351:	9.80	17.22	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	10.23	17.25	0	-NR-	-NR-	-NR-	-NR-		
S354:	9.68	17.15	0	-NR-	-NR-	-NR-	-NR-		

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Caloosahatchee River (S77, S78, S79)

S47B:	13.30	11.36		1.0	1.0				
S47D:	_____	-NR-	-NR-	-NR-					
S77:									

Spillway and Sector Flow:	16.82	11.67	*****	5.5	5.5	5.5	5.5		
Flow Due to Lockages+:			3						

S77 Below USGS Flow Gage 6805

S78:

Spillway and Sector Flow:	10.67	4.10	8164	6.0	6.5	8.0	7.5		
Flow Due to Lockages+:			2						

S79:

Spillway and Sector Flow:	2.98	2.87	14552	18.0	18.0	18.0	18.0	18.0	18.0	18.0
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18.0

Flow Due to Lockages+:	0
Percent of flow from S77	47%
Chloride (ppm)	55

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Flow:	17.09	16.85	*****	8.0	8.0	8.0	8.0		
Flow Due to Lockages+:			0						

S308 Below USGS Flow Gage 2271

S153:	18.64	16.56	478	1.5	1.5				
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S80:

Spillway and Sector Flow:	12.72	2.89	4227	4.5	2.5	0.0	4.5	2.5	4.5	4.5
Flow Due to Lockages+:			11							
Percent of flow from S308			54%							

Steele Point Top Salinity (mg/ml) 1197

Steele Point Bottom Salinity (mg/ml) 5537

Speedy Point Top Salinity (mg/ml) 533  
 Speedy Point Bottom Salinity (mg/ml) 689

+ 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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	----- 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	0.07	2.13	144	2
S78:	0.00	0.00	1.79	138	2
S79:	0.00	0.18	2.50	211	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	121	4
S80:	0.00	0.00	0.00	157	1
Okeechobee Average	0.00	0.01	0.16		
(Sites S78, S79 and S80 not included)					
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Oke Nexrad Basin Avg	-NR-	0.55	2.45		
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Okeechobee Lake Elevations	08 OCT 2017	17.16	Difference from
08OCT17			08OCT17
08OCT17 -1 Day =	07 OCT 2017	17.08	-0.08
08OCT17 -2 Days =	06 OCT 2017	17.00	-0.16
08OCT17 -3 Days =	05 OCT 2017	16.83	-0.33
08OCT17 -4 Days =	04 OCT 2017	16.67	-0.49
08OCT17 -5 Days =	03 OCT 2017	16.56	-0.60
08OCT17 -6 Days =	02 OCT 2017	16.50	-0.66
08OCT17 -7 Days =	01 OCT 2017	16.47	-0.69
08OCT17 -30 Days =	08 SEP 2017	13.66	-3.50
08OCT17 -1 Year =	08 OCT 2016	16.10	-1.06
08OCT17 -2 Year =	08 OCT 2015	14.75	-2.41

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Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 3.77

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Lake Okeechobee Net Inflow (LONIN)

Average Flow over the previous 14 days					Avg-Daily Flow
08OCT17	Today =	08 OCT 2017	24553	MON	27933
08OCT17	-1 Day =	07 OCT 2017	24384	SUN	27122
08OCT17	-2 Days =	06 OCT 2017	23779	SAT	45288
08OCT17	-3 Days =	05 OCT 2017	22094	FRI	42893
08OCT17	-4 Days =	04 OCT 2017	20660	THU	-NR-
08OCT17	-5 Days =	03 OCT 2017	20954	WED	20867
08OCT17	-6 Days =	02 OCT 2017	21563	TUE	15563
08OCT17	-7 Days =	01 OCT 2017	22514	MON	13126
08OCT17	-8 Days =	30 SEP 2017	24090	SUN	31156
08OCT17	-9 Days =	29 SEP 2017	24707	SAT	19200
08OCT17	-10 Days =	28 SEP 2017	26394	FRI	13720
08OCT17	-11 Days =	27 SEP 2017	28475	THU	17862
08OCT17	-12 Days =	26 SEP 2017	30386	WED	21873
08OCT17	-13 Days =	25 SEP 2017	32490	TUE	22581

S65E

Average Flow over previous 14 days					Avg-Daily Flow
08OCT17	Today=	08 OCT 2017	7103	MON	5573
08OCT17	-1 Day =	07 OCT 2017	7225	SUN	6387
08OCT17	-2 Days =	06 OCT 2017	7270	SAT	7487
08OCT17	-3 Days =	05 OCT 2017	7210	FRI	7388
08OCT17	-4 Days =	04 OCT 2017	7160	THU	7134
08OCT17	-5 Days =	03 OCT 2017	7150	WED	7177
08OCT17	-6 Days =	02 OCT 2017	7163	TUE	7194
08OCT17	-7 Days =	01 OCT 2017	7206	MON	7179
08OCT17	-8 Days =	30 SEP 2017	7277	SUN	7239
08OCT17	-9 Days =	29 SEP 2017	7349	SAT	7323
08OCT17	-10 Days =	28 SEP 2017	7414	FRI	7332
08OCT17	-11 Days =	27 SEP 2017	7397	THU	7368
08OCT17	-12 Days =	26 SEP 2017	7180	WED	7341
08OCT17	-13 Days =	25 SEP 2017	6850	TUE	7326

S65EX1

Average Flow over previous 14 days					Avg-Daily Flow
08OCT17	Today=	08 OCT 2017	5956	MON	5556
08OCT17	-1 Day =	07 OCT 2017	6034	SUN	5551
08OCT17	-2 Days =	06 OCT 2017	6119	SAT	5576
08OCT17	-3 Days =	05 OCT 2017	6199	FRI	5946
08OCT17	-4 Days =	04 OCT 2017	6253	THU	6312
08OCT17	-5 Days =	03 OCT 2017	6279	WED	5965
08OCT17	-6 Days =	02 OCT 2017	6333	TUE	5827
08OCT17	-7 Days =	01 OCT 2017	6402	MON	5648
08OCT17	-8 Days =	30 SEP 2017	6491	SUN	5970
08OCT17	-9 Days =	29 SEP 2017	6566	SAT	5824
08OCT17	-10 Days =	28 SEP 2017	6672	FRI	6056
08OCT17	-11 Days =	27 SEP 2017	6815	THU	6192
08OCT17	-12 Days =	26 SEP 2017	6955	WED	6322
08OCT17	-13 Days =	25 SEP 2017	7087	TUE	6639

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)
08 OCT 2017		12698	13495	16199	28570
07 OCT 2017		11967	12882	16240	28335
06 OCT 2017		11870	12998	16280	29107
05 OCT 2017		11754	13074	16552	27847
04 OCT 2017		13778	15605	16619	27784
03 OCT 2017		14157	14386	16016	24854
02 OCT 2017		13909	15122	15837	24884
01 OCT 2017		13486	14798	15934	25623
30 SEP 2017		13269	14649	15667	25931
29 SEP 2017		12532	13235	14008	21948
28 SEP 2017		10405	8988	10308	17752
27 SEP 2017		12995	10708	11029	18071
26 SEP 2017		12918	10504	11789	18595
25 SEP 2017		12188	10511	11699	18648

		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)
08 OCT 2017		18	0	0	0	-762
07 OCT 2017		21	0	0	0	-1098
06 OCT 2017		22	0	0	0	-1334
05 OCT 2017		21	0	0	0	-975
04 OCT 2017		36	0	0	0	-NR-
03 OCT 2017		33	0	0	0	-579
02 OCT 2017		10	0	0	0	-380
01 OCT 2017		1	0	0	0	-98
30 SEP 2017		6	0	0	0	-112
29 SEP 2017		16	0	0	0	29
28 SEP 2017		26	0	0	0	11
27 SEP 2017		11	0	0	0	-13
26 SEP 2017		18	0	0	0	44
25 SEP 2017		9	0	0	0	-40

		S-308	Below S-308	S-80
		Discharge	Discharge	Discharge
		(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE		(AC-FT)	(AC-FT)	(AC-FT)
08 OCT 2017		8739	4504	8678
07 OCT 2017		4268	3547	6857
06 OCT 2017		258	-229	6050
05 OCT 2017		-723	-795	3456
04 OCT 2017		446	44	3004
03 OCT 2017		-0	116	2381
02 OCT 2017		2028	1767	5600
01 OCT 2017		8787	6731	6677
30 SEP 2017		8835	6643	6649
29 SEP 2017		8779	6814	6684
28 SEP 2017		9126	7167	6541
27 SEP 2017		8871	6717	7229
26 SEP 2017		7815	5833	5626

25 SEP 2017 -NR- 5743 6147

\*\*\* 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)

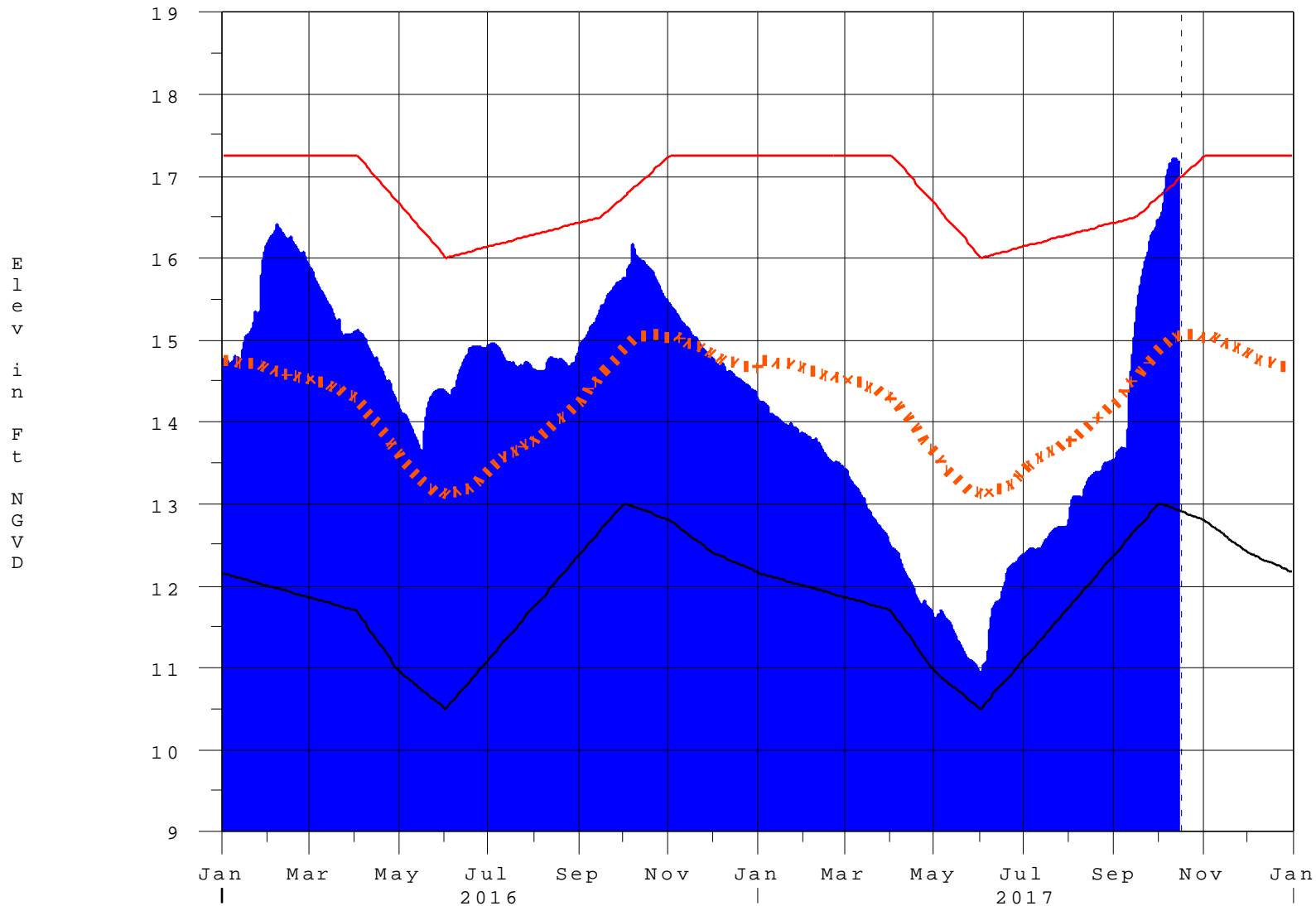
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-  
Report Generated 09OCT2017 @ 09:45 \*\* Preliminary Data - Subject to Revision  
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# Lake Okeechobee

16OCT17 11:17:22



- 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 Net Inflow 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