

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 10/22/2018 (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 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 ENSO Years ³		Sub-sampling of AMO Warm + ENSO Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Oct-Mar)	N/A	N/A	0.58	Dry	1.35	Normal	-0.06	Dry
Multi Seasonal (Nov-Oct)	N/A	N/A	3.02	Wet	3.90	Wet	2.15	Normal

*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.

**Sub-sampling is a weighted average of ENSO conditions based on the ENSO forecast used.

[Tributary Hydrologic Conditions Graph:](#)

515 cfs 14-day running average for Lake Okeechobee Net Inflow through 10/21/2018. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Normal.

- **1.59** for Palmer Index on 10/20/2018.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 10/22/2018

Lake Okeechobee Stage: **14.03 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		17.07	
Operational Band	High sub-band	16.70	
	Intermediate sub-band	16.13	
	Low sub-band	14.50	
Base Flow sub-band		12.91	← 14.03
Beneficial Use sub-band		12.87	
Water Shortage Management Band			

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

Release Guidance Flow Chart Outcome: Up to maximum practicable releases 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: S-79 Up to 450 cfs & S-80 Up to 200 cfs.

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

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

LORS2008 Implementation on 10/22/2018 (ENSO Neutral Condition):

Water Supply Risk Evaluation

Status for week ending 10/22/2018:

District wide, Raindar rainfall was 0.07 inches for the week. Lake stage on 10/22/2018 was 14.03 ft, down 0.21 ft from last week.

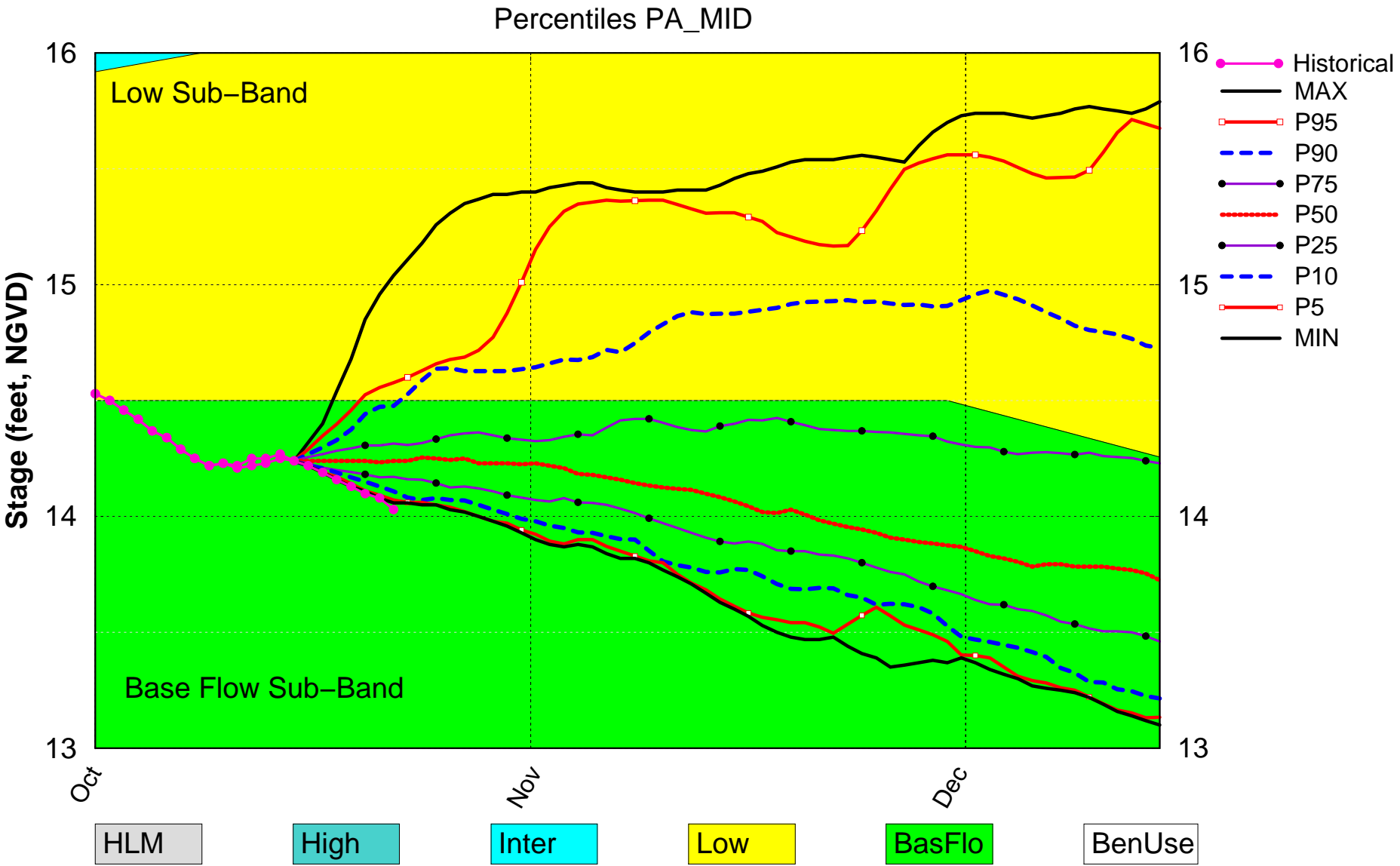
The updated Oct 2018 Mid-Month SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Base Flow Operational Sub-Band.

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

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Base Flow Sub Band	M
	Palmer Index for LOK Tributary Conditions	-1.32 (Normal to Extremely Wet)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.35 ft	L
	ENSO Years	(Normal to Extremely Wet)	
	LOK Multi-Seasonal Net Inflow Outlook	3.90 ft (Wet)	L
	ENSO Conditions		
WCAs	WCA 1: Station Average (Site 1-7, Site 1-8T, Site 1-9)	Above Line 1 (16.51 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.10 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (10.04 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.

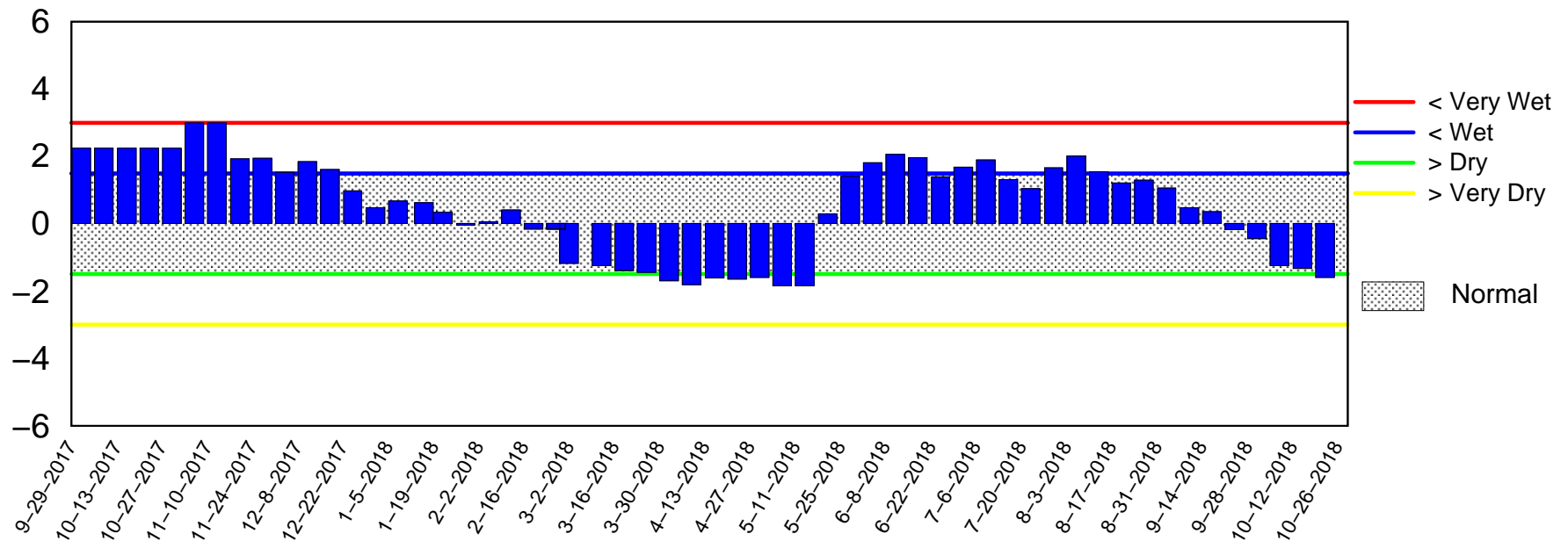
Lake Okeechobee SFWMM Oct 2018 Mid-Month Position Analysis



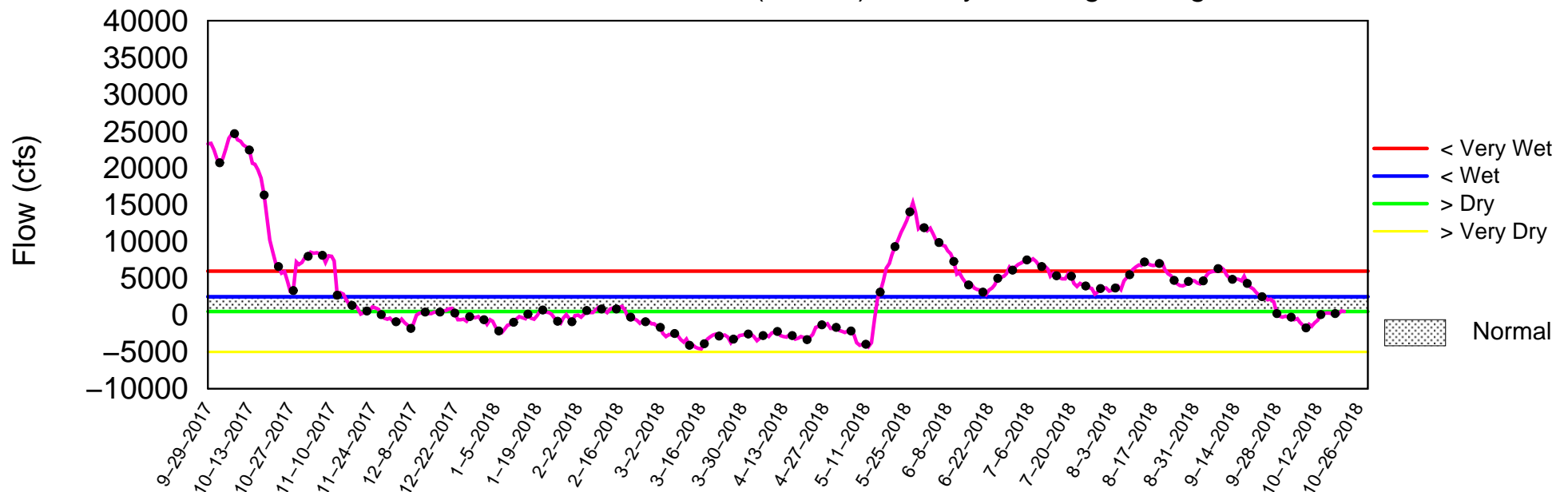
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of October 22 2018

Palmer Index



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



Tue Oct 23 07:51:27 EDT 2018

2008 LORS

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

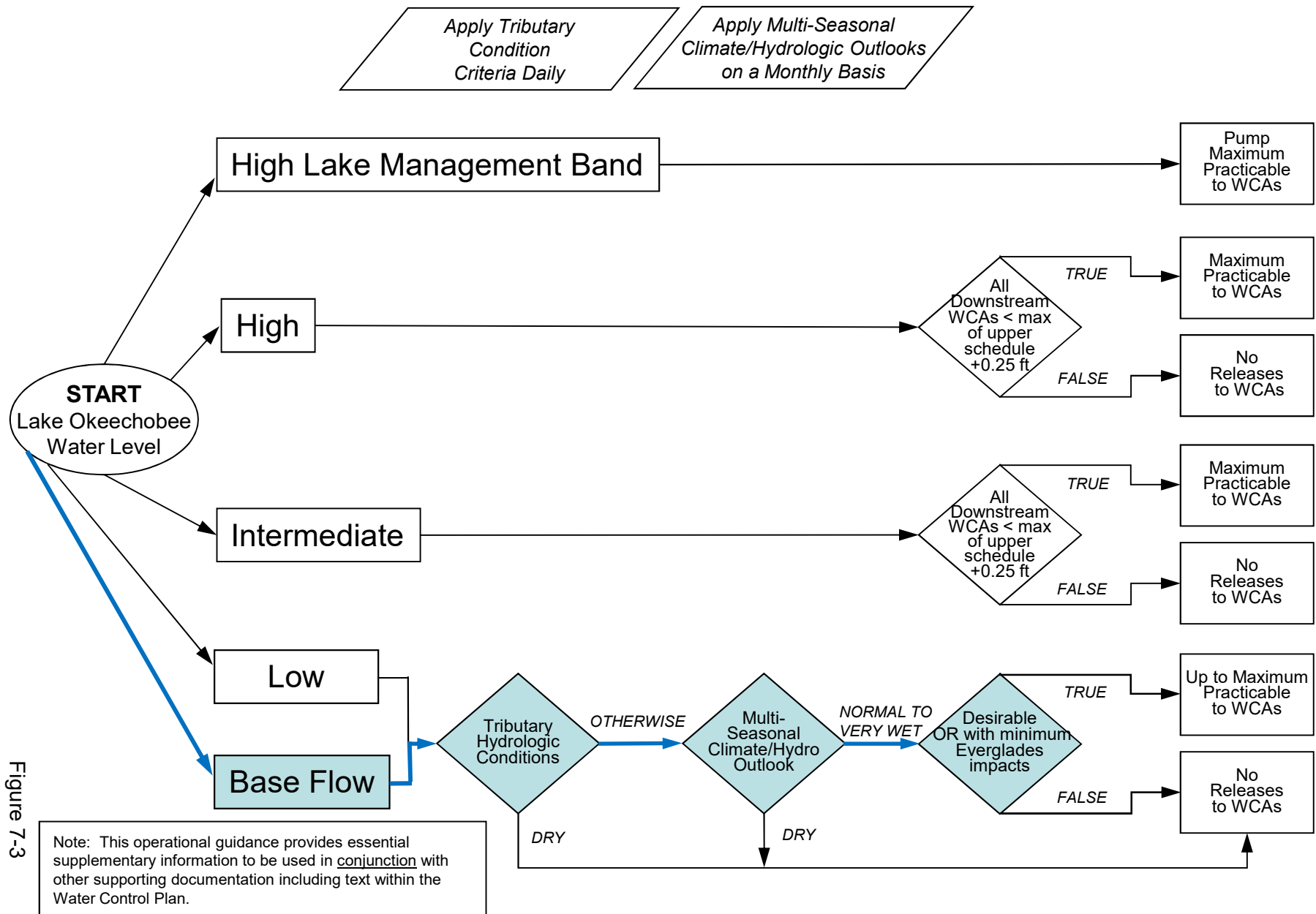


Figure 7-3

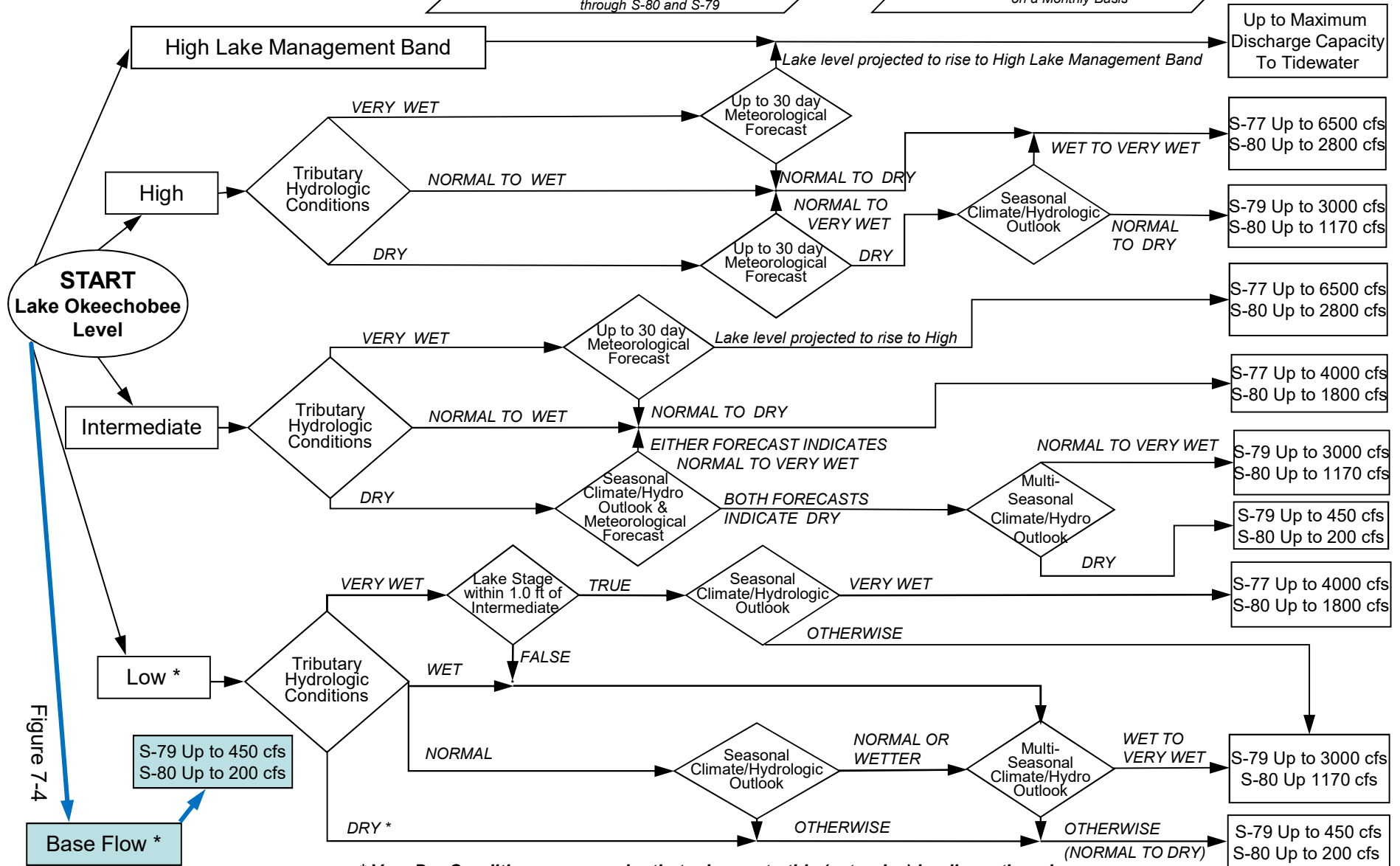
2008 LORS

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.

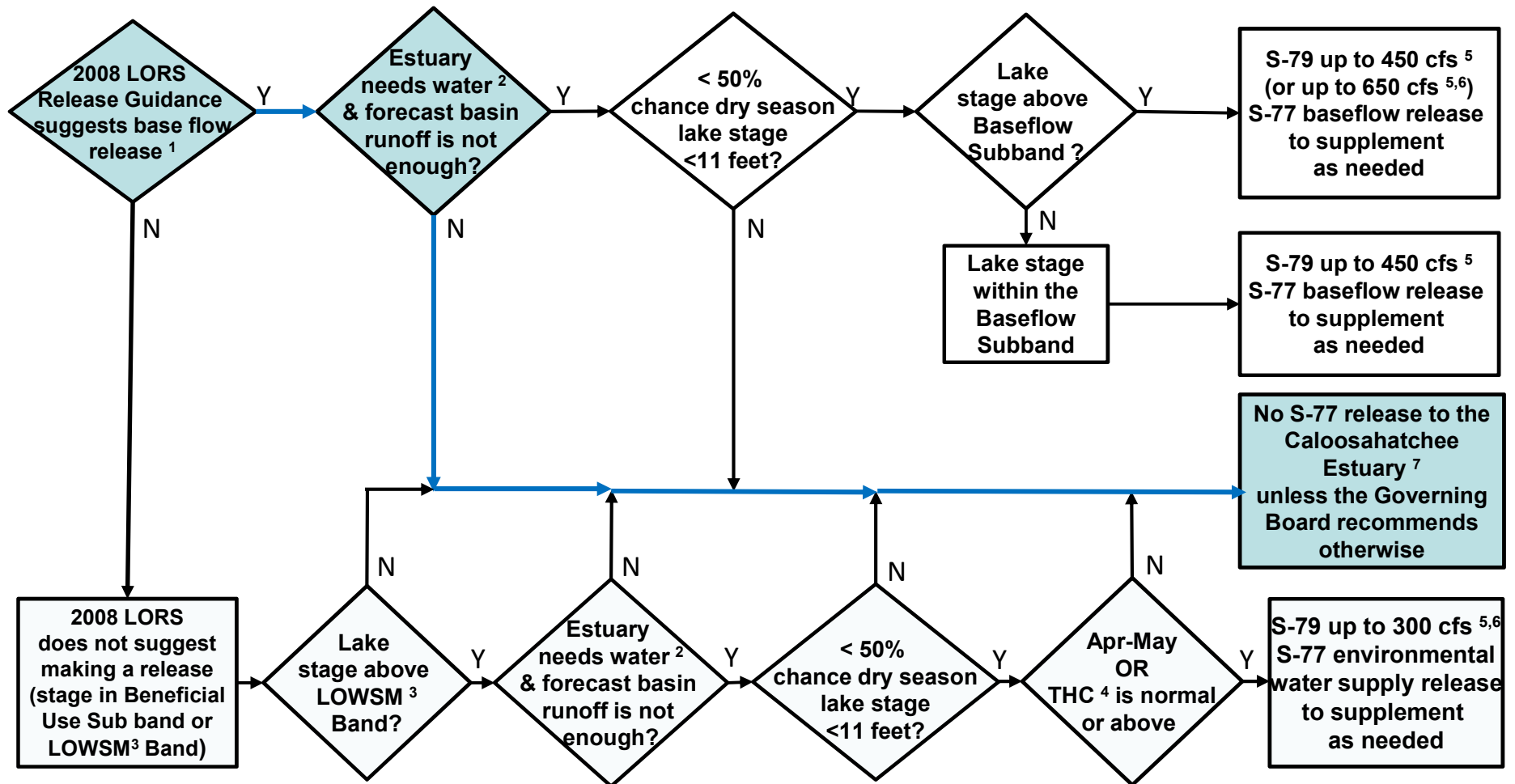
When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

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

Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary 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.

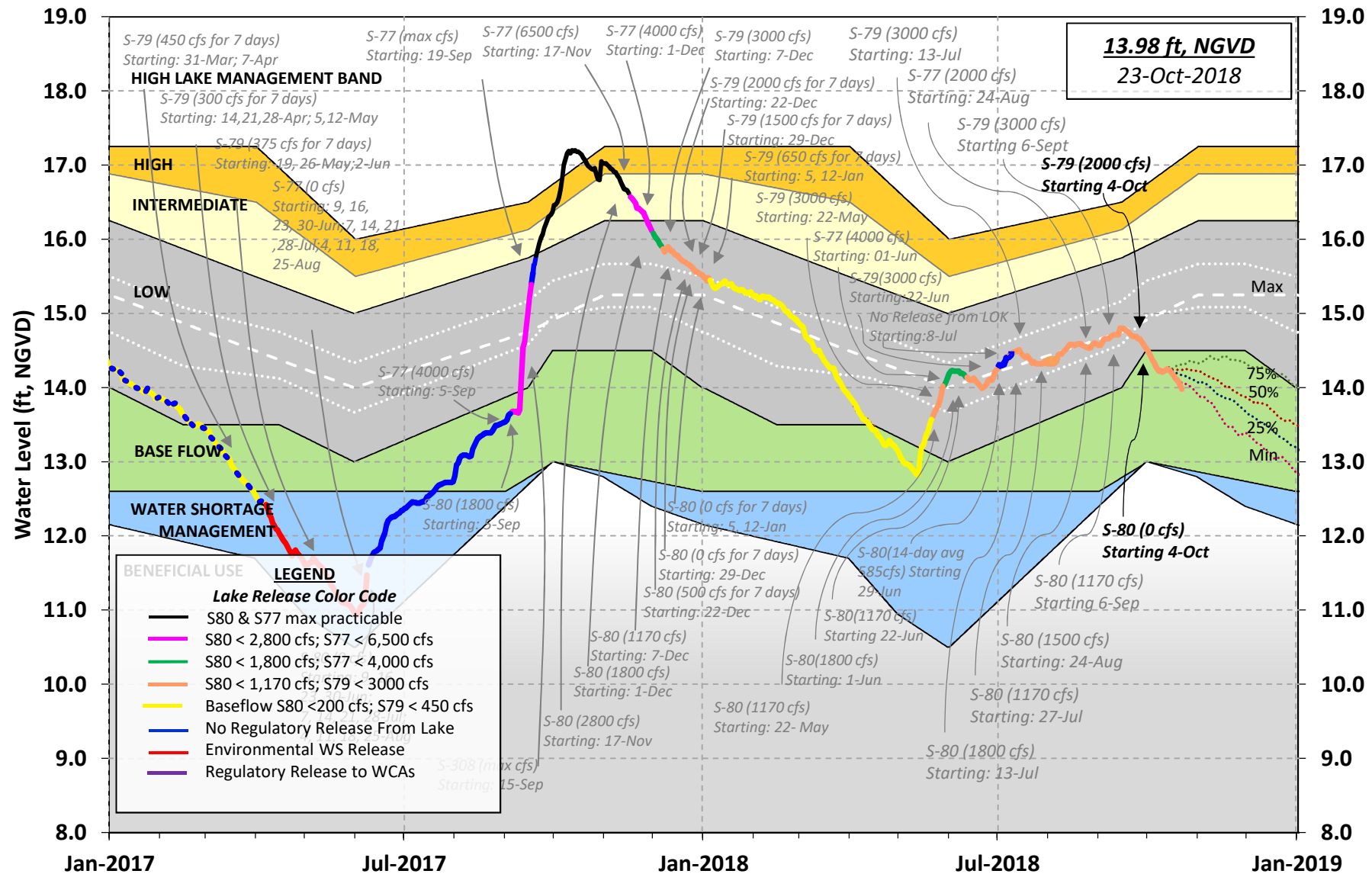
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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



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

Data Ending 2400 hours 22 OCT 2018

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	13.98	16.97	15.78 (Official Elv)
Bottom of High Lake Mngmt= 17.09 Top of Water Short Mngmt= 12.86			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	14.02
Difference from Average LORS2008	-0.04

22OCT (1965-2007) Period of Record Average	15.06
Difference from POR Average	-1.08

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 7.92'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 6.12'

Bridge Clearance = 49.90'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
13.84	14.14	14.03	13.94	14.21	14.05	13.84	13.81

*Combination Okeechobee Avg-Daily Lake Average = 13.98
(*See Note)

Okeechobee Inflows (cfs):

S65E	875	S65EX1	622	Fisheating Cr	22
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:		1519			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	1523	S77	1262
S127 Culverts	-4	S351	1639	S308	0
S129 Culverts	0	S352	487		
S131 Culverts	0	L8 Canal Pt	154		
Total Outflows:		5062			

S3 Pumps:	10.49	14.05	0	0	0	0		(cfs)
S354:	14.05	10.49	1523	2.5	2.5			
S2 Pumps:	11.12	-NR-	0	0	0	0	0	(cfs)
S351:	-NR-	11.12	1639	2.7	2.7	2.6		
S352:	14.05	10.49	487	0.9	0.9			
C10A:	-NR-	13.06		8.0	8.0	8.0	0.0	0.0
L8 Canal PT		12.91	154					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	11.12	-NR-	1639	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	10.49	14.05	487	-NR-	-NR-	-NR-	-NR-		
S354:	10.49	14.05	1523	-NR-	-NR-	-NR-	-NR-		

Caloosahatchee River (S77, S78, S79)

S47B:	11.85	11.20		0.0	0.0
S47D:	11.22	11.22	-74	6.5	

S77:

Spillway and Sector Preferred Flow:

14.08	11.11	1259	0.0	2.5	2.5	0.0
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Flow Due to Lockages+: 3

S78:

Spillway and Sector Flow:

11.04	2.98	775	1.0	0.0	0.0	1.0
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Flow Due to Lockages+: 13

S79:

Spillway and Sector Flow:

3.12	0.89	-NR-	0.0	0.0	0.0	1.0	1.0	1.0	1.0
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0.0

Flow Due to Lockages+: -NR-

Percent of flow from S77 -NR-%

Chloride (ppm) 50

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:

13.90	13.60	0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 0

S153:	18.62	13.34	0	0.0	0.0
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S80:

Spillway and Sector Flow:

13.63	1.49	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 16

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.
 ++ Preferred flow is determined from either the spillway discharge or the below flow meter daily

----- 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:	16.35	16.36	16.45	79	1
S78:	5.31	5.31	5.31	30	1
S79:	-6.03	-18.09	-42.21	270	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:	3.98	3.98	3.98	102	1
S80:	0.22	0.22	0.34	151	0
Okeechobee Average	10.16	1.56	1.57		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	22 OCT 2018	13.98	Difference from
22OCT18			
22OCT18 -1 Day =	21 OCT 2018	14.03	0.05
22OCT18 -2 Days =	20 OCT 2018	14.08	0.10
22OCT18 -3 Days =	19 OCT 2018	14.10	0.12
22OCT18 -4 Days =	18 OCT 2018	14.13	0.15
22OCT18 -5 Days =	17 OCT 2018	14.16	0.18
22OCT18 -6 Days =	16 OCT 2018	14.19	0.21
22OCT18 -7 Days =	15 OCT 2018	14.22	0.24
22OCT18 -30 Days =	22 SEP 2018	14.69	0.71
22OCT18 -1 Year =	22 OCT 2017	16.97	2.99
22OCT18 -2 Year =	22 OCT 2016	15.78	1.80

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 3.52

Lake Okeechobee Net Inflow (LONIN)
 Average Flow over the previous 14 days | Avg-Daily Flow

22OCT18	Today =	22 OCT 2018	275	TUE	-5525
22OCT18	-1 Day =	21 OCT 2018	524	MON	-4398
22OCT18	-2 Days =	20 OCT 2018	600	SUN	1410
22OCT18	-3 Days =	19 OCT 2018	144	SAT	-2081
22OCT18	-4 Days =	18 OCT 2018	263	FRI	-2079
22OCT18	-5 Days =	17 OCT 2018	136	THU	-3026
22OCT18	-6 Days =	16 OCT 2018	248	WED	-2315
22OCT18	-7 Days =	15 OCT 2018	280	TUE	-297
22OCT18	-8 Days =	14 OCT 2018	241	MON	-3451
22OCT18	-9 Days =	13 OCT 2018	363	SUN	6924
22OCT18	-10 Days =	12 OCT 2018	-387	SAT	2791
22OCT18	-11 Days =	11 OCT 2018	-693	FRI	9340
22OCT18	-12 Days =	10 OCT 2018	-1480	THU	850
22OCT18	-13 Days =	09 OCT 2018	-1173	WED	5708

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S65E					
Average Flow over previous 14 days					Avg-Daily Flow
22OCT18	Today=	22 OCT 2018	66	TUE	918
22OCT18	-1 Day =	21 OCT 2018	0	MON	0
22OCT18	-2 Days =	20 OCT 2018	0	SUN	0
22OCT18	-3 Days =	19 OCT 2018	0	SAT	0
22OCT18	-4 Days =	18 OCT 2018	0	FRI	0
22OCT18	-5 Days =	17 OCT 2018	0	THU	0
22OCT18	-6 Days =	16 OCT 2018	0	WED	0
22OCT18	-7 Days =	15 OCT 2018	0	TUE	0
22OCT18	-8 Days =	14 OCT 2018	0	MON	0
22OCT18	-9 Days =	13 OCT 2018	0	SUN	0
22OCT18	-10 Days =	12 OCT 2018	0	SAT	0
22OCT18	-11 Days =	11 OCT 2018	0	FRI	0
22OCT18	-12 Days =	10 OCT 2018	0	THU	0
22OCT18	-13 Days =	09 OCT 2018	0	WED	0

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S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
22OCT18	Today=	22 OCT 2018	1494	TUE	622
22OCT18	-1 Day =	21 OCT 2018	1566	MON	1529
22OCT18	-2 Days =	20 OCT 2018	1557	SUN	1512
22OCT18	-3 Days =	19 OCT 2018	1561	SAT	1466
22OCT18	-4 Days =	18 OCT 2018	1577	FRI	1536
22OCT18	-5 Days =	17 OCT 2018	1595	THU	1554
22OCT18	-6 Days =	16 OCT 2018	1604	WED	1584
22OCT18	-7 Days =	15 OCT 2018	1621	TUE	1557
22OCT18	-8 Days =	14 OCT 2018	1641	MON	1588
22OCT18	-9 Days =	13 OCT 2018	1662	SUN	1682
22OCT18	-10 Days =	12 OCT 2018	1692	SAT	1551
22OCT18	-11 Days =	11 OCT 2018	1715	FRI	1732
22OCT18	-12 Days =	10 OCT 2018	1733	THU	1432
22OCT18	-13 Days =	09 OCT 2018	1778	WED	1569

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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)
22 OCT 2018			2464	2255	1536	-NR-
21 OCT 2018			4549	4404	2872	3253
20 OCT 2018			4332	4117	3033	-NR-
19 OCT 2018			1912	1666	1660	-NR-
18 OCT 2018			2346	1938	1022	-NR-
17 OCT 2018			2713	1556	1713	2365
16 OCT 2018			2768	2808	1912	3267
15 OCT 2018			3257	3335	2793	3814
14 OCT 2018			2236	2377	2743	3850
13 OCT 2018			2221	2553	2398	4634
12 OCT 2018			2240	2355	2173	3824
11 OCT 2018			1460	1541	1337	1598
10 OCT 2018			1278	1153	1175	4212
09 OCT 2018			2695	2420	2372	2783

			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)
22 OCT 2018			-NR-	3249	843	2421	306
21 OCT 2018			-NR-	2824	748	2175	321
20 OCT 2018			88	2758	742	2310	322
19 OCT 2018			59	2607	670	1999	309
18 OCT 2018			72	2295	607	1927	297
17 OCT 2018			24	1924	577	1951	275
16 OCT 2018			20	2128	553	2039	151
15 OCT 2018			7	2083	407	954	5
14 OCT 2018			2	1857	0	397	7
13 OCT 2018			-0	1521	0	746	-40
12 OCT 2018			14	1636	149	1281	5
11 OCT 2018			33	2316	288	1626	157
10 OCT 2018			25	1944	317	1983	-6
09 OCT 2018			16	2035	1	1995	149

			S-308	Below S-308	S-80
			Discharge	Discharge	Discharge
			(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE			(AC-FT)	(AC-FT)	(AC-FT)
22 OCT 2018			0	118	32
21 OCT 2018			0	39	30
20 OCT 2018			0	-170	48
19 OCT 2018			478	406	46
18 OCT 2018			473	564	37
17 OCT 2018			2	198	29
16 OCT 2018			1	127	25
15 OCT 2018			2	241	18
14 OCT 2018			1	44	40
13 OCT 2018			3	78	29
12 OCT 2018			4	-120	25
11 OCT 2018			3	-325	18
10 OCT 2018			1	-105	4
09 OCT 2018			2	219	17

*** 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

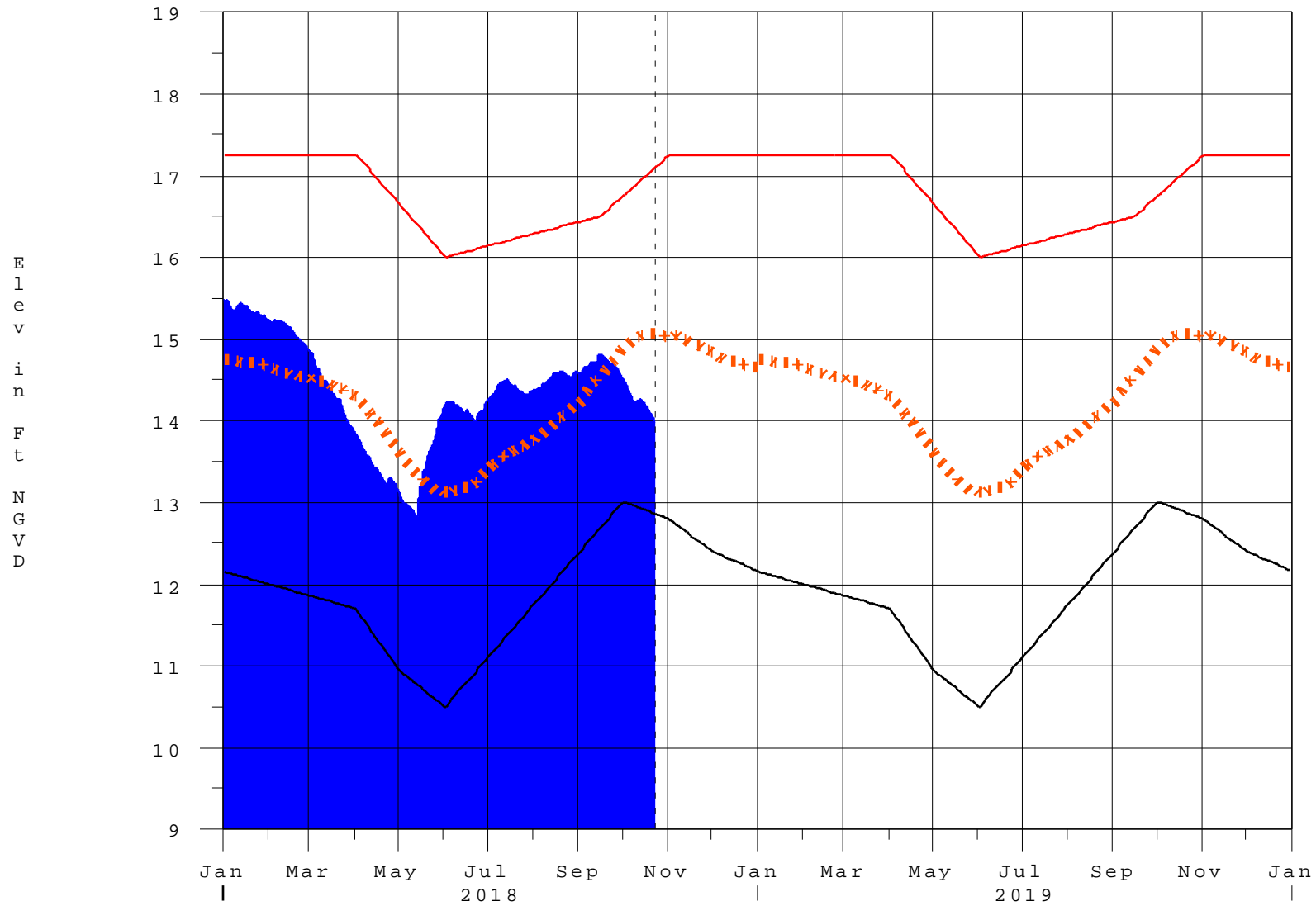
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* On 11 May 1999, Lake Okeechobee Elevation was switched from
Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the
standard
10 stations, the average of the interior 4 station gages 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

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Report Generated 23OCT2018 @ 07:38 ** Preliminary Data - Subject to Revision
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Lake Okeechobee

23OCT18 07:30:22



- 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