

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 1/14/2019 (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 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 (Jan-Jun)	N/A	N/A	0.39	Dry	1.23	Normal	0.13	Dry
Multi Seasonal (Jan-Oct)	N/A	N/A	2.91	Wet	3.63	Wet	2.07	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:](#)

-1622 cfs 14-day running average for Lake Okeechobee Net Inflow through 1/14/2019. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Dry.

-2.07 for Palmer Index on 12/15/2018.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 1/14/2019

Lake Okeechobee Stage: **12.44 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	16.83	
	Intermediate sub-band	16.15	
	Low sub-band	13.87	
Base Flow sub-band		12.60	
Beneficial Use sub-band			← 12.44
Water Shortage Management Band		12.09	

Part C of LORS2008: Discharge to WCA's

Lake Okeechobee stage is within the Beneficial Use Sub-band therefore, no releases to the WCAs to manage lake stages.

Part D of LORS2008: Discharge to Tidewater

Lake Okeechobee stage is within the Beneficial Use Sub-band therefore, no releases to the St. Lucie or Caloosahatchee Estuaries to manage lake stages.

Adaptive Protocol's Release Guidance: Caloosahatchee Estuary

Release Guidance Flow Chart Outcome: No releases.

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

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

LORS2008 Implementation on 01/14/2019 (ENSO Neutral Condition):

Status for week ending 01/14/2019:

District wide, Raindar rainfall was 0.009 inches for the week. Lake stage on 01/14/2019 was 12.44 ft, NGVD, down 0.14 ft from last week. The updated January 2019 SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Beneficial Use Sub-band. The LORS2008 Tributary Hydrologic Condition (THC) is classified as **Dry**. The PDSI indicates dry conditions and the LONIN is dry. The THC classification is based on the wetter of the two [indices](#)

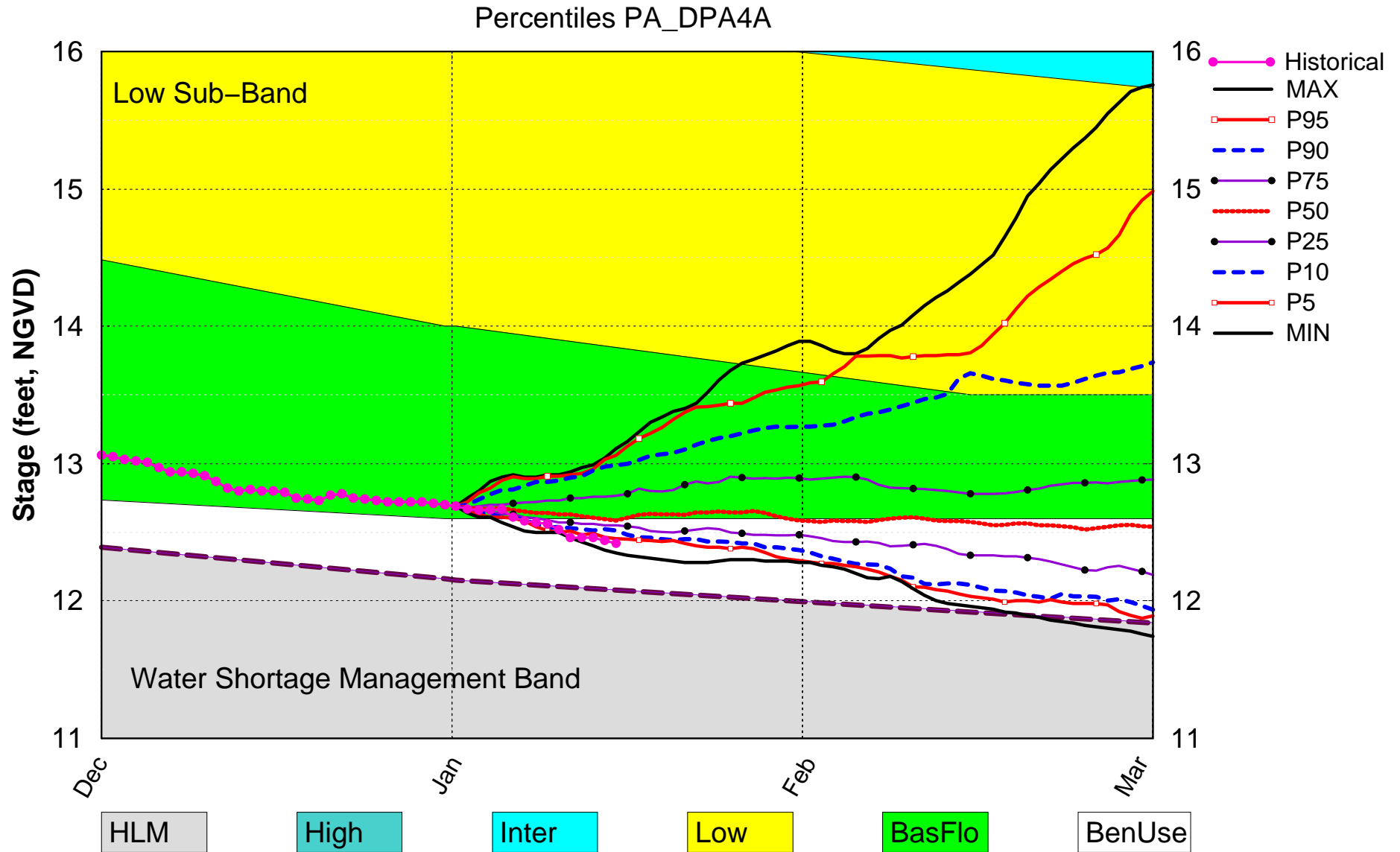
Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use Sub-Band	H
	Palmer Index for LOK Tributary Conditions	-2.07* (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.23 ft (Normal)	L
	ENSO Forecast (positive)		
	LOK Multi-Seasonal Net Inflow Outlook	3.63 ft (Wet)	L
	ENSO Forecast (positive)		
WCAs	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Line 1- Line 2 (16.08 ft)	M
	WCA 2A: Site 2-17 HW	Above Line 1 (11.77 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Line 1- Line 2 (9.28 ft)	M
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.

*PDSI - using December 15th value as current data is unavailable due to partial closure of the U.S government

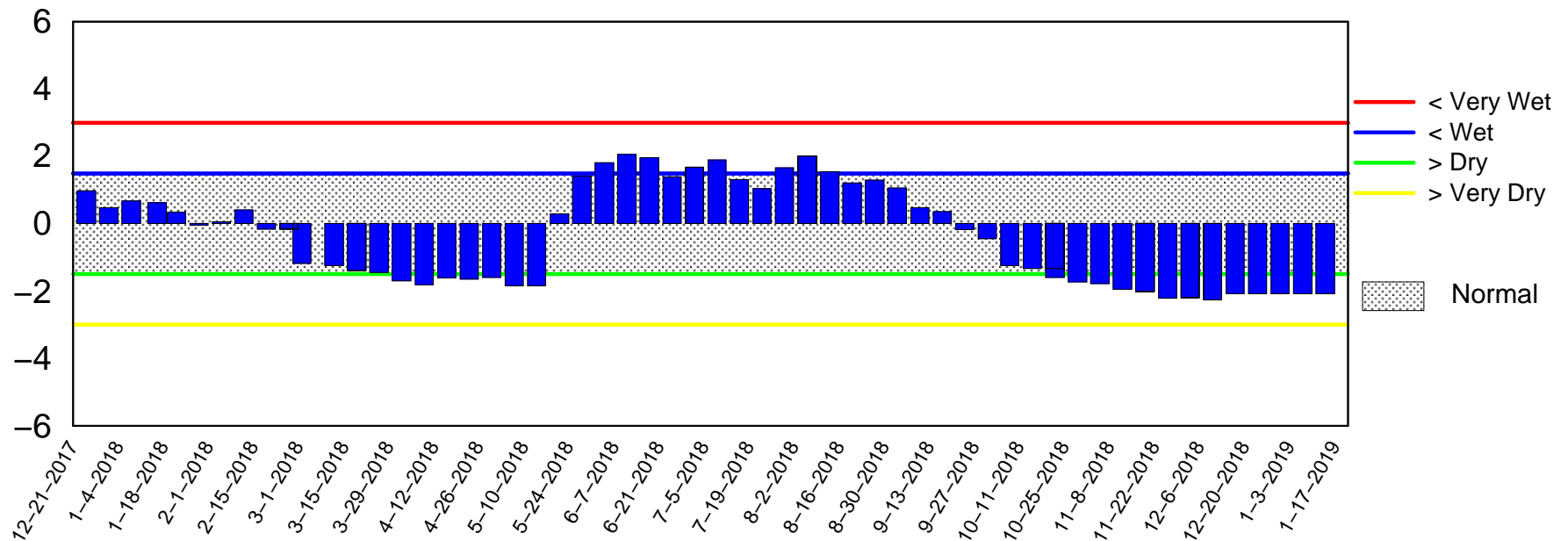
Lake Okeechobee SFWMM Jan 2019 Position Analysis



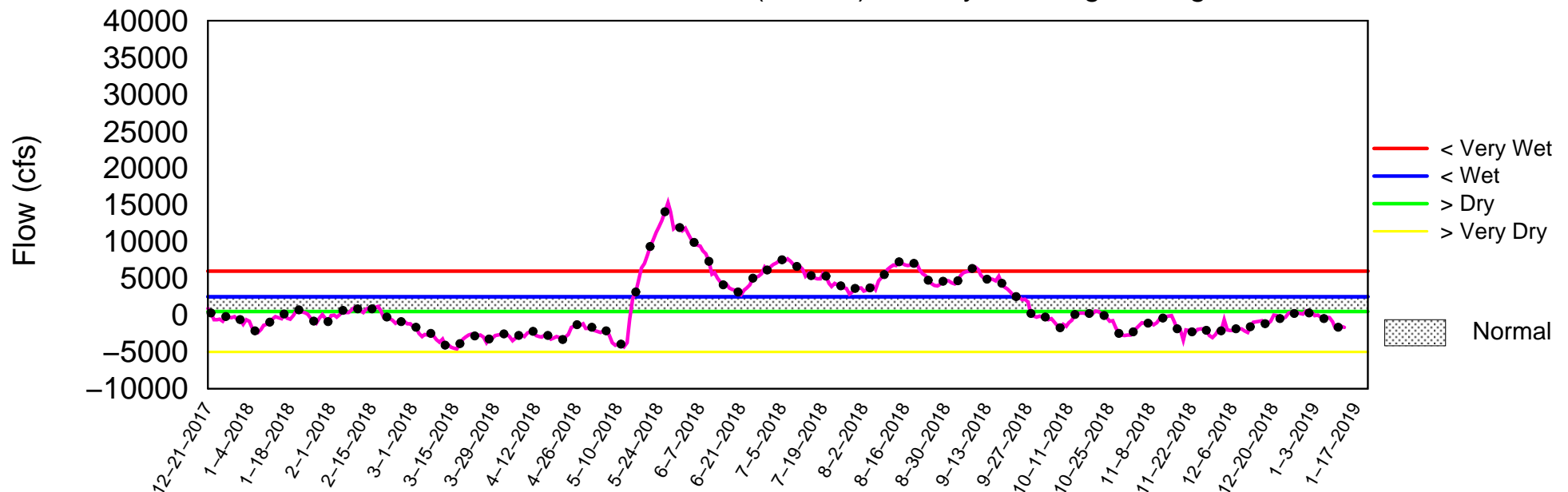
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of January 14 2019

Palmer Index



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



Mon Jan 14 15:35:21 EST 2019

2008 LORS

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

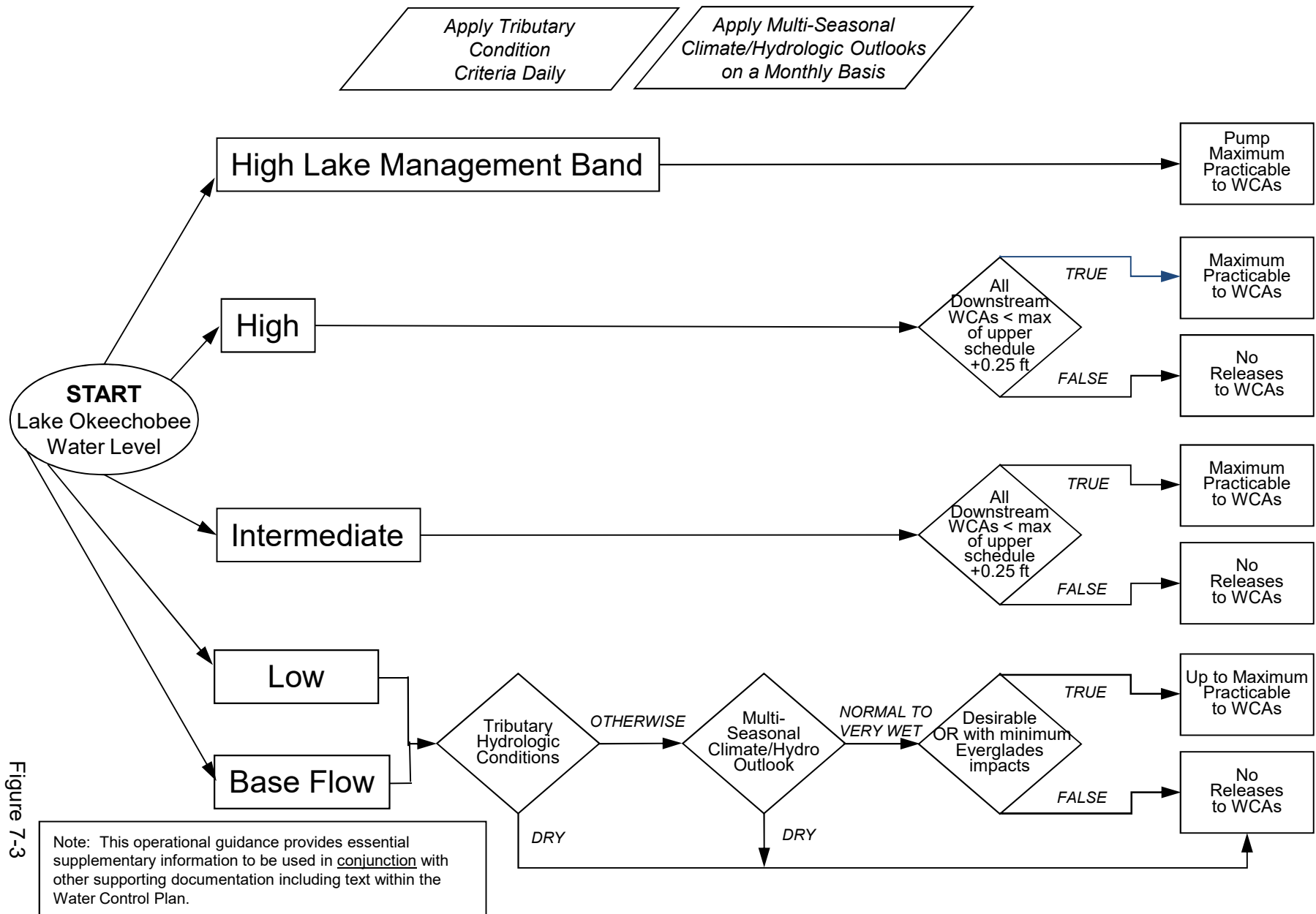


Figure 7-3

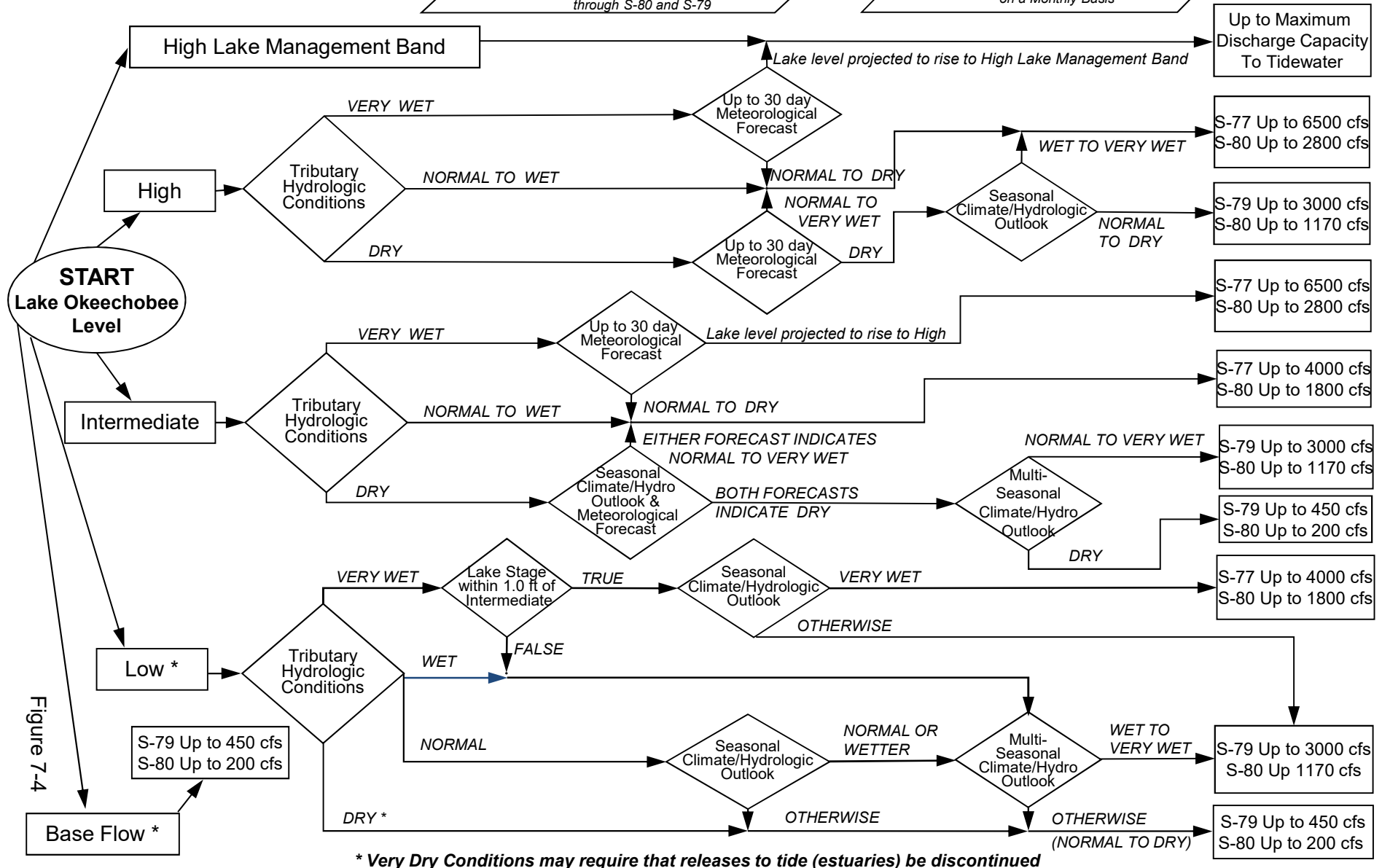
2008 LORS

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

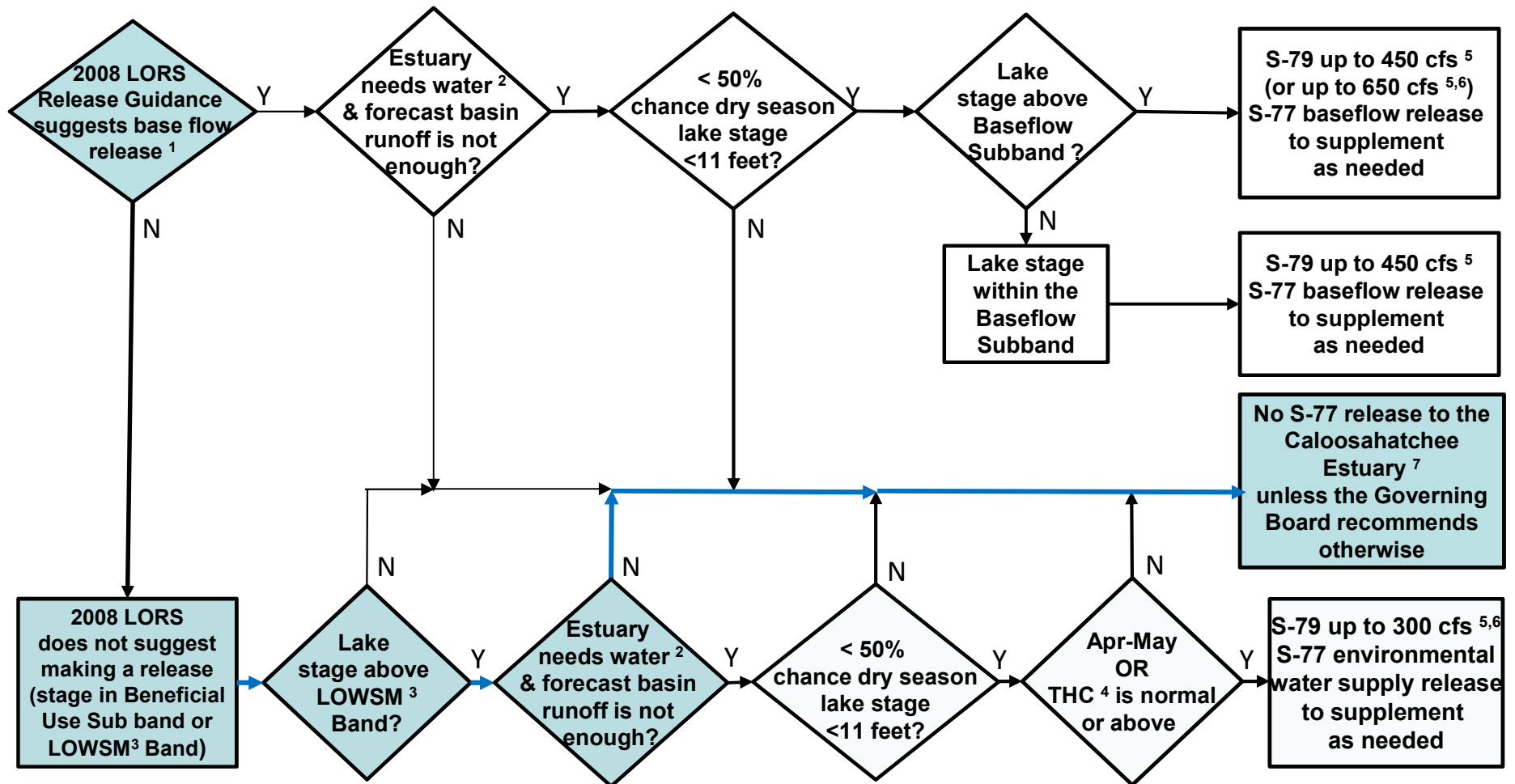
Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

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



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.

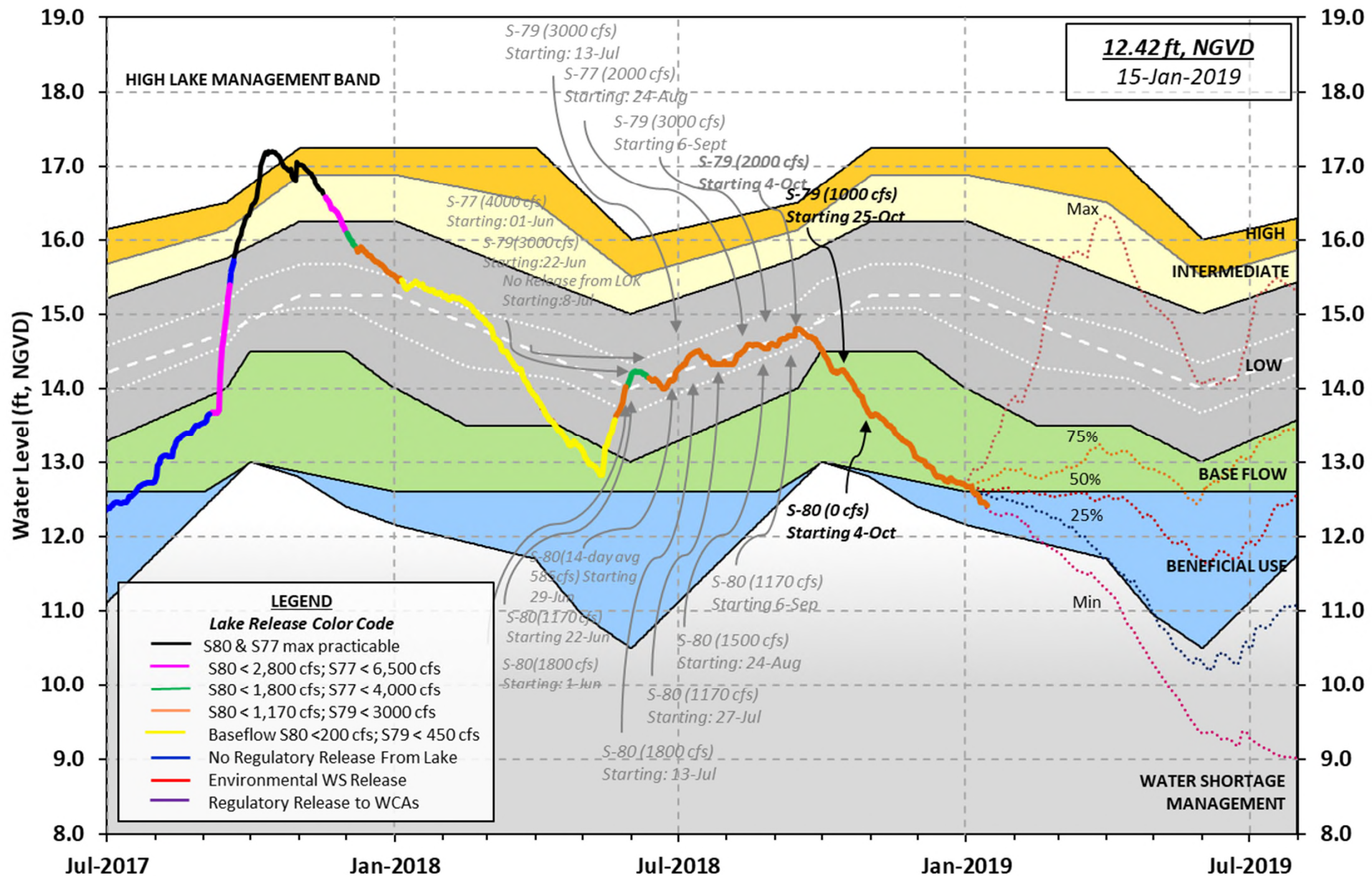
⁴Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

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 13 JAN 2019

Okeechobee Lake Regulation	Elevation	Last Year	2YRS Ago
	(ft-NGVD)	(ft-NGVD)	(ft-NGVD)
*Okeechobee Lake Elevation	12.44	15.44	14.05 (Official Elv)
Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.09			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	-NR-
Difference from Average LORS2008	-NR-

13JAN (1965-2007) Period of Record Average	14.71
Difference from POR Average	-2.27

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.38'

++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 4.58'

Bridge Clearance = 51.00'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.44	12.50	12.46	12.41	12.46	-NR-	12.43	12.39

*Combination Okeechobee Avg-Daily Lake Average = 12.44
(*See Note)

Okeechobee Inflows (cfs):

S65E	384	S65EX1	0	Fisheating Cr	4
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	50	S131 Pumps	0	C5	0
Total Inflows:	438				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	201	S77	1418
S127 Culverts	0	S351	417	S308	-129
S129 Culverts	0	S352	453		
S131 Culverts	0	L8 Canal Pt	92		
Total Outflows:	2452				

S3 Pumps:	11.13	12.52	0	0	0	0		(cfs)
S354:	12.52	11.13	201	0.6	0.6			
S2 Pumps:	11.08	-NR-	0	0	0	0	0	(cfs)
S351:	-NR-	11.08	417	0.8	0.8	0.6		
S352:		11.17	453	0.7	0.9			
C10A:	-NR-	12.66		8.0	8.0	8.0	0.0	0.0
L8 Canal PT		12.50	92					

S351 and S352 Temporary Pumps/S354 Spillway

S351:	11.08	-NR-	417	-NR--NR--NR--NR--NR--NR-
S352:	11.17		453	-NR--NR--NR--NR-
S354:	11.13	12.52	201	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	12.15	11.31		0.0	0.0
S47D:	11.38	11.39	-9	6.5	

S77:

Spillway and Sector Preferred Flow:

12.29	11.25	1416	0.0	3.0	3.0	3.0
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Flow Due to Lockages+: 2

S78:

Spillway and Sector Flow:

11.19	3.04	881	0.0	2.5	0.0	0.0
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Flow Due to Lockages+: 13

S79:

Spillway and Sector Flow:

3.12	1.28	1166	0.0	0.0	1.0	1.0	1.0	1.0	0.0
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0.0

Flow Due to Lockages+: 9

Percent of flow from S77 121%

Chloride (ppm) 60

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:

12.46	12.50	-129	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 0

S153:	18.52	12.25	0	0.0	0.0
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S80:

Spillway and Sector Flow:

12.51	0.11	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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Flow Due to Lockages+: 21

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:	0.00	0.00	0.00	282	3
S78:	0.00	0.00	0.00	286	7
S79:	0.00	0.00	0.00	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:	0.00	0.00	0.00	309	9
S80:	0.00	0.07	0.07	247	2
Okeechobee Average	0.00	0.00	0.00		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.00	0.00	0.00		

Okeechobee Lake Elevations	13 JAN 2019	12.44	Difference from
13JAN19			
13JAN19 -1 Day =	12 JAN 2019	12.46	0.02
13JAN19 -2 Days =	11 JAN 2019	12.46	0.02
13JAN19 -3 Days =	10 JAN 2019	12.46	0.02
13JAN19 -4 Days =	09 JAN 2019	12.52	0.08
13JAN19 -5 Days =	08 JAN 2019	12.56	0.12
13JAN19 -6 Days =	07 JAN 2019	12.57	0.13
13JAN19 -7 Days =	06 JAN 2019	12.58	0.14
13JAN19 -30 Days =	14 DEC 2018	12.80	0.36
13JAN19 -1 Year =	13 JAN 2018	15.44	3.00
13JAN19 -2 Year =	13 JAN 2017	14.05	1.61

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 1.87

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

13JAN19	Today =	13 JAN 2019	-1814	MON	-1353
13JAN19	-1 Day =	12 JAN 2019	-1703	SUN	-NR-
13JAN19	-2 Days =	11 JAN 2019	-1559	SAT	2019
13JAN19	-3 Days =	10 JAN 2019	-1586	FRI	-10062
13JAN19	-4 Days =	09 JAN 2019	-782	THU	-6192
13JAN19	-5 Days =	08 JAN 2019	-259	WED	-205
13JAN19	-6 Days =	07 JAN 2019	-321	TUE	486
13JAN19	-7 Days =	06 JAN 2019	-383	MON	-2751
13JAN19	-8 Days =	05 JAN 2019	-198	SUN	-8898
13JAN19	-9 Days =	04 JAN 2019	93	SAT	5863
13JAN19	-10 Days =	03 JAN 2019	-152	FRI	-45
13JAN19	-11 Days =	02 JAN 2019	423	THU	-293
13JAN19	-12 Days =	01 JAN 2019	368	WED	-2570
13JAN19	-13 Days =	31 DEC 2018	602	TUE	415

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S65E					
Average Flow over previous 14 days					Avg-Daily Flow
13JAN19	Today=	13 JAN 2019	284	MON	455
13JAN19	-1 Day =	12 JAN 2019	268	SUN	286
13JAN19	-2 Days =	11 JAN 2019	272	SAT	289
13JAN19	-3 Days =	10 JAN 2019	273	FRI	335
13JAN19	-4 Days =	09 JAN 2019	259	THU	263
13JAN19	-5 Days =	08 JAN 2019	249	WED	260
13JAN19	-6 Days =	07 JAN 2019	237	TUE	-NR-
13JAN19	-7 Days =	06 JAN 2019	227	MON	266
13JAN19	-8 Days =	05 JAN 2019	216	SUN	278
13JAN19	-9 Days =	04 JAN 2019	202	SAT	288
13JAN19	-10 Days =	03 JAN 2019	182	FRI	279
13JAN19	-11 Days =	02 JAN 2019	162	THU	264
13JAN19	-12 Days =	01 JAN 2019	155	WED	235
13JAN19	-13 Days =	31 DEC 2018	150	TUE	201

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S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
13JAN19	Today=	13 JAN 2019	2	MON	0
13JAN19	-1 Day =	12 JAN 2019	2	SUN	0
13JAN19	-2 Days =	11 JAN 2019	2	SAT	0
13JAN19	-3 Days =	10 JAN 2019	2	FRI	29
13JAN19	-4 Days =	09 JAN 2019	0	THU	0
13JAN19	-5 Days =	08 JAN 2019	4	WED	0
13JAN19	-6 Days =	07 JAN 2019	15	TUE	0
13JAN19	-7 Days =	06 JAN 2019	26	MON	0
13JAN19	-8 Days =	05 JAN 2019	37	SUN	0
13JAN19	-9 Days =	04 JAN 2019	49	SAT	0
13JAN19	-10 Days =	03 JAN 2019	67	FRI	0
13JAN19	-11 Days =	02 JAN 2019	96	THU	0
13JAN19	-12 Days =	01 JAN 2019	98	WED	0
13JAN19	-13 Days =	31 DEC 2018	109	TUE	0

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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)
13 JAN 2019			2792	2644	1757	2311
12 JAN 2019			2489	2199	1796	2567
11 JAN 2019			1693	1388	846	1683
10 JAN 2019			1269	1083	300	183
09 JAN 2019			811	670	303	811
08 JAN 2019			1271	1218	736	1652
07 JAN 2019			2508	2274	1787	2059
06 JAN 2019			3670	3527	2327	3000
05 JAN 2019			3469	3307	2825	3666
04 JAN 2019			2736	2516	1802	2283
03 JAN 2019			609	821	324	224
02 JAN 2019			624	701	576	1028
01 JAN 2019			1286	1418	1206	1558
31 DEC 2018			2475	2595	1592	1892

			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)
13 JAN 2019			137	827	-NR-	297	182
12 JAN 2019			232	956	-NR-	208	113
11 JAN 2019			220	832	-NR-	311	171
10 JAN 2019			445	705	-NR-	292	206
09 JAN 2019			286	1037	-NR-	210	264
08 JAN 2019			315	1312	-NR-	0	222
07 JAN 2019			274	1191	-NR-	-NR-	190
06 JAN 2019			315	1173	-NR-	218	189
05 JAN 2019			266	269	-NR-	299	308
04 JAN 2019			54	137	-NR-	119	211
03 JAN 2019			112	1242	-NR-	706	218
02 JAN 2019			86	899	-NR-	397	261
01 JAN 2019			81	491	-NR-	125	205
31 DEC 2018			130	657	-NR-	349	212

			S-308	Below S-308	S-80
			Discharge	Discharge	Discharge
			(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE			(AC-FT)	(AC-FT)	(AC-FT)
13 JAN 2019			-296	70	41
12 JAN 2019			-431	215	30
11 JAN 2019			-447	30	36
10 JAN 2019			-326	3	23
09 JAN 2019			-351	27	31
08 JAN 2019			-397	-163	35
07 JAN 2019			-1	-14	21
06 JAN 2019			-2	26	54
05 JAN 2019			-0	-70	44
04 JAN 2019			-182	-288	54
03 JAN 2019			-179	40	50
02 JAN 2019			-0	-35	36
01 JAN 2019			-304	-151	50
31 DEC 2018			-206	-39	14

*** 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

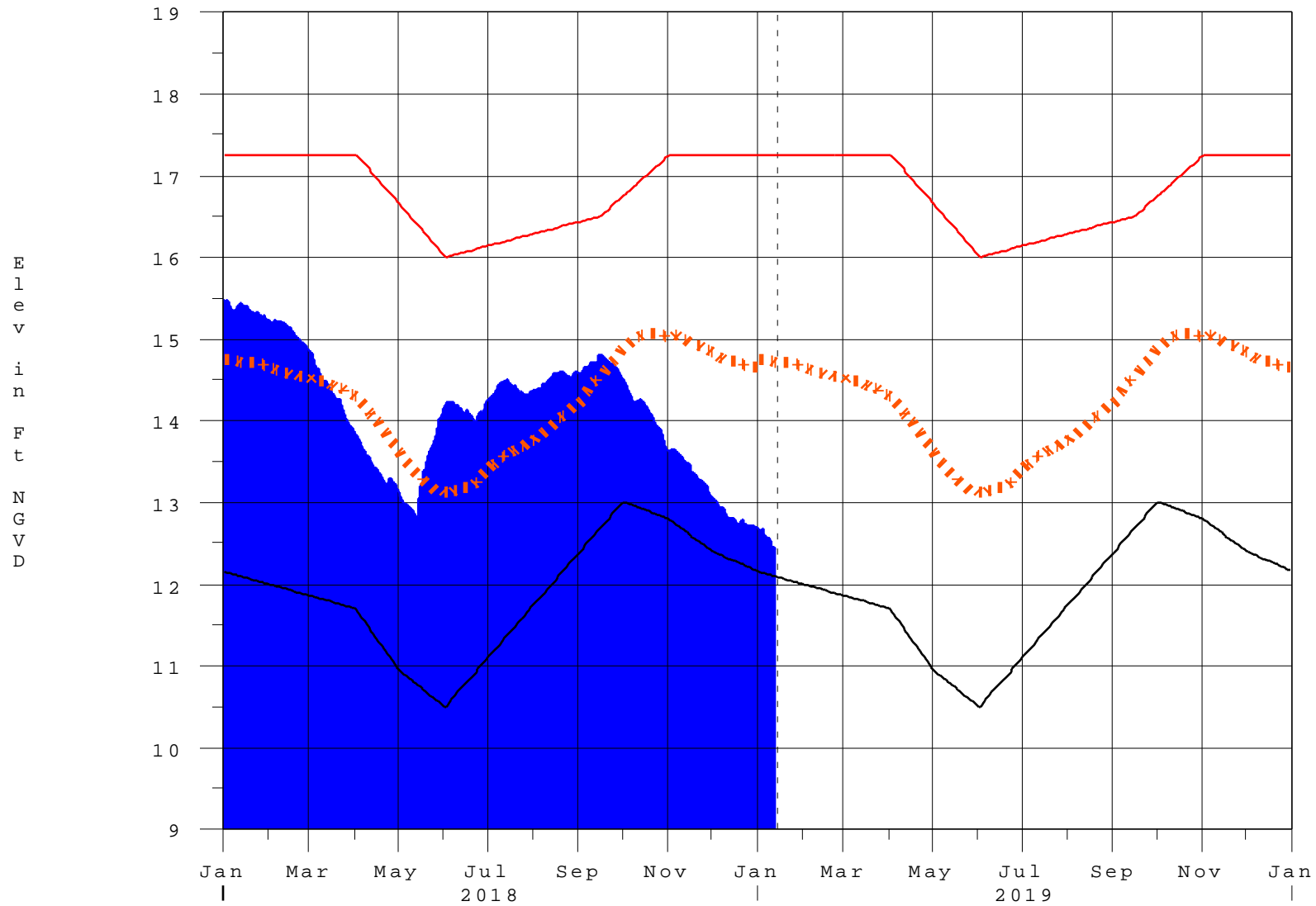
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* On 11 May 1999, Lake Okeechobee Elevation was switched from
Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the
standard
10 stations, the average of the interior 4 station gages 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 14JAN2019 @ 15:15 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

14JAN19 15:17:26



- 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