

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 9/9/2019 (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 (Sep-Feb)	N/A	N/A	1.68	Wet	2.03	Very Wet	3.55	Very Wet
Multi Seasonal (Sep-Apr)	N/A	N/A	1.87	Normal	2.15	Normal	3.88	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.

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

[Tributary Hydrologic Conditions Graph:](#)

8,540 cfs 14-day running average for Lake Okeechobee Net Inflow through 9/8/2019. According to the classification in [Tributary Hydrologic Conditions](#) table, this condition is Very Wet.

0.41 for Palmer Index on 9/7/2019.

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

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

[LORS2008 Classification Tables:](#)

Lake Okeechobee Stage on 9/9/2019

Lake Okeechobee Stage: **13.97 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		16.47	
Operational Band	High sub-band	16.09	
	Intermediate sub-band	15.70	
	Low sub-band	13.93	← 13.97
Base Flow sub-band		12.69	
Beneficial Use sub-band		12.55	
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 LORSS Homepage](#)

LORS2008 Implementation on 09/09/2019 (ENSO Neutral Condition):

Status for week ending 09/09/2019:

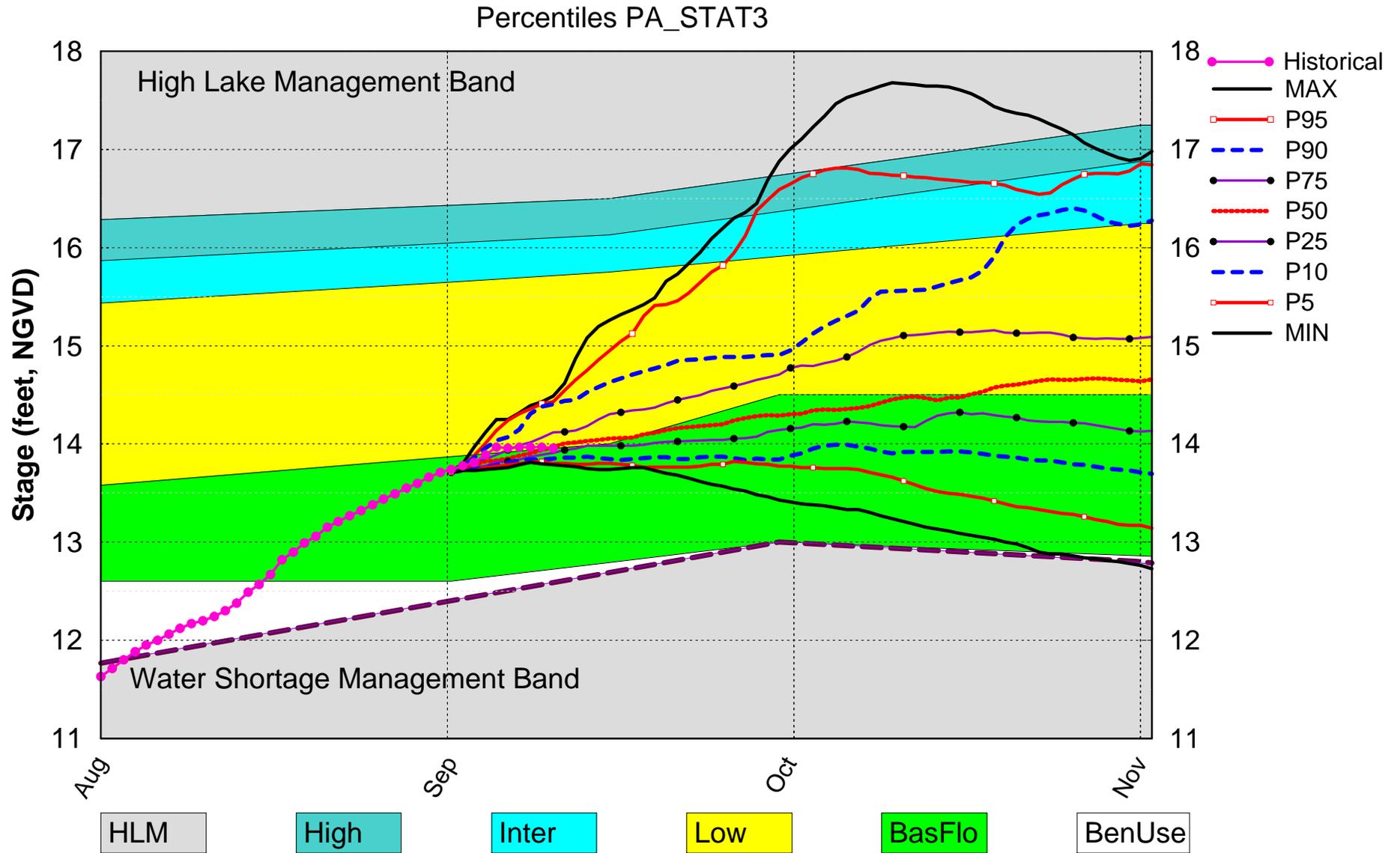
District wide, Raindar rainfall was 0.73 inches for the week. Lake stage on 9/9/2019 was 13.97 ft, NGVD, up 0.19 ft from last week. The updated September 2019 SFWMM Dynamic Position Analysis [percentile graph](#) for Lake Okeechobee show that the current lake stage is in the Low Sub-Band. The LORS2008 Tributary Hydrologic Conditions (THC) are classified as **Very Wet**. The PDI indicates normal conditions 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	Low Sub-Band	L
	Palmer Index for LOK Tributary Conditions	0.41 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.03 ft	L
	ENSO Forecast (positive)	(Normal to Extremely Wet)	
	LOK Multi-Seasonal Net Inflow Outlook	2.15 ft (Normal)	M
ENSO Forecast (positive)			
WCAs	WCA 1: Canal Gauge (Site 1-8C)	Above Line 1 (16.57 ft)	L
	WCA 2A: Site 2-17 HW	Above Line 1 (13.07 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64, and 65)	Above Line 1 (10.58 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.

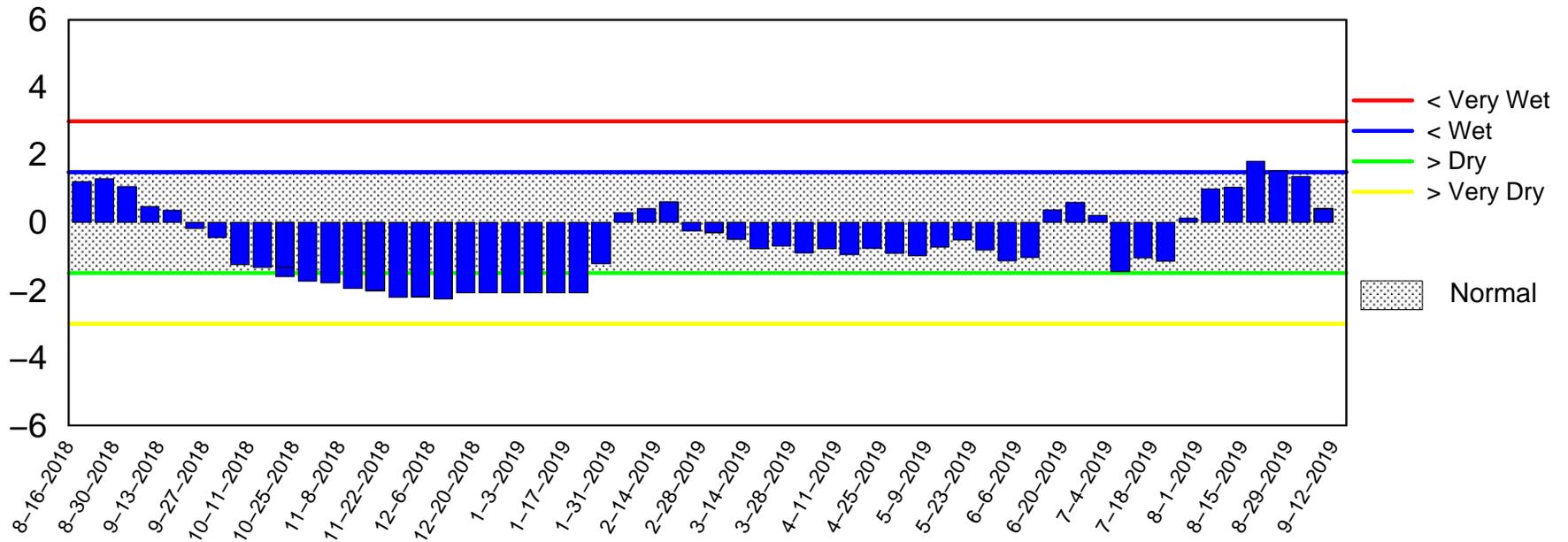
Lake Okeechobee SFWMM Sep 2019 Position Analysis



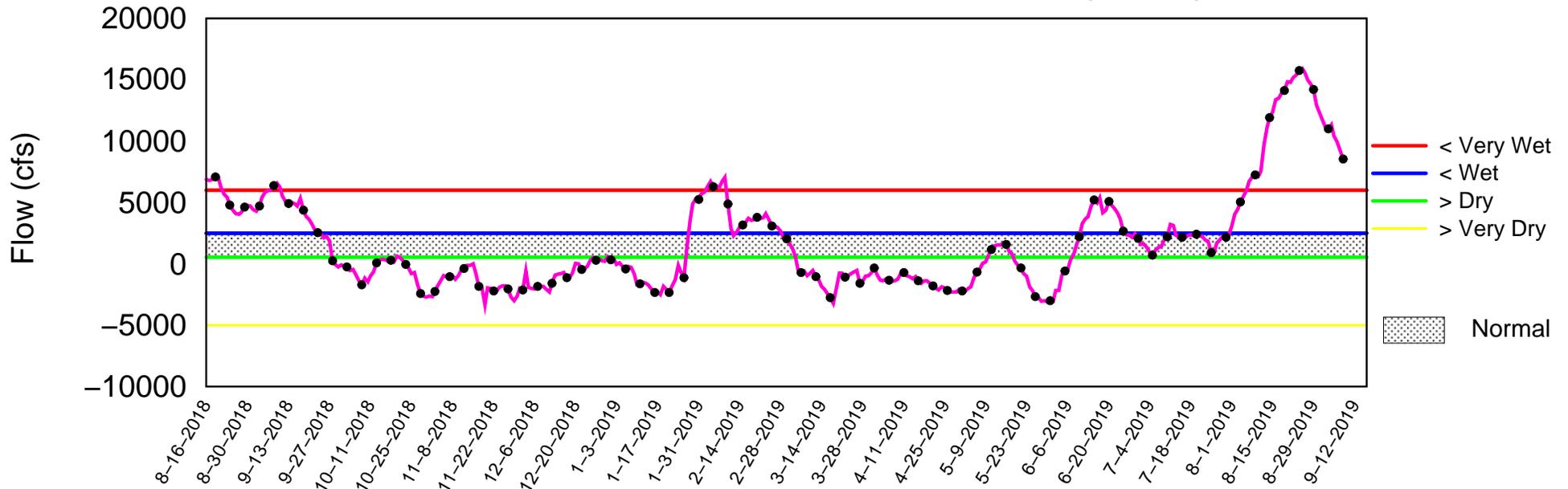
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of September 9 2019

Palmer Index



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



Tue Sep 10 08:59:33 EDT 2019

2008 LORS

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

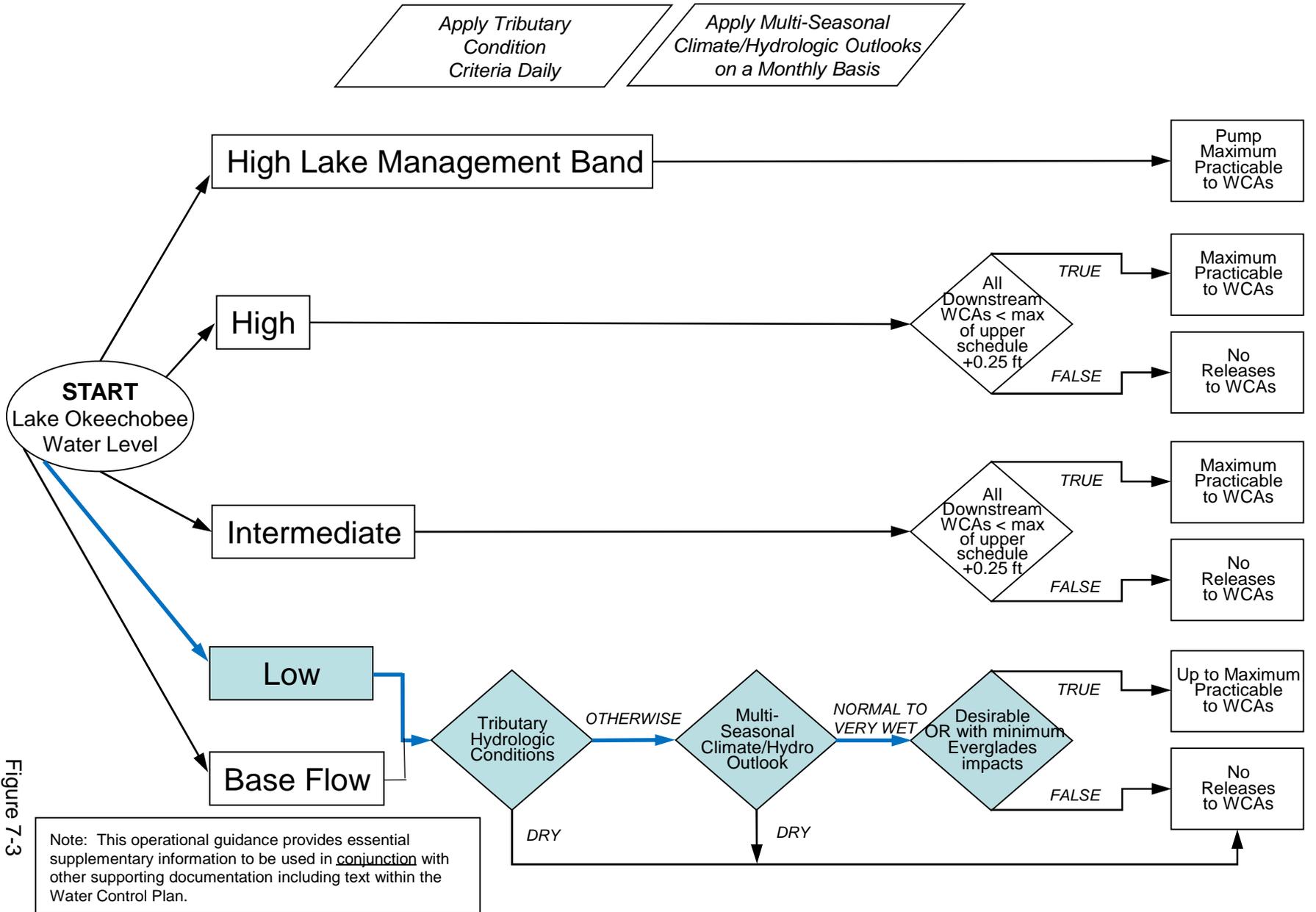


Figure 7-3

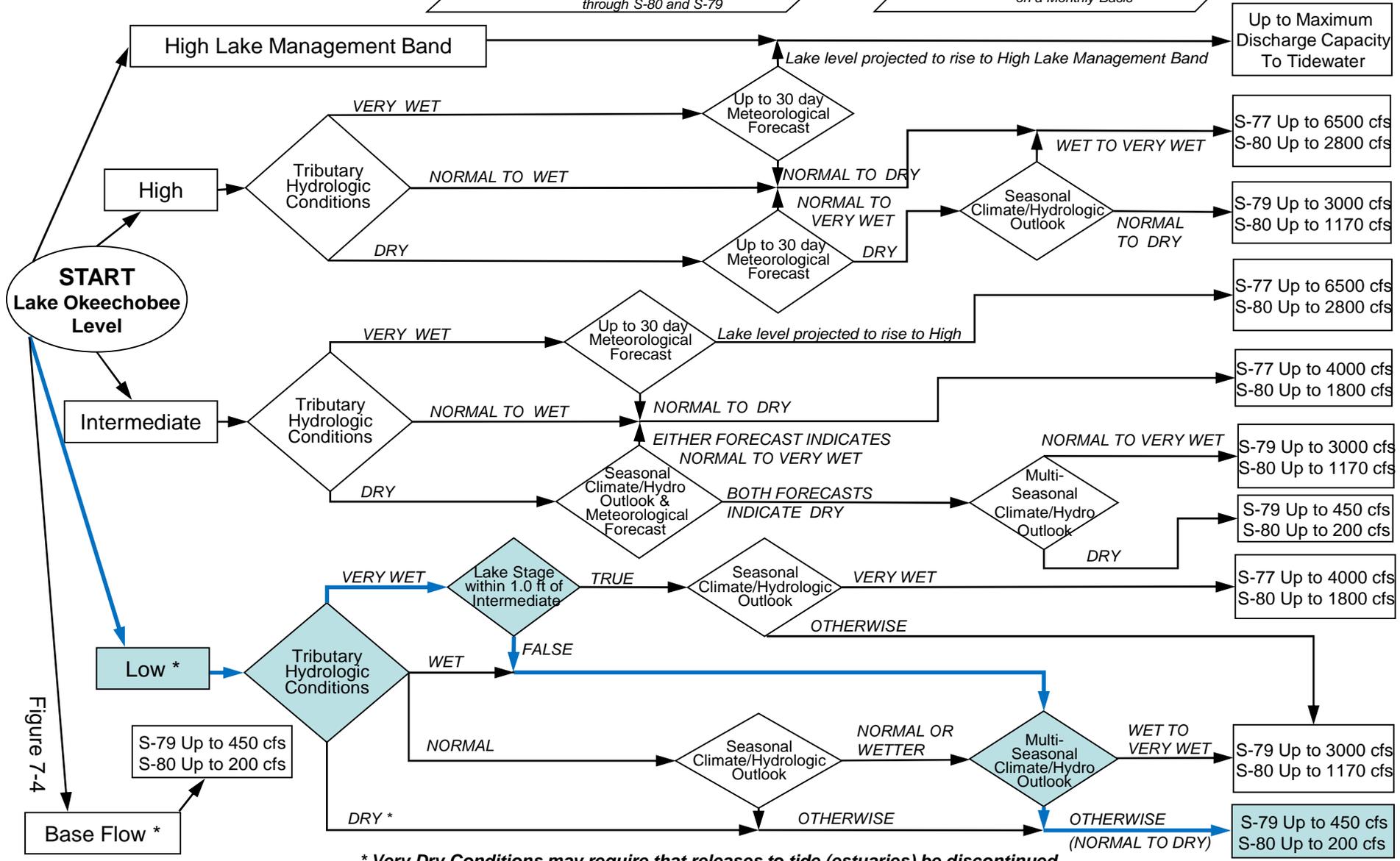
2008 LORS

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

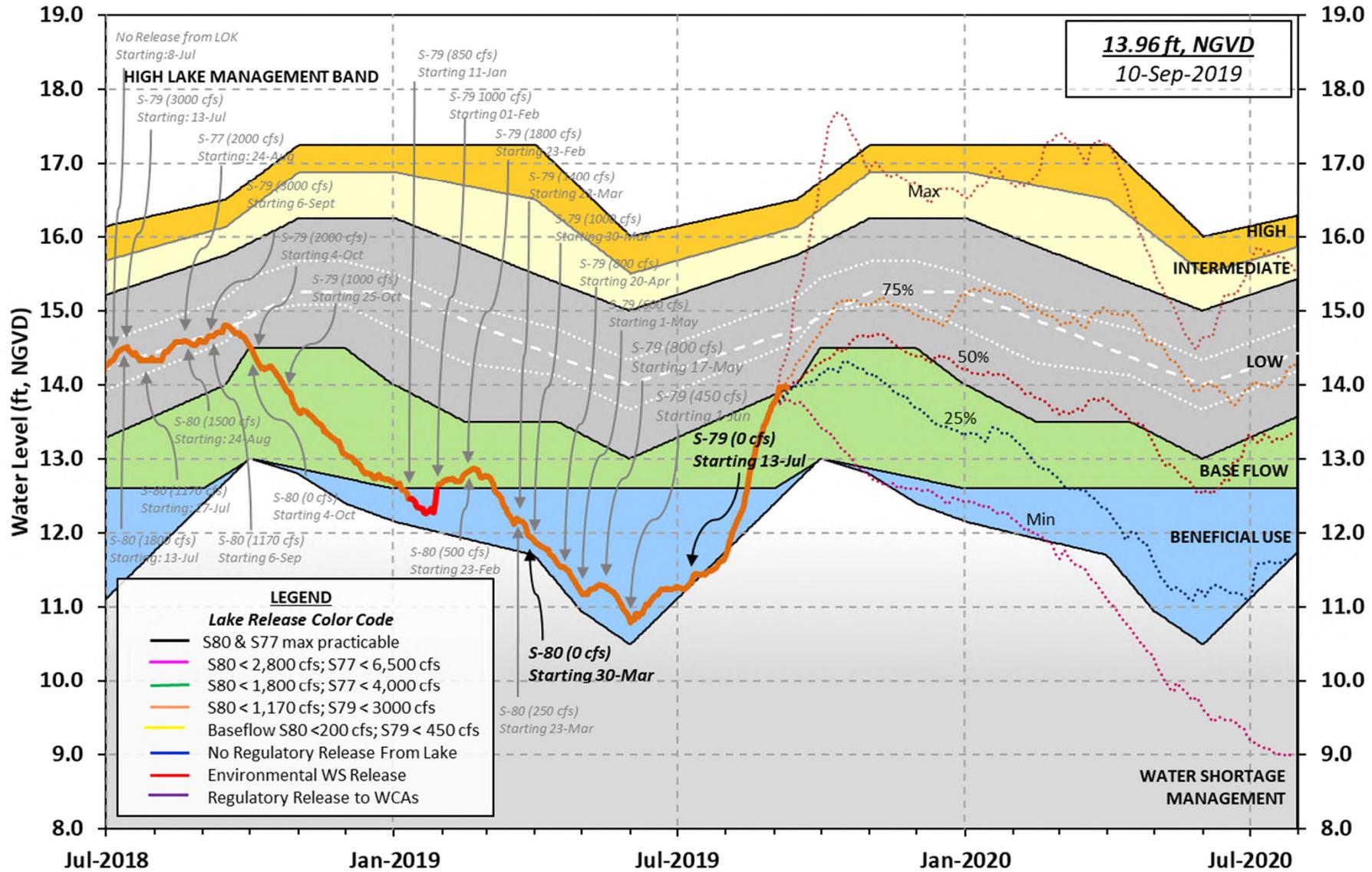
Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



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

Figure 7-4

Lake Okeechobee Water Level History and Projected Stages



****S77 structure flow is being used to compute Total Outflow.
 ****S308 structure flow is being used to compute Total Outflow.

Okeechobee Pan Evaporation (inches):

S77 0.29 S308 0.29
 Average Pan Evap x 0.75 Pan Coefficient = 0.22" = 0.02'

Lake Average Precipitation using NEXRAD: = 0.02" = 0.00'

Evaporation - Precipitation: = 0.20" = 0.02'

Evaporation - Precipitation using Lake Area of 730 square miles
 is equal to 3877 cfs out of the lake.

Lake Okeechobee (Change in Storage) Flow is 0 cfs or 0 AC-FT

	Headwater	Tailwater		----- Gate Positions -----						
	Elevation	Elevation	Disch	#1	#2	#3	#4	#5	#6	#7
#8	(ft-msl)	(ft-msl)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
				(I) see note at bottom						
North East Shore										
S133 Pumps:	13.37	14.07	0	0	0	0	0	0	0	(cfs)
S193:										
S191:	18.86	14.05	0	0.0	0.0	0.0				
S135 Pumps:	13.18	13.87	0	0	0	0	0			(cfs)
S135 Culverts:			0	0.0	0.0					
North West Shore										
S65E:	21.10	13.90	685	0.5	0.0	0.5	0.5	-0.0	0.5	
S65EX1:	21.10	13.90	3751							
S127 Pumps:	13.50	13.99	0	0	0	0	0	0	0	(cfs)
S127 Culvert:			0	0.0						
S129 Pumps:	12.78	13.99	0	0	0	0				(cfs)
S129 Culvert:			0	0.0						
S131 Pumps:	12.76	14.20	0	0	0					(cfs)
S131 Culvert:			0							
Fisheating Creek										
nr Palmdale		32.55	622							
nr Lakeport										
C5:		-NR-	0	-NR-	-NR-	-NR-				
South Shore										
S4 Pumps:	10.39	13.94	0	0	0	0				(cfs)
S169:	13.93	10.40	0	0.0	0.0	0.0				
S310:	13.83		31							

S3 Pumps:	10.11	13.89	0	0	0	0				(cfs)
S354:	13.89	10.11	1015	1.8	1.8					
S2 Pumps:	10.72	-NR-	0	0	0	0	0	0		(cfs)
S351:	-NR-	10.72	912	1.5	1.6	1.5				
S352:	13.96	10.78	797	1.5	1.9					
C10A:	-NR-	13.66		8.0	8.0	8.0	0.0	0.0		
L8 Canal PT		13.48	0							

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.72	-NR-	912	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-	
S352:	10.78	13.96	797	-NR-	-NR-	-NR-	-NR-			
S354:	10.11	13.89	1015	-NR-	-NR-	-NR-	-NR-			

Caloosahatchee River (S77, S78, S79)

S47B:	13.38	12.82		2.5	2.5					
S47D:	12.58	10.82	113	1.0						

S77:

Spillway and Sector Preferred Flow:

13.89	10.76	0	0.0	0.0	0.0	0.0			
-------	-------	---	-----	-----	-----	-----	--	--	--

Flow Due to Lockages+: 4

S78:

Spillway and Sector Flow:

10.71	2.81	146	0.5	0.0	0.0	0.0			
-------	------	-----	-----	-----	-----	-----	--	--	--

Flow Due to Lockages+: 16

S79:

Spillway and Sector Flow:

3.04	1.69	828	0.0	0.0	1.0	1.0	1.0	1.0	0.0
------	------	-----	-----	-----	-----	-----	-----	-----	-----

0.0

Flow Due to Lockages+: 5

Percent of flow from S77 0%

Chloride (ppm) 45

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:

13.86	14.05	0	0.0	0.0	0.0	0.0			
-------	-------	---	-----	-----	-----	-----	--	--	--

Flow Due to Lockages+: -0

S153:	18.96	13.88	0	0.0	0.0				
-------	-------	-------	---	-----	-----	--	--	--	--

S80:

Spillway and Sector Flow:

14.20	1.10	230	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-------	------	-----	-----	-----	-----	-----	-----	-----	-----

Flow Due to Lockages+: 9

Percent of flow from S308 0%

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

Speedy Point Top Salinity (mg/ml) 9424
 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 Speed (mph)	1-Day (inches)	3-Day (inches)	7-Day (inches)	Direction (Degø)	
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:	3.79	3.79	4.42	146	7
S78:	23.89	23.89	24.14	199	2
S79:	33.04	33.04	33.33	93	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:	24.45	24.45	25.16	140	7
S80:	0.09	0.09	1.09	153	0
Okeechobee Average	14.12	2.17	2.28		
(Sites S78, S79 and S80 not included)					

Oke Nexrad Basin Avg	0.02	0.04	0.77		

Okeechobee Lake Elevations	08 SEP 2019	13.97	Difference from
08SEP19			
08SEP19 -1 Day =	07 SEP 2019	13.97	0.00
08SEP19 -2 Days =	06 SEP 2019	13.97	0.00
08SEP19 -3 Days =	05 SEP 2019	13.96	-0.01
08SEP19 -4 Days =	04 SEP 2019	13.97	0.00
08SEP19 -5 Days =	03 SEP 2019	13.89	-0.08
08SEP19 -6 Days =	02 SEP 2019	13.81	-0.16
08SEP19 -7 Days =	01 SEP 2019	13.78	-0.19
08SEP19 -30 Days =	09 AUG 2019	12.20	-1.77
08SEP19 -1 Year =	08 SEP 2018	14.68	0.71
08SEP19 -2 Year =	08 SEP 2017	-NR-	-NR-

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 4.26

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

08SEP19	Today =	08 SEP 2019	8646	MON	2724
08SEP19	-1 Day =	07 SEP 2019	9345	SUN	2645
08SEP19	-2 Days =	06 SEP 2019	10063	SAT	4177
08SEP19	-3 Days =	05 SEP 2019	10521	FRI	-595
08SEP19	-4 Days =	04 SEP 2019	11471	THU	17075
08SEP19	-5 Days =	03 SEP 2019	11159	WED	16940
08SEP19	-6 Days =	02 SEP 2019	11310	TUE	6353
08SEP19	-7 Days =	01 SEP 2019	11904	MON	8470
08SEP19	-8 Days =	31 AUG 2019	12564	SUN	6353
08SEP19	-9 Days =	30 AUG 2019	13204	SAT	10622
08SEP19	-10 Days =	29 AUG 2019	14534	FRI	12705
08SEP19	-11 Days =	28 AUG 2019	15006	THU	10588
08SEP19	-12 Days =	27 AUG 2019	15374	WED	12655
08SEP19	-13 Days =	26 AUG 2019	16007	TUE	10335

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
08SEP19	Today=	08 SEP 2019	3613	MON	791
08SEP19	-1 Day =	07 SEP 2019	3968	SUN	1511
08SEP19	-2 Days =	06 SEP 2019	4274	SAT	1776
08SEP19	-3 Days =	05 SEP 2019	4569	FRI	1951
08SEP19	-4 Days =	04 SEP 2019	4858	THU	2649
08SEP19	-5 Days =	03 SEP 2019	5099	WED	2851
08SEP19	-6 Days =	02 SEP 2019	5323	TUE	3809
08SEP19	-7 Days =	01 SEP 2019	5469	MON	4665
08SEP19	-8 Days =	31 AUG 2019	5537	SUN	4612
08SEP19	-9 Days =	30 AUG 2019	5590	SAT	5042
08SEP19	-10 Days =	29 AUG 2019	5582	FRI	4935
08SEP19	-11 Days =	28 AUG 2019	5425	THU	5116
08SEP19	-12 Days =	27 AUG 2019	5059	WED	5463
08SEP19	-13 Days =	26 AUG 2019	4738	TUE	5416

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
08SEP19	Today=	08 SEP 2019	2924	MON	3751
08SEP19	-1 Day =	07 SEP 2019	2832	SUN	3762
08SEP19	-2 Days =	06 SEP 2019	2740	SAT	3743
08SEP19	-3 Days =	05 SEP 2019	2659	FRI	3771
08SEP19	-4 Days =	04 SEP 2019	2583	THU	3715
08SEP19	-5 Days =	03 SEP 2019	2510	WED	3801
08SEP19	-6 Days =	02 SEP 2019	2429	TUE	2919
08SEP19	-7 Days =	01 SEP 2019	2401	MON	2003
08SEP19	-8 Days =	31 AUG 2019	2442	SUN	1983
08SEP19	-9 Days =	30 AUG 2019	2479	SAT	1965
08SEP19	-10 Days =	29 AUG 2019	2483	FRI	2171
08SEP19	-11 Days =	28 AUG 2019	2566	THU	2446
08SEP19	-12 Days =	27 AUG 2019	2752	WED	2460
08SEP19	-13 Days =	26 AUG 2019	2831	TUE	2451

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 SEP 2019	7	81	320	1653
07 SEP 2019	4	233	387	1583
06 SEP 2019	5	122	597	1783
05 SEP 2019	7	234	781	2979
04 SEP 2019	5	288	1081	3737
03 SEP 2019	0	-149	1691	4591
02 SEP 2019	0	127	1870	5436
01 SEP 2019	4	249	2412	6104
31 AUG 2019	12	236	1599	5502
30 AUG 2019	15	242	3045	7752
29 AUG 2019	8	236	2213	7605
28 AUG 2019	5	523	3133	8493
27 AUG 2019	1	627	2998	8684
26 AUG 2019	4	194	1448	5408

	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)				
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
08 SEP 2019	61	1809	1580	1733	0
07 SEP 2019	86	1783	1527	1678	-7
06 SEP 2019	78	1071	1199	1575	-11
05 SEP 2019	61	672	794	1317	-49
04 SEP 2019	8	0	0	222	-49
03 SEP 2019	14	0	0	0	-5
02 SEP 2019	11	0	0	0	-9
01 SEP 2019	13	0	0	0	-56
31 AUG 2019	-77	0	0	0	-294
30 AUG 2019	-74	60	8	0	-441
29 AUG 2019	-52	0	0	0	-405
28 AUG 2019	-51	0	0	0	-297
27 AUG 2019	-111	0	0	0	-368
26 AUG 2019	-106	0	0	0	-347

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
08 SEP 2019	-1	94	476
07 SEP 2019	1	-104	100
06 SEP 2019	31	-260	38
05 SEP 2019	5	-310	49
04 SEP 2019	1	-314	905
03 SEP 2019	-NR-	68	697
02 SEP 2019	-NR-	-46	959
01 SEP 2019	0	70	896
31 AUG 2019	-0	226	1290
30 AUG 2019	-5	161	1760
29 AUG 2019	-3	257	1289
28 AUG 2019	-1	16	1723
27 AUG 2019	-2	-111	1164
26 AUG 2019	-1	-28	8

*** 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

-

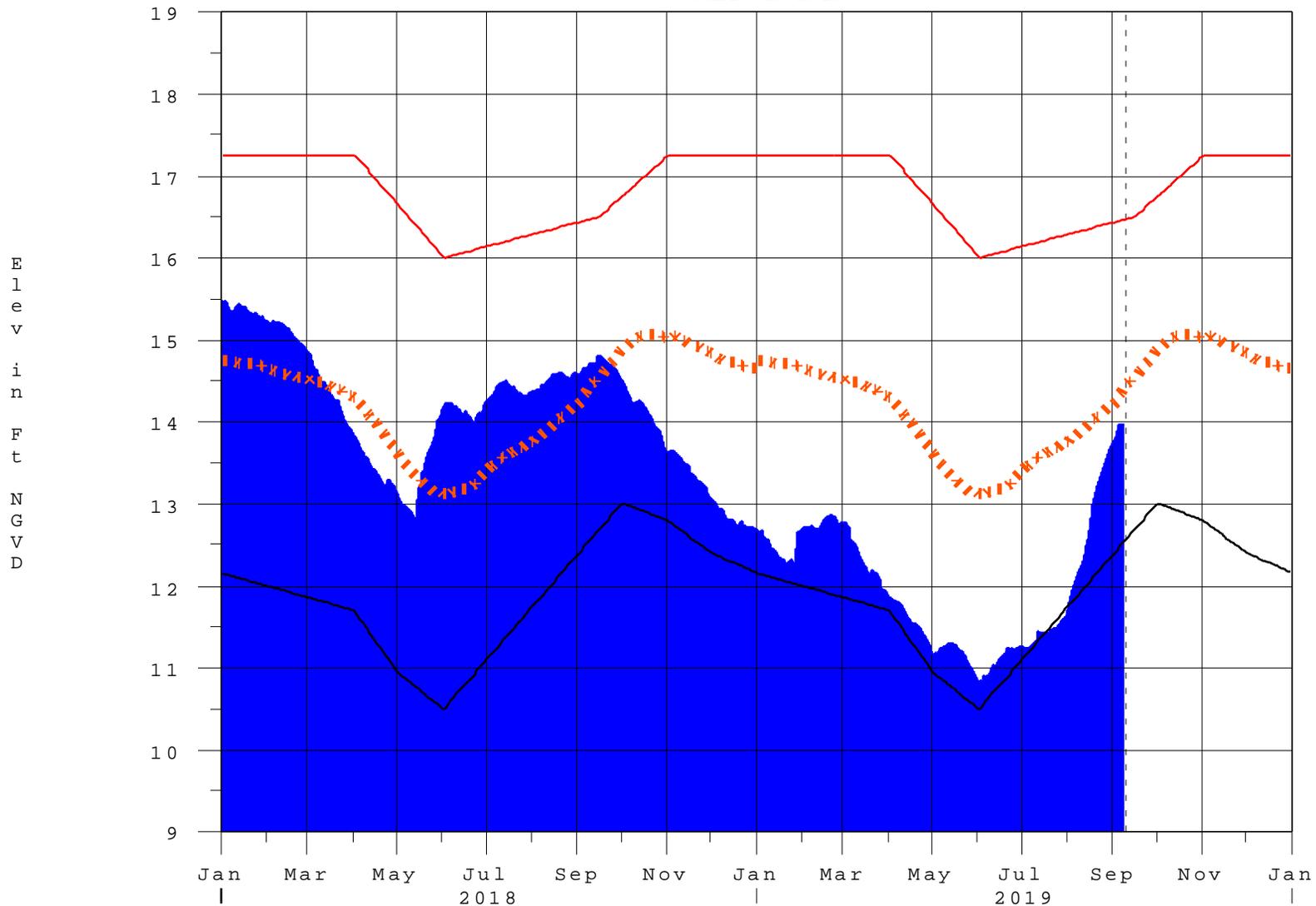
* On 11 May 1999, Lake Okeechobee Elevation was switched from
Instantaneous 2400 value to an average-daily lake average.
On 14 Mar 2001, due to the isolation of various gages within the
standard
10 stations, the average of the interior 4 station gages was used
as the Lake Okeechobee Elevation.
On 05 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 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

-

Report Generated 09SEP2019 @ 15:39 ** Preliminary Data - Subject to Revision
**

Lake Okeechobee

09SEP19 15:45:25



- 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