Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 11/30/2020 (ENSO Condition: La Niña)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method[1], the SFWMD empirical method[2], a sub-sampling of La Nina years[3] and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Nina ENSO years[4]. 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 La Nina ENSO Years[3]		Sub-sampling of AMO Warm + La Nina ENSO Years[4]	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Nov-Apr)	N/A	N/A	1.08	Normal	0.22	Dry	0.29	Dry
Multi Seasonal (Nov-Oct)	N/A	N/A	3.68	Wet	2.85	Wet	2.75	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:

704 cfs 14-day running average for Lake Okeechobee Net Inflow through 11/29/2020.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

1.14 for Palmer Drought Index on 11/28/2020.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 11/30/2020:

Lake Okeechobee Stage: **16.13 feet**

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	
	Low sub-band	14.50	← 16.13 ft
Base Flow sub-band		12.74	
Beneficial Use sub-band		12.41	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

Up to Maximum Practicable to the WCAs if desirable or with minimum Everglades impact; otherwise no releases to WCAs.

Part D of LORS2008: Discharge to Tide

Up to 450 cfs at S-79 and up to 200 cfs at S-80.

LORS2008 Implementation on 11/30/2020 (ENSO Condition- La Nina):

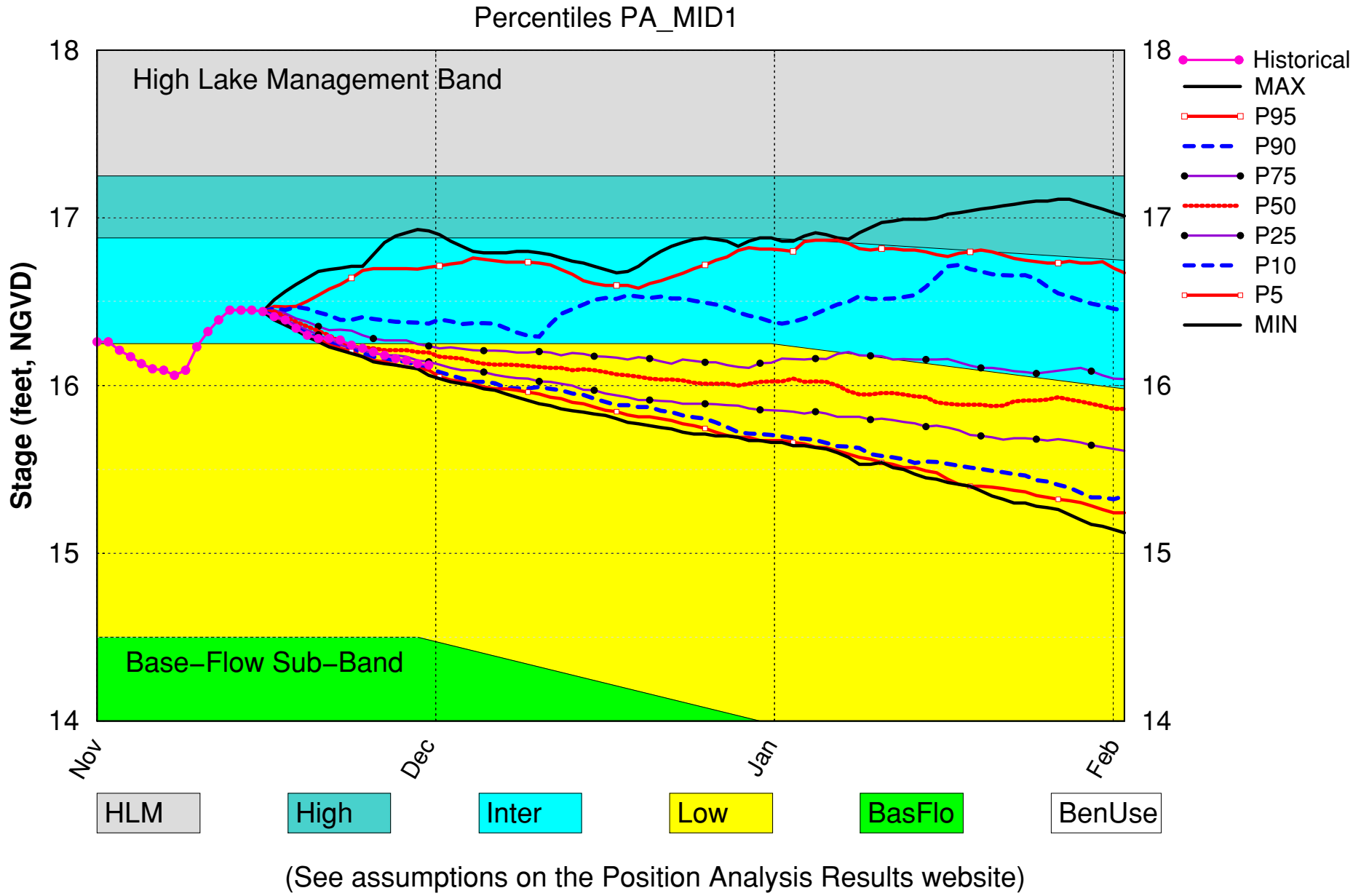
Status for week ending 11/30/2020:

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 Drought Index for LOK Tributary Conditions	1.14 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Below Normal	H
	LOK Seasonal Net Inflow Outlook	0.22 ft	M
	ENSO Forecast	Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.85 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (17.38 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (14.08 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.

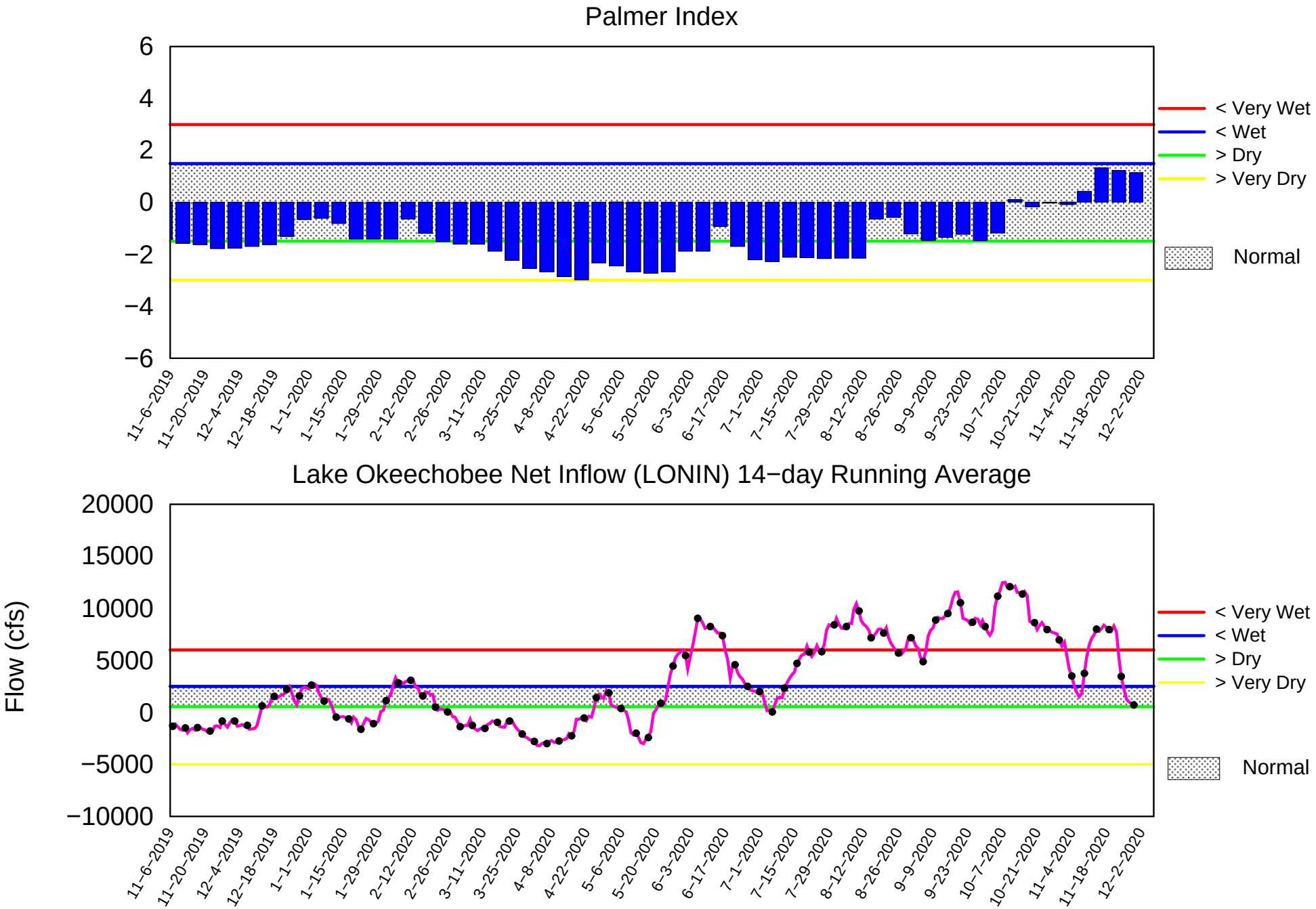
Lake Okeechobee SFWMM Nov 2020 Mid–Mon Position Analysis



(See assumptions on the Position Analysis Results website)

Mon Nov 30 15:14:57 EST 2020

Tributary Basin Condition Indicators as of November 30 2020



Mon Nov 30 17:14:49 EST 2020

2008 LORS

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

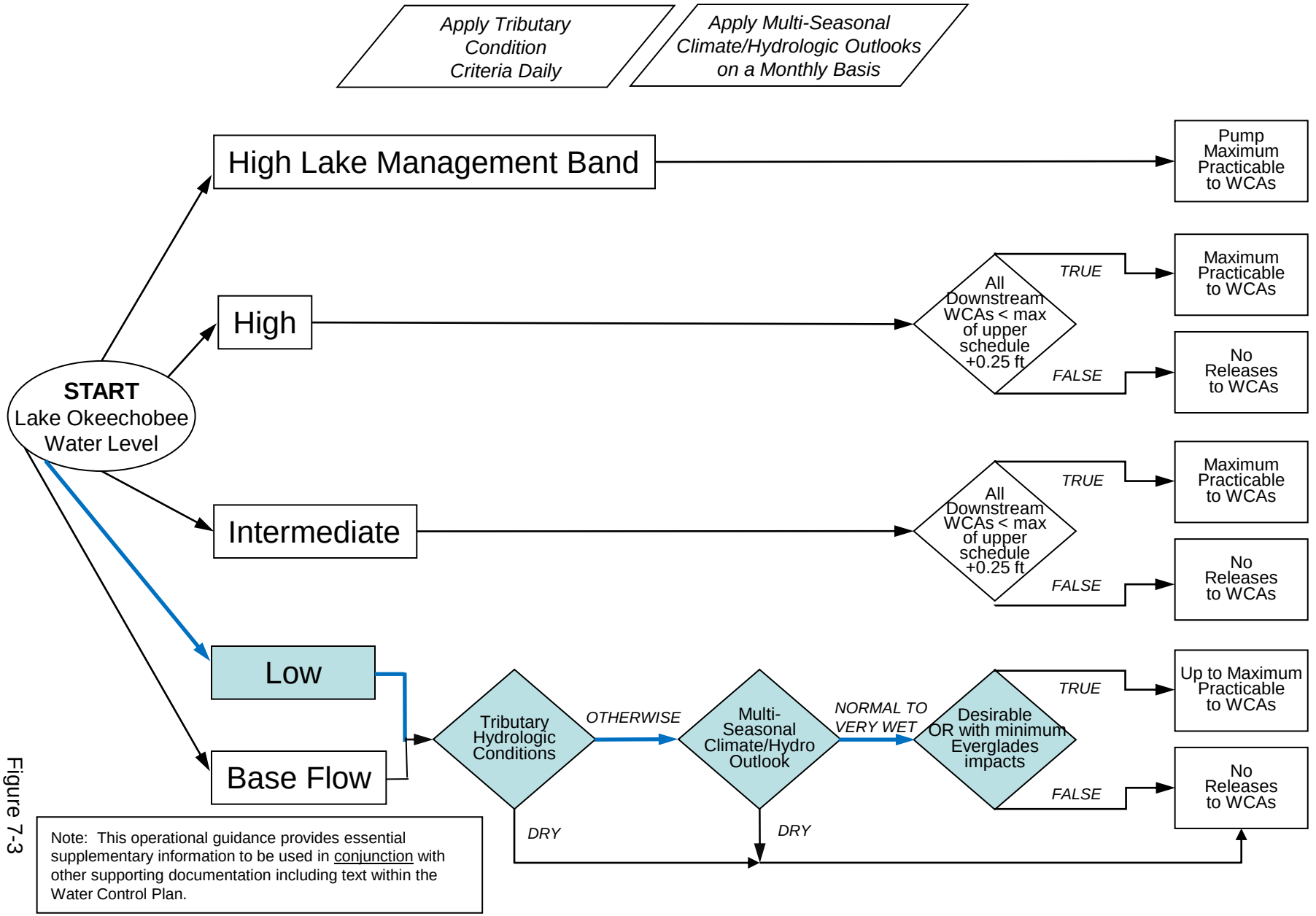


Figure 7-3

2008 LORS

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

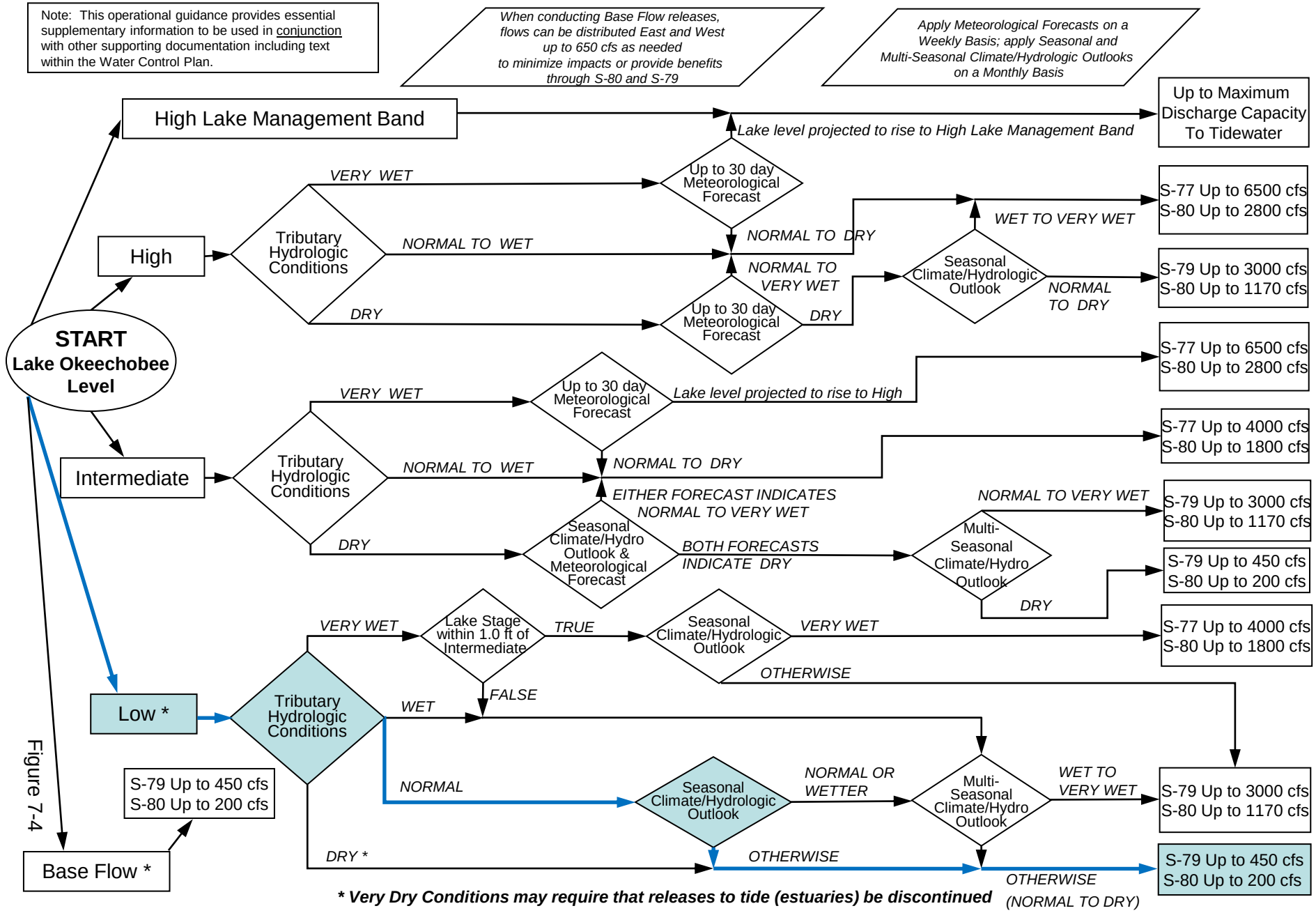
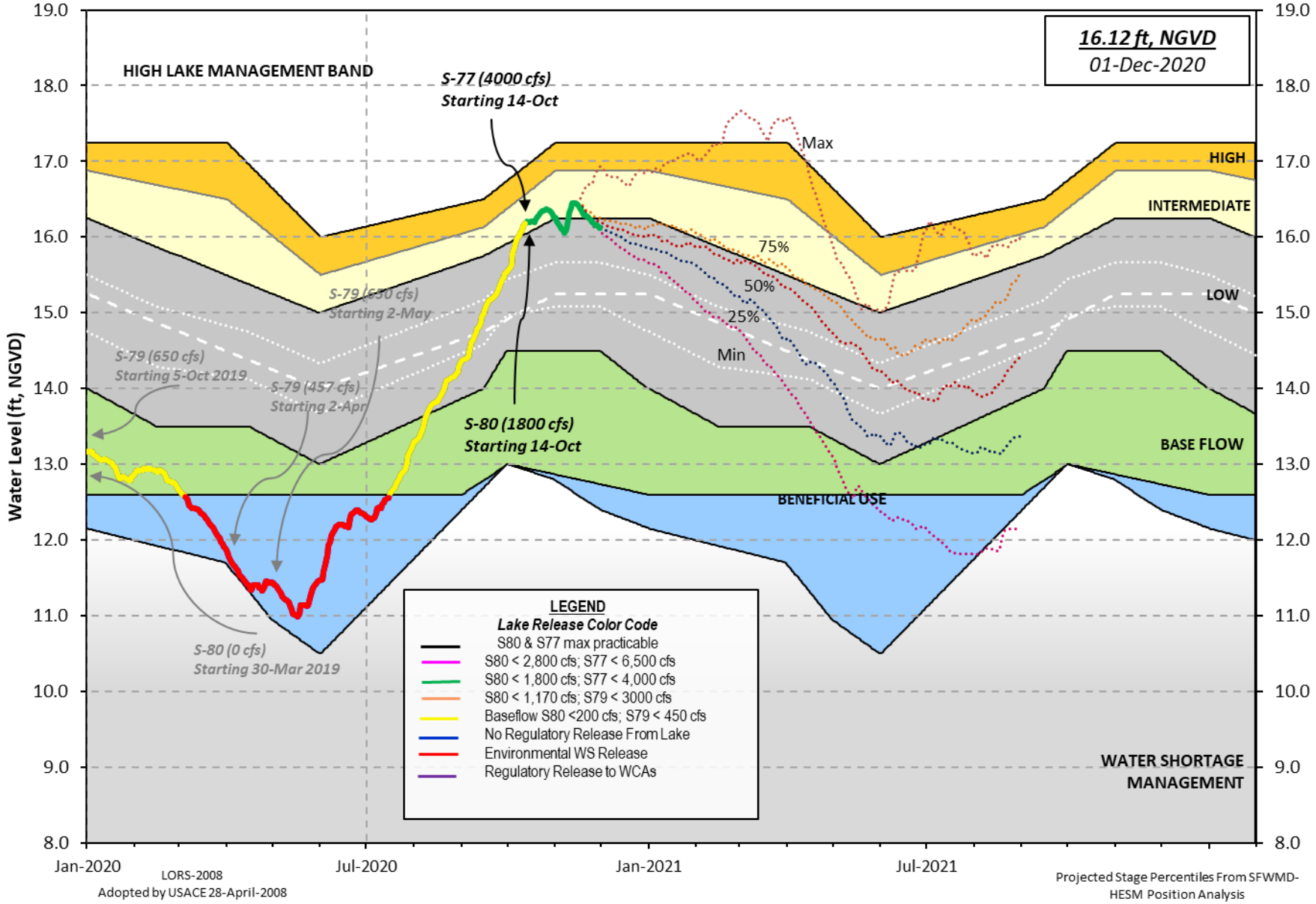


Figure 7-4

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 29 NOV 2020

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	16.13	13.10	13.08 (Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 12.41
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.78
Difference from Average LORS2008 2.35

29NOV (1965-2007) Period of Record Average 14.84
Difference from POR Average 1.29

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 10.07'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 8.27'
Bridge Clearance = 48.95'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
16.14	16.16	16.11	16.10	16.09	16.22	16.11	16.11

*Combination Okeechobee Avg-Daily Lake Average = 16.13 (*See Note)

Okeechobee Inflows (cfs):

S65E	1507	S65EX1	0	Fisheating Cr	113
S154	55	S191	0	S135 Pumps	0
S84	548	S133 Pumps	0	S2 Pumps	0
S84X	98	S127 Pumps	0	S3 Pumps	0
S71	242	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0

Total Inflows: 2562

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	3925
S127 Culverts	0	S351	0	S308	1636
S129 Culverts	0	S352	91		
S131 Culverts	0	L8 Canal Pt	-2		

Total Outflows: 5651

****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	0.00	S308	-NR-

Average Pan Evap x 0.75 Pan Coefficient = -NR-" = -NR-'

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

Evaporation - Precipitation: = -NR-" = -NR-'
Evaporation - Precipitation using Lake Area of 730 square miles
is equal to -NR-
Lake Okeechobee (Change in Storage) Flow is -4538 cfs or -9000 AC-FT

	Headwater Elevation (ft-msl)	Tailwater Elevation (ft-msl)	Disch (cfs)	Gate Positions #1 (ft)	#2 (ft)	#3 (ft)	#4 (ft)	#5 (ft)	#6 (ft)	#7 (ft)	#8 (ft)
		(I) see note at bottom									
North East Shore											
S133 Pumps:	13.51	16.13	0	0	0	0	0	0	(cfs)		
S193:											
S191:	19.37	16.15	0	0.0	0.0	0.0					
S135 Pumps:	13.61	16.10	0	0	0	0	0	(cfs)			
S135 Culverts:			0	0.2	0.0						
North West Shore											
S65E:	21.28	15.86	1507	0.9	1.0	0.5	1.0	0.5	0.5		
S65EX1:	21.28	15.86	0								
S127 Pumps:	13.76	16.12	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.15	16.13	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	12.97	16.08	0	0	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		30.87	113								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.22	16.03	0	0	0	0	(cfs)				
S169:	15.07	11.24	0	0.0	0.0	0.0					
S310:	15.97		4								
S3 Pumps:	10.21	16.09	0	0	0	0	(cfs)				
S354:	16.09	10.21	0	0.0	0.0						
S2 Pumps:	10.16	-NR-	0	-NR-	-NR-	-NR-	-NR-	(cfs)			
S351:	-NR-	10.16	0	0.0	0.0	0.0					
S352:	16.21	10.10	91	0.1	0.1						
C10A:	-NR-	15.05		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT		15.08	-2								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.16	-NR-	0	-NR--NR--NR--NR--NR--NR--NR-							
S352:	10.10	16.21	91	-NR--NR--NR--NR-							
S354:	10.21	16.09	0	-NR--NR--NR--NR-							
Caloosahatchee River (S77, S78, S79)											
S47B:	14.21	11.12		0.0	0.0						
S47D:	11.10	11.10	19	5.0							

```
  S77:
    Spillway and Sector Preferred Flow:
              15.75     11.08    3920  3.5  3.5  3.5  3.5
    Flow Due to Lockages+:           5

  S78:
    Spillway and Sector Flow:
              10.90      3.01    3645    3.0  3.0  2.5  3.0
    Flow Due to Lockages+:          14

  S79:
    Spillway and Sector Flow:
               3.11      2.37    4966    2.0  2.6  3.0  3.0  3.0  3.0  2.6  2.0
    Flow Due to Lockages+:           6
    Percent of flow from S77        79%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              15.96     14.55    1632  0.0  4.0  3.5  0.0
    Flow Due to Lockages+:           4

  S153:        18.59     14.33     113    0.0  0.5
  S80:
    Spillway and Sector Flow:
              14.05      1.27    1934    0.0  0.0  0.0  0.8  0.4  4.0  0.0
    Flow Due to Lockages+:          24
    Percent of flow from S308       84%

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

  Speedy Point Top Salinity    (mg/ml) 4143
  Speedy Point Bottom Salinity (mg/ml) 7961

 + 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
```

Daily Precipitation Totals	1-Day (inches)	3-Day (inches)	7-Day (inches)	----- Wind ---- Direction (Degø)	Speed (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	185	6
S78:	0.00	0.00	0.00	188	2
S79:	0.00	0.00	0.00	64	3
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	188	9
S80:	0.00	0.00	0.00	181	3
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				Difference from 29NOV20
29NOV20	-1 Day =	28 NOV 2020	16.15	0.02
29NOV20	-2 Days =	27 NOV 2020	16.16	0.03
29NOV20	-3 Days =	26 NOV 2020	16.18	0.05
29NOV20	-4 Days =	25 NOV 2020	16.20	0.07
29NOV20	-5 Days =	24 NOV 2020	16.22	0.09
29NOV20	-6 Days =	23 NOV 2020	16.24	0.11
29NOV20	-7 Days =	22 NOV 2020	16.27	0.14
29NOV20	-30 Days =	30 OCT 2020	16.30	0.17
29NOV20	-1 Year =	29 NOV 2019	13.10	-3.03
29NOV20	-2 Year =	29 NOV 2018	13.08	-3.05

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

Lake Okeechobee Net Inflow (LONIN)

			Average Flow over the previous 14 days		Avg-Daily Flow
29NOV20	Today =	29 NOV 2020	704	MON	1105
29NOV20	-1 Day =	28 NOV 2020	874	SUN	3274
29NOV20	-2 Days =	27 NOV 2020	1041	SAT	979
29NOV20	-3 Days =	26 NOV 2020	1270	FRI	1026
29NOV20	-4 Days =	25 NOV 2020	2211	THU	1068
29NOV20	-5 Days =	24 NOV 2020	3444	WED	1223
29NOV20	-6 Days =	23 NOV 2020	5102	TUE	-918
29NOV20	-7 Days =	22 NOV 2020	7724	MON	3954
29NOV20	-8 Days =	21 NOV 2020	8267	SUN	5736
29NOV20	-9 Days =	20 NOV 2020	7789	SAT	1344
29NOV20	-10 Days =	19 NOV 2020	7938	FRI	-3187
29NOV20	-11 Days =	18 NOV 2020	8127	THU	-5660
29NOV20	-12 Days =	17 NOV 2020	8338	WED	1023
29NOV20	-13 Days =	16 NOV 2020	8055	TUE	-1107

S65E

			Average Flow over previous 14 days		Avg-Daily Flow
29NOV20	Today=	29 NOV 2020	1901	MON	1657
29NOV20	-1 Day =	28 NOV 2020	1946	SUN	1679
29NOV20	-2 Days =	27 NOV 2020	1977	SAT	1828
29NOV20	-3 Days =	26 NOV 2020	2016	FRI	1819
29NOV20	-4 Days =	25 NOV 2020	2054	THU	1770
29NOV20	-5 Days =	24 NOV 2020	2078	WED	1935
29NOV20	-6 Days =	23 NOV 2020	2060	TUE	1988
29NOV20	-7 Days =	22 NOV 2020	2027	MON	2017
29NOV20	-8 Days =	21 NOV 2020	1960	SUN	1983
29NOV20	-9 Days =	20 NOV 2020	1880	SAT	1863
29NOV20	-10 Days =	19 NOV 2020	1810	FRI	1988
29NOV20	-11 Days =	18 NOV 2020	1729	THU	2003
29NOV20	-12 Days =	17 NOV 2020	1657	WED	1982
29NOV20	-13 Days =	16 NOV 2020	1589	TUE	2096

S65EX1

			Average Flow over previous 14 days		Avg-Daily Flow
29NOV20	Today=	29 NOV 2020	0	MON	0
29NOV20	-1 Day =	28 NOV 2020	0	SUN	0
29NOV20	-2 Days =	27 NOV 2020	0	SAT	0

29NOV20	-3 Days =	26 NOV 2020	0	FRI	|	0
29NOV20	-4 Days =	25 NOV 2020	0	THU	|	0
29NOV20	-5 Days =	24 NOV 2020	0	WED	|	0
29NOV20	-6 Days =	23 NOV 2020	0	TUE	|	0
29NOV20	-7 Days =	22 NOV 2020	0	MON	|	0
29NOV20	-8 Days =	21 NOV 2020	0	SUN	|	0
29NOV20	-9 Days =	20 NOV 2020	0	SAT	|	0
29NOV20	-10 Days =	19 NOV 2020	0	FRI	|	0
29NOV20	-11 Days =	18 NOV 2020	0	THU	|	0
29NOV20	-12 Days =	17 NOV 2020	0	WED	|	0
29NOV20	-13 Days =	16 NOV 2020	0	TUE	|	0

Lake Okeechobee Outlets Last 14 Days

DATE	S-77 Discharge (ALL DAY) (AC-FT)	Below S-77 Discharge (ALL-DAY) (AC-FT)	S-78 Discharge (ALL DAY) (AC-FT)	S-79 Discharge (ALL DAY) (AC-FT)
29 NOV 2020	7786	7995	7251	9836
28 NOV 2020	7815	8086	7260	9601
27 NOV 2020	7780	8209	7272	10273
26 NOV 2020	7873	8071	7262	9439
25 NOV 2020	7947	8289	6898	10214
24 NOV 2020	8147	8388	7034	9269
23 NOV 2020	8157	8319	7598	10716
22 NOV 2020	8044	8310	7628	10890
21 NOV 2020	8159	8298	7432	10348
20 NOV 2020	8381	8571	7748	10998
19 NOV 2020	8478	8861	8268	11948
18 NOV 2020	8323	8638	8690	12725
17 NOV 2020	8193	8528	8755	12696
16 NOV 2020	8146	8557	8796	12819

DATE	S-310 Discharge (ALL DAY) (AC-FT)	S-351 Discharge (ALL DAY) (AC-FT)	S-352 Discharge (ALL DAY) (AC-FT)	S-354 Discharge (ALL DAY) (AC-FT)	L8 Canal Pt Discharge (ALL DAY) (AC-FT)
29 NOV 2020	7	0	180	0	-4
28 NOV 2020	69	0	0	0	-6
27 NOV 2020	126	0	0	0	-6
26 NOV 2020	71	0	0	0	-11
25 NOV 2020	20	0	0	0	-2
24 NOV 2020	14	0	86	0	4
23 NOV 2020	6	231	174	0	-8
22 NOV 2020	-2	1094	80	0	6
21 NOV 2020	11	0	0	0	5
20 NOV 2020	18	0	0	0	-5
19 NOV 2020	17	0	0	0	-6
18 NOV 2020	1	0	0	0	-6
17 NOV 2020	2	0	0	0	1
16 NOV 2020	14	0	0	0	-104

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
29 NOV 2020	3231	3050	3883
28 NOV 2020	3204	2951	3885
27 NOV 2020	3169	3021	3863
26 NOV 2020	3175	2983	3872
25 NOV 2020	3173	3146	3903
24 NOV 2020	3221	3291	4034

23 NOV 2020	3129	3228	4197
22 NOV 2020	3138	3211	4200
21 NOV 2020	3220	3289	4215
20 NOV 2020	3309	3506	4252
19 NOV 2020	3233	3467	4213
18 NOV 2020	2969	3237	4292
17 NOV 2020	2887	3019	4486
16 NOV 2020	3175	3285	3617

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

(I) - Flows preceeded 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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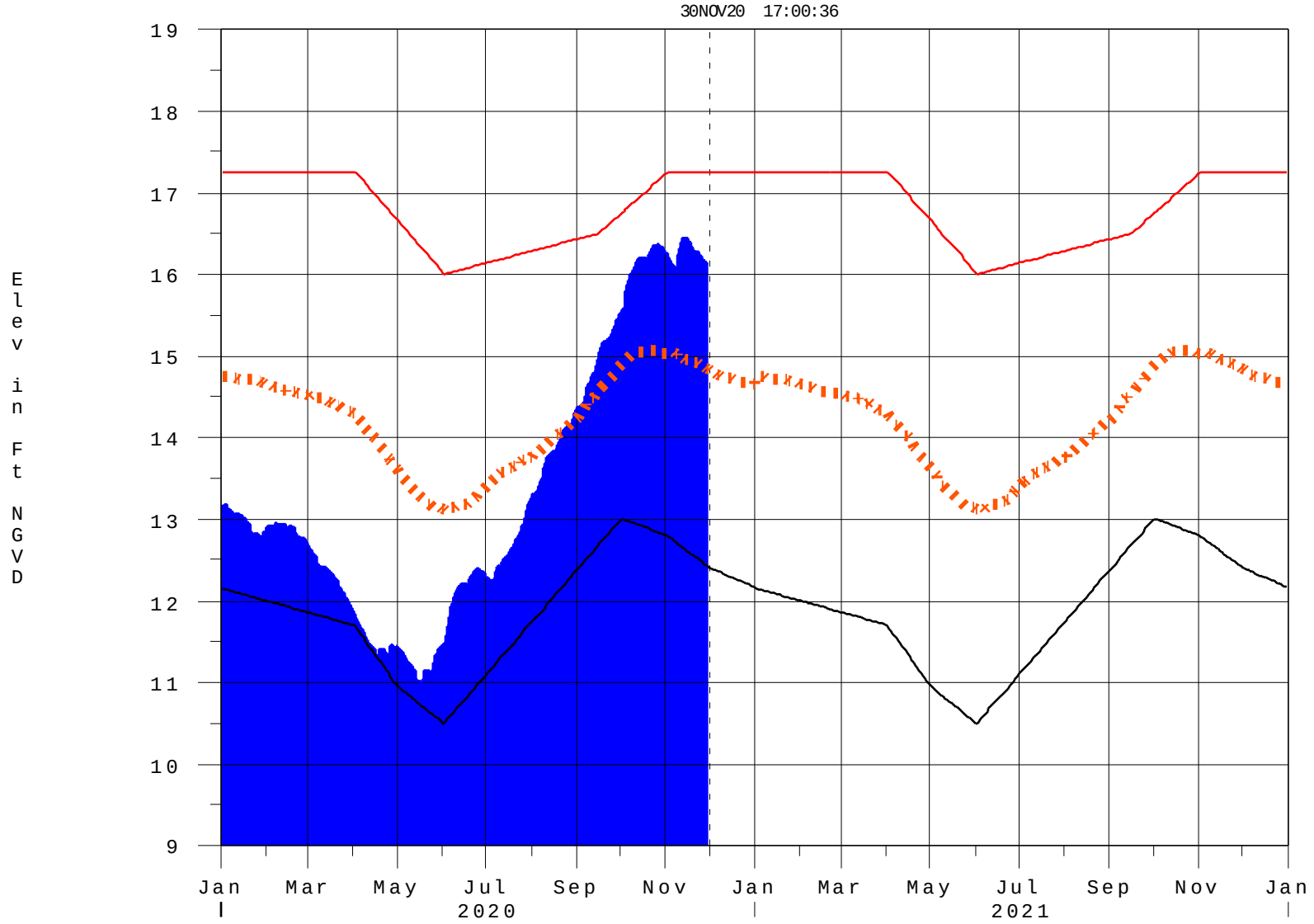
Report Generated 30NOV2020 @ 12:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee



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 >= 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