Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 09/21/2020 (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 Neutral 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 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	1.92	Wet	1.64	Wet	1.61	Wet
Multi Seasonal (Sep-Apr)	N/A	N/A	2.11	Normal	1.50	Normal	1.36	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:

10506 cfs 14-day running average for Lake Okeechobee Net Inflow through 09/21/2020.
According to the classification in Tributary Hydrologic Conditions table, this condition is Very Wet.

-1.22 for Palmer Drought Index on 09/19/2020.
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 09/21/2020:

Lake Okeechobee Stage: **15.18 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.58	
Operational Band	High sub-band	16.21	
	Intermediate sub-band	15.80	
	Low sub-band	14.17	← 15.18 ft
Base Flow sub-band		12.85	
Beneficial Use sub-band		12.79	
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 3000 cfs at S-79 and up to 1170 cfs at S-80.

LORS2008 Implementation on 09/21/2020 (ENSO Condition- La Nina):

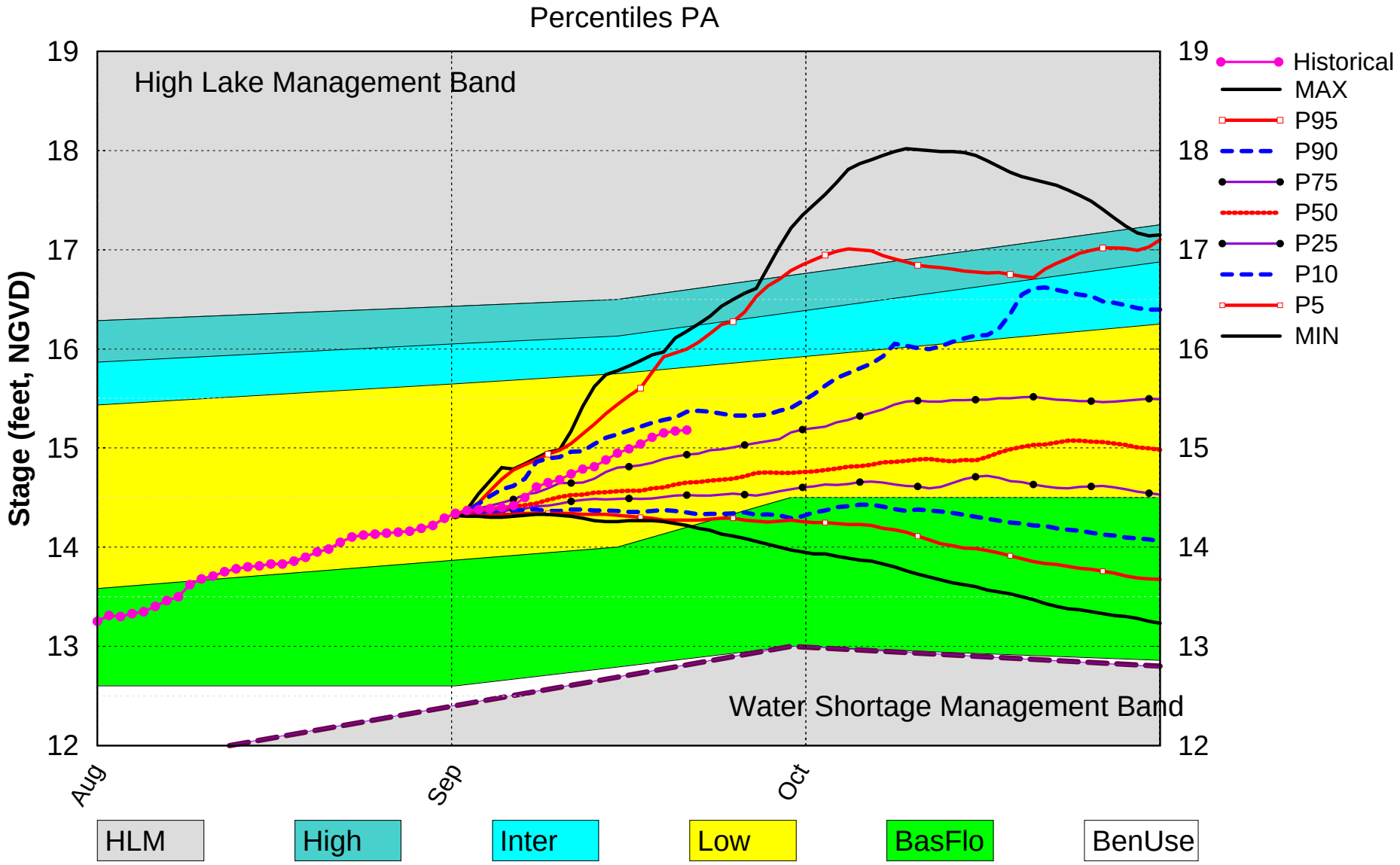
Status for week ending 9/21/2020:

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 Drought Index for LOK Tributary Conditions	-1.22 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	1.64 ft	L
	ENSO Forecast (positive)	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	1.50 ft	M
	ENSO Forecast (positive)	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (17.53 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.43 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (10.45 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.

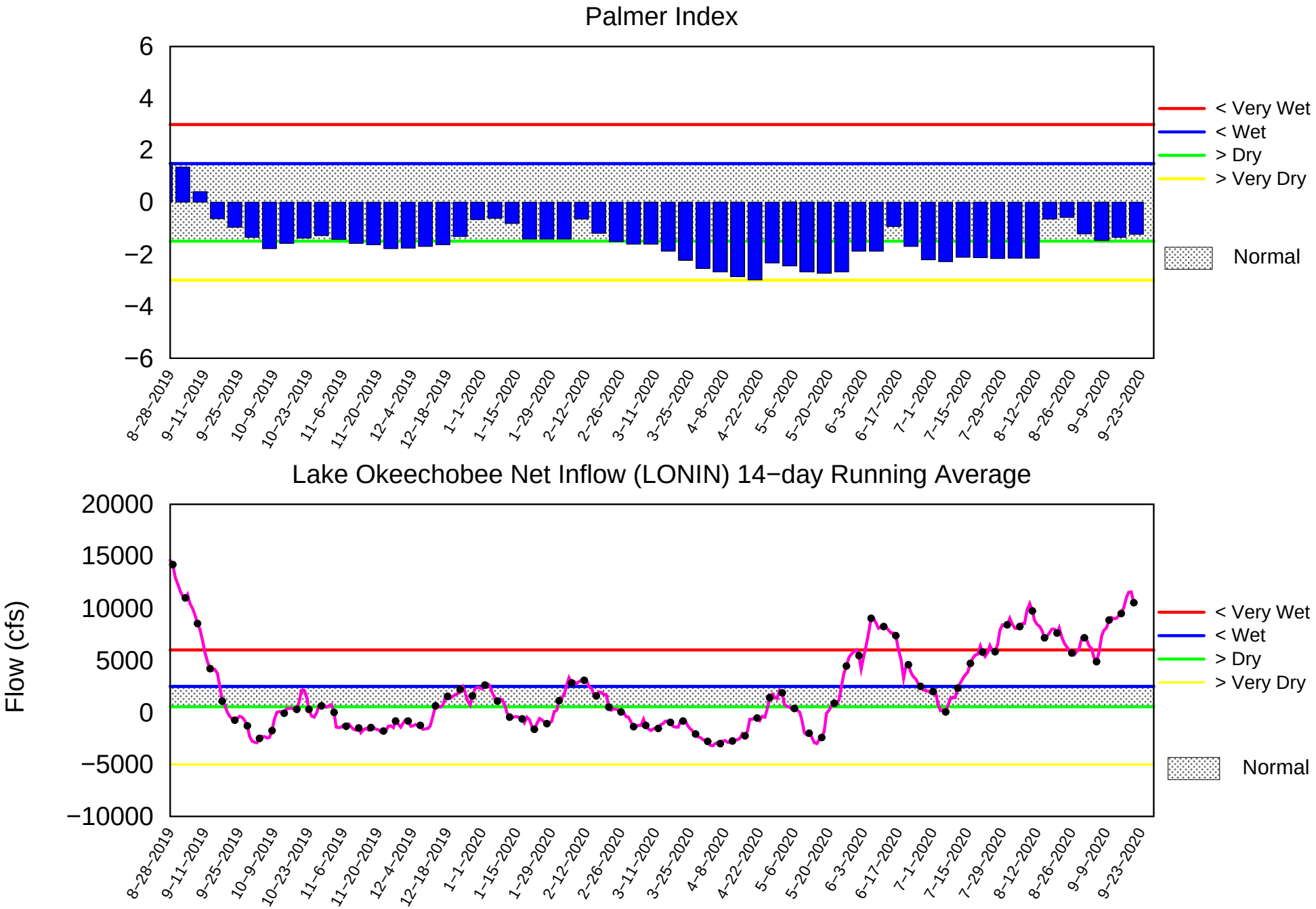
Lake Okeechobee SFWMM Sep 2020 Position Analysis



(See assumptions on the Position Analysis Results website)

Tue Sep 22 06:52:47 EDT 2020

Tributary Basin Condition Indicators as of September 21 2020



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2008 LORS

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

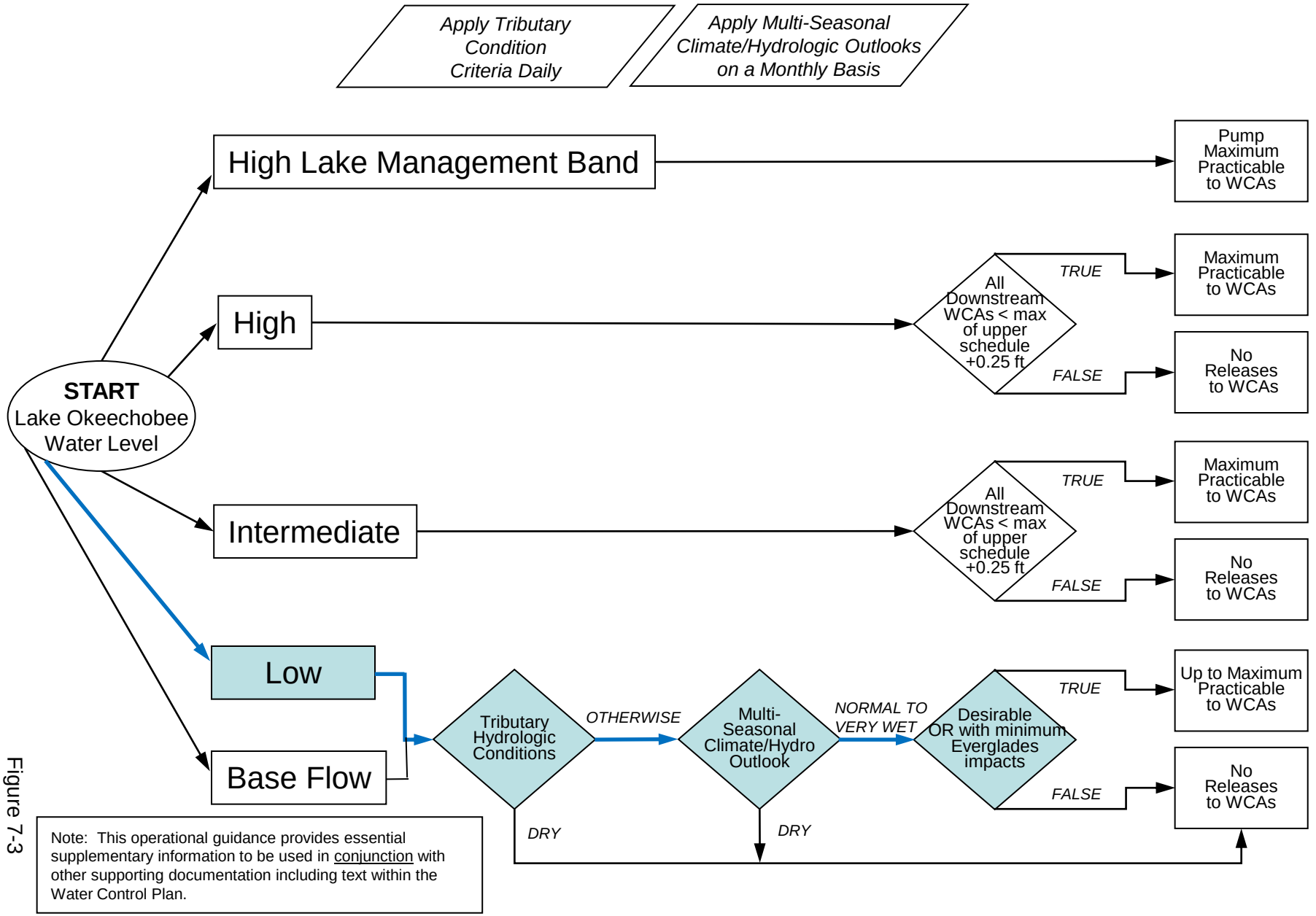


Figure 7-3

2008 LORS

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

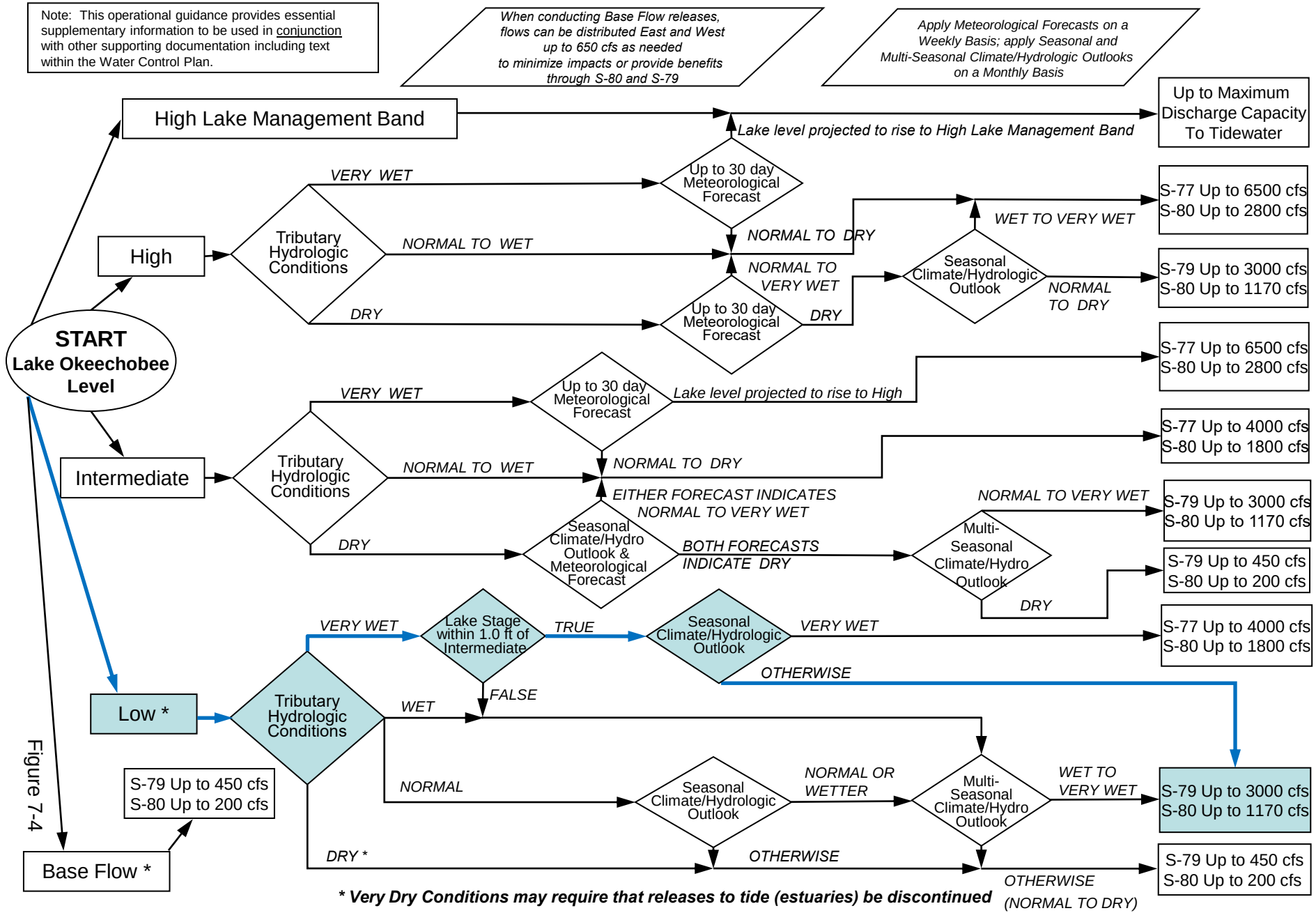
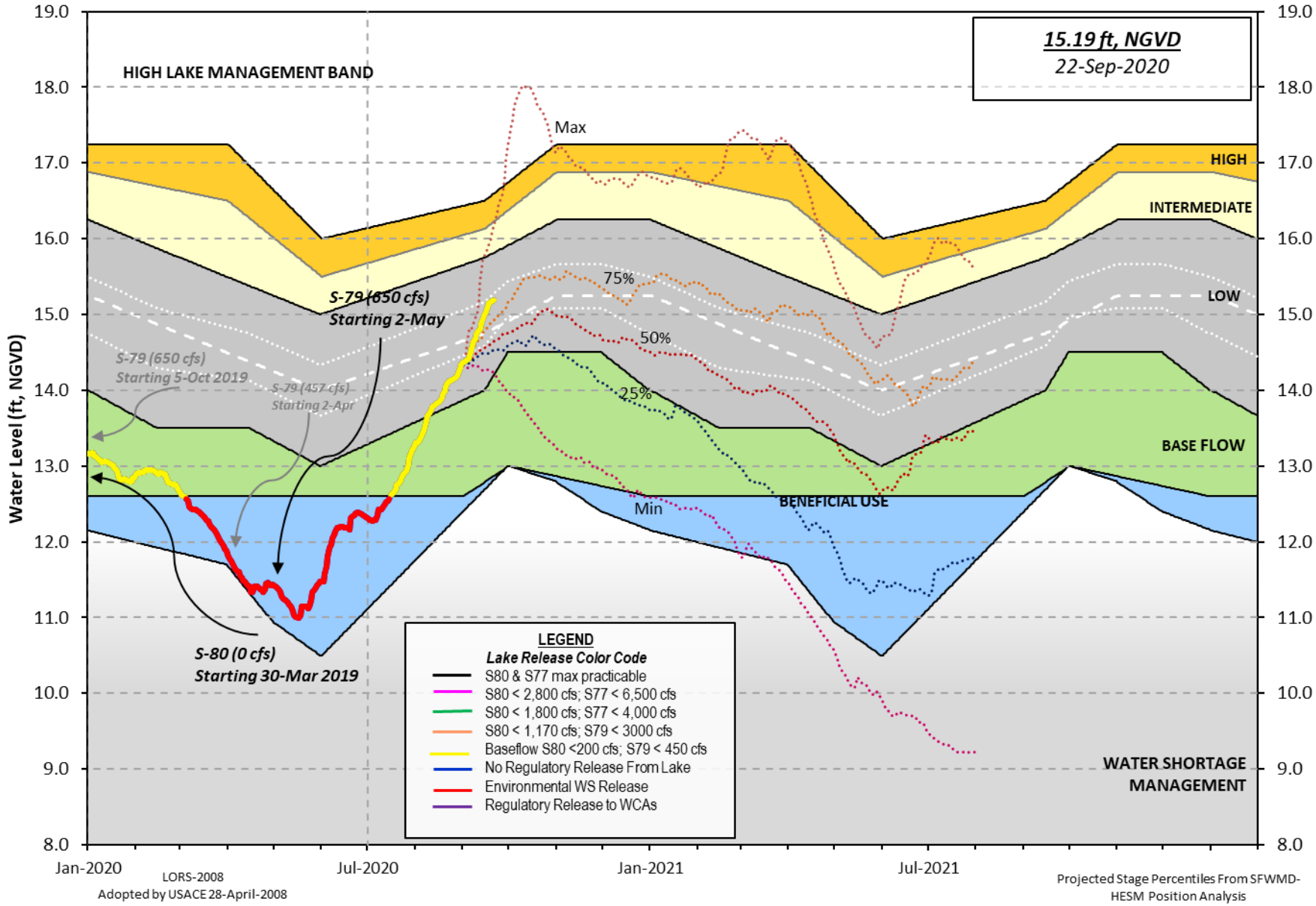


Figure 7-4

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 20 SEP 2020

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.18	13.78	14.73 (Official Elv)

Bottom of High Lake Mngmt= 16.58 Top of Water Short Mngmt= 12.79
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.61
Difference from Average LORS2008 1.57

20SEP (1965-2007) Period of Record Average 14.67
Difference from POR Average 0.51

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 9.12'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 7.32'
Bridge Clearance = 49.27'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.03	15.28	15.22	15.16	15.32	15.27	15.84	14.97

*Combination Okeechobee Avg-Daily Lake Average = 15.18 (*See Note)

Okeechobee Inflows (cfs):

S65E	3122	S65EX1	977	Fisheating Cr	745
S154	120	S191	881	S135 Pumps	212
S84	500	S133 Pumps	79	S2 Pumps	0
S84X	192	S127 Pumps	29	S3 Pumps	0
S71	206	S129 Pumps	28	S4 Pumps	0
S72	187	S131 Pumps	11	C5	0

Total Inflows: 7289

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	4
S127 Culverts	0	S351	559	S308	1
S129 Culverts	0	S352	52		
S131 Culverts	0	L8 Canal Pt	-108		

Total Outflows: 507

****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	0.19

Average Pan Evap x 0.75 Pan Coefficient = 0.07" = 0.01'

Lake Average Precipitation using NEXRAD: = 0.32" = 0.03'

Evaporation - Precipitation: = -0.25" = -0.02'
Evaporation - Precipitation using Lake Area of 730 square miles
is equal to 4883 cfs into the lake.
Lake Okeechobee (Change in Storage) Flow is 2168 cfs or 4300 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:	13.53	14.31	79	24	18	0	24	0				(cfs)
S193:												
S191:	19.17	14.26	881	2.0	2.0	2.5						
S135 Pumps:	13.89	13.69	212	47	65	34	53					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	21.19	15.55	3122	2.0	1.4	1.4	1.5	1.5	2.0			
S65EX1:	21.19	15.55	977									
S127 Pumps:	13.39	15.01	29	0	0	0	0	31				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.87	15.29	28	0	0	31						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.81	16.00	11	18	0							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		32.80	745									
nr Lakeport												
C5:		-NR-	0	-NR-	-NR-	-NR-						
South Shore												
S4 Pumps:	13.39	16.04	0	0	0	0						(cfs)
S169:	16.14	13.39	0	0.0	0.0	0.0						
S310:			-NR-									
S3 Pumps:	9.32	15.81	0	0	0	0						(cfs)
S354:	15.81	9.32	0	0.0	0.0							
S2 Pumps:	9.97	-NR-	0	-NR-	-NR-	-NR-	-NR-					(cfs)
S351:	-NR-	9.97	559	0.6	0.6	0.6						
S352:	14.16	10.09	52	0.4	0.4							
C10A:	-NR-	14.78		8.0	8.0	8.0	0.0	0.0				
L8 Canal PT		15.15	-108									
S351 and S352 Temporary Pumps/S354 Spillway												
S351:	9.97	-NR-	559	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-			
S352:	10.09	14.16	52	-NR-	-NR-	-NR-	-NR-					
S354:	9.32	15.81	0	-NR-	-NR-	-NR-	-NR-					
Caloosahatchee River (S77, S78, S79)												
S47B:	14.41	12.00		0.5	0.5							
S47D:	11.88	10.94	0	0.0								

```
  S77:
    Spillway and Sector Preferred Flow:
               15.49     10.64       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           4

  S78:
    Spillway and Sector Flow:
               10.90      3.66    1021    2.0  0.0  0.0  2.0
    Flow Due to Lockages+:          14

  S79:
    Spillway and Sector Flow:
                3.62      1.86    3889    5.0  5.0  5.0  5.0  4.0  0.0  0.0  0.0
    Flow Due to Lockages+:           5
    Percent of flow from S77         0%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
               15.48     14.23       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           1

  S153:        18.83     14.15     261    0.5  0.0
  S80:
    Spillway and Sector Flow:
                -NR-      -NR-    -NR-    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:        -NR-
    Percent of flow from S308     -NR-%

  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
```

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	1.12	53	19
S78:	0.14	0.31	0.49	76	7
S79:	1.36	1.37	2.76	16	13
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:	0.04	0.04	0.28	69	3
S80:	-NR-	0.00	0.00	-NR-	-NR-
Okeechobee Average	0.02	0.00	0.11		

(Sites S78, S79 and S80 not included)

Oke Nexrad Basin Avg	0.32	0.57	1.75

Okeechobee Lake Elevations			20 SEP 2020	15.18	Difference from 20SEP20
20SEP20	-1 Day	=	19 SEP 2020	15.17	-0.01
20SEP20	-2 Days	=	18 SEP 2020	15.15	-0.03
20SEP20	-3 Days	=	17 SEP 2020	15.11	-0.07
20SEP20	-4 Days	=	16 SEP 2020	15.04	-0.14
20SEP20	-5 Days	=	15 SEP 2020	14.99	-0.19
20SEP20	-6 Days	=	14 SEP 2020	14.95	-0.23
20SEP20	-7 Days	=	13 SEP 2020	14.88	-0.30
20SEP20	-30 Days	=	21 AUG 2020	14.05	-1.13
20SEP20	-1 Year	=	20 SEP 2019	13.78	-1.40
20SEP20	-2 Year	=	20 SEP 2018	14.73	-0.45

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
20SEP20	Today	=	20 SEP 2020	10506	MON	2778
20SEP20	-1 Day	=	19 SEP 2020	11546	SUN	4899
20SEP20	-2 Days	=	18 SEP 2020	11509	SAT	9174
20SEP20	-3 Days	=	17 SEP 2020	11009	FRI	15175
20SEP20	-4 Days	=	16 SEP 2020	10079	THU	10789
20SEP20	-5 Days	=	15 SEP 2020	9463	WED	8470
20SEP20	-6 Days	=	14 SEP 2020	9330	TUE	14923
20SEP20	-7 Days	=	13 SEP 2020	9027	MON	15175
20SEP20	-8 Days	=	12 SEP 2020	9002	SUN	4285
20SEP20	-9 Days	=	11 SEP 2020	9161	SAT	10588
20SEP20	-10 Days	=	10 SEP 2020	8880	FRI	12705
20SEP20	-11 Days	=	09 SEP 2020	8163	THU	6353
20SEP20	-12 Days	=	08 SEP 2020	7904	WED	8470
20SEP20	-13 Days	=	07 SEP 2020	7464	TUE	23293

S65E

			Average Flow over previous 14 days			Avg-Daily Flow
20SEP20	Today	=	20 SEP 2020	2939	MON	3343
20SEP20	-1 Day	=	19 SEP 2020	2909	SUN	3307
20SEP20	-2 Days	=	18 SEP 2020	2882	SAT	3358
20SEP20	-3 Days	=	17 SEP 2020	2863	FRI	3252
20SEP20	-4 Days	=	16 SEP 2020	2853	THU	3346
20SEP20	-5 Days	=	15 SEP 2020	2836	WED	2882
20SEP20	-6 Days	=	14 SEP 2020	2862	TUE	2712
20SEP20	-7 Days	=	13 SEP 2020	2898	MON	2659
20SEP20	-8 Days	=	12 SEP 2020	2935	SUN	2950
20SEP20	-9 Days	=	11 SEP 2020	2919	SAT	2532
20SEP20	-10 Days	=	10 SEP 2020	2938	FRI	2441
20SEP20	-11 Days	=	09 SEP 2020	2951	THU	2611
20SEP20	-12 Days	=	08 SEP 2020	2922	WED	2877
20SEP20	-13 Days	=	07 SEP 2020	2866	TUE	2880

S65EX1

			Average Flow over previous 14 days			Avg-Daily Flow
20SEP20	Today	=	20 SEP 2020	1036	MON	977
20SEP20	-1 Day	=	19 SEP 2020	1062	SUN	973
20SEP20	-2 Days	=	18 SEP 2020	1088	SAT	963

20SEP20	-3 Days =	17 SEP 2020	1129	FRI	972
20SEP20	-4 Days =	16 SEP 2020	1169	THU	964
20SEP20	-5 Days =	15 SEP 2020	1210	WED	978
20SEP20	-6 Days =	14 SEP 2020	1246	TUE	1020
20SEP20	-7 Days =	13 SEP 2020	1284	MON	1071
20SEP20	-8 Days =	12 SEP 2020	1315	SUN	1055
20SEP20	-9 Days =	11 SEP 2020	1337	SAT	1094
20SEP20	-10 Days =	10 SEP 2020	1358	FRI	1103
20SEP20	-11 Days =	09 SEP 2020	1355	THU	1225
20SEP20	-12 Days =	08 SEP 2020	1336	WED	1026
20SEP20	-13 Days =	07 SEP 2020	1332	TUE	1081

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)
20 SEP 2020	7	946	2054	7771
19 SEP 2020	10	884	2182	7808
18 SEP 2020	5	948	2427	6973
17 SEP 2020	6	943	2682	8979
16 SEP 2020	4	807	2393	10389
15 SEP 2020	8	720	2018	10562
14 SEP 2020	3	594	1754	11742
13 SEP 2020	7	244	1599	8136
12 SEP 2020	8	434	2649	6204
11 SEP 2020	11	657	4172	10543
10 SEP 2020	2	682	4213	11153
09 SEP 2020	4	846	2315	6932
08 SEP 2020	2	489	878	4896
07 SEP 2020	7	6	509	3618

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)
20 SEP 2020	-NR-	1108	102	0	-214
19 SEP 2020	-440	1085	32	0	-244
18 SEP 2020	-373	728	268	0	-228
17 SEP 2020	-269	0	0	0	-314
16 SEP 2020	-270	0	0	0	-331
15 SEP 2020	-177	0	0	0	-526
14 SEP 2020	-183	0	0	0	-643
13 SEP 2020	-81	0	0	0	-735
12 SEP 2020	-140	0	0	0	-817
11 SEP 2020	-197	0	0	0	-1090
10 SEP 2020	-199	0	0	0	-1251
09 SEP 2020	-210	0	0	0	-1137
08 SEP 2020	-264	0	0	0	-826
07 SEP 2020	-197	0	0	0	-691

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
20 SEP 2020	3	16	-NR-
19 SEP 2020	7	38	-NR-
18 SEP 2020	4	-90	-NR-
17 SEP 2020	4	-116	730
16 SEP 2020	2	-149	781
15 SEP 2020	5	-70	1199

14 SEP 2020	4	-NR-	2310
13 SEP 2020	3	-NR-	-NR-
12 SEP 2020	5	-NR-	641
11 SEP 2020	3	-NR-	724
10 SEP 2020	5	-125	1276
09 SEP 2020	2	-201	1490
08 SEP 2020	0	-97	863
07 SEP 2020	3	25	52

*** 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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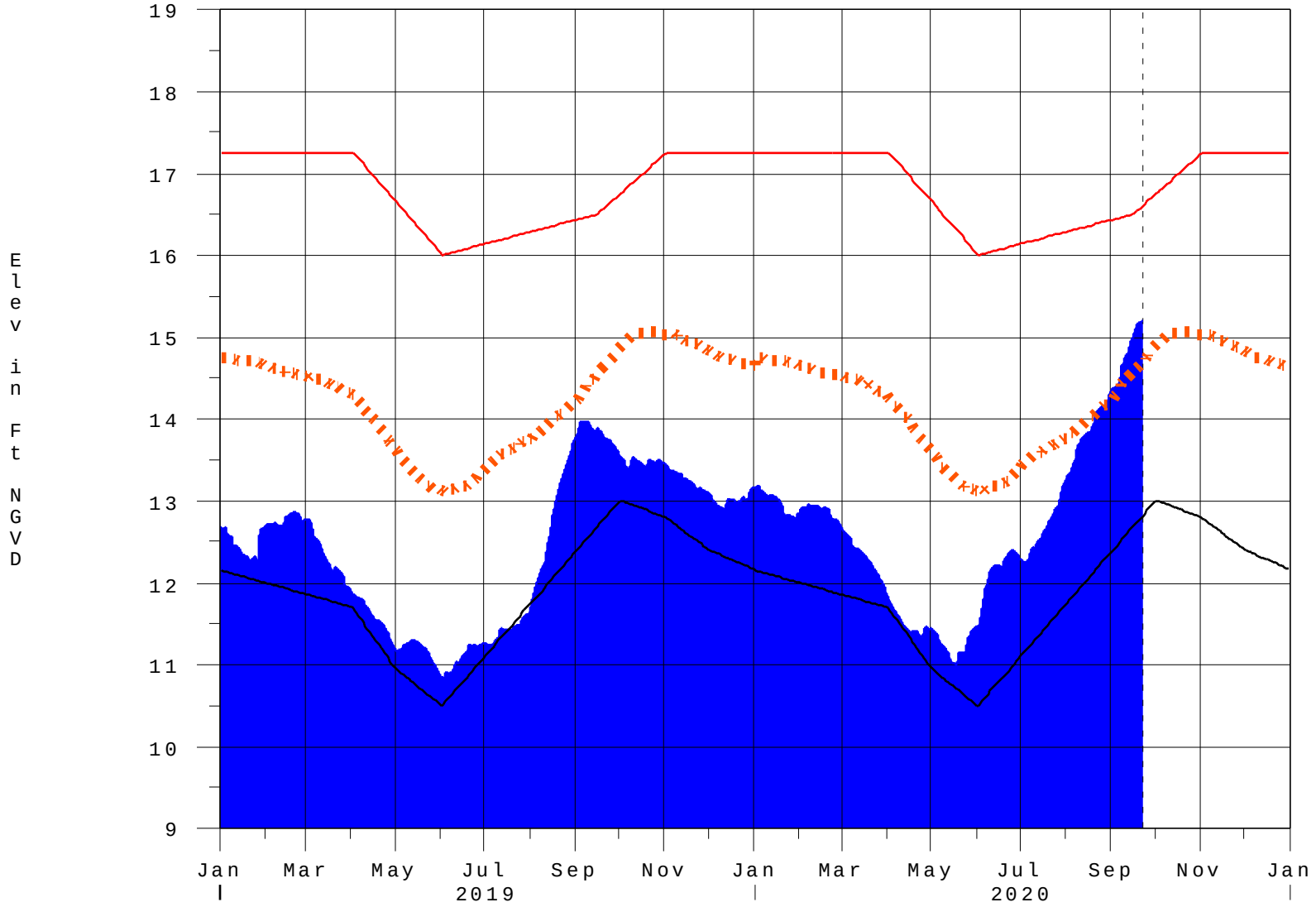
Report Generated 21SEP2020 @ 23:44 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

22SEP20 06:31:40



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