Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 09/07/2020 (ENSO Condition: La Niña Watch)

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	1.62	Wet	1.47	Normal	2.57	Very Wet
Multi Seasonal (Sep-Apr)	N/A	N/A	1.81	Normal	1.40	Normal	2.57	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:

5852 cfs 14-day running average for Lake Okeechobee Net Inflow through 09/07/2020.
According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

-1.46 for Palmer Drought Index on 09/05/2020.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 09/07/2020:

Lake Okeechobee Stage: **14.50 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.46	
Operational Band	High sub-band	16.08	
	Intermediate sub-band	15.69	
	Low sub-band	13.92	← 14.50 ft
Base Flow sub-band		12.67	
Beneficial Use sub-band		12.50	
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 09/07/2020 (ENSO Condition- La Nina Watch):

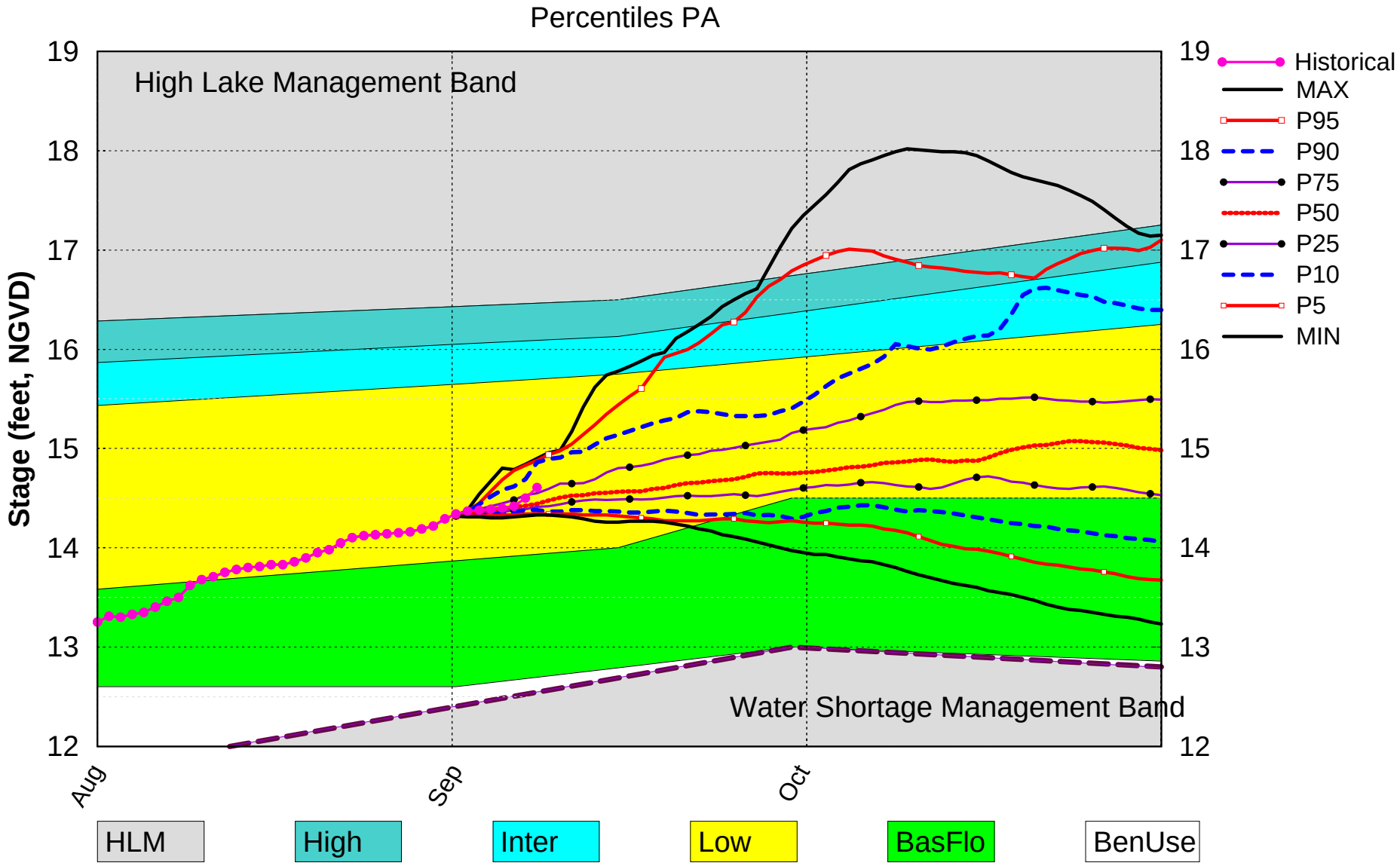
Status for week ending 9/7/2020:

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	-1.46 (Dry)	M
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.47 ft	L
	ENSO Forecast (positive)	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	1.40 ft	M
	ENSO Forecast (positive)	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (17.12 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.58 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.

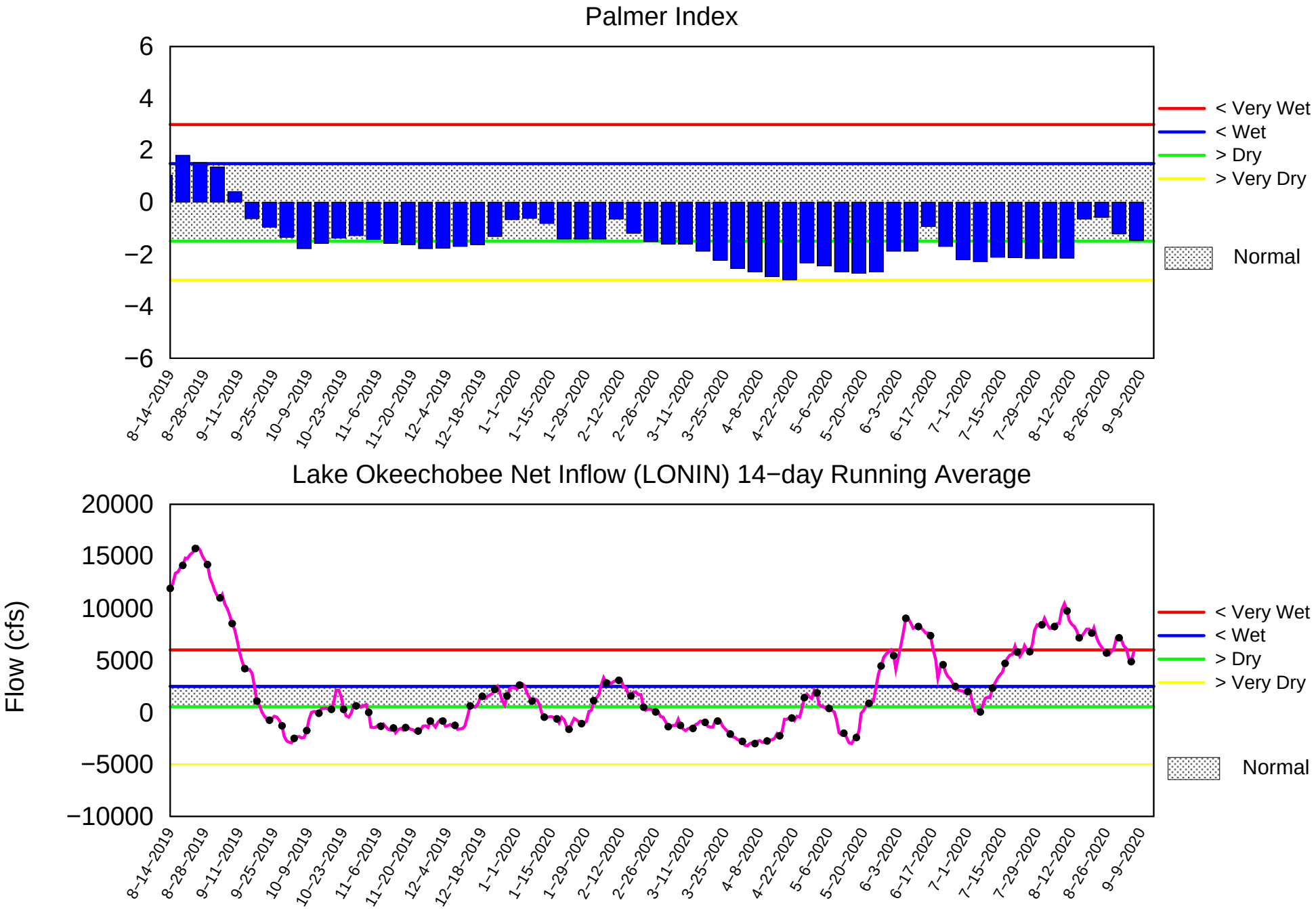
Lake Okeechobee SFWMM Sep 2020 Position Analysis



(See assumptions on the Position Analysis Results website)

Tue Sep 8 05:41:51 2020

Tributary Basin Condition Indicators as of September 7 2020



Mon Sep 07 21:20:05 EDT 2020

2008 LORS

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

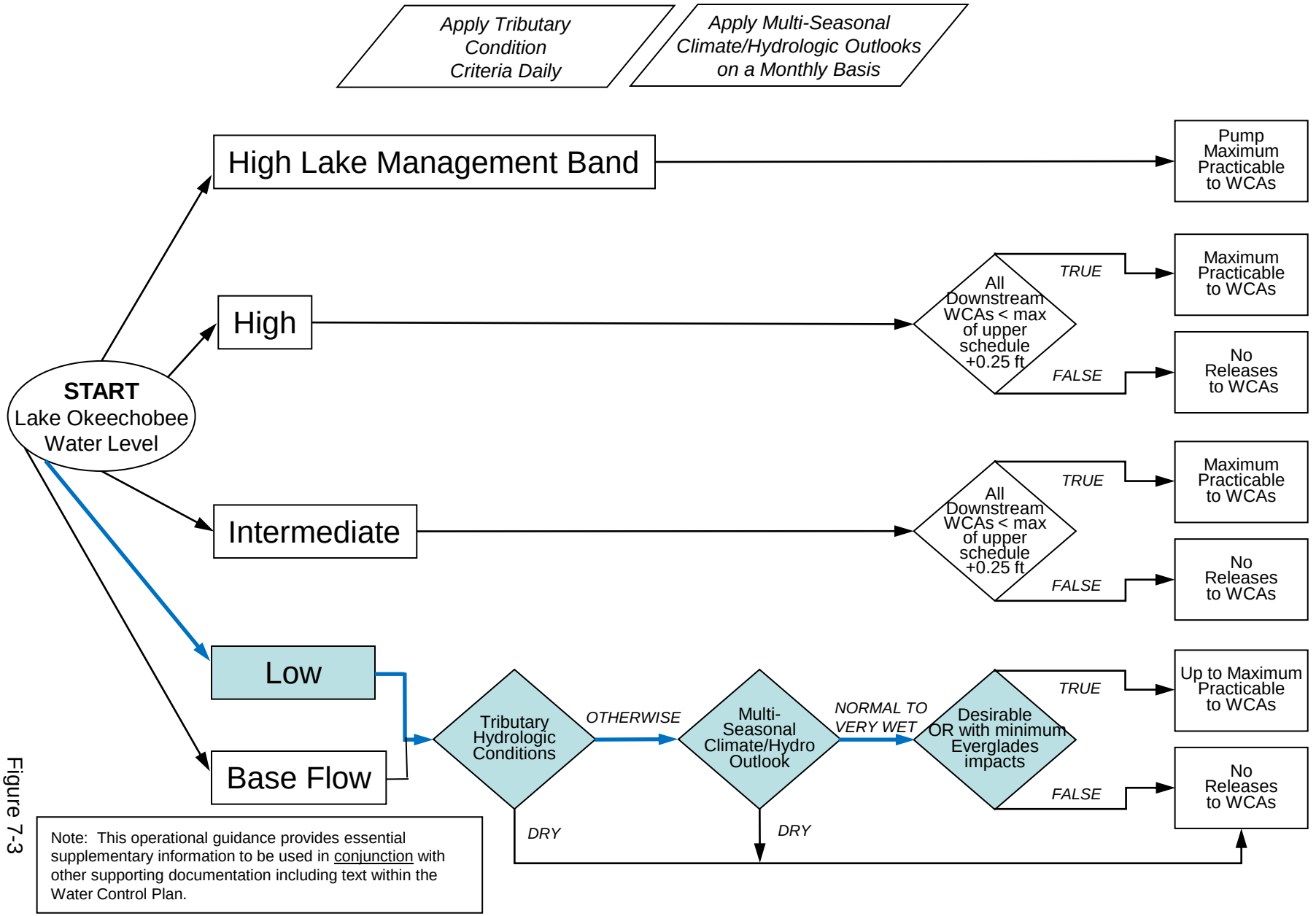


Figure 7-3

2008 LORS

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

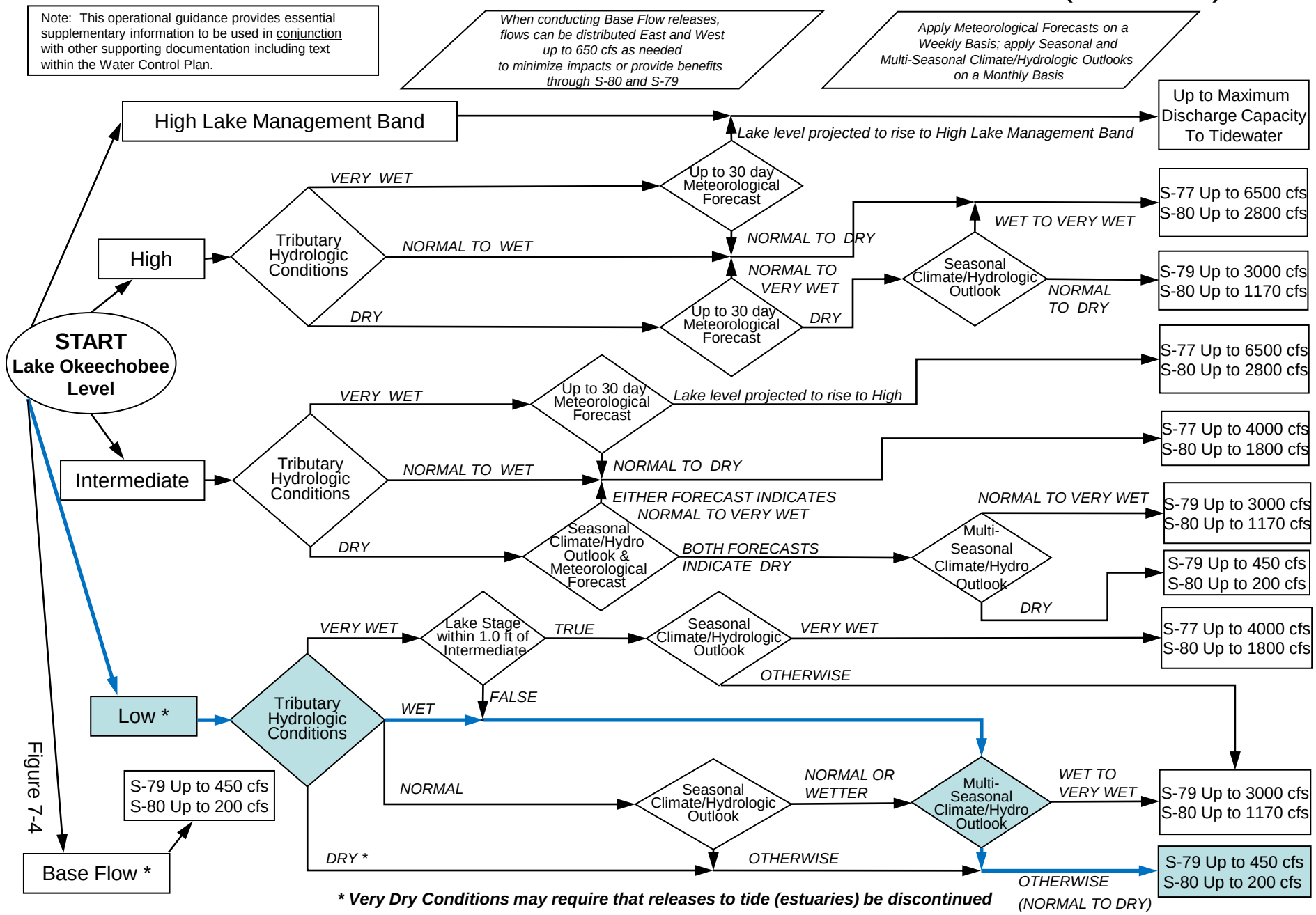
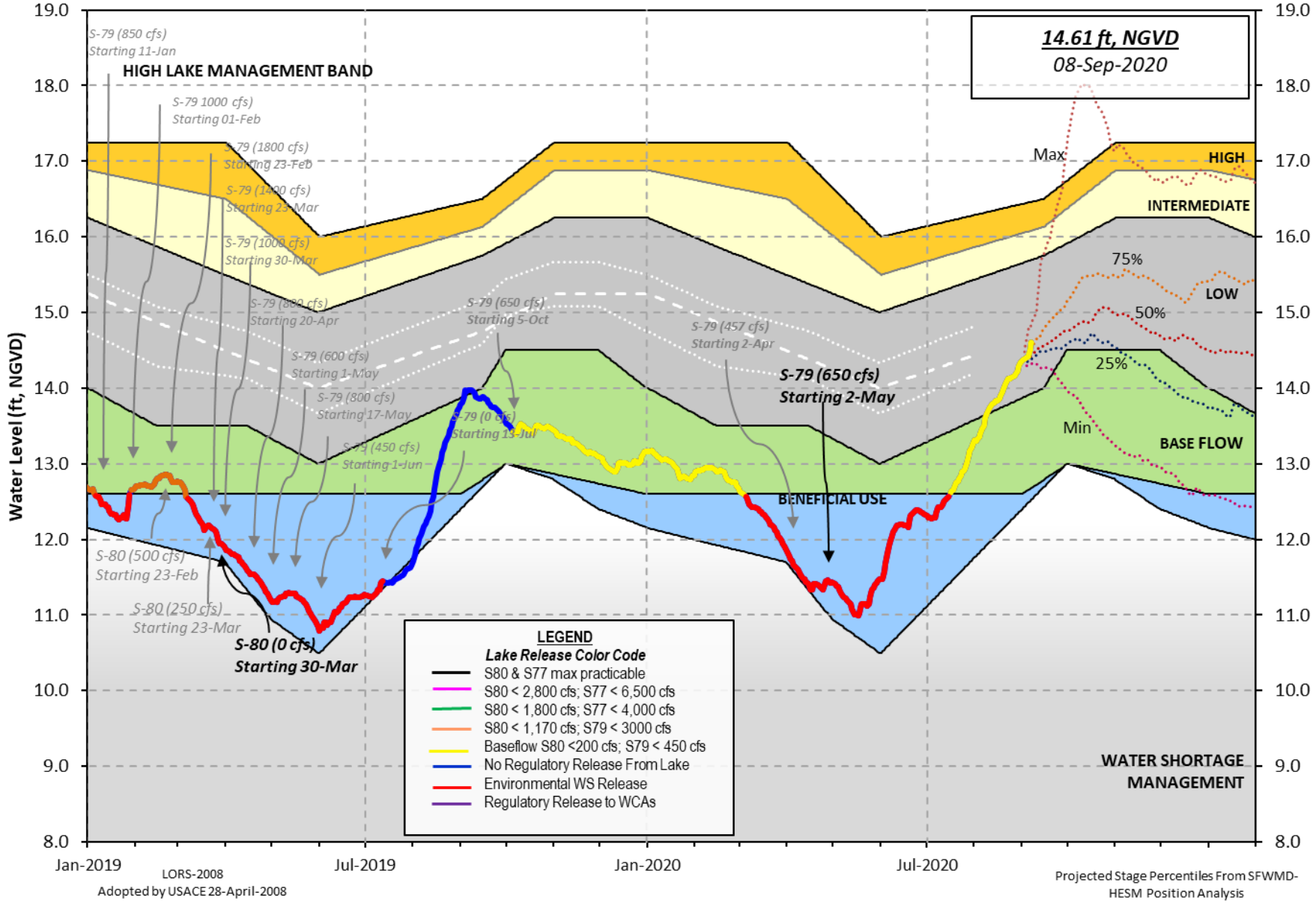


Figure 7-4

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 06 SEP 2020

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	14.50	13.97	14.65	(Official Elv)

Bottom of High Lake Mngmt= 16.46 Top of Water Short Mngmt= 12.50
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.36
Difference from Average LORS2008 1.14

06SEP (1965-2007) Period of Record Average 14.39
Difference from POR Average 0.11

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 8.44'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 6.64'
Bridge Clearance = 49.69'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.45	14.52	14.51	14.47	14.53	14.63	15.13	14.43

*Combination Okeechobee Avg-Daily Lake Average = 14.50 (*See Note)

Okeechobee Inflows (cfs):

S65E	2679	S65EX1	1336	Fisheating Cr	149
S154	60	S191	0	S135 Pumps	287
S84	723	S133 Pumps	202	S2 Pumps	0
S84X	197	S127 Pumps	96	S3 Pumps	0
S71	110	S129 Pumps	69	S4 Pumps	0
S72	257	S131 Pumps	90	C5	0

Total Inflows: 6258

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	5
S127 Culverts	0	S351	0	S308	7
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-143		

Total Outflows: -131

****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	0.14

Average Pan Evap x 0.75 Pan Coefficient = 0.05" = 0.00'

Lake Average Precipitation using NEXRAD: = 1.42" = 0.12'

Evaporation - Precipitation: = -1.37" = -0.11'
Evaporation - Precipitation using Lake Area of 730 square miles
is equal to 26843 cfs into the lake.
Lake Okeechobee (Change in Storage) Flow is 17343 cfs or 34400 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:	13.35	14.49	202	68	62	0	54	25				(cfs)
S193:												
S191:	18.77	14.49	0	0.0	0.0	0.0						
S135 Pumps:	13.40	14.48	287	69	69	81	81					(cfs)
S135 Culverts:			0	0.1	0.0							
North West Shore												
S65E:	20.92	14.28	2679	1.0	1.5	0.9	1.0	1.5	1.0			
S65EX1:	20.92	14.28	1336									
S127 Pumps:	13.33	14.53	96	0	31	31	37	0				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.78	14.54	69	43	25	6						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.83	14.61	90	43	50							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		31.43	149									
nr Lakeport												
C5:		-NR-	0	-NR-	-NR-	-NR-						
South Shore												
S4 Pumps:	11.57	14.56	0	0	0	0						(cfs)
S169:	14.50	11.61	0	0.0	0.0	0.0						
S310:	14.52		-36									
S3 Pumps:	9.39	14.57	0	0	0	0						(cfs)
S354:	14.57	9.39	0	0.0	0.0							
S2 Pumps:	10.81	-NR-	0	-NR-	-NR-	-NR-	-NR-					(cfs)
S351:	-NR-	10.81	0	0.0	0.0	0.0						
S352:	14.74	10.71	0	0.0	0.0							
C10A:	-NR-	14.84		8.0	8.0	8.0	0.0	0.0				
L8 Canal PT		14.86	-143									
S351 and S352 Temporary Pumps/S354 Spillway												
S351:	10.81	-NR-	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-			
S352:	10.71	14.74	0	-NR-	-NR-	-NR-	-NR-					
S354:	9.39	14.57	0	-NR-	-NR-	-NR-	-NR-					
Caloosahatchee River (S77, S78, S79)												
S47B:	14.41	10.99		0.0	0.0							
S47D:	11.02	11.02	-25	3.0								

```
  S77:
    Spillway and Sector Preferred Flow:
               14.41     10.87       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           5

  S78:
    Spillway and Sector Flow:
               10.90      2.80     149    0.5  0.0  0.0  0.0
    Flow Due to Lockages+:           11

  S79:
    Spillway and Sector Flow:
                3.04      1.22    1471    0.0  0.0  2.0  2.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           4
    Percent of flow from S77         0%
    Chloride             (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
               15.31     13.81       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           7

  S153:        18.77     13.67     119    0.0  0.0
  S80:
    Spillway and Sector Flow:
               13.94      0.74       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:          25
    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
```

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:	0.37	0.39	0.39	5	6
S78:	0.86	0.87	1.72	107	1
S79:	0.00	0.00	1.21	12	2
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:	1.10	1.10	1.10	76	4
S80:	0.23	0.23	0.25	-NR-	-NR-
Okeechobee Average	0.74	0.11	0.11		

(Sites S78, S79 and S80 not included)

Oke Nexrad Basin Avg	1.42	1.94	2.08

Okeechobee Lake Elevations	06 SEP 2020	14.50	Difference from 06SEP20
06SEP20 -1 Day =	05 SEP 2020	14.42	-0.08
06SEP20 -2 Days =	04 SEP 2020	14.40	-0.10
06SEP20 -3 Days =	03 SEP 2020	14.39	-0.11
06SEP20 -4 Days =	02 SEP 2020	14.38	-0.12
06SEP20 -5 Days =	01 SEP 2020	14.37	-0.13
06SEP20 -6 Days =	31 AUG 2020	14.34	-0.16
06SEP20 -7 Days =	30 AUG 2020	14.29	-0.21
06SEP20 -30 Days =	07 AUG 2020	13.50	-1.00
06SEP20 -1 Year =	06 SEP 2019	13.97	-0.53
06SEP20 -2 Year =	06 SEP 2018	14.65	0.15

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
06SEP20 Today =	06 SEP 2020	5980	MON	17343
06SEP20 -1 Day =	05 SEP 2020	5068	SUN	4381
06SEP20 -2 Days =	04 SEP 2020	5536	SAT	2170
06SEP20 -3 Days =	03 SEP 2020	6460	FRI	2165
06SEP20 -4 Days =	02 SEP 2020	6779	THU	2167
06SEP20 -5 Days =	01 SEP 2020	7426	WED	6603
06SEP20 -6 Days =	31 AUG 2020	7595	TUE	10682
06SEP20 -7 Days =	30 AUG 2020	7296	MON	14823
06SEP20 -8 Days =	29 AUG 2020	6280	SUN	6514
06SEP20 -9 Days =	28 AUG 2020	6160	SAT	6649
06SEP20 -10 Days =	27 AUG 2020	5892	FRI	2667
06SEP20 -11 Days =	26 AUG 2020	6044	THU	2733
06SEP20 -12 Days =	25 AUG 2020	6342	WED	2307
06SEP20 -13 Days =	24 AUG 2020	6782	TUE	2510

S65E

		Average Flow over previous 14 days		Avg-Daily Flow
06SEP20 Today=	06 SEP 2020	2800	MON	2922
06SEP20 -1 Day =	05 SEP 2020	2739	SUN	2929
06SEP20 -2 Days =	04 SEP 2020	2686	SAT	3096
06SEP20 -3 Days =	03 SEP 2020	2622	FRI	3110
06SEP20 -4 Days =	02 SEP 2020	2566	THU	3104
06SEP20 -5 Days =	01 SEP 2020	2517	WED	3256
06SEP20 -6 Days =	31 AUG 2020	2457	TUE	3215
06SEP20 -7 Days =	30 AUG 2020	2416	MON	3172
06SEP20 -8 Days =	29 AUG 2020	2376	SUN	2725
06SEP20 -9 Days =	28 AUG 2020	2369	SAT	2795
06SEP20 -10 Days =	27 AUG 2020	2387	FRI	2624
06SEP20 -11 Days =	26 AUG 2020	2431	THU	2209
06SEP20 -12 Days =	25 AUG 2020	2523	WED	2085
06SEP20 -13 Days =	24 AUG 2020	2649	TUE	1951

S65EX1

		Average Flow over previous 14 days		Avg-Daily Flow
06SEP20 Today=	06 SEP 2020	1323	MON	1336
06SEP20 -1 Day =	05 SEP 2020	1296	SUN	1343
06SEP20 -2 Days =	04 SEP 2020	1270	SAT	1534

06SEP20	-3 Days =	03 SEP 2020	1228	FRI	1540
06SEP20	-4 Days =	02 SEP 2020	1188	THU	1540
06SEP20	-5 Days =	01 SEP 2020	1147	WED	1472
06SEP20	-6 Days =	31 AUG 2020	1107	TUE	1557
06SEP20	-7 Days =	30 AUG 2020	1077	MON	1503
06SEP20	-8 Days =	29 AUG 2020	1072	SUN	1359
06SEP20	-9 Days =	28 AUG 2020	1062	SAT	1400
06SEP20	-10 Days =	27 AUG 2020	1053	FRI	1048
06SEP20	-11 Days =	26 AUG 2020	1077	THU	970
06SEP20	-12 Days =	25 AUG 2020	1106	WED	963
06SEP20	-13 Days =	24 AUG 2020	1148	TUE	962

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)
06 SEP 2020	10	8	316	2909
05 SEP 2020	11	8	397	3307
04 SEP 2020	5	204	422	3567
03 SEP 2020	4	160	337	3170
02 SEP 2020	6	279	1468	6468
01 SEP 2020	0	64	1244	3881
31 AUG 2020	5	182	678	2875
30 AUG 2020	9	403	807	3756
29 AUG 2020	4	154	13	4071
28 AUG 2020	6	350	380	3434
27 AUG 2020	221	873	1123	5123
26 AUG 2020	1095	1318	1084	7133
25 AUG 2020	1426	276	1564	7208
24 AUG 2020	1428	678	1573	9750

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)
06 SEP 2020	-71	0	0	0	-284
05 SEP 2020	30	0	90	0	-189
04 SEP 2020	-98	0	103	0	-150
03 SEP 2020	-174	0	94	0	-243
02 SEP 2020	-277	0	98	0	-308
01 SEP 2020	-390	0	496	0	-452
31 AUG 2020	-503	0	187	0	-459
30 AUG 2020	-276	0	0	0	-312
29 AUG 2020	-13	0	0	220	-233
28 AUG 2020	76	0	0	287	-259
27 AUG 2020	74	0	0	781	-235
26 AUG 2020	45	0	0	0	-306
25 AUG 2020	18	0	0	0	-670
24 AUG 2020	6	0	0	0	-1064

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
06 SEP 2020	14	31	49
05 SEP 2020	7	-229	49
04 SEP 2020	5	-83	34
03 SEP 2020	4	-4	27
02 SEP 2020	2	83	40
01 SEP 2020	1	58	149

31 AUG 2020	2	27	323
30 AUG 2020	1	81	232
29 AUG 2020	2	-120	368
28 AUG 2020	1	-44	888
27 AUG 2020	1	-79	-NR-
26 AUG 2020	3	89	26
25 AUG 2020	1	182	617
24 AUG 2020	0	236	966

*** 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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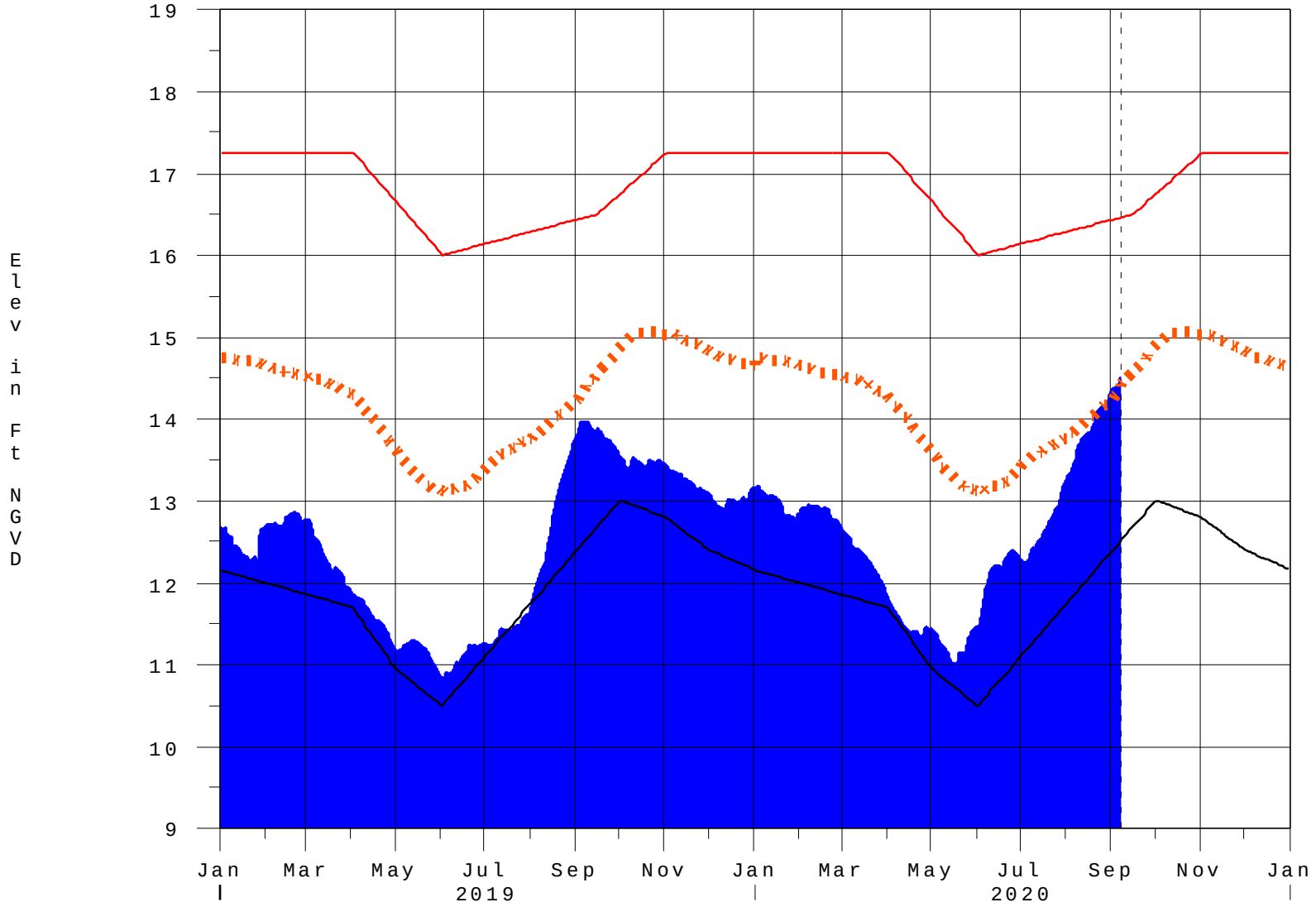
Report Generated 07SEP2020 @ 22:43 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

07SEP20 21:00:54



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