Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 8/9/2021 (ENSO Condition: ENSO-neutral)

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 ENSO Neutral years[3] and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with ENSO Neutral 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 ENSO Neutral Years[3]		Sub-sampling of AMO Warm + ENSO Neutral Years [4]	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Aug-Jan)	N/A	N/A	2.06	Very Wet	2.04	Very Wet	3.33	Very Wet
Multi Seasonal (Aug-Apr)	N/A	N/A	2.42	Normal	1.99	Normal	3.41	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:

6720 cfs 14-day running average for Lake Okeechobee Net Inflow through 8/8/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Very Wet.

-0.45 for Palmer Drought Index on 8/7/2021.
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 8/9/2021:

Lake Okeechobee Stage: **14.00 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.32	
Operational Band	High sub-band	15.90	
	Intermediate sub-band	15.48	
	Low sub-band	13.64	← 14.00 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.90	
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 8/9/2021 (ENSO Condition- ENSO-neutral):

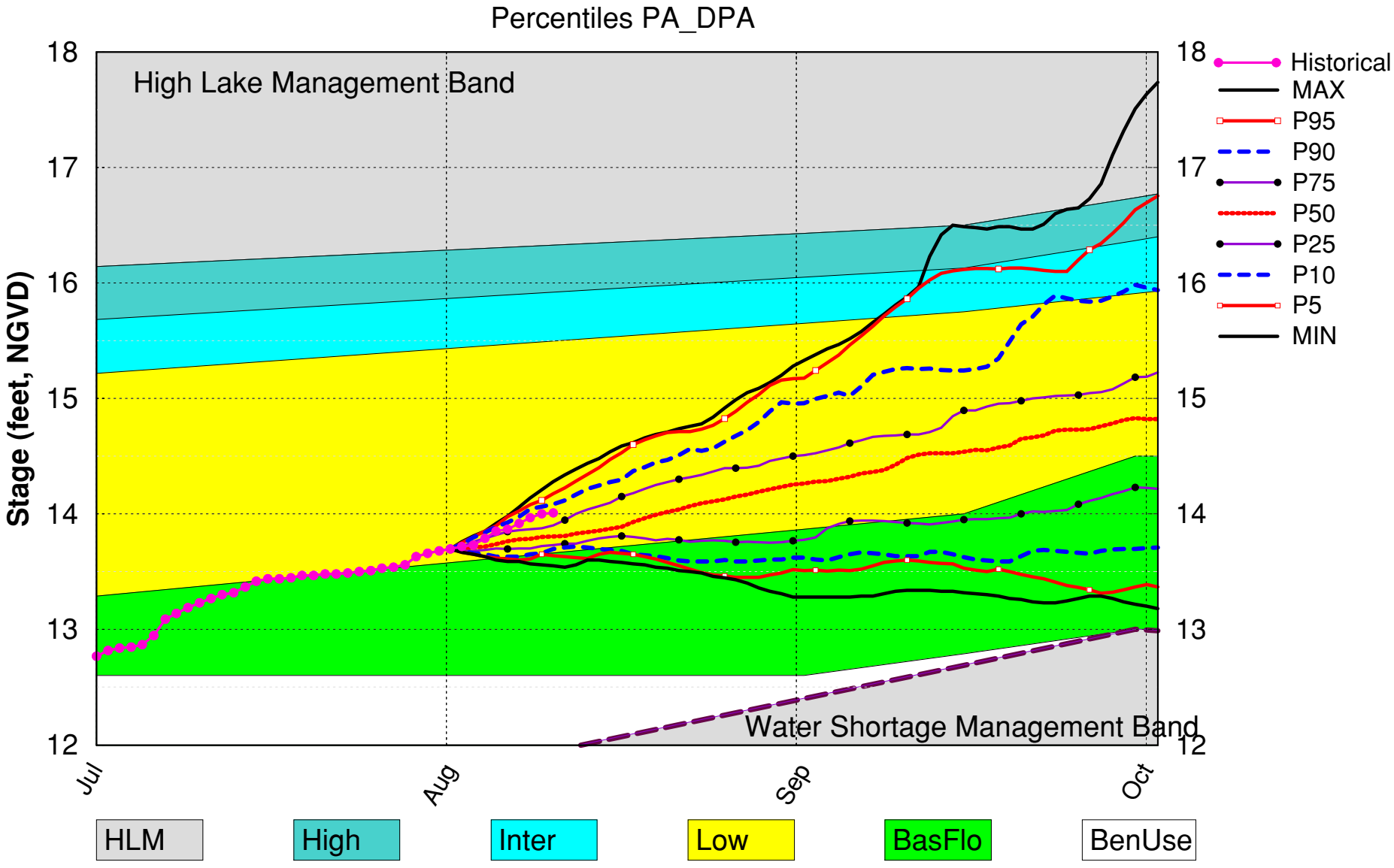
Status for week ending 8/9/2021:

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	-0.45 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Normal	L
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	2.04 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	1.99 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (16.61 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.50 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.63 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.

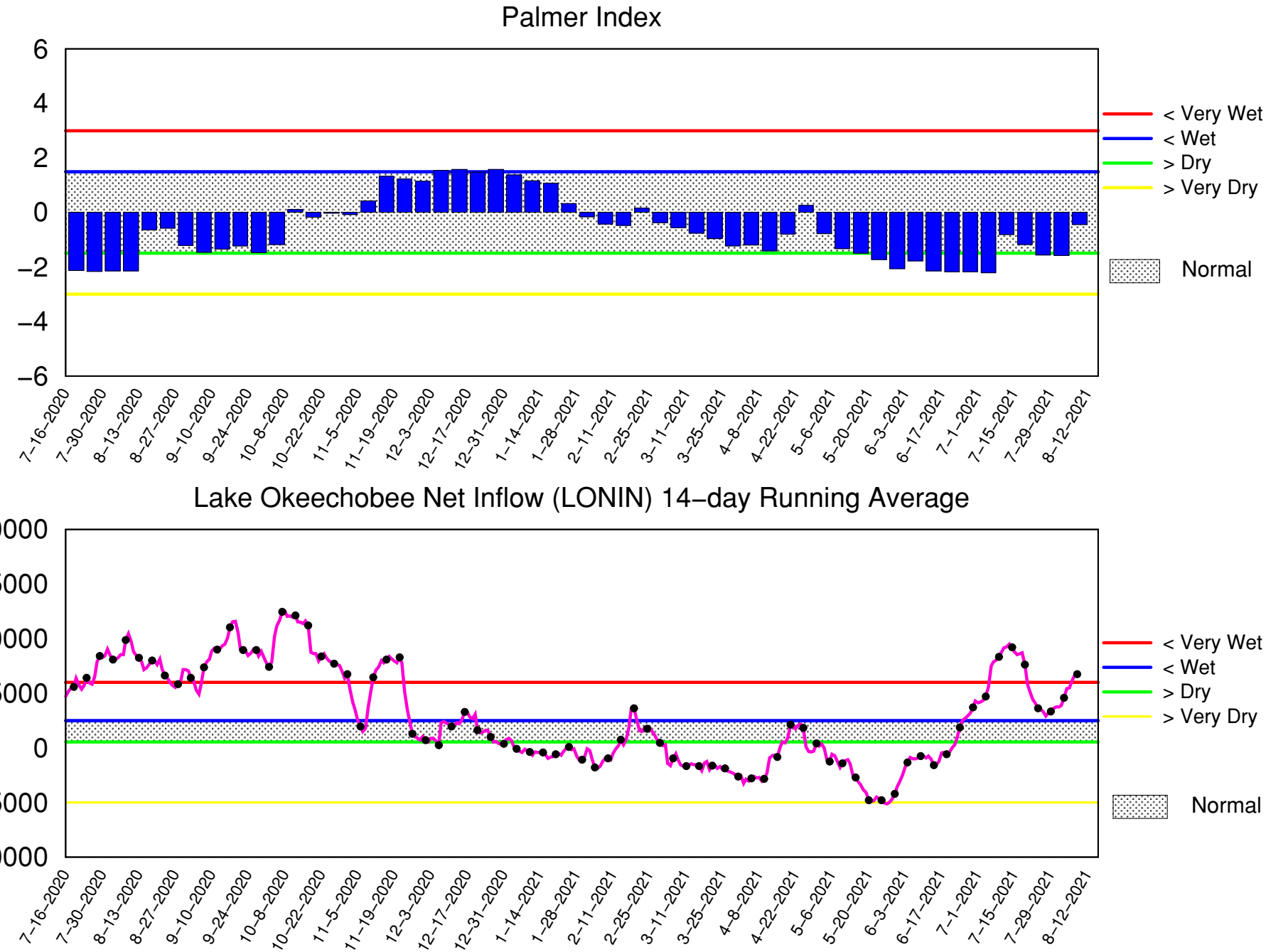
Lake Okeechobee SFWMM Aug 2021 Position Analysis



(See assumptions on the Position Analysis Results website)

Tue Aug 10 06:19:48 2021

Tributary Basin Condition Indicators as of August 9 2021



Mon Aug 9 12:59:13 EDT 2021

2008 LORS

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

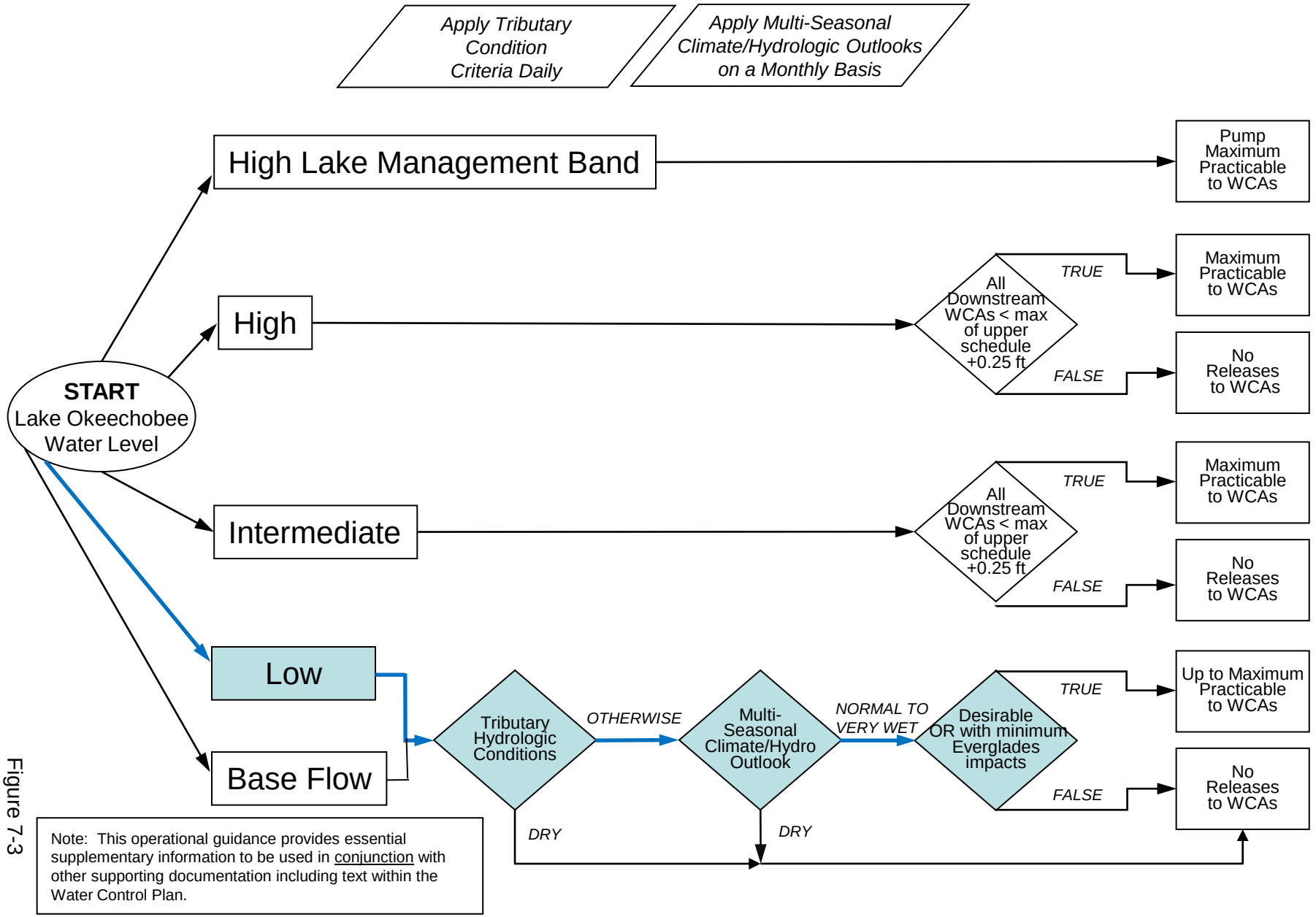


Figure 7-3

2008 LORS

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

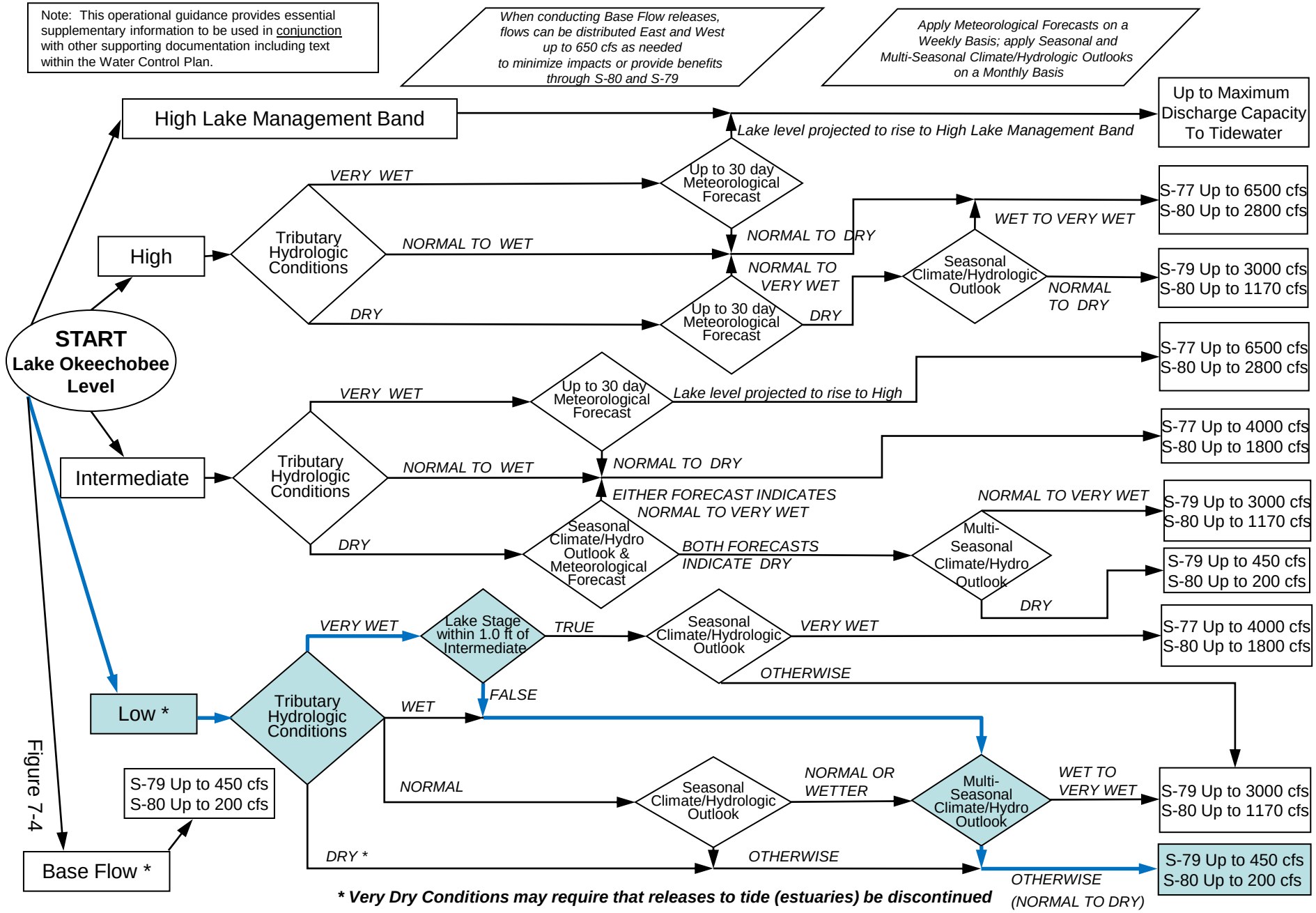
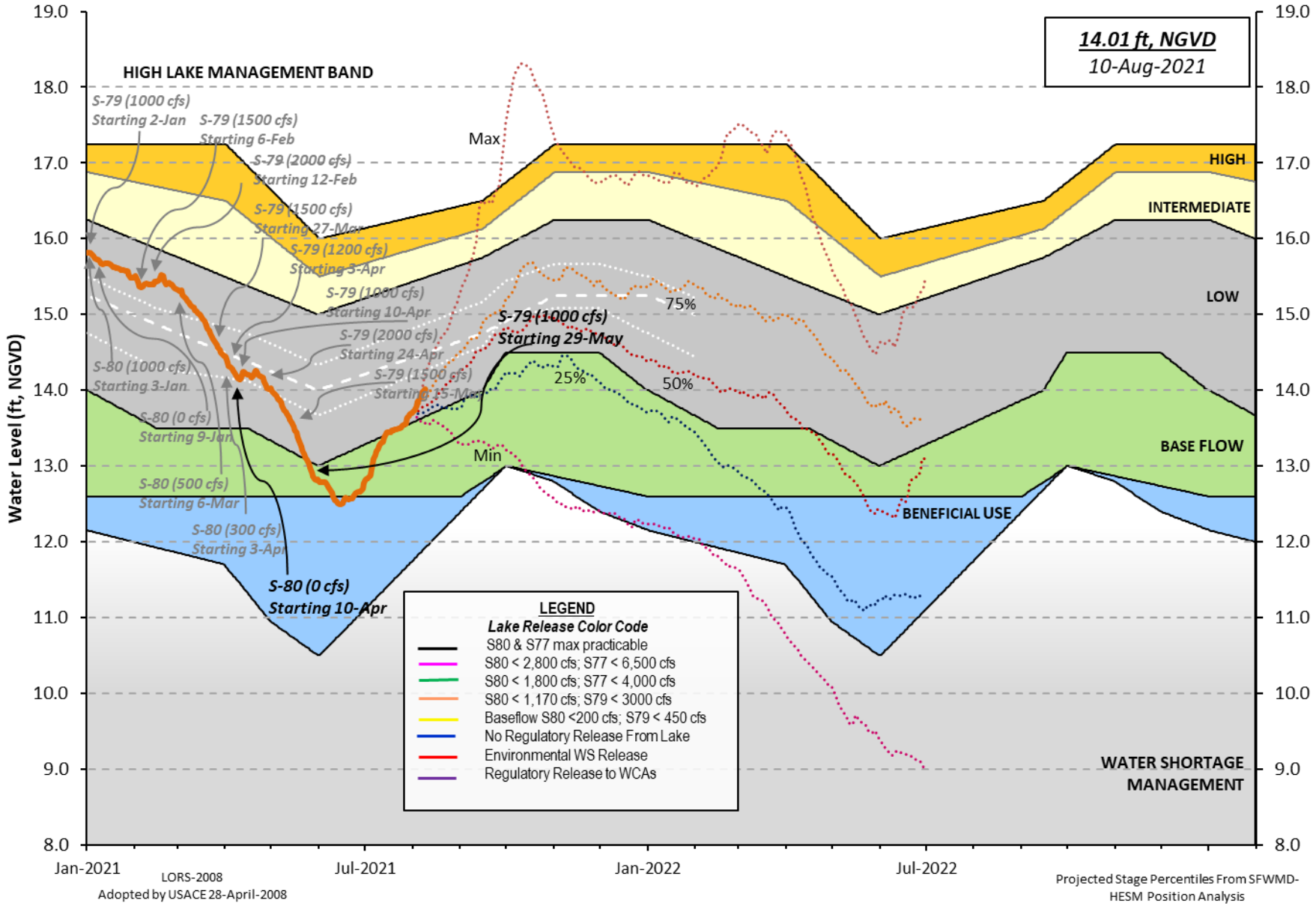


Figure 7-4

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 08 AUG 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	14.00	13.62	12.17	(Official Elv)

Bottom of High Lake Mngmt= 16.32 Top of Water Short Mngmt= 11.90
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.81
Difference from Average LORS2008 1.19

08AUG (1965-2007) Period of Record Average 13.87
Difference from POR Average 0.13

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 7.94'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 6.14'
Bridge Clearance = 49.41'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.02	14.03	13.97	13.96	13.97	14.09	13.98	13.98

*Combination Okeechobee Avg-Daily Lake Average = 14.00 (*See Note)

Okeechobee Inflows (cfs):

S65E	1759	S65EX1	0	Fisheating Cr	434
S154	56	S191	0	S135 Pumps	222
S84	1228	S133 Pumps	37	S2 Pumps	0
S84X	307	S127 Pumps	79	S3 Pumps	0
S71	648	S129 Pumps	52	S4 Pumps	0
S72	441	S131 Pumps	53	C5	0
Total Inflows:	5316				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	4
S127 Culverts	0	S351	0	S308	-360
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-NR-		
Total Outflows:	-356				

****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	0.30	S308	0.24

Average Pan Evap x 0.75 Pan Coefficient = 0.20" = 0.02'

Lake Average Precipitation using NEXRAD: = -NR-" = -NR-'

Evaporation - Precipitation: = -NR-" = -NR-'
Evaporation - Precipitation using Lake Area of 730 square miles

is equal to -NR-
Lake Okeechobee (Change in Storage) Flow is 6353 cfs or 12600 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:	13.29	13.91	37	18	0	0	0	0				(cfs)
S193:												
S191:	19.33	13.90	0	0.0	0.0	0.0						
S135 Pumps:	13.42	13.85	222	57	57	57	57					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	20.98	13.90	1759	0.6	0.7	1.3	1.3	0.6	-0.0			
S65EX1:	20.98	13.90	0									
S127 Pumps:	13.46	13.99	79	49	0	0	31	0				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.93	13.99	52	0	44	12						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.95	13.97	53	25	31							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		32.40	434									
nr Lakeport												
C5:		-NR-	0	-NR-	-NR-	-NR-						
South Shore												
S4 Pumps:	11.77	13.95	0	0	0	0						(cfs)
S169:		-NR-	-NR-	-NR-	-NR-	-NR-						
S310:	13.87		-65									
S3 Pumps:	9.93	14.04	0	0	0	0						(cfs)
S354:	14.04	9.93	0	0.0	0.0							
S2 Pumps:	8.99	-NR-	0	-NR-	-NR-	-NR-	-NR-					(cfs)
S351:	-NR-	8.99	0	0.0	0.0	0.0						
S352:	14.10	9.44	0	0.0	0.0							
C10A:	-NR-	13.92		8.0	8.0	8.0	0.0	0.0				
L8 Canal PT			-NR-									
S351 and S352 Temporary Pumps/S354 Spillway												
S351:	8.99	-NR-	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-			
S352:	9.44	14.10	0	-NR-	-NR-	-NR-	-NR-					
S354:	9.93	14.04	0	-NR-	-NR-	-NR-	-NR-					
Caloosahatchee River (S77, S78, S79)												
S47B:	14.37	12.62		0.0	0.0							
S47D:	12.62	10.84	15	0.0								
S77:												
Spillway and Sector Preferred Flow:												
	13.77	10.74	0	0.0	0.0	0.0	0.0					
Flow Due to Lockages+:			4									
S78:												

```
    Spillway and Sector Flow:
              10.75      3.05    1359    0.0  2.5  0.0  1.5
    Flow Due to Lockages+:           8

  S79:
    Spillway and Sector Flow:
               3.05      1.14    3612    1.0  2.0  2.0  3.0  2.0  2.0  2.0  2.0
    Flow Due to Lockages+:         -NR-
    Percent of flow from S77          0%
    Chloride            (ppm)      -N


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              13.97     14.09    -360  0.0  3.0  3.0  0.0
    Flow Due to Lockages+:          -0

  S153:        18.60     13.75      68    0.0  0.0
  S80:
    Spillway and Sector Flow:
              14.05      1.66       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:          19
    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 (Deg)	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	0.47	3.21	301	2
S78:	0.00	0.00	2.01	287	1
S79:	1.15	1.52	3.98	1	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:	0.00	1.44	2.44	119	3
S80:	0.01	0.04	1.73	101	2
Okeechobee Average (Sites S78, S79 and S80 not included)	0.00	0.15	0.43		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
Okeechobee Lake Elevations  08 AUG 2021          14.00 Difference from 08AUG21
   08AUG21  -1 Day  =       07 AUG 2021          13.97            -0.03
```

08AUG21	-2 Days =	06 AUG 2021	13.92	-0.08
08AUG21	-3 Days =	05 AUG 2021	13.87	-0.13
08AUG21	-4 Days =	04 AUG 2021	13.85	-0.15
08AUG21	-5 Days =	03 AUG 2021	13.79	-0.21
08AUG21	-6 Days =	02 AUG 2021	13.73	-0.27
08AUG21	-7 Days =	01 AUG 2021	13.72	-0.28
08AUG21	-30 Days =	09 JUL 2021	13.23	-0.77
08AUG21	-1 Year =	08 AUG 2020	13.62	-0.38
08AUG21	-2 Year =	08 AUG 2019	12.17	-1.83

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
08AUG21	Today =	08 AUG 2021	7130	MON	6353
08AUG21	-1 Day =	07 AUG 2021	6978	SUN	10588
08AUG21	-2 Days =	06 AUG 2021	6391	SAT	10588
08AUG21	-3 Days =	05 AUG 2021	5806	FRI	4235
08AUG21	-4 Days =	04 AUG 2021	5664	THU	12705
08AUG21	-5 Days =	03 AUG 2021	4767	WED	12705
08AUG21	-6 Days =	02 AUG 2021	4052	TUE	2118
08AUG21	-7 Days =	01 AUG 2021	3919	MON	4235
08AUG21	-8 Days =	31 JUL 2021	3929	SUN	4235
08AUG21	-9 Days =	30 JUL 2021	3791	SAT	4235
08AUG21	-10 Days =	29 JUL 2021	3493	FRI	6353
08AUG21	-11 Days =	28 JUL 2021	3334	THU	14823
08AUG21	-12 Days =	27 JUL 2021	3024	WED	4235
08AUG21	-13 Days =	26 JUL 2021	3478	TUE	2409

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
08AUG21	Today=	08 AUG 2021	1875	MON	1944
08AUG21	-1 Day =	07 AUG 2021	1844	SUN	1999
08AUG21	-2 Days =	06 AUG 2021	1809	SAT	2044
08AUG21	-3 Days =	05 AUG 2021	1771	FRI	2079
08AUG21	-4 Days =	04 AUG 2021	1733	THU	2151
08AUG21	-5 Days =	03 AUG 2021	1695	WED	1902
08AUG21	-6 Days =	02 AUG 2021	1674	TUE	1715
08AUG21	-7 Days =	01 AUG 2021	1647	MON	1779
08AUG21	-8 Days =	31 JUL 2021	1613	SUN	1640
08AUG21	-9 Days =	30 JUL 2021	1591	SAT	1650
08AUG21	-10 Days =	29 JUL 2021	1568	FRI	1850
08AUG21	-11 Days =	28 JUL 2021	1532	THU	1792
08AUG21	-12 Days =	27 JUL 2021	1503	WED	1794
08AUG21	-13 Days =	26 JUL 2021	1431	TUE	1916

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
08AUG21	Today=	08 AUG 2021	0	MON	0
08AUG21	-1 Day =	07 AUG 2021	0	SUN	0
08AUG21	-2 Days =	06 AUG 2021	0	SAT	0
08AUG21	-3 Days =	05 AUG 2021	0	FRI	0
08AUG21	-4 Days =	04 AUG 2021	0	THU	0
08AUG21	-5 Days =	03 AUG 2021	0	WED	0
08AUG21	-6 Days =	02 AUG 2021	0	TUE	0
08AUG21	-7 Days =	01 AUG 2021	0	MON	0
08AUG21	-8 Days =	31 JUL 2021	0	SUN	0
08AUG21	-9 Days =	30 JUL 2021	0	SAT	0
08AUG21	-10 Days =	29 JUL 2021	0	FRI	0
08AUG21	-11 Days =	28 JUL 2021	0	THU	0
08AUG21	-12 Days =	27 JUL 2021	0	WED	0
08AUG21	-13 Days =	26 JUL 2021	44	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)
08 AUG 2021	8	434	2708	-NR-
07 AUG 2021	9	612	3243	-NR-
06 AUG 2021	5	376	3526	-NR-
05 AUG 2021	7	379	3928	-NR-
04 AUG 2021	7	358	3403	9253
03 AUG 2021	2	49	1401	3282
02 AUG 2021	1	171	1119	4240
01 AUG 2021	6	40	1209	3630
31 JUL 2021	9	277	1624	4620
30 JUL 2021	9	718	3416	7476
29 JUL 2021	3	475	2259	5390
28 JUL 2021	2	167	1595	5210
27 JUL 2021	1	305	1281	4155
26 JUL 2021	3	339	1117	3307

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)
08 AUG 2021	-129	0	0	0	-NR-
07 AUG 2021	-64	0	0	0	-NR-
06 AUG 2021	-71	0	0	0	-NR-
05 AUG 2021	-76	0	0	0	-NR-
04 AUG 2021	-36	0	0	0	-NR-
03 AUG 2021	-32	0	0	0	-NR-
02 AUG 2021	-43	0	0	0	-NR-
01 AUG 2021	-3	0	0	0	-NR-
31 JUL 2021	15	0	0	0	-NR-
30 JUL 2021	25	0	0	0	-NR-
29 JUL 2021	-11	0	0	0	-NR-
28 JUL 2021	32	0	0	0	-NR-
27 JUL 2021	31	0	0	0	-NR-
26 JUL 2021	27	237	0	340	-NR-

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
08 AUG 2021	-726	-626	38
07 AUG 2021	-654	-677	31
06 AUG 2021	-650	-684	31
05 AUG 2021	-887	-986	39
04 AUG 2021	-340	-566	16
03 AUG 2021	-170	-299	19
02 AUG 2021	-445	-506	24
01 AUG 2021	-361	-416	12
31 JUL 2021	-2	112	61
30 JUL 2021	-1	-118	37
29 JUL 2021	-322	-483	30
28 JUL 2021	-28	-212	11
27 JUL 2021	-0	-76	18
26 JUL 2021	-437	-753	14

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

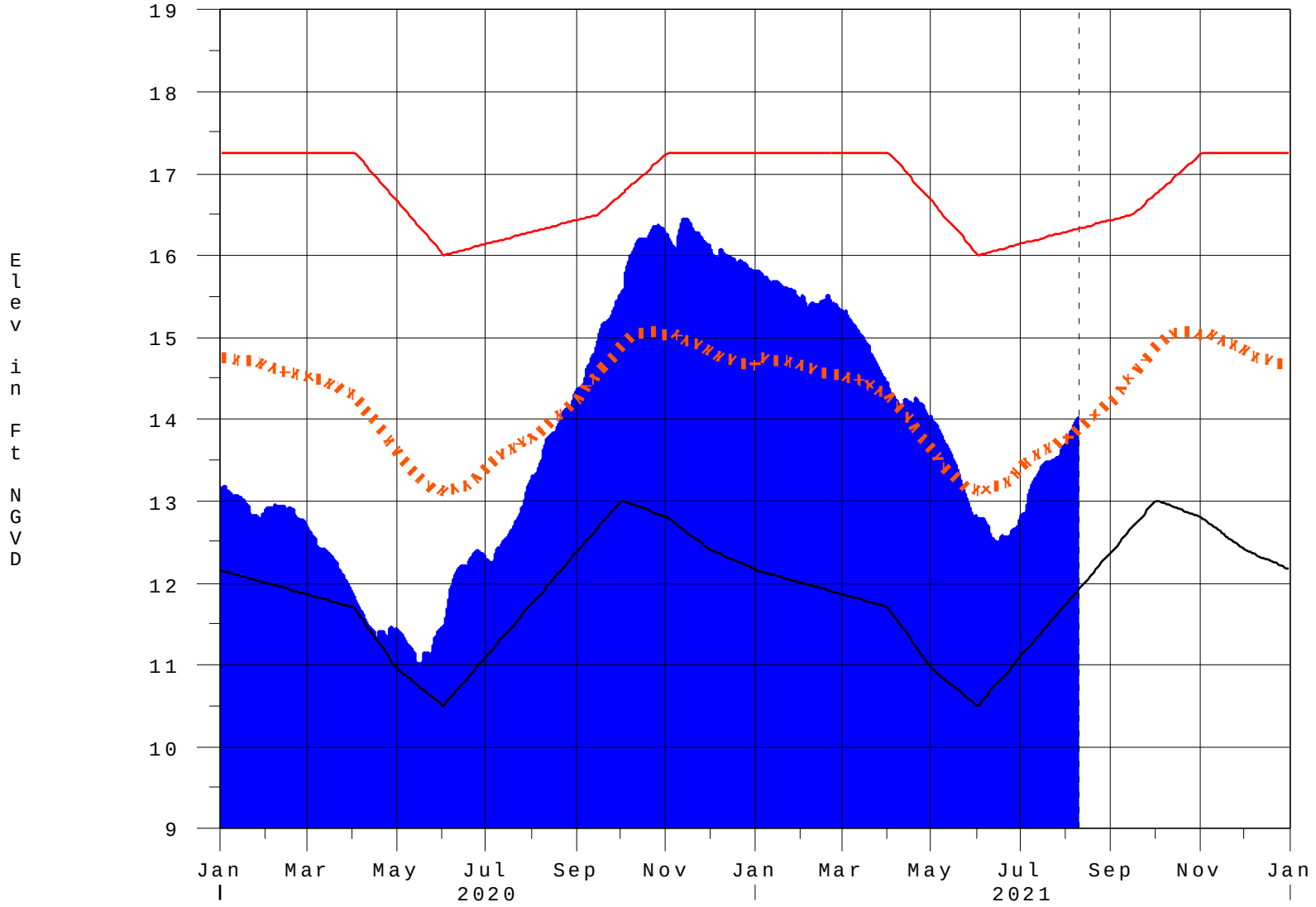
(I) - Flows preceeded by "I" signify an instantaneous
flow computed from the single value reported for the day

* 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

Report Generated 09AUG2021 @ 10:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

10AUG21 06:30:58



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