Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 09/04/2023 (ENSO Condition: El Niño)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using methods described in the LORS2008 Water Control Plan: Croley's method, the SFWMD empirical method, a sub-sampling of El Niño years and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with El Niño ENSO years. 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*		SFWMD Empirical Method		Sub-sampling of El Niño ENSO Years**		Sub-sampling of AMO Warm + El Niño ENSO Years***	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Sep-Feb)	N/A	N/A	2.06	Very Wet	2.36	Very Wet	3.49	Very Wet
Multi Seasonal (Sep-Apr)	N/A	N/A	2.07	Normal	2.88	Wet	3.82	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 IRI ENSO forecast published.
***Sub-sampling based on combination of ENSO and AMO conditions. For this predominant ENSO categorization is used instead of weights.

Tributary Hydrologic Conditions:

529 cfs 14-day running average for Lake Okeechobee Net Inflow through 09/03/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

-3.08 for Palmer Drought Index on 09/02/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Very Dry.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 09/04/2023:

Lake Okeechobee Stage: **15.39 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.44	
Operational Band	High sub-band	16.06	
	Intermediate sub-band	15.67	
	Low sub-band	13.89	← 15.39 ft
Base Flow sub-band		12.63	
Beneficial Use sub-band		12.44	
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 09/04/2023 (ENSO Condition- El Niño):

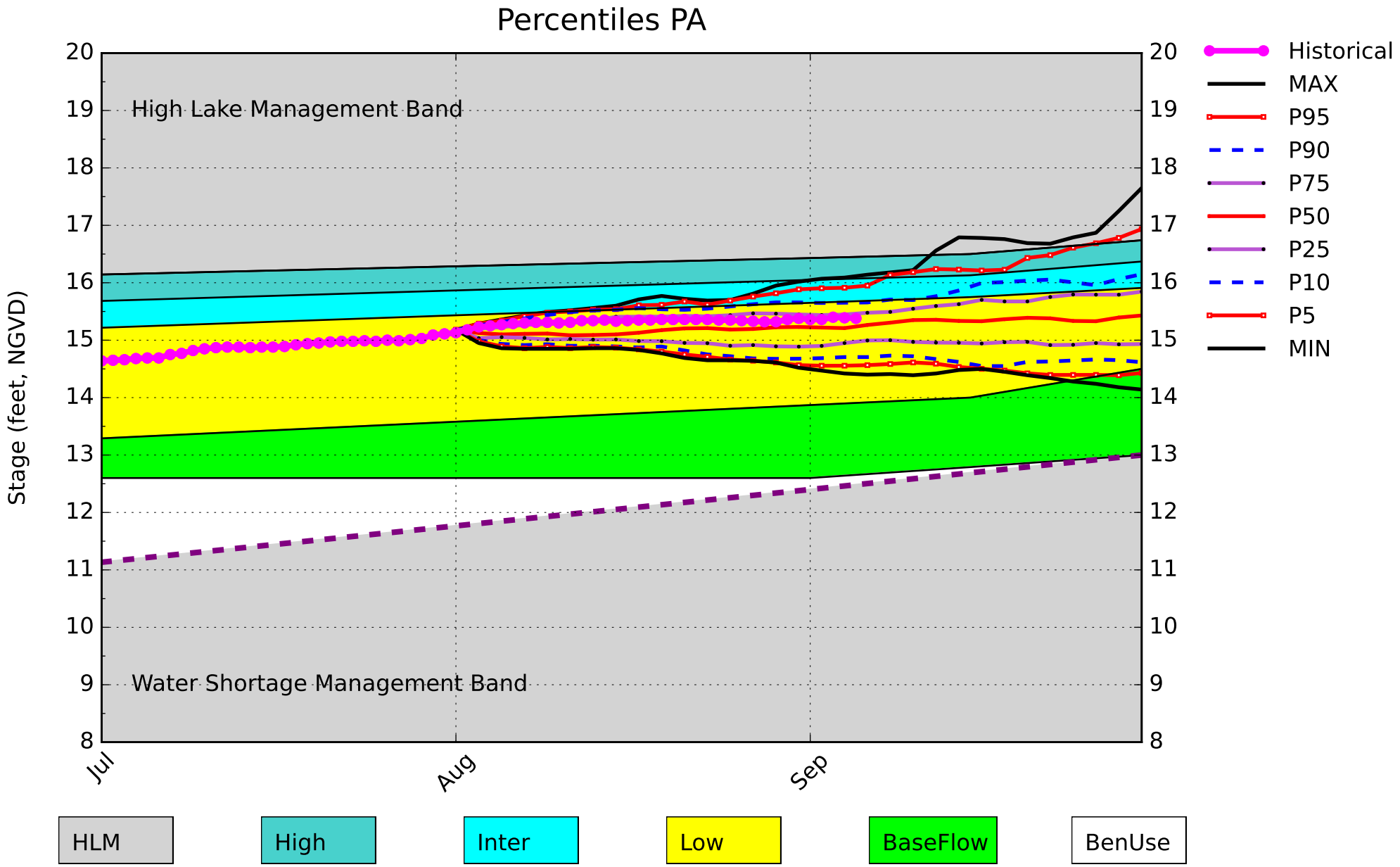
Status for week ending 09/04/2023:

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	-3.08 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Equal Chances	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.36 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	2.88 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Sites 1-7, 1-8T, and 1-9)	Above Line 1 (16.82 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.66 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (11.02 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

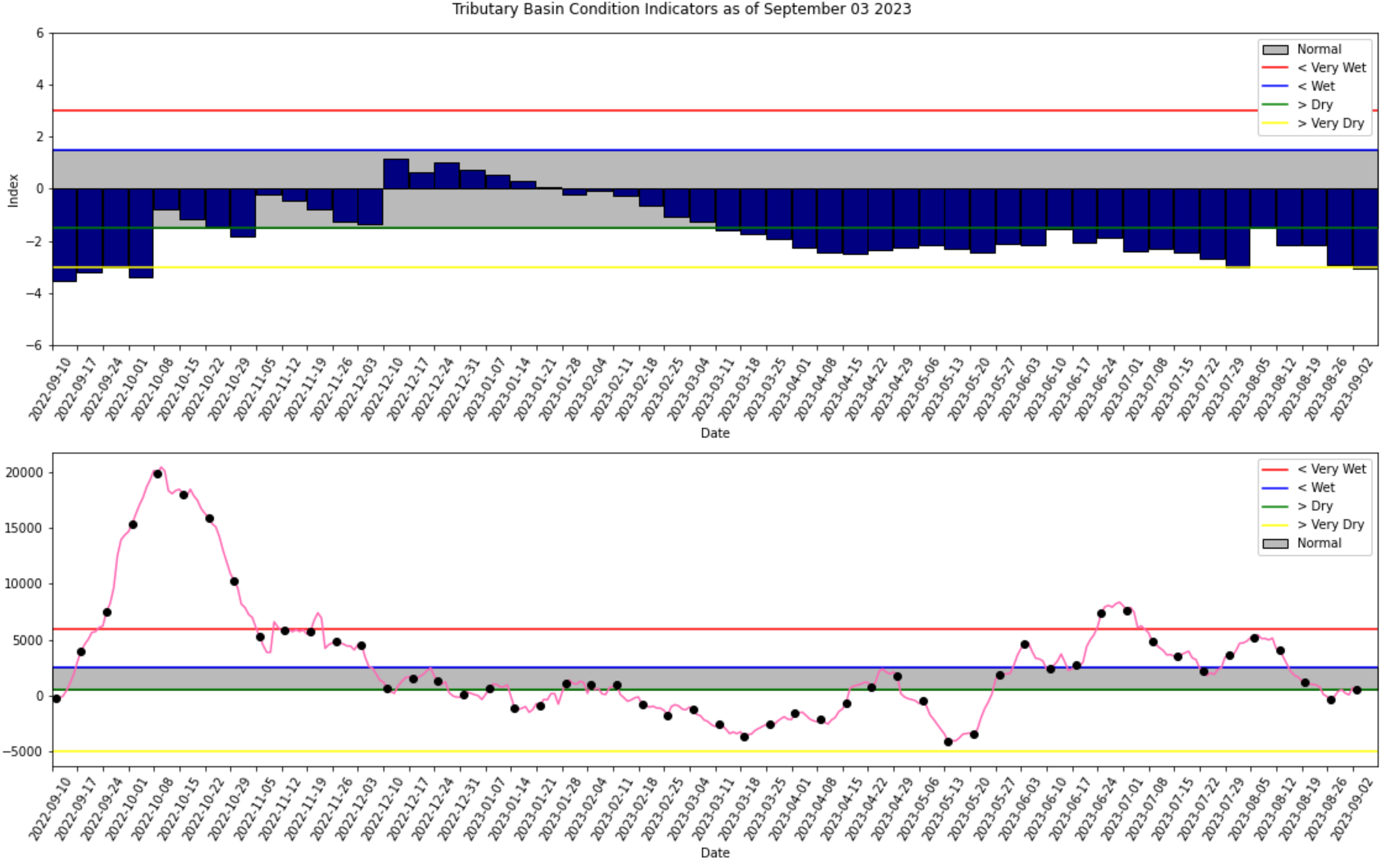
Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.

Lake Okeechobee SFWMM August 2023 Position Analysis



(See assumptions on the Position Analysis Results website)

09/05/23 07:17:00


Tributary Basin Condition Indicators as of September 03 2023
Index
Normal
< Very Wet
< Wet
> Dry
> Very Dry
Date
Flow (cfs)
< Very Wet
< Wet
> Dry
> Very Dry
Normal
Date

2008 LORS

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

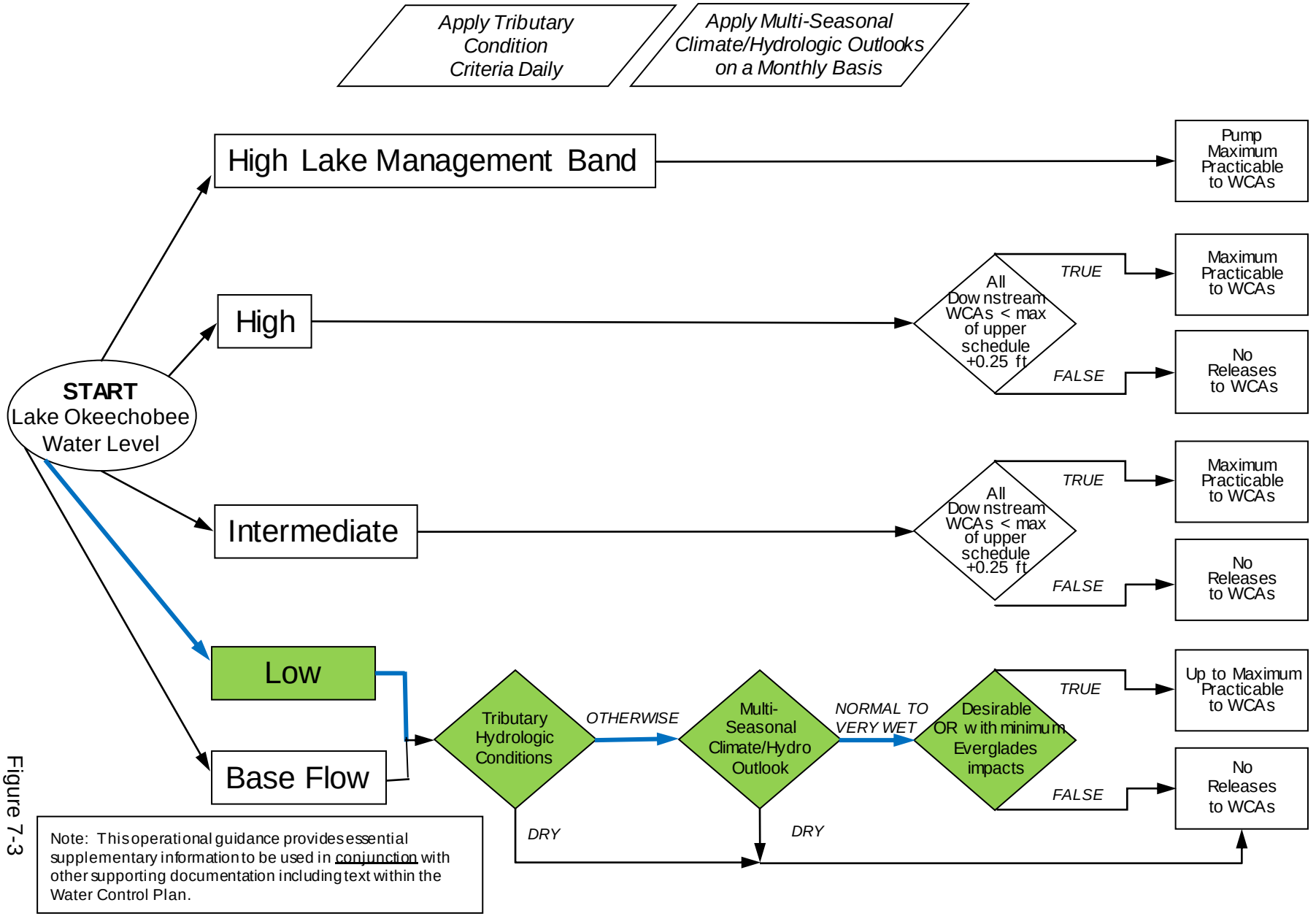


Figure 7-3

2008 LORS

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

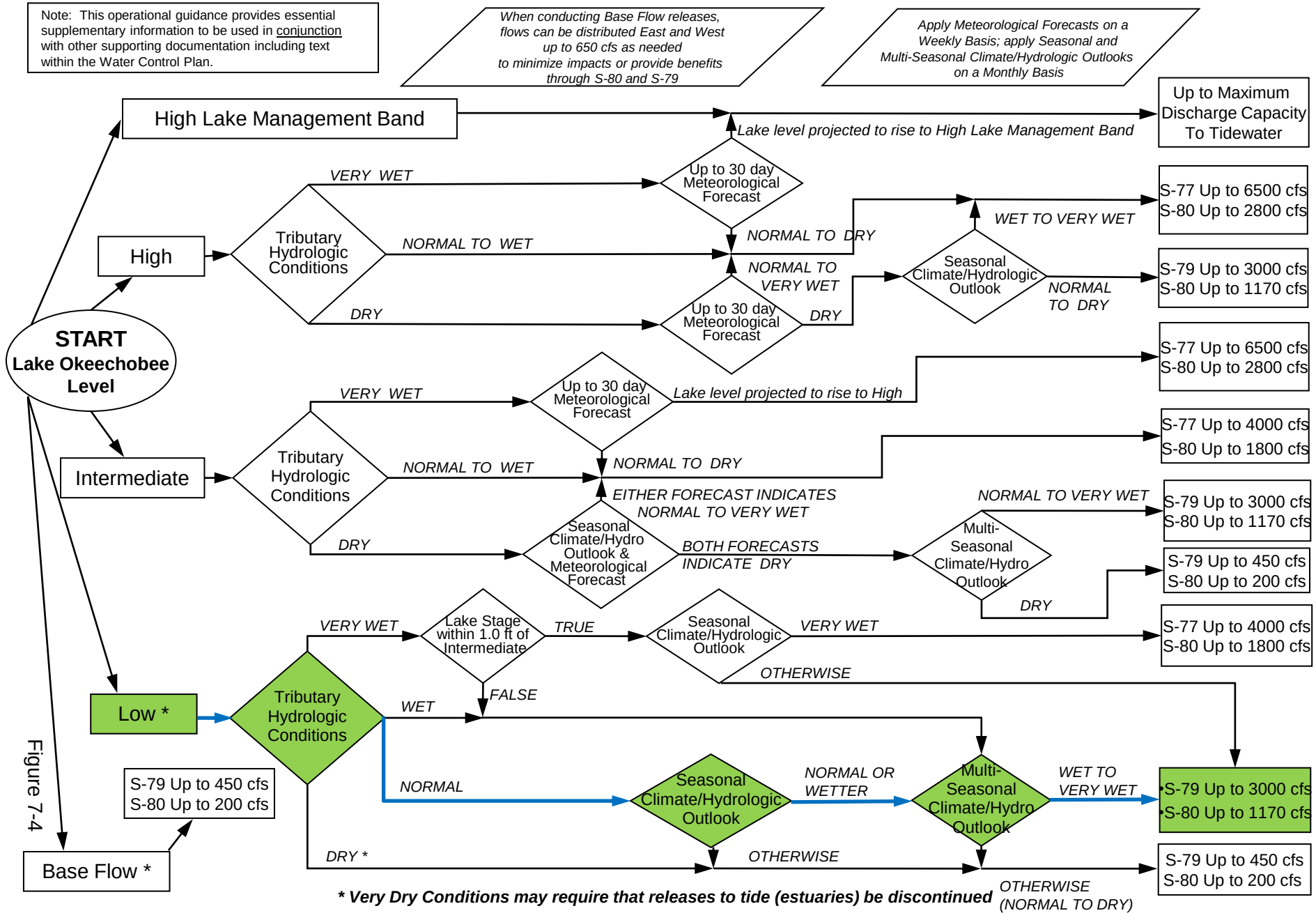
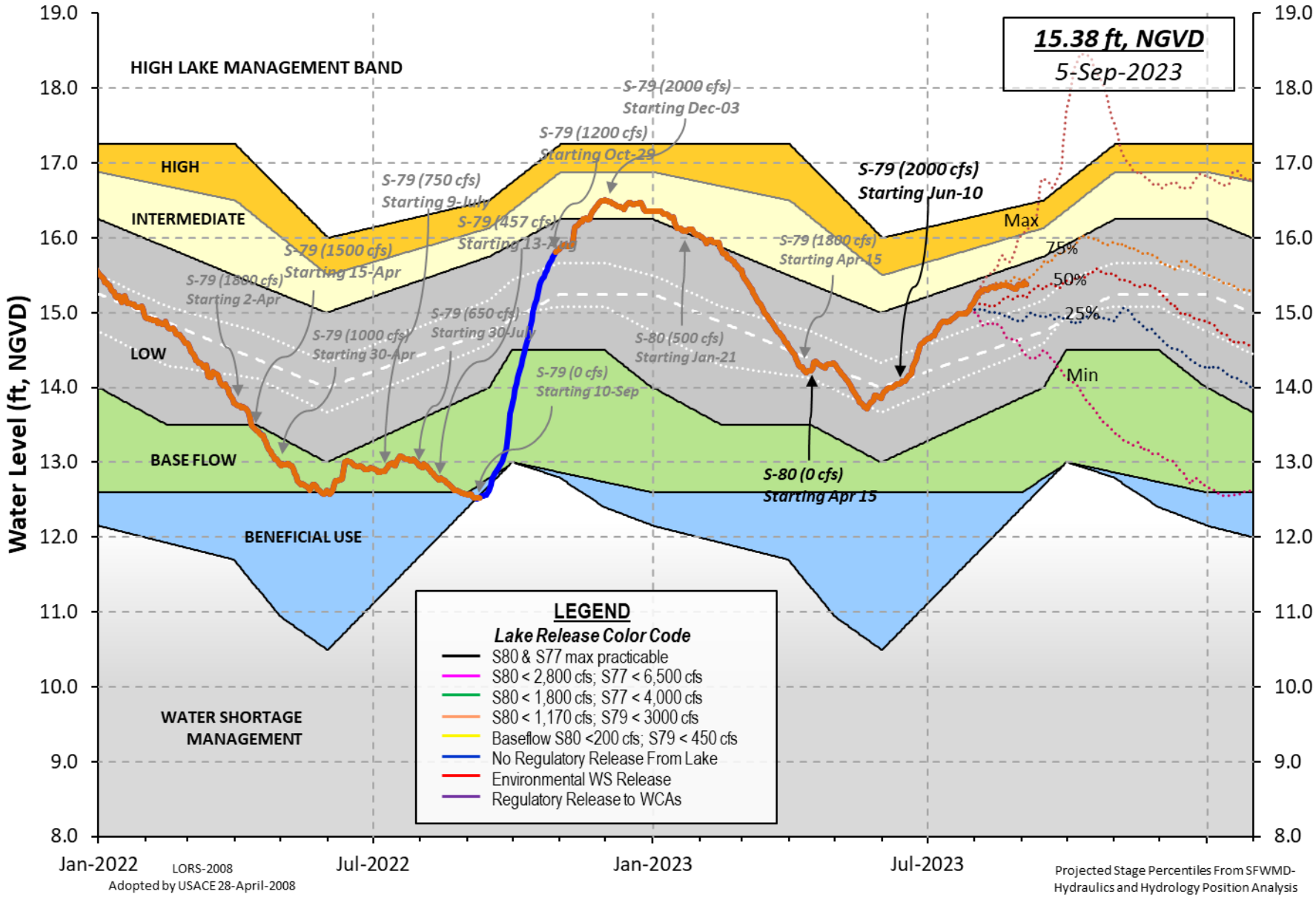


Figure 7-4

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 03 SEP 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	15.39	12.57	14.70	(Official Elv)

Bottom of High Lake Mngmt= 16.44 Top of Water Short Mngmt= 12.44
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.26
Difference from Average LORS2008 2.13

03SEP (1965-2007) Period of Record Average 14.28
Difference from POR Average 1.11

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 9.33'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 7.53'
Bridge Clearance = 49.20'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.36	15.43	15.42	15.32	15.48	15.49	15.11	15.19

*Combination Okeechobee Avg-Daily Lake Average = 15.39 (*See Note)

Okeechobee Inflows (cfs):

S65E	634	S65EX1	0	Fisheating Cr	395
S154	27	S191	0	S135 Pumps	0
S84	1197	S133 Pumps	130	S2 Pumps	0
S84X	373	S127 Pumps	52	S3 Pumps	0
S71	169	S129 Pumps	0	S4 Pumps	0
S72	298	S131 Pumps	16	C5	0
Total Inflows:	3291				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	119
S127 Culverts	0	S351	0	S308	1
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	5		
Total Outflows:	125				

****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	0.25	S308	0.21

Average Pan Evap x 0.75 Pan Coefficient = 0.17" = 0.01'

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 -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:	13.29	15.23	130	42	31	43	24	0				(cfs)
S193:												
S191:	18.55	15.23	0	0.0	0.0	0.0						
S135 Pumps:	13.36	15.23	0	0	0	0	0					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	20.87	14.97	634	0.5	0.5	0.2	0.4	0.0	0.0			
S65EX1:	20.87	14.97	0									
S127 Pumps:	13.30	15.28	52	0	0	18	0	37				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.94	15.42	0	0	0	0						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.78	-NR-	16	0	0							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		32.19	395									
nr Lakeport												
S282	15.39	15.43		0.0	0.0	0.1						
South Shore												
S4 Pumps:	11.20	-NR-	0	0	0	0						(cfs)
S169:	14.72	-NR-	-NR-	-NR-	-NR-	-NR-						
S310:	15.46		3									
S3 Pumps:	10.29	15.47	0	0	0	0						(cfs)
S354:	15.47	10.29	0	0.0	0.0							
S2 Pumps:	10.12	15.50	0	0	0	0	0					(cfs)
S351:	15.50	10.12	0	0.0	0.0	0.0						
S352:	15.49	10.24	0	0.0	0.0							
S271:	15.58	14.18		-NR-	0.0	0.0	0.0					
L8 Canal PT		13.85	5									

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.12	15.50	0	-NR--NR--NR--NR--NR--NR-
S352:	10.24	15.49	0	-NR--NR--NR--NR-
S354:	10.29	15.47	0	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)								
S47B:	12.77	11.03		0.5	1.0			
S47D:	10.98	10.96	43	6.5				
S77:								
Spillway and Sector Preferred Flow:								
	15.34	10.83	114	0.0	0.5	0.5	0.0	
Flow Due to Lockages+:			5					
S78:								

```
    Spillway and Sector Flow:
              10.85      3.11    1330    2.0  0.0  2.5  0.0
    Flow Due to Lockages+:        -NR-

  S79:
    Spillway and Sector Flow:
               3.27      1.04    2733    0.0  1.5  2.0  2.0  2.0  2.0  0.0  0.0
    Flow Due to Lockages+:          11
    Percent of flow from S77         4%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              15.13     14.30       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           1

  S153:        19.05     14.07       3    0.5  0.0
  S80:
    Spillway and Sector Flow:
              14.30      1.74       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           4
    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:	-NR-	0.00	0.00	42	4
S78:	-NR-	0.00	0.00	7	0
S79:	-NR-	0.00	0.00	78	4
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:	-NR-	0.00	0.00	-NR-	-NR-
S80:	-NR-	0.00	0.00	112	4
Okeechobee Average (Sites S78, S79 and S80 not included)	-NR-	0.00	0.00		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
Okeechobee Lake Elevations  03 SEP 2023          15.39 Difference from 03SEP23
   03SEP23  -1 Day  =       02 SEP 2023          15.40             0.01
```

03SEP23 -2 Days =	01 SEP 2023	15.36	-0.03
03SEP23 -3 Days =	31 AUG 2023	15.36	-0.03
03SEP23 -4 Days =	30 AUG 2023	15.38	-0.01
03SEP23 -5 Days =	29 AUG 2023	15.36	-0.03
03SEP23 -6 Days =	28 AUG 2023	15.32	-0.07
03SEP23 -7 Days =	27 AUG 2023	15.32	-0.07
03SEP23 -30 Days =	04 AUG 2023	15.27	-0.12
03SEP23 -1 Year =	03 SEP 2022	12.57	-2.82
03SEP23 -2 Year =	03 SEP 2021	14.70	-0.69

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
03SEP23 Today =	03 SEP 2023	531	MON	-2052
03SEP23 -1 Day =	02 SEP 2023	704	SUN	8786
03SEP23 -2 Days =	01 SEP 2023	76	SAT	76
03SEP23 -3 Days =	31 AUG 2023	226	FRI	-4336
03SEP23 -4 Days =	30 AUG 2023	535	THU	4336
03SEP23 -5 Days =	29 AUG 2023	380	WED	8674
03SEP23 -6 Days =	28 AUG 2023	-74	TUE	0
03SEP23 -7 Days =	27 AUG 2023	-384	MON	-1722
03SEP23 -8 Days =	26 AUG 2023	-78	SUN	-2166
03SEP23 -9 Days =	25 AUG 2023	102	SAT	-2155
03SEP23 -10 Days =	24 AUG 2023	759	FRI	0
03SEP23 -11 Days =	23 AUG 2023	960	THU	-2167
03SEP23 -12 Days =	22 AUG 2023	1015	WED	166
03SEP23 -13 Days =	21 AUG 2023	1057	TUE	0

S65E

	Average Flow over previous 14 days			Avg-Daily Flow
03SEP23 Today=	03 SEP 2023	710	MON	728
03SEP23 -1 Day =	02 SEP 2023	740	SUN	898
03SEP23 -2 Days =	01 SEP 2023	773	SAT	909
03SEP23 -3 Days =	31 AUG 2023	811	FRI	477
03SEP23 -4 Days =	30 AUG 2023	848	THU	466
03SEP23 -5 Days =	29 AUG 2023	880	WED	376
03SEP23 -6 Days =	28 AUG 2023	961	TUE	607
03SEP23 -7 Days =	27 AUG 2023	994	MON	623
03SEP23 -8 Days =	26 AUG 2023	1032	SUN	647
03SEP23 -9 Days =	25 AUG 2023	1069	SAT	669
03SEP23 -10 Days =	24 AUG 2023	1089	FRI	691
03SEP23 -11 Days =	23 AUG 2023	1115	THU	840
03SEP23 -12 Days =	22 AUG 2023	1161	WED	1055
03SEP23 -13 Days =	21 AUG 2023	1203	TUE	949

S65EX1

	Average Flow over previous 14 days			Avg-Daily Flow
03SEP23 Today=	03 SEP 2023	0	MON	0
03SEP23 -1 Day =	02 SEP 2023	0	SUN	0
03SEP23 -2 Days =	01 SEP 2023	0	SAT	0
03SEP23 -3 Days =	31 AUG 2023	0	FRI	0
03SEP23 -4 Days =	30 AUG 2023	0	THU	0
03SEP23 -5 Days =	29 AUG 2023	0	WED	0
03SEP23 -6 Days =	28 AUG 2023	0	TUE	0
03SEP23 -7 Days =	27 AUG 2023	0	MON	0
03SEP23 -8 Days =	26 AUG 2023	0	SUN	0
03SEP23 -9 Days =	25 AUG 2023	0	SAT	0
03SEP23 -10 Days =	24 AUG 2023	0	FRI	0
03SEP23 -11 Days =	23 AUG 2023	0	THU	0
03SEP23 -12 Days =	22 AUG 2023	0	WED	0
03SEP23 -13 Days =	21 AUG 2023	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)
03 SEP 2023	244	786	-NR-	5440
02 SEP 2023	216	695	1643	3823
01 SEP 2023	171	201	601	1804
31 AUG 2023	5	152	583	3730
30 AUG 2023	1	259	548	501
29 AUG 2023	5	-84	597	1482
28 AUG 2023	5	113	606	2198
27 AUG 2023	12	-316	609	1737
26 AUG 2023	14	-307	613	1438
25 AUG 2023	12	-91	776	2442
24 AUG 2023	3	-152	1198	2835
23 AUG 2023	5	-152	1104	3362
22 AUG 2023	3	-137	872	2953
21 AUG 2023	1	63	1223	3033

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)
03 SEP 2023	6	0	0	0	10
02 SEP 2023	15	0	0	0	9
01 SEP 2023	-79	0	0	0	0
31 AUG 2023	-136	0	0	0	-7
30 AUG 2023	82	0	0	0	-8
29 AUG 2023	10	0	0	0	5
28 AUG 2023	17	0	0	0	-3
27 AUG 2023	-33	0	0	0	-0
26 AUG 2023	-90	0	0	0	6
25 AUG 2023	-169	0	0	0	19
24 AUG 2023	22	0	0	0	1
23 AUG 2023	-26	0	0	0	7
22 AUG 2023	-186	0	0	0	2
21 AUG 2023	-326	0	0	0	7

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
03 SEP 2023	2	-NR-	7
02 SEP 2023	2	-NR-	26
01 SEP 2023	1	-NR-	31
31 AUG 2023	1	-NR-	16
30 AUG 2023	1	-NR-	8
29 AUG 2023	5	-NR-	33
28 AUG 2023	2	-NR-	7
27 AUG 2023	809	-NR-	18
26 AUG 2023	9	-NR-	42
25 AUG 2023	5	-NR-	43
24 AUG 2023	3	-NR-	22
23 AUG 2023	3	-NR-	15
22 AUG 2023	341	-NR-	8
21 AUG 2023	1	-NR-	23

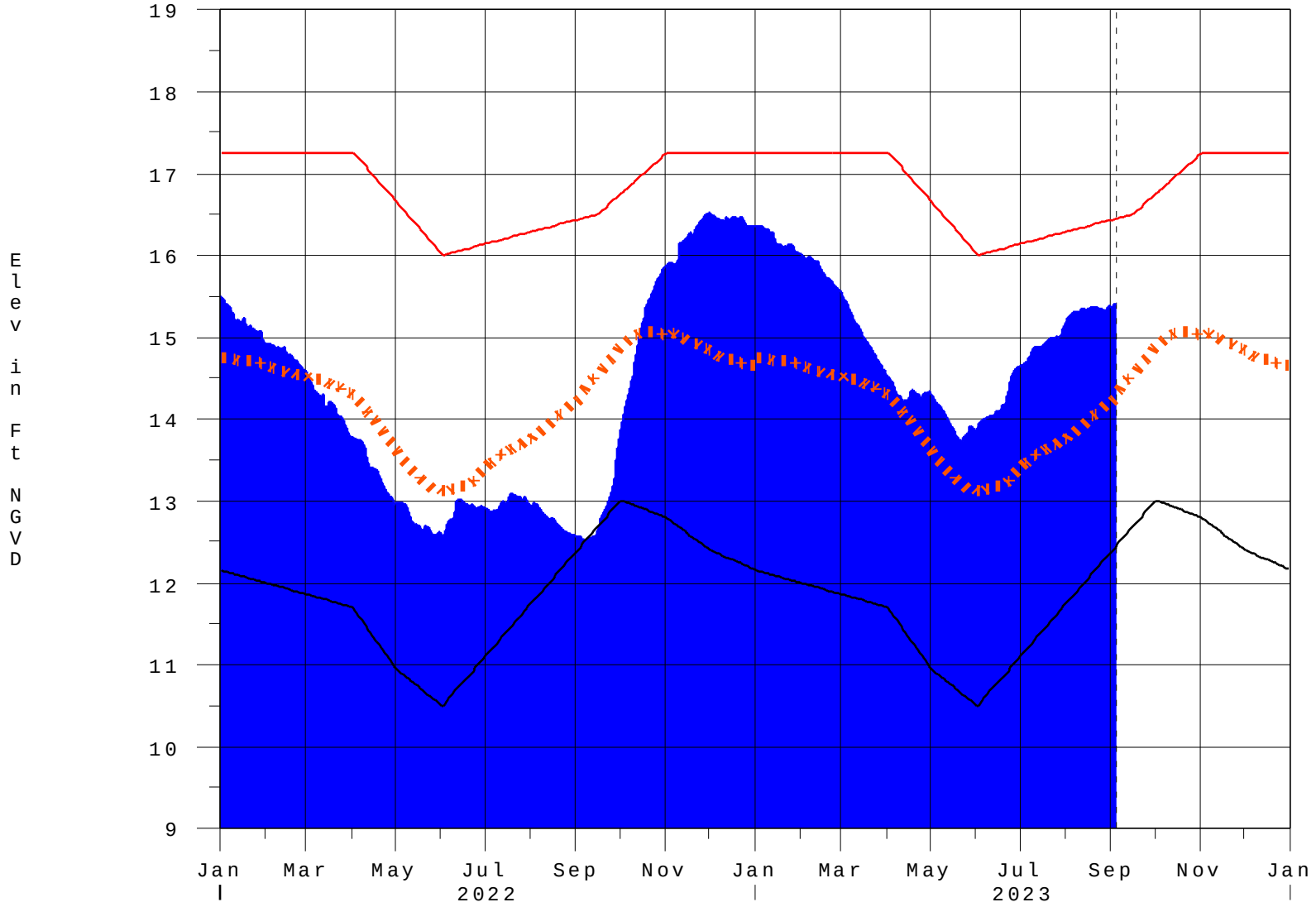
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(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 04SEP2023 @ 19:07  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee

04SEP23 19:00:20



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**