Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 07/10/2023 (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 (Jul-Dec)	N/A	N/A	2.83	Very Wet	2.75	Very Wet	3.87	Very Wet
Multi Seasonal (Jul-Apr)	N/A	N/A	3.25	Wet	3.43	Wet	5.12	Very 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:

4850 cfs 14-day running average for Lake Okeechobee Net Inflow through 07/09/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

-2.29 for Palmer Drought Index on 07/08/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 07/10/2023:

Lake Okeechobee Stage: **14.85 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.18	
Operational Band	High sub-band	15.73	
	Intermediate sub-band	15.27	
	Low sub-band	13.36	← 14.85 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.29	
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 07/10/2023 (ENSO Condition- El Niño):

Status for week ending 07/10/2023*:

Water Supply Risk Evaluation

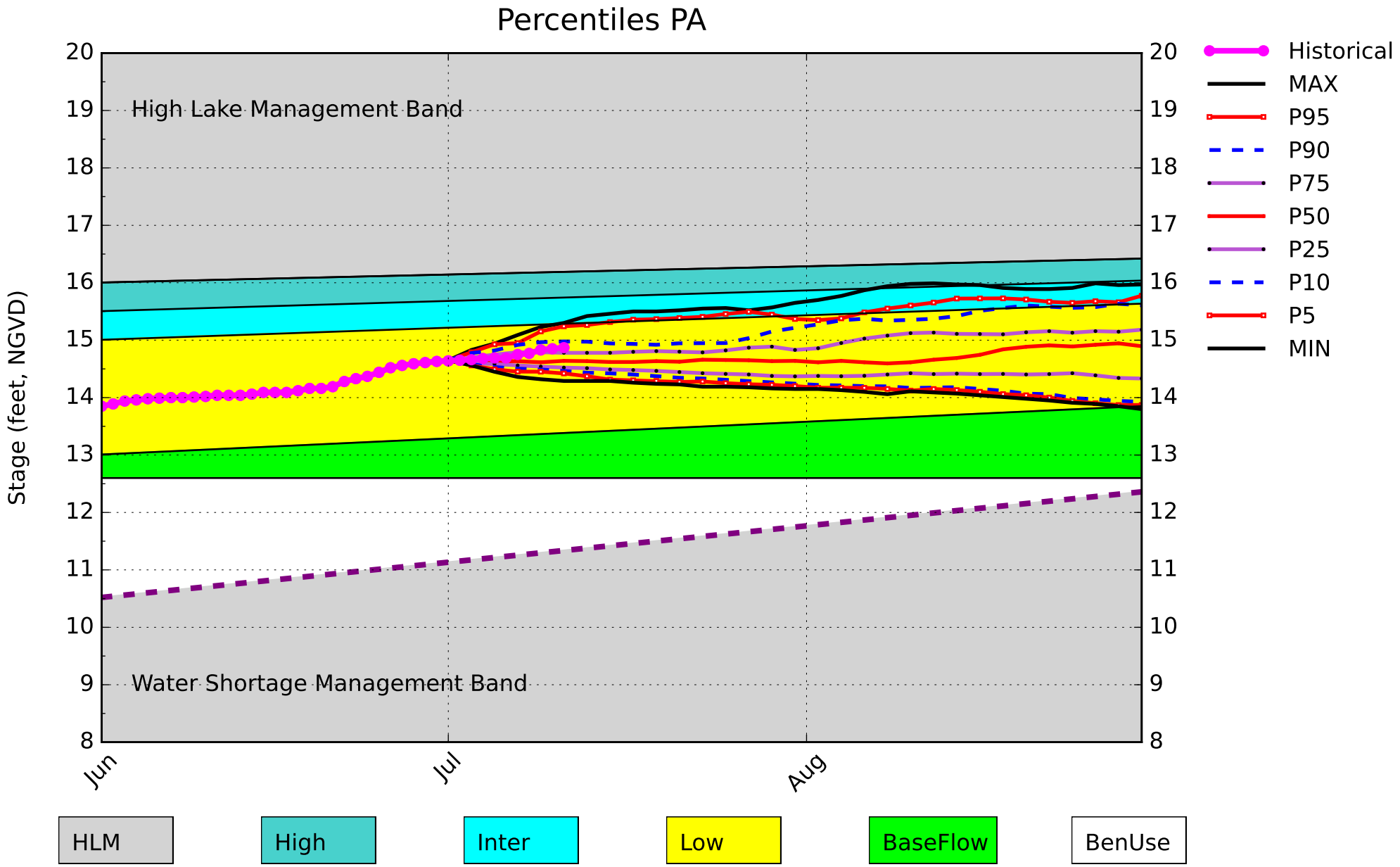
Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	L
	Palmer Drought Index for LOK Tributary Conditions	-2.29 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Equal Chances	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.75 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	3.43 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: 3 Station Average (Site 1-8C)	Above Line 1 (16.03 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (13.10 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.47 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.

---

*- S77 flow data for July 7 is not available from USACE Daily Reports and was assumed to be zero. S80 flow data for July 7-9 is not available from USACE Daily Reports and was substituted with alternative data sources from USGS.

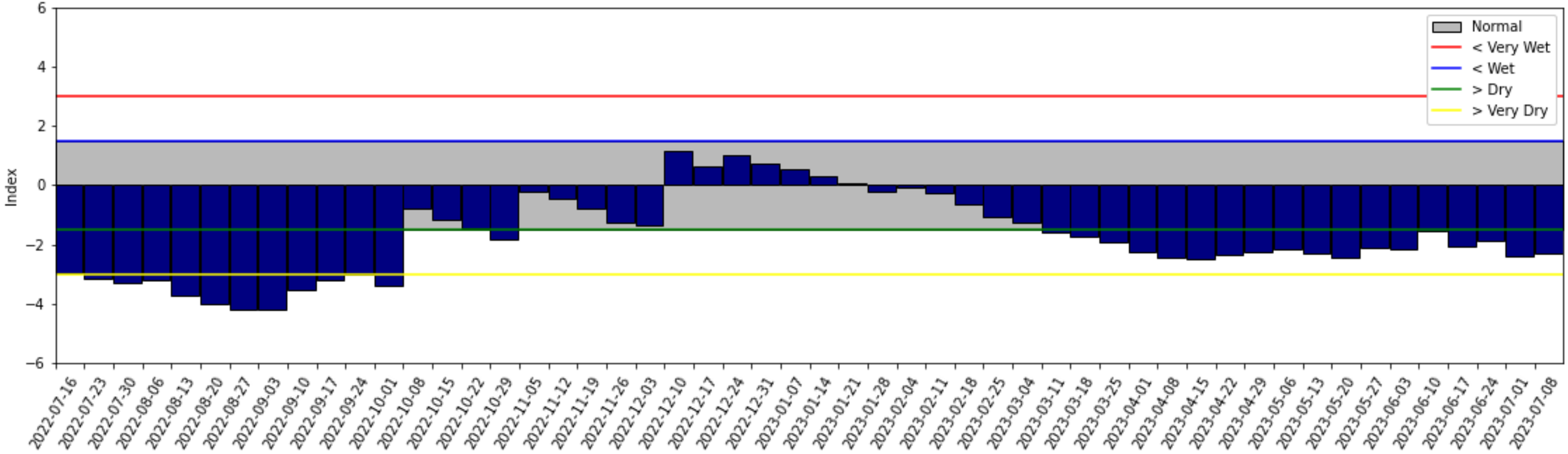
Lake Okeechobee SFWMM July 2023 Position Analysis

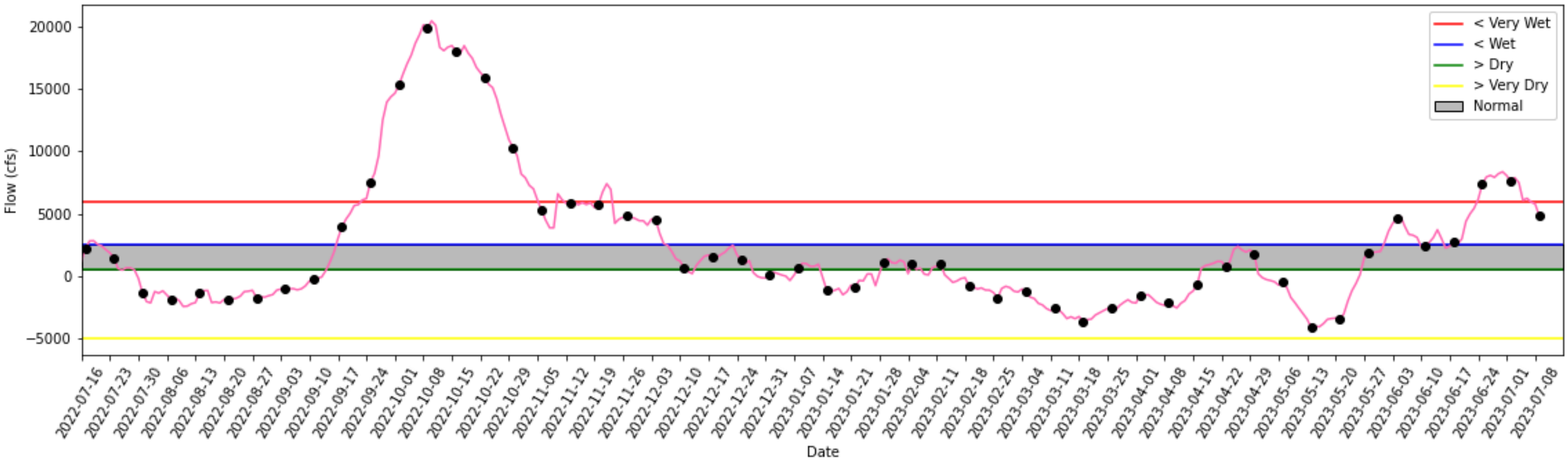


(See assumptions on the Position Analysis Results website)

07/11/23 08:27:06

Tributary Basin Condition Indicators as of July 09 2023





2008 LORS

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

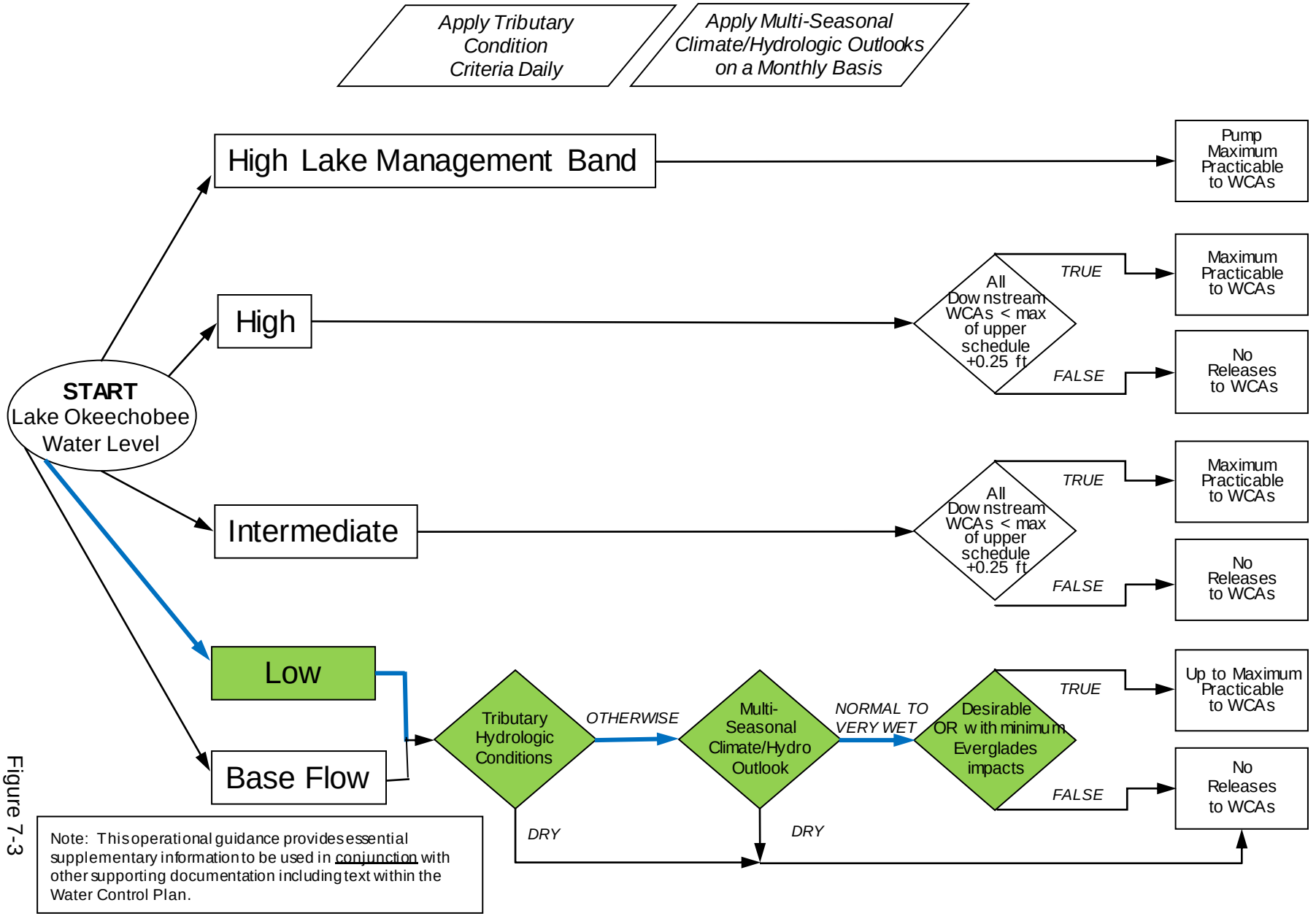


Figure 7-3

2008 LORS

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

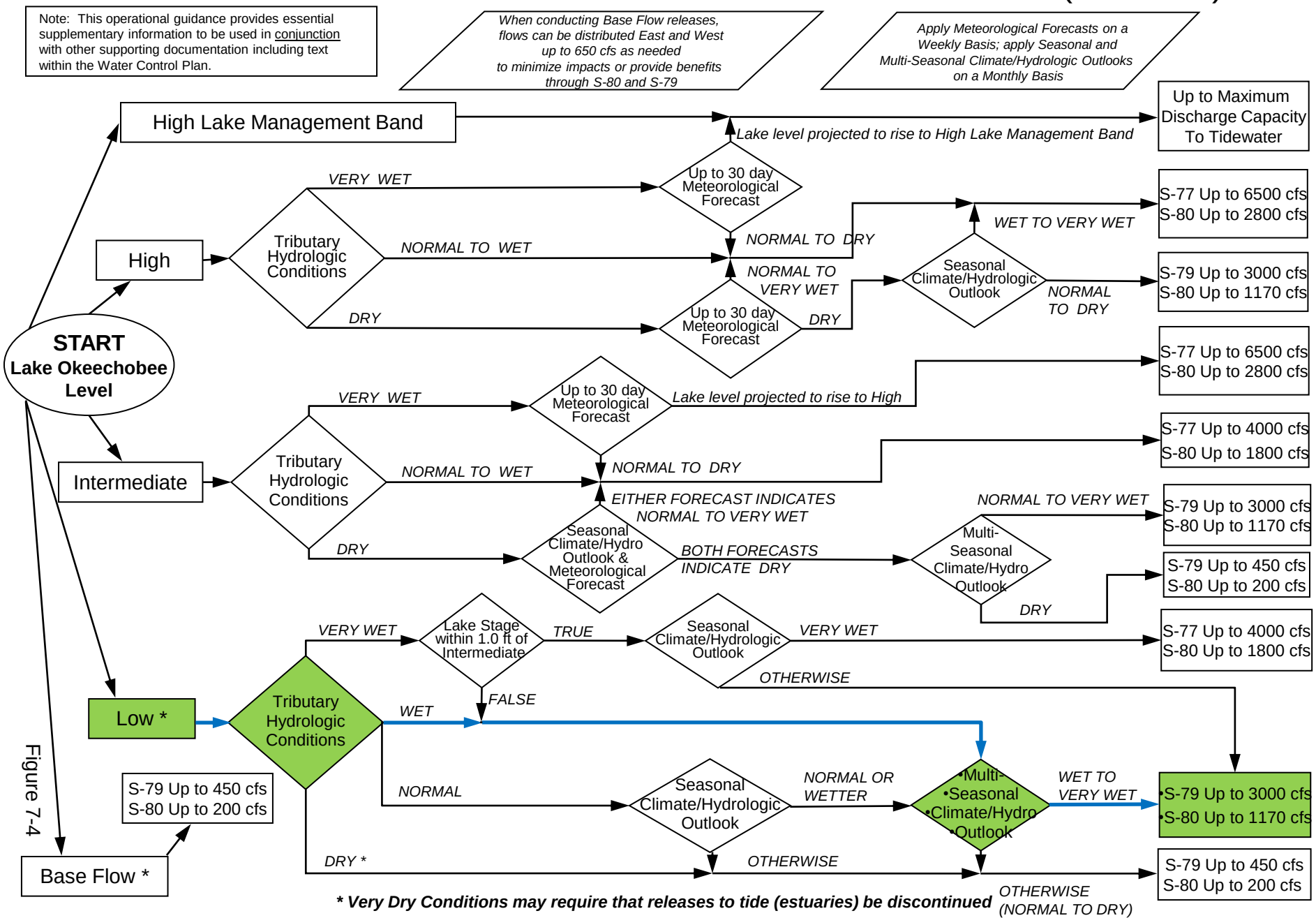


Figure 7-4

U. S. Army Corps of Engineers, Jacksonville District
Lake Okeechobee and Vicinity Report
** Preliminary Data - Subject to Revision **

Data Ending 2400 hours 09 JUL 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	14.85	12.90	13.23	(Official Elv)

Bottom of High Lake Mngmt= 16.18 Top of Water Short Mngmt= 11.29
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.42
Difference from Average LORS2008 2.43

09JUL (1965-2007) Period of Record Average 13.54
Difference from POR Average 1.31

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 8.79'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 6.99'
Bridge Clearance = 50.07'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.95	14.82	14.84	14.82	14.75	15.00	-NR-	14.78

*Combination Okeechobee Avg-Daily Lake Average = 14.85 (*See Note)

Okeechobee Inflows (cfs):

S65E	2170	S65EX1	0	Fisheating Cr	630
S154	0	S191	146	S135 Pumps	0
S84	753	S133 Pumps	210	S2 Pumps	0
S84X	240	S127 Pumps	74	S3 Pumps	0
S71	380	S129 Pumps	51	S4 Pumps	0
S72	310	S131 Pumps	52	C5	0

Total Inflows: 5015

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	4
S127 Culverts	0	S351	0	S308	-NR-
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-NR-		

Total Outflows: No Report Due To Missing S77 or S308 Discharge Data

****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	0.33	S308	0.30

Average Pan Evap x 0.75 Pan Coefficient = 0.24" = 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 4336 cfs or 8600 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:	13.39	14.84	210	43	62	62	12	37				(cfs)
S193:												
S191:	18.68	14.82	146	0.0	0.0	0.0						
S135 Pumps:	13.31	14.75	0	0	0	0	0					(cfs)
S135 Culverts:			0	0.0	0.0							
North West Shore												
S65E:	21.17	14.47	2170	1.0	1.4	0.9	1.2	1.1	1.0			
S65EX1:	21.17	14.47	0									
S127 Pumps:	13.32	14.75	74	36	42	0	0	0				(cfs)
S127 Culvert:			0	0.0								
S129 Pumps:	12.81	14.80	51	49	0	0						(cfs)
S129 Culvert:			0	0.0								
S131 Pumps:	12.94	-NR-	52	-NR-	-NR-							(cfs)
S131 Culvert:			0									
Fisheating Creek												
nr Palmdale		32.50	630									
nr Lakeport												
C5:		-NR-	0	-NR-	-NR-	-NR-						
South Shore												
S4 Pumps:	12.57	-NR-	0	0	0	0						(cfs)
S169:	14.84	-NR-	-NR-	-NR-	-NR-	-NR-						
S310:	14.80		-56									
S3 Pumps:	10.88	14.86	0	0	0	0						(cfs)
S354:	14.86	10.88	0	0.0	0.0							
S2 Pumps:	10.48	14.93	0	0	0	0	0					(cfs)
S351:	14.93	10.48	0	0.0	0.0	0.0						
S352:	14.99	10.81	0	0.0	0.0							
C10A:	-NR-	-NR-		-NR-	-NR-	-NR-	-NR-	-NR-				
L8 Canal PT		14.87	-NR-									
S351 and S352 Temporary Pumps/S354 Spillway												
S351:	10.48	14.93	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-			
S352:	10.81	14.99	0	-NR-	-NR-	-NR-	-NR-					
S354:	10.88	14.86	0	-NR-	-NR-	-NR-	-NR-					
Caloosahatchee River (S77, S78, S79)												
S47B:	11.83	11.64		3.0	2.5							
S47D:	11.44	11.44	137	6.5								
S77:												
Spillway and Sector Preferred Flow:												
	14.71	11.41	0	0.0	0.0	0.0	0.0					
Flow Due to Lockages+:			4									
S78:												

```
    Spillway and Sector Flow:
              11.32      3.13    -NR-    2.0  2.5  2.5  0.0
    Flow Due to Lockages+:          11

  S79:
    Spillway and Sector Flow:
               3.19      1.93    4931    0.0  1.0  3.0  3.0  4.0  4.0  3.0  2.8
    Flow Due to Lockages+:           9
    Percent of flow from S77         0%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              14.92     13.43       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:        -NR-

  S153:        18.77     13.20      52    0.0  0.0
  S80:
    Spillway and Sector Flow:
              13.49      0.25       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:        -NR-
    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	192	3
S78:	-NR-	0.00	0.00	214	1
S79:	-NR-	0.00	0.00	146	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:	-NR-	0.00	0.00	114	6
S80:	-NR-	0.00	0.00	212	1
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  09 JUL 2023          14.85 Difference from 09JUL23
   09JUL23  -1 Day  =       08 JUL 2023          14.83            -0.02
```

09JUL23 -2 Days =	07 JUL 2023	14.77	-0.08
09JUL23 -3 Days =	06 JUL 2023	14.75	-0.10
09JUL23 -4 Days =	05 JUL 2023	14.69	-0.16
09JUL23 -5 Days =	04 JUL 2023	14.69	-0.16
09JUL23 -6 Days =	03 JUL 2023	14.68	-0.17
09JUL23 -7 Days =	02 JUL 2023	14.66	-0.19
09JUL23 -30 Days =	09 JUN 2023	14.02	-0.83
09JUL23 -1 Year =	09 JUL 2022	12.90	-1.95
09JUL23 -2 Year =	09 JUL 2021	13.23	-1.62

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
09JUL23 Today =	09 JUL 2023	5069 MON	4336
09JUL23 -1 Day =	08 JUL 2023	6062 SUN	12856
09JUL23 -2 Days =	07 JUL 2023	6229 SAT	-NR-
09JUL23 -3 Days =	06 JUL 2023	6389 FRI	12705
09JUL23 -4 Days =	05 JUL 2023	6238 THU	0
09JUL23 -5 Days =	04 JUL 2023	7650 WED	2118
09JUL23 -6 Days =	03 JUL 2023	8046 TUE	4235
09JUL23 -7 Days =	02 JUL 2023	7744 MON	2118
09JUL23 -8 Days =	01 JUL 2023	8212 SUN	2118
09JUL23 -9 Days =	30 JUN 2023	8522 SAT	2118
09JUL23 -10 Days =	29 JUN 2023	8370 FRI	4235
09JUL23 -11 Days =	28 JUN 2023	8068 THU	4235
09JUL23 -12 Days =	27 JUN 2023	8219 WED	6353
09JUL23 -13 Days =	26 JUN 2023	8068 TUE	8470

S65E

	Average Flow over previous 14 days		Avg-Daily Flow
09JUL23 Today=	09 JUL 2023	3064 MON	2372
09JUL23 -1 Day =	08 JUL 2023	3069 SUN	2828
09JUL23 -2 Days =	07 JUL 2023	3046 SAT	2864
09JUL23 -3 Days =	06 JUL 2023	3012 FRI	3016
09JUL23 -4 Days =	05 JUL 2023	2962 THU	2972
09JUL23 -5 Days =	04 JUL 2023	2913 WED	3234
09JUL23 -6 Days =	03 JUL 2023	2816 TUE	3499
09JUL23 -7 Days =	02 JUL 2023	2649 MON	3545
09JUL23 -8 Days =	01 JUL 2023	2484 SUN	3664
09JUL23 -9 Days =	30 JUN 2023	2288 SAT	3375
09JUL23 -10 Days =	29 JUN 2023	2119 FRI	3210
09JUL23 -11 Days =	28 JUN 2023	1934 THU	2955
09JUL23 -12 Days =	27 JUN 2023	1737 WED	2720
09JUL23 -13 Days =	26 JUN 2023	1543 TUE	2642

S65EX1

	Average Flow over previous 14 days		Avg-Daily Flow
09JUL23 Today=	09 JUL 2023	0 MON	0
09JUL23 -1 Day =	08 JUL 2023	0 SUN	0
09JUL23 -2 Days =	07 JUL 2023	0 SAT	0
09JUL23 -3 Days =	06 JUL 2023	0 FRI	0
09JUL23 -4 Days =	05 JUL 2023	0 THU	0
09JUL23 -5 Days =	04 JUL 2023	0 WED	0
09JUL23 -6 Days =	03 JUL 2023	0 TUE	0
09JUL23 -7 Days =	02 JUL 2023	0 MON	0
09JUL23 -8 Days =	01 JUL 2023	0 SUN	0
09JUL23 -9 Days =	30 JUN 2023	0 SAT	0
09JUL23 -10 Days =	29 JUN 2023	0 FRI	0
09JUL23 -11 Days =	28 JUN 2023	0 THU	0
09JUL23 -12 Days =	27 JUN 2023	32 WED	0
09JUL23 -13 Days =	26 JUN 2023	76 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)
09 JUL 2023	8	903	-NR-	9878
08 JUL 2023	6	408	-NR-	5410
07 JUL 2023	-NR-	331	-NR-	3937
06 JUL 2023	9	463	-NR-	4708
05 JUL 2023	2	139	-NR-	5477
04 JUL 2023	8	227	2571	6674
03 JUL 2023	6	184	2897	6608
02 JUL 2023	11	310	3081	6791
01 JUL 2023	11	483	4149	8356
30 JUN 2023	12	430	4123	8855
29 JUN 2023	4	707	3009	7370
28 JUN 2023	7	963	2576	4973
27 JUN 2023	6	1236	3996	6882
26 JUN 2023	5	985	4406	8758

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)
09 JUL 2023	-111	0	0	0	-NR-
08 JUL 2023	-78	0	0	0	-NR-
07 JUL 2023	-58	0	0	0	-NR-
06 JUL 2023	-82	0	0	0	-NR-
05 JUL 2023	-68	0	0	0	-NR-
04 JUL 2023	-7	0	0	0	-NR-
03 JUL 2023	-57	0	0	0	-NR-
02 JUL 2023	-41	0	0	0	-NR-
01 JUL 2023	-123	0	0	0	-NR-
30 JUN 2023	-144	0	0	0	-NR-
29 JUN 2023	-85	0	0	0	-NR-
28 JUN 2023	-233	0	0	0	-NR-
27 JUN 2023	-385	0	0	0	-NR-
26 JUN 2023	-401	0	0	0	-NR-

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
09 JUL 2023	-NR-	-NR-	-NR-
08 JUL 2023	7	-NR-	-NR-
07 JUL 2023	4	-NR-	-NR-
06 JUL 2023	5	-NR-	29
05 JUL 2023	2	-NR-	33
04 JUL 2023	3	-NR-	29
03 JUL 2023	4	-NR-	25
02 JUL 2023	3	-NR-	30
01 JUL 2023	2	-NR-	38
30 JUN 2023	1	-NR-	38
29 JUN 2023	2	-NR-	23
28 JUN 2023	2	-NR-	35
27 JUN 2023	1	-NR-	34
26 JUN 2023	2	-NR-	875

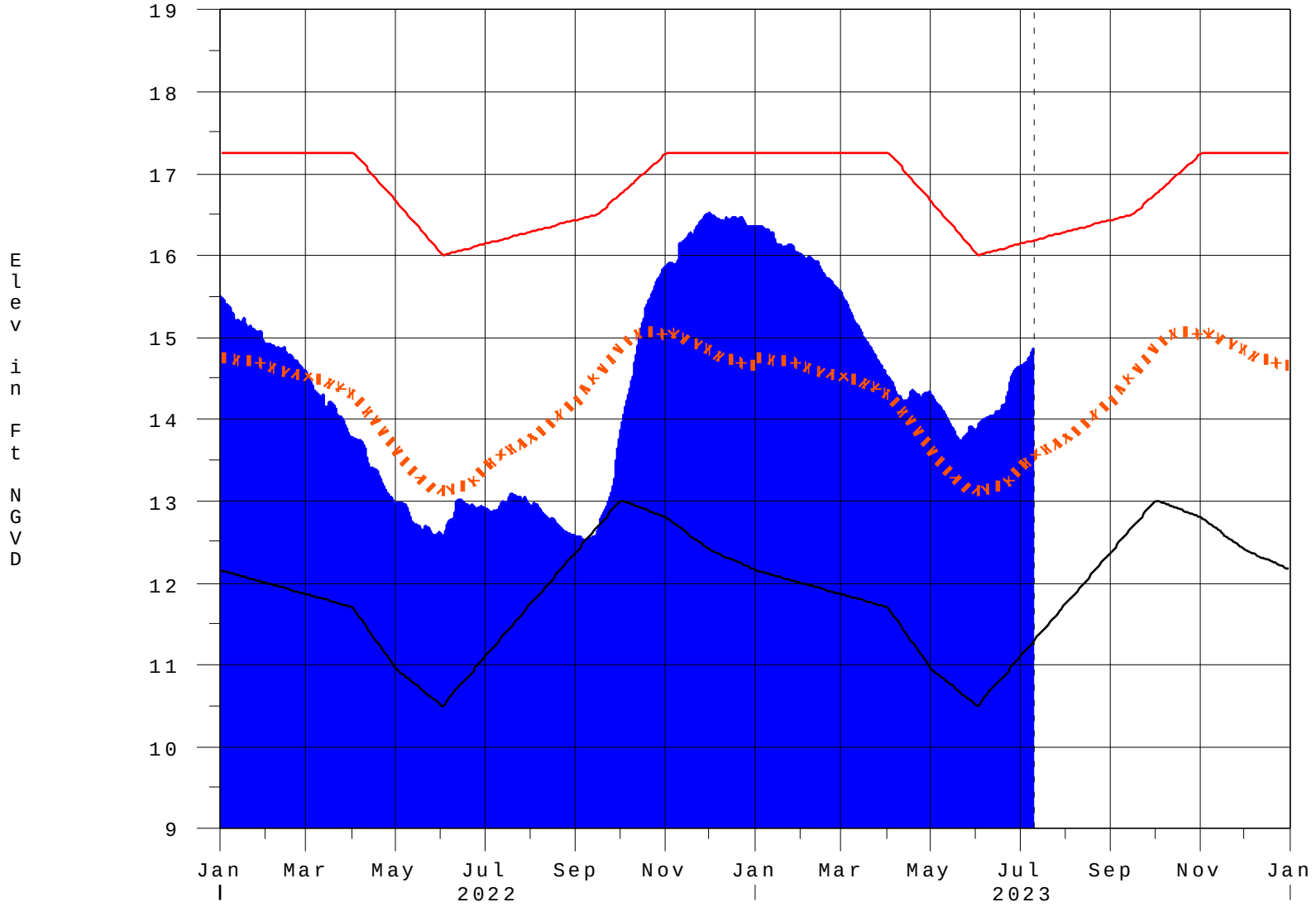
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(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 10JUL2023 @ 08:45  ** Preliminary Data - Subject to Revision **
```

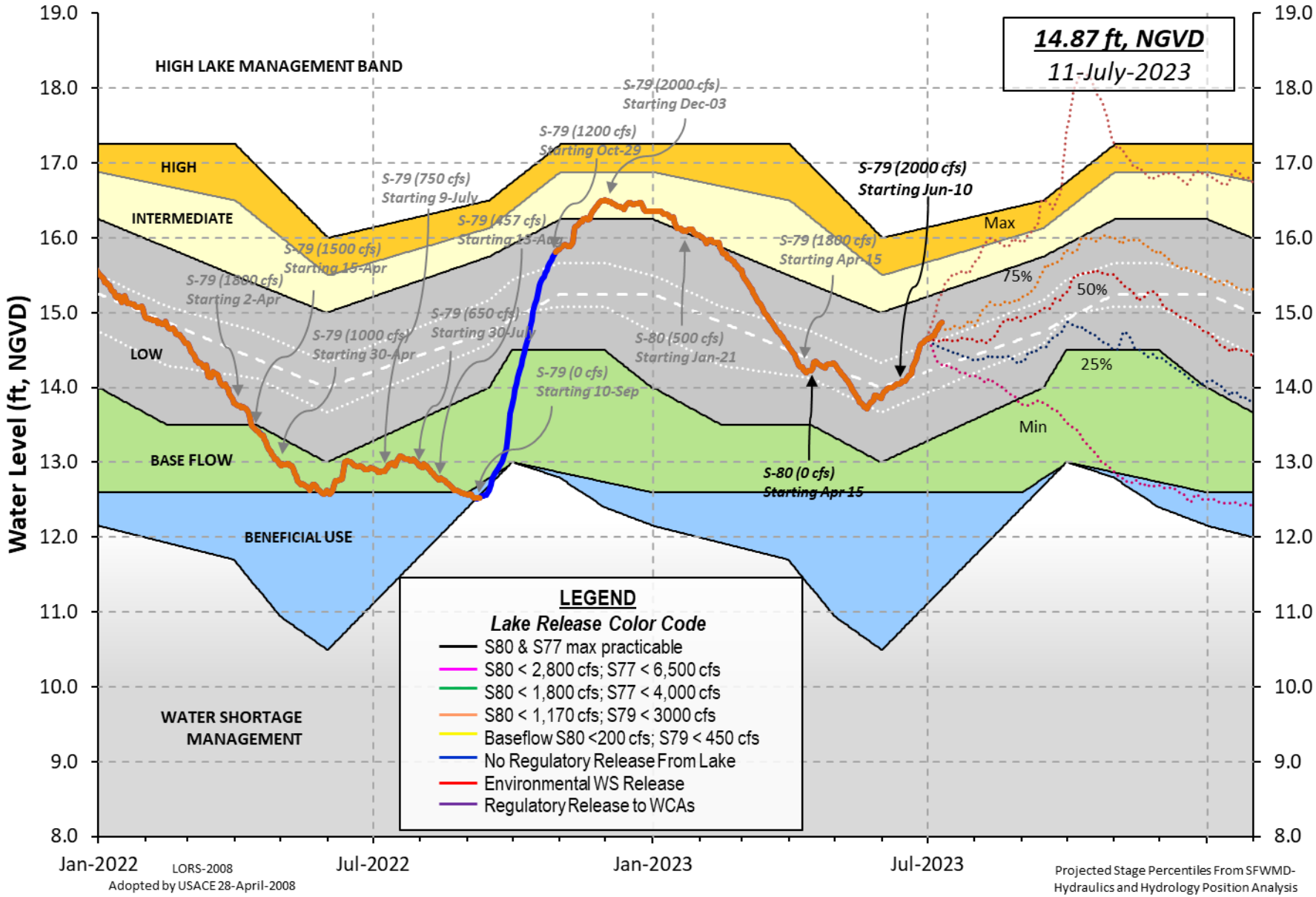
Lake Okeechobee

10JUL23 08:45:27



High Lake Management
Okeechobee Avg Elev
Average Elev [1965-2007]
Water Shortage Management

Lake Okeechobee Water Level History and Projected Stages



LORS-2008
Adopted by USACE 28-April-2008

Projected Stage Percentiles From SFWMD-Hydraulics and Hydrology Position Analysis

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**