Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 08/14/2023 (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 (Aug-Jan)	N/A	N/A	2.31	Very Wet	2.57	Very Wet	3.69	Very Wet
Multi Seasonal (Aug-Apr)	N/A	N/A	2.55	Wet	3.41	Wet	4.45	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:

4064 cfs 14-day running average for Lake Okeechobee Net Inflow through 08/13/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Wet.

-2.16 for Palmer Drought Index on 08/12/2023.
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 08/14/2023:

Lake Okeechobee Stage: **15.35 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.34	
Operational Band	High sub-band	15.93	
	Intermediate sub-band	15.52	
	Low sub-band	13.69	← 15.35 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		12.01	
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 08/14/2023 (ENSO Condition- El Niño):

Status for week ending 08/14/2023*:

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	-2.16 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Equal Chances	L
		3 months: Equal Chances	L
	LOK Seasonal Net Inflow Outlook	2.57 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	3.41 ft	L
	ENSO Forecast	Wet	
WCAs	WCA 1: Site 1-8C	Above Line 1 (16.80 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.90 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (10.78 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.

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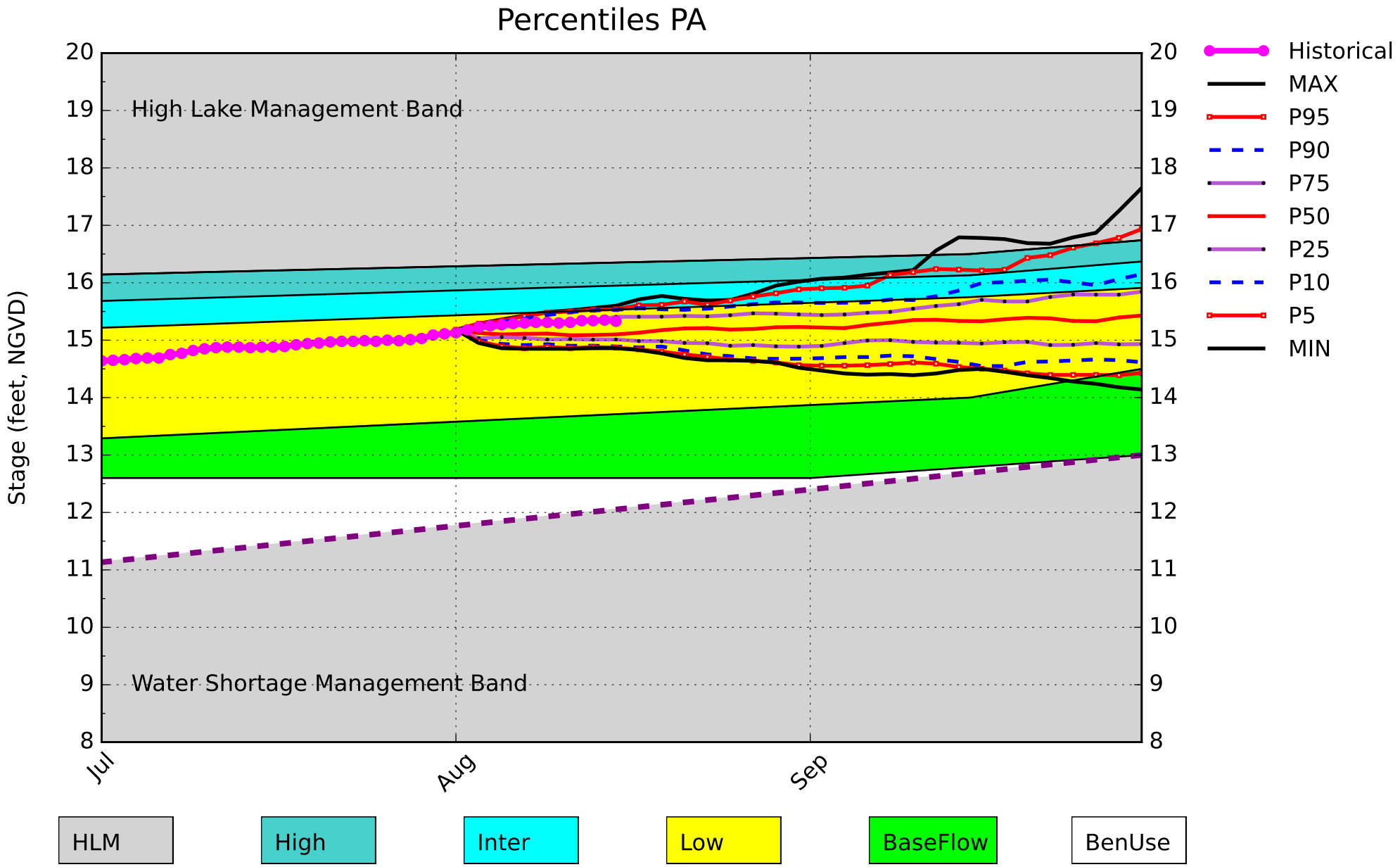
*- S80 flow data for August 12 & 13 is not available from USACE Daily Reports and was assumed to be 0.

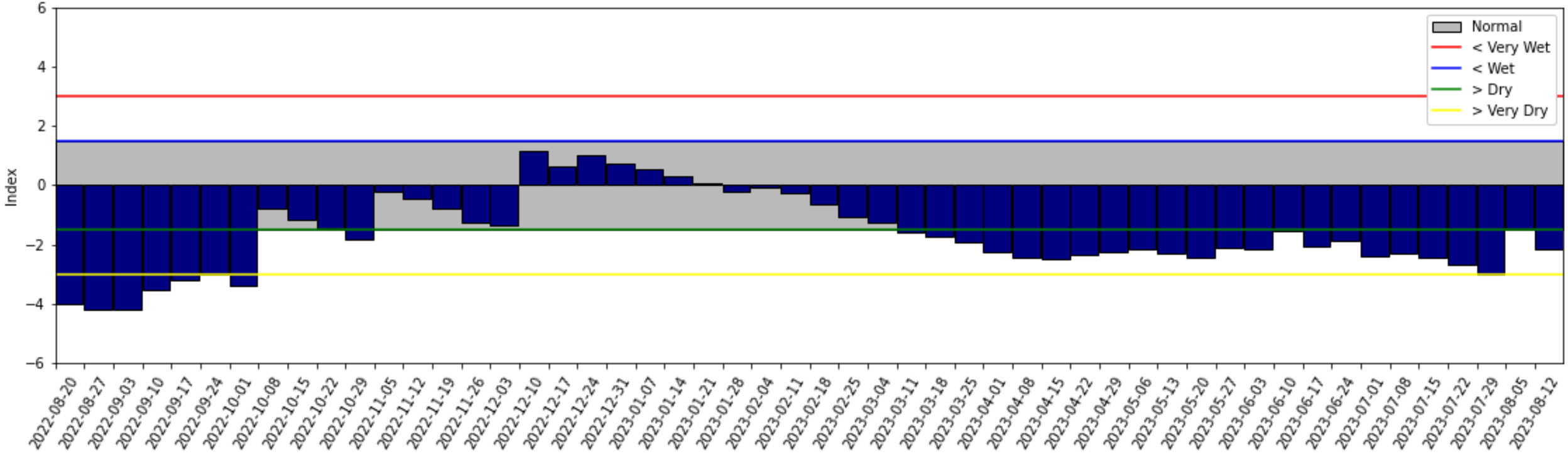
Lake Okeechobee SFWMM August 2023 Position Analysis



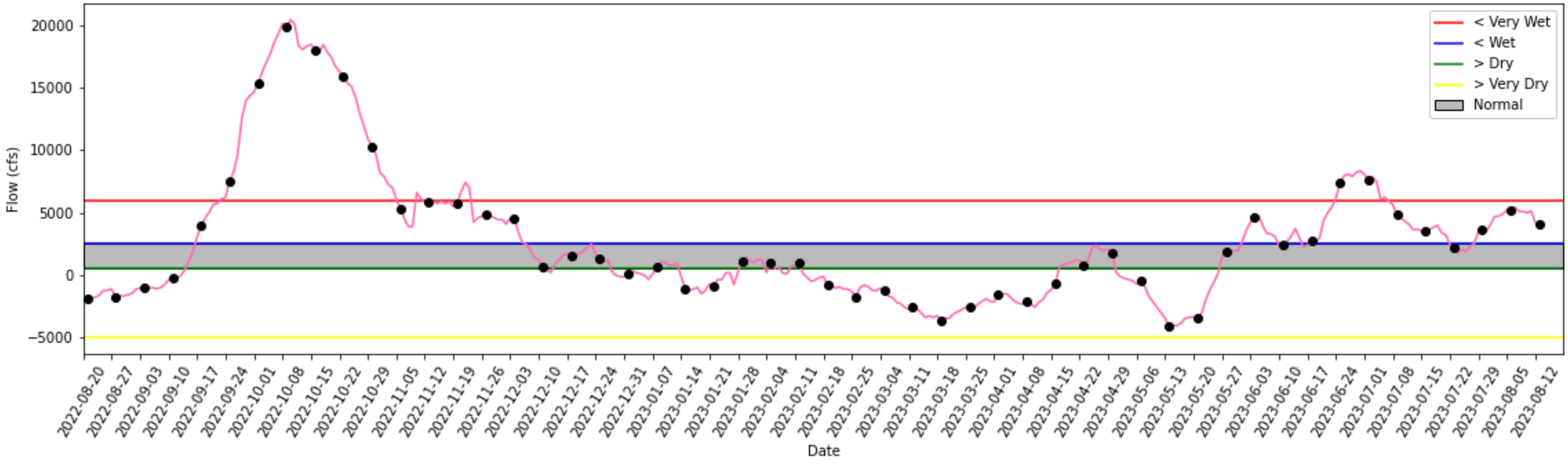
(See assumptions on the Position Analysis Results website)

08/15/23 08:19:45

Tributary Basin Condition Indicators as of August 13 2023



Date



Date

2008 LORS

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

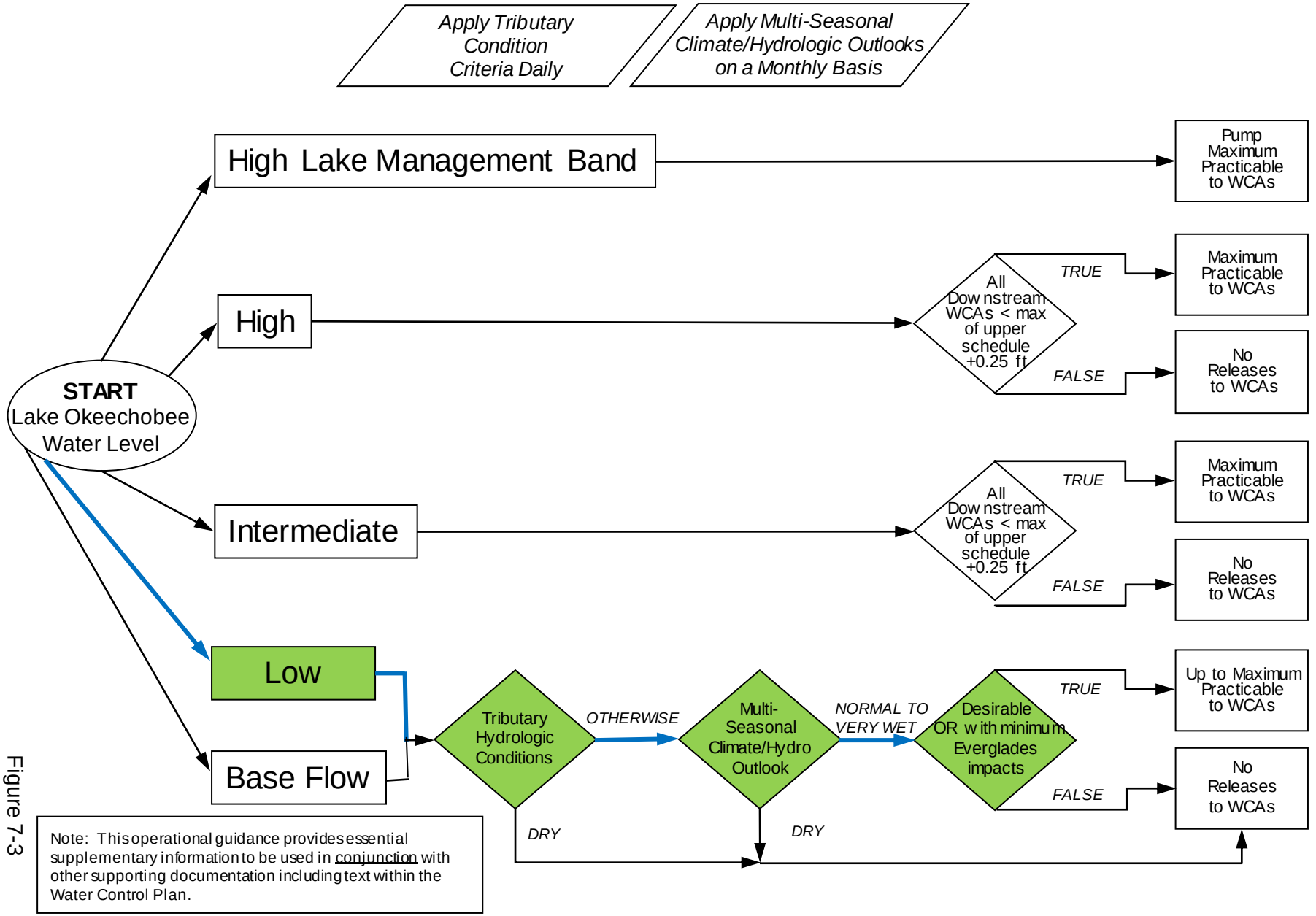
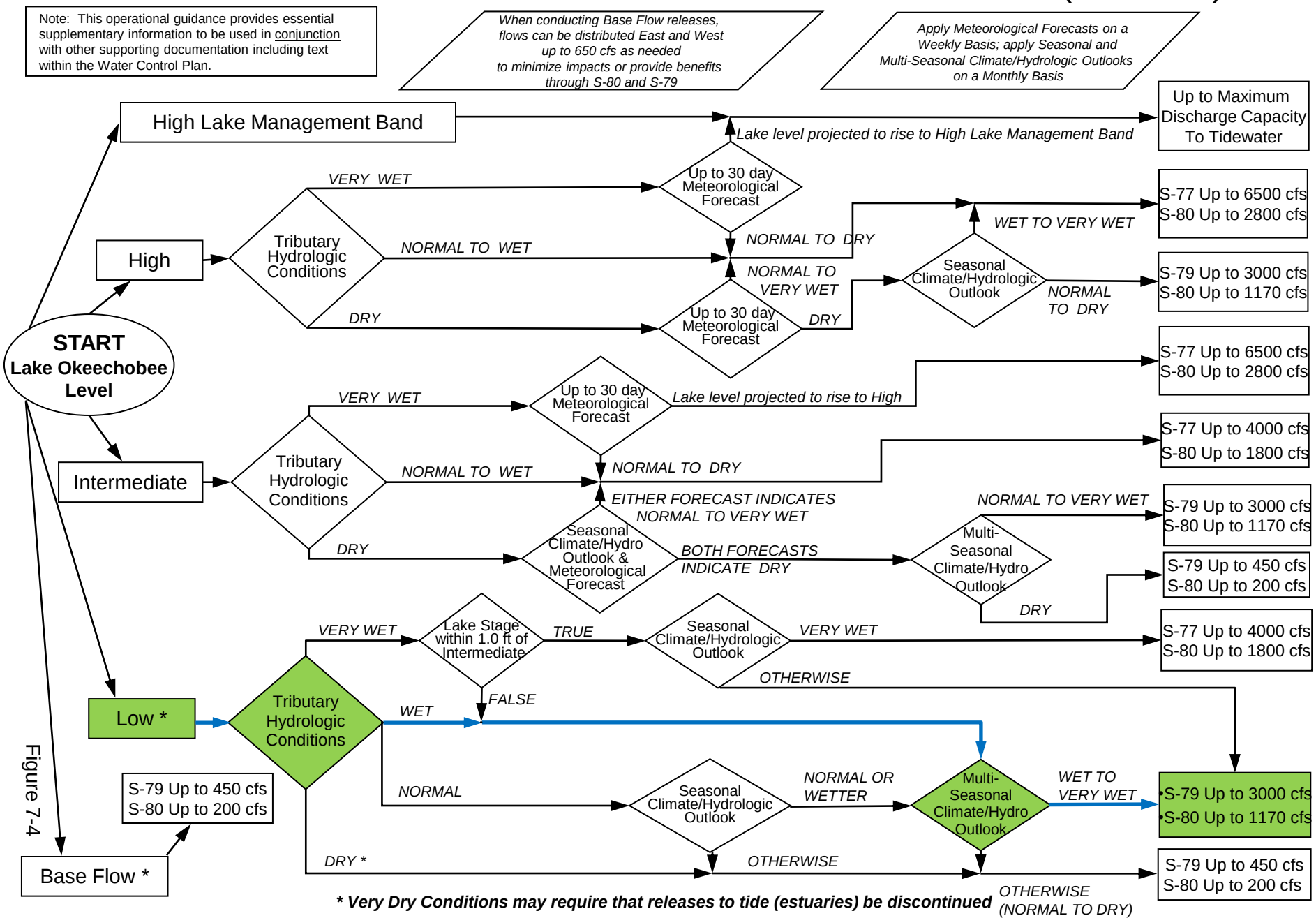


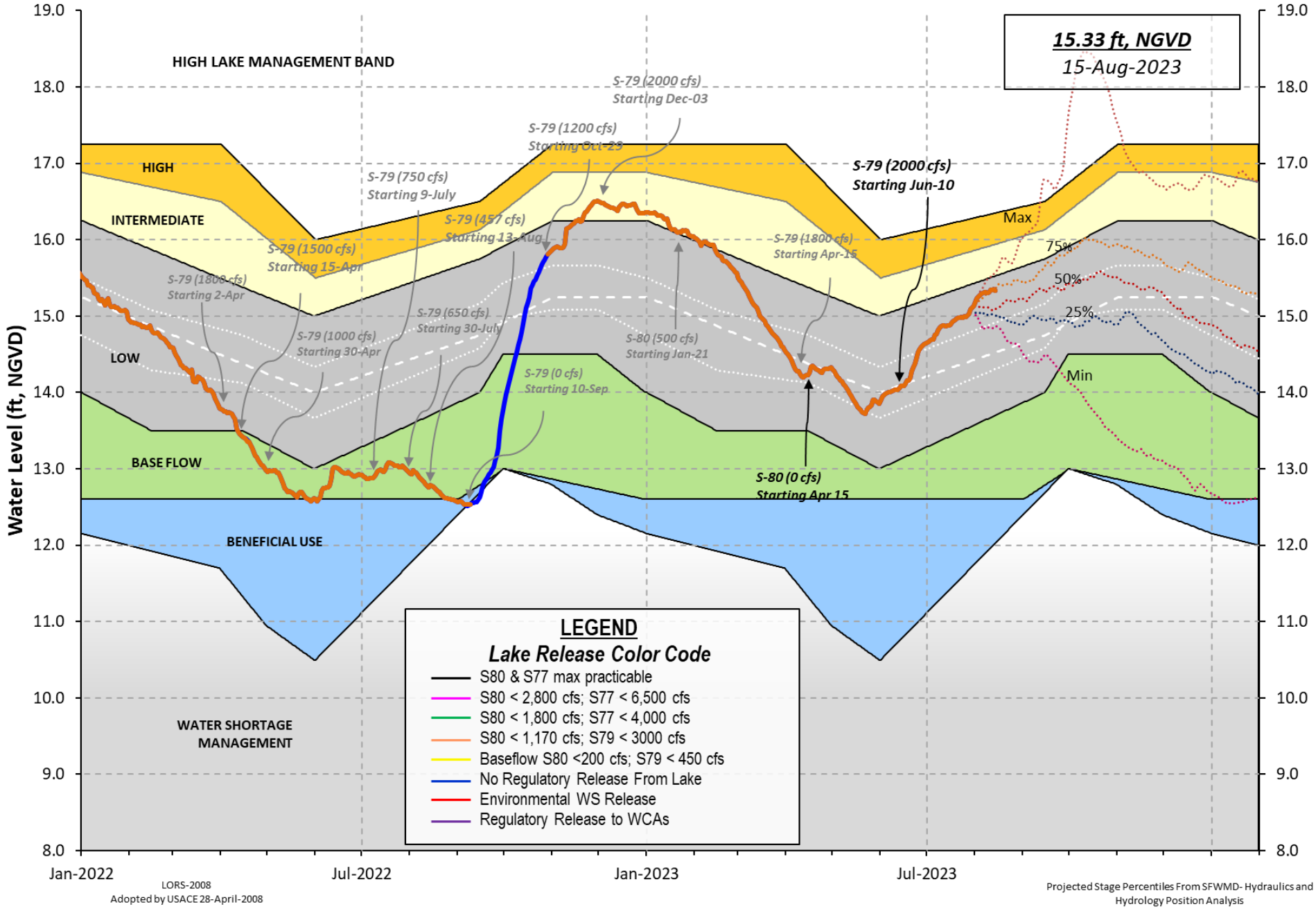
Figure 7-3

2008 LORS

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



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

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

Data Ending 2400 hours 13 AUG 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	15.35	12.76	14.17	(Official Elv)

Bottom of High Lake Mngmt= 16.34 Top of Water Short Mngmt= 12.01
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.91
Difference from Average LORS2008 2.44

13AUG (1965-2007) Period of Record Average 13.95
Difference from POR Average 1.40

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 9.29'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 7.49'
Bridge Clearance = 49.54'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.51	15.36	15.25	15.24	15.22	15.38	15.23	15.46

*Combination Okeechobee Avg-Daily Lake Average = 15.35 (*See Note)

Okeechobee Inflows (cfs):

S65E	1007	S65EX1	0	Fisheating Cr	582
S154	30	S191	0	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	64	S3 Pumps	0
S71	180	S129 Pumps	0	S4 Pumps	0
S72	448	S131 Pumps	28	C5	0

Total Inflows: 2340

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	0	S77	386
S127 Culverts	0	S351	0	S308	1
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	-1		

Total Outflows: 386

****S77 below flow meter is being used to compute Total Outflow.
****S308 structure flow is being used to compute Total Outflow.

Okeechobee Pan Evaporation (inches):

S77	0.32	S308	0.33

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 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:	13.40	15.43	0	0	0	0	0	0	(cfs)		
S193:											
S191:	19.00	15.43	0	0.0	0.0	0.0					
S135 Pumps:	13.42	15.30	0	0	0	0	0	(cfs)			
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.84	15.62	1007	0.3	0.3	0.4	0.0	0.5	0.5		
S65EX1:	20.84	15.62	0								
S127 Pumps:	13.37	15.40	64	0	0	0	43	25	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	12.90	15.39	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	12.82	-NR-	28	-NR-	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		32.40	582								
nr Lakeport											
S282	15.38	15.43		0.0	0.0	0.1					
South Shore											
S4 Pumps:	10.97	-NR-	0	0	0	0	(cfs)				
S169:	15.20	-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	15.17		18								
S3 Pumps:	10.94	15.15	0	0	0	0	(cfs)				
S354:	15.15	10.94	0	0.0	0.0						
S2 Pumps:	10.54	15.19	0	0	0	0	0	(cfs)			
S351:	15.19	10.54	0	0.0	0.0	0.0					
S352:	15.40	10.44	0	0.0	0.0						
S271:	15.53	15.23		-NR-	0.0	0.0	0.0				
L8 Canal PT		14.94	-1								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.54	15.19	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	10.44	15.40	0	-NR-	-NR-	-NR-	-NR-				
S354:	10.94	15.15	0	-NR-	-NR-	-NR-	-NR-				
Caloosahatchee River (S77, S78, S79)											
S47B:	12.90	12.36		2.0	2.0						
S47D:	12.50	10.95	73	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	15.28	10.76	384	0.0	0.0	0.0	0.0				
Flow Due to Lockages+:			1								
S78:											

```
    Spillway and Sector Flow:
              10.81      2.89    1047    0.5  0.0  2.5  0.0
    Flow Due to Lockages+:        -NR-

  S79:
    Spillway and Sector Flow:
               3.16      0.78    2091    0.0  0.0  1.0  2.0  2.5  2.0  0.0  0.0
    Flow Due to Lockages+:        -NR-
    Percent of flow from S77        18%
    Chloride            (ppm)     -N


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              14.91     13.96       0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           1

  S153:        18.66     13.66      49    0.0  0.0
  S80:
    Spillway and Sector Flow:
              13.89      1.00       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	159	2
S78:	-NR-	0.00	0.00	120	4
S79:	-NR-	0.00	0.00	109	6
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	99	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  13 AUG 2023          15.35 Difference from 13AUG23
   13AUG23  -1 Day  =       12 AUG 2023          15.34            -0.01
```

13AUG23	-2 Days =	11 AUG 2023	15.34	-0.01
13AUG23	-3 Days =	10 AUG 2023	15.31	-0.04
13AUG23	-4 Days =	09 AUG 2023	15.30	-0.05
13AUG23	-5 Days =	08 AUG 2023	15.31	-0.04
13AUG23	-6 Days =	07 AUG 2023	15.31	-0.04
13AUG23	-7 Days =	06 AUG 2023	15.30	-0.05
13AUG23	-30 Days =	14 JUL 2023	14.88	-0.47
13AUG23	-1 Year =	13 AUG 2022	12.76	-2.59
13AUG23	-2 Year =	13 AUG 2021	14.17	-1.18

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
13AUG23	Today =	13 AUG 2023	4071	MON	2552
13AUG23	-1 Day =	12 AUG 2023	4224	SUN	366
13AUG23	-2 Days =	11 AUG 2023	5152	SAT	7042
13AUG23	-3 Days =	10 AUG 2023	4984	FRI	2806
13AUG23	-4 Days =	09 AUG 2023	5118	THU	-1397
13AUG23	-5 Days =	08 AUG 2023	5105	WED	763
13AUG23	-6 Days =	07 AUG 2023	5443	TUE	2381
13AUG23	-7 Days =	06 AUG 2023	5175	MON	2168
13AUG23	-8 Days =	05 AUG 2023	5199	SUN	4338
13AUG23	-9 Days =	04 AUG 2023	4889	SAT	4514
13AUG23	-10 Days =	03 AUG 2023	4718	FRI	4672
13AUG23	-11 Days =	02 AUG 2023	4687	THU	11094
13AUG23	-12 Days =	01 AUG 2023	4194	WED	11108
13AUG23	-13 Days =	31 JUL 2023	3618	TUE	4584

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
13AUG23	Today=	13 AUG 2023	1561	MON	1104
13AUG23	-1 Day =	12 AUG 2023	1577	SUN	1160
13AUG23	-2 Days =	11 AUG 2023	1596	SAT	954
13AUG23	-3 Days =	10 AUG 2023	1625	FRI	1069
13AUG23	-4 Days =	09 AUG 2023	1629	THU	1479
13AUG23	-5 Days =	08 AUG 2023	1624	WED	1660
13AUG23	-6 Days =	07 AUG 2023	1616	TUE	1922
13AUG23	-7 Days =	06 AUG 2023	1593	MON	2298
13AUG23	-8 Days =	05 AUG 2023	1553	SUN	2026
13AUG23	-9 Days =	04 AUG 2023	1535	SAT	2041
13AUG23	-10 Days =	03 AUG 2023	1532	FRI	1498
13AUG23	-11 Days =	02 AUG 2023	1575	THU	1450
13AUG23	-12 Days =	01 AUG 2023	1636	WED	1812
13AUG23	-13 Days =	31 JUL 2023	1660	TUE	1378

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
13AUG23	Today=	13 AUG 2023	0	MON	0
13AUG23	-1 Day =	12 AUG 2023	0	SUN	0
13AUG23	-2 Days =	11 AUG 2023	0	SAT	0
13AUG23	-3 Days =	10 AUG 2023	0	FRI	0
13AUG23	-4 Days =	09 AUG 2023	0	THU	0
13AUG23	-5 Days =	08 AUG 2023	0	WED	0
13AUG23	-6 Days =	07 AUG 2023	0	TUE	0
13AUG23	-7 Days =	06 AUG 2023	0	MON	0
13AUG23	-8 Days =	05 AUG 2023	0	SUN	0
13AUG23	-9 Days =	04 AUG 2023	0	SAT	0
13AUG23	-10 Days =	03 AUG 2023	0	FRI	0
13AUG23	-11 Days =	02 AUG 2023	0	THU	0
13AUG23	-12 Days =	01 AUG 2023	0	WED	0
13AUG23	-13 Days =	31 JUL 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)
13 AUG 2023	1451	762	-NR-	-NR-
12 AUG 2023	2638	726	-NR-	5694
11 AUG 2023	2168	1068	-NR-	5350
10 AUG 2023	1270	1297	2011	5716
09 AUG 2023	1535	1652	2252	4738
08 AUG 2023	1523	1805	2601	6236
07 AUG 2023	444	831	2590	7214
06 AUG 2023	7	1076	2351	6707
05 AUG 2023	8	780	2014	7829
04 AUG 2023	84	450	2237	8237
03 AUG 2023	8	250	2540	7670
02 AUG 2023	9	576	3601	7337
01 AUG 2023	7	1005	4159	8646
31 JUL 2023	82	768	2946	4877

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)
13 AUG 2023	35	0	0	0	-1
12 AUG 2023	-105	0	0	0	1
11 AUG 2023	-103	0	0	0	5
10 AUG 2023	-61	0	0	0	-14
09 AUG 2023	18	0	0	0	0
08 AUG 2023	4	0	0	0	-0
07 AUG 2023	-2	0	0	0	4
06 AUG 2023	-58	0	0	0	-5
05 AUG 2023	22	0	0	0	-15
04 AUG 2023	-75	0	0	0	-2
03 AUG 2023	-14	157	0	0	6
02 AUG 2023	-36	308	0	195	8
01 AUG 2023	-29	0	0	0	-8
31 JUL 2023	6	0	0	0	0

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
13 AUG 2023	3	-NR-	-NR-
12 AUG 2023	3	-NR-	-NR-
11 AUG 2023	7	-NR-	35
10 AUG 2023	4	-NR-	35
09 AUG 2023	4	-NR-	27
08 AUG 2023	3	-NR-	15
07 AUG 2023	2	-NR-	19
06 AUG 2023	4	-NR-	30
05 AUG 2023	5	-NR-	438
04 AUG 2023	283	-NR-	18
03 AUG 2023	538	-NR-	21
02 AUG 2023	4	-NR-	0
01 AUG 2023	507	-NR-	45
31 JUL 2023	384	-NR-	12

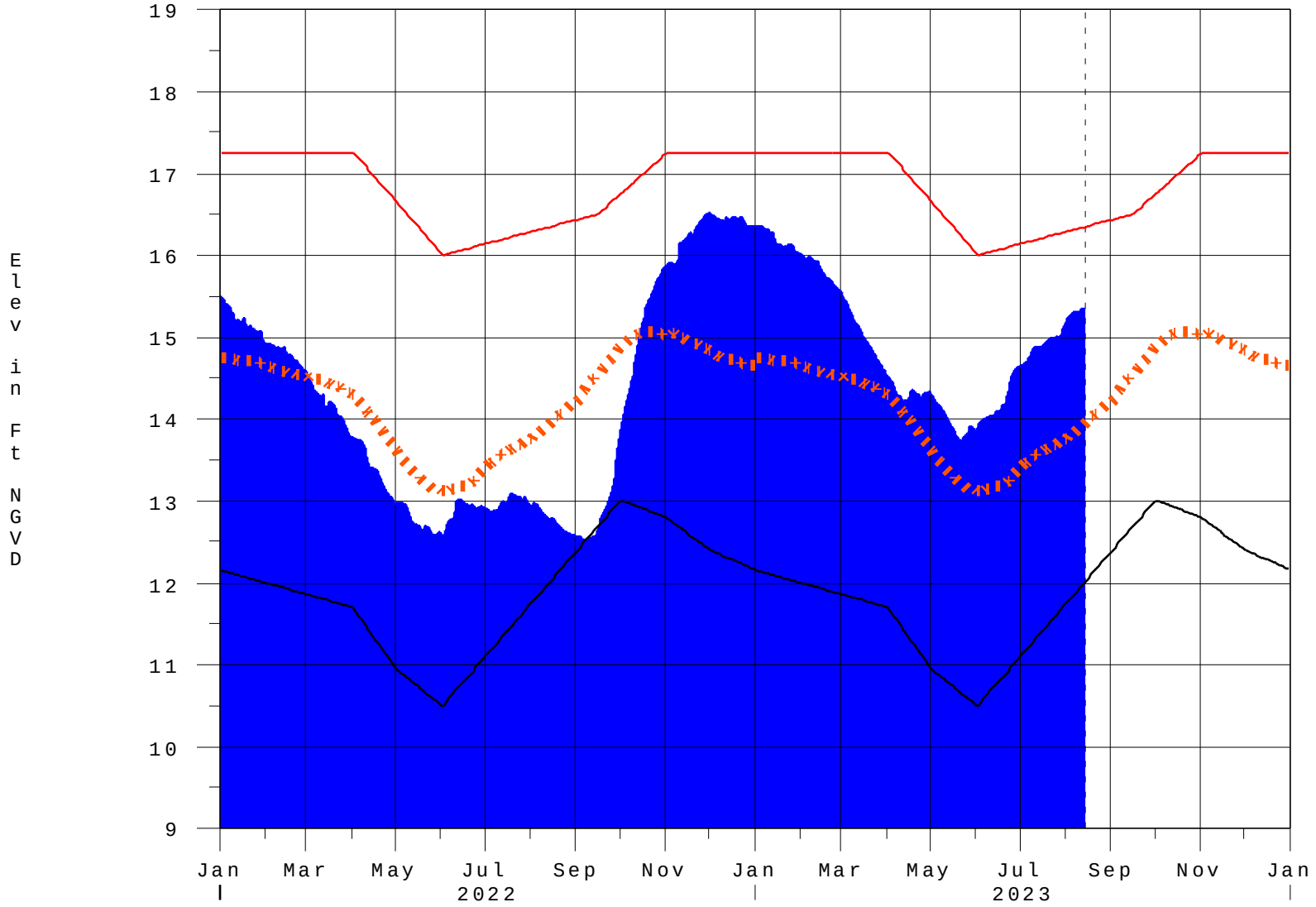
*** NOTE: Discharge (ALL DAY) is computed using Spillway, Sector Gate and Lockages Discharges from 0015 hrs to 2400 hrs.

(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 14AUG2023 @ 08:39  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee

14AUG23 08:30:27



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**