Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 02/06/2023 (ENSO Condition: La Niña)

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 La Niña years and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Niña 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 La Niña ENSO Years**		Sub-sampling of AMO Warm + La Niña ENSO Years***	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (Feb-Jul)	N/A	N/A	0.57	Dry	0.66	Dry	0.55	Dry
Multi Seasonal (Feb-Oct)	N/A	N/A	2.31	Normal	2.60	Wet	2.17	Normal

*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:

972 cfs 14-day running average for Lake Okeechobee Net Inflow through 02/06/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

-0.10 for Palmer Drought Index on 02/04/2023.
According to the classification in Tributary Hydrologic Conditions table, this condition is Near Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 02/06/2023:

Lake Okeechobee Stage: **15.96 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.25	
Operational Band	High sub-band	16.73	
	Intermediate sub-band	15.96	← 15.96 ft
	Low sub-band	13.61	
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.97	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

Maximum practicable to WCAs if “All downstream WCAs < max. of upper schedule + 0.25 ft”. Currently, all WCAs have the potential to receive regulatory releases from Lake Okeechobee.

Part D of LORS2008: Discharge to Tide

Up to 4000 cfs at S-77 and up to 1800 cfs at S-80.

LORS2008 Implementation on 02/06/2023 (ENSO Condition- La Niña Watch):

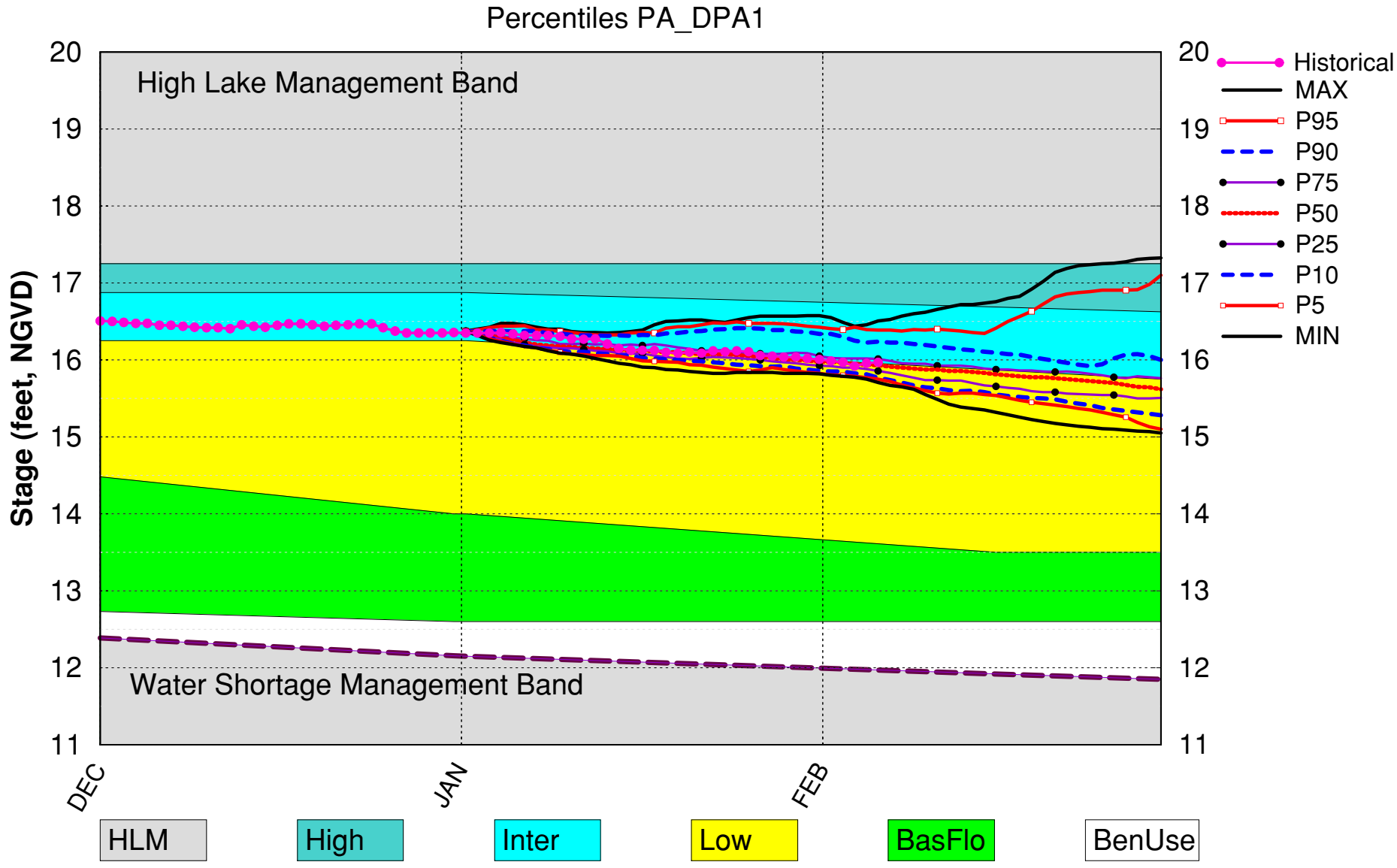
Status for week ending 02/06/2023:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Low Sub-band	M
	Palmer Drought Index for LOK Tributary Conditions	-0.10 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	0.66 ft	M
	ENSO Forecast	Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.60 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Sites 1-8C)	Above Line 1 (17.11 ft)	L
	WCA 2A: Site S11B	Above Line 1 (12.08 ft)	L
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Above Line 1 (9.69 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

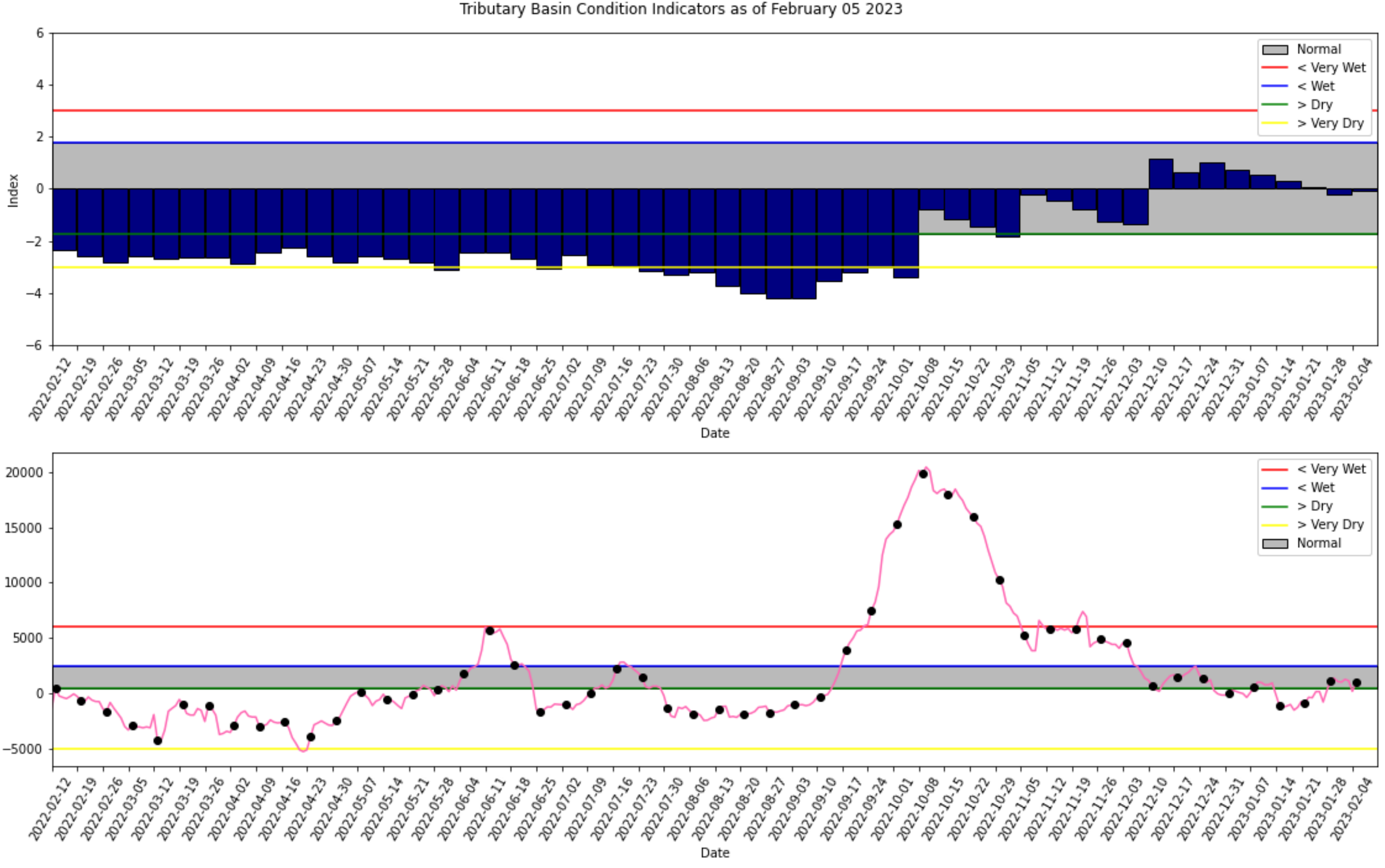
Note: The water supply risk classification based on the Palmer index, as well as the LOK seasonal and multi-seasonal net inflow outlooks use slightly different classification intervals than those used by the 2008-LORS.

Lake Okeechobee SFWMM January 2023 Position Analysis



(See assumptions on the Position Analysis Results website)

Tue Feb 07 08:00:37 2023


Tributary Basin Condition Indicators as of February 05 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

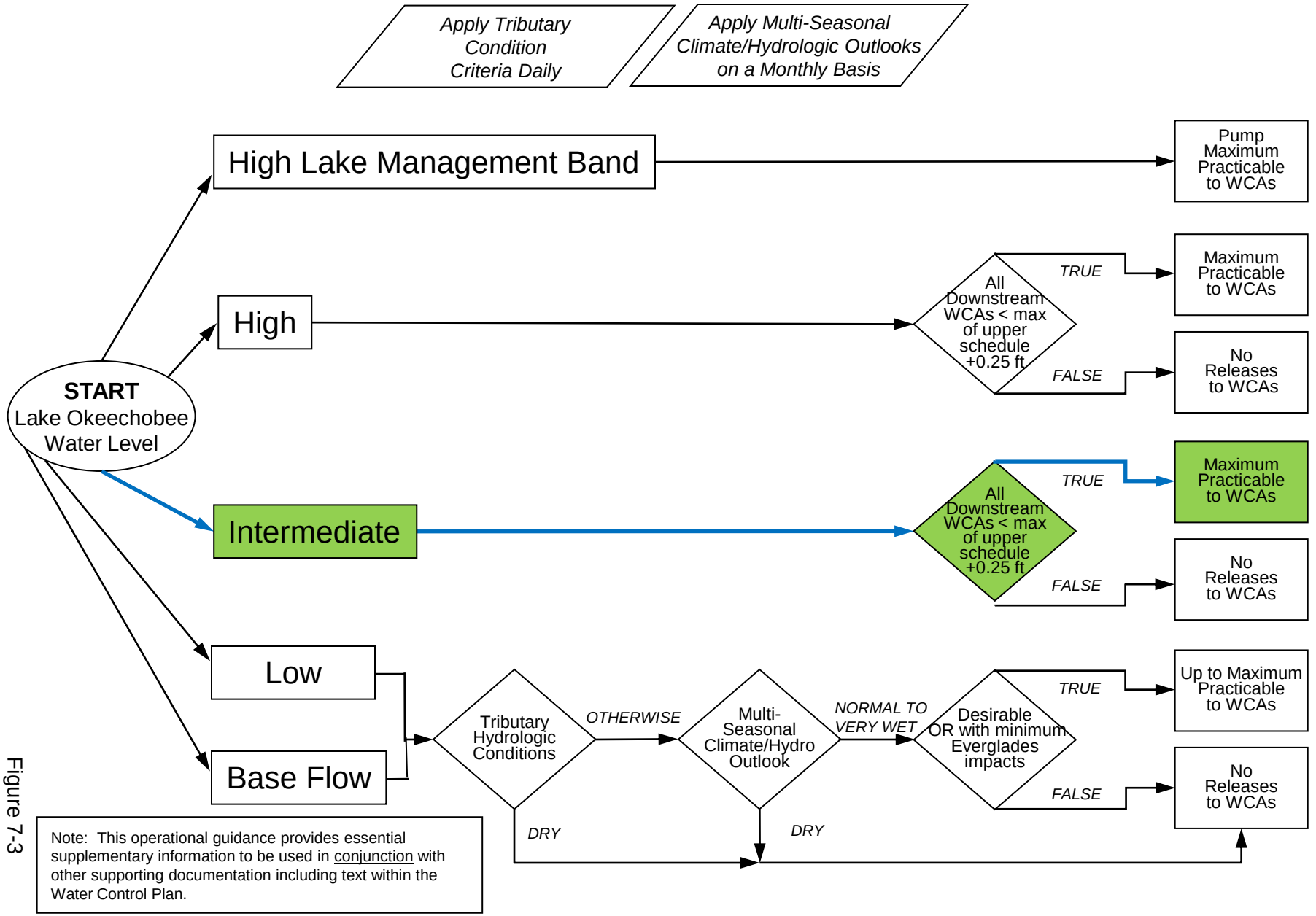


Figure 7-3

Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

2008 LORS

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

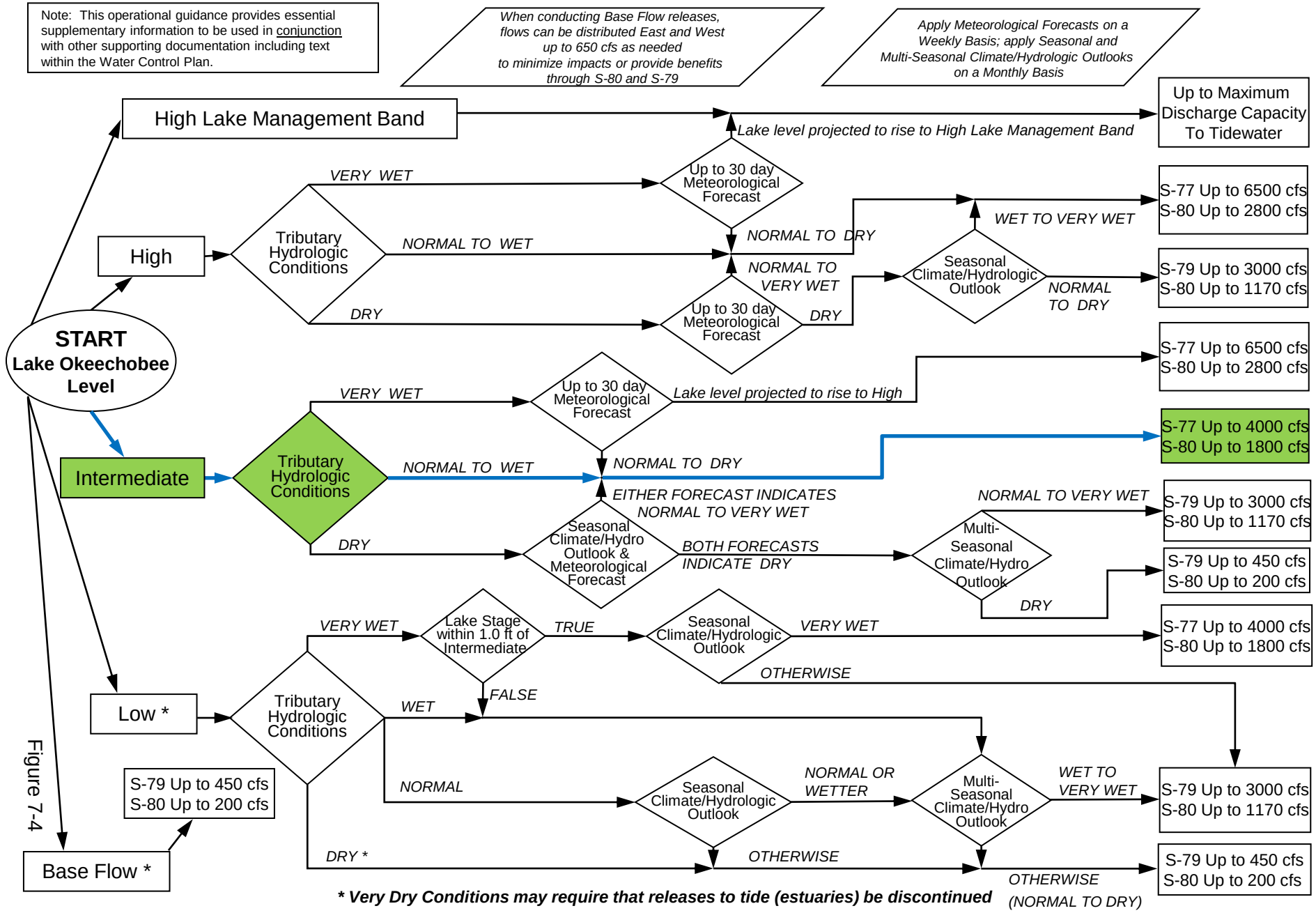
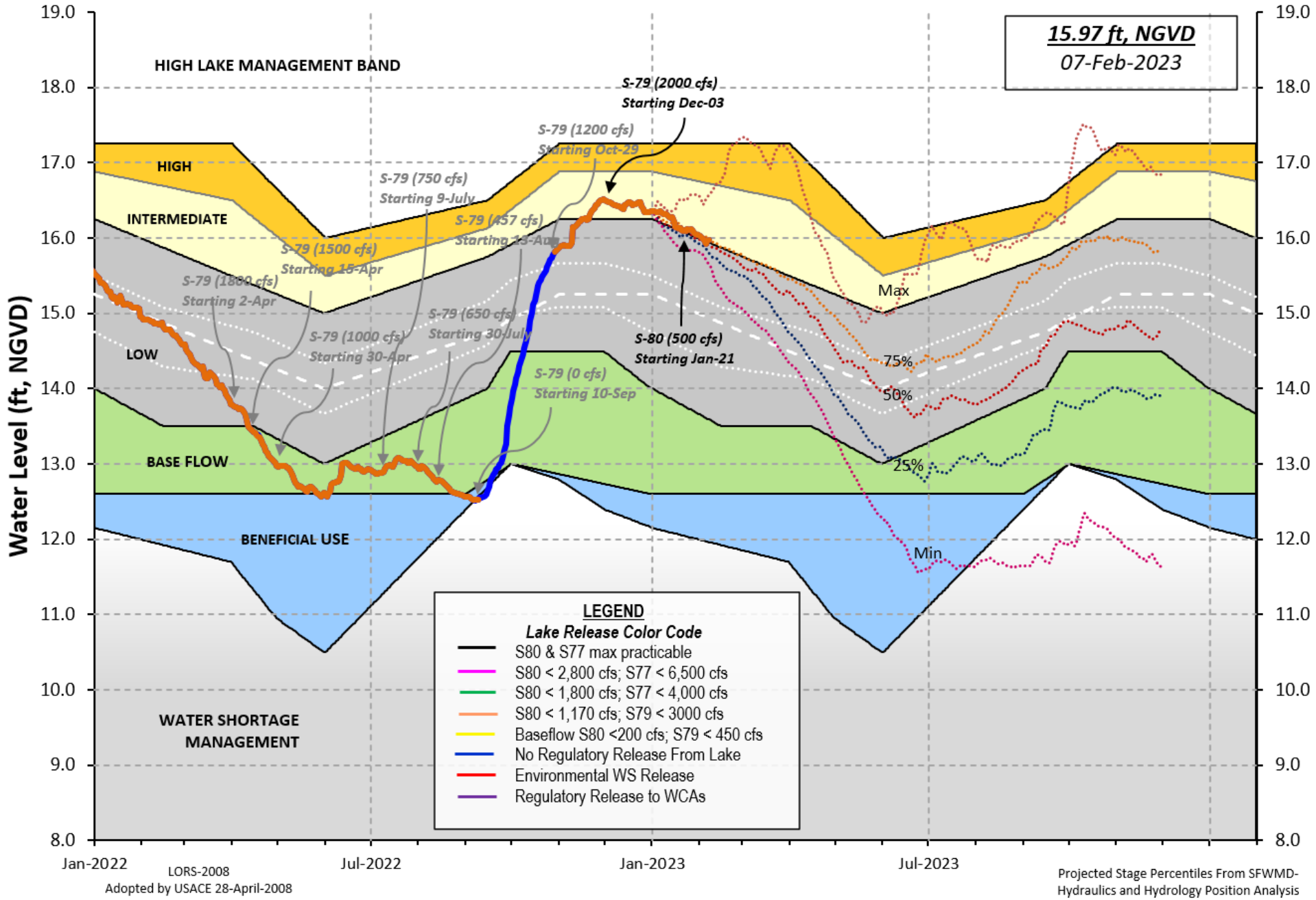


Figure 7-4

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 05 FEB 2023

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	15.96	14.90	15.36	(Official Elv)

Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 11.97
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 13.48
Difference from Average LORS2008 2.48

05FEB (1965-2007) Period of Record Average 14.62
Difference from POR Average 1.34

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 9.90'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 8.10'
Bridge Clearance = 63.52'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.92	15.98	15.96	15.99	16.00	16.07	15.82	15.80

*Combination Okeechobee Avg-Daily Lake Average = 15.96
(*See Note)

Okeechobee Inflows (cfs):

S65E	1438	S65EX1	0	Fisheating Cr	11
S154	0	S191	0	S135 Pumps	0
S84	0	S133 Pumps	0	S2 Pumps	0
S84X	0	S127 Pumps	0	S3 Pumps	0
S71	0	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0

Total Inflows: 1449

Okeechobee Outflows (cfs):

S135 Culverts	-NR-	S354	0	S77	1042
S127 Culverts	0	S351	0	S308	-NR-
S129 Culverts	0	S352	0		
S131 Culverts	0	L8 Canal Pt	196		

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

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

Okeechobee Pan Evaporation (inches):

S77	0.13	S308	0.04

Average Pan Evap x 0.75 Pan Coefficient = 0.06" = 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 8672 cfs or 17200 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:	13.66	15.81	0	0	0	0	0	0	(cfs)		
S193:	------										
S191:	19.21	15.78	0	0.0	0.0	0.0					
S135 Pumps:	13.42	15.76	0	0	0	0	0	(cfs)			
S135 Culverts:			-NR-	-NR-	0.0						
North West Shore											
S65E:	21.12	15.55	1438	1.1	0.4	0.8	1.1	0.4	0.4		
S65EX1:	21.12	15.55	0								
S127 Pumps:	13.57	15.82	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.10	15.95	0	0	0	0	(cfs)				
S129 Culvert:			0	0.0							
S131 Pumps:	13.09	15.98	0	0	0	(cfs)					
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		28.60	11								
nr Lakeport	------										
C5:	------	-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	12.14	-NR-	0	0	0	0	(cfs)				
S169:	------	-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	16.00		7								
S3 Pumps:	10.78	16.11	0	0	0	0	(cfs)				
S354:	16.11	10.78	0	0.0	0.0						
S2 Pumps:	10.05	16.15	0	0	0	0	0	(cfs)			
S351:	16.15	10.05	0	0.0	0.0	0.0					
S352:	16.07	10.74	0	0.0	0.0						
C10A:	-NR-	-NR-		-NR-	-NR-	-NR-	-NR-	-NR-			
L8 Canal PT		15.52	196								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.05	16.15	0	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	10.74	16.07	0	-NR-	-NR-	-NR-	-NR-				
S354:	10.78	16.11	0	-NR-	-NR-	-NR-	-NR-				

Caloosahatchee River (S77, S78, S79)											
S47B:	14.32	12.57		1.0	1.5						
S47D:	12.58	11.38	0	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	15.78	11.25	1039	0.0	0.0	2.5	0.0				
Flow Due to Lockages+:			3								
S78:											

```
    Spillway and Sector Flow:
              11.27      3.15    1043    0.0  0.0  2.5  0.0
    Flow Due to Lockages+:           7

  S79:
    Spillway and Sector Flow:
               3.39      1.45    1412    0.0  0.0  0.0  1.5  2.0  1.0  0.0  0.0
    Flow Due to Lockages+:           9
    Percent of flow from S77        74%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              15.85     -0.02     456  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:        -NR-

  S153:        19.00     14.14       0    0.0  0.0
  S80:
    Spillway and Sector Flow:
              14.26      1.49     390    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           11
    Percent of flow from S308       117%

  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	12	4
S78:	-NR-	0.00	0.00	31	1
S79:	-NR-	0.00	0.00	51	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:	-NR-	0.00	0.00	87	4
S80:	-NR-	0.00	0.00	303	2
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  05 FEB 2023          15.96 Difference from 05FEB23
   05FEB23  -1 Day  =       04 FEB 2023          15.92            -0.04
```

05FEB23	-2 Days =	03 FEB 2023	15.97	0.01
05FEB23	-3 Days =	02 FEB 2023	15.99	0.03
05FEB23	-4 Days =	01 FEB 2023	16.01	0.05
05FEB23	-5 Days =	31 JAN 2023	16.02	0.06
05FEB23	-6 Days =	30 JAN 2023	16.04	0.08
05FEB23	-7 Days =	29 JAN 2023	16.04	0.08
05FEB23	-30 Days =	06 JAN 2023	16.34	0.38
05FEB23	-1 Year =	05 FEB 2022	14.90	-1.06
05FEB23	-2 Year =	05 FEB 2021	15.36	-0.60

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
05FEB23	Today =	05 FEB 2023	972	MON	10358
05FEB23	-1 Day =	04 FEB 2023	206	SUN	-8743
05FEB23	-2 Days =	03 FEB 2023	1153	SAT	-1327
05FEB23	-3 Days =	02 FEB 2023	1286	FRI	-185
05FEB23	-4 Days =	01 FEB 2023	1034	THU	2411
05FEB23	-5 Days =	31 JAN 2023	1091	WED	-596
05FEB23	-6 Days =	30 JAN 2023	1221	TUE	2498
05FEB23	-7 Days =	29 JAN 2023	924	MON	172
05FEB23	-8 Days =	28 JAN 2023	20	SUN	1015
05FEB23	-9 Days =	27 JAN 2023	-1088	SAT	-7875
05FEB23	-10 Days =	26 JAN 2023	-80	FRI	1224
05FEB23	-11 Days =	25 JAN 2023	-79	THU	460
05FEB23	-12 Days =	24 JAN 2023	-322	WED	2733
05FEB23	-13 Days =	23 JAN 2023	-461	TUE	11457

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
05FEB23	Today=	05 FEB 2023	1556	MON	1584
05FEB23	-1 Day =	04 FEB 2023	1549	SUN	1533
05FEB23	-2 Days =	03 FEB 2023	1545	SAT	1555
05FEB23	-3 Days =	02 FEB 2023	1540	FRI	1545
05FEB23	-4 Days =	01 FEB 2023	1532	THU	1520
05FEB23	-5 Days =	31 JAN 2023	1526	WED	1392
05FEB23	-6 Days =	30 JAN 2023	1533	TUE	1754
05FEB23	-7 Days =	29 JAN 2023	1514	MON	1608
05FEB23	-8 Days =	28 JAN 2023	1509	SUN	1524
05FEB23	-9 Days =	27 JAN 2023	1515	SAT	1540
05FEB23	-10 Days =	26 JAN 2023	1512	FRI	1570
05FEB23	-11 Days =	25 JAN 2023	1530	THU	1629
05FEB23	-12 Days =	24 JAN 2023	1505	WED	1510
05FEB23	-13 Days =	23 JAN 2023	1526	TUE	1520

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
05FEB23	Today=	05 FEB 2023	0	MON	0
05FEB23	-1 Day =	04 FEB 2023	0	SUN	0
05FEB23	-2 Days =	03 FEB 2023	0	SAT	0
05FEB23	-3 Days =	02 FEB 2023	0	FRI	0
05FEB23	-4 Days =	01 FEB 2023	0	THU	0
05FEB23	-5 Days =	31 JAN 2023	0	WED	0
05FEB23	-6 Days =	30 JAN 2023	0	TUE	0
05FEB23	-7 Days =	29 JAN 2023	0	MON	0
05FEB23	-8 Days =	28 JAN 2023	0	SUN	0
05FEB23	-9 Days =	27 JAN 2023	0	SAT	0
05FEB23	-10 Days =	26 JAN 2023	0	FRI	0
05FEB23	-11 Days =	25 JAN 2023	0	THU	0
05FEB23	-12 Days =	24 JAN 2023	0	WED	0
05FEB23	-13 Days =	23 JAN 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)
05 FEB 2023	2031	2478	2074	2811
04 FEB 2023	2690	2982	2420	3082
03 FEB 2023	2951	3285	2569	3937
02 FEB 2023	4709	5356	3907	5215
01 FEB 2023	4380	4799	4238	5127
31 JAN 2023	2657	3218	2765	3922
30 JAN 2023	1348	2072	2085	3157
29 JAN 2023	1891	2526	2088	2891
28 JAN 2023	2546	3125	2544	3353
27 JAN 2023	3300	3642	3485	3859
26 JAN 2023	3360	3698	3193	5554
25 JAN 2023	3336	2989	3879	5066
24 JAN 2023	2826	2337	3207	4438
23 JAN 2023	966	1950	1994	3625

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)
05 FEB 2023	15	0	0	0	388
04 FEB 2023	22	547	74	291	552
03 FEB 2023	16	1213	115	609	767
02 FEB 2023	10	1159	254	358	882
01 FEB 2023	0	2042	638	397	821
31 JAN 2023	2	1748	598	786	-NR-
30 JAN 2023	9	1223	415	436	690
29 JAN 2023	16	1108	186	129	725
28 JAN 2023	9	1302	320	288	762
27 JAN 2023	8	1572	84	240	623
26 JAN 2023	10	1696	275	0	577
25 JAN 2023	17	616	0	0	581
24 JAN 2023	15	884	363	0	423
23 JAN 2023	8	1482	786	210	247

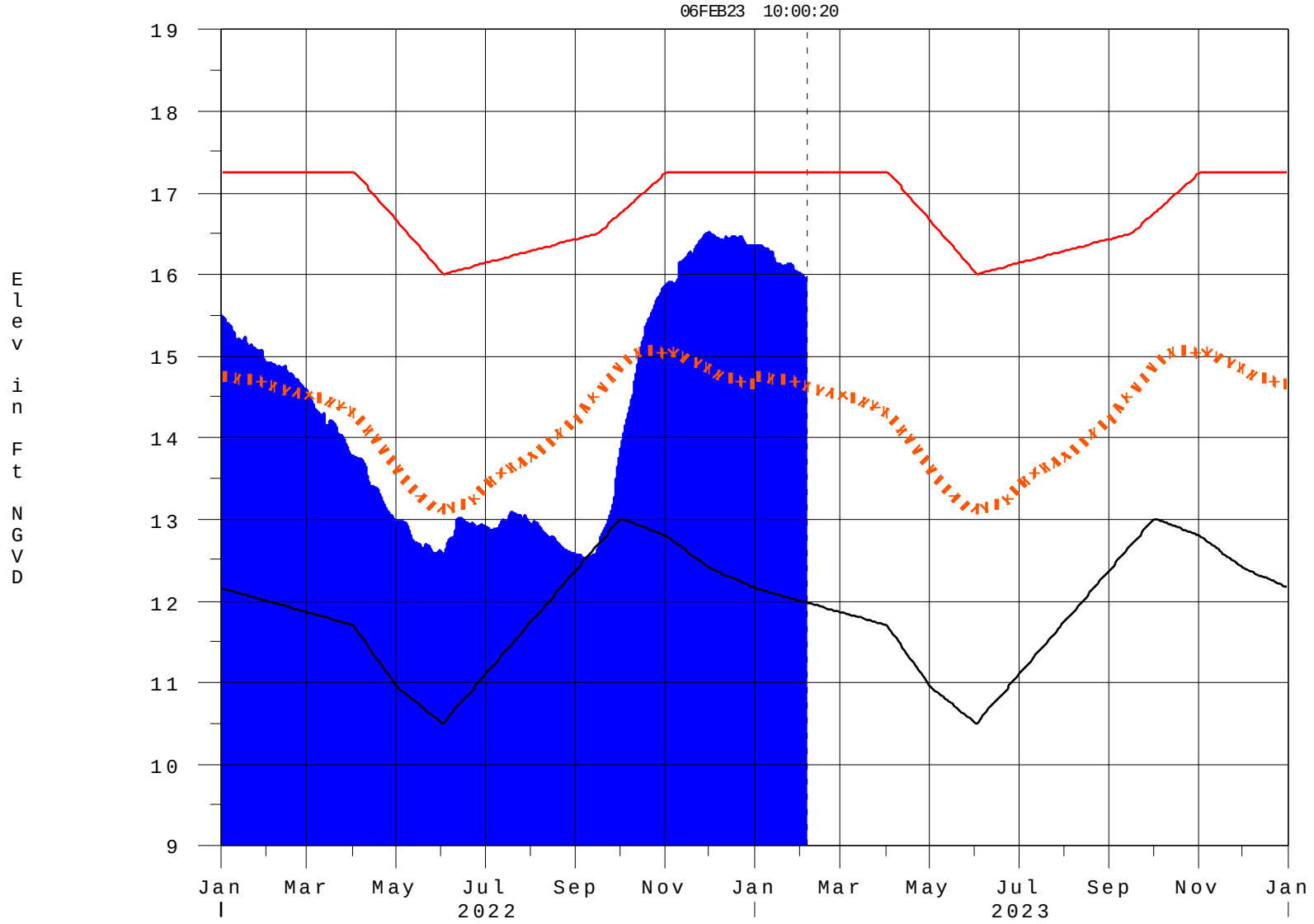
DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
05 FEB 2023	-NR-	-NR-	743
04 FEB 2023	2	-NR-	11
03 FEB 2023	224	-NR-	122
02 FEB 2023	1025	-NR-	854
01 FEB 2023	1020	-NR-	748
31 JAN 2023	-NR-	-NR-	956
30 JAN 2023	2491	-NR-	858
29 JAN 2023	828	-NR-	865
28 JAN 2023	1258	-NR-	741
27 JAN 2023	1108	-NR-	615
26 JAN 2023	1027	-NR-	860
25 JAN 2023	855	-NR-	1091
24 JAN 2023	983	-NR-	763
23 JAN 2023	1022	-NR-	385

*** 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 06FEB2023 @ 10:07  ** Preliminary Data - Subject to Revision **
```

Lake Okeechobee



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**