Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 05/09/2022 (ENSO Condition: La Niña)

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 La Nina years[3] and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Nina ENSO 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 La Nina ENSO Years[3]		Sub-sampling of AMO Warm + La Nina ENSO Years[4]	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition
Current (May-Oct)	N/A	N/A	2.44	Very Wet	2.48	Very Wet	2.45	Very Wet
Multi Seasonal (May-Apr)	N/A	N/A	3.11	Wet	2.30	Normal	1.97	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 ENSO forecast used.

Tributary Hydrologic Conditions Graph:

123 cfs 14-day running average for Lake Okeechobee Net Inflow through 05/09/2022.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-2.61 for Palmer Drought Index on 05/09/2022.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 05/09/2022:

Lake Okeechobee Stage: **12.91 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.07	
Operational Band	High sub-band	16.35	
	Intermediate sub-band	15.42	
	Low sub-band	13.50	
Base Flow sub-band		12.60	← 12.91 ft
Beneficial Use sub-band		11.45	
Water Shortage Management Band			

Part C of LORS2008: Discharge to WCAs

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.

Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply

Guidance for Lake Okeechobee Releases to the Caloosahatchee Estuary indicates no S77 release to the Caloosahatchee Estuary unless the Governing Board recommends otherwise.

LORS2008 Implementation on 05/09/2022 (ENSO Condition- La Nina Watch):

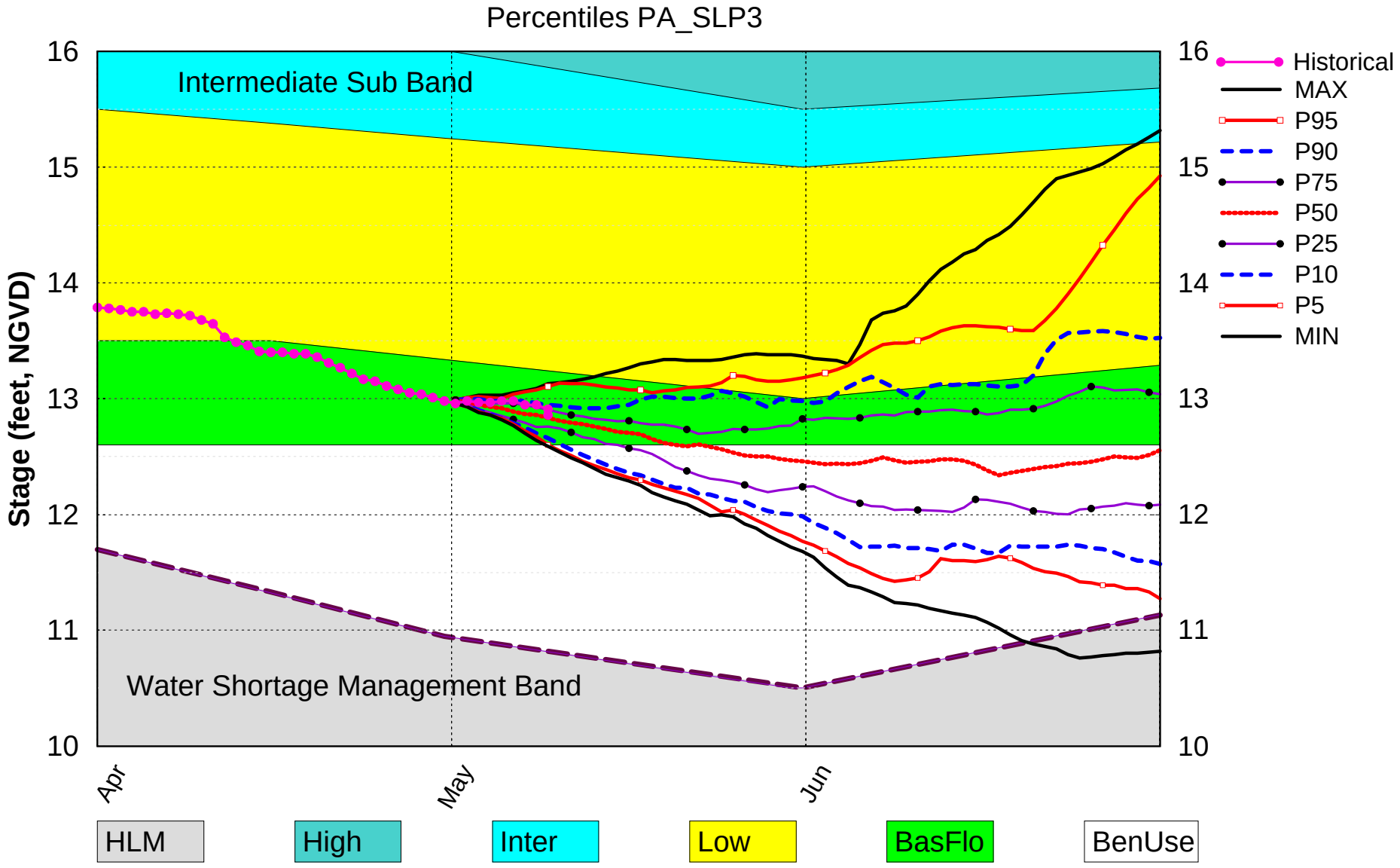
Status for week ending 05/09/2022:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Beneficial Use	M
	Palmer Drought Index for LOK Tributary Conditions	-2.61 (Extremely Dry)	H
	CPC Precipitation Outlook	1 month: Normal	M
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	2.48 ft	L
	ENSO Forecast	Normal to extremely wet	
	LOK Multi-Seasonal Net Inflow Outlook	2.30 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: Site 1-8C	Above Line 1 (15.65 ft)	L
	WCA 2A: Site S-11B	Below Line 2 (10.61 ft)	H
	WCA-3A: 3 Station Average (Sites 63, 64, and 65)	Line 1 - Line 2 (8.50 ft)	M
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.

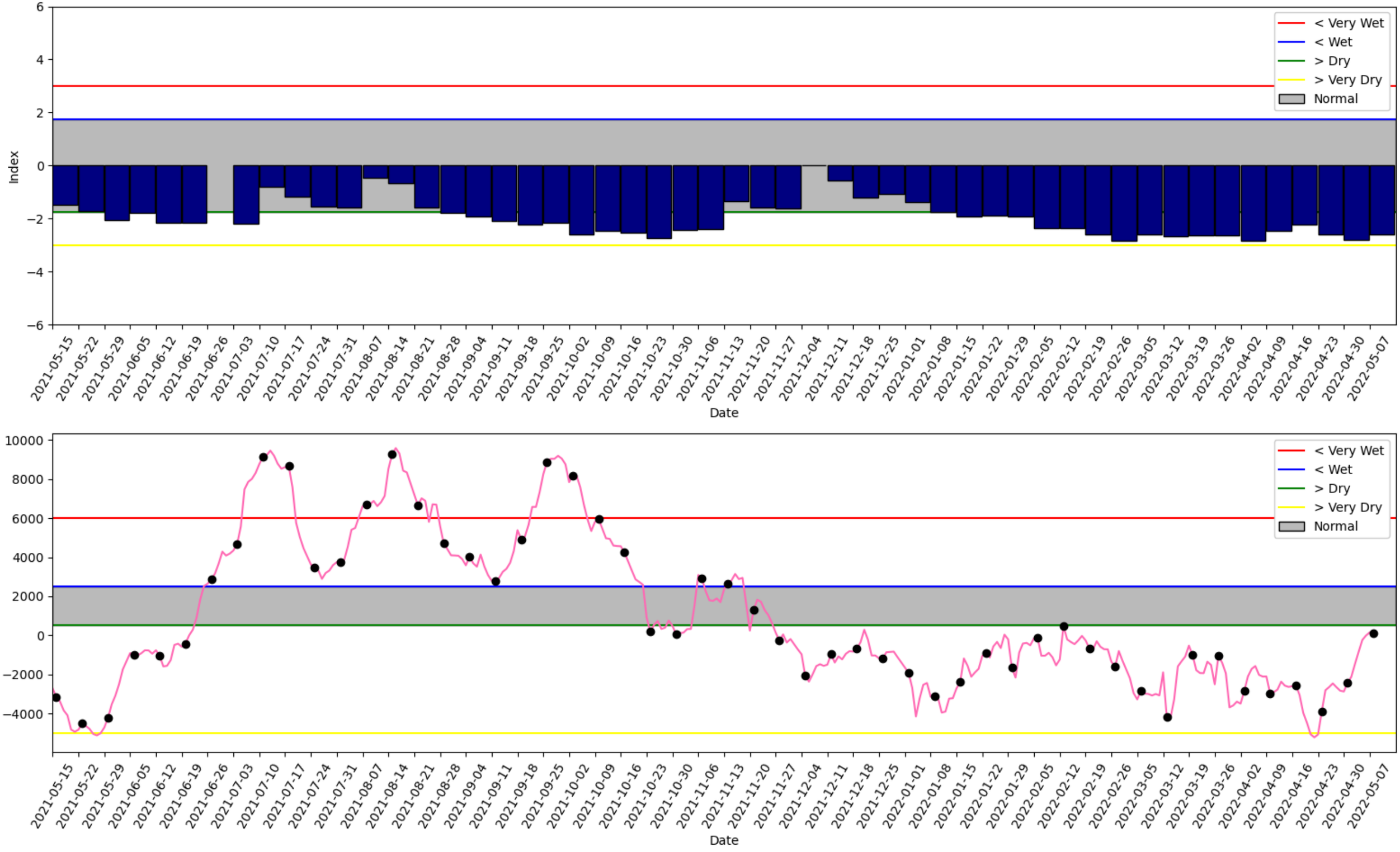
Lake Okeechobee SFWMM May 2022 Position Analysis



(See assumptions on the Position Analysis Results website)

Mon May 9 15:41:45 2022

Tributary Basin Condition Indicators as of May 08 2022



2008 LORS

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

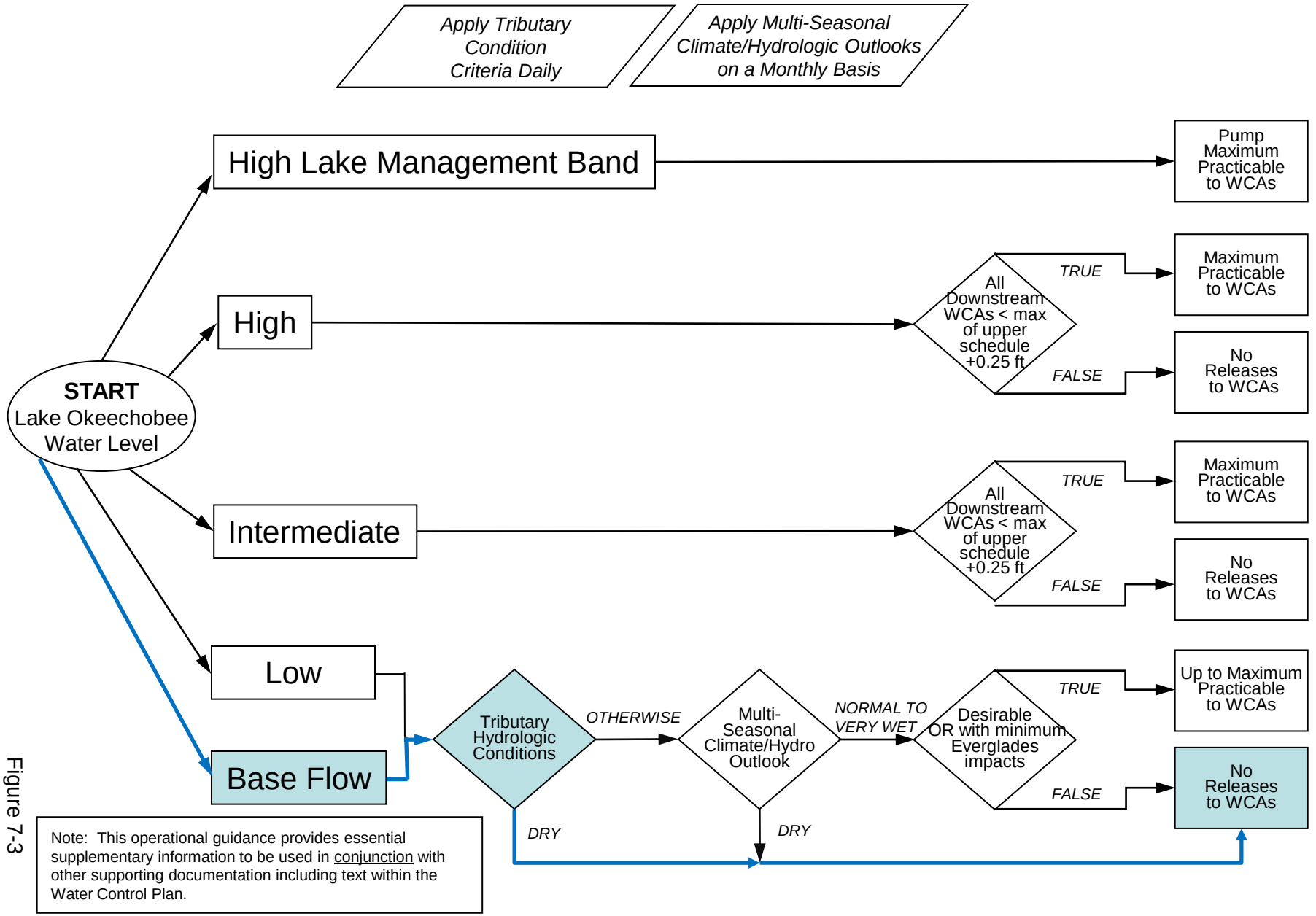


Figure 7-3

2008 LORS

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

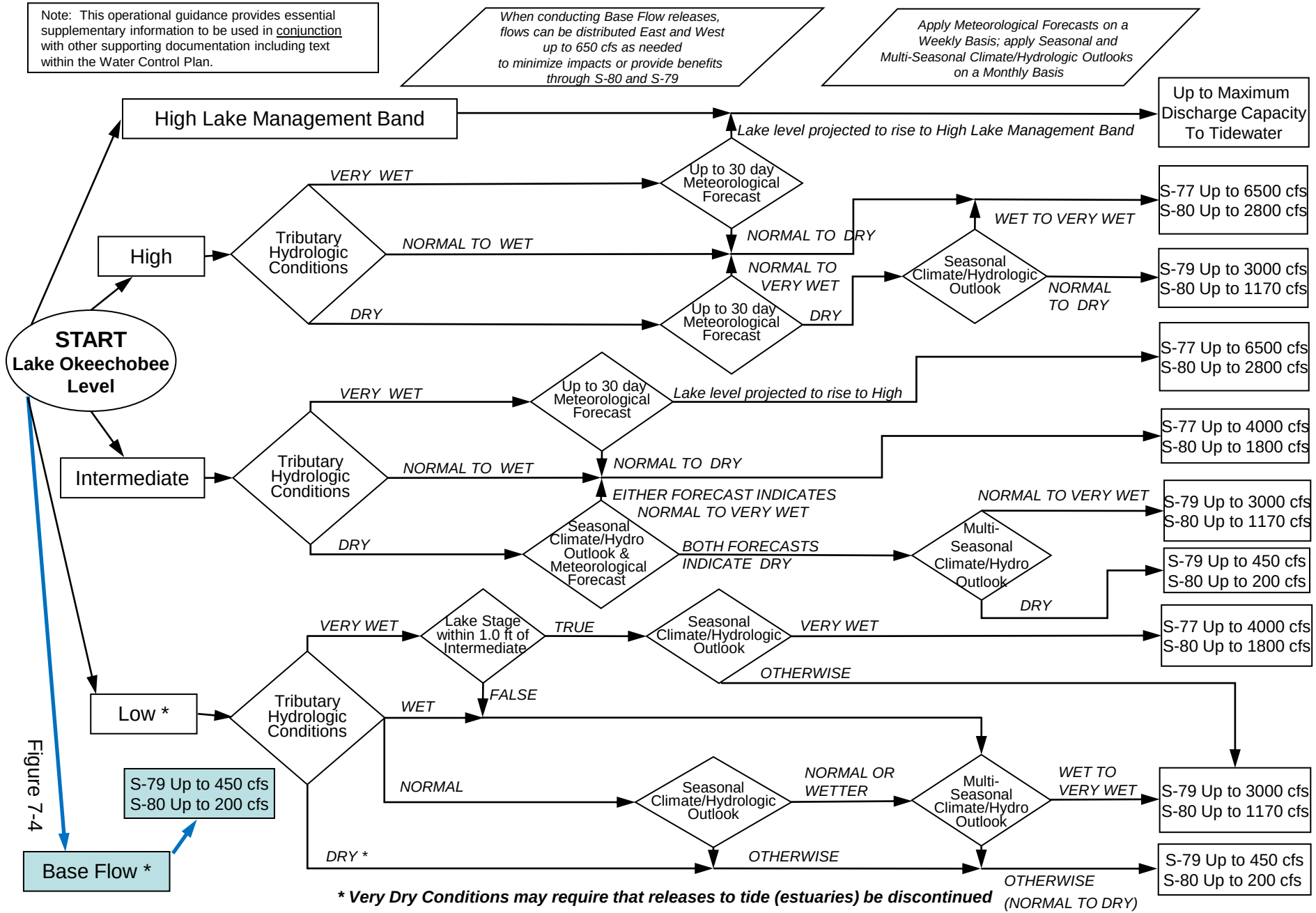
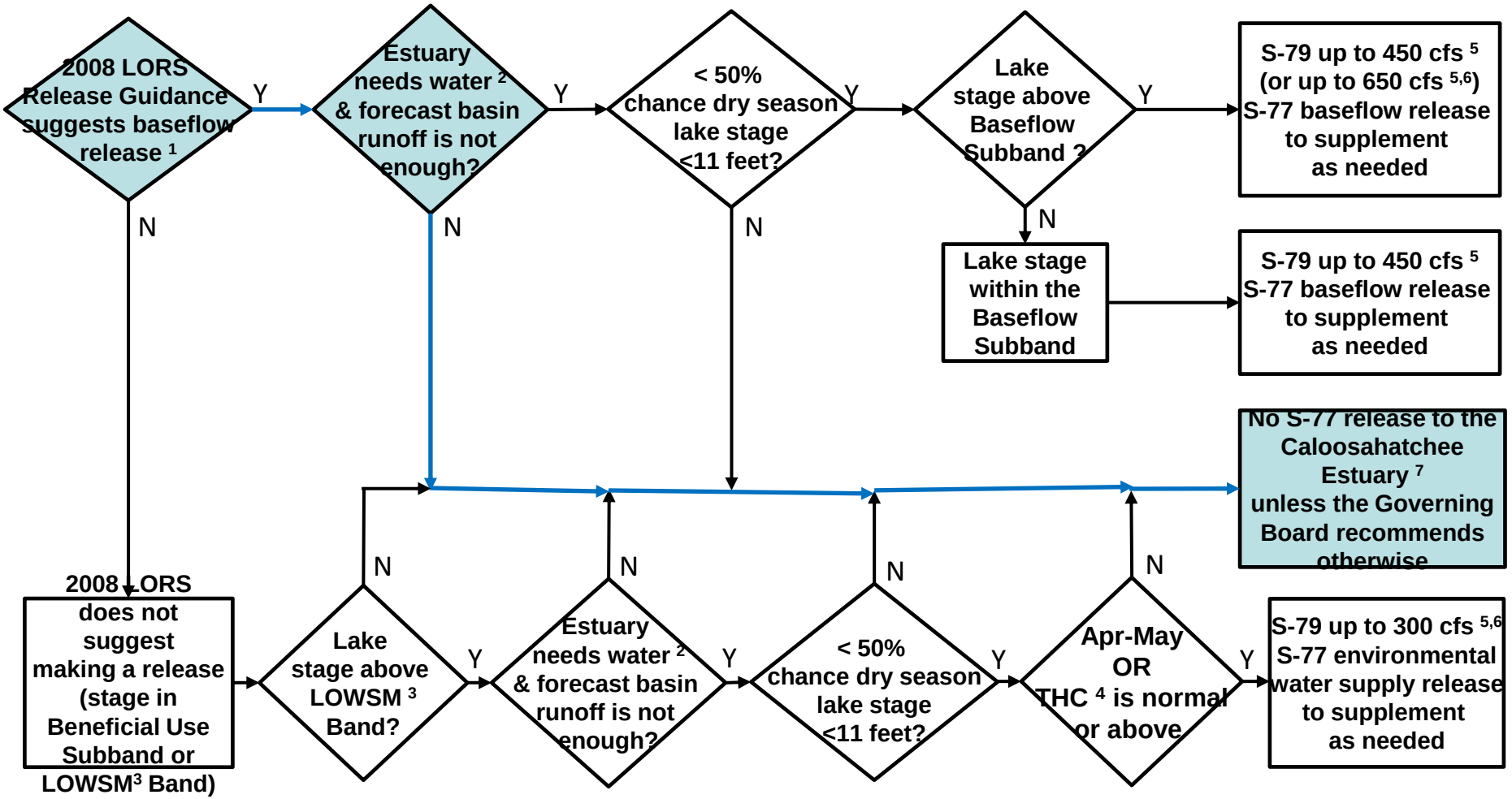


Figure 7-4

Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for 2008 LORS Baseflow & for Environmental Water Supply (revised 9-Aug-2012)



[1]The 2008 LORS Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow Subbands.

[2]Estuary "needs" water when the 30-day moving average salinity at I-75 bridge is projected to exceed 5 practical salinity units (psu) within 2 weeks.

[3]LOWSM = Lake Okeechobee Water Shortage Management.

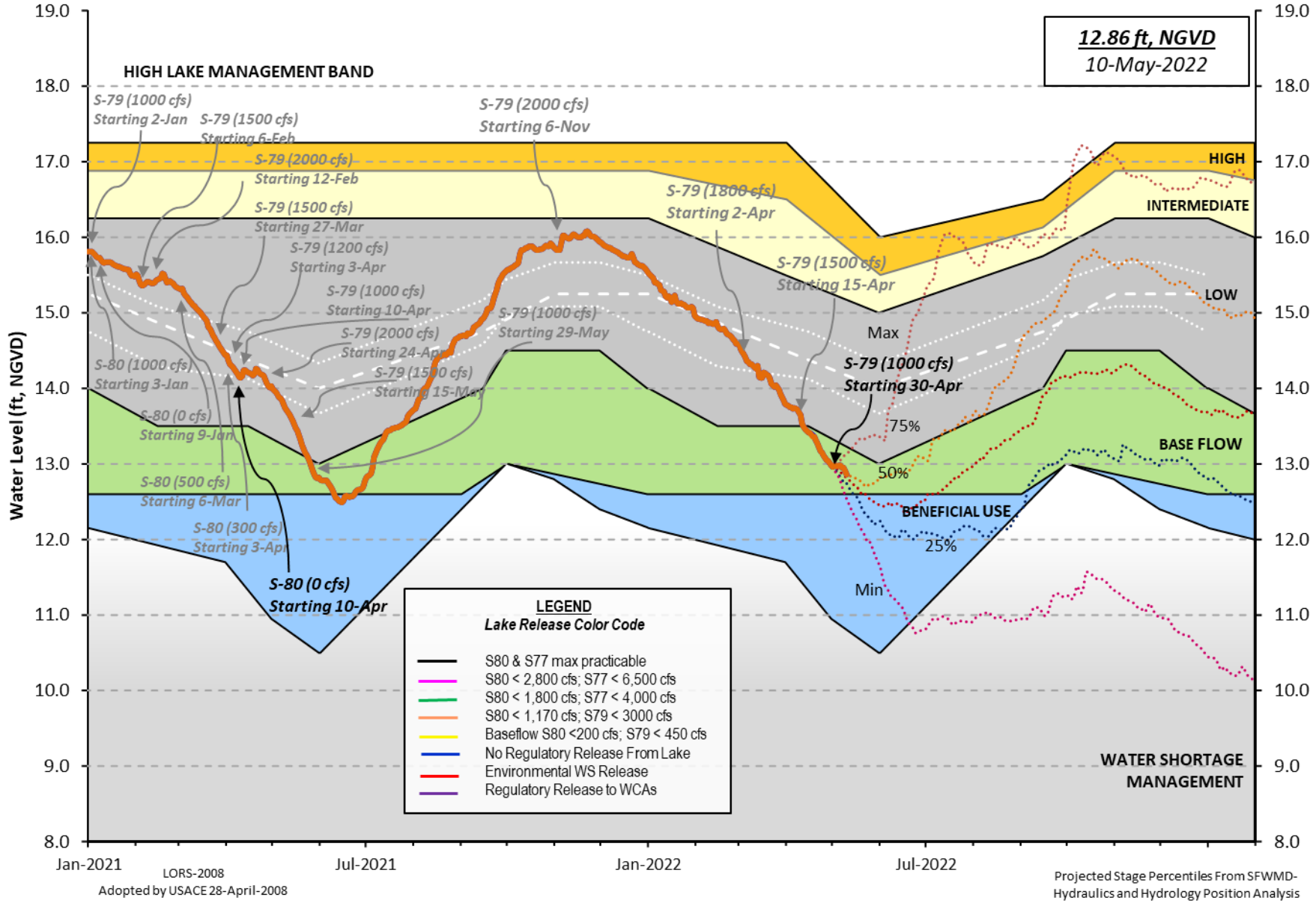
[4]Tributary Hydrologic Condition (THC) is based on classification of Lake Okeechobee Net Inflow and Palmer Index.

[5]Can release less than the "up to" limit if lower release is sufficient to reach or sustain desired estuary salinity; cfs = cubic feet per second.

[6]After reviewing conditions in Water Conservation Areas (WCAs), Stormwater Treatment Areas (STAs), ENP, St. Lucie Estuary and Lake Okeechobee.

[7]Should this condition be reached, the Governing Board will be briefed at their next regularly scheduled meeting as part of the State of the Water Resources agenda item.

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 MAY 2022

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	12.91	13.79	11.23	(Official Elv)

Bottom of High Lake Mngmt= 16.49 Top of Water Short Mngmt= 10.83
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.21
Difference from Average LORS2008 0.70

08MAY (1965-2007) Period of Record Average 13.43
Difference from POR Average -0.52

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 6.85'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 5.05'
Bridge Clearance = 50.70'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
12.93	12.87	12.92	12.94	12.69	13.07	13.00	12.86

*Combination Okeechobee Avg-Daily Lake Average = 12.91 (*See Note)

Okeechobee Inflows (cfs):

S65E	1502	S65EX1	0	Fisheating Cr	0
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: 1502

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	260	S77	1362
S127 Culverts	0	S351	954	S308	568
S129 Culverts	0	S352	462		
S131 Culverts	0	L8 Canal Pt	-NR-		

Total Outflows: 3606

****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 0.09 S308 -NR-
  Average Pan Evap x 0.75 Pan Coefficient = -NR-" = -NR-'

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 -7865 cfs or -15600 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:	12.89	12.72	0	0	0	0	0	0	(cfs)		
S193:	------										
S191:	18.66	12.72	0	0.0	0.0	0.0					
S135 Pumps:	12.84	12.67	0	0	0	0	0		(cfs)		
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.97	12.64	1502	1.1	0.9	0.4	0.4	0.5	0.4		
S65EX1:	20.97	12.64	0								
S127 Pumps:	12.46	12.80	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	12.43	12.57	0	0	0	0			(cfs)		
S129 Culvert:			0	0.0							
S131 Pumps:	12.43	13.06	0	0	0				(cfs)		
S131 Culvert:			0								
Fisheating Creek nr Palmdale		27.64	0								
nr Lakeport C5:	------	-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	12.80	-NR-	0	0	0	0			(cfs)		
S169:	------	-NR-	-NR-	-NR-	-NR-	-NR-					
S310:	12.77		79								

```
  S3 Pumps:    10.65     13.02       0      0    0    0            (cfs)
  S354:        13.02     10.65     260    0.6  0.6
  S2 Pumps:    10.77     13.19       0      0    0    0    0       (cfs)
  S351:        13.19     10.77     954    1.9  1.9  2.0
  S352:        12.95     10.74     462    0.9  1.1
  C10A:         -NR-     12.79            8.0   8.0   8.0   0.0   0.0
  L8 Canal PT            12.84    -NR-
```

S351 and S352 Temporary Pumps/S354 Spillway

```
  S351:        10.77     13.19     954  -NR--NR--NR--NR--NR--NR-
  S352:        10.74     12.95     462  -NR--NR--NR--NR-
  S354:        10.65     13.02     260  -NR--NR--NR--NR-
```

```
Caloosahatchee River (S77, S78, S79)
  S47B:        12.77     10.98            0.0  0.0
  S47D:        10.98     11.00     -76    5.0
  S77:
    Spillway and Sector Preferred Flow:
                12.57     10.90    1359  2.5  3.0  2.5  2.5
    Flow Due to Lockages+:             3

  S78:
    Spillway and Sector Flow:
                10.88      2.79     831    1.5  0.0  0.0  1.5
    Flow Due to Lockages+:            12

  S79:
    Spillway and Sector Flow:
                 2.96      1.52    1324    0.0  0.0  1.0  1.5  1.5  1.0  0.0
0.0
    Flow Due to Lockages+:            10
    Percent of flow from S77         103%
    Chloride              (ppm)       0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
                12.90     12.80     568  3.5  3.5  3.5  3.5
    Flow Due to Lockages+:             0

  S153:        18.91     12.55       0    0.0  0.0
  S80:
    Spillway and Sector Flow:
                12.81      0.07       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:            18
    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 (Degø)	Wind 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:	7.99	8.29	8.40	297	6
S78:	4.52	4.71	5.66	78	2
S79:	1.82	2.79	3.35	193	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:	5.62	5.64	6.95	83	6
S80:	9.17	9.17	9.41	102	2
Okeechobee Average (Sites S78, S79 and S80 not included)	6.80	1.07	1.18		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

Okeechobee Lake Elevations	08 MAY 2022	12.91	Difference from 08MAY22
08MAY22 -1 Day =	07 MAY 2022	12.95	0.04
08MAY22 -2 Days =	06 MAY 2022	12.95	0.04
08MAY22 -3 Days =	05 MAY 2022	12.98	0.07
08MAY22 -4 Days =	04 MAY 2022	12.98	0.07
08MAY22 -5 Days =	03 MAY 2022	12.97	0.06
08MAY22 -6 Days =	02 MAY 2022	12.97	0.06
08MAY22 -7 Days =	01 MAY 2022	12.98	0.07
08MAY22 -30 Days =	08 APR 2022	13.68	0.77
08MAY22 -1 Year =	08 MAY 2021	13.79	0.88
08MAY22 -2 Year =	08 MAY 2020	11.23	-1.68

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

08MAY22	Today =	08 MAY 2022	123	MON	-4236
08MAY22	-1 Day =	07 MAY 2022	150	SUN	2854
08MAY22	-2 Days =	06 MAY 2022	-12	SAT	-2228
08MAY22	-3 Days =	05 MAY 2022	-239	FRI	2525
08MAY22	-4 Days =	04 MAY 2022	-847	THU	3787
08MAY22	-5 Days =	03 MAY 2022	-1478	WED	1889
08MAY22	-6 Days =	02 MAY 2022	-2130	TUE	251
08MAY22	-7 Days =	01 MAY 2022	-2426	MON	6310
08MAY22	-8 Days =	30 APR 2022	-2724	SUN	-1784
08MAY22	-9 Days =	29 APR 2022	-2682	SAT	-3130
08MAY22	-10 Days =	28 APR 2022	-2356	FRI	-4228
08MAY22	-11 Days =	27 APR 2022	-1992	THU	1685
08MAY22	-12 Days =	26 APR 2022	-2544	WED	-745
08MAY22	-13 Days =	25 APR 2022	-2632	TUE	-1234

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
08MAY22	Today=	08 MAY 2022	1799	MON	1707
08MAY22	-1 Day =	07 MAY 2022	1798	SUN	1751
08MAY22	-2 Days =	06 MAY 2022	1784	SAT	-NR-
08MAY22	-3 Days =	05 MAY 2022	1768	FRI	1778
08MAY22	-4 Days =	04 MAY 2022	1746	THU	1804
08MAY22	-5 Days =	03 MAY 2022	1713	WED	1824
08MAY22	-6 Days =	02 MAY 2022	1678	TUE	1826
08MAY22	-7 Days =	01 MAY 2022	1642	MON	1887
08MAY22	-8 Days =	30 APR 2022	1588	SUN	1881
08MAY22	-9 Days =	29 APR 2022	1558	SAT	-NR-
08MAY22	-10 Days =	28 APR 2022	1536	FRI	1824
08MAY22	-11 Days =	27 APR 2022	1494	THU	1811
08MAY22	-12 Days =	26 APR 2022	1444	WED	1812
08MAY22	-13 Days =	25 APR 2022	1416	TUE	1678

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
08MAY22	Today=	08 MAY 2022	0	MON	0
08MAY22	-1 Day =	07 MAY 2022	0	SUN	0
08MAY22	-2 Days =	06 MAY 2022	0	SAT	0
08MAY22	-3 Days =	05 MAY 2022	0	FRI	0
08MAY22	-4 Days =	04 MAY 2022	0	THU	0
08MAY22	-5 Days =	03 MAY 2022	0	WED	0
08MAY22	-6 Days =	02 MAY 2022	0	TUE	0
08MAY22	-7 Days =	01 MAY 2022	0	MON	0
08MAY22	-8 Days =	30 APR 2022	0	SUN	0
08MAY22	-9 Days =	29 APR 2022	0	SAT	0
08MAY22	-10 Days =	28 APR 2022	0	FRI	0
08MAY22	-11 Days =	27 APR 2022	0	THU	0
08MAY22	-12 Days =	26 APR 2022	0	WED	0
08MAY22	-13 Days =	25 APR 2022	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)
08 MAY 2022	2785	2595	1676	2642
07 MAY 2022	2225	2122	1567	2548
06 MAY 2022	2091	2105	1507	1551
05 MAY 2022	1223	1376	737	1537
04 MAY 2022	1127	1270	806	1644
03 MAY 2022	852	1246	1070	1711
02 MAY 2022	1877	1762	1339	2140
01 MAY 2022	2638	2667	1984	2738
30 APR 2022	2508	1782	1635	2416
29 APR 2022	2688	2286	1668	2102
28 APR 2022	2603	3688	2292	2324
27 APR 2022	2580	3192	2070	2414
26 APR 2022	3318	3529	2267	3221
25 APR 2022	3531	3762	3524	3752

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 MAY 2022	157	1891	917	516	-NR-
07 MAY 2022	318	1120	583	243	-NR-
06 MAY 2022	386	2100	1127	611	-NR-
05 MAY 2022	331	1039	630	640	-NR-
04 MAY 2022	40	621	255	0	-NR-
03 MAY 2022	228	895	413	0	-NR-
02 MAY 2022	66	431	528	0	-NR-
01 MAY 2022	-44	274	292	0	-NR-
30 APR 2022	-8	175	545	169	-NR-
29 APR 2022	114	812	386	463	-NR-
28 APR 2022	398	0	0	0	-NR-
27 APR 2022	429	1564	734	850	-NR-
26 APR 2022	380	2564	1624	1885	-NR-
25 APR 2022	154	2262	1443	1339	-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 MAY 2022	1046	-NR-	36
07 MAY 2022	1211	-NR-	33
06 MAY 2022	1226	-NR-	47
05 MAY 2022	1493	-NR-	54
04 MAY 2022	1540	-NR-	36
03 MAY 2022	1559	-NR-	46
02 MAY 2022	1454	-NR-	35
01 MAY 2022	1523	-NR-	49
30 APR 2022	1481	-NR-	48
29 APR 2022	1379	-NR-	40
28 APR 2022	1487	-NR-	46
27 APR 2022	1564	-NR-	46
26 APR 2022	1473	-NR-	46
25 APR 2022	1358	-NR-	52

*** 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

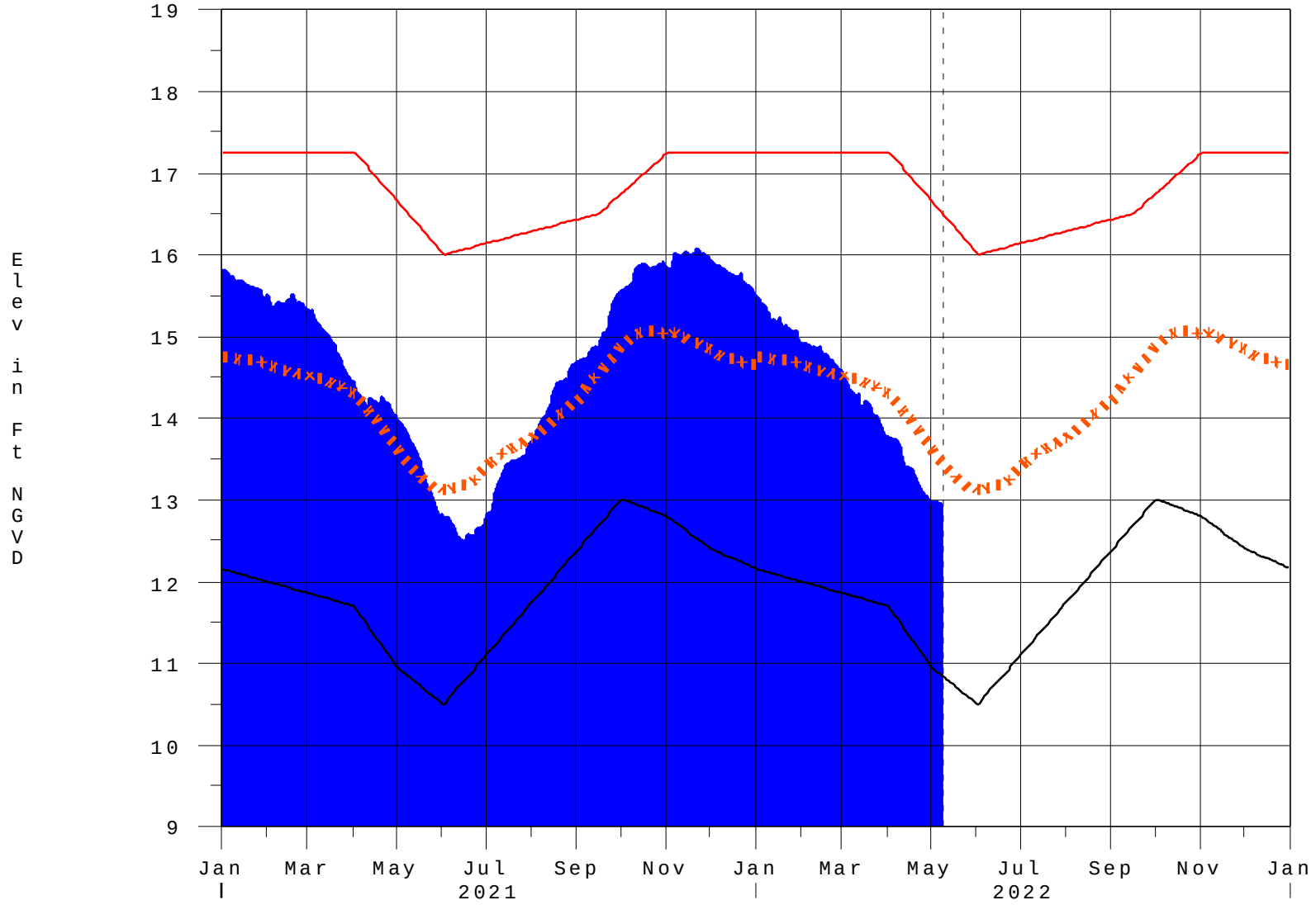
---

* 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 09MAY2022 @ 10:39 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

09MAY22 11:00:27



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

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**