

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 2/22/2021 (ENSO Condition: La Niña)

Lake Okeechobee Net Inflow Outlook:

The Lake Okeechobee Net Inflow Outlook has been computed using 4 methods: Croley's method¹, the SFWMD empirical method², a sub-sampling of La Nina years³ and a sub-sampling of warm years of the Atlantic Multi-decadal Oscillation (AMO) in combination with La Nina ENSO years⁴. 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)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>	Value (ft)	<u>Condition</u>
Current (Feb-July)	N/A	N/A	0.92	Normal	0.46	Dry	0.66	Dry
Multi Seasonal (Feb-Oct)	N/A	N/A	2.89	Wet	2.28	Normal	2.28	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:

1561 cfs 14-day running average for Lake Okeechobee Net Inflow through 2/21/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

0.16 for Palmer Drought Index on 2/20/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Normal.

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

LORS2008 Classification Tables:

Lake Okeechobee Stage on 2/22/2021:

Lake Okeechobee Stage: **15.40 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.25	
Operational Band	High sub-band	16.66	
	Intermediate sub-band	15.82	
	Low sub-band	13.50	← 15.40 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.89	
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 450 cfs at S-79 and up to 200 cfs at S-80.

LORS2008 Implementation on 2/22/2021 (ENSO Condition- La Nina):

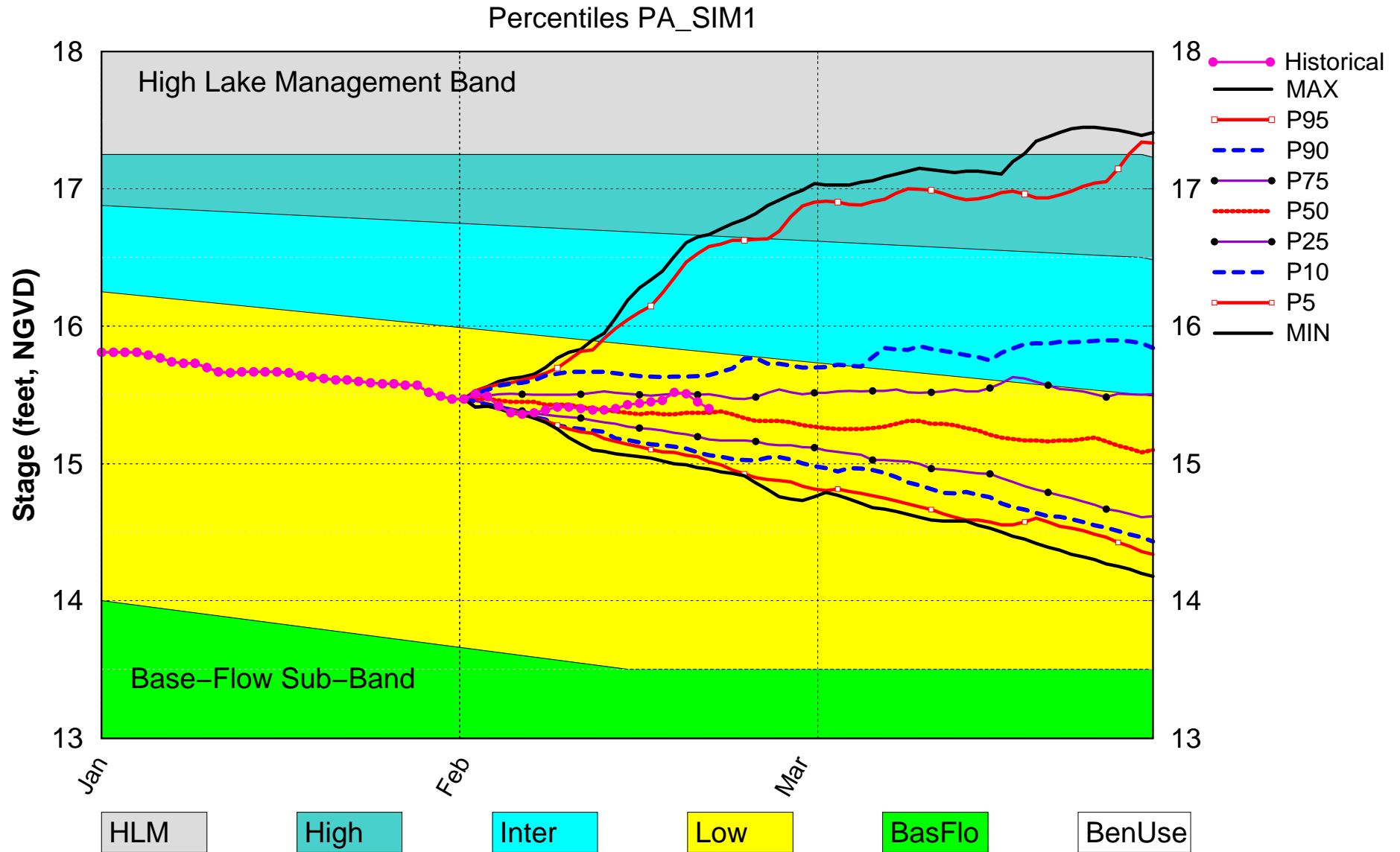
Status for week ending 2/22/2021:

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	0.16 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	0.46 ft	M
	ENSO Forecast	Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.28 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (16.83 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (12.36 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (10.25 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.

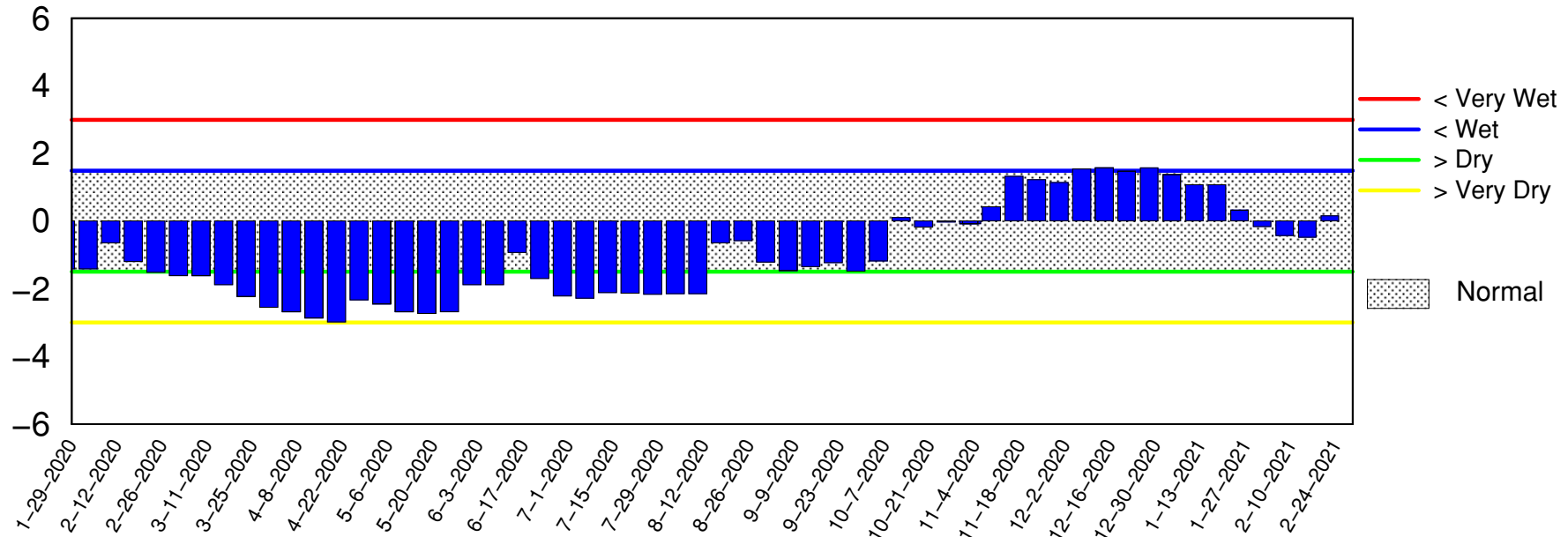
Lake Okeechobee SFWMM Feb 2021 Position Analysis



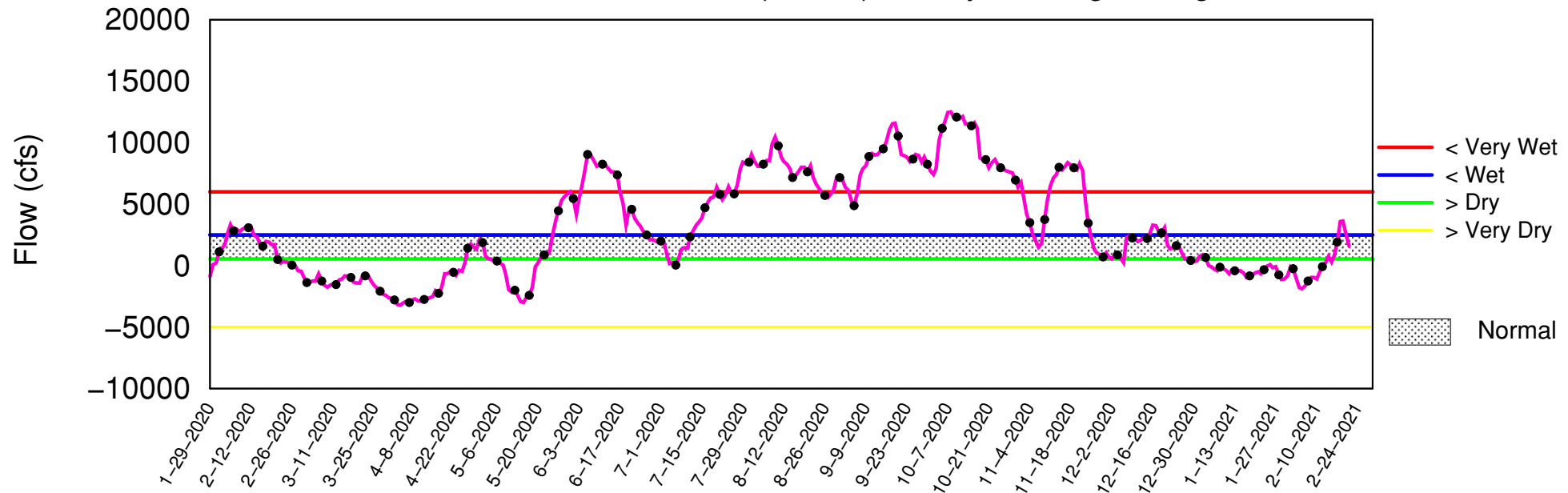
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of February 22 2021

Palmer Index



Lake Okeechobee Net Inflow (LONIN) 14-day Running Average



2008 LORS

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

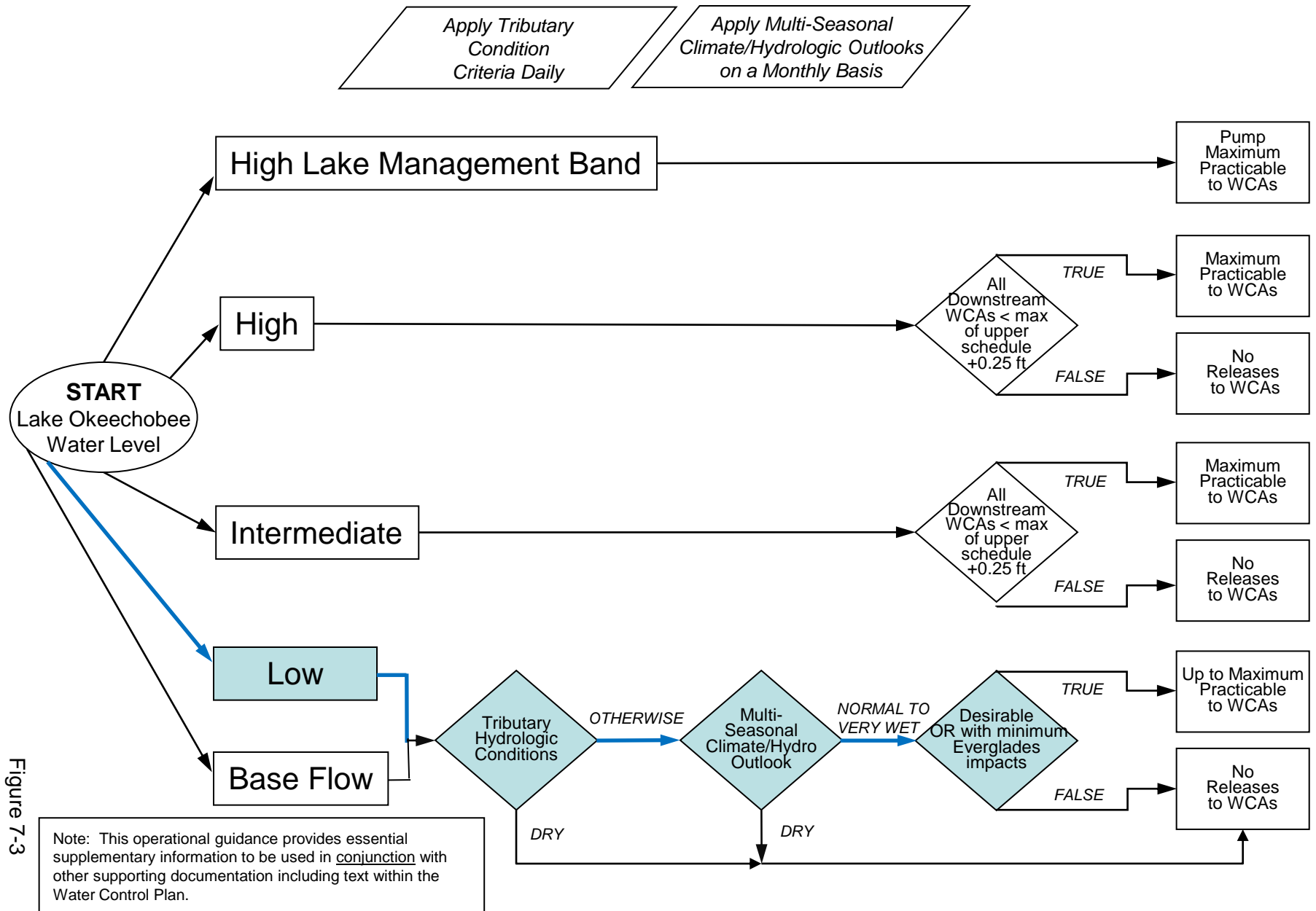


Figure 7-3

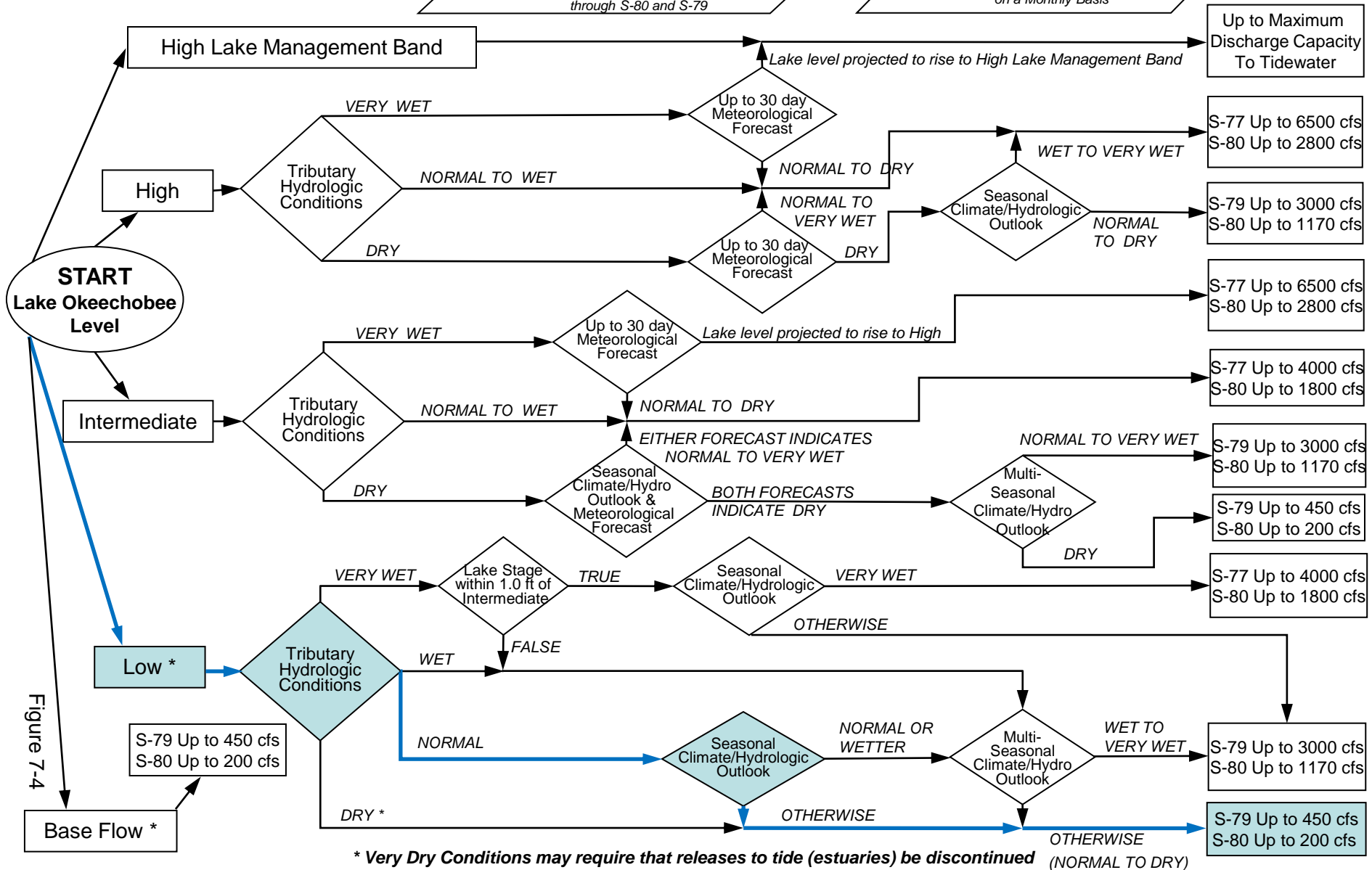
2008 LORS

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

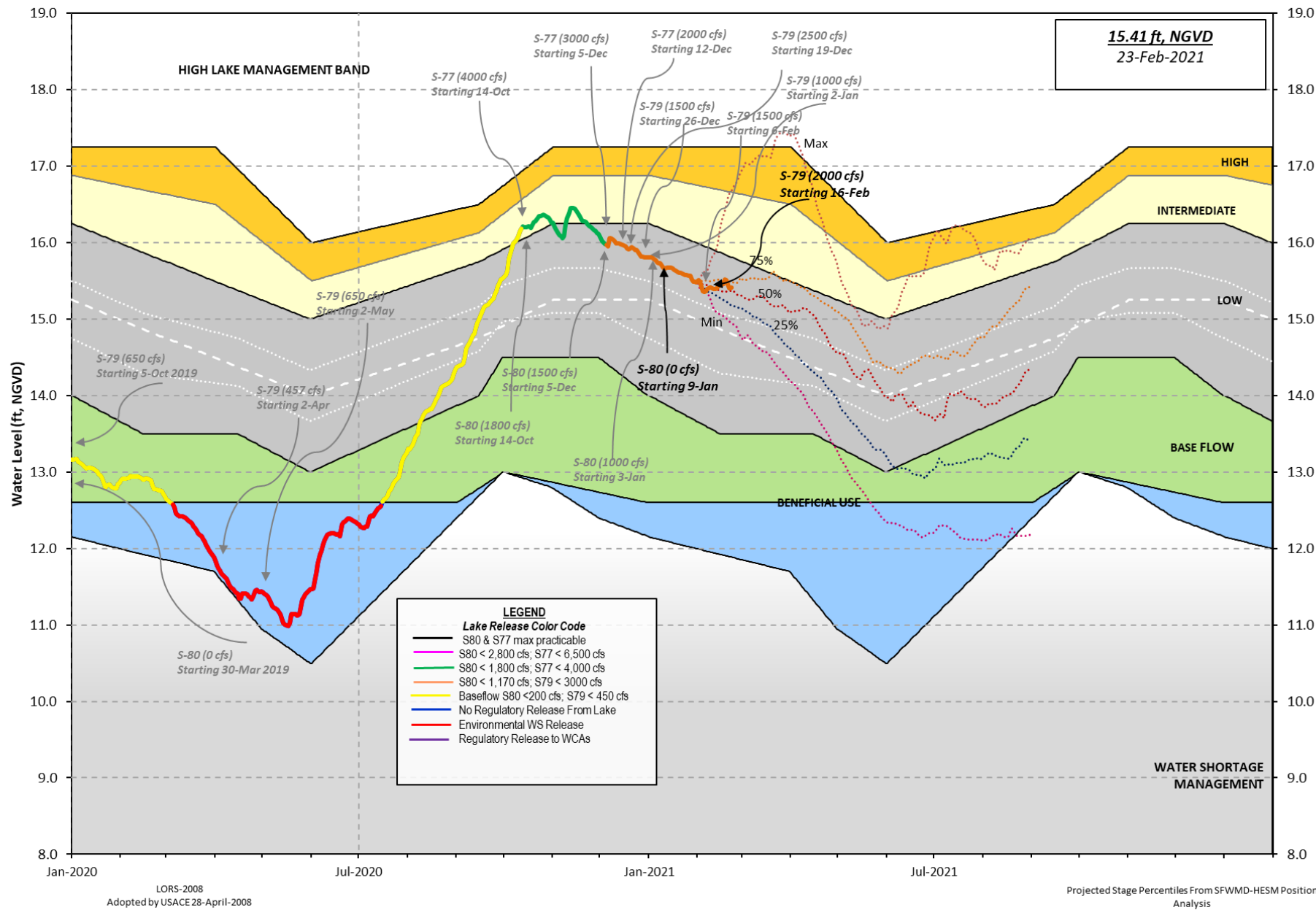
Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

When conducting Base Flow releases, flows can be distributed East and West up to 650 cfs as needed to minimize impacts or provide benefits through S-80 and S-79

Apply Meteorological Forecasts on a Weekly Basis; apply Seasonal and Multi-Seasonal Climate/Hydrologic Outlooks on a Monthly Basis



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 21 FEB 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.40	12.82	12.86 (Official Elv)
Bottom of High Lake Mngmt=	17.25	Top of Water Short Mngmt=	11.89
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.37
Difference from Average LORS2008	2.03

21FEB (1965-2007) Period of Record Average	14.55
Difference from POR Average	0.85

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ♦ 9.34'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ♦ 7.54'
Bridge Clearance = 49.32'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
15.29	15.58	15.44	15.38	15.65	15.42	15.27	15.22

*Combination Okeechobee Avg-Daily Lake Average = 15.40
(*See Note)

Okeechobee Inflows (cfs):

S65E	1061	S65EX1	0	Fisheating Cr	43
S154	0	S191	0	S135 Pumps	148
S84	343	S133 Pumps	0	S2 Pumps	0
S84X	124	S127 Pumps	0	S3 Pumps	0
S71	119	S129 Pumps	0	S4 Pumps	0
S72	0	S131 Pumps	0	C5	0
Total Inflows:	1839				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	157	S77	-NR-
S127 Culverts	0	S351	98	S308	1
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	-NR-	S308	0.24
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 -10840 cfs or -21500 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:	13.62	15.35	0	0	0	0	0	0	0		(cfs)
S193:											
S191:	18.58	15.35	0	0.0	-NR-	0.0					
S135 Pumps:	13.35	15.26	148	56	43	25	25				(cfs)
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.92	15.29	1061	0.5	0.5	0.5	0.5	0.4	0.5		
S65EX1:	20.92	15.29	0								
S127 Pumps:	13.53	15.40	0	0	0	0	0	0			(cfs)
S127 Culvert:			0	0.0							
S129 Pumps:	12.91	15.59	0	0	0	0					(cfs)
S129 Culvert:			0	0.0							
S131 Pumps:	12.88	15.73	0	0	0						(cfs)
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		29.55	43								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	12.38	15.45	0	0	0	0					(cfs)
S169:	15.40	12.48	319	1.3	1.3	0.8					
S310:	15.37		194								
S3 Pumps:	10.59	15.34	0	0	0	0					(cfs)
S354:	15.34	10.59	157	0.4	0.4						
S2 Pumps:	10.28	-NR-	0	-NR-	-NR-	-NR-	-NR-				(cfs)
S351:	-NR-	10.28	98	0.2	0.4	0.2					
S352:	15.43	10.52	0	0.0	0.0						
C10A:	-NR-	10.26		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT			-NR-								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.28	-NR-	98	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	10.52	15.43	0	-NR-	-NR-	-NR-	-NR-				
S354:	10.59	15.34	157	-NR-	-NR-	-NR-	-NR-				

Caloosahatchee River (S77, S78, S79)

S47B:	14.45	12.53		2.0	0.0						
S47D:	12.43	11.18	58	1.0							

S77:

Spillway and Sector Preferred Flow:

15.45 11.08 951 0.0 0.5 2.5 0.5

Flow Due to Lockages+: -NR-

S78:

Spillway and Sector Flow:

11.08 2.87 1306 2.0 0.0 0.0 2.0

Flow Due to Lockages+: 14

S79:

Spillway and Sector Flow:

3.04 1.21 1743 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0

Flow Due to Lockages+: 16

Percent of flow from S77 55%

Chloride (ppm) -N

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:

15.32 14.18 0 0.0 0.0 0.0 0.0

Flow Due to Lockages+: 1

S153: 18.87 13.83 119 0.5 0.0

S80:

Spillway and Sector Flow:

14.08 0.27 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Flow Due to Lockages+: 17

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

	1-Day	3-Day	7-Day	Direction	Speed
Daily Precipitation Totals	(inches)	(inches)	(inches)	(Deg)	(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:	0.18	0.19	0.24	108	8
S78:	9.37	9.40	9.46	77	5
S79:	-0.64	-0.62	-0.06	305	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:	14.63	14.63	16.21	83	3
S80:	2.21	2.45	4.59	102	6
Okeechobee Average	7.41	1.14	1.27		

(Sites S78, S79 and S80 not included)

Oke Nexrad Basin Avg -NR- 0.00 0.00

Okeechobee Lake Elevations	21 FEB 2021	15.40	Difference from 21FEB21
21FEB21 -1 Day =	20 FEB 2021	15.45	0.05
21FEB21 -2 Days =	19 FEB 2021	15.51	0.11
21FEB21 -3 Days =	18 FEB 2021	15.52	0.12
21FEB21 -4 Days =	17 FEB 2021	15.46	0.06
21FEB21 -5 Days =	16 FEB 2021	15.45	0.05
21FEB21 -6 Days =	15 FEB 2021	15.44	0.04
21FEB21 -7 Days =	14 FEB 2021	15.43	0.03
21FEB21 -30 Days =	22 JAN 2021	15.60	0.20
21FEB21 -1 Year =	21 FEB 2020	12.82	-2.58
21FEB21 -2 Year =	21 FEB 2019	12.86	-2.54

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
21FEB21	Today =	21 FEB 2021	1562 MON	-9519
21FEB21	-1 Day =	20 FEB 2021	2579 SUN	-11646
21FEB21	-2 Days =	19 FEB 2021	3590 SAT	-897
21FEB21	-3 Days =	18 FEB 2021	3563 FRI	14779
21FEB21	-4 Days =	17 FEB 2021	1905 THU	3893
21FEB21	-5 Days =	16 FEB 2021	784 WED	4339
21FEB21	-6 Days =	15 FEB 2021	276 TUE	3550
21FEB21	-7 Days =	14 FEB 2021	743 MON	7488
21FEB21	-8 Days =	13 FEB 2021	350 SUN	3655
21FEB21	-9 Days =	12 FEB 2021	-104 SAT	1453
21FEB21	-10 Days =	11 FEB 2021	-521 FRI	-344
21FEB21	-11 Days =	10 FEB 2021	-1121 THU	-501
21FEB21	-12 Days =	09 FEB 2021	-966 WED	310
21FEB21	-13 Days =	08 FEB 2021	-1000 TUE	5314

S65E				
Average Flow over previous 14 days				Avg-Daily Flow
21FEB21	Today=	21 FEB 2021	1116 MON	1200
21FEB21	-1 Day =	20 FEB 2021	1108 SUN	1187
21FEB21	-2 Days =	19 FEB 2021	1097 SAT	1223
21FEB21	-3 Days =	18 FEB 2021	1090 FRI	1158
21FEB21	-4 Days =	17 FEB 2021	1078 THU	1212
21FEB21	-5 Days =	16 FEB 2021	1066 WED	1213
21FEB21	-6 Days =	15 FEB 2021	1052 TUE	1104
21FEB21	-7 Days =	14 FEB 2021	1026 MON	1169
21FEB21	-8 Days =	13 FEB 2021	1008 SUN	1050
21FEB21	-9 Days =	12 FEB 2021	1000 SAT	946
21FEB21	-10 Days =	11 FEB 2021	1002 FRI	1001
21FEB21	-11 Days =	10 FEB 2021	1003 THU	1050
21FEB21	-12 Days =	09 FEB 2021	1002 WED	1042
21FEB21	-13 Days =	08 FEB 2021	1004 TUE	1069

S65EX1				
Average Flow over previous 14 days				Avg-Daily Flow
21FEB21	Today=	21 FEB 2021	10 MON	0
21FEB21	-1 Day =	20 FEB 2021	10 SUN	0
21FEB21	-2 Days =	19 FEB 2021	10 SAT	0

21FEB21	-3 Days =	18 FEB 2021	10	FRI		0
21FEB21	-4 Days =	17 FEB 2021	10	THU		0
21FEB21	-5 Days =	16 FEB 2021	10	WED		0
21FEB21	-6 Days =	15 FEB 2021	10	TUE		0
21FEB21	-7 Days =	14 FEB 2021	36	MON		0
21FEB21	-8 Days =	13 FEB 2021	36	SUN		0
21FEB21	-9 Days =	12 FEB 2021	36	SAT		51
21FEB21	-10 Days =	11 FEB 2021	33	FRI		94
21FEB21	-11 Days =	10 FEB 2021	26	THU		0
21FEB21	-12 Days =	09 FEB 2021	26	WED		0
21FEB21	-13 Days =	08 FEB 2021	26	TUE		0

Lake Okeechobee Outlets Last 14 Days

	S-77	Below S-77	S-78	S-79	
	Discharge	Discharge	Discharge	Discharge	
	(ALL DAY)	(ALL-DAY)	(ALL DAY)	(ALL DAY)	
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	
21 FEB 2021	-NR-	2934	2618	3488	
20 FEB 2021	1796	2668	2433	3533	
19 FEB 2021	1296	1620	2224	3539	
18 FEB 2021	1633	2481	2650	3877	
17 FEB 2021	2319	2895	2987	4574	
16 FEB 2021	2665	2880	2955	4540	
15 FEB 2021	2266	2340	2710	3925	
14 FEB 2021	1264	1575	2354	3300	
13 FEB 2021	2221	2563	2019	3189	
12 FEB 2021	2070	2144	1992	2715	
11 FEB 2021	2630	2710	2283	3145	
10 FEB 2021	3307	3520	2521	3230	
09 FEB 2021	551	2279	2589	3438	
08 FEB 2021	1742	1927	2395	3704	

	S-310	S-351	S-352	S-354	L8 Canal Pt
	Discharge	Discharge	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)	(ALL DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)	(AC-FT)
21 FEB 2021	385	195	0	312	-NR-
20 FEB 2021	400	97	0	578	-NR-
19 FEB 2021	-72	175	0	774	-NR-
18 FEB 2021	-137	738	0	845	-NR-
17 FEB 2021	37	178	183	517	-NR-
16 FEB 2021	53	519	289	721	-NR-
15 FEB 2021	43	295	0	206	-NR-
14 FEB 2021	-2	682	0	0	-NR-
13 FEB 2021	29	495	0	241	-NR-
12 FEB 2021	13	526	0	297	-NR-
11 FEB 2021	26	0	0	407	-NR-
10 FEB 2021	-7	0	0	0	-NR-
09 FEB 2021	22	0	0	0	-NR-
08 FEB 2021	180	0	0	0	284

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
21 FEB 2021	3	243	33
20 FEB 2021	3	22	50
19 FEB 2021	9	-273	571
18 FEB 2021	7	53	555
17 FEB 2021	6	-9	39
16 FEB 2021	5	-297	31

15 FEB 2021	7	-49	50
14 FEB 2021	6	-204	27
13 FEB 2021	6	-235	66
12 FEB 2021	4	-89	35
11 FEB 2021	-NR-	559	43
10 FEB 2021	6	-178	50
09 FEB 2021	4	-128	51
08 FEB 2021	5	47	23

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

(I) - Flows preceded 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

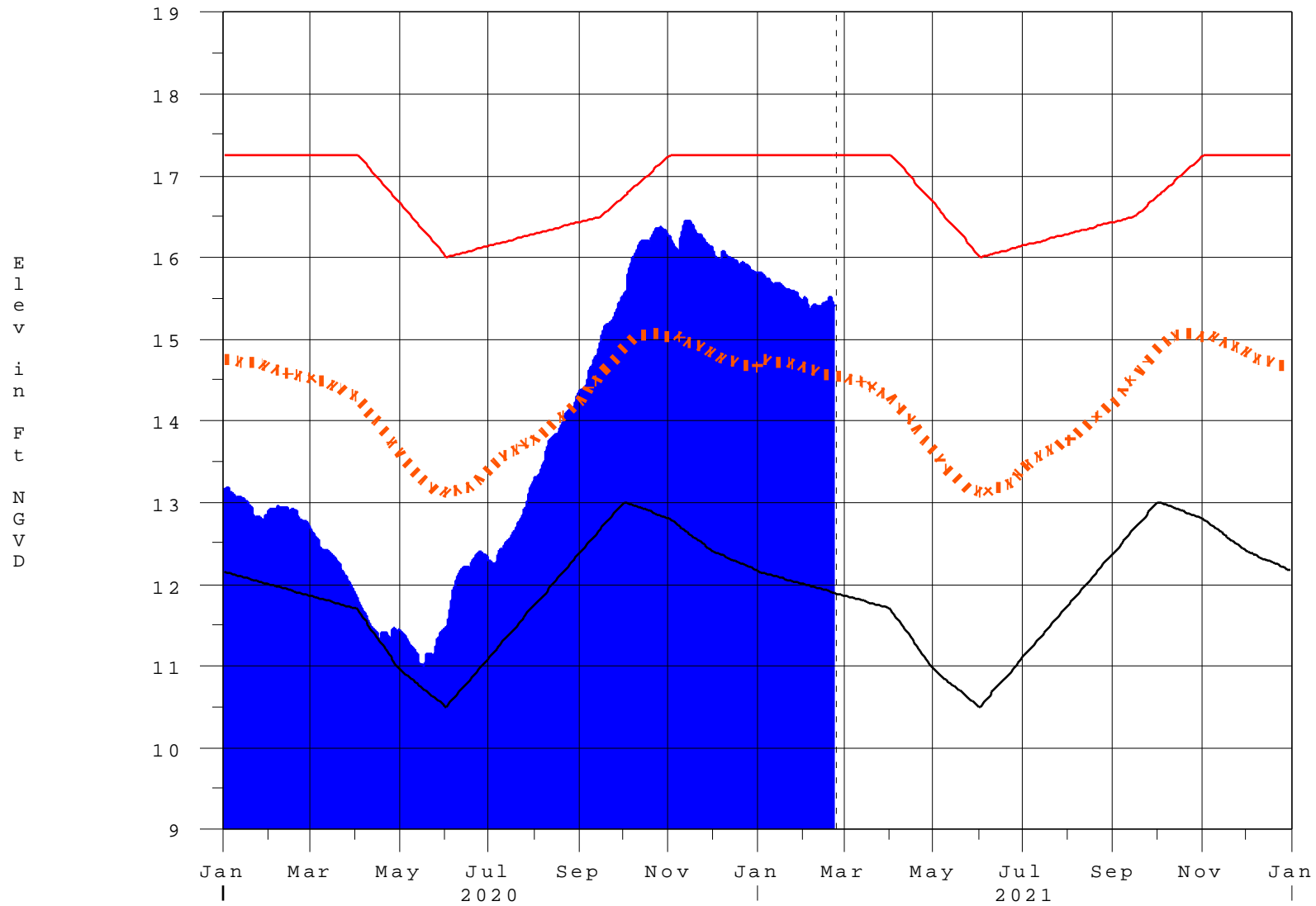
++ For more information see the Jacksonville District Navigation website at <http://www.saj.usace.army.mil/>

\$ For information regarding Lake Okeechobee Service Area water restrictions please refer to www.sfwmd.gov

Report Generated 22FEB2021 @ 23:39 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

23FEB21 07:31:27



- 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 \geq 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**

Under Construction