

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 3/15/2021 (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 (Mar-Aug)	N/A	N/A	1.25	Normal	0.87	Normal	0.94	Normal
Multi Seasonal (Mar-Oct)	N/A	N/A	2.69	Wet	2.21	Normal	2.19	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:

-1560 cfs 14-day running average for Lake Okeechobee Net Inflow through 3/14/2021. According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-0.75 for Palmer Drought Index on 3/13/2021. 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 3/15/2021:

Lake Okeechobee Stage: **15.02 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.25	
Operational Band	High sub-band	16.58	
	Intermediate sub-band	15.64	
	Low sub-band	13.50	← 15.02 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.79	
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 3/15/2021 (ENSO Condition- La Nina):

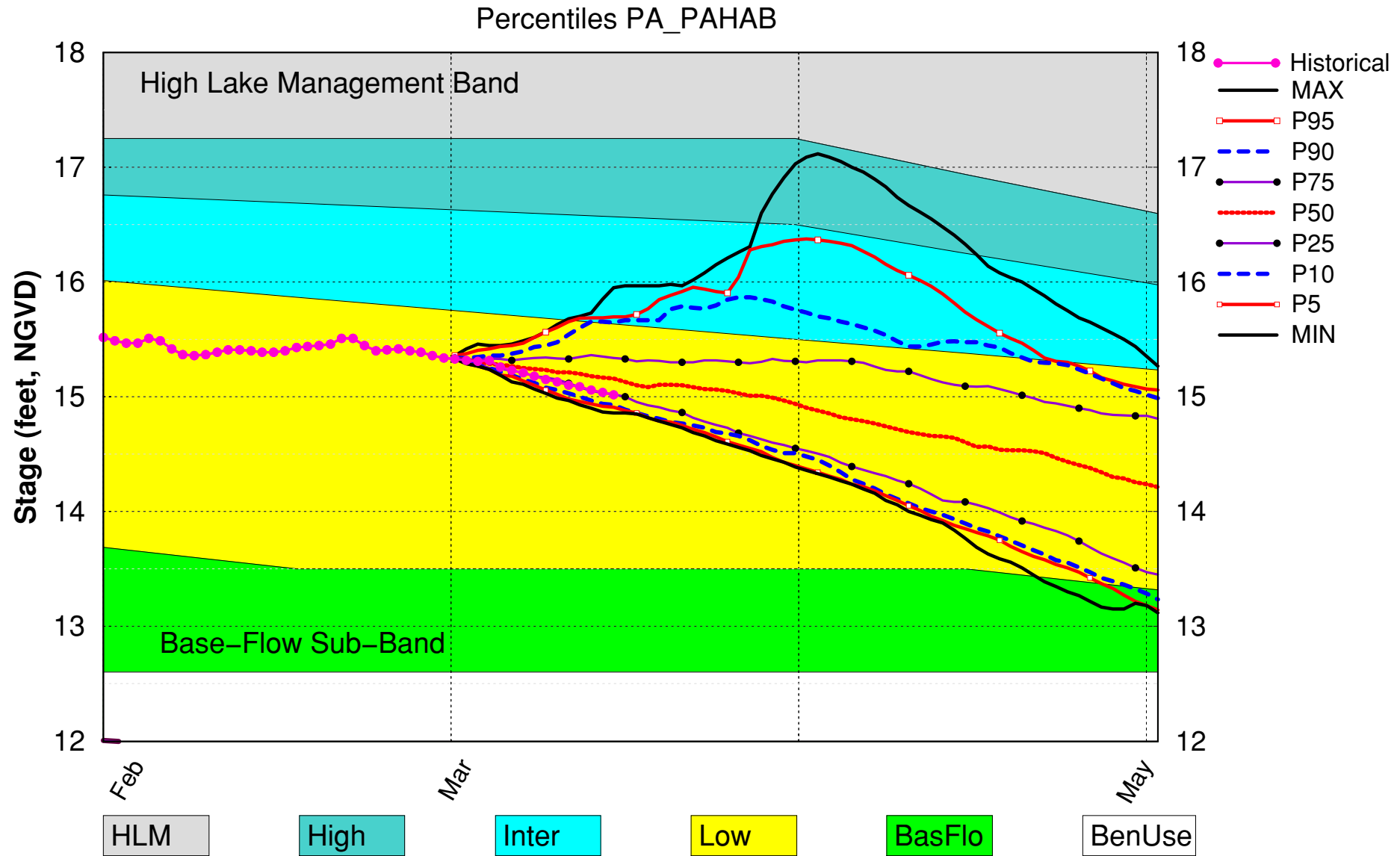
Status for week ending 3/15/2021:

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	-0.75 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Below Normal	H
		3 months: Below Normal	M
	LOK Seasonal Net Inflow Outlook	0.87 ft	M
	ENSO Forecast	Dry	
	LOK Multi-Seasonal Net Inflow Outlook	2.21 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (16.59 ft)	L
	WCA 2A: Site 2-17	Above Line 1 (11.90 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.84 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.

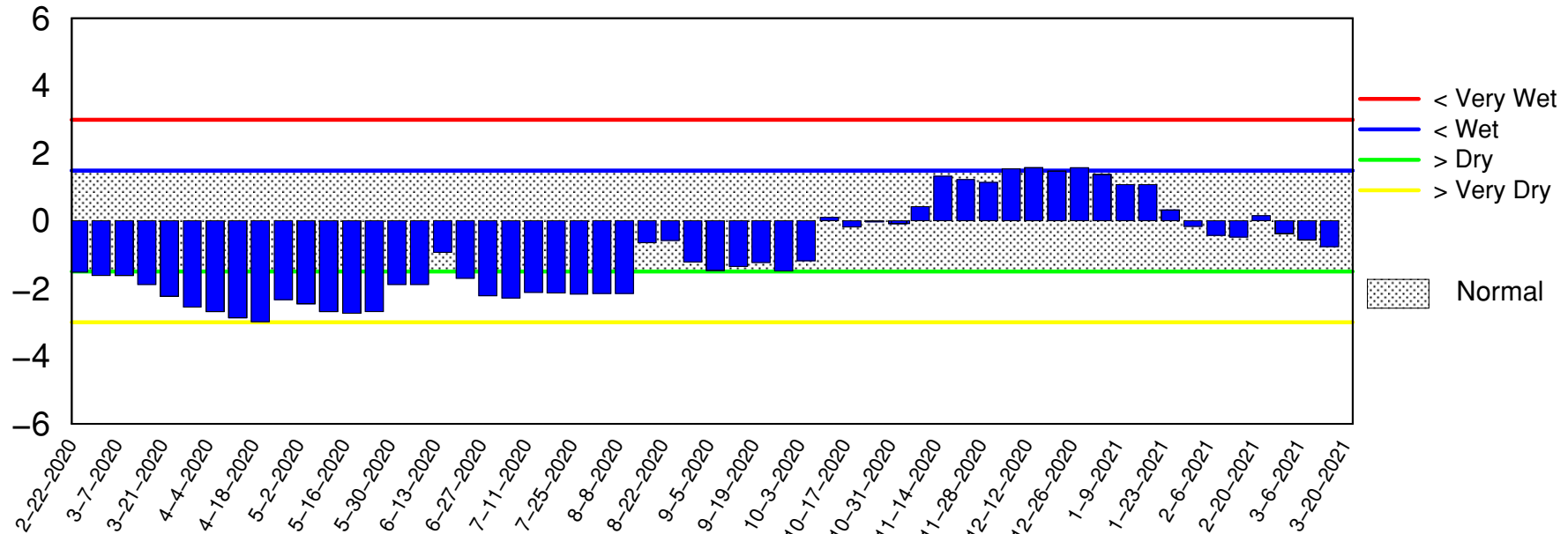
Lake Okeechobee SFWMM Mar 2021 Position Analysis



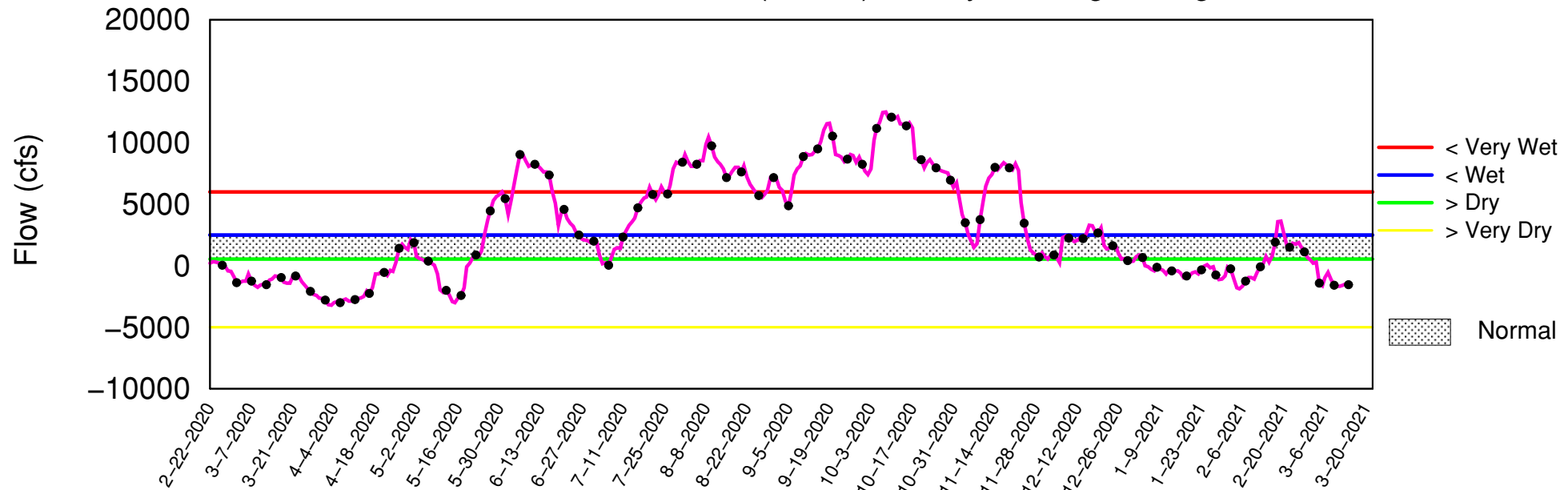
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of March 15 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

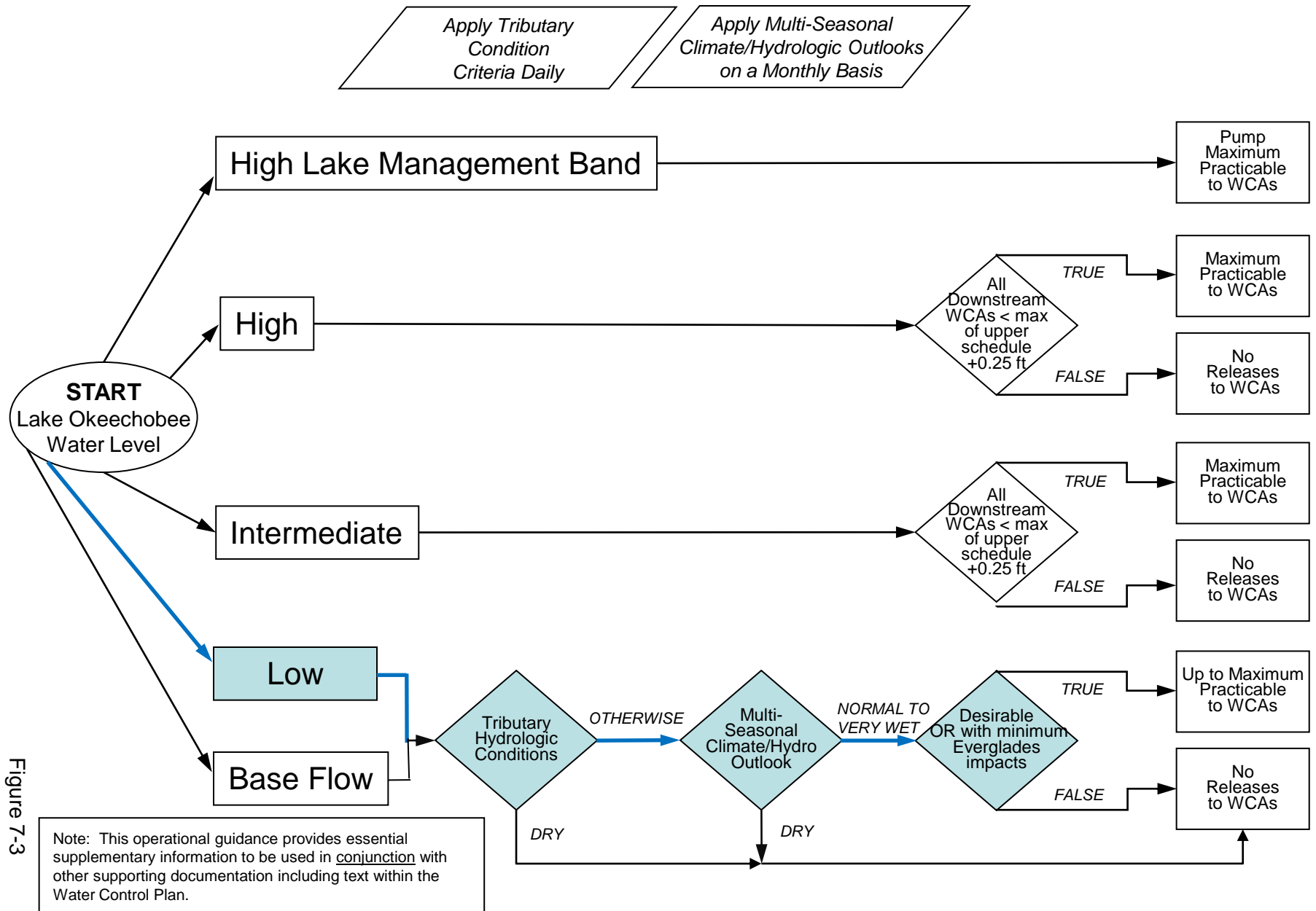


Figure 7-3

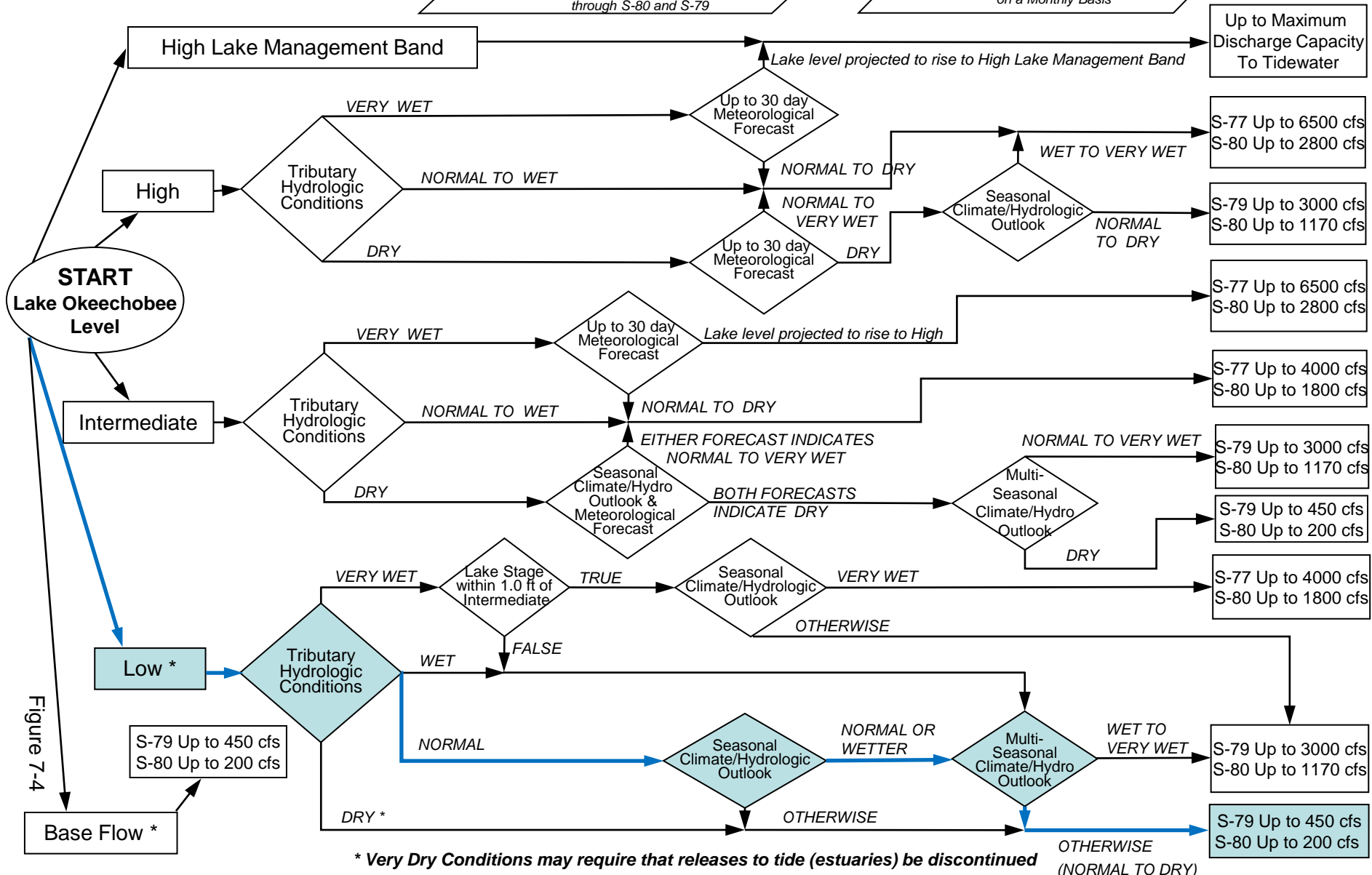
2008 LORS

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

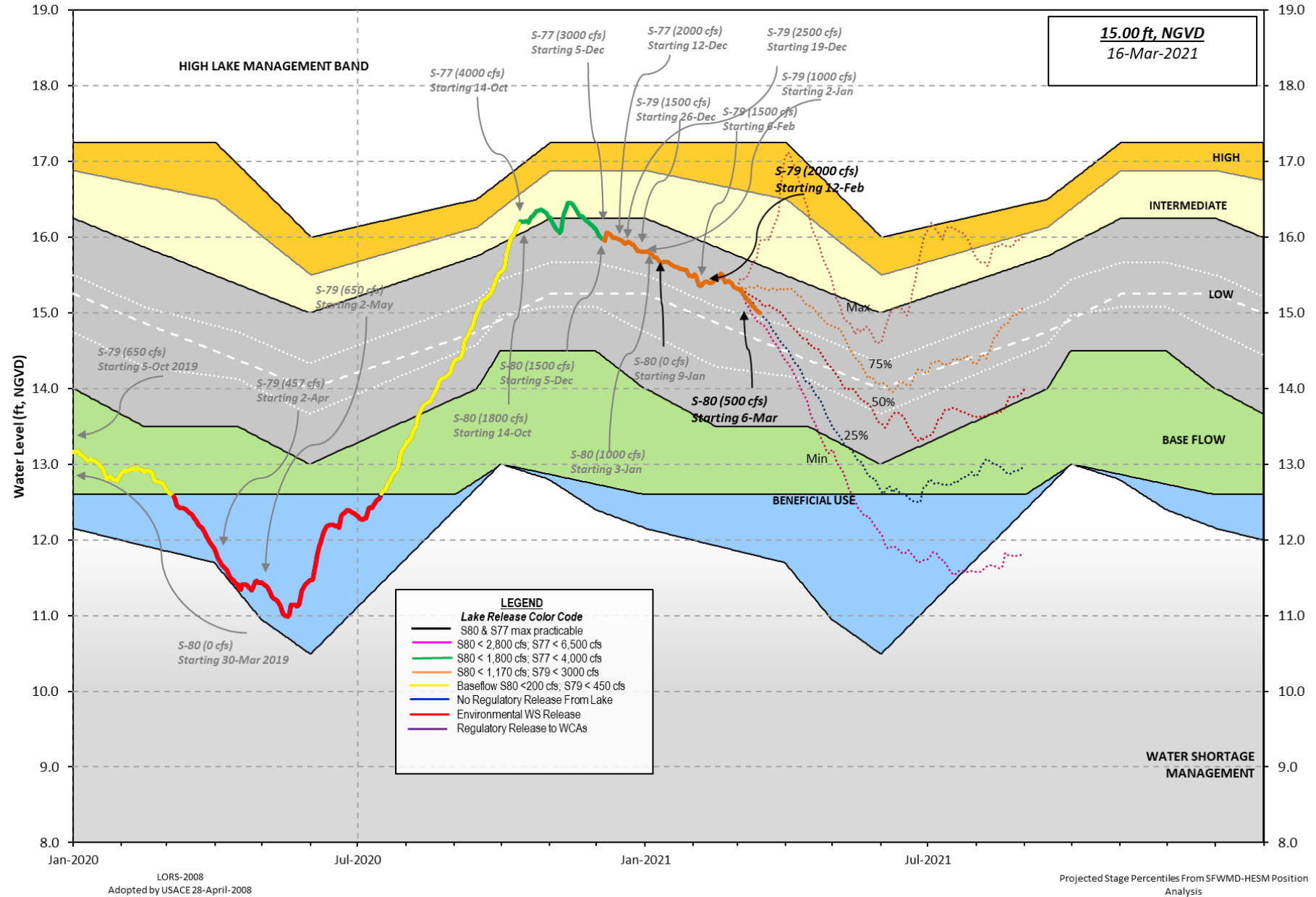
Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

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 14 MAR 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	15.02	12.38	12.28 (Official Elv)
Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 11.79			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	13.23
Difference from Average LORS2008	1.80

14MAR (1965-2007) Period of Record Average	14.45
Difference from POR Average	0.57

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ♦ 8.96'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ♦ 7.16'
 Bridge Clearance = 48.99'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.99	15.07	15.02	14.99	15.03	15.11	15.01	14.95

*Combination Okeechobee Avg-Daily Lake Average = 15.02
 (*See Note)

Okeechobee Inflows (cfs):

S65E	898	S65EX1	0	Fisheating Cr	6
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:	904				

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	240	S77	1851
S127 Culverts	0	S351	1121	S308	439
S129 Culverts	0	S352	337		
S131 Culverts	0	L8 Canal Pt	-NR-		
Total Outflows:	3988				

****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	0.19	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 -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:	13.57	15.05	0	0	0	0	0	0	0	(cfs)	
S193:											
S191:	18.51	15.05	0	0.0	0.2	0.0					
S135 Pumps:	13.42	14.91	0	0	0	0	0			(cfs)	
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	20.99	14.89	898	0.4	0.4	0.5	0.6	0.3	0.5		
S65EX1:	20.99	14.89	0								
S127 Pumps:	13.46	14.99	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	12.98	15.04	0	0	0	0			(cfs)		
S129 Culvert:			0	0.0							
S131 Pumps:	12.92	15.09	0	0	0				(cfs)		
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		28.34	6								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.52	14.93	0	0	0	0			(cfs)		
S169:	14.92	11.56	4	0.0	0.0	0.0					
S310:	14.87		9								
S3 Pumps:	10.40	14.86	0	0	0	0			(cfs)		
S354:	14.86	10.40	240	0.4	0.4						
S2 Pumps:	10.97	-NR-	0	0	0	0	0		(cfs)		
S351:	-NR-	10.97	1121	1.5	1.5	1.4					
S352:	15.04	10.36	337	0.5	0.8						
C10A:	-NR-	14.67		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT			-NR-								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	10.97	-NR-	1121	-NR--NR--NR--NR--NR--NR-
S352:	10.36	15.04	337	-NR--NR--NR--NR-
S354:	10.40	14.86	240	-NR--NR--NR--NR-

Caloosahatchee River (S77, S78, S79)

S47B:	14.39	11.87		0.5	1.0
S47D:	11.83	11.17	0	0.0	

S77:

Spillway and Sector Preferred Flow:

14.87 11.07 1842 2.5 2.5 2.5 0.0
Flow Due to Lockages+: 9

S78:

Spillway and Sector Flow:

11.07 2.96 1471 2.0 0.0 2.5 0.0
Flow Due to Lockages+: 19

S79:

Spillway and Sector Flow:

3.09 0.87 1828 1.0 1.0 1.0 1.0 1.0 1.0 1.0 0.0
Flow Due to Lockages+: 9
Percent of flow from S77 101%
Chloride (ppm) 0

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:

15.00 14.51 437 0.0 0.0 4.0 0.0
Flow Due to Lockages+: 2

S153: 18.95 14.17 0 0.0 0.0

S80:

Spillway and Sector Flow:

14.41 1.31 384 0.0 0.0 0.5 0.0 0.5 0.0 0.0
Flow Due to Lockages+: 28
Percent of flow from S308 114%

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	----- Wind -----	
Daily Precipitation Totals	(inches)	(inches)	(inches)	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:	0.00	0.00	0.01	178	2
S78:	0.00	0.00	0.00	334	2
S79:	0.00	0.00	0.00	104	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:	0.00	0.00	0.00	91	4
S80:	0.00	0.00	0.00	187	1
Okeechobee Average	0.00	0.00	0.00		

(Sites S78, S79 and S80 not included)

Oke Nexrad Basin Avg -NR- 0.00 0.00

Okeechobee Lake Elevations	14 MAR 2021	15.02	Difference from 14MAR21
14MAR21 -1 Day =	13 MAR 2021	15.04	0.02
14MAR21 -2 Days =	12 MAR 2021	15.06	0.04
14MAR21 -3 Days =	11 MAR 2021	15.09	0.07
14MAR21 -4 Days =	10 MAR 2021	15.10	0.08
14MAR21 -5 Days =	09 MAR 2021	15.13	0.11
14MAR21 -6 Days =	08 MAR 2021	15.15	0.13
14MAR21 -7 Days =	07 MAR 2021	15.18	0.16
14MAR21 -30 Days =	12 FEB 2021	15.39	0.37
14MAR21 -1 Year =	14 MAR 2020	12.38	-2.64
14MAR21 -2 Year =	14 MAR 2019	12.28	-2.74

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
14MAR21 Today =	14 MAR 2021	-1560	MON		-86
14MAR21 -1 Day =	13 MAR 2021	-1483	SUN		-303
14MAR21 -2 Days =	12 MAR 2021	-1588	SAT		-2604
14MAR21 -3 Days =	11 MAR 2021	-1667	FRI		1645
14MAR21 -4 Days =	10 MAR 2021	-1696	THU		-2878
14MAR21 -5 Days =	09 MAR 2021	-1585	WED		-1189
14MAR21 -6 Days =	08 MAR 2021	-1150	TUE		-3928
14MAR21 -7 Days =	07 MAR 2021	-581	MON		-4191
14MAR21 -8 Days =	06 MAR 2021	-961	SUN		-2039
14MAR21 -9 Days =	05 MAR 2021	-1648	SAT		-3638
14MAR21 -10 Days =	04 MAR 2021	-1297	FRI		-9497
14MAR21 -11 Days =	03 MAR 2021	282	THU		5175
14MAR21 -12 Days =	02 MAR 2021	191	WED		849
14MAR21 -13 Days =	01 MAR 2021	440	TUE		848

S65E					
Average Flow over previous 14 days					Avg-Daily Flow
14MAR21 Today=	14 MAR 2021	1058	MON		1024
14MAR21 -1 Day =	13 MAR 2021	1058	SUN		1033
14MAR21 -2 Days =	12 MAR 2021	1063	SAT		1041
14MAR21 -3 Days =	11 MAR 2021	1073	FRI		1046
14MAR21 -4 Days =	10 MAR 2021	1081	THU		1014
14MAR21 -5 Days =	09 MAR 2021	1091	WED		1040
14MAR21 -6 Days =	08 MAR 2021	1104	TUE		1049
14MAR21 -7 Days =	07 MAR 2021	1112	MON		1072
14MAR21 -8 Days =	06 MAR 2021	1122	SUN		1092
14MAR21 -9 Days =	05 MAR 2021	1128	SAT		1062
14MAR21 -10 Days =	04 MAR 2021	1140	FRI		1078
14MAR21 -11 Days =	03 MAR 2021	1146	THU		1064
14MAR21 -12 Days =	02 MAR 2021	1156	WED		1121
14MAR21 -13 Days =	01 MAR 2021	1163	TUE		1070

S65EX1					
Average Flow over previous 14 days					Avg-Daily Flow
14MAR21 Today=	14 MAR 2021	0	MON		0
14MAR21 -1 Day =	13 MAR 2021	0	SUN		0
14MAR21 -2 Days =	12 MAR 2021	0	SAT		0

14MAR21	-3 Days =	11 MAR 2021	0	FRI		0
14MAR21	-4 Days =	10 MAR 2021	0	THU		0
14MAR21	-5 Days =	09 MAR 2021	0	WED		0
14MAR21	-6 Days =	08 MAR 2021	1	TUE		0
14MAR21	-7 Days =	07 MAR 2021	1	MON		0
14MAR21	-8 Days =	06 MAR 2021	1	SUN		0
14MAR21	-9 Days =	05 MAR 2021	1	SAT		0
14MAR21	-10 Days =	04 MAR 2021	1	FRI		0
14MAR21	-11 Days =	03 MAR 2021	1	THU		0
14MAR21	-12 Days =	02 MAR 2021	1	WED		0
14MAR21	-13 Days =	01 MAR 2021	1	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)	
14 MAR 2021	3670	3599	2955	3640	
13 MAR 2021	3743	3714	2956	4421	
12 MAR 2021	3815	3734	2883	4335	
11 MAR 2021	3711	3636	2865	3918	
10 MAR 2021	3183	3146	2903	3890	
09 MAR 2021	3143	3117	2916	4015	
08 MAR 2021	2747	2689	2958	4331	
07 MAR 2021	2496	2813	2946	4665	
06 MAR 2021	3247	3612	2979	3694	
05 MAR 2021	3741	3928	2982	3821	
04 MAR 2021	3793	4070	2928	3943	
03 MAR 2021	3260	3248	2545	2623	
02 MAR 2021	2654	2710	2173	3215	
01 MAR 2021	2404	2545	2261	3687	

	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)
14 MAR 2021	17	2222	668	476	-NR-
13 MAR 2021	157	1684	622	618	-NR-
12 MAR 2021	268	1565	866	259	-NR-
11 MAR 2021	156	1216	708	117	-NR-
10 MAR 2021	56	927	796	163	-NR-
09 MAR 2021	44	595	202	0	-NR-
08 MAR 2021	10	607	0	0	-NR-
07 MAR 2021	184	784	0	0	-NR-
06 MAR 2021	68	541	18	0	-NR-
05 MAR 2021	194	1121	150	295	-NR-
04 MAR 2021	256	1290	489	553	-NR-
03 MAR 2021	268	1020	374	609	-NR-
02 MAR 2021	231	1451	434	639	-NR-
01 MAR 2021	272	620	406	2183	-NR-

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
14 MAR 2021	876	690	818
13 MAR 2021	771	788	557
12 MAR 2021	780	1098	808
11 MAR 2021	1333	1602	1119
10 MAR 2021	1711	2029	1370
09 MAR 2021	1876	2279	1566

08 MAR 2021	1316	1454	1225
07 MAR 2021	976	935	786
06 MAR 2021	365	398	343
05 MAR 2021	5	142	37
04 MAR 2021	433	439	33
03 MAR 2021	314	-126	49
02 MAR 2021	461	44	58
01 MAR 2021	3	-145	47

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

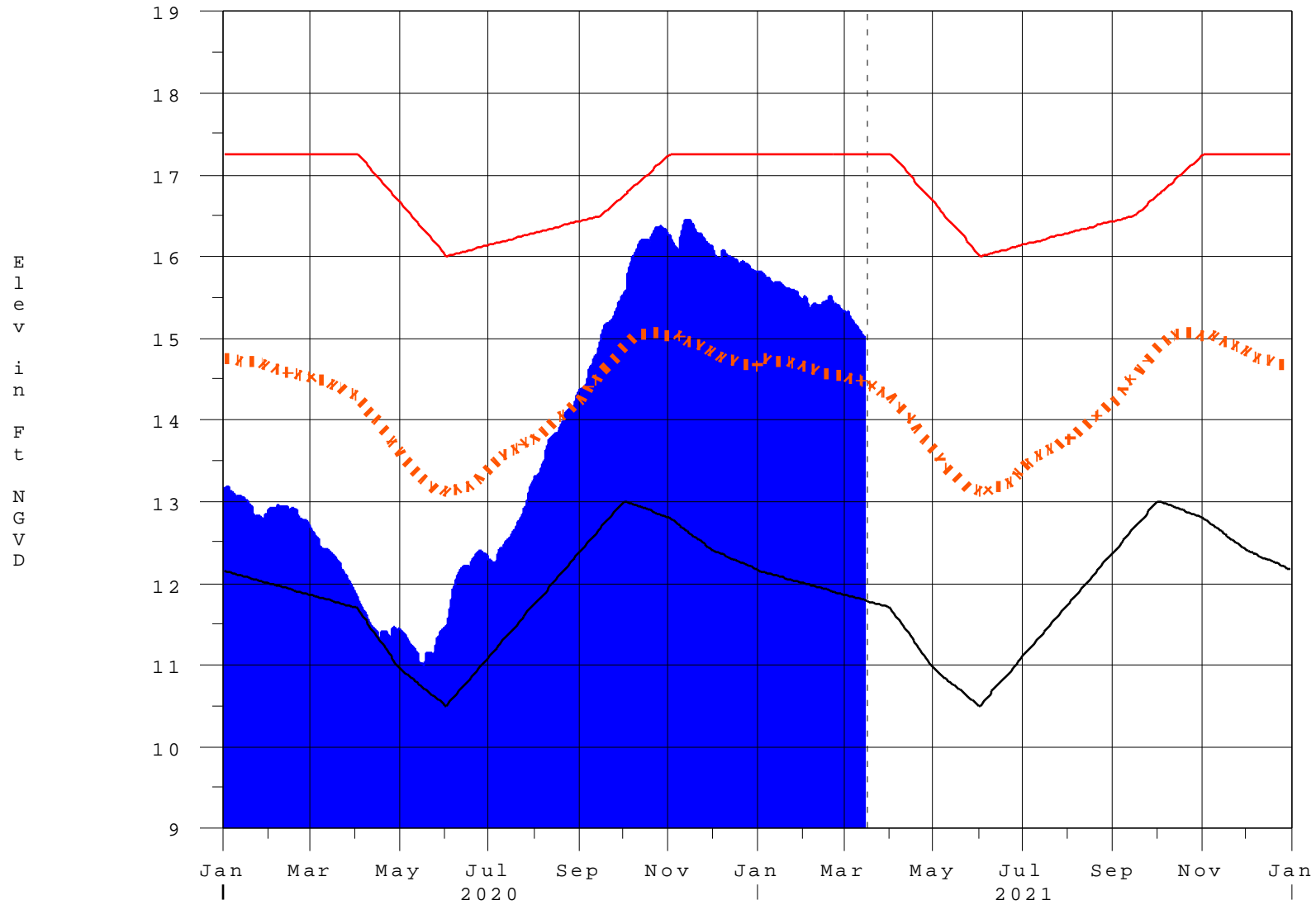
(I) - Flows preceded by "I" signify an instantaneous flow computed from the single value reported for the day

* 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 15MAR2021 @ 22:15 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

16MAR21 09:01:00



- 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