

Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 4/5/2021 (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 (Apr-Sep)	N/A	N/A	1.88	Wet	1.78	Wet	1.64	Wet
Multi Seasonal (Apr-Oct)	N/A	N/A	2.58	Wet	2.32	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:

-3041 cfs 14-day running average for Lake Okeechobee Net Inflow through 4/4/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-1.19 for Palmer Drought Index on 4/3/2021.
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 4/5/2021:

Lake Okeechobee Stage: **14.30 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		17.19	
Operational Band	High sub-band	16.45	
	Intermediate sub-band	15.47	
	Low sub-band	13.50	← 14.30 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.60	
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 4/5/2021 (ENSO Condition- La Nina):

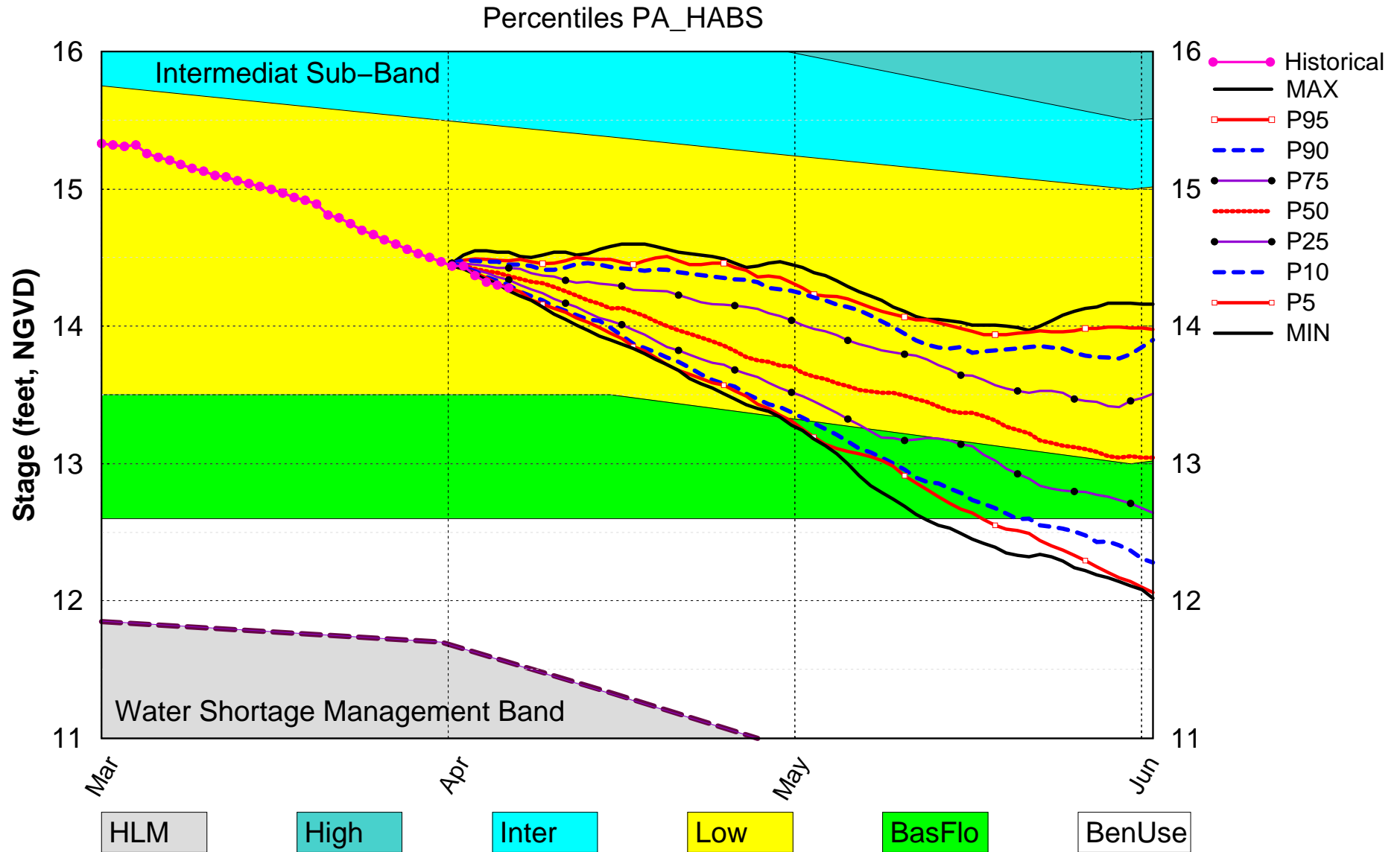
Status for week ending 4/5/2021:

Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
LOK	Projected LOK Stage for the next two months	Base Flow Sub-band	M
	Palmer Drought Index for LOK Tributary Conditions	-1.19 (Dry)	M
	CPC Precipitation Outlook	1 month: Below Normal	M
		3 months: Normal	L
	LOK Seasonal Net Inflow Outlook	1.78 ft	L
	ENSO Forecast	Normal	
	LOK Multi-Seasonal Net Inflow Outlook	2.32 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (16.26 ft)	L
	WCA 2A: Site S-11B HW	Above Line 1 (11.42 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.39 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.

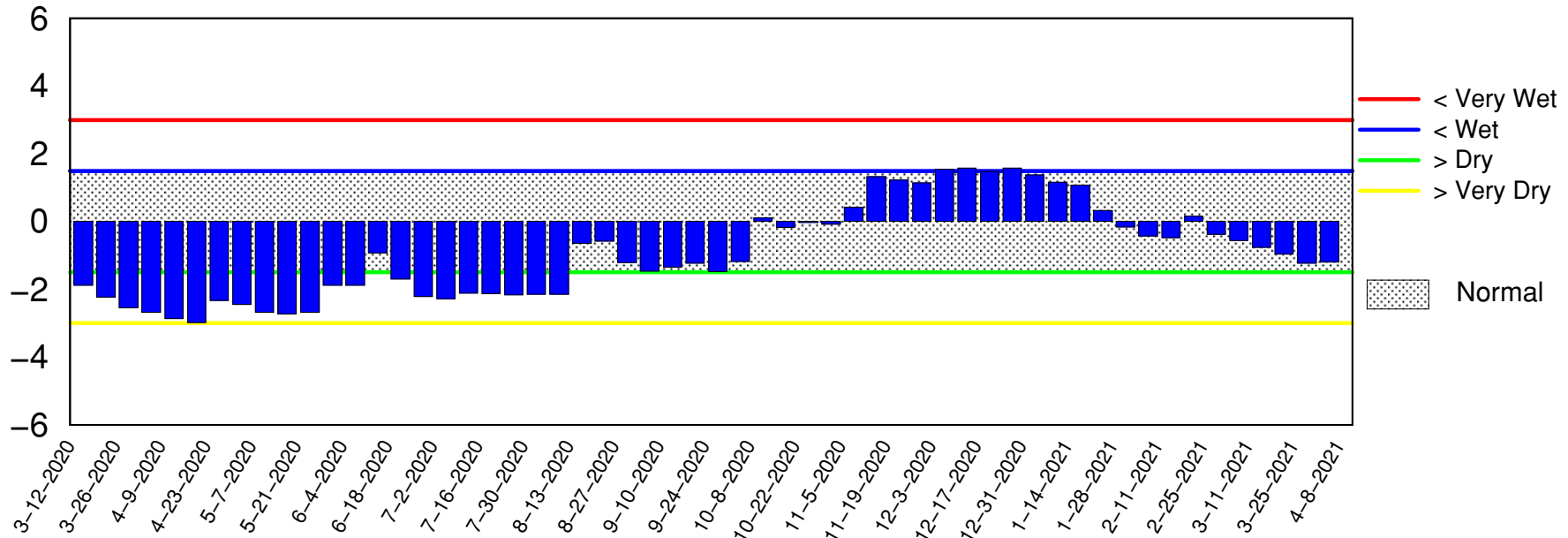
Lake Okeechobee SFWMM Apr 2021 Position Analysis



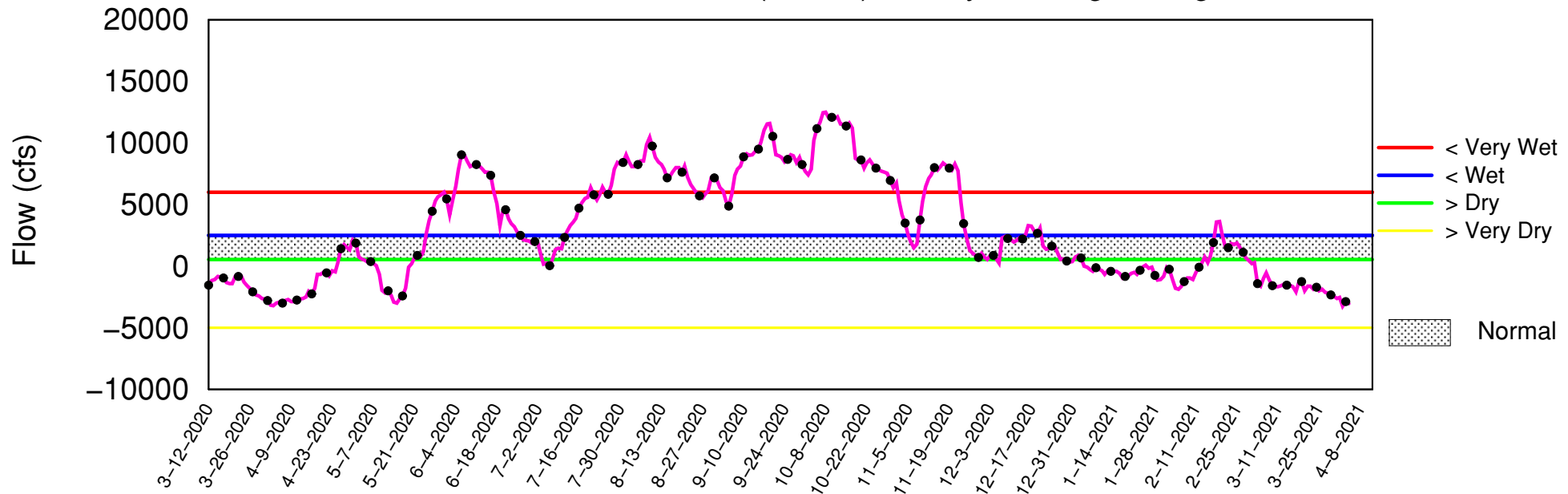
(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of April 5 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

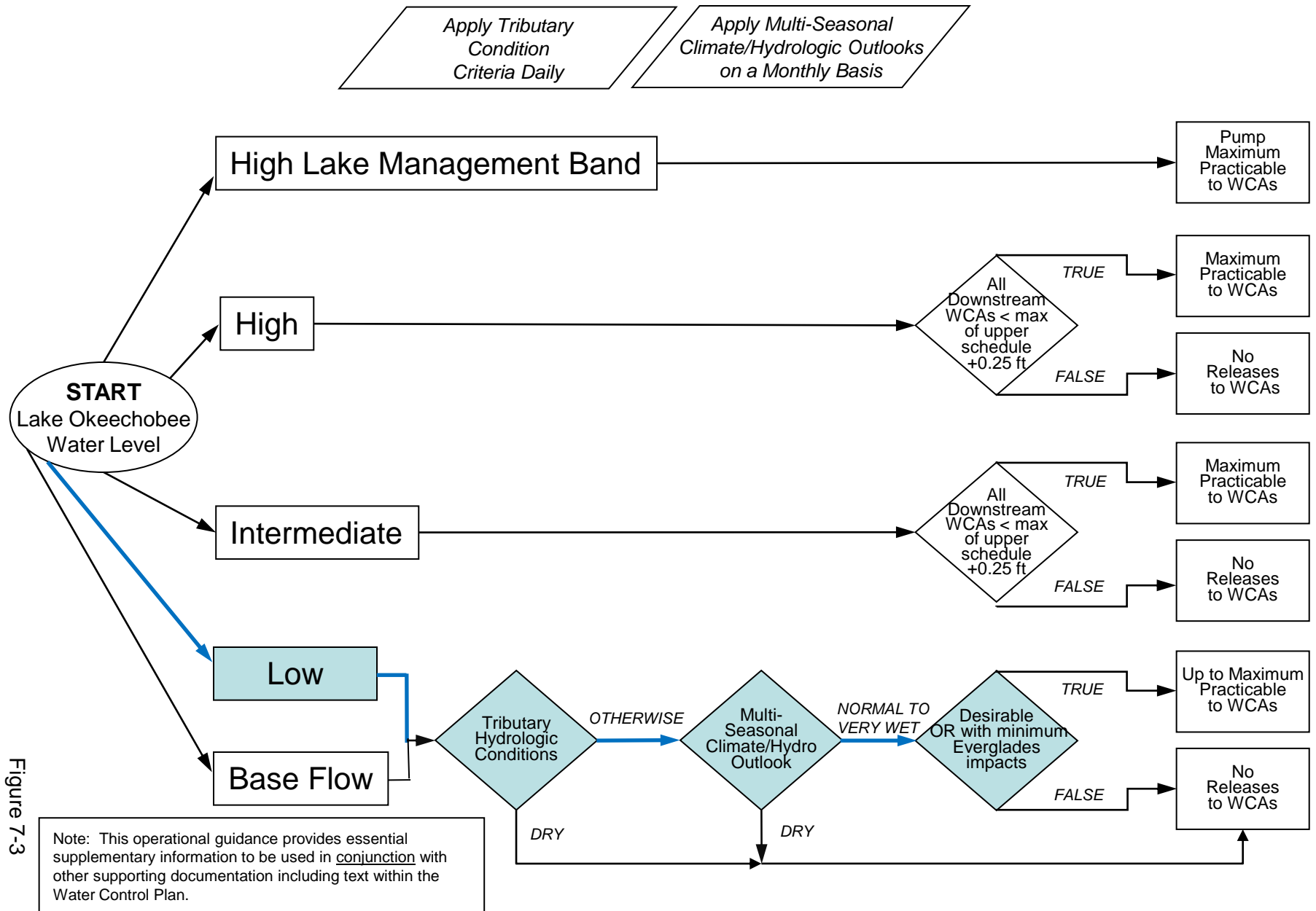


Figure 7-3

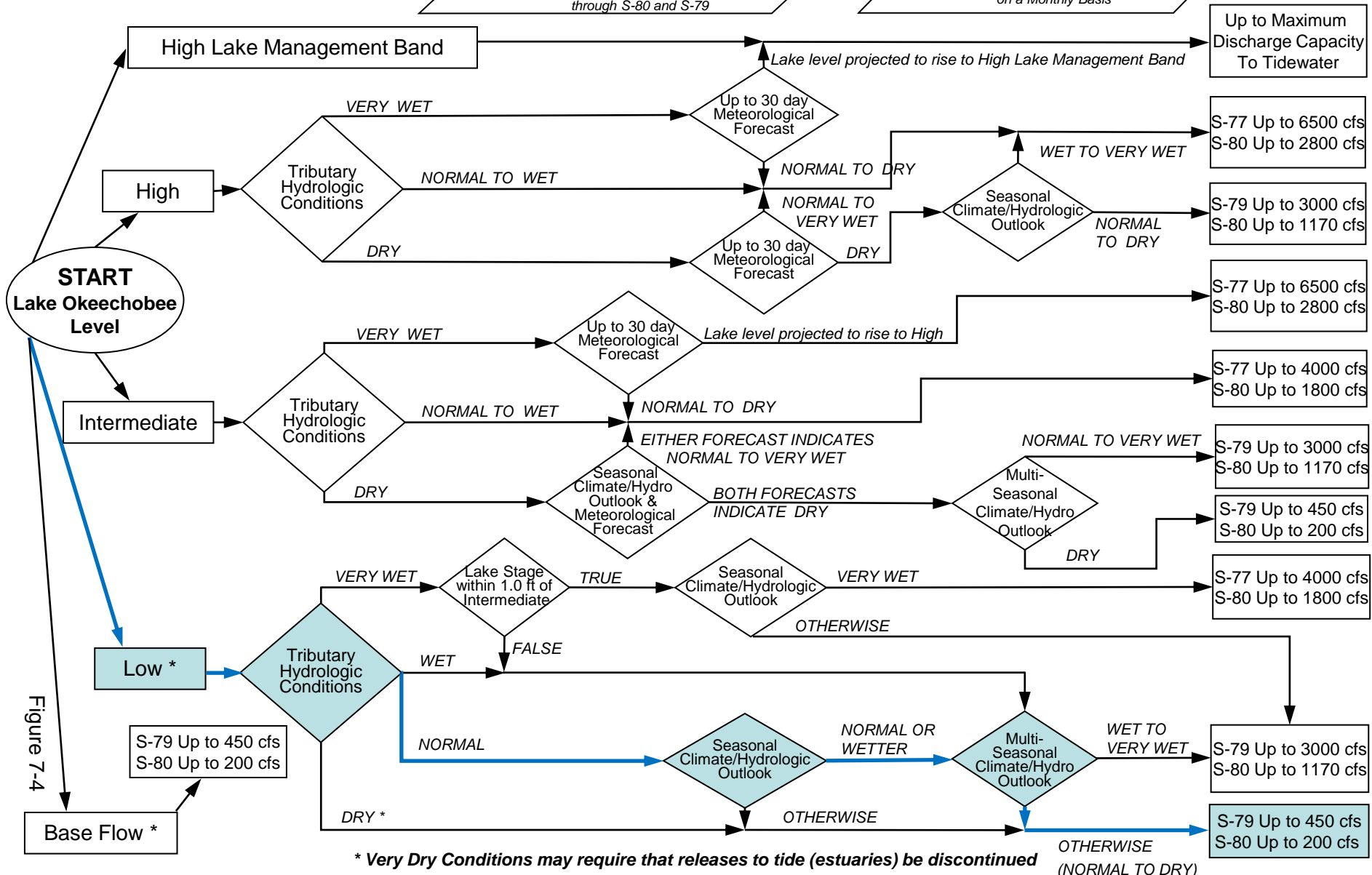
2008 LORS

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

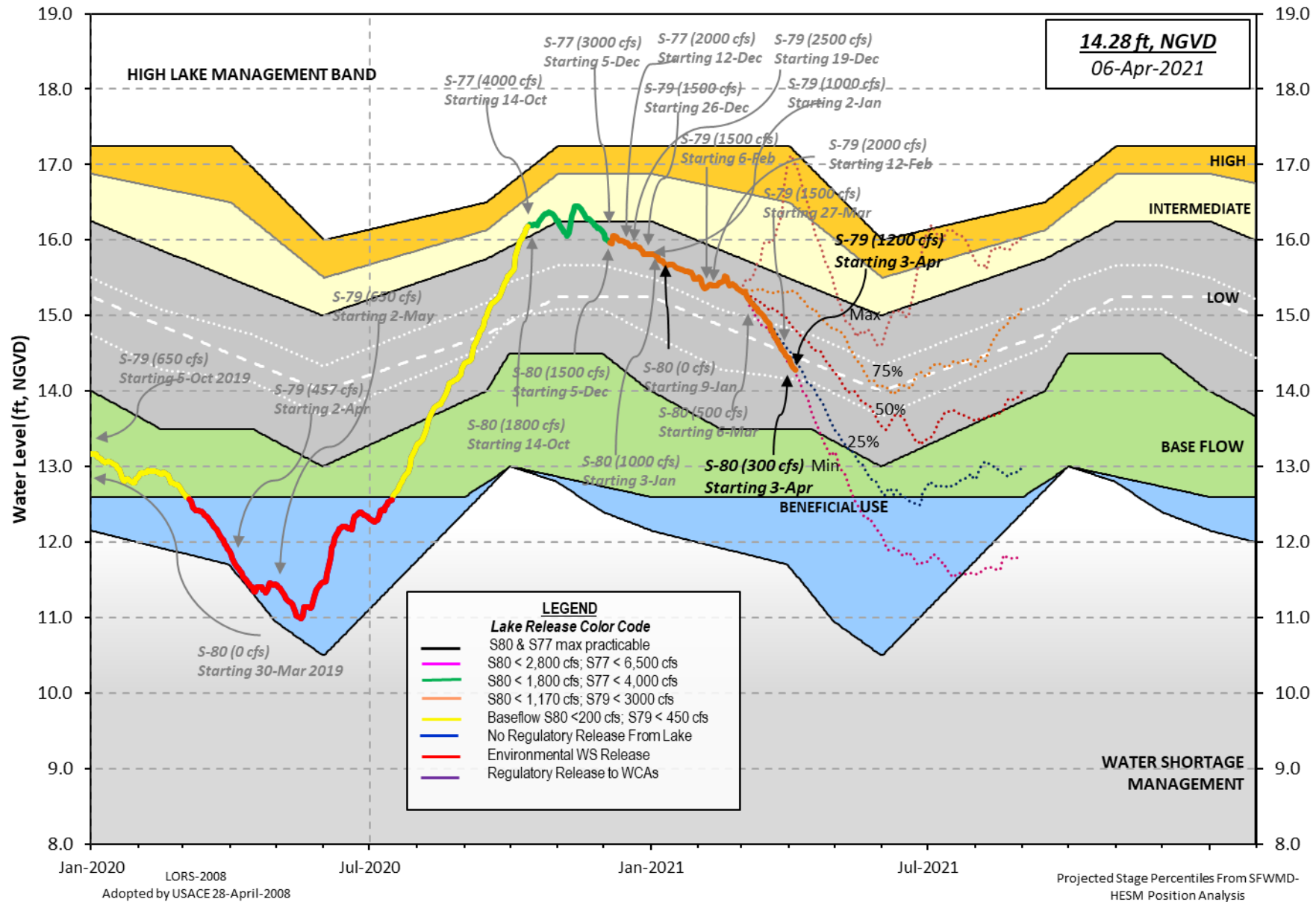
Note: This operational guidance provides essential supplementary information to be used in conjunction with other supporting documentation including text within the Water Control Plan.

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 04 APR 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)
*Okeechobee Lake Elevation	14.30	11.71	11.82 (Official Elv)
Bottom of High Lake Mngmt= 17.19 Top of Water Short Mngmt= 11.60			
Currently in Operational Management Band			

Simulated Average LORS2008 [1965-2000]	12.97
Difference from Average LORS2008	1.33

04APR (1965-2007) Period of Record Average	14.22
Difference from POR Average	0.08

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1  8.24'
 ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2  6.44'
 Bridge Clearance = 49.19'

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.18	14.37	14.36	14.29	14.44	14.38	14.27	14.12

*Combination Okeechobee Avg-Daily Lake Average = 14.30
 (*See Note)

Okeechobee Inflows (cfs):

S65E	330	S65EX1	476	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:		806			

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	16	S77	1265
S127 Culverts	0	S351	931	S308	-0
S129 Culverts	0	S352	724		
S131 Culverts	0	L8 Canal Pt	-NR-		
Total Outflows:		2936			

****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	0.20
Average Pan Evap x 0.75 Pan Coefficient = 0.15" = 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 -4235 cfs or -8400 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:	13.56	14.21	0	0	0	0	0	0	0	0	(cfs)
S193:											
S191:	18.33	14.20	0	0.0	-NR-	0.0					
S135 Pumps:	13.29	14.16	0	0	0	0	0				(cfs)
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	21.03	14.16	330	0.1	0.0	0.4	0.0	0.0	0.4		
S65EX1:	21.03	14.16	476								
S127 Pumps:	13.21	14.22	0	0	0	0	0	0			(cfs)
S127 Culvert:			0	0.0							
S129 Pumps:	12.85	14.33	0	0	0	0					(cfs)
S129 Culvert:			0	0.0							
S131 Pumps:	13.25	14.40	0	0	0						(cfs)
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		27.86	0								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.52	14.36	0	0	0	0					(cfs)
S169:	14.35	11.58	46	0.5	1.0	0.5					
S310:	14.31		36								
S3 Pumps:	10.83	14.31	0	0	0	0					(cfs)
S354:	14.31	10.83	16	0.6	0.8						
S2 Pumps:	11.27	-NR-	0	0	0	0	0				(cfs)
S351:	-NR-	11.27	931	1.4	1.6	1.4					
S352:	14.31	11.28	724	1.1	1.3						
C10A:	-NR-	14.13		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT			-NR-								

S351 and S352 Temporary Pumps/S354 Spillway

S351:	11.27	-NR-	931	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S352:	11.28	14.31	724	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-
S354:	10.83	14.31	16	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-

Caloosahatchee River (S77, S78, S79)

S47B:	14.21	12.27		0.5	1.0		
S47D:	12.35	10.96	0	0.0			
S77:							
Spillway and Sector Preferred Flow:							
	14.27	10.85	1262	0.5	2.5	2.5	0.0
Flow Due to Lockages+:			3				

S78:

Spillway and Sector Flow:
 10.88 3.06 1211 2.0 0.0 0.0 1.5
 Flow Due to Lockages+: 6

S79:

Spillway and Sector Flow:
 3.24 1.59 1680 0.0 0.5 1.0 1.0 1.0 1.0 1.0 0.0
 Flow Due to Lockages+: 13
 Percent of flow from S77 75%
 Chloride (ppm) 0

St. Lucie Canal (S308, S80)

S308:

Spillway and Sector Preferred Flow:
 14.23 14.31 0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: -0

S153: 18.95 14.01 0 0.0 0.0

S80:

Spillway and Sector Flow:
 14.23 0.16 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
 Flow Due to Lockages+: 19
 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 Speed (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:	0.00	0.00	0.01	106 3
S78:	0.00	0.00	0.46	82 2
S79:	0.00	0.00	0.08	37 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	1.16	88 3
S80:	0.00	0.00	0.43	209 1
Okeechobee Average (Sites S78, S79 and S80 not included)	0.00	0.00	0.09	

Oke Nexrad Basin Avg	-NR-	0.00	0.00	

Okeechobee Lake Elevations	04 APR 2021	14.30	Difference from 04APR21
04APR21 -1 Day =	03 APR 2021	14.32	0.02

04APR21	-2 Days =	02 APR 2021	14.37	0.07
04APR21	-3 Days =	01 APR 2021	14.44	0.14
04APR21	-4 Days =	31 MAR 2021	14.44	0.14
04APR21	-5 Days =	30 MAR 2021	14.47	0.17
04APR21	-6 Days =	29 MAR 2021	14.50	0.20
04APR21	-7 Days =	28 MAR 2021	14.53	0.23
04APR21	-30 Days =	05 MAR 2021	15.23	0.93
04APR21	-1 Year =	04 APR 2020	11.71	-2.59
04APR21	-2 Year =	04 APR 2019	11.82	-2.48

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
04APR21	Today =	04 APR 2021	-3041 MON	-989
04APR21	-1 Day =	03 APR 2021	-2884 SUN	-7603
04APR21	-2 Days =	02 APR 2021	-3252 SAT	-11957
04APR21	-3 Days =	01 APR 2021	-2541 FRI	2449
04APR21	-4 Days =	31 MAR 2021	-2658 THU	-3098
04APR21	-5 Days =	30 MAR 2021	-2494 WED	-2678
04APR21	-6 Days =	29 MAR 2021	-2357 TUE	-1341
04APR21	-7 Days =	28 MAR 2021	-2218 MON	-1330
04APR21	-8 Days =	27 MAR 2021	-2129 SUN	-3329
04APR21	-9 Days =	26 MAR 2021	-1913 SAT	-970
04APR21	-10 Days =	25 MAR 2021	-2029 FRI	-2776
04APR21	-11 Days =	24 MAR 2021	-1714 THU	-424
04APR21	-12 Days =	23 MAR 2021	-1889 WED	-4780
04APR21	-13 Days =	22 MAR 2021	-1632 TUE	-3746

S65E

Average Flow over previous 14 days				Avg-Daily Flow
04APR21	Today=	04 APR 2021	609 MON	384
04APR21	-1 Day =	03 APR 2021	651 SUN	383
04APR21	-2 Days =	02 APR 2021	694 SAT	344
04APR21	-3 Days =	01 APR 2021	742 FRI	359
04APR21	-4 Days =	31 MAR 2021	787 THU	301
04APR21	-5 Days =	30 MAR 2021	837 WED	396
04APR21	-6 Days =	29 MAR 2021	881 TUE	761
04APR21	-7 Days =	28 MAR 2021	901 MON	810
04APR21	-8 Days =	27 MAR 2021	917 SUN	756
04APR21	-9 Days =	26 MAR 2021	937 SAT	770
04APR21	-10 Days =	25 MAR 2021	956 FRI	722
04APR21	-11 Days =	24 MAR 2021	979 THU	741
04APR21	-12 Days =	23 MAR 2021	999 WED	847
04APR21	-13 Days =	22 MAR 2021	1012 TUE	946

S65EX1

Average Flow over previous 14 days				Avg-Daily Flow
04APR21	Today=	04 APR 2021	216 MON	476
04APR21	-1 Day =	03 APR 2021	182 SUN	478
04APR21	-2 Days =	02 APR 2021	148 SAT	487
04APR21	-3 Days =	01 APR 2021	114 FRI	471
04APR21	-4 Days =	31 MAR 2021	80 THU	464
04APR21	-5 Days =	30 MAR 2021	47 WED	461
04APR21	-6 Days =	29 MAR 2021	14 TUE	194
04APR21	-7 Days =	28 MAR 2021	0 MON	0
04APR21	-8 Days =	27 MAR 2021	0 SUN	0
04APR21	-9 Days =	26 MAR 2021	0 SAT	0
04APR21	-10 Days =	25 MAR 2021	0 FRI	0
04APR21	-11 Days =	24 MAR 2021	0 THU	0
04APR21	-12 Days =	23 MAR 2021	0 WED	0
04APR21	-13 Days =	22 MAR 2021	0 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)
04 APR 2021	2511	2737	2400	3347
03 APR 2021	2437	2703	2524	3404
02 APR 2021	2739	2653	2366	4089
01 APR 2021	3311	3372	2581	3643
31 MAR 2021	3348	3401	2579	3225
30 MAR 2021	3418	3585	2602	3214
29 MAR 2021	3453	3597	2602	3144
28 MAR 2021	3262	3319	2519	2921
27 MAR 2021	3338	3328	2336	3518
26 MAR 2021	3965	3944	2723	4311
25 MAR 2021	3935	3765	2719	3615
24 MAR 2021	3982	3788	2709	3622
23 MAR 2021	4105	3759	2701	3618
22 MAR 2021	3179	3015	2720	4098

	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)
04 APR 2021	72	1847	1437	31	-NR-
03 APR 2021	70	1294	1370	0	-NR-
02 APR 2021	75	1390	959	0	-NR-
01 APR 2021	44	322	423	47	-NR-
31 MAR 2021	99	305	849	182	-NR-
30 MAR 2021	244	722	1111	722	-NR-
29 MAR 2021	290	1996	1585	1231	-NR-
28 MAR 2021	112	2080	1616	1177	-NR-
27 MAR 2021	202	2231	1693	1253	-NR-
26 MAR 2021	321	2157	1686	1200	-NR-
25 MAR 2021	175	2332	1670	1199	-NR-
24 MAR 2021	273	2333	1593	1012	-NR-
23 MAR 2021	126	2137	1498	879	-NR-
22 MAR 2021	92	2167	720	1136	-NR-

	S-308	Below S-308	S-80
	Discharge	Discharge	Discharge
	(ALL DAY)	(ALL-DAY)	(ALL-DAY)
DATE	(AC-FT)	(AC-FT)	(AC-FT)
04 APR 2021	-0	190	38
03 APR 2021	185	315	214
02 APR 2021	401	389	753
01 APR 2021	117	747	1116
31 MAR 2021	1199	2352	1369
30 MAR 2021	1054	2404	1552
29 MAR 2021	967	1881	1215
28 MAR 2021	1140	1292	857
27 MAR 2021	954	1126	663
26 MAR 2021	988	1248	785
25 MAR 2021	1462	1716	1113
24 MAR 2021	1997	2416	1362
23 MAR 2021	2074	2284	1535
22 MAR 2021	1327	1301	1229

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

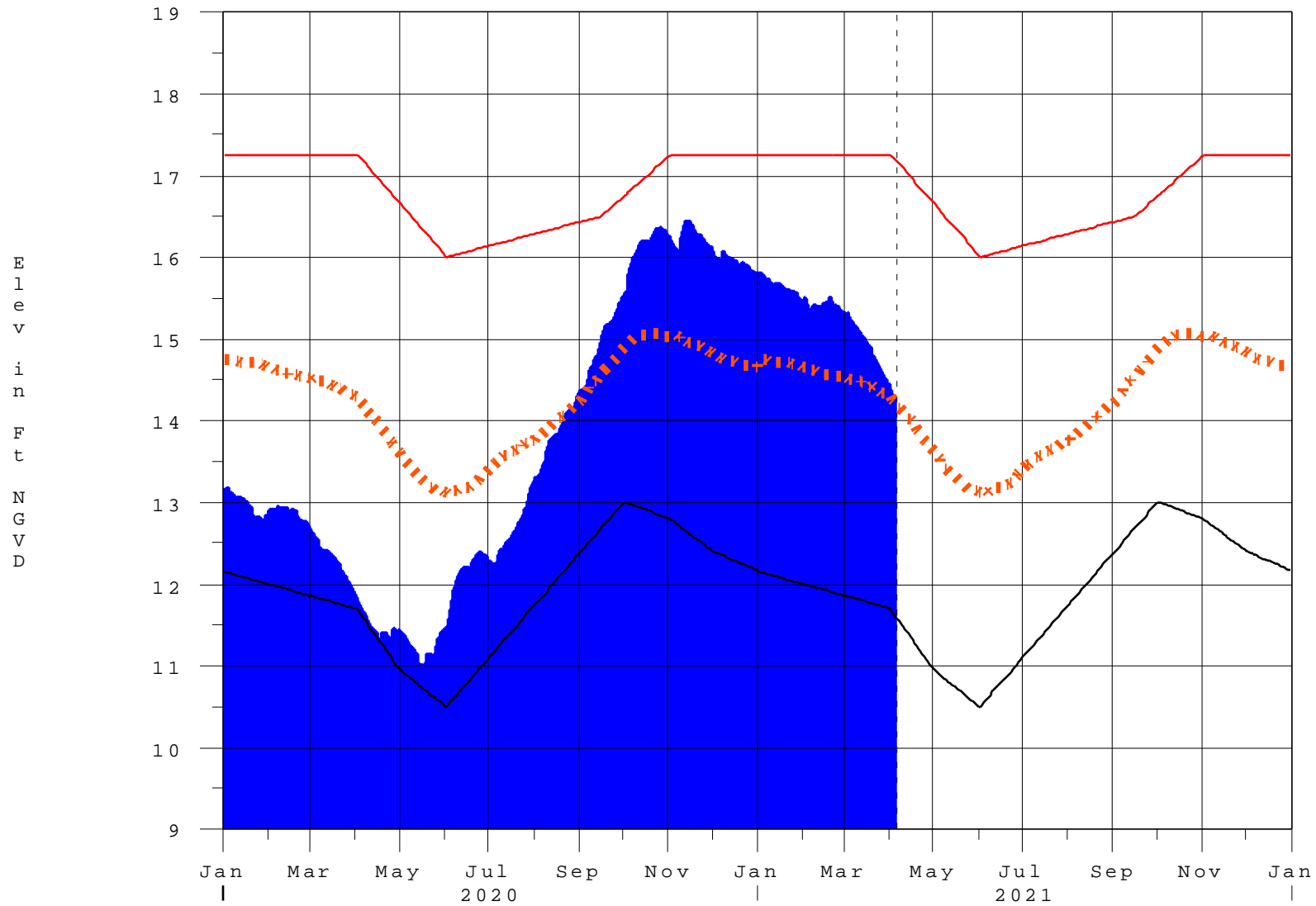
(I) - Flows preceeded by "I" signify an instantaneous flow computed from the single value reported for the day

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- * 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 Okeechobee 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 05APR2021 @ 23:40 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

06APR21 08:00:48



- 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