Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 4/19/2021 (ENSO Condition: La Niña Advisory)

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 (Apr-Sep)	N/A	N/A	1.83	Wet	1.97	Wet	2.78	Very Wet
Multi Seasonal (Apr-Oct)	N/A	N/A	2.38	Normal	2.52	Wet	3.58	Wet

*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:

429 cfs 14-day running average for Lake Okeechobee Net Inflow through 4/18/2021.
According to the classification in Tributary Hydrologic Conditions table, this condition is Dry.

-0.79 for Palmer Drought Index on 4/17/2021.
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 4/19/2021:

Lake Okeechobee Stage: **14.17 feet**

Lake Okeechobee Management Zone/Band		Bottom Elevation (feet, NGVD)	Current Lake Stage
High Lake Management Band		16.90	
Operational Band	High sub-band	16.22	
	Intermediate sub-band	15.35	
	Low sub-band	13.47	← 14.17 ft
Base Flow sub-band		12.60	
Beneficial Use sub-band		11.25	
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 3000 cfs at S-79 and up to 1170 cfs at S-80.

LORS2008 Implementation on 4/19/2021 (ENSO Condition- La Nina Advisory):

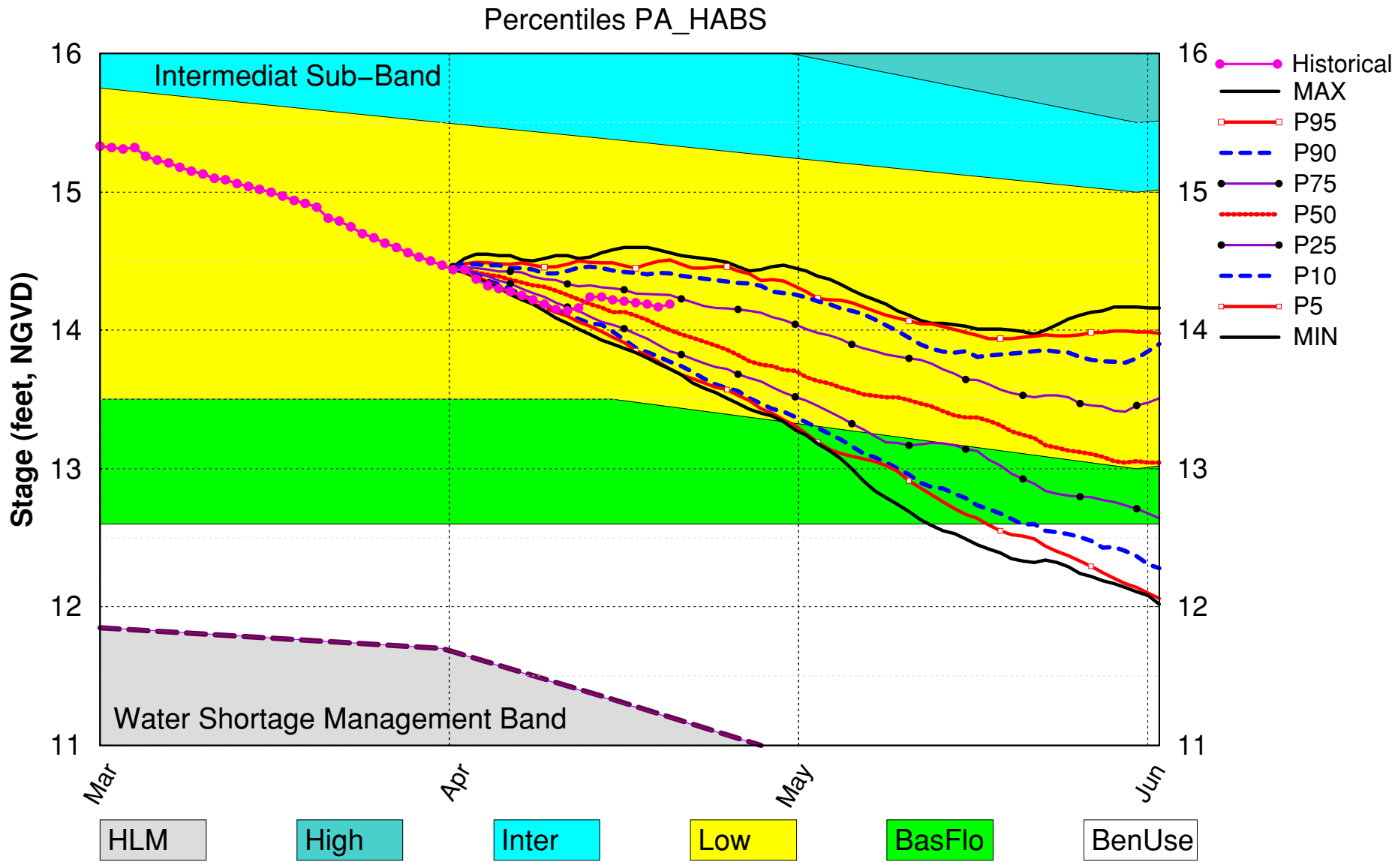
Status for week ending 4/19/2021:

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	-0.79 (Normal to Extremely Wet)	L
	CPC Precipitation Outlook	1 month: Above Normal	L
		3 months: Above Normal	L
	LOK Seasonal Net Inflow Outlook	1.97 ft	L
	ENSO Forecast	Normal to Extremely Wet	
	LOK Multi-Seasonal Net Inflow Outlook	2.52 ft	M
	ENSO Forecast	Normal	
WCAs	WCA 1: 3 Station Average (Site 1-7, 1-8T and 1-9)	Above Line 1 (16.24 ft)	L
	WCA 2A: Site S-11B HW	Above Line 1 (11.21 ft)	L
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.24 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

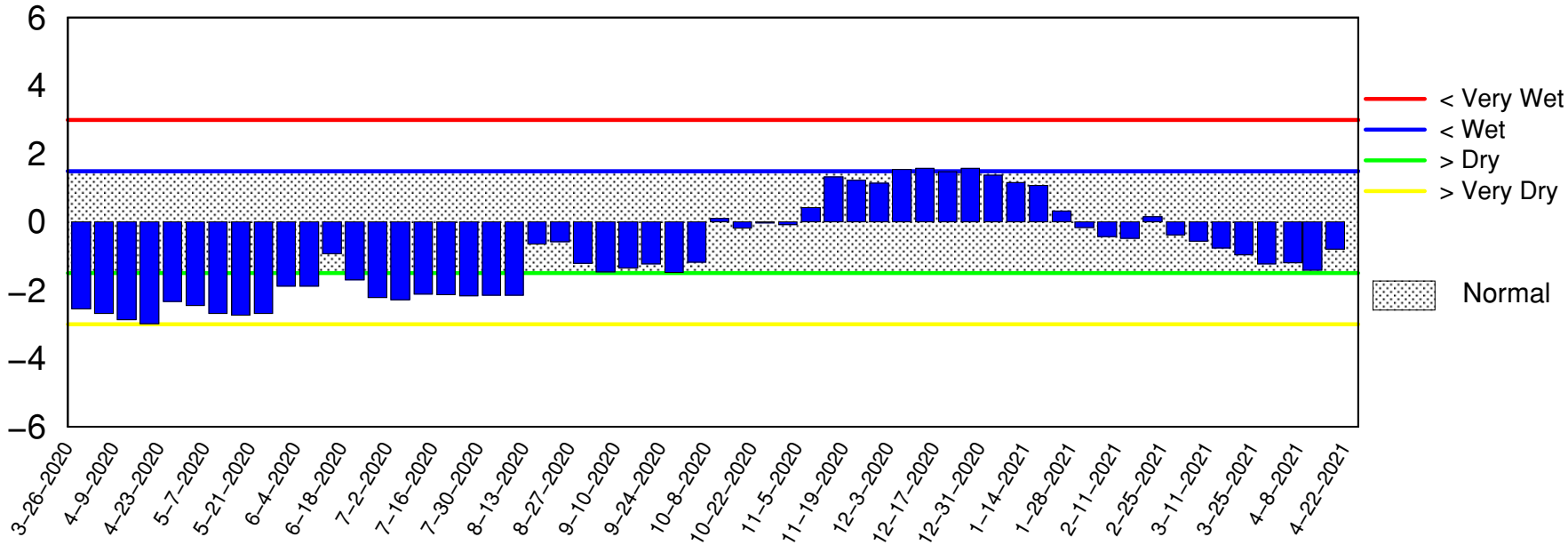


(See assumptions on the Position Analysis Results website)

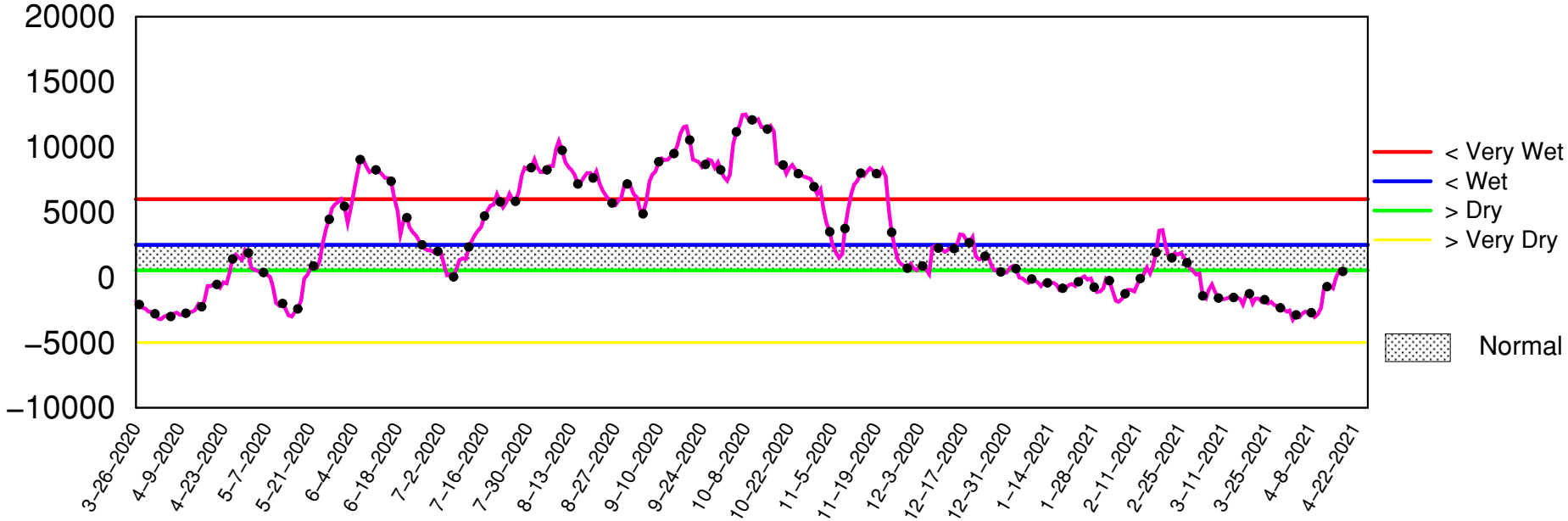
Tue Apr 20 06:50:42 EDT 2021

Tributary Basin Condition Indicators as of April 19 2021

Palmer Index



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



Mon Apr 19 14:50:06 EDT 2021

2008 LORS

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

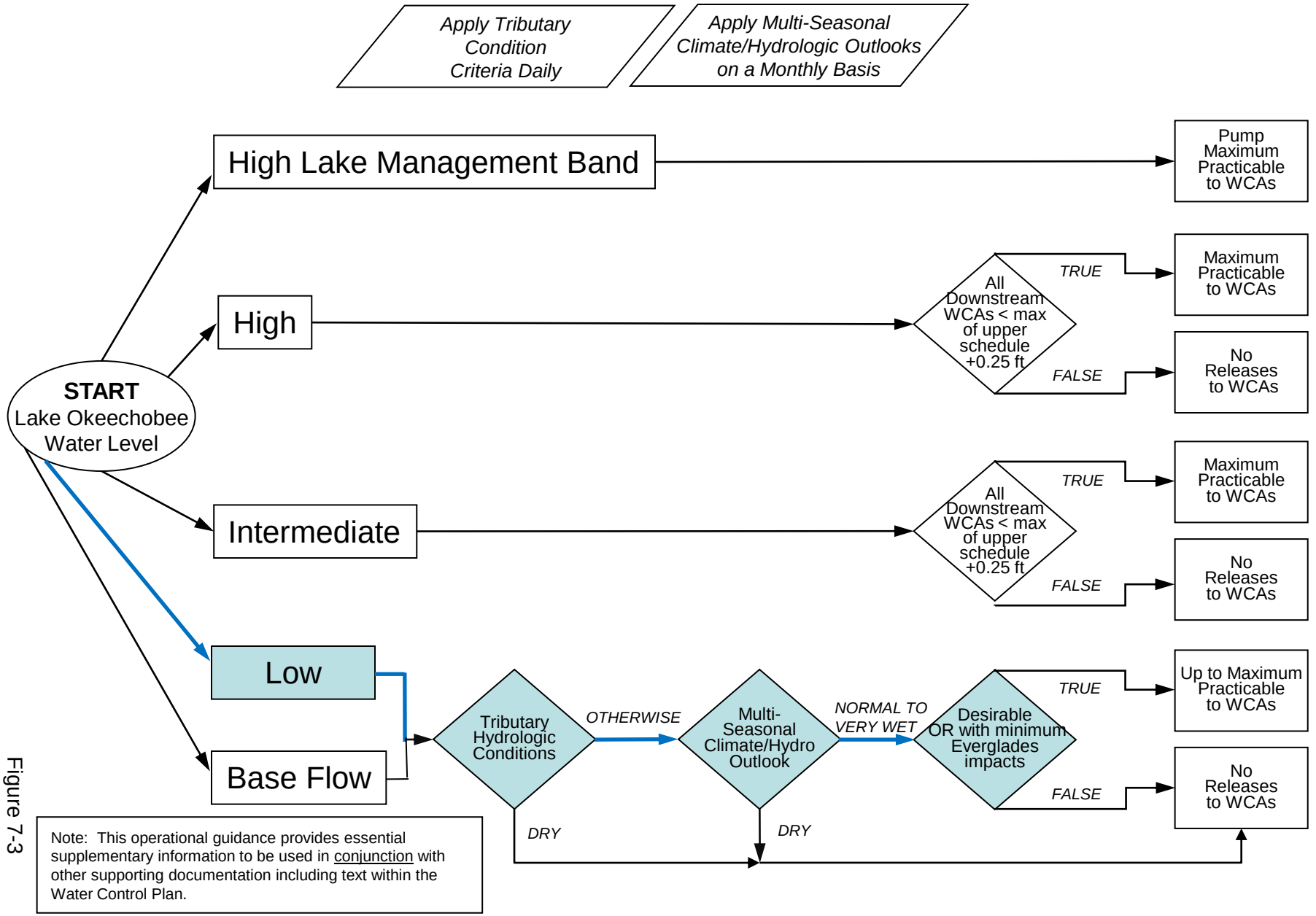


Figure 7-3

2008 LORS

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

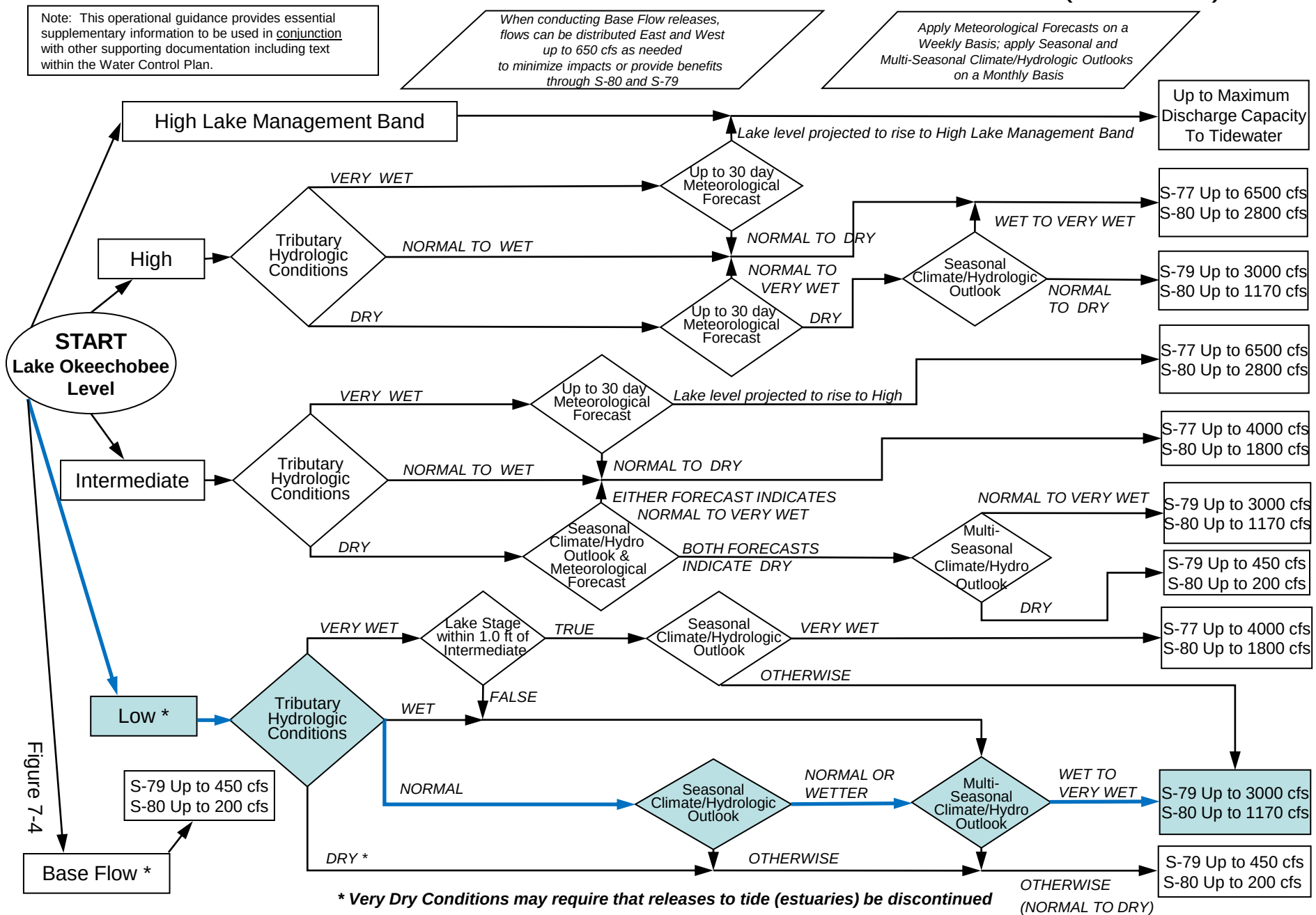
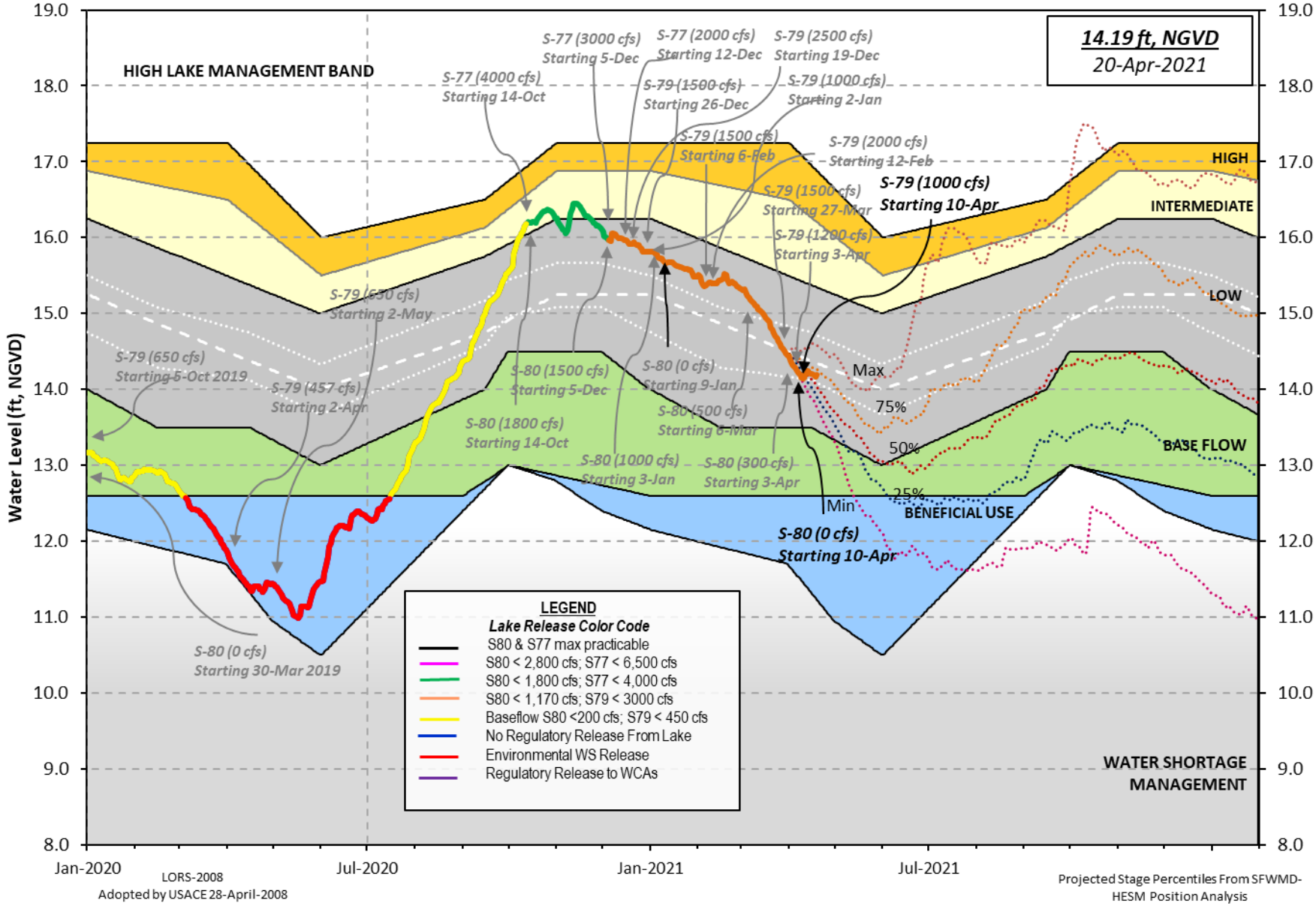


Figure 7-4

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 18 APR 2021

Okeechobee Lake Regulation	Elevation (ft-NGVD)	Last Year (ft-NGVD)	2YRS Ago (ft-NGVD)	
*Okeechobee Lake Elevation	14.17	11.41	11.54	(Official Elv)

Bottom of High Lake Mngmt= 16.90 Top of Water Short Mngmt= 11.25
Currently in Operational Management Band

Simulated Average LORS2008 [1965-2000] 12.69
Difference from Average LORS2008 1.48

18APR (1965-2007) Period of Record Average 13.92
Difference from POR Average 0.25

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

++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ◆ 8.11'
++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ◆ 6.31'
Bridge Clearance = 49.30'

---

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

L001	L005	L006	LZ40	S4	S352	S308	S133
14.17	14.16	14.15	14.13	14.06	14.31	14.22	14.14

*Combination Okeechobee Avg-Daily Lake Average = 14.17 (*See Note)

Okeechobee Inflows (cfs):

S65E	790	S65EX1	0	Fisheating Cr	15
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: 805

Okeechobee Outflows (cfs):

S135 Culverts	0	S354	91	S77	1488
S127 Culverts	0	S351	525	S308	-248
S129 Culverts	0	S352	9		
S131 Culverts	0	L8 Canal Pt	-NR-		

Total Outflows: 1865

****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	0.23	S308	0.30

Average Pan Evap x 0.75 Pan Coefficient = 0.20" = 0.02'

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) (I) see note at bottom	Gate Positions #1 (ft)	#2 (ft)	#3 (ft)	#4 (ft)	#5 (ft)	#6 (ft)	#7 (ft)	#8 (ft)
North East Shore											
S133 Pumps:	13.54	14.13	0	0	0	0	0	0	(cfs)		
S193:											
S191:	18.31	14.16	0	0.0	-NR-	0.0					
S135 Pumps:	13.47	14.08	0	0	0	0	0		(cfs)		
S135 Culverts:			0	0.0	0.0						
North West Shore											
S65E:	21.02	14.00	790	0.7	0.3	0.0	0.5	0.7	0.0		
S65EX1:	21.02	14.00	0								
S127 Pumps:	13.35	14.10	0	0	0	0	0	0	(cfs)		
S127 Culvert:			0	0.0							
S129 Pumps:	13.00	14.09	0	0	0	0			(cfs)		
S129 Culvert:			0	0.0							
S131 Pumps:	13.00	14.10	0	0	0				(cfs)		
S131 Culvert:			0								
Fisheating Creek											
nr Palmdale		28.72	15								
nr Lakeport											
C5:		-NR-	0	-NR-	-NR-	-NR-					
South Shore											
S4 Pumps:	11.46	14.04	0	0	0	0			(cfs)		
S169:	14.04	11.50	75	0.0	0.5	0.0					
S310:	14.01		22								
S3 Pumps:	10.35	14.03	0	0	0	0			(cfs)		
S354:	14.03	10.35	91	0.0	0.2						
S2 Pumps:	10.36	-NR-	0	-NR-	-NR-	-NR-	-NR-		(cfs)		
S351:	-NR-	10.36	525	0.0	0.1	0.4					
S352:	14.30	10.64	9	0.0	0.0						
C10A:	-NR-	14.12		8.0	8.0	8.0	0.0	0.0			
L8 Canal PT			-NR-								
S351 and S352 Temporary Pumps/S354 Spillway											
S351:	10.36	-NR-	525	-NR-	-NR-	-NR-	-NR-	-NR-	-NR-		
S352:	10.64	14.30	9	-NR-	-NR-	-NR-	-NR-				
S354:	10.35	14.03	91	-NR-	-NR-	-NR-	-NR-				
Caloosahatchee River (S77, S78, S79)											
S47B:	13.94	12.76		0.0	0.0						
S47D:	12.76	11.17	0	0.0							
S77:											
Spillway and Sector Preferred Flow:											
	13.85	11.05	1481	2.5	2.5	2.5	0.0				
Flow Due to Lockages+:			7								
S78:											

```
    Spillway and Sector Flow:
              11.06      3.10    1092    2.0  0.0  0.0  1.5
    Flow Due to Lockages+:          18

  S79:
    Spillway and Sector Flow:
               3.25      1.83    1624    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        91%
    Chloride            (ppm)      0


St. Lucie Canal (S308, S80)
  S308:
    Spillway and Sector Preferred Flow:
              14.32     14.20    -248  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:           0

  S153:        18.70     13.88      44    0.0  0.0
  S80:
    Spillway and Sector Flow:
              14.19      0.58       0    0.0  0.0  0.0  0.0  0.0  0.0  0.0
    Flow Due to Lockages+:          25
    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 (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:	0.39	0.46	0.51	206	3
S78:	12.18	12.18	12.22	158	2
S79:	2.03	2.03	2.03	43	3
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:	18.97	18.97	20.07	238	11
S80:	0.00	0.00	0.15	184	0
Okeechobee Average (Sites S78, S79 and S80 not included)	9.68	1.49	1.58		
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

```
Okeechobee Lake Elevations  18 APR 2021          14.17 Difference from 18APR21
   18APR21  -1 Day  =       17 APR 2021          14.19             0.02
```

18APR21 -2 Days =	16 APR 2021	14.20	0.03
18APR21 -3 Days =	15 APR 2021	14.21	0.04
18APR21 -4 Days =	14 APR 2021	14.22	0.05
18APR21 -5 Days =	13 APR 2021	14.24	0.07
18APR21 -6 Days =	12 APR 2021	14.24	0.07
18APR21 -7 Days =	11 APR 2021	14.16	-0.01
18APR21 -30 Days =	19 MAR 2021	14.89	0.72
18APR21 -1 Year =	18 APR 2020	11.41	-2.76
18APR21 -2 Year =	18 APR 2019	11.54	-2.63

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
18APR21	Today =	18 APR 2021	483	MON	-2161
18APR21	-1 Day =	17 APR 2021	573	SUN	-246
18APR21	-2 Days =	16 APR 2021	7	SAT	-NR-
18APR21	-3 Days =	15 APR 2021	-847	FRI	329
18APR21	-4 Days =	14 APR 2021	-696	THU	-2869
18APR21	-5 Days =	13 APR 2021	-712	WED	453
18APR21	-6 Days =	12 APR 2021	-936	TUE	18178
18APR21	-7 Days =	11 APR 2021	-2330	MON	5887
18APR21	-8 Days =	10 APR 2021	-2846	SUN	-344
18APR21	-9 Days =	09 APR 2021	-3059	SAT	-5672
18APR21	-10 Days =	08 APR 2021	-2723	FRI	-2234
18APR21	-11 Days =	07 APR 2021	-2762	THU	-2107
18APR21	-12 Days =	06 APR 2021	-2641	WED	-2165
18APR21	-13 Days =	05 APR 2021	-2828	TUE	-769

S65E

		Average Flow over previous 14 days			Avg-Daily Flow
18APR21	Today=	18 APR 2021	674	MON	885
18APR21	-1 Day =	17 APR 2021	638	SUN	1014
18APR21	-2 Days =	16 APR 2021	593	SAT	894
18APR21	-3 Days =	15 APR 2021	554	FRI	816
18APR21	-4 Days =	14 APR 2021	521	THU	750
18APR21	-5 Days =	13 APR 2021	489	WED	618
18APR21	-6 Days =	12 APR 2021	473	TUE	572
18APR21	-7 Days =	11 APR 2021	486	MON	749
18APR21	-8 Days =	10 APR 2021	491	SUN	494
18APR21	-9 Days =	09 APR 2021	510	SAT	656
18APR21	-10 Days =	08 APR 2021	518	FRI	680
18APR21	-11 Days =	07 APR 2021	521	THU	641
18APR21	-12 Days =	06 APR 2021	528	WED	312
18APR21	-13 Days =	05 APR 2021	566	TUE	348

S65EX1

		Average Flow over previous 14 days			Avg-Daily Flow
18APR21	Today=	18 APR 2021	78	MON	0
18APR21	-1 Day =	17 APR 2021	112	SUN	0
18APR21	-2 Days =	16 APR 2021	146	SAT	0
18APR21	-3 Days =	15 APR 2021	181	FRI	0
18APR21	-4 Days =	14 APR 2021	214	THU	0
18APR21	-5 Days =	13 APR 2021	248	WED	0
18APR21	-6 Days =	12 APR 2021	280	TUE	0
18APR21	-7 Days =	11 APR 2021	294	MON	0
18APR21	-8 Days =	10 APR 2021	294	SUN	0
18APR21	-9 Days =	09 APR 2021	294	SAT	0
18APR21	-10 Days =	08 APR 2021	294	FRI	0
18APR21	-11 Days =	07 APR 2021	294	THU	139
18APR21	-12 Days =	06 APR 2021	284	WED	476
18APR21	-13 Days =	05 APR 2021	250	TUE	475

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)
18 APR 2021	2943	3017	2203	3242
17 APR 2021	1639	1816	1550	2189
16 APR 2021	1308	1500	1060	702
15 APR 2021	1121	1324	1221	933
14 APR 2021	533	893	1182	2040
13 APR 2021	470	989	1536	3841
12 APR 2021	2029	2683	1941	3870
11 APR 2021	2578	2760	2471	3520
10 APR 2021	2162	2624	1754	2329
09 APR 2021	1975	2350	1546	1196
08 APR 2021	1883	2289	1563	1579
07 APR 2021	1839	2115	1296	1667
06 APR 2021	2280	2359	1237	2017
05 APR 2021	2482	2619	1777	2561

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)
18 APR 2021	43	1041	19	181	-NR-
17 APR 2021	20	1269	726	44	-NR-
16 APR 2021	8	1666	528	608	-NR-
15 APR 2021	19	1408	1401	606	-NR-
14 APR 2021	-37	714	1067	403	-NR-
13 APR 2021	-48	0	374	0	-NR-
12 APR 2021	-30	0	0	0	-NR-
11 APR 2021	19	0	0	0	-NR-
10 APR 2021	84	0	771	0	-NR-
09 APR 2021	225	1295	1474	386	-NR-
08 APR 2021	260	2461	1698	833	-NR-
07 APR 2021	282	2640	1678	650	-NR-
06 APR 2021	251	2187	1601	666	-NR-
05 APR 2021	255	1640	1336	656	-NR-

DATE	S-308 Discharge (ALL DAY) (AC-FT)	Below S-308 Discharge (ALL-DAY) (AC-FT)	S-80 Discharge (ALL-DAY) (AC-FT)
18 APR 2021	-668	-354	50
17 APR 2021	-0	-283	43
16 APR 2021	-1	-371	55
15 APR 2021	-0	-254	71
14 APR 2021	-1	113	309
13 APR 2021	-3	61	1816
12 APR 2021	-3	-44	1355
11 APR 2021	-1	-155	40
10 APR 2021	-143	31	160
09 APR 2021	193	842	570
08 APR 2021	607	1032	819
07 APR 2021	868	1164	1106
06 APR 2021	874	1243	1212
05 APR 2021	129	576	881

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

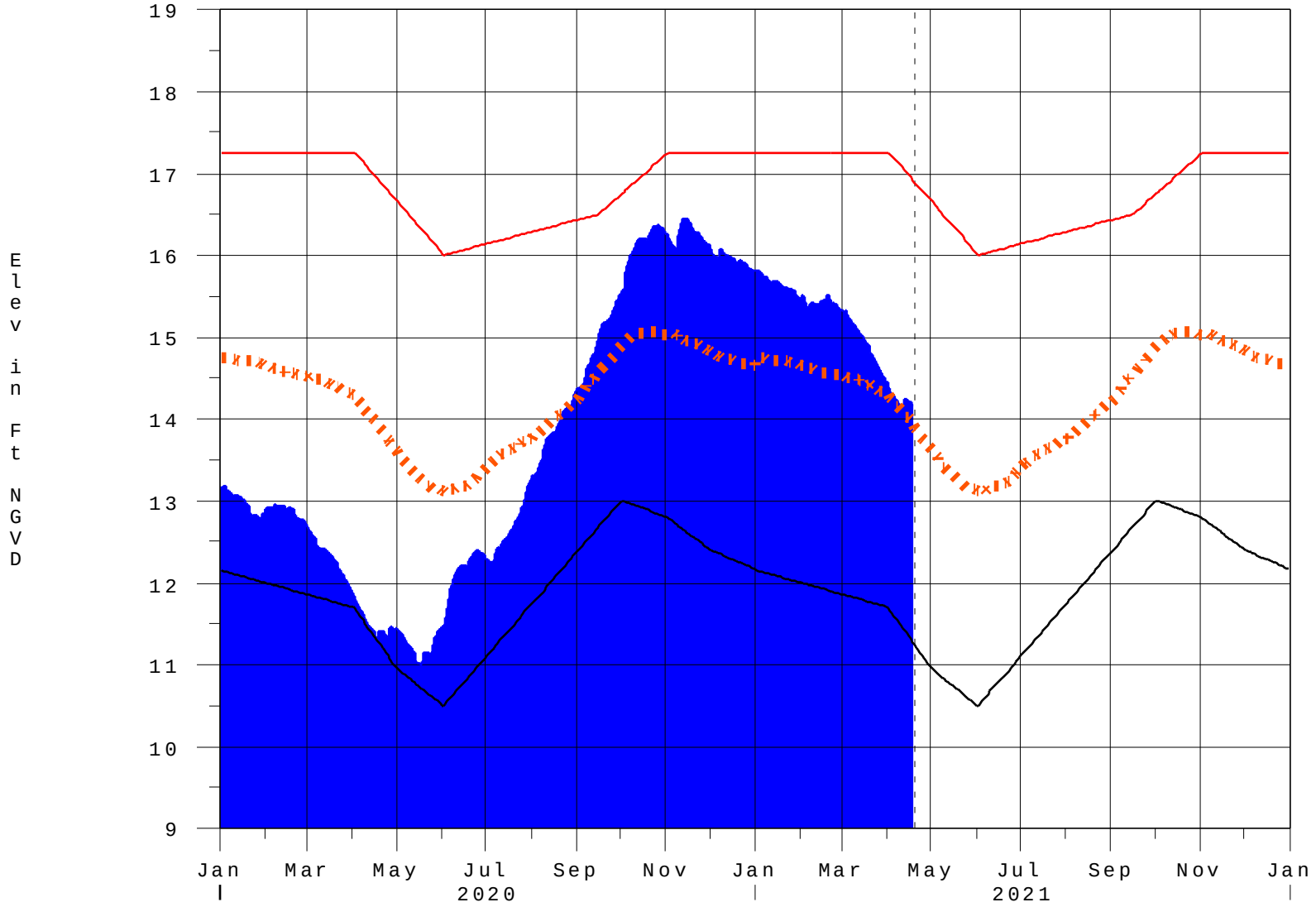
(I) - Flows preceeded by "I" signify an instantaneous
flow computed from the single value reported for the day

```
   * 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 19APR2021 @ 10:42 ** Preliminary Data - Subject to Revision **

Lake Okeechobee

19APR21 14:30:34



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**

Under Construction