Application of the Lake Okeechobee Regulation Schedule (LORS2008) on 4/2/2018 (ENSO Neutral Condition)

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 Neutral 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 <u>CPC Outlook</u>.

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		Crole y's Me thod ^{1*}		Hmnirical		Sub-sampling of La Nina Years ³		Sub-sampling of AMO Warm + La Nina Years ⁴	
	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	Value (ft)	Condition	
Current (Apr- Sep)	N/A	N/A	1.76	Wet	1.94	Wet	1.71	Wet	
Multi Seasonal (Apr-Oct)	N/A	N/A	2.24	Normal	2.51	Wet	2.35	Normal	

*Croley's Method Not Produced For This Report

See <u>Seasonal</u> and <u>Multi-Seasonal</u> 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 LORS 2008 Release Guidance Flow Charts.

**Sub-sampling is a weighted average of ENSO conditions based on the ENSO forecast used.

Tributary Hydrologic Conditions Graph:

-2424 cfs 14-day running average for Lake Okeechobee Net Inflow through 4/2/2018. According to the classification in <u>Tributary Hydrologic Conditions</u> table, this condition is Dry.

-1.69 for Palmer Index on 3/31/2018.

According to the classification in <u>Tributary Hydrologic Conditions</u> table, this condition is Dry.

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

LORS 2008 Classification Tables:

Lake Okeechobee Stage on 4/2/2018

Lake Okeechobee Stage: **13.84 feet**

US ACE Report for Lake Okeechobee

Lake Okeechobee Stage Hydrograph

Lake Okeechob	ee Management	Bottom Elevation	Current
Zone	Band	(feet, NGVD)	Lake Stage
High Lake Manage	ement Band	17.23	
	High sub-band	16.48	
Operational Band	Intermediate sub-band	15.49	
	Low sub-band	13.50	← 13.84
Base Flow sub-ba	nd	12.60	
Beneficial Use sub	o-band	11.68	
Water Shortage M	lanagement Band		

Part C of LORS 2008: Discharge to WCA's

Release Guidance Flow Chart Outcome: No releases to the WCAs.

Part D of LORS 2008: Discharge to Tidewater

Release Guidance Flow Chart Outcome: S-79 Up to 450 cfs & S-80 Up to 200 cfs.

Technical Input Summaries from:

- Lake Okeechobee Division
- <u>Coastal Ecosystems</u>
- Everglades Ecosystems Division
- Water Supply Department
- Water Resource Management Release Recommendation
- Kissimmee Watershed Environmental Conditions
- Operations Department

Back to Lake Okeechobee Operations Main Page

Back to U.S. Army Corps of Engineers LORSS Homepage

Status for week ending 4/2/2018:

District wide, Raindar rainfall was 0.12 inches for the week. Lake stage on 4/2/2018 was 13.84 ft, NGVD, down 0.23 ft from last week.

The updated March 2018 SFWMM Dynamic Position Analysis percentile graph for

Lake Okeechobee show that the current lake stage is in the Low Operational Sub-Band. The 2008 LORS Tributary Hydrologic Condition (THC) tributary is classified as **Dry**. The PDSI indicates dry condition and the LONIN is Dry. The THC classification is based on the wetter of the two <u>indices</u>.

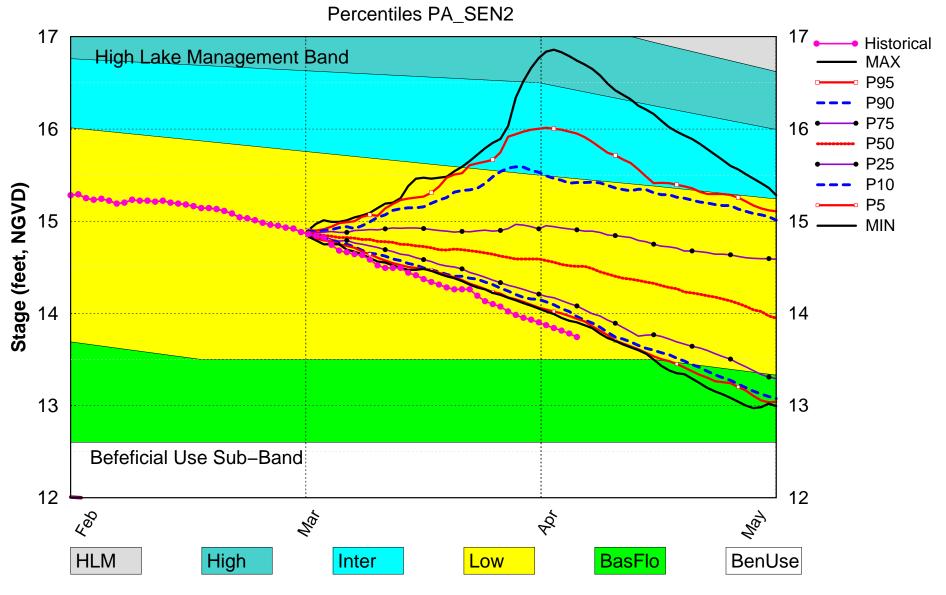
Water Supply Risk Evaluation

Area	Indicator	Value	Color Coded Scoring Scheme
	Projected LOK Stage for the next two months	Base Flow Sub Band	М
	Palmer Index for LOK Tributary Conditions	-1.69 (Dry)	М
	CPC Procinitation Outlook	1 month: Below Normal	М
LOK	CPC Precipitation Outlook	3 months: Normal	L
	LOK Seasonal Net Inflow Outlook ENSO La Nina Years	1.94 ft (Normal to Extremely Wet)	L
	LOK Multi-Seasonal Net Inflow Outlook ENSO Conditions	2.51 ft (Normal)	М
	WCA 1: Site 1-7, Site 1-8T, & Site 1-9 Average	Above Line 1 (16.01 ft)	L
WCAs	WCA 2A: Site S11BHW	Below Line 2 (9.84 ft)	н
	WCA-3A: 3 Station Average (Site 63, 64 and 65)	Above Line 1 (9.14 ft)	L
	Service Area 1	Year-Round Irrigation Rule in effect	L
LEC	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.

Back to Lake Okeechobee Operations Main Page Back to U.S. Army Corps of Engineers LORSS Homepage

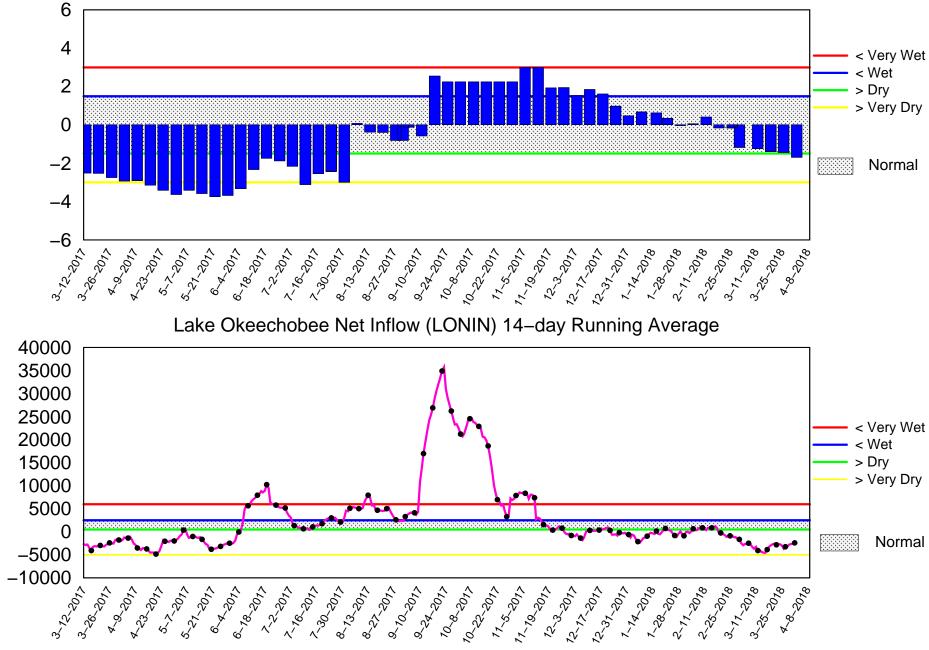
Lake Okeechobee SFWMM Mar 2018 Position Analysis



(See assumptions on the Position Analysis Results website)

Tributary Basin Condition Indicators as of April 2 2018

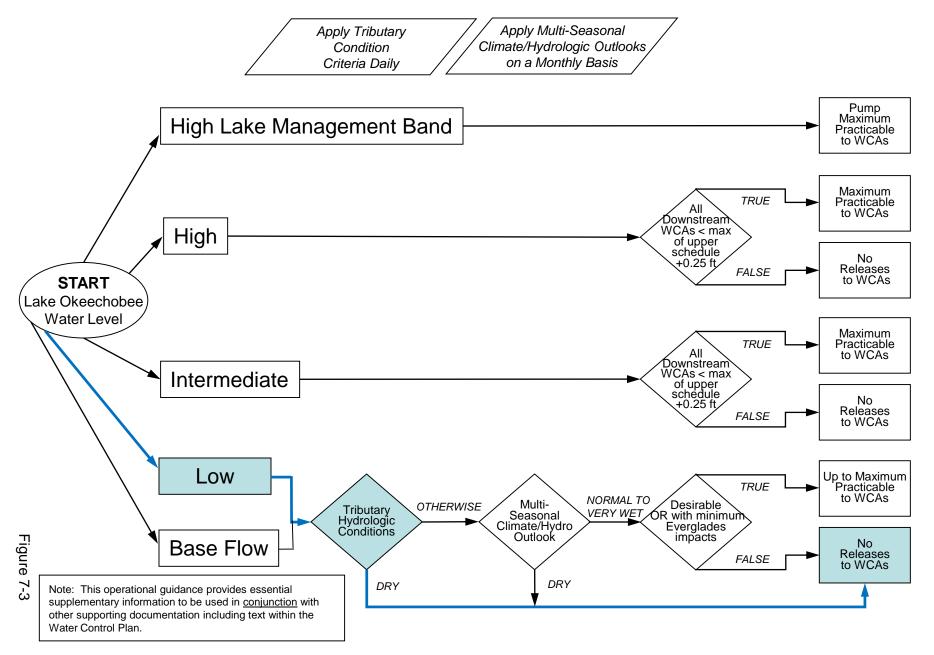
Palmer Index



Mon Mar 26 16:41:14 EDT 2018

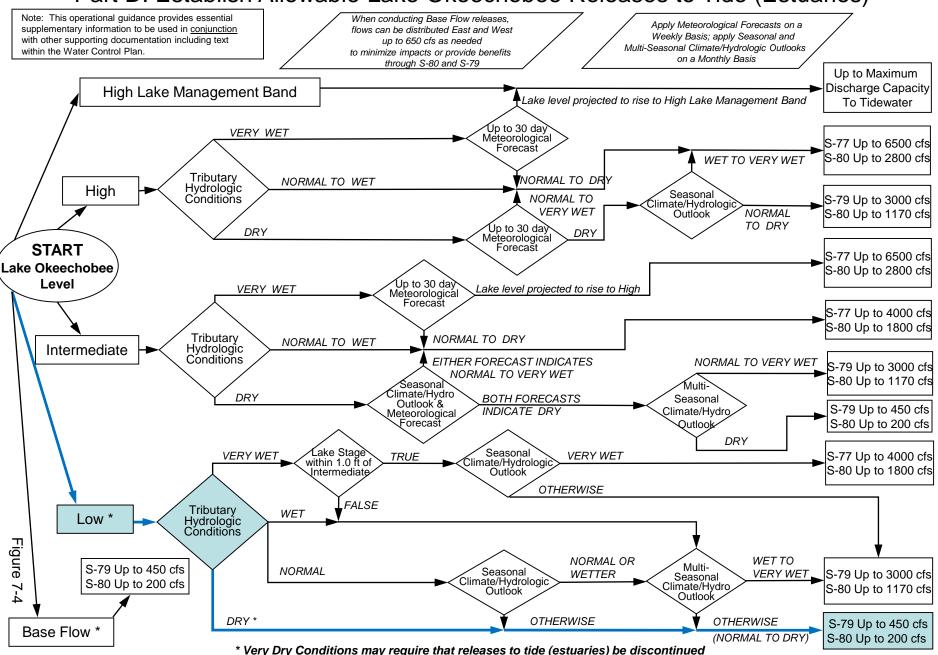
2008 LORS

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

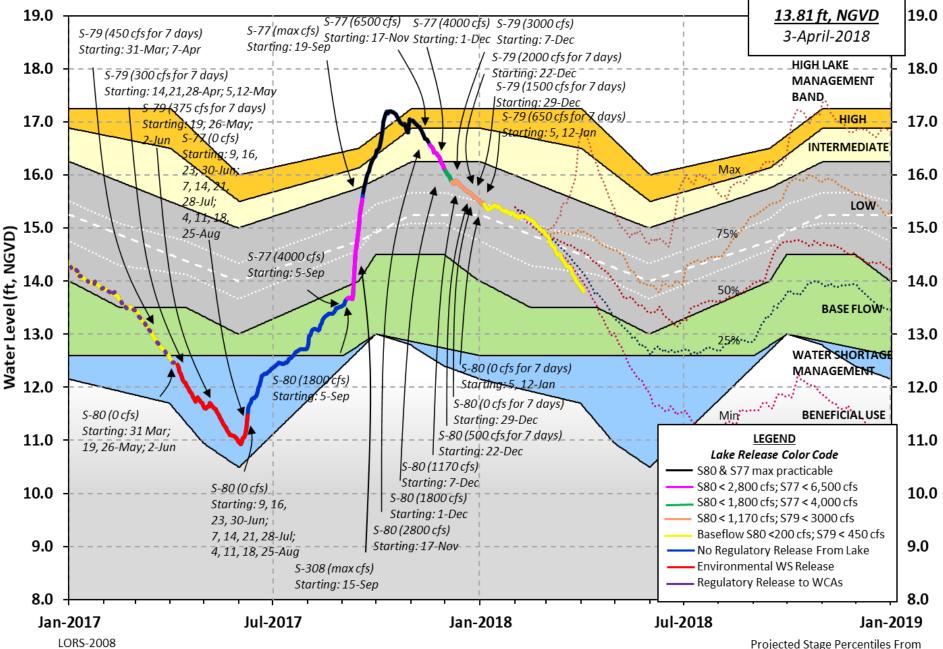


2008 LORS

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



Lake Okeechobee Water Level History and Projected Stages



Adopted by USACE 28-April-2008

Projected Stage Percentiles From SFWMD-HESM Position Analysis

U. S. Army Corps of Engineers, Jacksonville District Lake Okeechobee and Vicinity Report ** Preliminary Data - Subject to Revision ** Data Ending 2400 hours 01 APR 2018 Okeechobee Lake Regulation Elevation Last Year 2YRS Ago (ft-NGVD) (ft-NGVD) (ft-NGVD) *Okeechobee Lake Elevation 13.84 12.48 15.11 (Official Elv) Bottom of High Lake Mngmt= 17.25 Top of Water Short Mngmt= 11.68 Currently in Operational Management Band Simulated Average LORS2008 [1965-2000] 13.03 0.81 Difference from Average LORS2008 01APR (1965-2007) Period of Record Average 14.29 Difference from POR Average -0.45 Today Lake Okeechobee elevation is determined from the 4 Int & 4 Edge stations ++Navigation Depth (Based on 2007 Channel Condition Survey) Route 1 ÷ 7.78' ++Navigation Depth (Based on 2008 Channel Condition Survey) Route 2 ÷ 5.98' Bridge Clearance = 49.87'4 Interior and 4 Edge Okeechobee Lake Average (Avg-Daily values): L001 L005 L006 LZ40 S4 S352 S308 S133 13.83 13.94 13.85 13.80 13.90 13.93 13.77 13.74 *Combination Okeechobee Avg-Daily Lake Average = 13.84 (*See Note) Okeechobee Inflows (cfs): 152Fisheating Cr0S135 Pumpsumps0S2 Pumpsumps0S3 Pumpsumps0S4 Pumpsumps0C5 S65EX1 0 S65E 151 S191 S154 0 0 0 S84 S133 Pumps 0 S127 Pumps S129 Pumps S131 Pumps S84X 0 0 S71 0 0 6 S72 0 Total Inflows: 310 Okeechobee Outflows (cfs): S308 S77 S135 Culverts 0 S354 580 1509 580 1434

 S127 Culverts
 -3
 S351
 1434

 S129 Culverts
 0
 S352
 704

 S131 Culverts
 0
 L8 Canal Pt
 260

 235 Total Outflows: 4720

```
****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 0.20 S308 0.25
Average Pan Evap x 0.75 Pan Coefficient = 0.17" = 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 -6353 cfs or -12600 AC-FT
```

```
_
```

_

	Headwater	Tailwater				Gat	te Pos	sitior	ns	
	Elevation	Elevation	Disch	#1	#2	#3	#4	#5	#6	#7
#8	(ft-msl)	(ft-msl)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft) (ft)
(ft)		. –	,							
North East S	horo	(1) see n	ote at	t boti	com				
S133 Pumps S193:		13.81	0	0	0	0	0	0	(cfs)	
S191:	18.41	13.81	0	0.0	0.0	0.0				
S135 Pumps		13.73	0	0	0	0	0		(cfs)	
S135 Culve	rts:		0	0.0	0.0					
North West S	hore									
S65E:	21.05	13.71	151	0.4	0.0	0.0	0.0	0.0	0.0	
S65EX1:	21.05	13.71	152							
S127 Pumps	: 13.36	13.84	0	0	0	0	0	0	(cfs)	
S127 Culve	rt:		-3	0.5						
S129 Pumps	: 13.07	13.89	0	0	0	0			(cfs)	
S129 Culve			0	0.0						
S131 Pumps	: 12.87	13.99	0	0	0				(cfs)	
S131 Culve		10.99	0	0	0				(015)	
Fisheating	Creek									
nr Palmd		27.97	0							
nr Lakep	ort									
C5:		-NR-	0	-NE	RNH	RNH	۲–			
South Shore										
S4 Pumps:	11.13	13.81	0	0	0	0			(cfs)	
S169:	13.84	11.12	0	0.0	0.0	0.0			. ,	
S310:	13.77		33							

 S3 Pumps:
 11.18
 13.81
 0
 0
 0
 0

 S354:
 13.81
 11.18
 580
 0.5
 0.7

 S2 Pumps:
 11.45
 13.83
 0
 0
 0
 0

 S351:
 13.83
 11.45
 1434
 2.3
 2.2
 2.3

 S352:
 13.91
 11.03
 704
 1.3
 1.2

 C10A:
 -NR 13.88
 8.0
 8.0
 8.0
 0.0

 L8 Canal PT
 13.73
 260
 260
 260
 260

 (cfs) (cfs) 8.0 8.0 8.0 0.0 0.0 S351 and S352 Temporary Pumps/S354 Spillway 11.4513.831434-NR--NR--NR--NR--NR-11.0313.91704-NR--NR--NR-11.1813.81580-NR--NR--NR-S351: S352: S354: Caloosahatchee River (S77, S78, S79) S47B:11.5911.140.0S47D:11.1711.1796.6 S77: Spillway and Sector Flow: 13.84 11.24 ***** 2.0 0.0 3.0 2.0 Flow Due to Lockages+: 5 S77 Below USGS Flow Gage 1334 S78: Spillway and Sector Flow: 11.08 3.00 1018 0.5 2.5 0.0 0.0 Flow Due to Lockages+: 19 S79: Spillway and Sector Flow: 3.10 0.83 1109 0.0 0.5 0.5 1.0 1.0 0.5 0.0 0.0 9 Flow Due to Lockages+: Percent of flow from S77 136% Chloride (ppm) 57 St. Lucie Canal (S308, S80) S308: Spillway and Sector Flow: 13.78 13.63 235.00 0.0 0.0 0.0 0.0 Flow Due to Lockages+: 0 S308 Below USGS Flow Gage low USGS Flow Gage 97 18.55 13.43 0 0.0 0.0 S153: S80: Spillway and Sector Flow:

 13.65
 1.60
 0
 0.0
 0.0
 0.0
 0.0
 0.0
 0.0

 Flow Due to Lockages+:
 28

 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.

				Wi	nd
aily Precipitation Totals peed	1-Day	3-Day	7-Day	Directio	n
	(inches)	(inches)	(inches)	(Deca)	
mph)	(1101100)	(1101100)	(11101100)	(2092)	
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		
-	-NR-	0.00	0.00		
s77:	0.45	0.45	0.45	166	3
S78:	1.71	1.71	1.71	164	2
S79:	-46.44	-46.44	-46.44	240	1
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:	0.01	0.01	0.02	114	4
S80:	0.00	0.00	0.00	285	0
Okeechobee Average	0.23	0.04	0.04		
(Sites S78, S79 and					
Oke Nexrad Basin Avg	-NR-	0.00	0.00		

_ Okeechobee Lake Elevations 01APR18	01 APR 2018	13.84 Difference from
01APR18 -1 Day =	31 MAR 2018	13.87 0.03
01APR18 -2 Days =	30 MAR 2018	13.90 0.06
01APR18 -3 Days =	29 MAR 2018	13.93 0.09
01APR18 -4 Days =	28 MAR 2018	13.95 0.11
01APR18 -5 Days =	27 MAR 2018	13.98 0.14
01APR18 -6 Days =	26 MAR 2018	14.02 0.18
01APR18 -7 Days =	25 MAR 2018	14.07 0.23
01APR18 -30 Days =	02 MAR 2018	14.82 0.98
01APR18 -1 Year =	01 APR 2017	12.48 -1.36
01APR18 -2 Year =	01 APR 2016	15.11 1.27

Long Term Mean 30day Avearge ET for Lake Alfred (Inches) = 3.72

Lake Okeechobee Net Inflow (LONIN)

_

	Average	Flow ove	er the	previous	14 days	Avg-Daily Flow
01APR18	Today =	01 APR	2018	-2406	MON	-1635
01APR18 -1	. Day =	31 MAR	2018	-2489	SUN	-1347
01APR18 -2	2 Days =	30 MAR	2018	-2556	SAT	-1532
01APR18 -3	B Days =	29 MAR	2018	-2648	FRI	289
01APR18 -4	Days =	28 MAR	2018	-3073	THU	-2140
01APR18 -5	Days =	27 MAR	2018	-3176	WED	-4535
01APR18 -6	Days =	26 MAR	2018	-3415	TUE	-5958
01APR18 -7	Days =	25 MAR	2018	-2790	MON	-1524
01APR18 -8	B Days =	24 MAR	2018	-2479	SUN	-1439
01APR18 -9) Days =	23 MAR	2018	-2535	SAT	-8373
01APR18 -10) Days =	22 MAR	2018	-2490	FRI	-10773
01APR18 -11	. Days =	21 MAR	2018	-2192	THU	3217
01APR18 -12	2 Days =	20 MAR	2018	-2303	WED	3084
01APR18 -13	B Days =	19 MAR	2018	-2558	TUE	-1014

_									
					Se	65E			
				Average	Flow	v over	previous	14 days	Avg-Daily Flow
01APR18		Today	y=	01	APR	2018	187	MON	175
01APR18	-1	Day	=	31	MAR	2018	174	SUN	214
01APR18	-2	Days	=	30	MAR	2018	159	SAT	240
01APR18	-3	Days	=	29	MAR	2018	142	FRI	239
01APR18	-4	Days	=	28	MAR	2018	125	THU	239
01APR18	-5	Days	=	27	MAR	2018	108	WED	238
01APR18	-6	Days	=	26	MAR	2018	91	TUE	236
01APR18	-7	Days	=	25	MAR	2018	74	MON	234
01APR18	-8	Days	=	24	MAR	2018	57	SUN	236
01APR18	-9	Days	=	23	MAR	2018	40	SAT	236
01APR18	-10	Days	=	22	MAR	2018	24	FRI	236
01APR18	-11	Days	=	21	MAR	2018	7	THU	95
01APR18	-12	Days	=	20	MAR	2018	0	WED	0
01APR18	-13	Days	=	19	MAR	2018	0	TUE	0

					-	65EX1				
				Average			previous	14 days		Avg-Daily Flo
01APR18		Today	/=	01	APR	2018	172	MON		152
01APR18	-1	Day	=	31	MAR	2018	182	SUN		152
01APR18	-2	Days	=	30	MAR	2018	189	SAT		139
01APR18	-3	Days	=	29	MAR	2018	197	FRI		113
01APR18	-4	Days	=	28	MAR	2018	213	THU		113
01APR18	-5	Days	=	27	MAR	2018	230	WED		112
01APR18	-6	Days	=	26	MAR	2018	246	TUE		112
01APR18	-7	Days	=	25	MAR	2018	267	MON	- 1	103
01APR18	-8	Days	=	24	MAR	2018	290	SUN		175
01APR18	-9	Days	=	23	MAR	2018	304	SAT		113
01APR18 ·	-10	Days	=	22	MAR	2018	323	FRI		70
01APR18 ·	-11	Days	=	21	MAR	2018	345	THU	Ì	353
01APR18 ·	-12	Days	=	20	MAR	2018	355	WED	Í.	292
01APR18 ·	-13	Davs	=	19	MAR	2018	372	TUE	Í	417

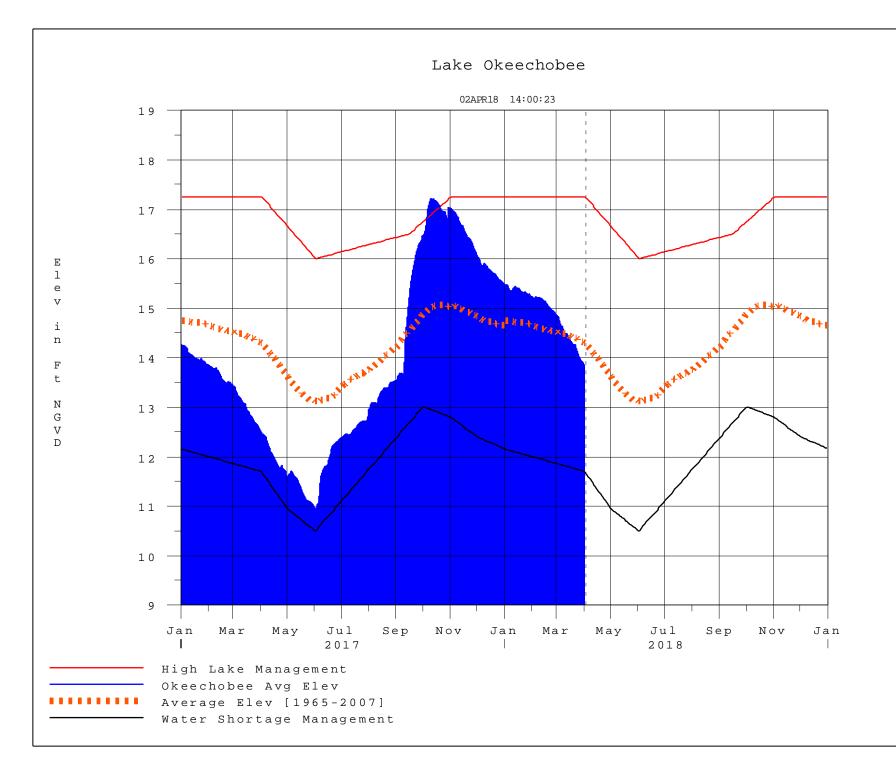
_

Lake Okeechobee Outlets Last 14 Days

DATE 01 APR 2018 31 MAR 2018 30 MAR 2018 29 MAR 2018 28 MAR 2018 26 MAR 2018 25 MAR 2018 24 MAR 2018 23 MAR 2018 21 MAR 2018 20 MAR 2018 20 MAR 2018	Discharge (ALL DAY) (AC-FT) 3 2987 3 3380 3 3001 3 1893 3 1622 3 1213 3 1466 3 2104 3 3636 3 3391 3 1464 3 1069 3 1543	Below S-77 Discharge (ALL-DAY) (AC-FT) 2645 3061 2504 1497 1162 812 945 1162 1595 1297 541 355 490 707	S-78 Discharge (ALL DAY) (AC-FT) 2036 2649 3054 635 616 653 883 1735 2366 2152 679 147 38 858	S-79 Discharge (ALL DAY) (AC-FT) 2203 2926 1756 74 398 1042 1485 2377 2312 1743 104 361 707 1216	
DATE 01 APR 2018 31 MAR 2018 30 MAR 2018 29 MAR 2018 28 MAR 2018 26 MAR 2018 25 MAR 2018 24 MAR 2018 23 MAR 2018 21 MAR 2018 21 MAR 2018 20 MAR 2018 21 MAR 2018	3 38 3 31 3 119 3 116 3 72 3 105 3 116 3 125 3 151 3 156 3 194 3 138 3 84	S-351 Discharge (ALL DAY) (AC-FT) 2844 2903 2903 2904 2934 3035 3801 3818 3494 3539 3469 2686 2231 2258	S-352 Discharge (ALL DAY) (AC-FT) 1253 1372 1368 1392 1461 1485 1489 1491 1487 1485 1485 1463 1346 1249 1087	S-354 Discharge (ALL DAY) (AC-FT) 1005 1037 1158 1406 1160 1231 1549 1477 1473 1430 1289 924 1208 1432	L8 Canal Pt Discharge (ALL DAY) (AC-FT) 516 546 526 526 522 585 601 607 576 540 612 651 553 522
DATE 01 APR 2018 31 MAR 2018 30 MAR 2018 29 MAR 2018 29 MAR 2018 27 MAR 2018 26 MAR 2018 25 MAR 2018 24 MAR 2018 23 MAR 2018 21 MAR 2018 20 MAR 2018	S-308 Discharge (ALL DAY) (AC-FT) 3 433 3 394 3 585 3 482 3 725 3 1128 3 227 3 1128 3 227 3 1128 3 227 3 1 3 420 3 -1 3 -NR- 3 -NR-	Below S-308 Discharge (ALL-DAY) (AC-FT) 193 190 269 285 822 292 -20 12 125 -12 -12 -185 -116 -51		2	

19 MAR 2018	2	214	46						
*** NOTE: and	Discharge	(ALL DAY) is	computed using Spillway, Sector Gate						
anu	Lockages Di	lscharges fro	om 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									
		-	interior 4 station gages was used						
On 05 Nov mix of in	ember 2010,		nobee Elevation was switched to a 9 gage o obtain a more reliable representation						
On 09 May mix of in of the la	2011, Lake terior and e ke level due	edge gages to e to isolatio	Elevation was switched to a 8 gage o obtain a more reliable representation on of S135 from low lake levels. s determined from the 4 Int & 4 Edge						
stations			-						
			ssonville District Navigation website						
	-	ace.army.mil, rding Lake Ol	Reechobee Service Area water						
restrictions									
please re	fer to www.s	sfwmd.gov							
	ed 021PR2019	A 23.38 *:	Preliminary Data - Subject to Revision						

Report Generated 02APR2018 @ 23:38 ** Preliminary Data - Subject to Revision **



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

• <u>6-15 Day Precipitation Outlook Categories</u>

Table ?? in the Lake Okeechobee Water Control Plan

<u>Classification of Lake Okeechobee Net Inflow for Seasonal</u>

<u>Outlook</u>

 Table K-3 in the Lake Okeechobee Water Control Plan

<u>Classification of Lake Okeechobee Net Inflow for Multi-</u>

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	Equivalent Depth**	Lake Okeechobee
[million acre-feet]	[feet]	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	Equivalent Depth**	Lake Okeechobee
[million acre-feet]	[feet]	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