Water Conditions Summary

South Florida Water Management District

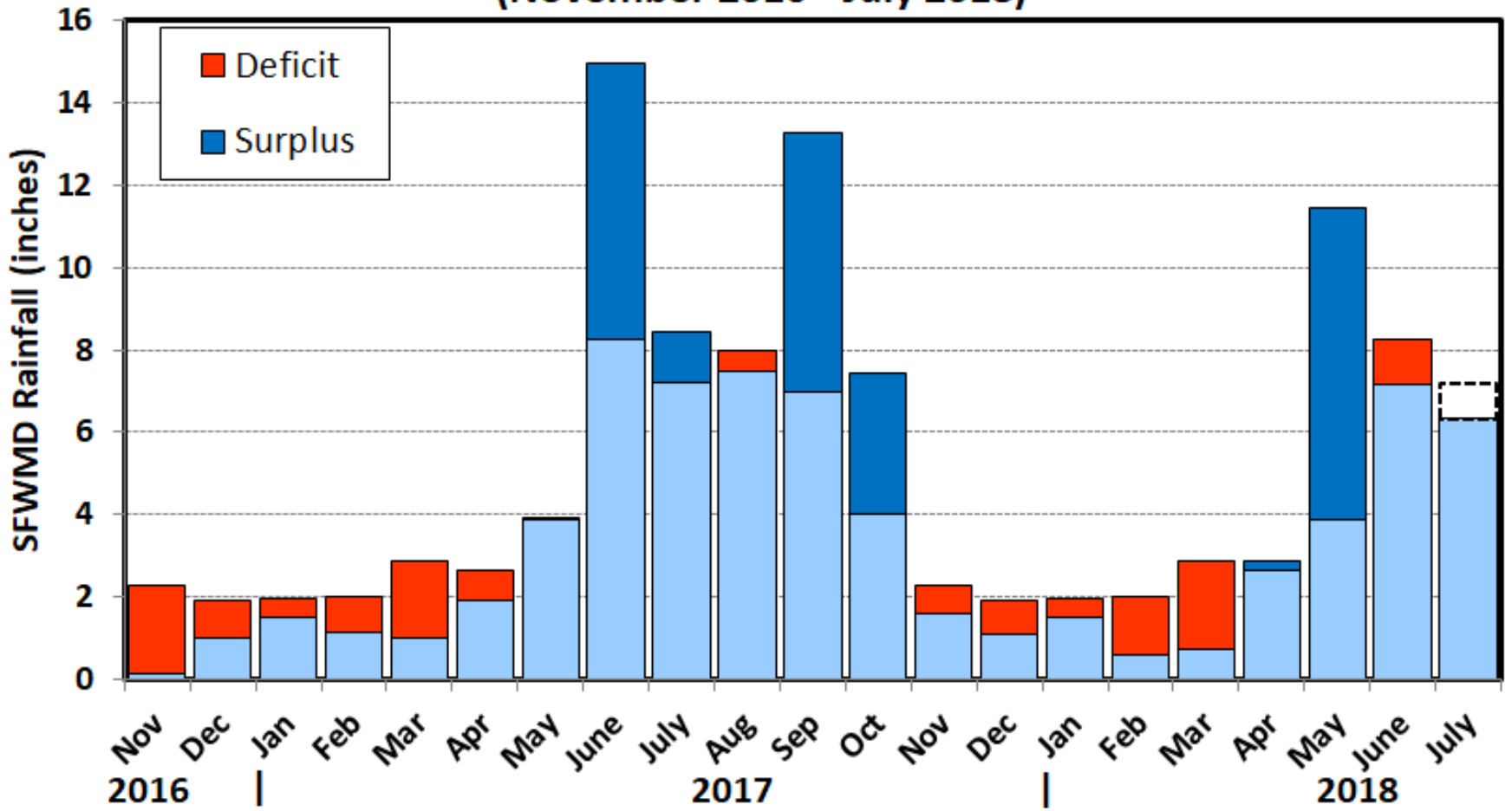
WRAC Meeting

August 2, 2018

John P. Mitnik, PE
Chief District Engineer

SFWMD Rainfall Distribution Comparison

(November 2016 - July 2018)



2017-2018 WET SEASON:

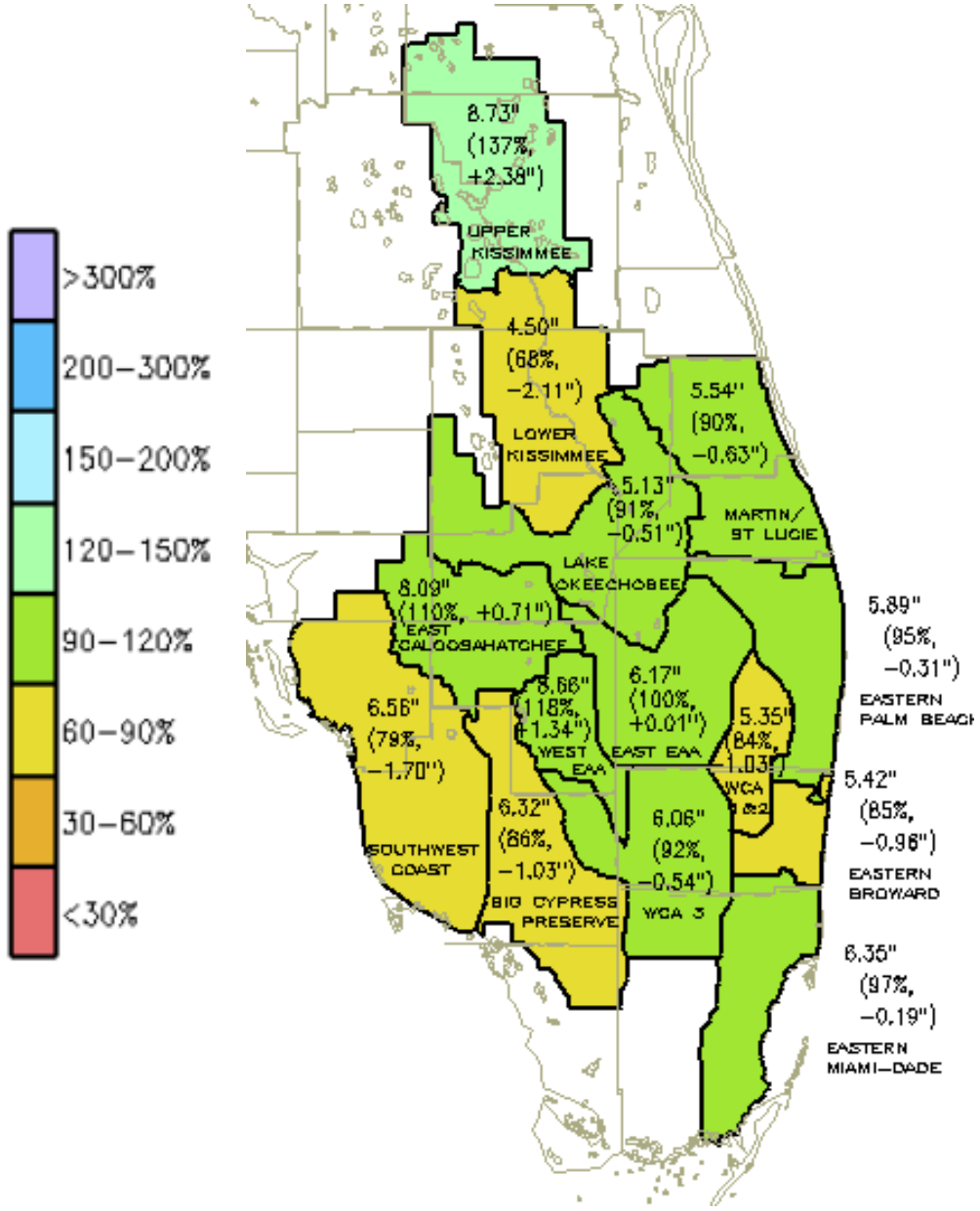
- June, September and October 2017 were ~ 190% average
- Hurricane Irma Impact ~ 8.5”
- TS Philippe ~ 2.4”

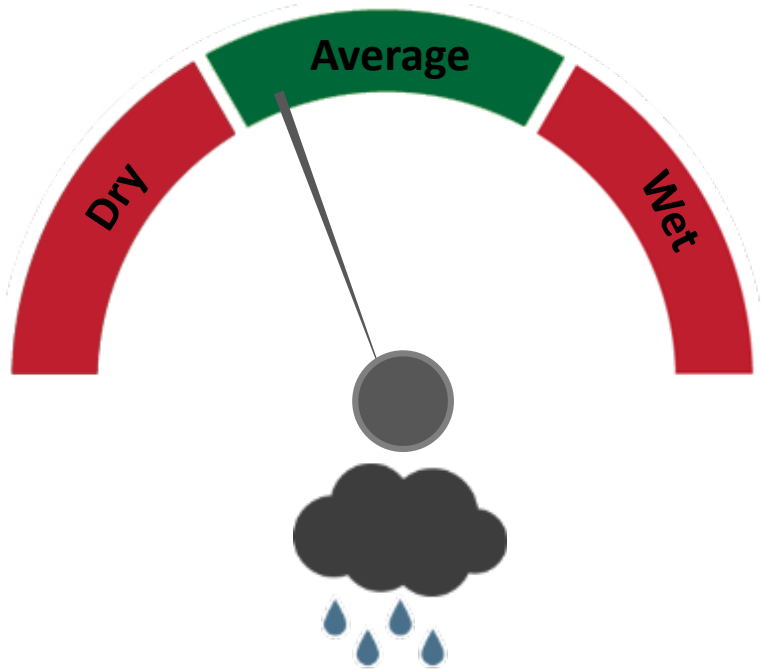
2018 DRY SEASON:

- Below average
- April was first month above average after 5 dry months
- Wettest May in the POR

2018-2019 WET SEASON:

- June 2018 was 87% of average
- July 2018 is 94% of average up to date



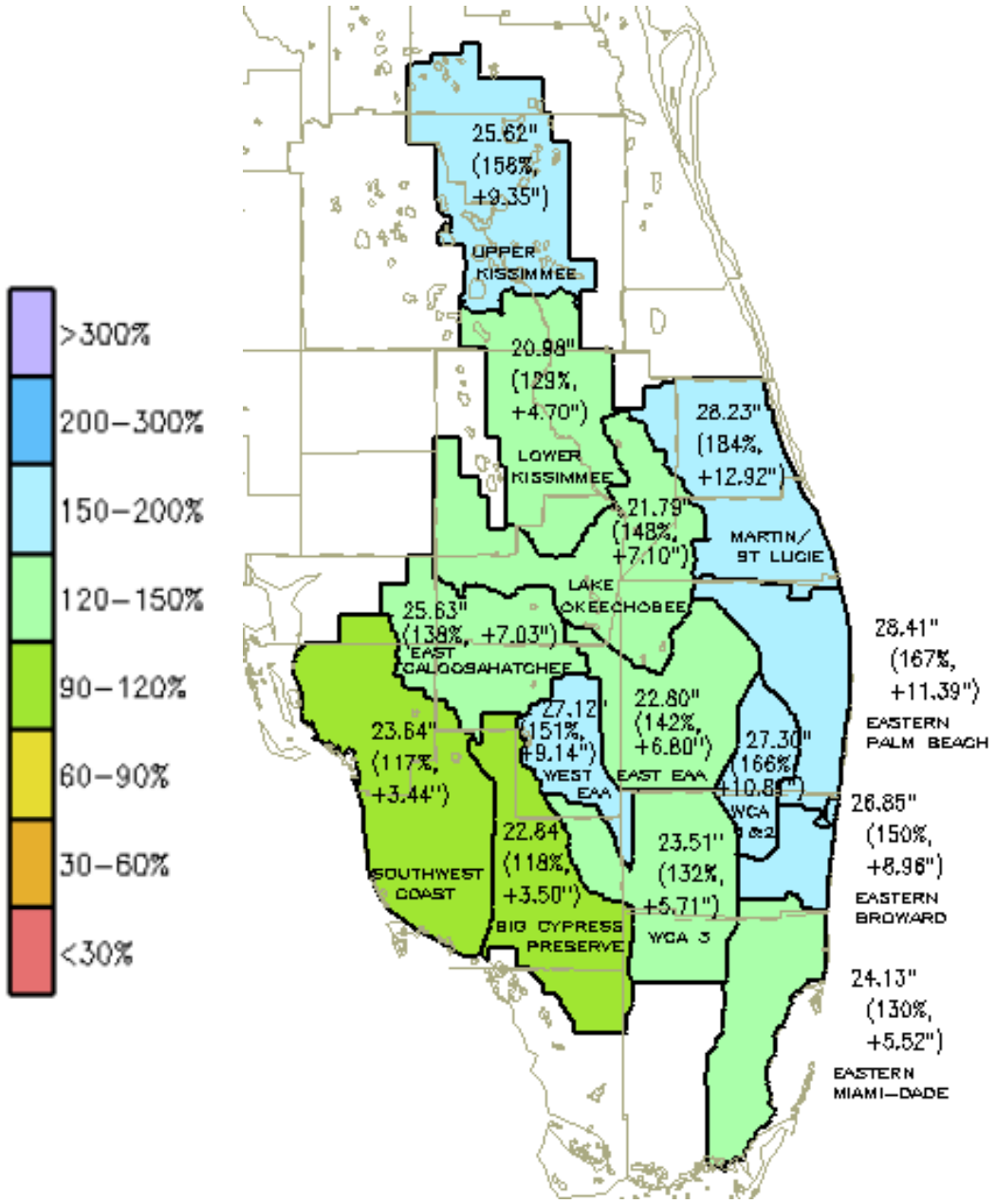


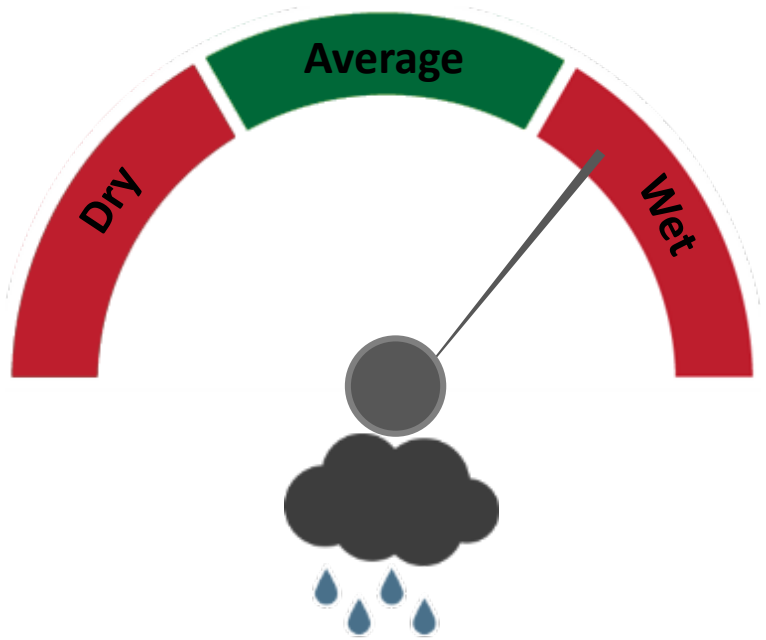
SFWMD

July 2018 Rainfall To Date

DISTRICT-WIDE: 6.33"

- Below average: 94% or -0.39”
- High variability of rainfall observed throughout the district
- Largest accumulation at Upper Kissimmee (137%) followed by West EAA (118%) and East Caloosahatchee (110%)
- All remaining basins show deficit. Lower Kissimmee Valley has largest deficit of -2.11”.
- Lower East Coast and Western Coast show large deficits





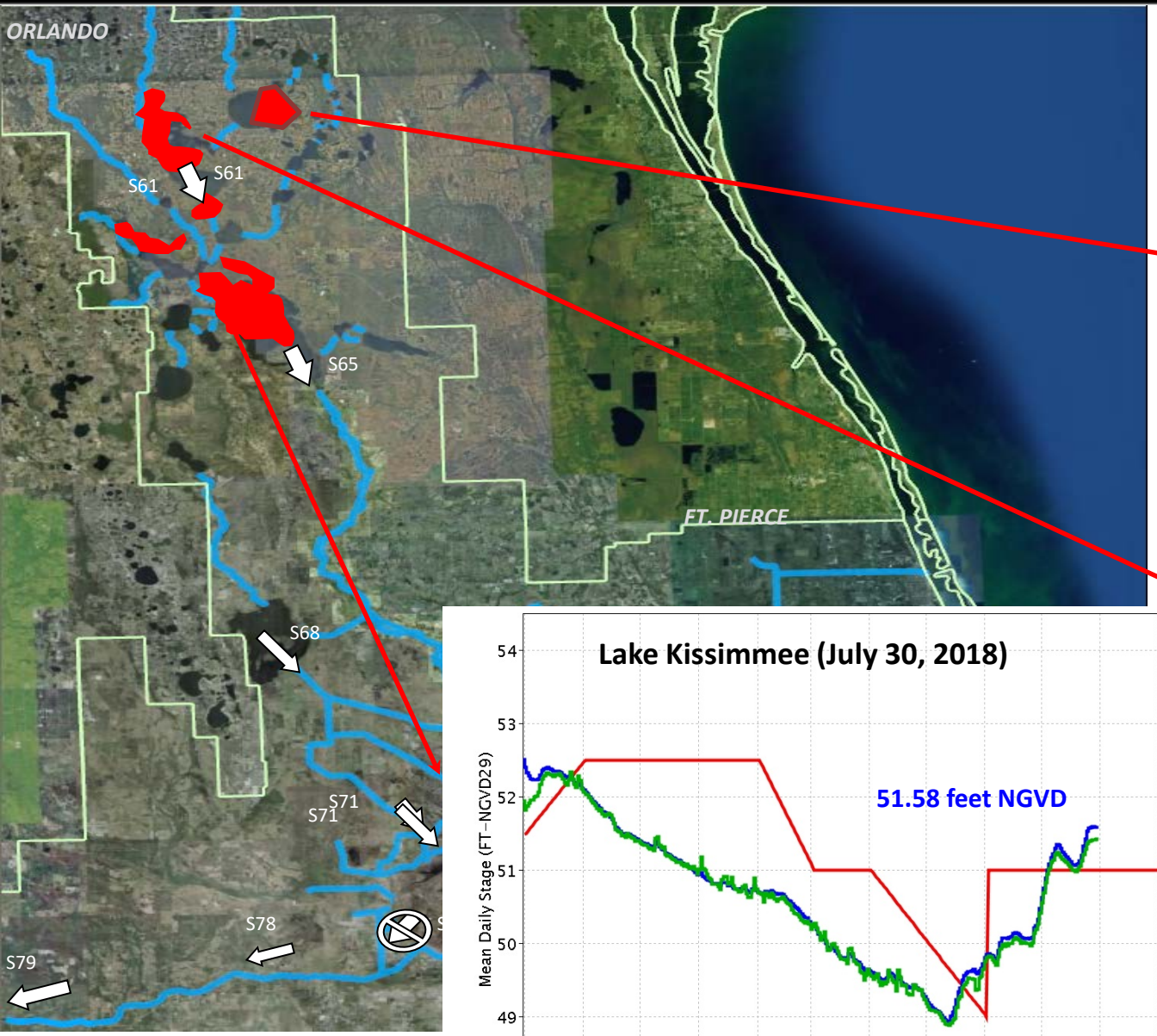
SFWMD

Wet Season Rainfall

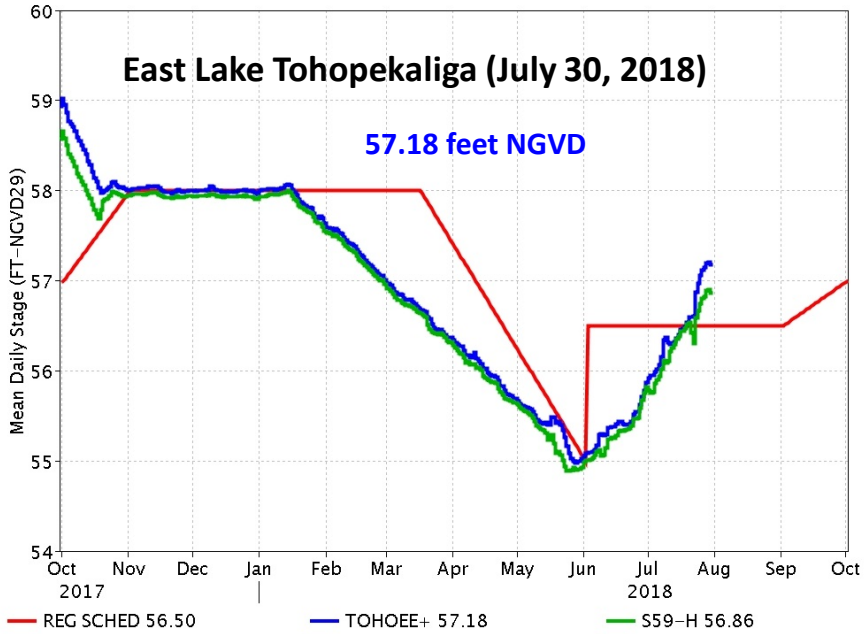
14-May, 2018 to 30-July, 2018

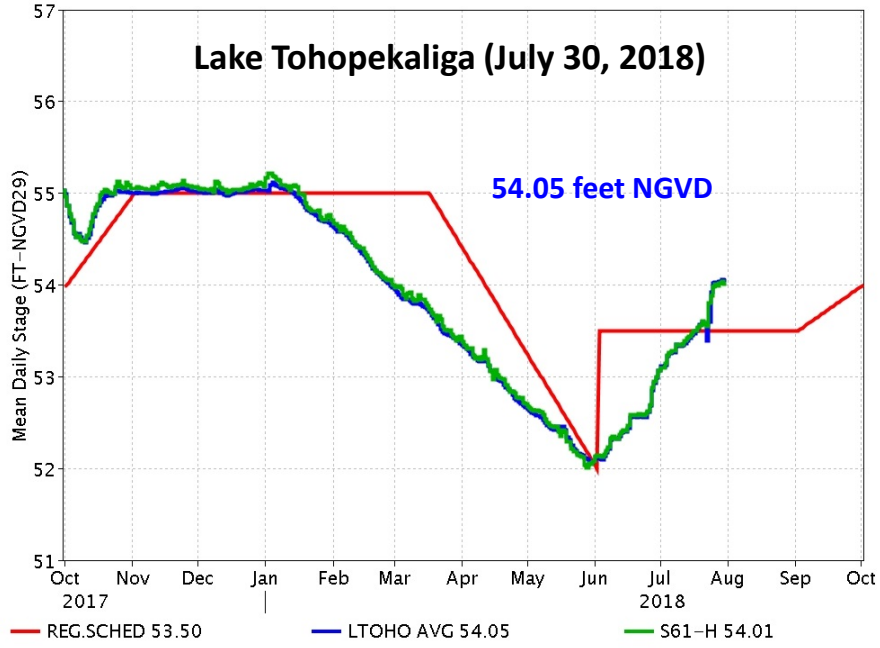
DISTRICT-WIDE: 24.36"

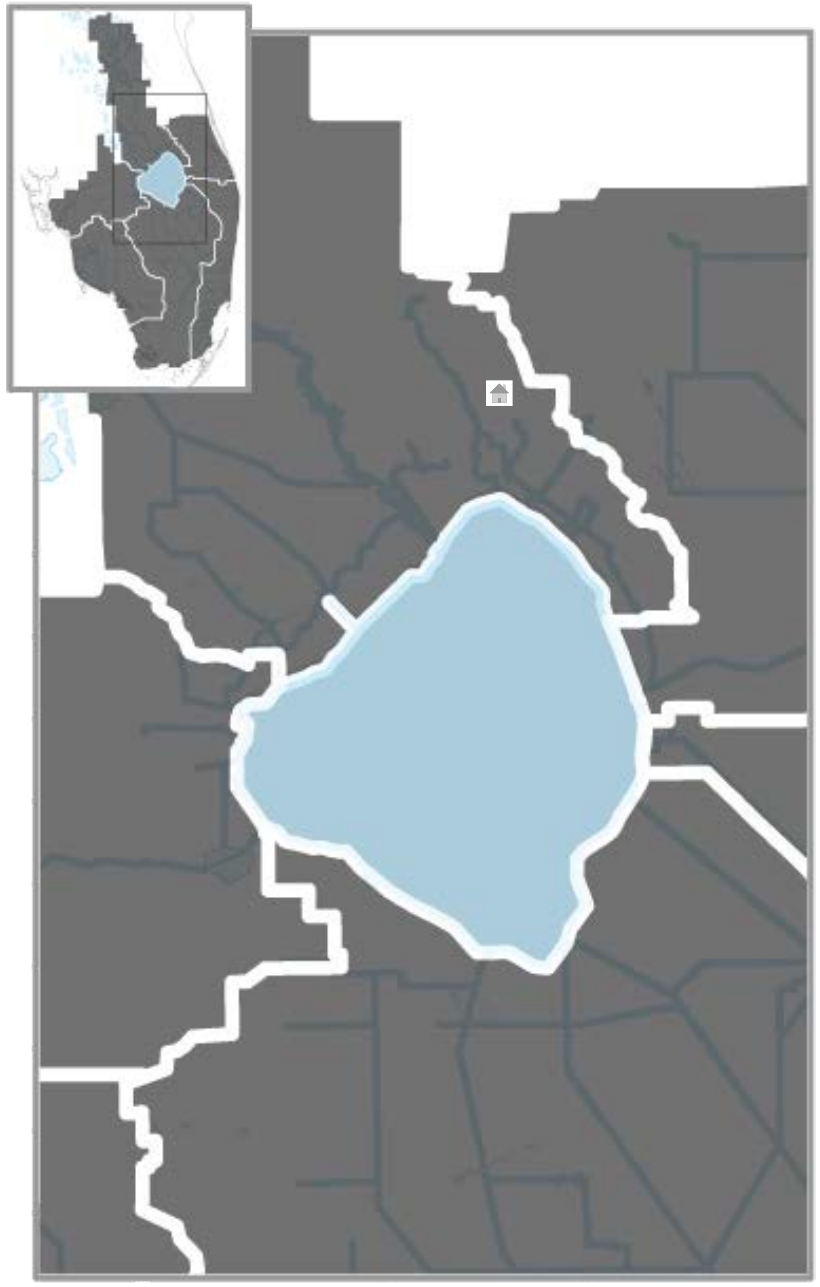
- 141% of average or +7.06”
- Last 2 weeks of May produced 10.87‘’ of rain
- Martin/St. Lucie County, Eastern Palm Beach, WCAs 1 & 2 and West EAA experienced largest rainfall accumulation (151-184% of average)
- All other basins but two basins in the west coast are in the 120-150% of average


ORLANDO
S61
S61
S65
FT. PIERCE
S68
S71
S71
S78
S79

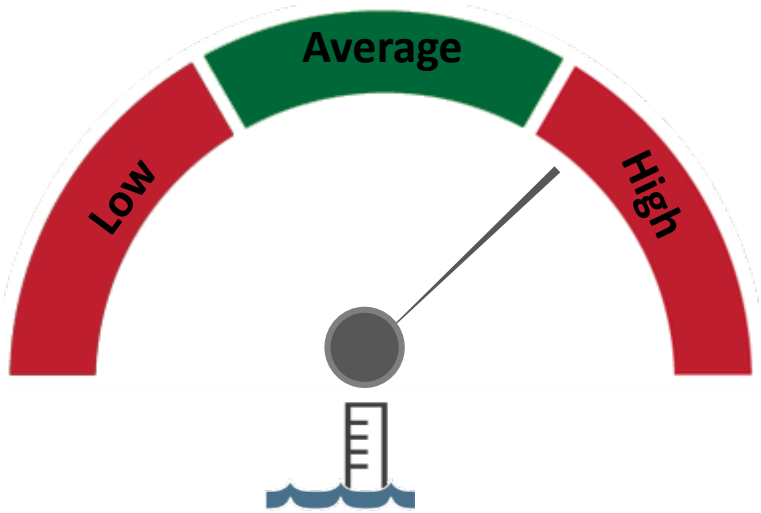
Lake Kissimmee (July 30, 2018)
51.58 feet NGVD
Mean Daily Stage (FT-NGVD29)
54
53
52
51
50
49
48
Oct 2017
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul 2018
Aug
Sep
Oct
REG SCHED 51.00
LKISS AVG 51.58
S65-H 51.42


East Lake Tohopekaliga (July 30, 2018)
57.18 feet NGVD
Mean Daily Stage (FT-NGVD29)
60
59
58
57
56
55
54
Oct 2017
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul 2018
Aug
Sep
Oct
REG SCHED 56.50
TOHOEE+ 57.18
S59-H 56.86


Lake Tohopekaliga (July 30, 2018)
54.05 feet NGVD
Mean Daily Stage (FT-NGVD29)
57
56
55
54
53
52
51
Oct 2017
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul 2018
Aug
Sep
Oct
REG.SCHED 53.50
LTOHO AVG 54.05
S61-H 54.01

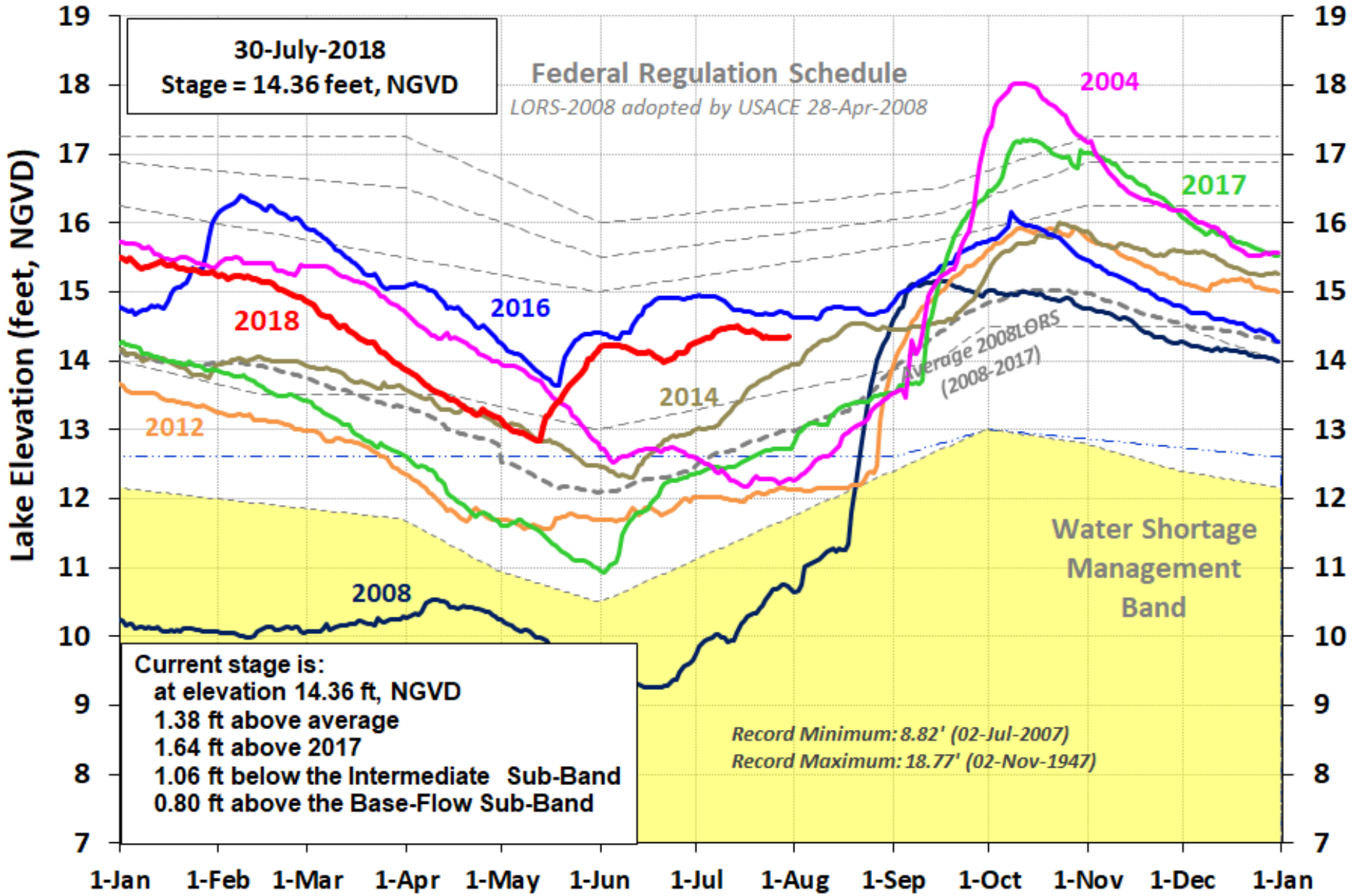


Lake Okeechobee Water Level

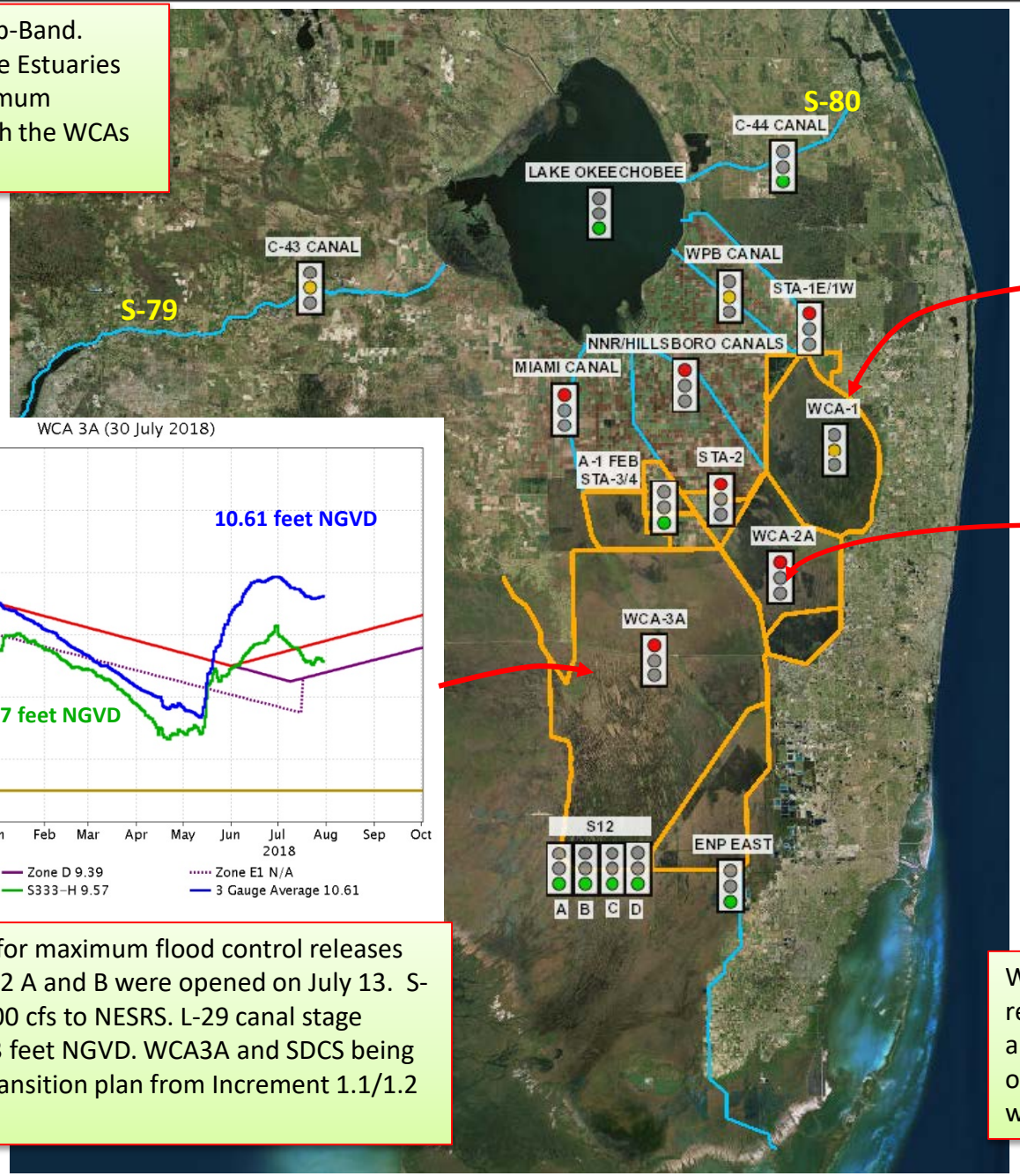


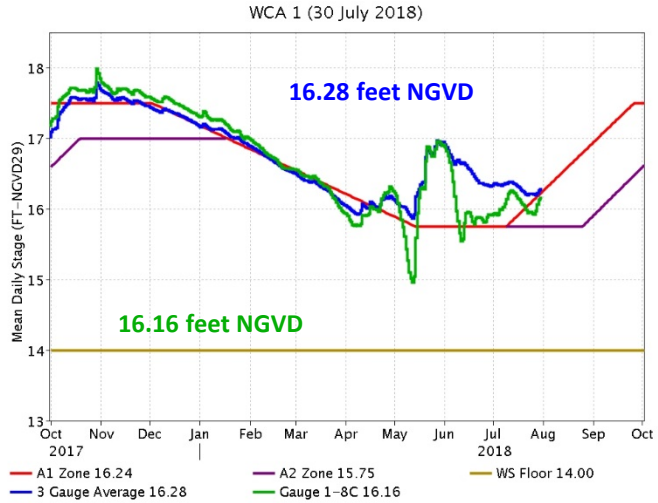
- Lake stage is 14.36 feet NGVD as of 07/30/2018
- Lake level increased by about 0.12 feet during the preceding 30 days and by 0.01 feet in the last 7 days
- Regulatory releases to the St. Lucie Estuary were on hold July 1-12. Restarted on July 13. Currently implementing pulse releases.
- No releases to the Caloosahatchee Estuary July 6-12. Restarted on July 13. Currently implementing constant releases
- In response to the record rainfall in May, SFWMD and other agencies are implementing maximum practicable releases to the south from the Lake to WCAs

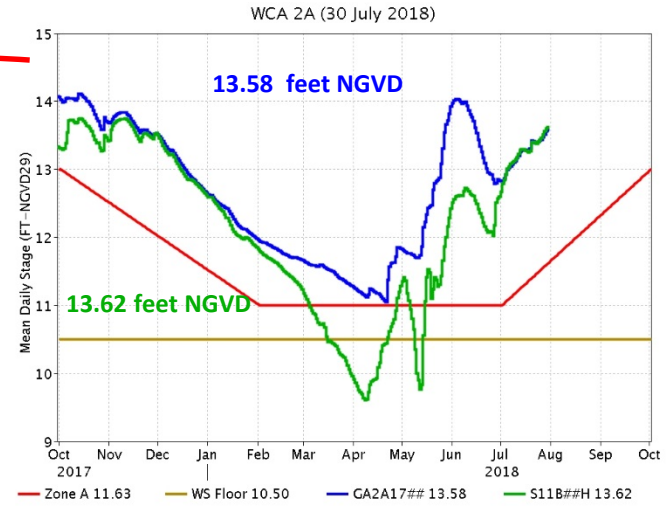
Lake Okeechobee Water Level Comparison



Lake Okeechobee stage is in the Low Sub-Band. Releases to St. Lucie and Caloosahatchee Estuaries were re-started by middle of July. Maximum practicable releases to the south through the WCAs from Lake Okeechobee.





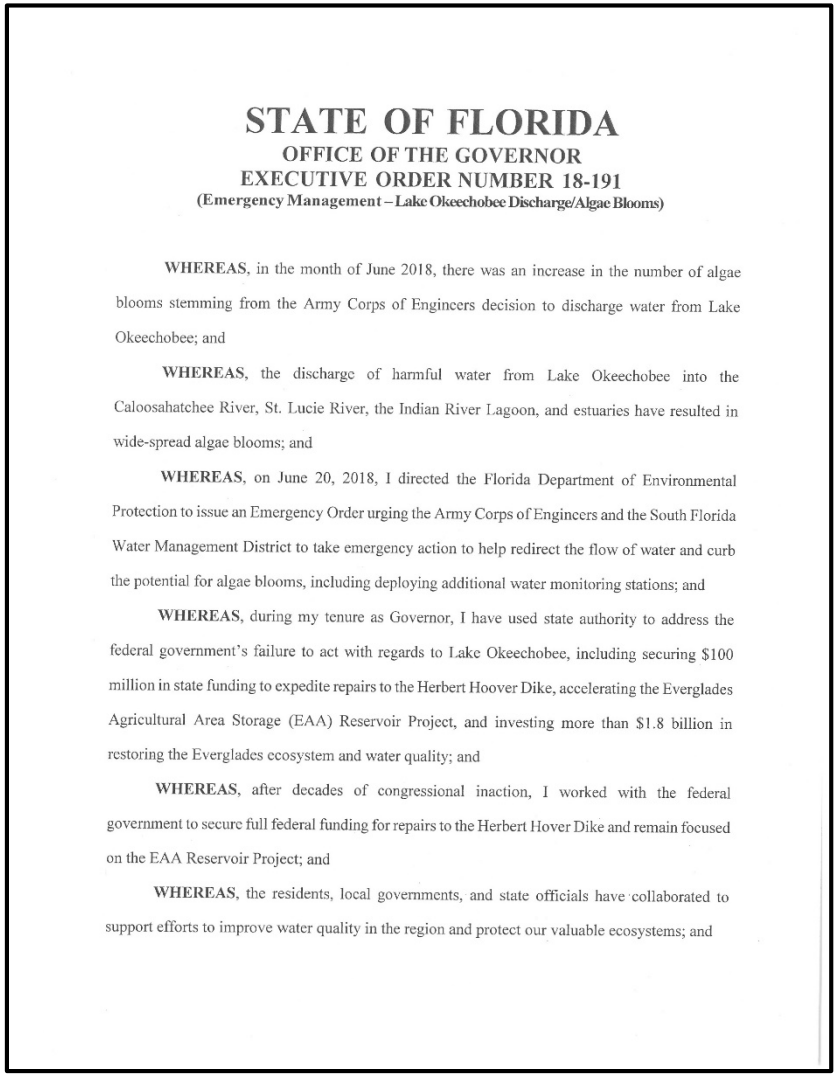


Rainfall Plan calls for maximum flood control releases from WCA-3A. S-12 A and B were opened on July 13. S-333 passing ~ 1,200 cfs to NESRS. L-29 canal stage constraint is at 8.3 feet NGVD. WCA3A and SDCS being operated under transition plan from Increment 1.1/1.2 to 2.0.

WCA-1 is below schedule (Canal gauge 1-8C); WCA-2A is above regulation schedule and above the deviation schedule; WCA-3A is above schedule. Flood control releases from WCA-3A to ENP are occurring now. S-10s are closed. USACE will open S-11s this week.

System considerations for sending water south for the period 07/17/2018 to 07/23/2018

Actions Facilitated By Governor's Emergency Orders



STATE OF FLORIDA
OFFICE OF THE GOVERNOR
EXECUTIVE ORDER NUMBER 18-191
(Emergency Management – Lake Okeechobee Discharge/Algae Blooms)

WHEREAS, in the month of June 2018, there was an increase in the number of algae blooms stemming from the Army Corps of Engineers decision to discharge water from Lake Okeechobee; and

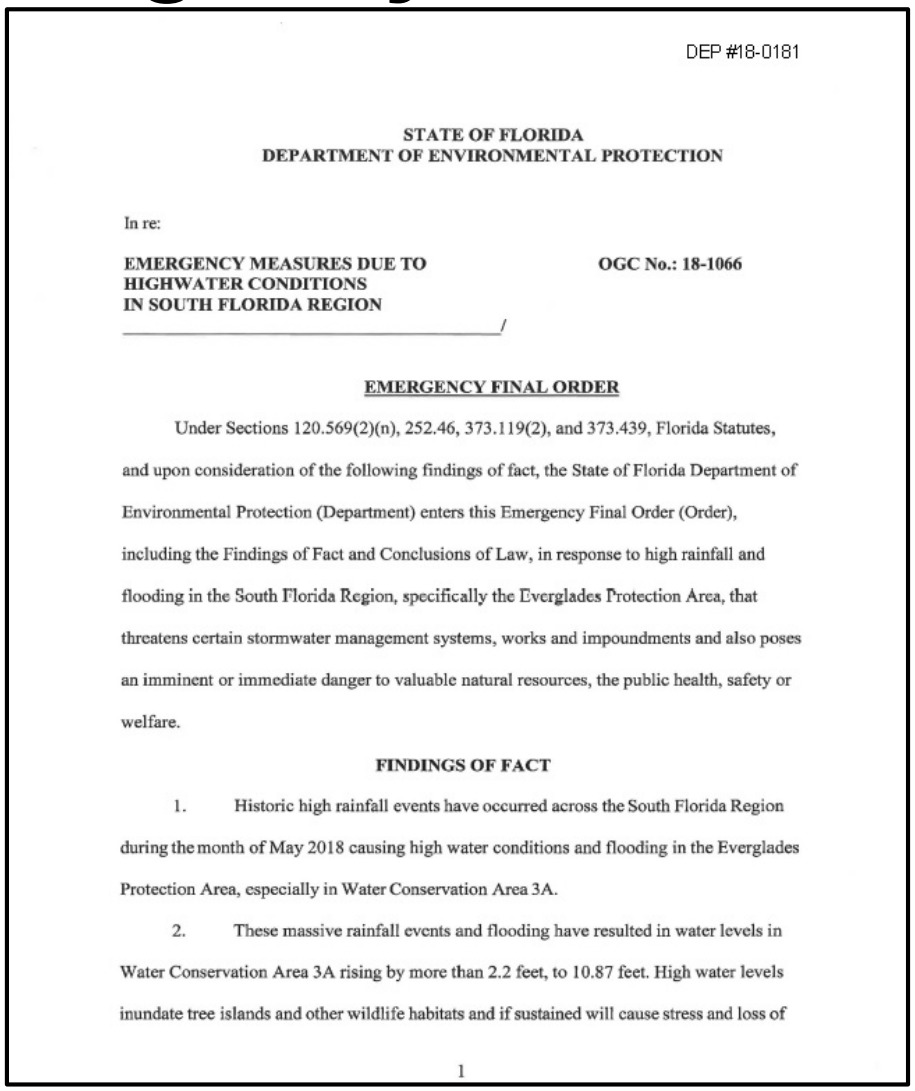
WHEREAS, the discharge of harmful water from Lake Okeechobee into the Caloosahatchee River, St. Lucie River, the Indian River Lagoon, and estuaries have resulted in wide-spread algae blooms; and

WHEREAS, on June 20, 2018, I directed the Florida Department of Environmental Protection to issue an Emergency Order urging the Army Corps of Engineers and the South Florida Water Management District to take emergency action to help redirect the flow of water and curb the potential for algae blooms, including deploying additional water monitoring stations; and

WHEREAS, during my tenure as Governor, I have used state authority to address the federal government's failure to act with regards to Lake Okeechobee, including securing $100 million in state funding to expedite repairs to the Herbert Hoover Dike, accelerating the Everglades Agricultural Area Storage (EAA) Reservoir Project, and investing more than $1.8 billion in restoring the Everglades ecosystem and water quality; and

WHEREAS, after decades of congressional inaction, I worked with the federal government to secure full federal funding for repairs to the Herbert Hover Dike and remain focused on the EAA Reservoir Project; and

WHEREAS, the residents, local governments, and state officials have collaborated to support efforts to improve water quality in the region and protect our valuable ecosystems; and



DEP #18-0181

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re:

EMERGENCY MEASURES DUE TO HIGHWATER CONDITIONS IN SOUTH FLORIDA REGION / OGC No.: 18-1066

EMERGENCY FINAL ORDER

Under Sections 120.569(2)(n), 252.46, 373.119(2), and 373.439, Florida Statutes, and upon consideration of the following findings of fact, the State of Florida Department of Environmental Protection (Department) enters this Emergency Final Order (Order), including the Findings of Fact and Conclusions of Law, in response to high rainfall and flooding in the South Florida Region, specifically the Everglades Protection Area, that threatens certain stormwater management systems, works and impoundments and also poses an imminent or immediate danger to valuable natural resources, the public health, safety or welfare.

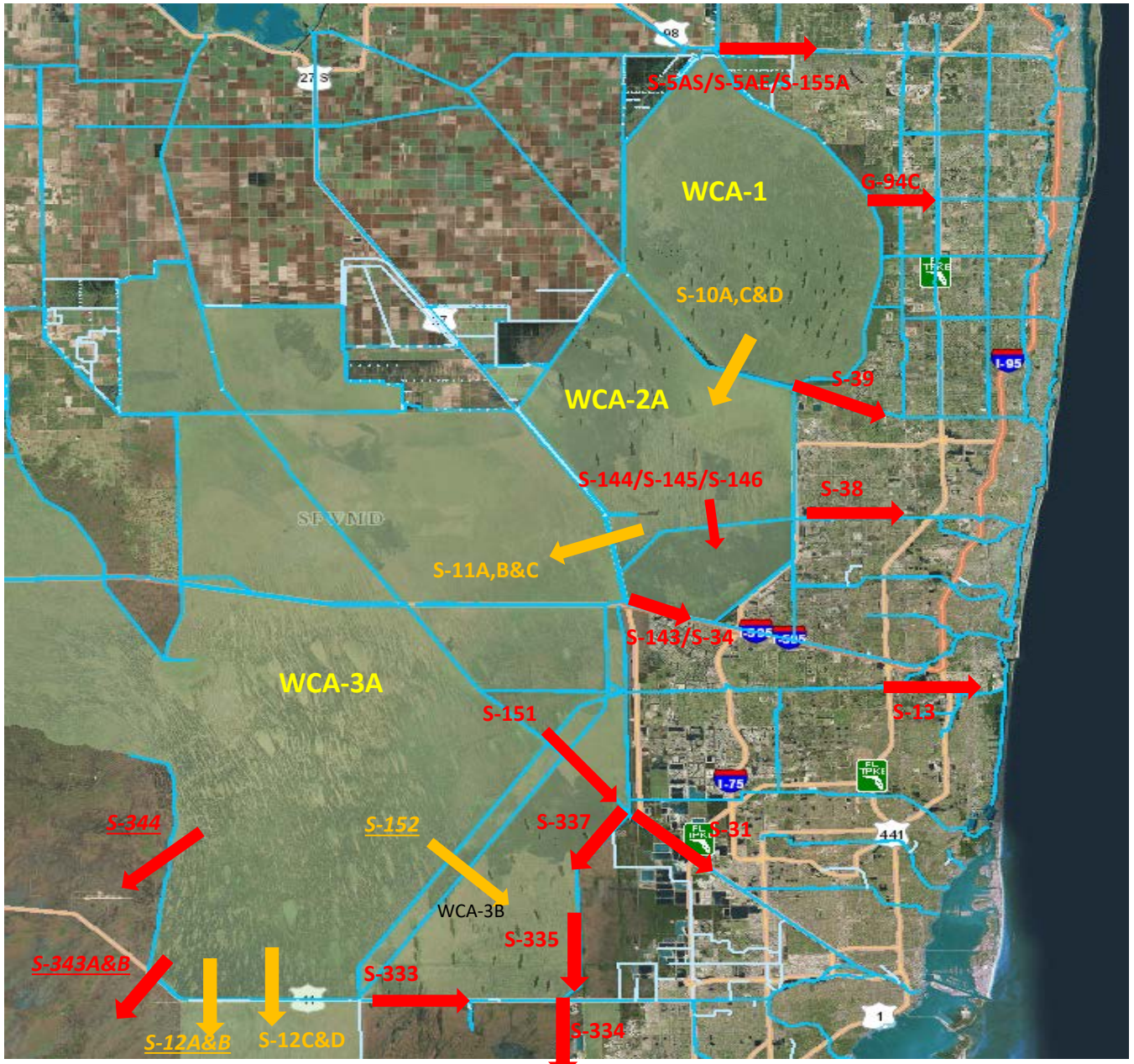
FINDINGS OF FACT

1. Historic high rainfall events have occurred across the South Florida Region during the month of May 2018 causing high water conditions and flooding in the Everglades Protection Area, especially in Water Conservation Area 3A.

2. These massive rainfall events and flooding have resulted in water levels in Water Conservation Area 3A rising by more than 2.2 feet, to 10.87 feet. High water levels inundate tree islands and other wildlife habitats and if sustained will cause stress and loss of

1

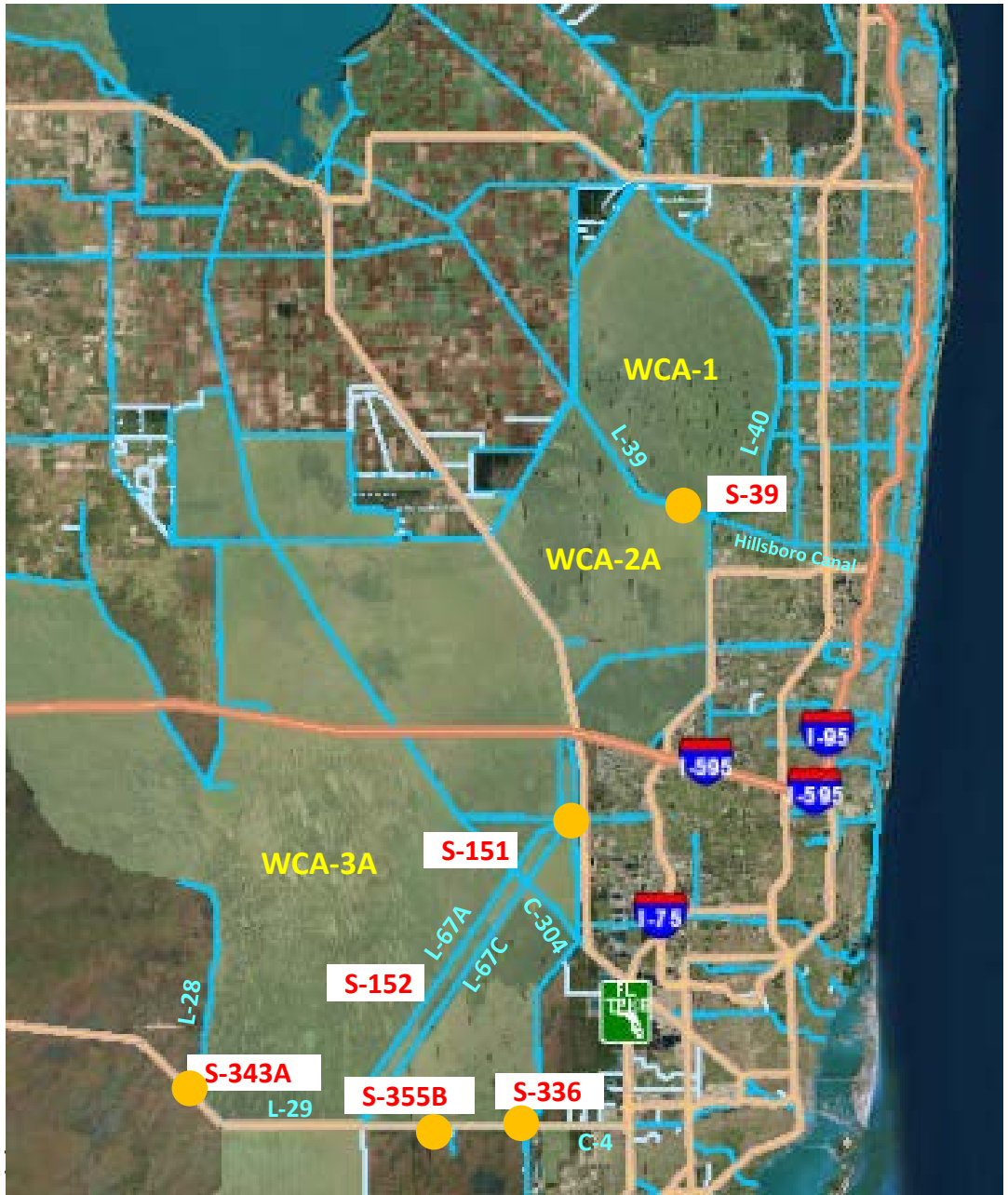
Operations to Lower Stages in WCAs



SFWMD operated structures

USACE operated structures

Emergency Measures to Manage High Water Levels



New measures enabled by the emergency order:

- Moving water to tide through every available structure, including the Hillsboro, North New River and Miami canals.
- Utilizing the A-1 Flow Equalization Basin and L-8 Flow Equalization Basin to store water.
- Storing water on public lands through the Dispersed Water Management program.
- Working with private landowners to store water on their properties.
- Moving more water into WCA-3B out of WCA-3A
- Installing temporary pumps at several locations to move water from the conservation areas to the South and East.

Temporary Pump Operation

Location	From	To	# - Size	Capacity (cfs)	On since
West of S-39	WCA 2A	WCA-1	2 (3)-42”	300	2 on 6/23/2018, 3rd pump on 7/18/2018.
North of S-151	WCA 3A	WCA 3B	2-42”	200	7/12/2018
North of S-343A	WCA 3A	L-28	2-30”	100	7/5/2018
At S-336	L-29	C-4	1-30”	40	6/26/2018
At S-355B	WCA 3B	L-29	4-30”	200	Being tested as of 7/29/2018

- Temporary pump station location

Social Media Communication

South Florida Water Managemen... ✓
@SFWMD

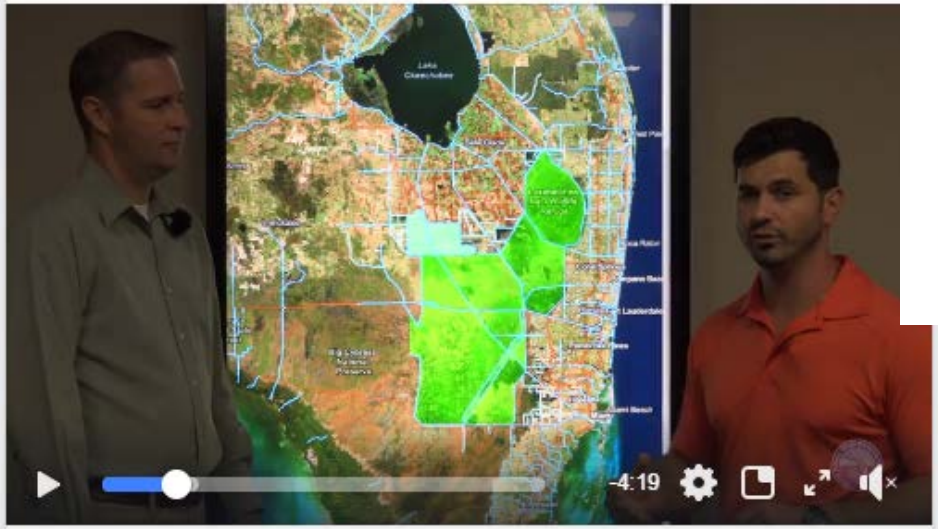
Watch the latest video update from Chief Engineer John Mitnik about current water conditions in South Florida and actions taken by the District to lower water levels, including the installation of emergency temporary pumps.

Operations Update: Managing High Water, July 3, 2...
SFWMD Chief Engineer John Mitnik gives an update on current water conditions and actions taken by the District to lower water levels, including the installat...
youtube.com

12:20 PM - 5 Jul 2018

SFWMD Chief Engineer John Mitnik gives an update on current water conditions and actions taken by the District to lower water levels, including the installation of emergency temporary pumps.

Visit www.sfwmd.gov/managinghighwater for the latest on SFWMD measures being taken to alleviate the high water emergency caused by record rainfall throughout South Florida.



South Florida Water Managemen... ✓
@SFWMD

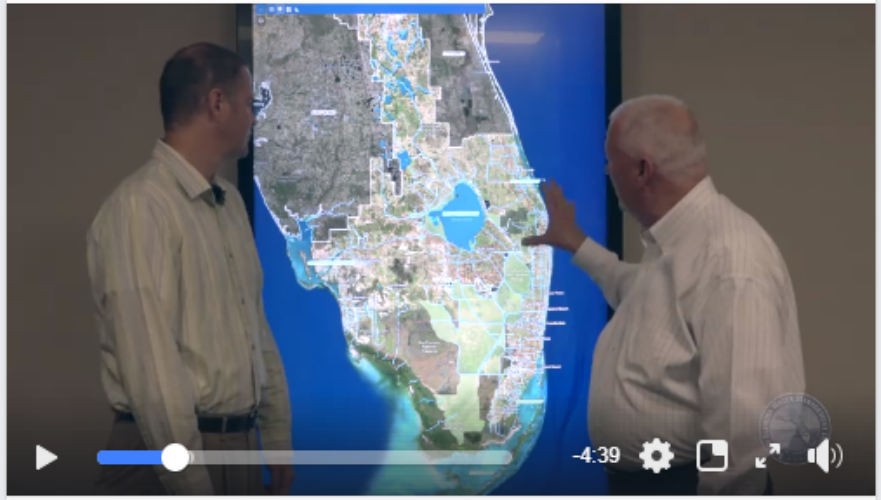
You can find updates on SFWMD measures to alleviate the high water emergency, along with links to the latest data on conditions in South Florida, at sfwmd.gov/managinghighwa....

9:38 AM - 28 Jun 2018

South Florida Water Management District
June 28 at 9:33 AM

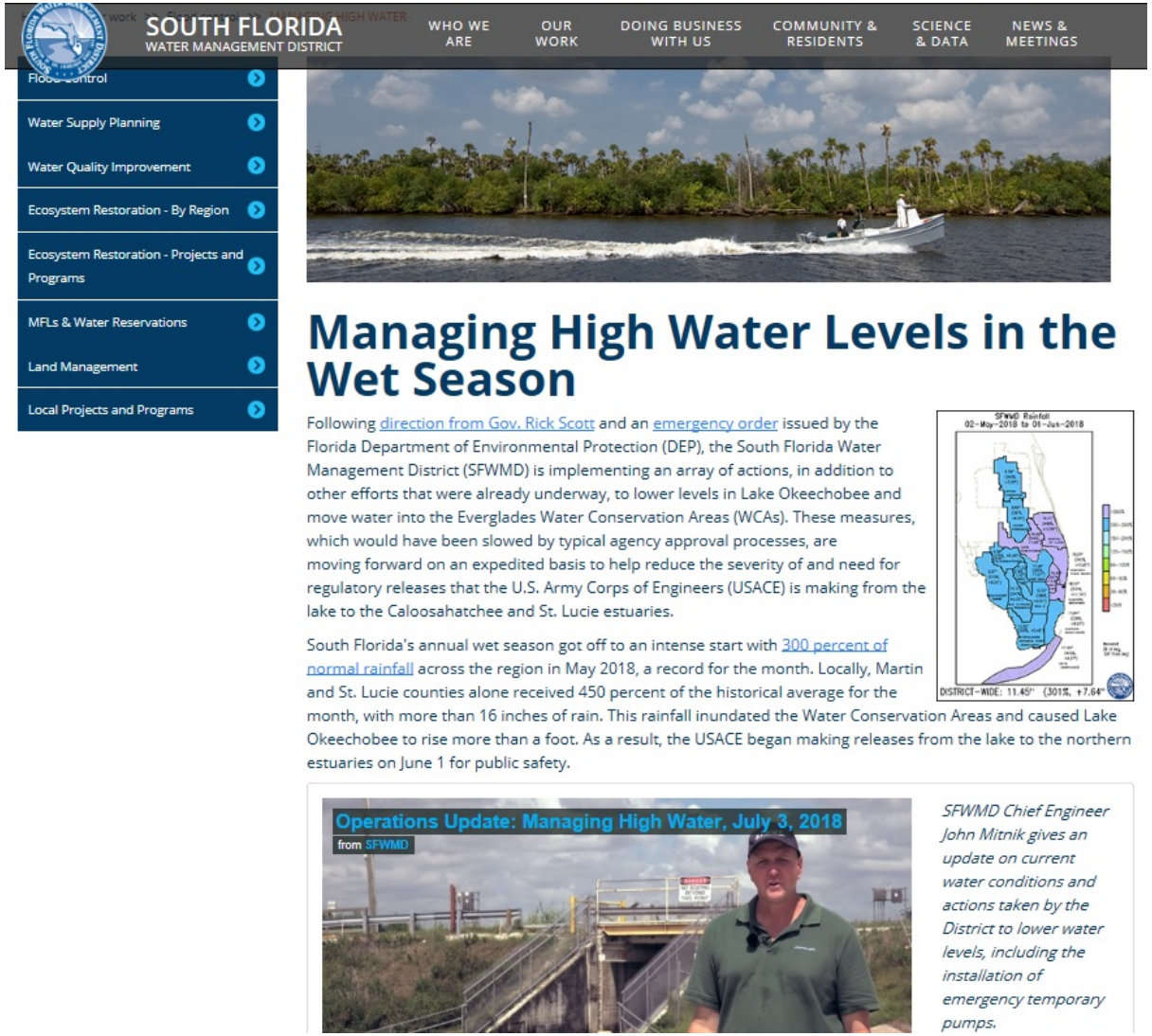
SFWMD Chief Engineer John Mitnik joins SFWMD spokesman Randy Smith to provide an update on water conditions throughout South Florida and ongoing actions being taken by the District to lower Lake Okeechobee levels and move more water through the Water Conservation Areas.

Visit www.sfwmd.gov/managinghighwater for the latest on SFWMD measures being taken to alleviate the high water emergency caused by record rainfall throughout South Florida.



sfwmd.gov

Dedicated Managing High Water Website

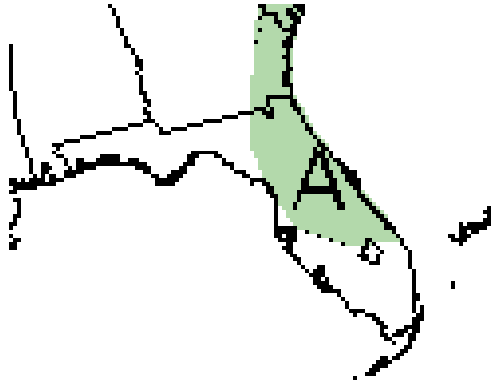


www.sfwmd.gov/managinghighwater

sfwmd.gov

CPC Precipitation Outlook

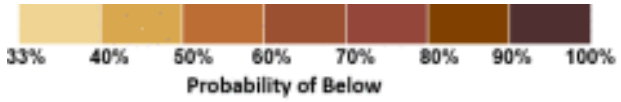
Aug 2018

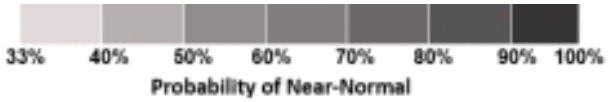


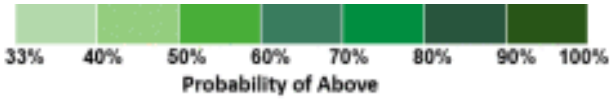
Aug-Oct 2018

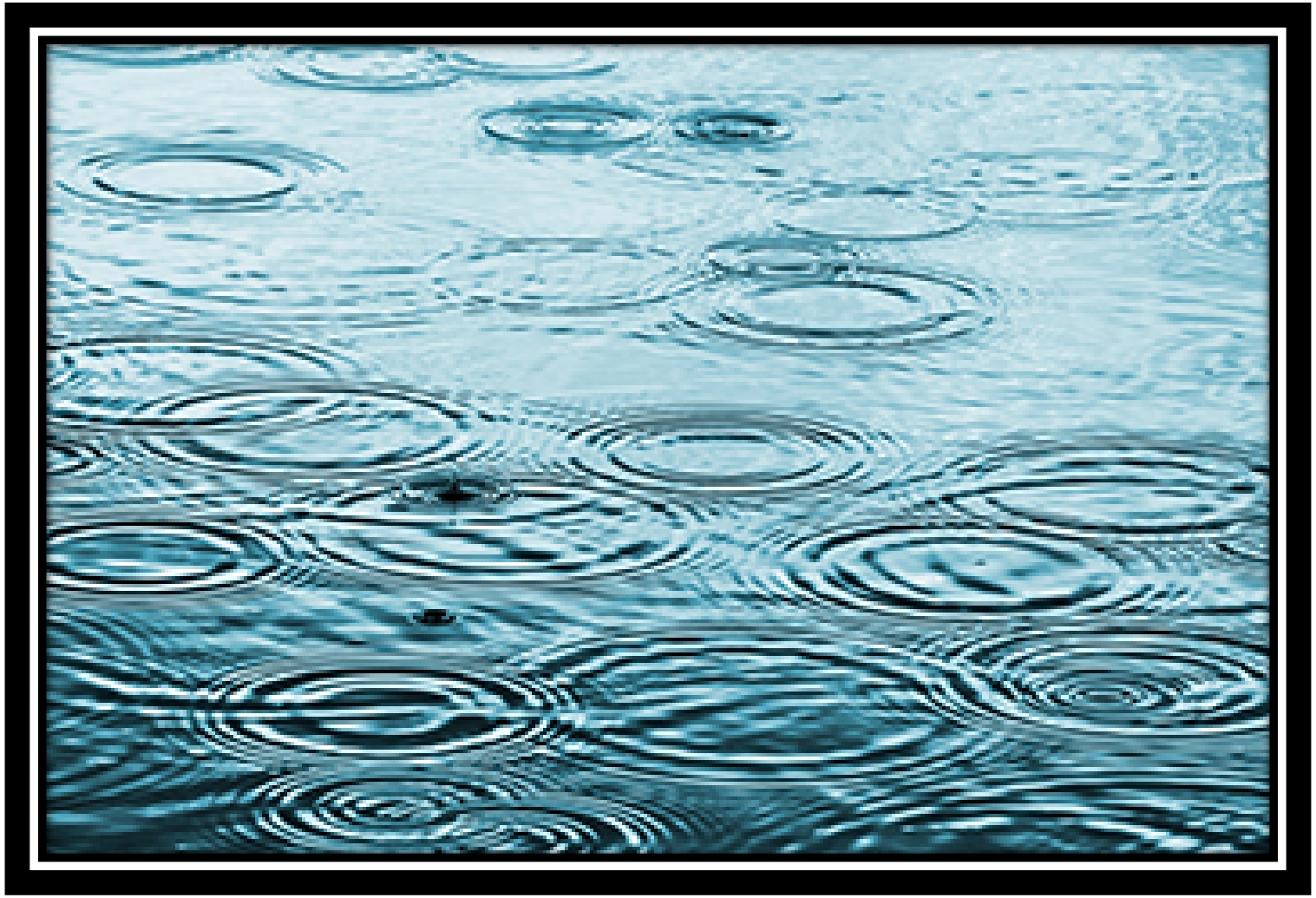
Sep-Nov 2018

- The outlook for August 2018 indicates equal chances (EC) of below-normal, normal and above normal rainfall.
- The outlook for 3-month windows for Aug-Oct 2018 is for slightly increased chances of above-normal rainfall for areas north of Lake Okeechobee and equal chances of below-normal, normal and above-normal rainfall for the remainder of the district.
- The outlook for the 2018-2019 dry season is for increased chances of above normal rainfall.









Questions