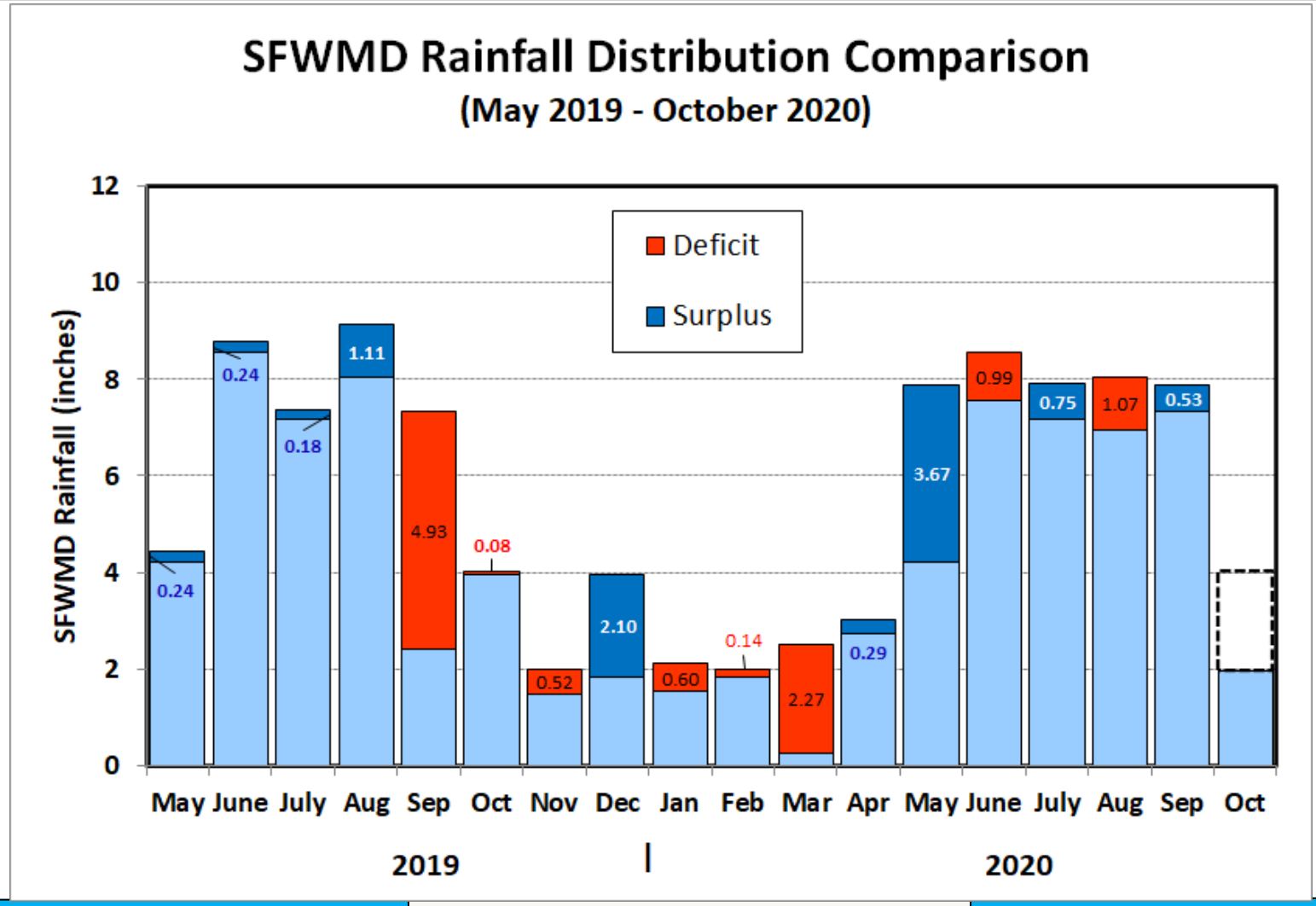
Water Conditions Summary

South Florida Water Management District
Governing Board Meeting
October 8, 2020

John P. Mitnik, PE
Chief District Engineer
Assistant Executive Director



District Wide Average Rainfall

Month	Average (inches)
Jan	2.12
Feb	1.98
Mar	2.51
Apr	2.74
May	4.21
Jun	8.55
Jul	7.18
Aug	8.03
Sep	7.34
Oct	4.03
Nov	1.99
Dec	1.84

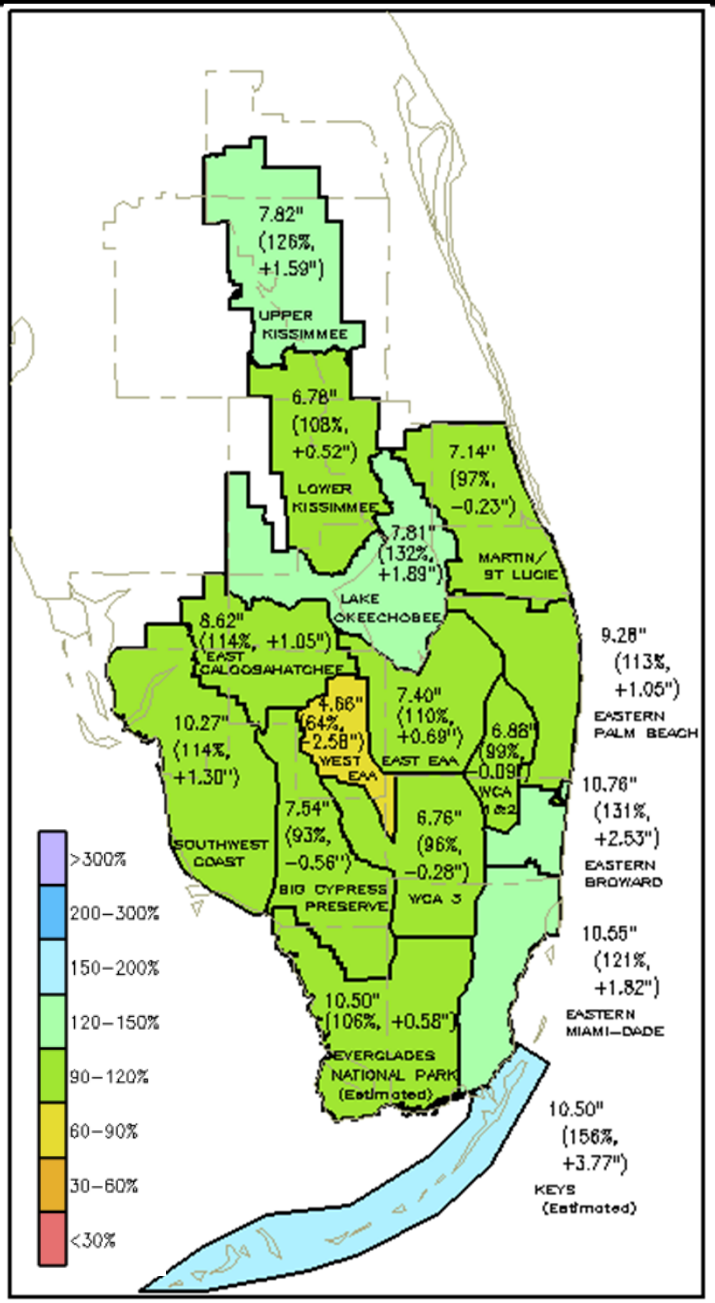
Wet Season

2019 WET SEASON
- May to August had above average rainfall
- August was 14% above average.
- Driest September in the 88-year POR.
- Earliest end in POR: Sep. 16, 2019.

2019-2020 DRY SEASON.
- Sep. 18, 2019 to May 15, 2020, 73% or Normal
- Driest March in 89 years of record
- May was ~ 187% of normal

2020 WET SEASON
- Started May 15, 2020.
- July and September had above average rainfall.
- Half of October Normal rainfall in 7 days.

sfwmd.gov



Sep 2020 Rainfall

DISTRICT-WIDE: 8.08”

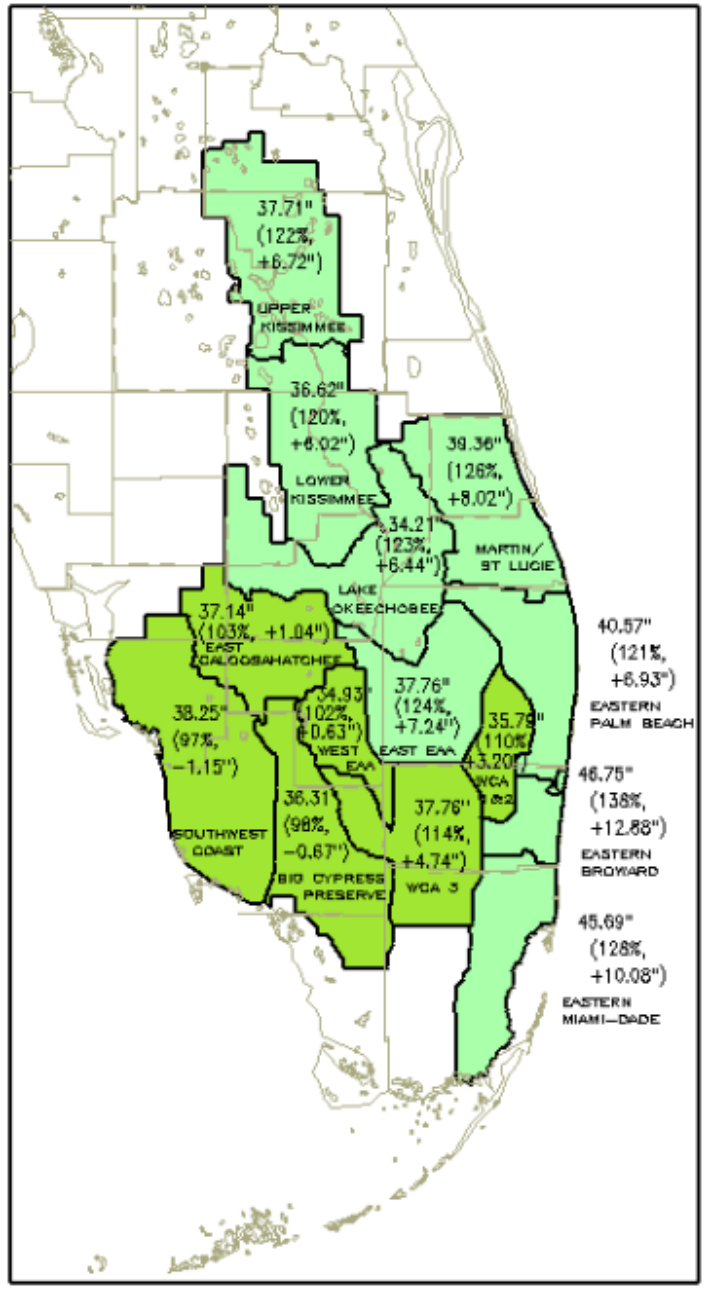
- 110 % of average, +0.74” surplus
- Variability 132% to 64%
- Highest rainfall accumulation is for Eastern Broward 2.53”
- Lowest deficit at West EAA -2.58”
- Out of 14 rainfall areas: 4 > 120%; 9 are 120% to 90%; 1 is < 90%

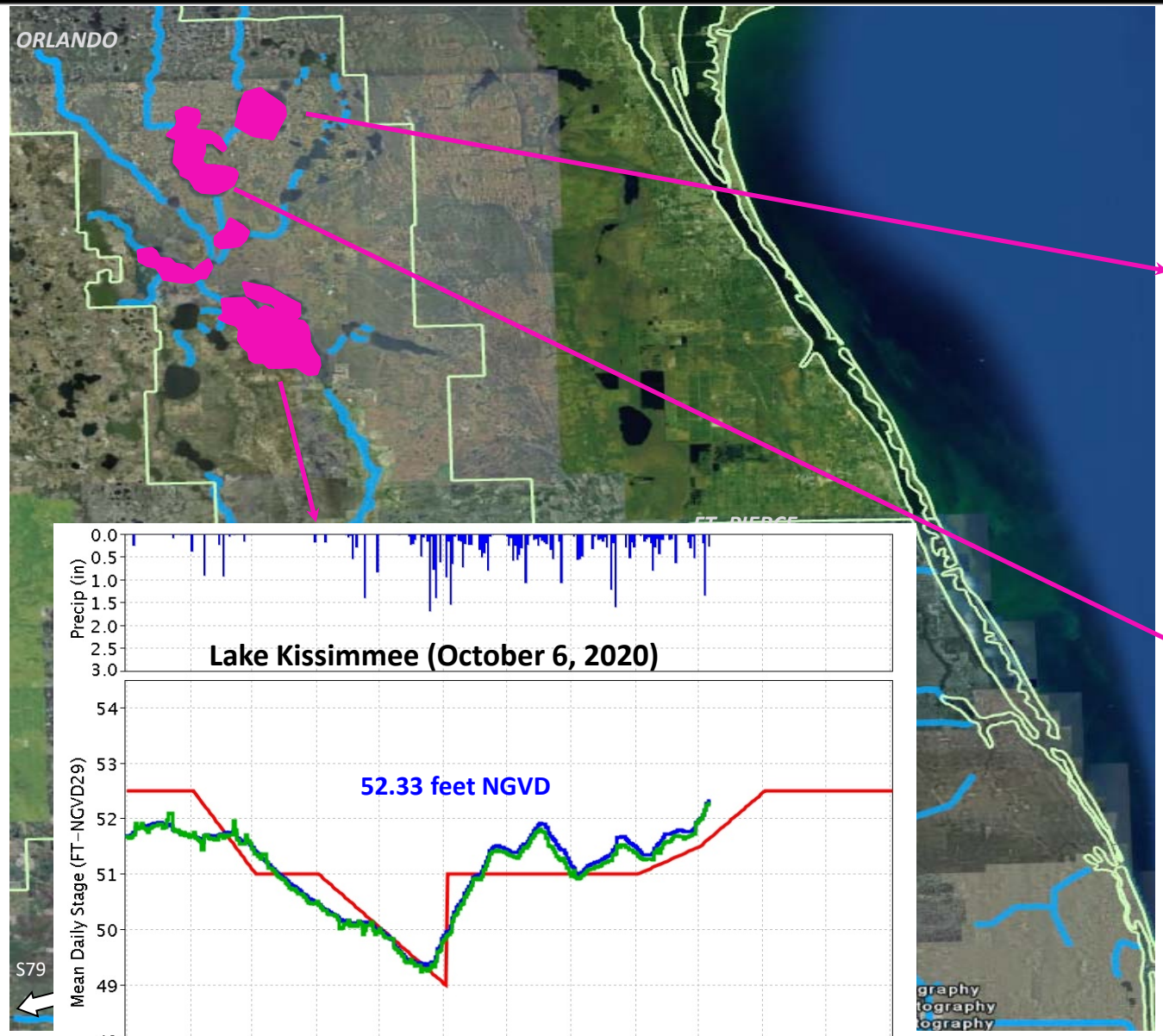
Wet Season Rainfall

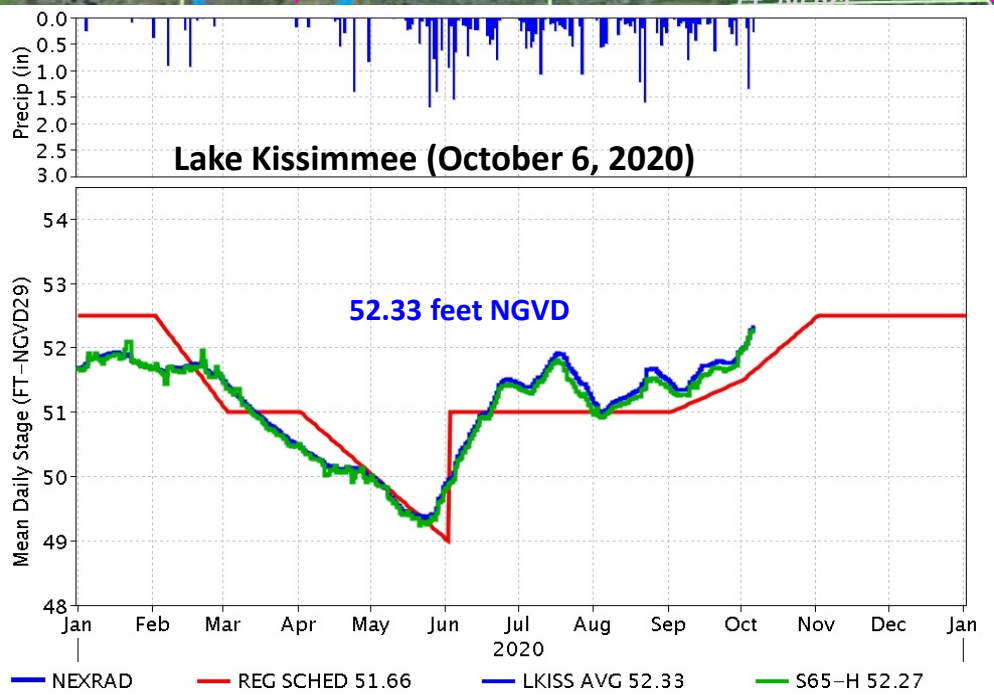
15 May 2020 - Present

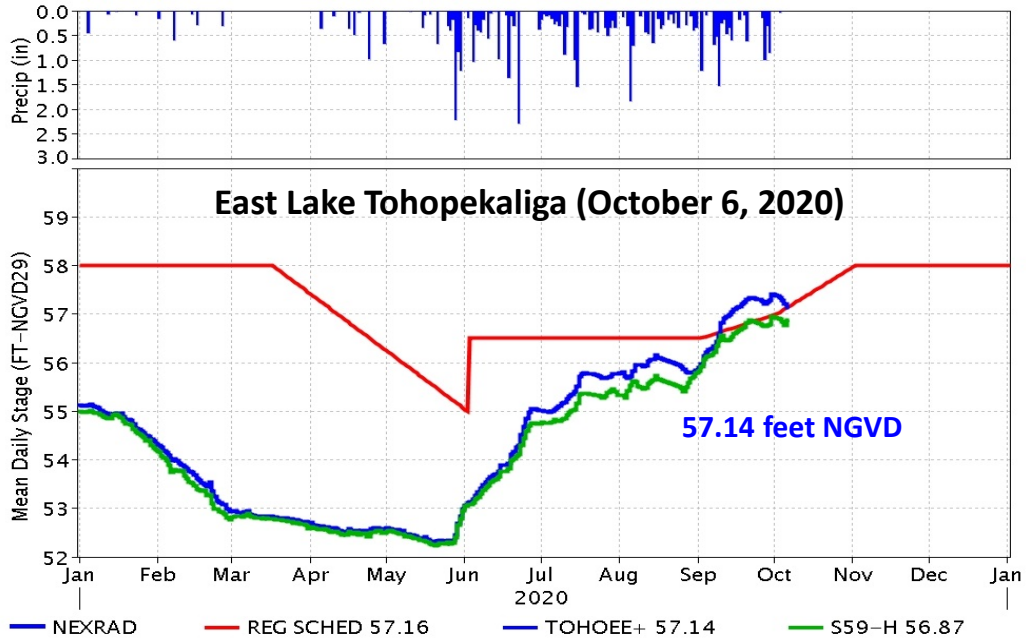
DISTRICT-WIDE: ~40.21”

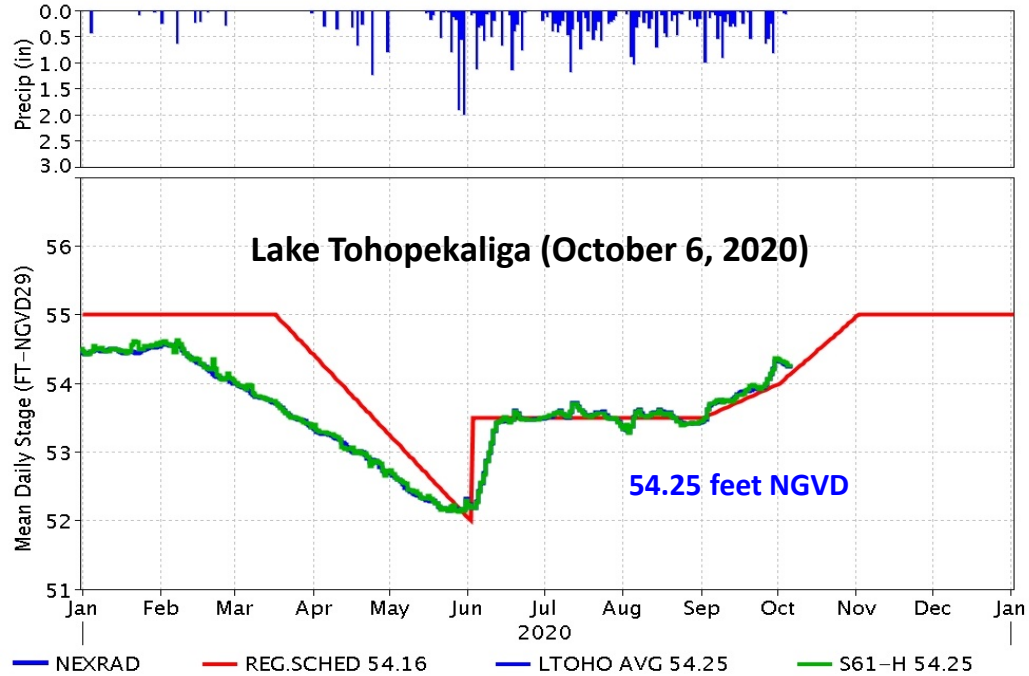
- 117% of average, + 5.89” surplus
- Areas on the West and the WCAs have received slightly less rainfall
- All areas are 97% to 138% of average
- Highest is Eastern Broward with 138%
- Lowest is Southwest Coast with 97%



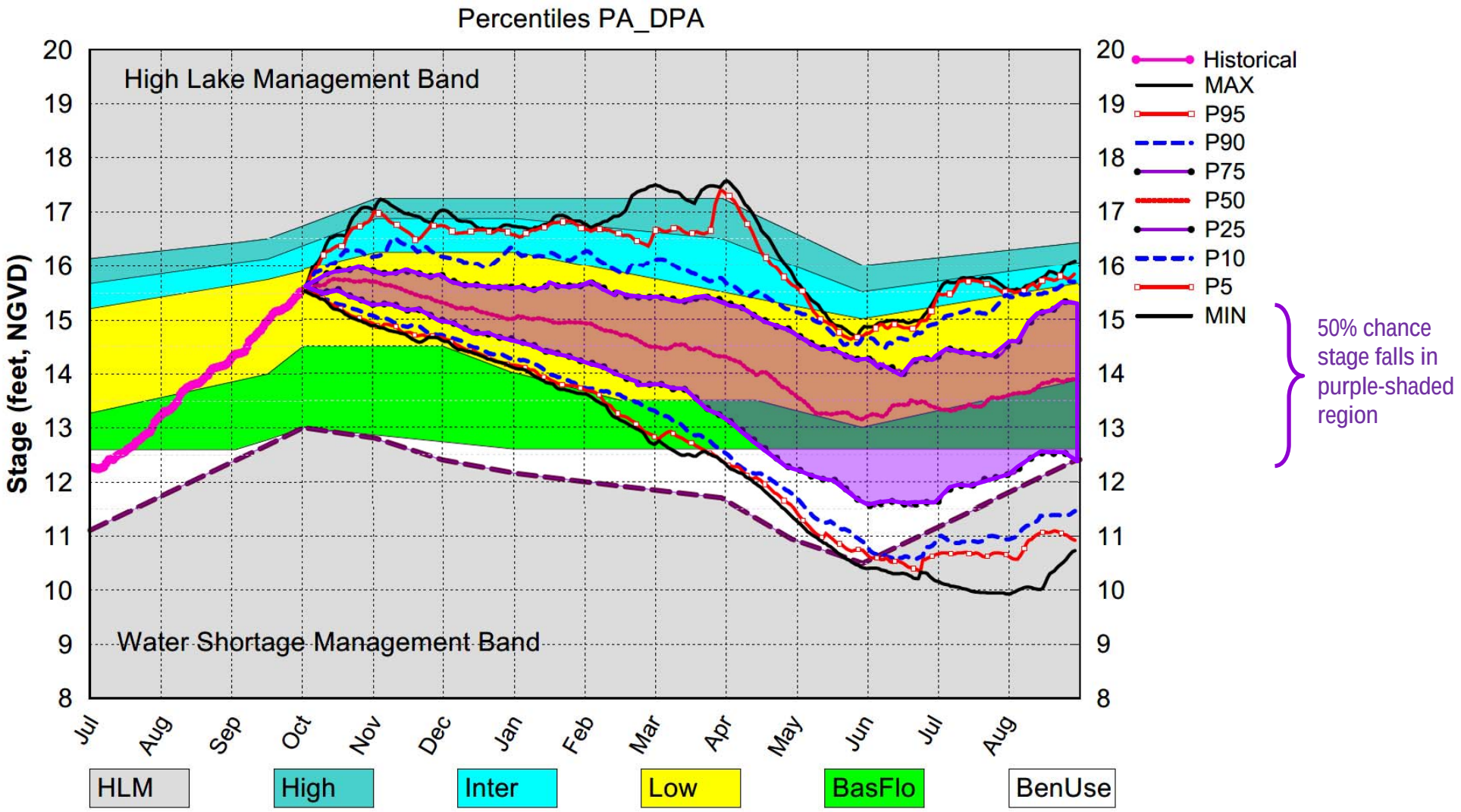

ORLANDO
S79


Lake Kissimmee (October 6, 2020)
Precip (in)
Mean Daily Stage (FT-NGVD29)
52.33 feet NGVD
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2020
NEXRAD
REG SCHED 51.66
LKISS AVG 52.33
S65-H 52.27


East Lake Tohopekaliga (October 6, 2020)
Precip (in)
Mean Daily Stage (FT-NGVD29)
57.14 feet NGVD
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2020
NEXRAD
REG SCHED 57.16
TOHOEE+ 57.14
S59-H 56.87


Lake Tohopekaliga (October 6, 2020)
Precip (in)
Mean Daily Stage (FT-NGVD29)
54.25 feet NGVD
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2020
NEXRAD
REG.SCHED 54.16
LTOHO AVG 54.25
S61-H 54.25

Lake Okeechobee SFWMM Oct 2020 Position Analysis

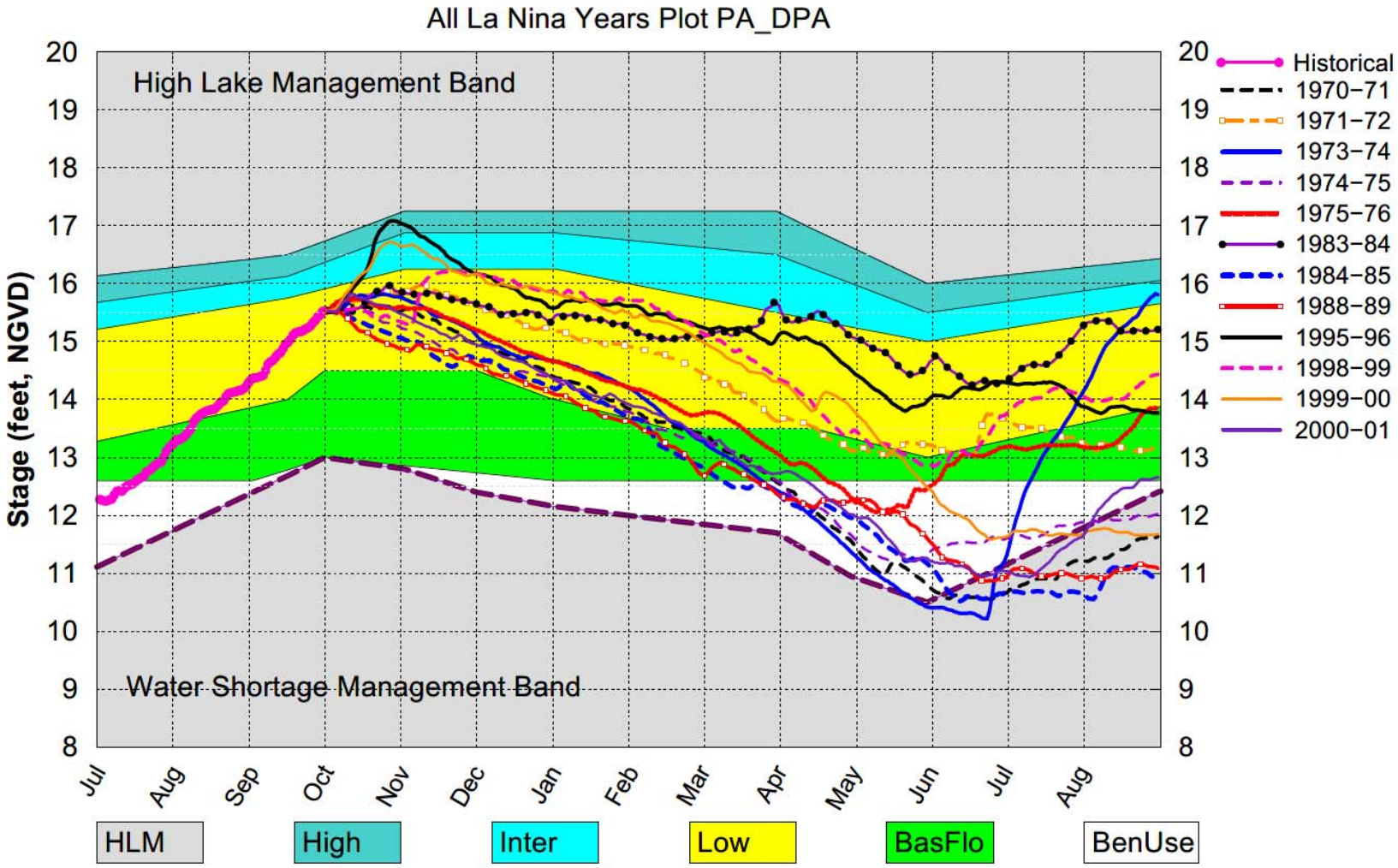


50% chance stage falls in purple-shaded region

(See assumptions on the Position Analysis Results website)

Sun Oct 4 23:18:17 2020

Lake Okeechobee SFWMM Oct 2020 Position Analysis

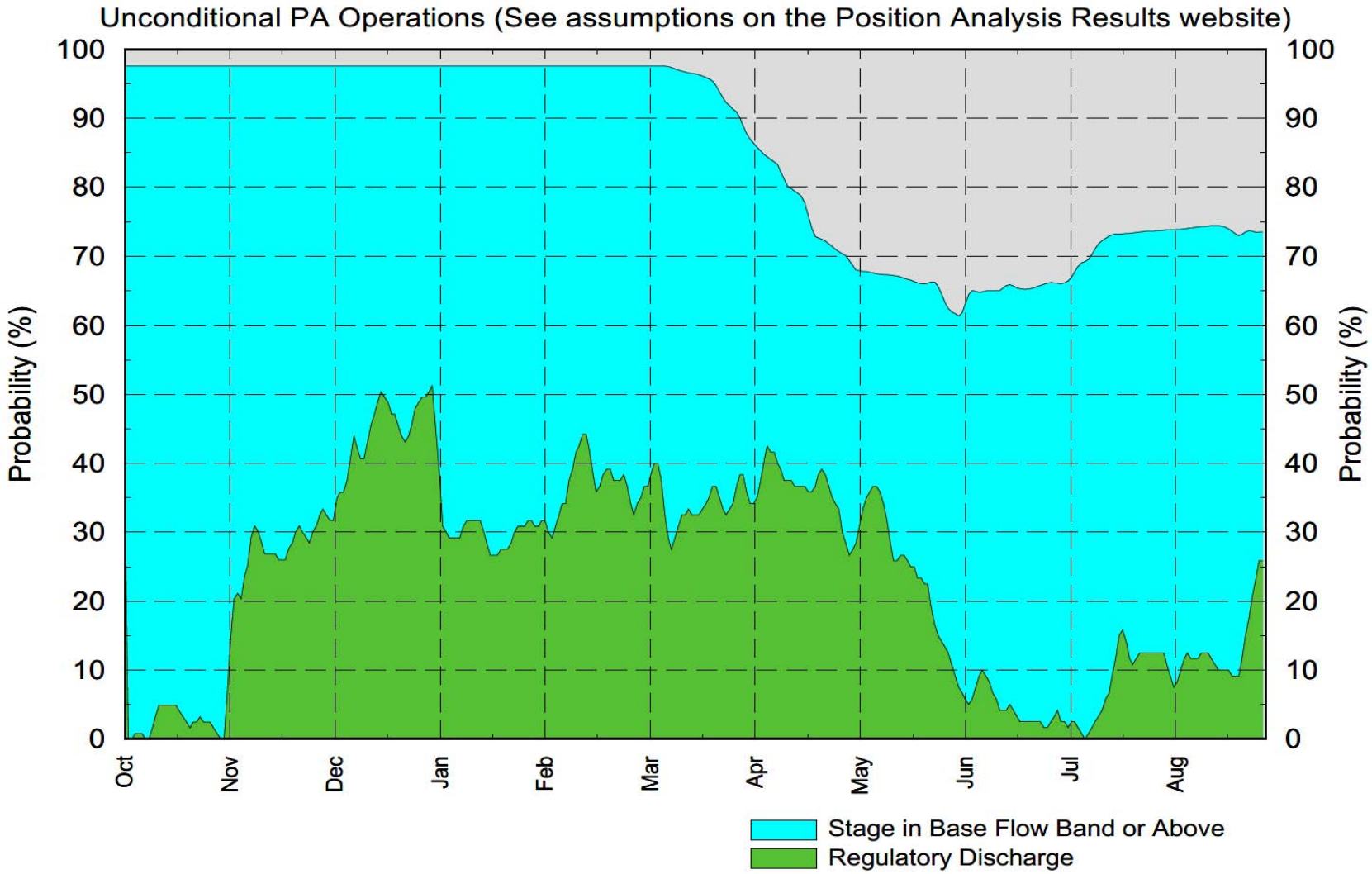


(See assumptions on the Position Analysis Results website)

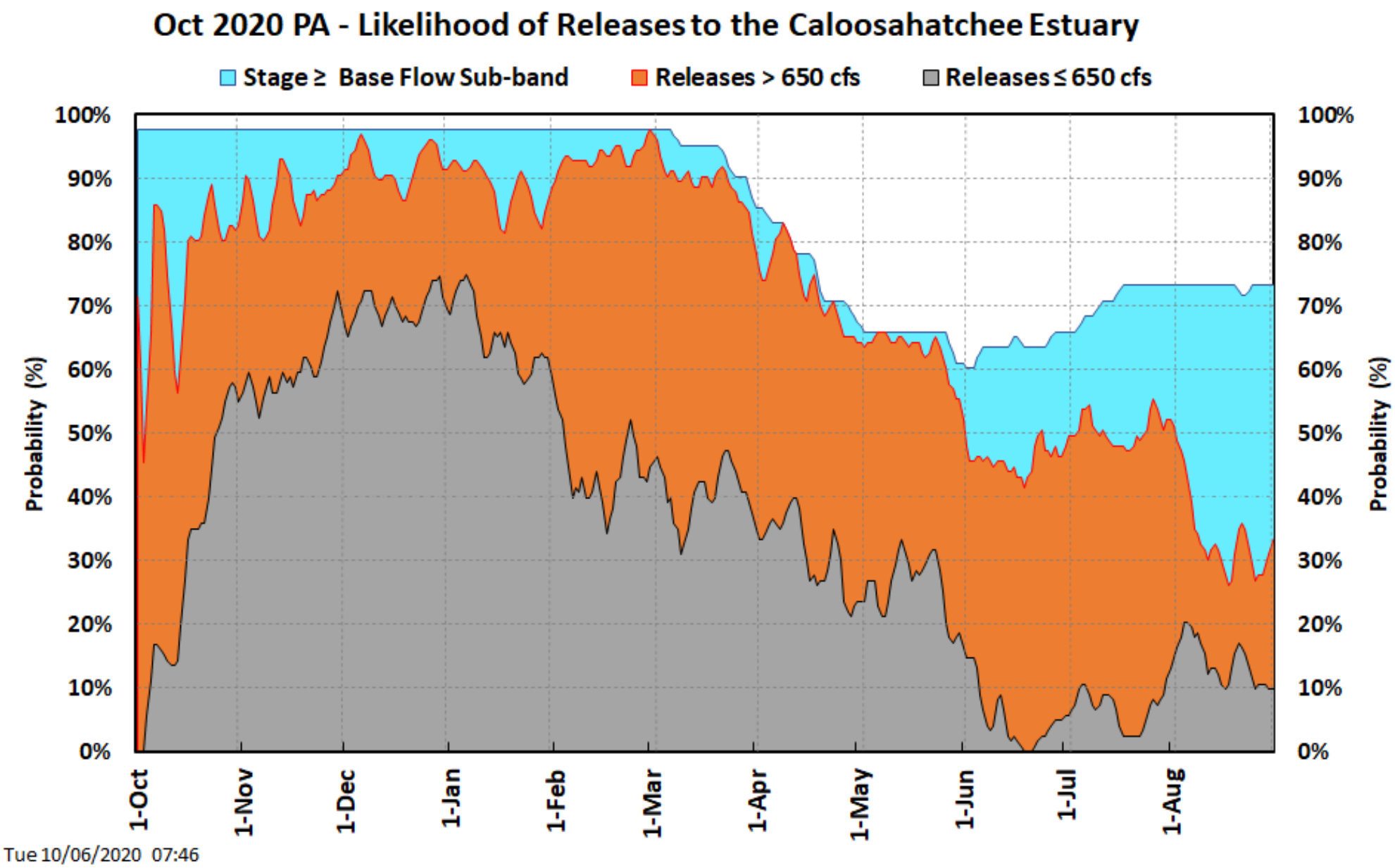
Mon Oct 5 15:19:49 2020

September 2020 Dynamic Position Analysis

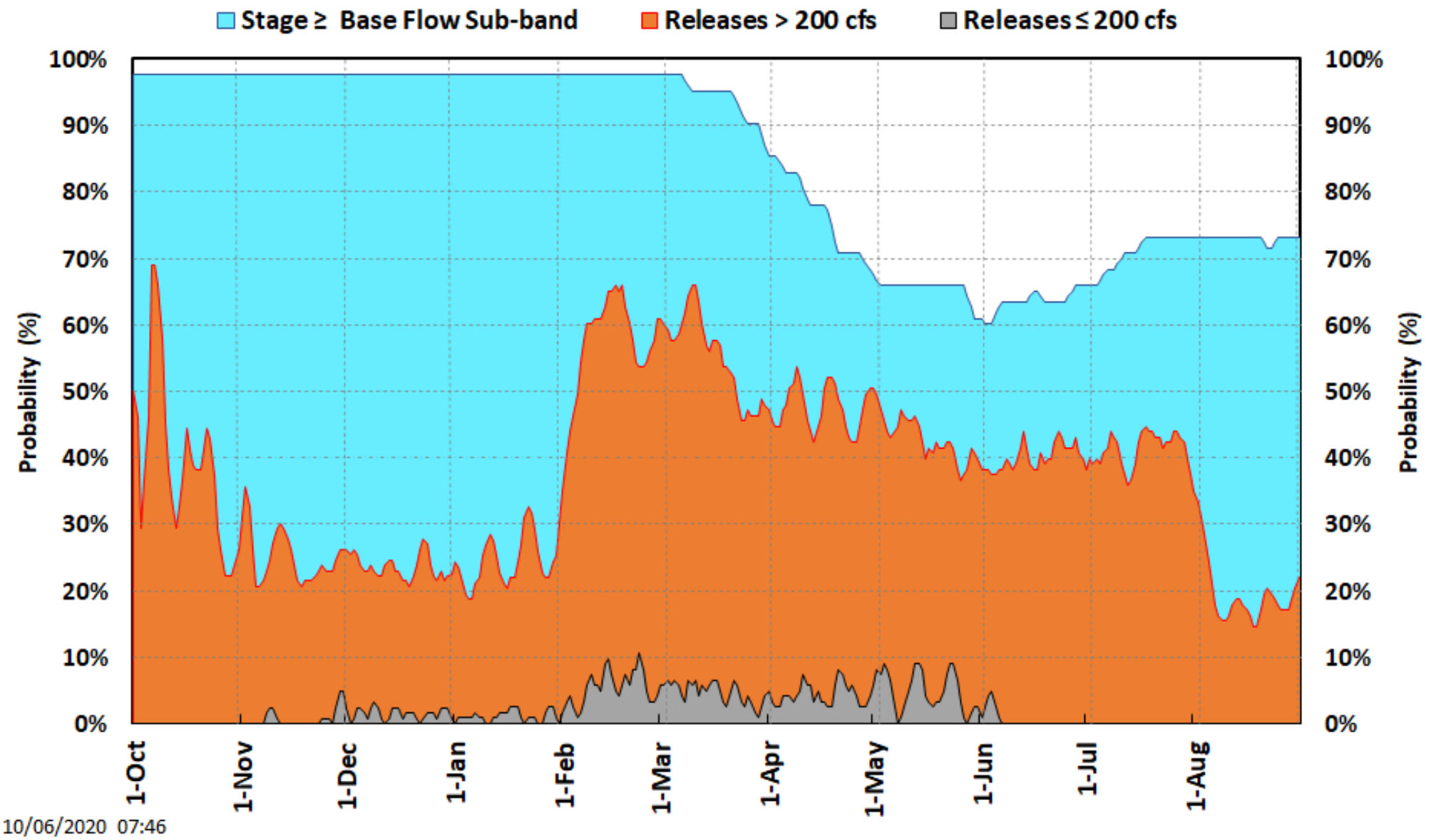
Lake Okeechobee – LORS2008 Releases to the WCA's



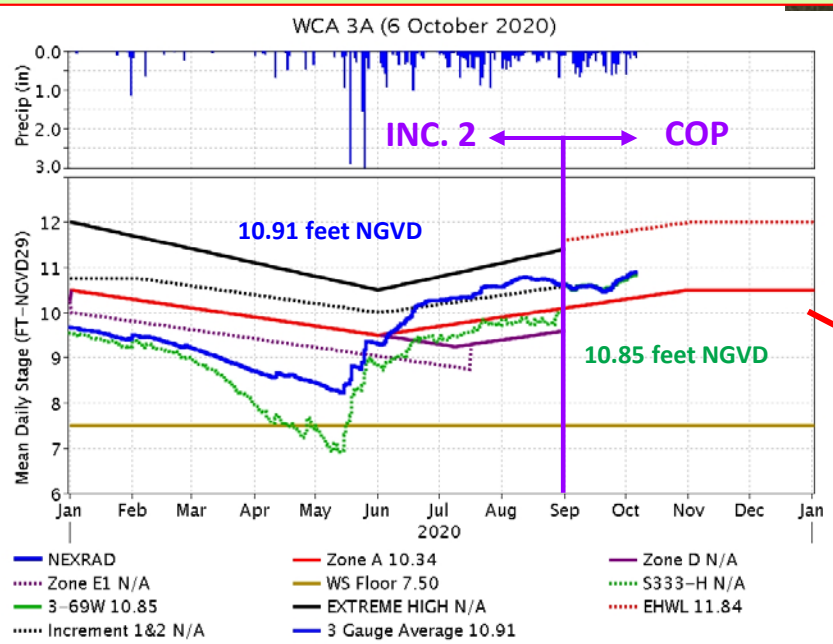
Sun Oct 4 23:55:21 2020


Oct 2020 PA - Likelihood of Releases to the Caloosahatchee Estuary
Stage ≥ Base Flow Sub-band
Releases > 650 cfs
Releases ≤ 650 cfs
Probability (%)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
Tue 10/06/2020 07:46

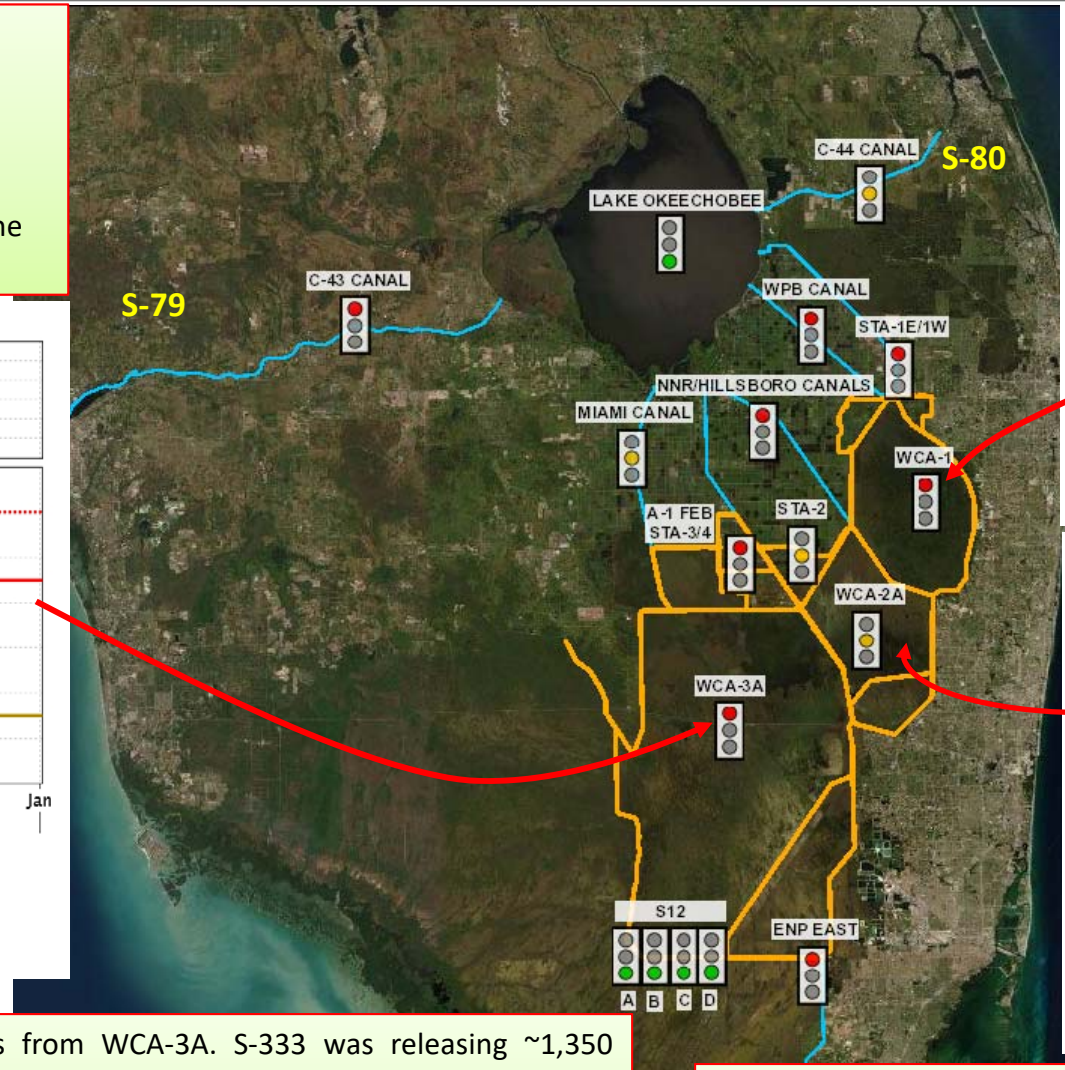
Oct 2020 PA - Likelihood of Releases to the St. Lucie Estuary

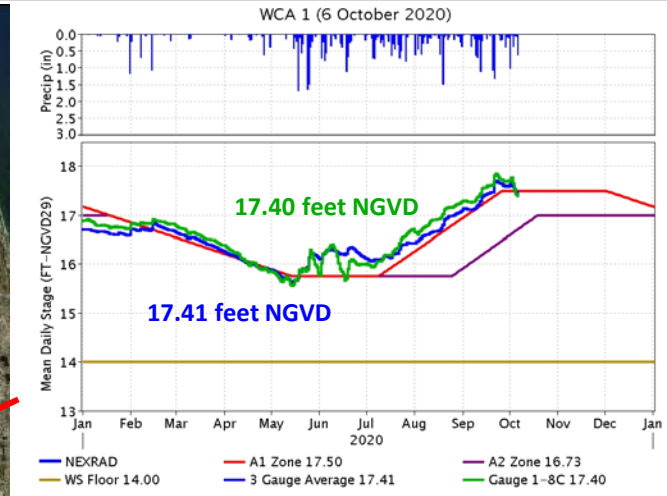


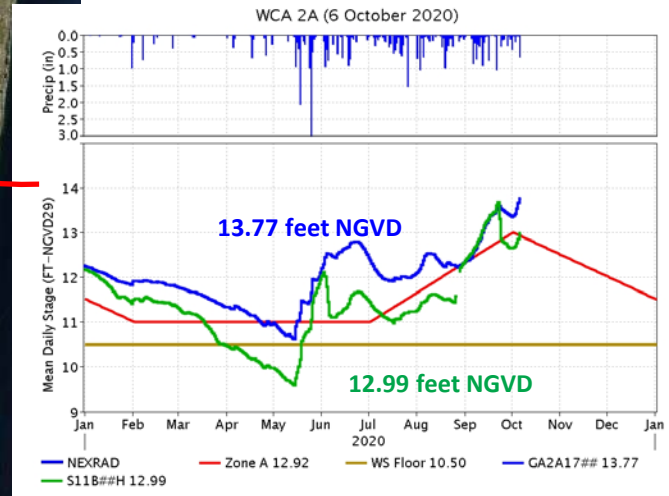
Lake Okeechobee stage is in the Low Sub-band of LORS-2008 Regulation schedule and projected to raise into the Intermediate Sub-band. Since the middle of September, the USACE has requested the District to implement maximum practicable releases to the WCAs. LORS 2008 Part D is recommending pulse releases of 3,000 cfs and 1,170 cfs to the Caloosahatchee Estuary and St. Lucie Estuary.



Note: With COP floor gauge switched from S333-H to 3-69W



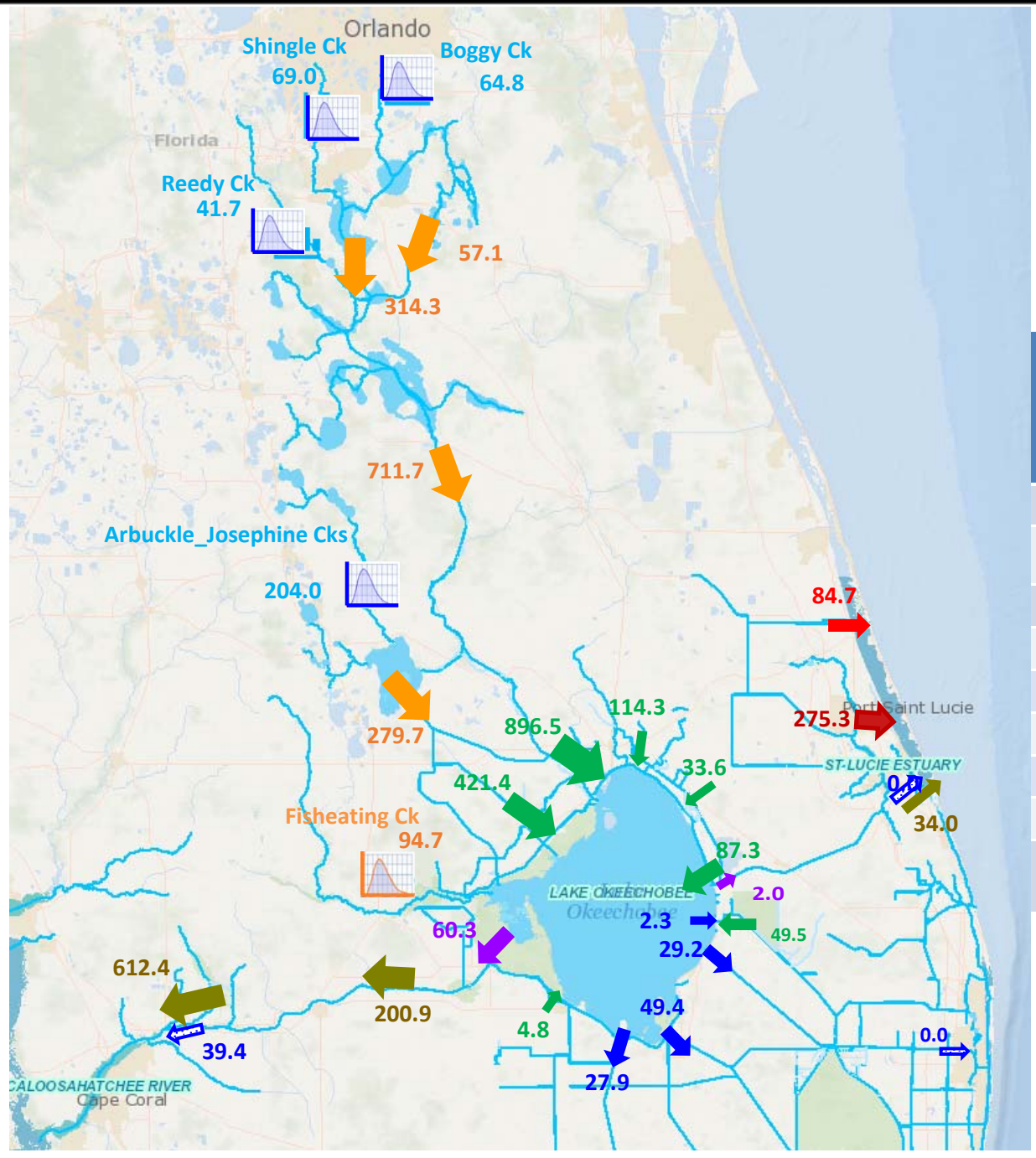




Tamiami Trail Flow Formula calls for MAXIMUM releases from WCA-3A. S-333 was releasing ~1,350 cfs. However, it is currently closed to reduce L-29 target stage from 8.3-8.5 to 7.8 feet NGVD due to concerns with Las Palmas community flood mitigation. S-334 is closed. S-331 and S-357 are pumping with very low stage settings to help the Las Palmas Community. District continues to operate the detention cells to provide flood mitigation and seepage management for the SDCS (L-31N and C-111). S-199 and S-200 pumps are running (no Cape Sable Seaside Sparrow limitations). S-152 was closed September 15 due to high water conditions in WCA-3B. S-197 was opened October 2nd result of heavy rainfall in South Dade.

WCA-1 is in Zone A2 of the regulation schedule; WCA-2A is in Zone A of the regulation schedule; WCA-3A is in Zone A of its regulation schedule. S-10s are open since 09/22/2020. S-11s are open since 09/23/2020. S-12B, S-343 A and B, and S-344 were opened on July 15. S-12 A opened on July 22. S-12 C&D opened on June 1, 2020. All S-12s passing ~1,900 cfs currently. S-343 A and B were closed on Oct 1st as required under COP.

System considerations for sending water south for the period 09/29/2020 to 10/05/2020



SFWMD – Selected Release Volumes for the Period May 1, 2020 to October 6, 2020

(volumes in 1,000 acre-feet)

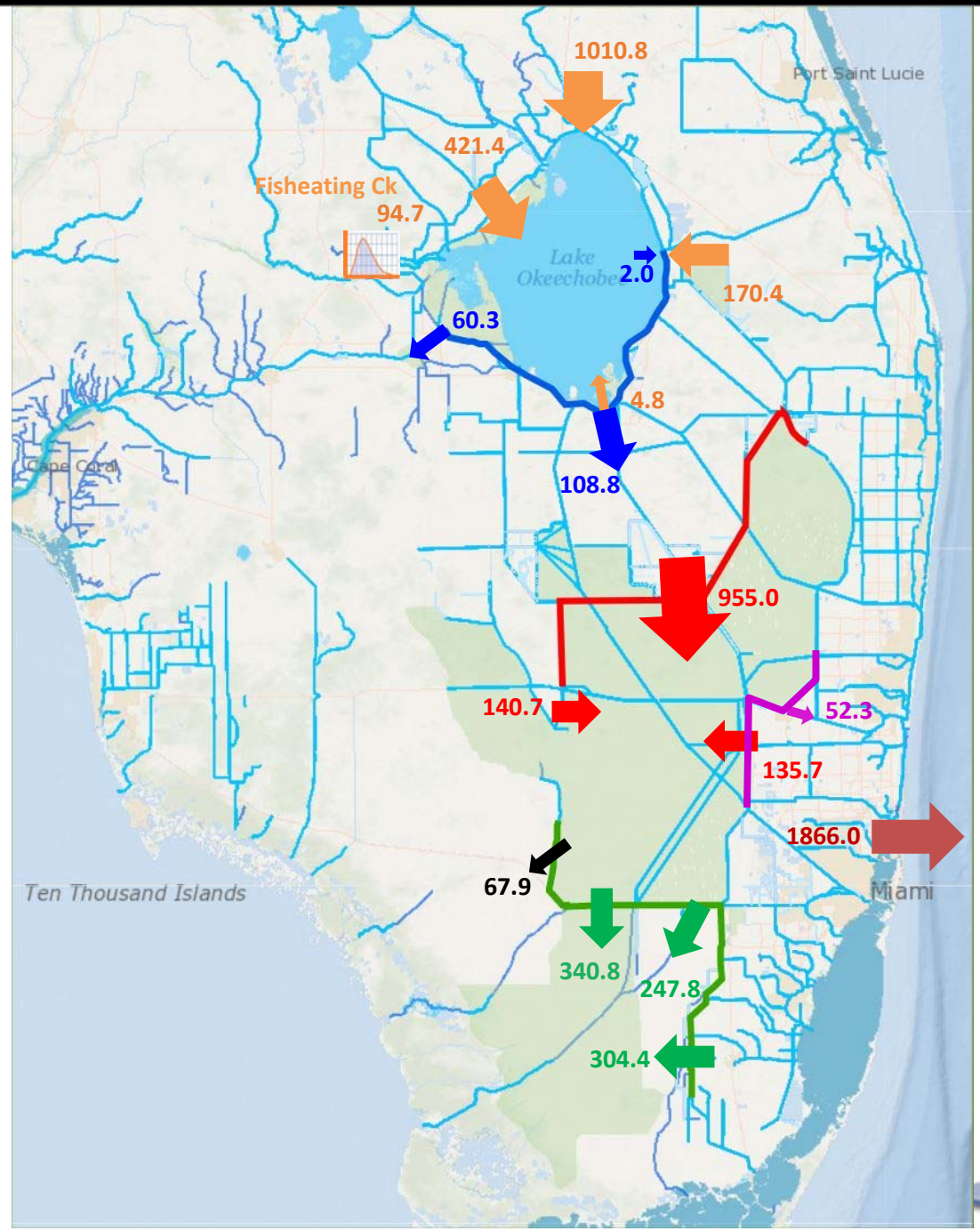
Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Upper Kissimmee to Lower Kissimmee	711.7	181.3
	Inflows to Lake Okeechobee (including Fisheating Creek)	1702.0	616.8
	Lake Releases and Basin Runoff	646.4	258.3
	Lake Releases East and West	62.3	0.0
	Lake Flood Control to Estuaries	39.4	0.0
	Total Lake Releases South	108.8	27.7
	Releases to Indian River Lagoon	84.7	27.3
	Upper East Coast discharges to St. Lucie Estuary	275.3	60.6
	Uncontrolled flows - Creeks (does not include Fisheating Creek)	379.4	119.5

1,000 acre-feet = 325.9 Million Gallons

SFWMD –Volumes Flowing Down the System
May 1, 2020 to October 6, 2020
(volumes in 1,000 acre-feet)

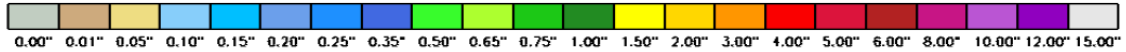
Symbol	Description	Volume (1,000 acre- feet)	
		Season to Date	Last Month
	Lake Okeechobee Inflows	1702.0	616.8
	Lake Okeechobee Outflows	171.1	27.7
	WCAs Inflows	1231.5	289.6
	ENP / Detention Cell Inflows	893.0	230.6
	WCAs to East	52.3	22.5
	Flows to Intracoastal	1866.0	527.5

1,000 acre-feet = 325.9 Million Gallons

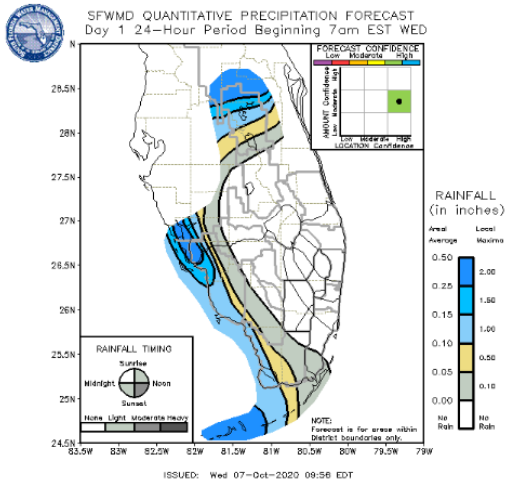


Posted 10/7/2020

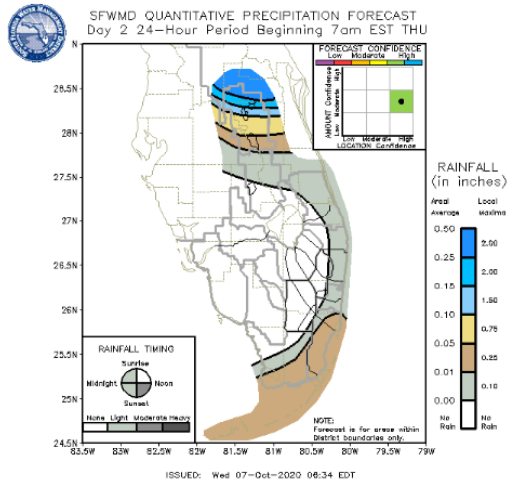
Daily Quantitative Precipitation Forecasts



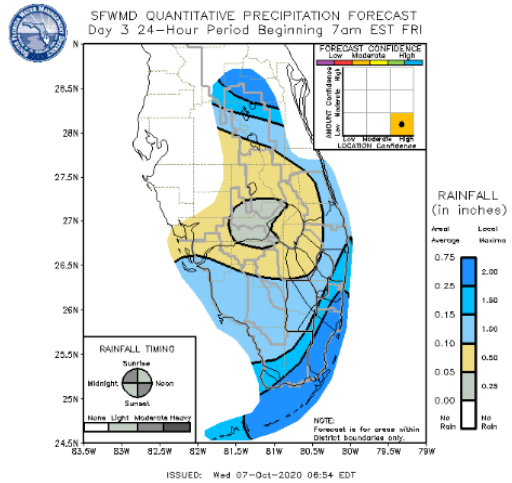
Day 1



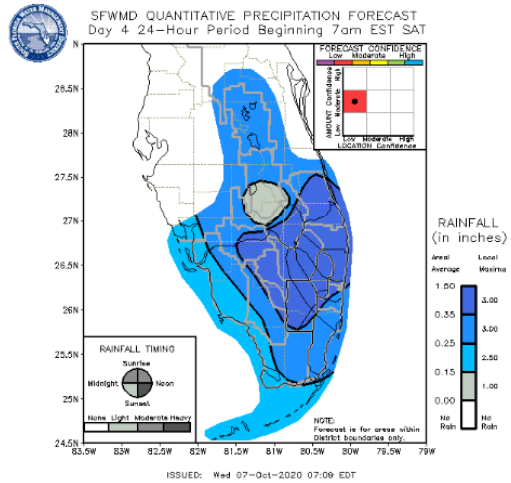
Day 2



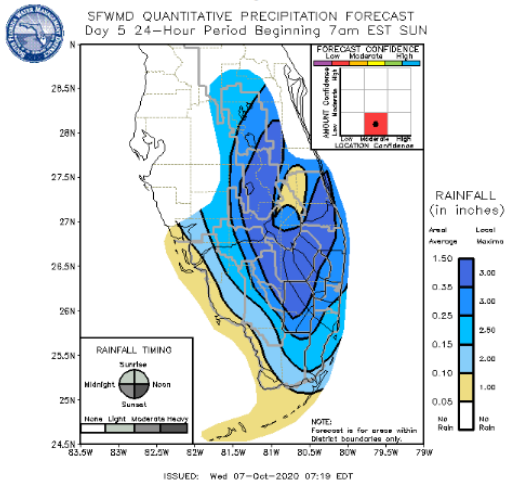
Day 3



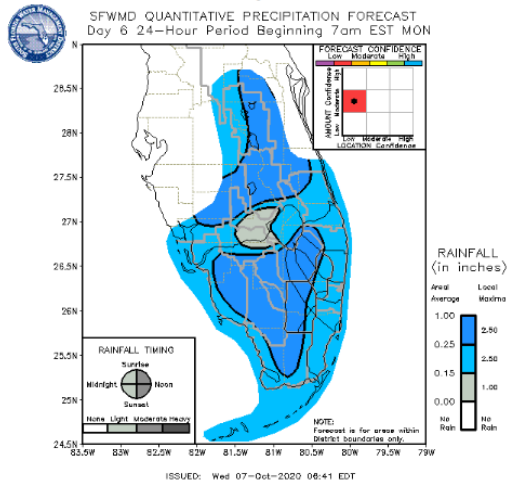
Day 4



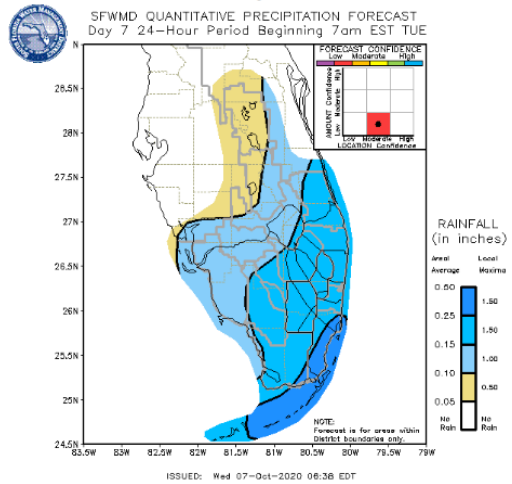
Day 5



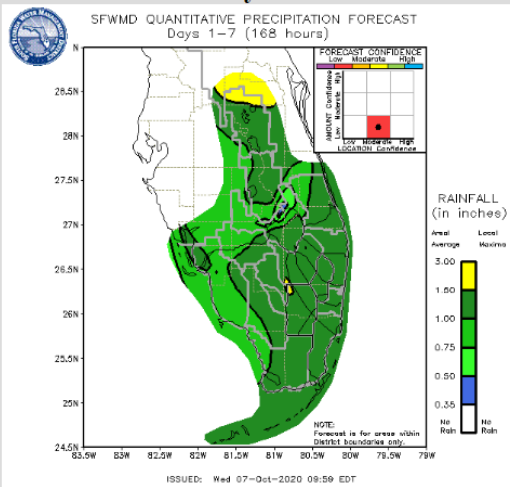
Day 6



Day 7

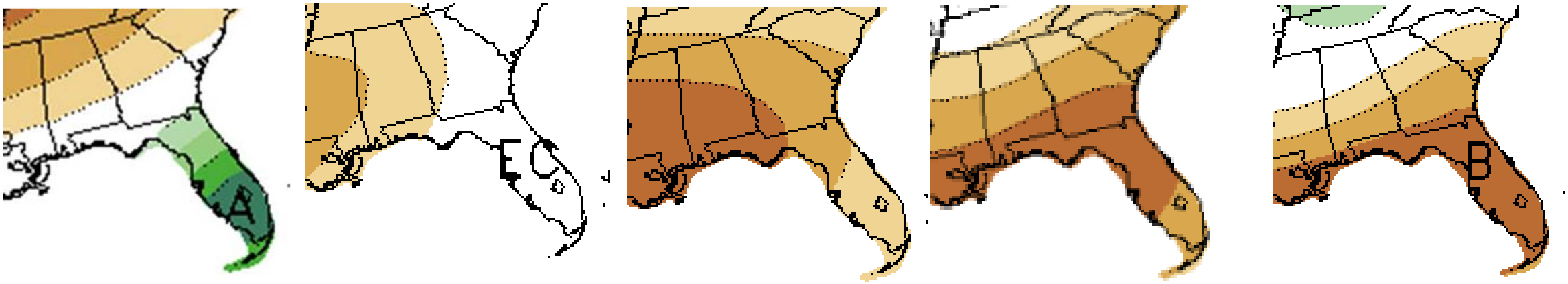


7-Day Total



sfwmd.gov

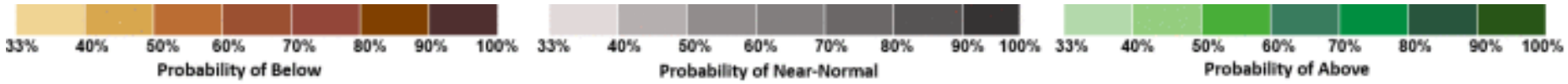
CPC Precipitation Outlook for South Florida

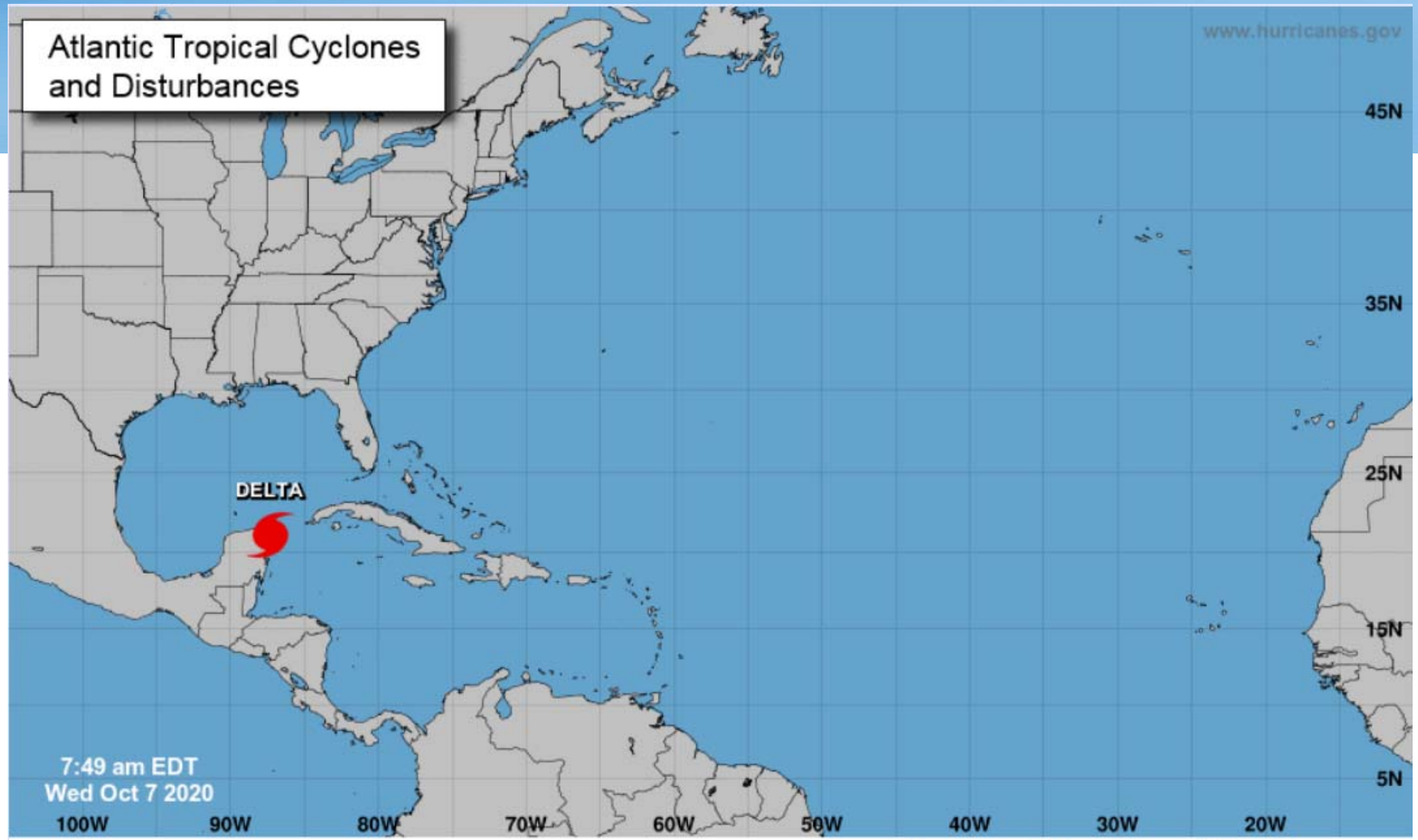


Oct 2020 | Oct-Dec | Nov-Jan | Dec-Feb | Jan-Mar

https://www.cpc.ncep.noaa.gov/products/predictions//multi_season/13_seasonal_outlooks/color/churchill.php

- The most recent CPC precipitation outlooks for October 2020 is for highly increased likelihood (65%) of above normal rainfall for most of the District area. The Upper Kissimmee Chain shows substantially increased likelihood (55%) of above normal precipitation.
- The 3-month window of Oct-Dec shows equal chances of above-normal, normal, and below-normal rainfall.
- The outlooks for the 3-month windows from Nov-Jan to Jan-Mar gradually increase the likelihood of below normal rainfall for south Florida, from slightly increased, to increased and then substantially increased.
- The precipitation outlook for the 3-month window Feb-Mar is for increased chances of below normal rainfall, while the 3-month window of Mar-May is for equal chances of above-normal, normal, and below-normal rainfall.
- The outlook for the transition from the dry to the wet season in 2021 (Apr-Jun to Jun-Aug) shows increased chances of above normal rainfall.

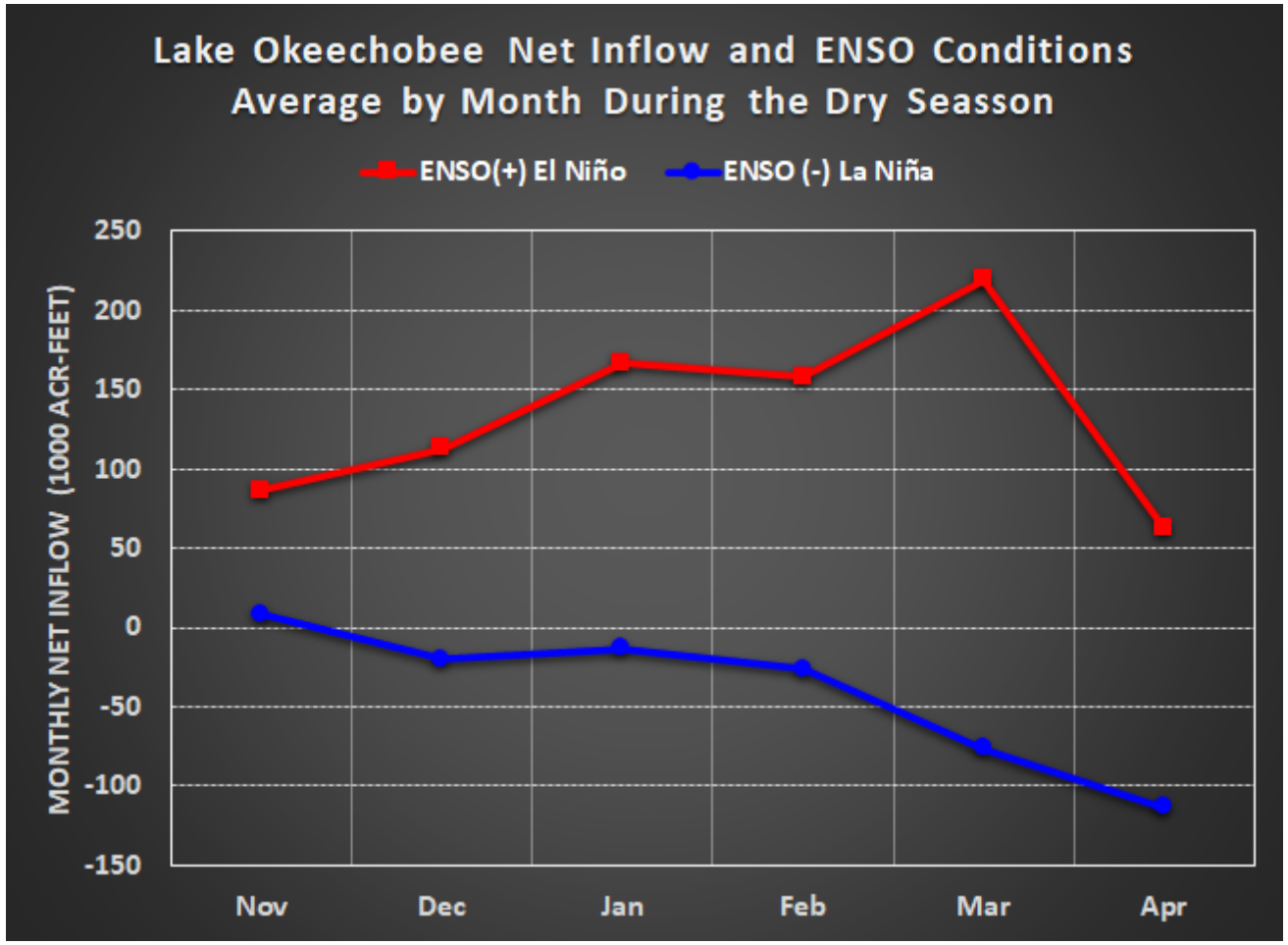




https://www.nhc.noaa.gov/

What is La Niña and Why Do We Care?

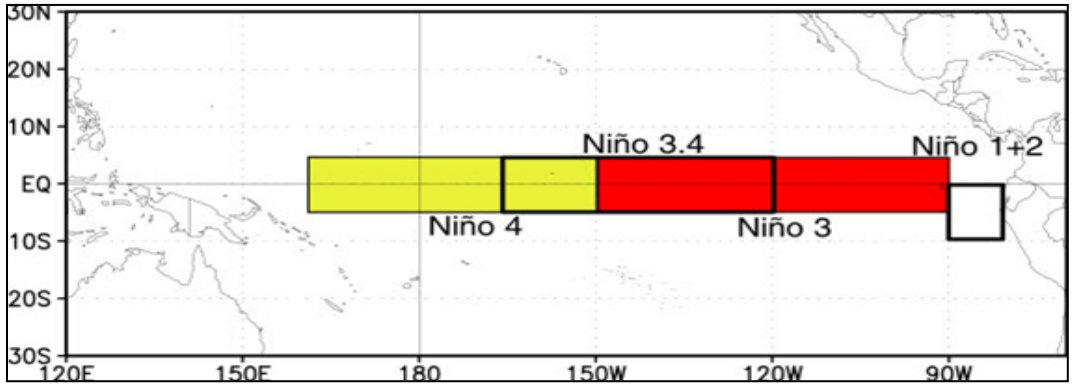
- El Niño increases the chances of a wetter-than-normal dry season and decreased tropical activity, La Niña increases the chances of a drier-than-normal dry season and tropical activity (both have most influence November through March).
- In general, November through March rainfall is expected to be ~ 140% of normal during El Niño, ~ 85% of normal for ENSO Neutral and ~60-65% of normal for La Niña
- ENSO conditions are a big determinant in Lake Okeechobee Net Inflow during the dry season

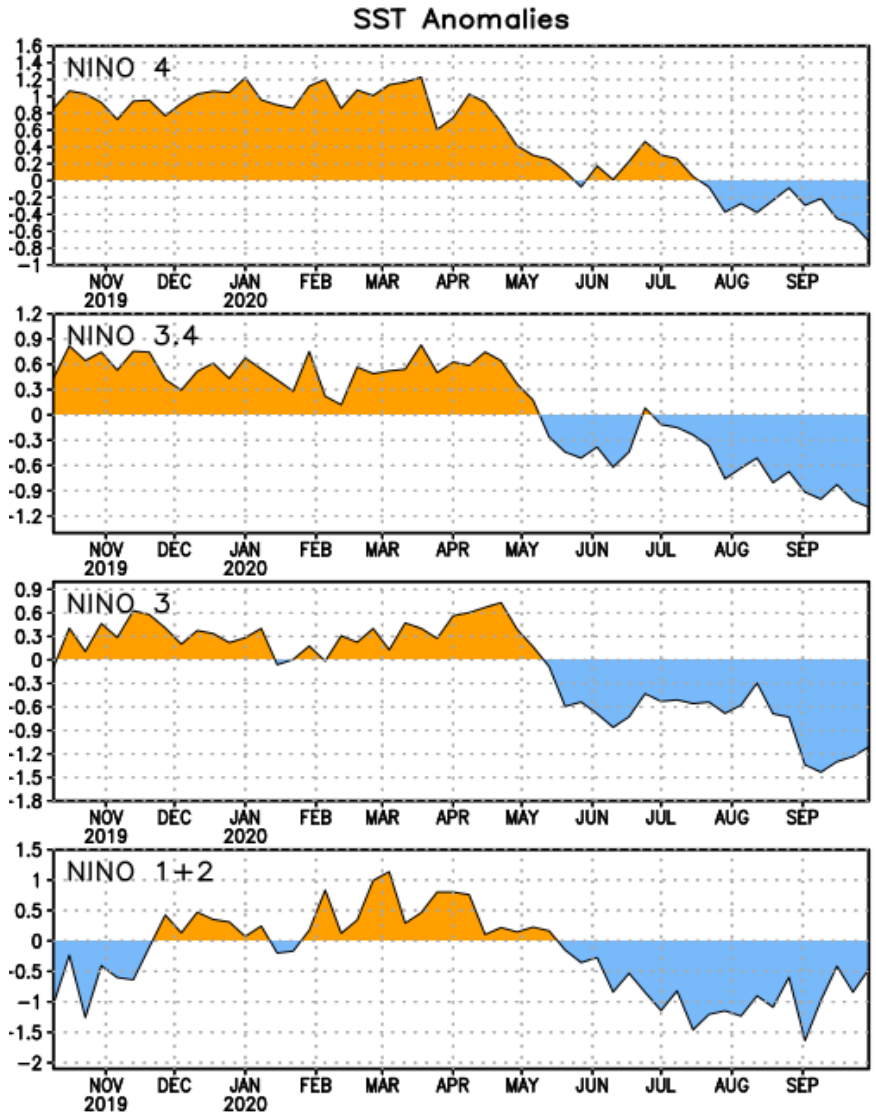


Niño Region SST Departures (ºC) Recent Evolution

The latest weekly SST departures are:

Niño 4	**-0.7ºC**
Niño 3.4	**-1.1ºC**
Niño 3	**-1.1ºC**
Niño 1+2	**-0.5ºC**





Prepared by: Climate Prediction Center/NCEP

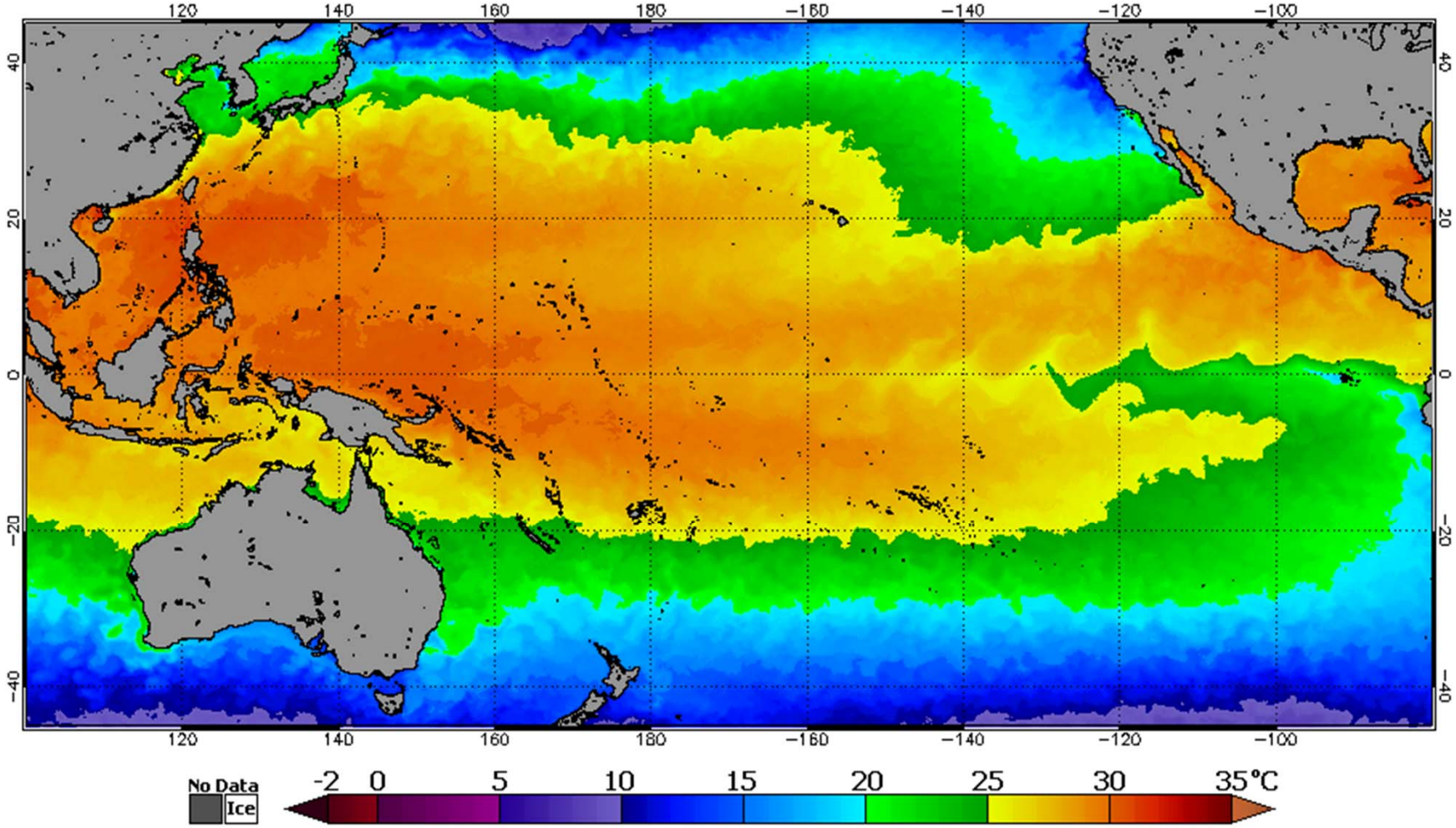
NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)

DOC > NOAA > NESDIS > STAR > CRW

Coral Reef Watch

CRTF | CRCP | CoRIS

NOAA Coral Reef Watch Daily 5km Sea Surface Temperatures (Version 3.1) 8 Jul 2020



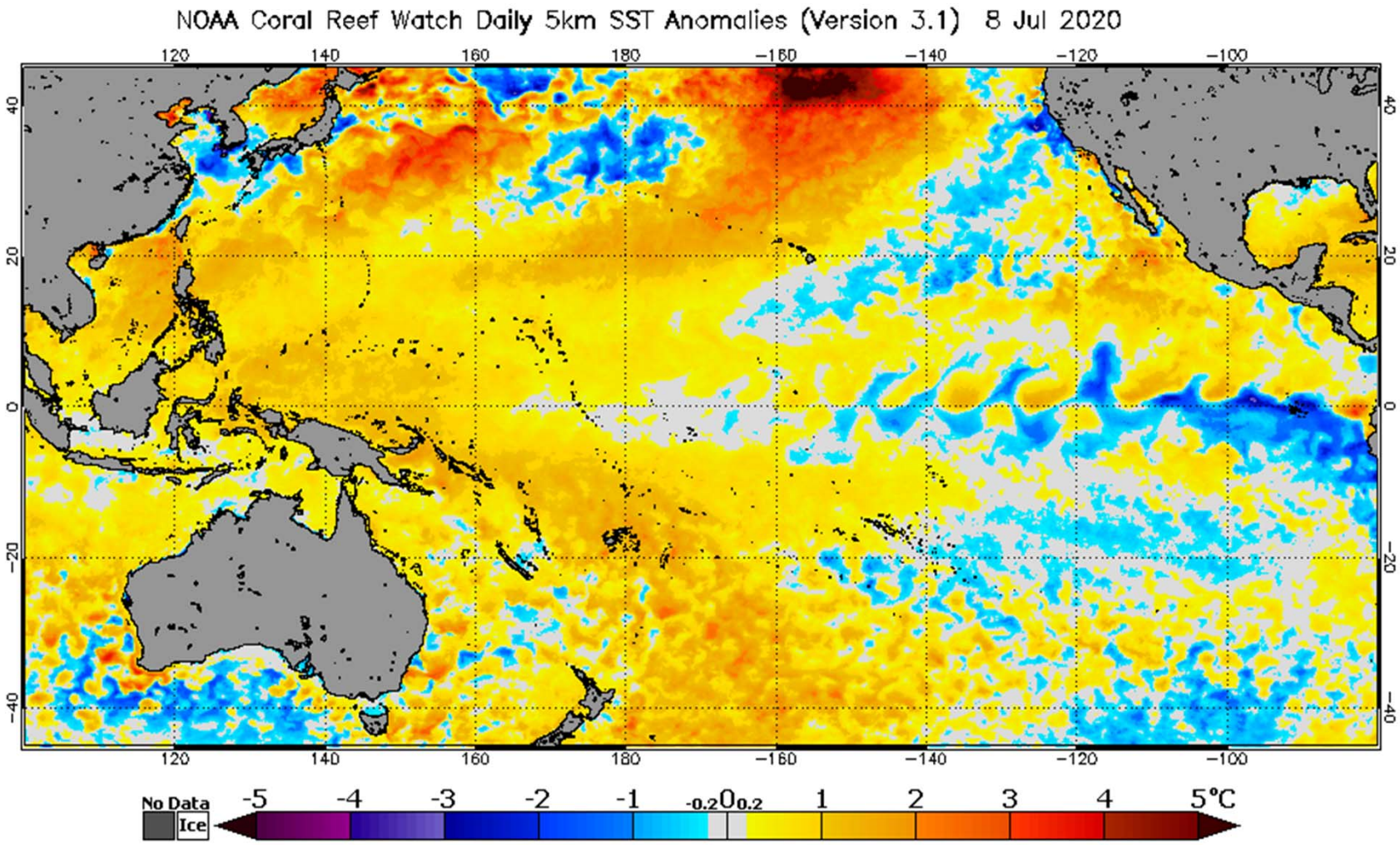
https://coralreefwatch.noaa.gov/data/5km/v3.1/current/animation/gif/sst_animation_90day_pacific_930x580.gif

Presenter: John Mitnik

NOAA Satellite and Information Service
National Environmental Satellite, Data, and Information Service (NESDIS)

DOC > NOAA > NESDIS > STAR > CRW

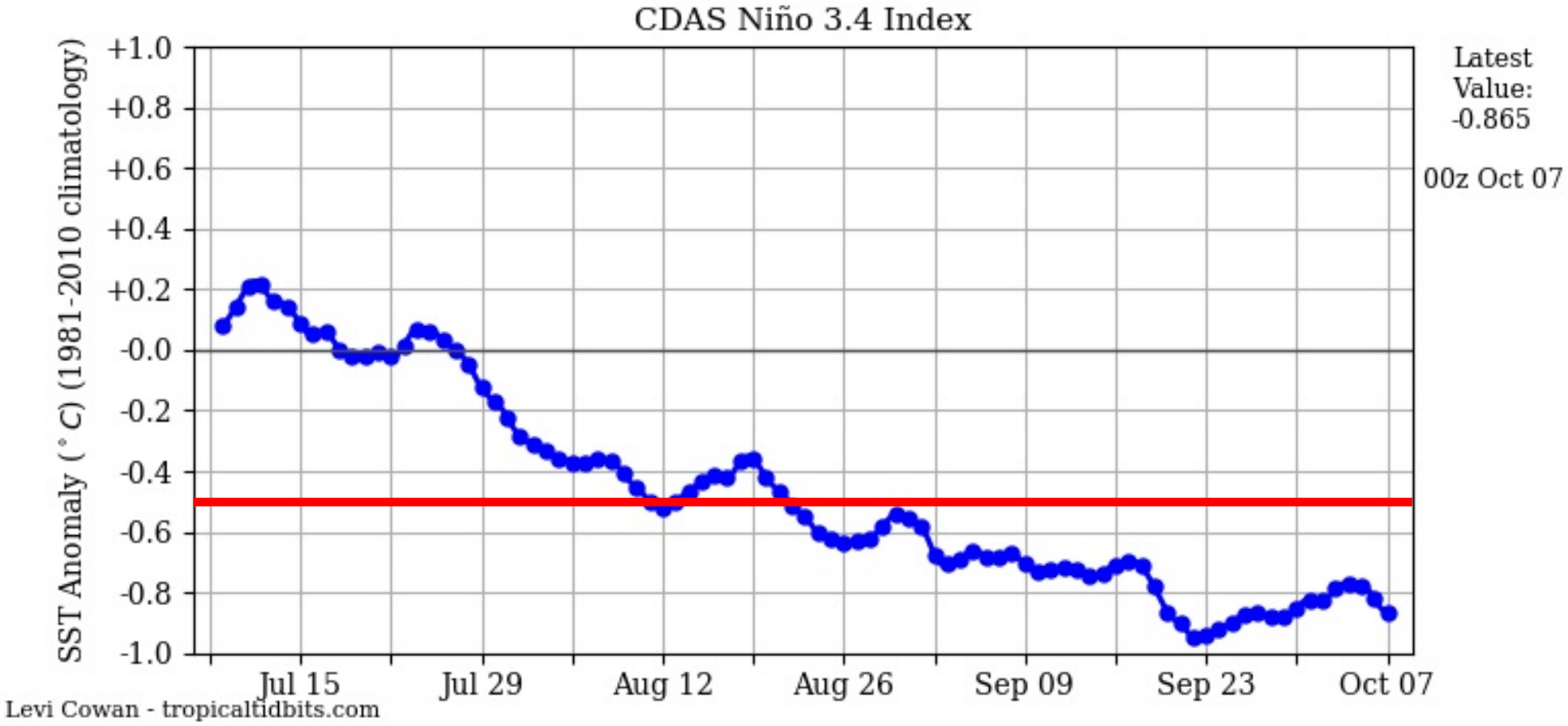
Coral Reef Watch
CRTF | CRCP | CoRIS



https://coralreefwatch.noaa.gov/data/5km/v3.1/current/animation/gif/ssta_animation_90day_pacific_930x580.gif

Presenter: John Mitnik

Levi's Blog

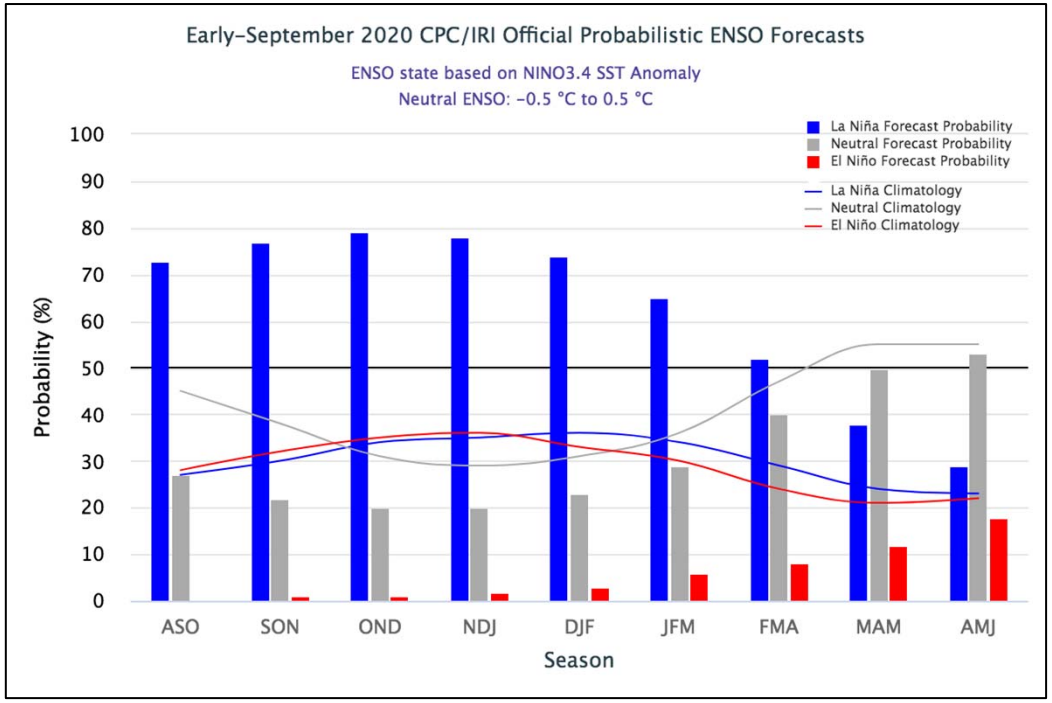


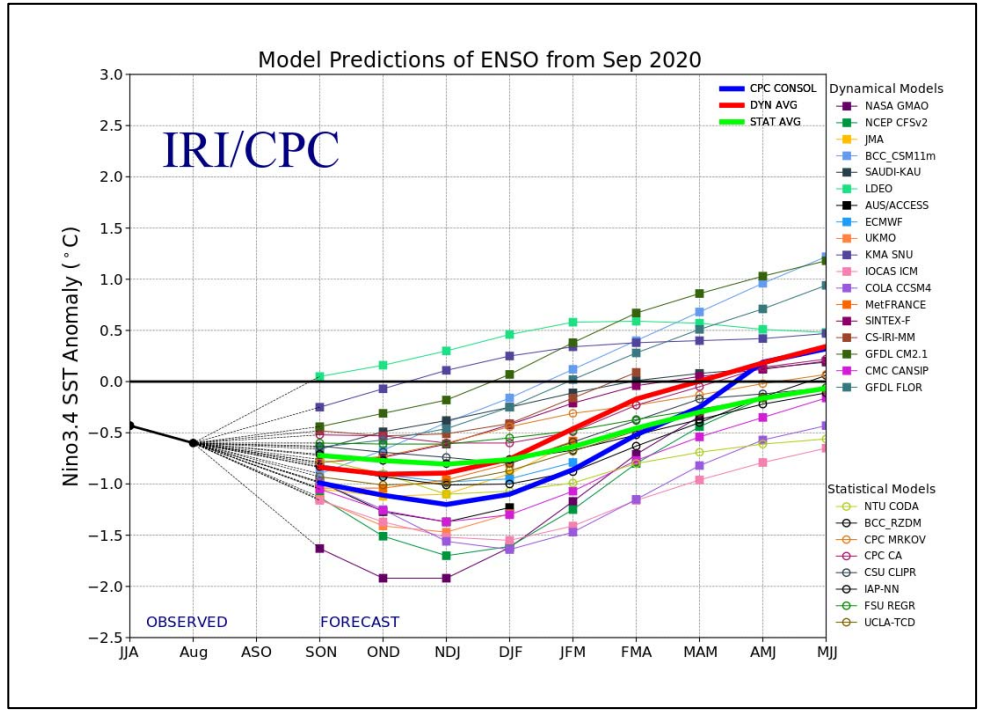
https://www.tropicaltidbits.com/analysis/ocean/nino34.png

IRI/CPC ENSO Forecast Products

Released Early August 2020

https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/





La Niña conditions are present with a 65-80% chance of persisting through winter 2020-21.

Provides an idea of the ENSO strength: weak to moderate La Niña conditions

Presenter: John Mitnik