Summary

• The Climate Prediction Center (CPC) is forecasting equal chances of below normal, normal and above normal rainfall from October through December.

• La Niña conditions are present and are likely to continue through winter (~75% chance).

• 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 increased tropical activity (both have most influence November through March).

• Monitoring Atlantic Multidecadal Oscillation (AMO) which is currently in the warm phase:
  • Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase
The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.
Teleconnections to South Florida

Climate anomalies being related to each other at large distances:

**El Niño Southern Oscillation (ENSO)**

South Florida dry season (November through May) rainfall is positively correlated with El Niño which has a frequency that ranges between 3 to 7 years while rainfall is negatively correlated with La Niña November through March with a potential increase in tropical rainfall during La Niña

**Atlantic Multidecadal Oscillation (AMO)**

Average annual inflow to Lake Okeechobee is nearly 50% greater during the warm phase compared to the cold phase of the AMO, easterly flow toward south Florida affected by phase

**Pacific Decadal Oscillation (PDO)**

Increases variations of south Florida dry season rainfall
Current Global Sea Surface Temperature Anomalies

Global sea surface anomaly and snow cover
06 Oct 2020

Anomalie de la température de la mer et épaisseur de la neige
06 Oct 2020

Sea surface temperature anomaly / Anomalie de la température de la mer (°C)

-5.0 -4.0 -3.0 -2.5 -2.0 -1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0 4.0 5.0

Snow depth / Épaisseur de la neige (cm)

1.0 10.0 50.0 100.0

Uncovered sea ice
Glace marine à découvert
Climatologie 1995-2009 Climatology

CMC Environnement Canada
CMC Environment Canada
Niño Region SST Departures (°C) Recent Evolution

The latest weekly SST departures are:

- Niño 4: -0.7°C
- Niño 3.4: -1.1°C
- Niño 3: -1.1°C
- Niño 1+2: -0.5°C
Significant equatorial oceanic Kelvin wave activity (dashed and dotted lines) has been present throughout the period shown.

From December 2019 to February 2020, downwelling Kelvin waves (dashed line) resulted in above-average subsurface temperatures across the central and east-central equatorial Pacific.

From April-June 2020, negative subsurface temperature anomalies expanded eastward in association with an upwelling Kelvin wave.

Starting in late July 2020, negative anomalies strengthened in the east-central and eastern Pacific Ocean.

Equatorial oceanic Kelvin waves have alternating warm and cold phases. The warm phase is indicated by dashed lines. Downwelling and warming occur in the leading portion of a Kelvin wave, and upwelling and cooling occur in the trailing portion.
Warm Water Volume (5°N–5°S, 120°E–80°W) and NINO 3.4 SST Anomaly
MEI.v2 Evolution of Historical ENSO Events

(a) El Niño

(b) La Niña
The model averages predict La Niña to continue through the Northern Hemisphere winter 2020-21.
Historical El Niño and La Niña Episodes Based on the ONI computed using ERSST.v5

Recent Pacific warm (red) and cold (blue) periods based on a threshold of +/- 0.5 °C for the Oceanic Nino Index (ONI) [3 month running mean of ERSST.v5 SST anomalies in the Nino 3.4 region (5N-5S, 120-170W)]. For historical purposes, periods of below and above normal SSTs are colored in blue and red when the threshold is met for a minimum of 5 consecutive over-lapping seasons.

The ONI is one measure of the El Niño-Southern Oscillation, and other indices can confirm whether features consistent with a coupled ocean-atmosphere Southern Oscillation phenomenon accompanied these periods. The complete table going back to DJF 1950 can be found here.

<table>
<thead>
<tr>
<th>Year</th>
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</table>
La Niña is likely (> 70% chance) from August-October 2020 to December-February 2020-21, with a ~50% chance of continuing through February-April 2021.
El Niño & La Niña Events (1950-2018), and Lake Okeechobee Watershed Rainfall & Net Inflow

Source: Cal Neidrauer (SFWMD)
Standardized PDO (9 Month Running Mean)
Index of the North Atlantic Temperatures from Kaplan Extended SST V2
2020 Tropical Outlook
2020 Atlantic Hurricane Season Outlook
AUGUST 6 UPDATE

Season probability

- Above-normal: 85%
- Near-normal: 10%
- Below-normal season: 5%

Named storms: 19-25
Hurricanes: 7-11
Major hurricanes: 3-6

Be prepared: Visit hurricanes.gov and follow @NWS and @NHC_Atlantic on Twitter.

August 6, 2020
Source: National Hurricane Center
Colorado State University (Tropical Meteorology Project)

- Extremely active season
- Sea surface temperatures averaged across the tropical Atlantic are much warmer than normal
- Vertical wind shear is well below average
- Current cool neutral ENSO conditions may transition to weak La Niña conditions by later this summer

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### Final 2020 Seasonal Predictions

<table>
<thead>
<tr>
<th>Forecast Parameter and 1981-2010 Average (in parentheses)</th>
<th>Issue Date</th>
<th>Issue Date</th>
<th>Issue Date</th>
<th>Issue Date</th>
<th>Observed Thru 4 August 2020</th>
<th>Remainder of Season Forecast</th>
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<tr>
<td>Named Storms (NS) (12.1)</td>
<td>2 April 2020</td>
<td>4 June 2020</td>
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<td>5 August 2020</td>
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<td>Named Storm Days (NSD) (59.4)</td>
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<td>24*</td>
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<td>Hurricanes (H) (6.4)</td>
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<td>Accumulated Cyclone Energy (ACE) (106)</td>
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<td>Net Tropical Cyclone Activity (NTC) (116%)</td>
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<td>170</td>
<td>170</td>
<td>215</td>
<td>31</td>
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</table>

*Total forecast includes Arthur, Bertha, Cristobal, Dolly, Edouard, Fay, Gonzalo, Hanna and Isaias which have formed in the Atlantic as of August 4th.
Based on historical climatic conditions spanning the period 1965-2005

Each year the model resets the initial stages for Lake Okeechobee (LOK) and the Water Conservation Areas (WCAs) to value on the 1st of the previous month and conditions the simulation using real time data during the previous month to achieve real time stage on the 1st or 15th of the current month for both Lake Okeechobee and the Water Conservation Areas

Dynamic Position Analysis

- Each 1-year simulation starts with current hydrologic conditions (e.g., 1-October-2020)
- 41 1-year simulations of system response to historical rainfall conditions
- Statistical summaries used to display projections
Lake Okeechobee SFWMM Oct 2020 Position Analysis

Percentiles PA_DPA

High Lake Management Band

Water Shortage Management Band

(See assumptions on the Position Analysis Results website)
Lake Okeechobee SFWMM Oct 2020 Position Analysis

All Simulated Years Plot PA_DPA

High Lake Management Band

Water Shortage Management Band

(See assumptions on the Position Analysis Results website)
Lake Okeechobee SFWMM Oct 2020 Position Analysis

All La Nina Years Plot PA_DPA

High Lake Management Band

Water Shortage Management Band

(See assumptions on the Position Analysis Results website)