Summary

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

• ENSO-neutral conditions are present. ENSO-neutral is favored (50 to ~55% chance) into winter 2017-18.

• Monitoring Atlantic Multidecadal Oscillation (AMO) index for switch to negative (cold) phase, this has the potential to contribute to a drier-than-normal 2017 wet season.

• National Hurricane Center favors an above-average hurricane season (5-9 hurricanes), with 45% probability (35% probability of a near-normal season). Colorado State University’s Tropical Meteorology Project anticipates an above-average hurricane season (8 hurricanes).
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.
Niño Region SST Departures (ºC) Recent Evolution

The latest weekly SST departures are:

- Niño 4: 0.2ºC
- Niño 3.4: 0.2ºC
- Niño 3: 0.1ºC
- Niño 1+2: -0.1ºC
From February 2017 through May 2017, positive subsurface temperature anomalies persisted in the western and eastern Pacific Ocean, with oceanic Kelvin waves resulting in anomalous temperature variability in the central Pacific.

Recently, subsurface temperature anomalies are near-to-slightly below average across the central and east-central equatorial Pacific.

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.
Most models and the multi-model averages predict ENSO-Neutral through the remainder of the year and into early 2018.
Historical El Niño and La Niña Episodes Based on the ONI computed using ERSST.v4

Recent Pacific warm (red) and cold (blue) periods based on a threshold of +/- 0.5 °C for the Oceanic Niño Index (ONI) [3 month running mean of ERSST.v4 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 overlapping 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>
<th>DJF</th>
<th>JFM</th>
<th>FMA</th>
<th>MAM</th>
<th>AMJ</th>
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</table>
ENSO-Neutral is favored (50 to ~55% chance) into the Northern Hemisphere winter 2017-18, with diminishing chances for El Niño throughout.
Multivariate ENSO Index (MEI) for the seven strongest El Niño events since 1950 vs. 2015-17

Update: 11 July 2017
NOAA/ESRL/Physical Science Division, University of Colorado at Boulder/CIRES

1. El Niño
2. Neutral
3. Strong El Niño
4. La Niña
5. Strong La Niña

Source: Wossenu Abtew (SFWMD)
2017 Atlantic Hurricane Season Outlook

Season probability:
- Above-normal: 45%
- Near-normal: 35%
- Below-normal season: 20%

- Named storms: 11-17
- Hurricanes: 5-9
- Major Hurricanes: 2-4

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

May 25, 2017
# Atlantic Basin Seasonal Hurricane Forecast for 2017

<table>
<thead>
<tr>
<th>Forecast Parameter and 1981-2010 Median (in parentheses)</th>
<th>Issue Date 6 April 2017</th>
<th>Issue Date 1 June 2017</th>
<th>Issue Date 5 July 2017</th>
<th>Observed Activity Thru July 2017</th>
<th>Forecast Activity After 31 July</th>
<th>Total Seasonal Forecast</th>
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<td>Named Storms (NS) (12.0)</td>
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<td>5</td>
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<td>Accumulated Cyclone Energy (ACE) (92)</td>
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<tr>
<td>Net Tropical Cyclone Activity (NTC) (103%)</td>
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<td>110</td>
<td>140</td>
<td>11</td>
<td>129</td>
<td>140</td>
</tr>
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</table>

From the Tropical Meteorology Project at Colorado State University (8/4/2017): http://webcms.colostate.edu/tropical/media/sites/111/2017/08/2017-08.pdf
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 current month’s 1st for both Lake Okeechobee and the Water Conservation Areas.

Dynamic Position Analysis

- Each 1-year simulation starts with current hydrologic conditions (e.g., 1-Jun-2017)
- 41 1-year simulations of system response to historical rainfall conditions
- Statistical summaries used to display projections
Preliminary Results

Lake Okeechobee SFWMM Aug 2017 Dynamic Position Analysis

Percentiles DPA_AUG

High Lake Management Band

Stage (feet, NGVD)

May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun

HLM High Inter Low BasFlo BenUse

Water-Shortage Management Band

Historical MAX P95 P90 P75 P50 P25 P10 P5 MIN

(See assumptions on the Position Analysis Results website)
Preliminary Results

Lake Okeechobee SFWMM Aug 2017 Dynamic Position Analysis
All Simulated Years Plot DPA_AUG

(See assumptions on the Position Analysis Results website)
Preliminary Results

Lake Okeechobee SFWMM Aug 2017 Dynamic Position Analysis

AMO Warm / ENSO Neutral Analog Years Plot DPA_AUG

(See assumptions on the Position Analysis Results website)
Lake Okeechobee SFWMM Aug 2017 Dynamic Position Analysis

All ENSO Neutral Years Plot DPA_AUG

(Preliminary Results)

(See assumptions on the Position Analysis Results website)
Preliminary Results

Lake Okeechobee SFWMM Aug 2017 Dynamic Position Analysis

Percentiles DPA_AUG

High Lake Management Band

Water Shortage Management Band

(See assumptions on the Position Analysis Results website)