Climate Summary for Florida – May 2023

Prepared by the Florida Climate Center, The Florida State University, Tallahassee, Florida
Online at: http://climatecenter.fsu.edu/products-services/summaries

Key Points

- Monthly average temperatures in May were generally near or above normal.
- Monthly precipitation totals for May were generally above normal for much of the state.
- With increasing rainfall, drought conditions improved across the state during the month, and 74% of the state was drought free by the end of the month. Drought removal is likely over the coming weeks as the rainy season becomes fully underway.
- A transition to El Niño is likely this summer with fairly high forecast confidence.
- A surface low formed in the Gulf at the end of the month and developed into a tropical depression on June 1, kicking off the 2023 Atlantic hurricane season.

Average monthly temperatures in May were generally near to above normal across the state. Average temperature departures from normal ranged from -1.1℉ in Melbourne to +2.0℉ in Fort Myers for the month (see Table 1 and Appendix 1 for select cities). While the middle of the month was generally warmer than normal for much of the state, the month began and ended with below normal average temperatures in most places. Thus, monthly departures from normal were not as warm as in previous months this year so far. However, these first five months of the year, January-May, have been the warmest start to the year on record for many locations across the state, including **Miami**, **Fort Myers**, **Key West**, **Sarasota**, **Tampa**, **Melbourne**, **Orlando**, **Daytona Beach**, **Ocala**, **Tallahassee**, and **Pensacola**. Select daily high maximum temperature records tied or broken during the month are provided in Appendix 2.

Table 1. May average temperatures and departures from normal (℉) for selected cities.

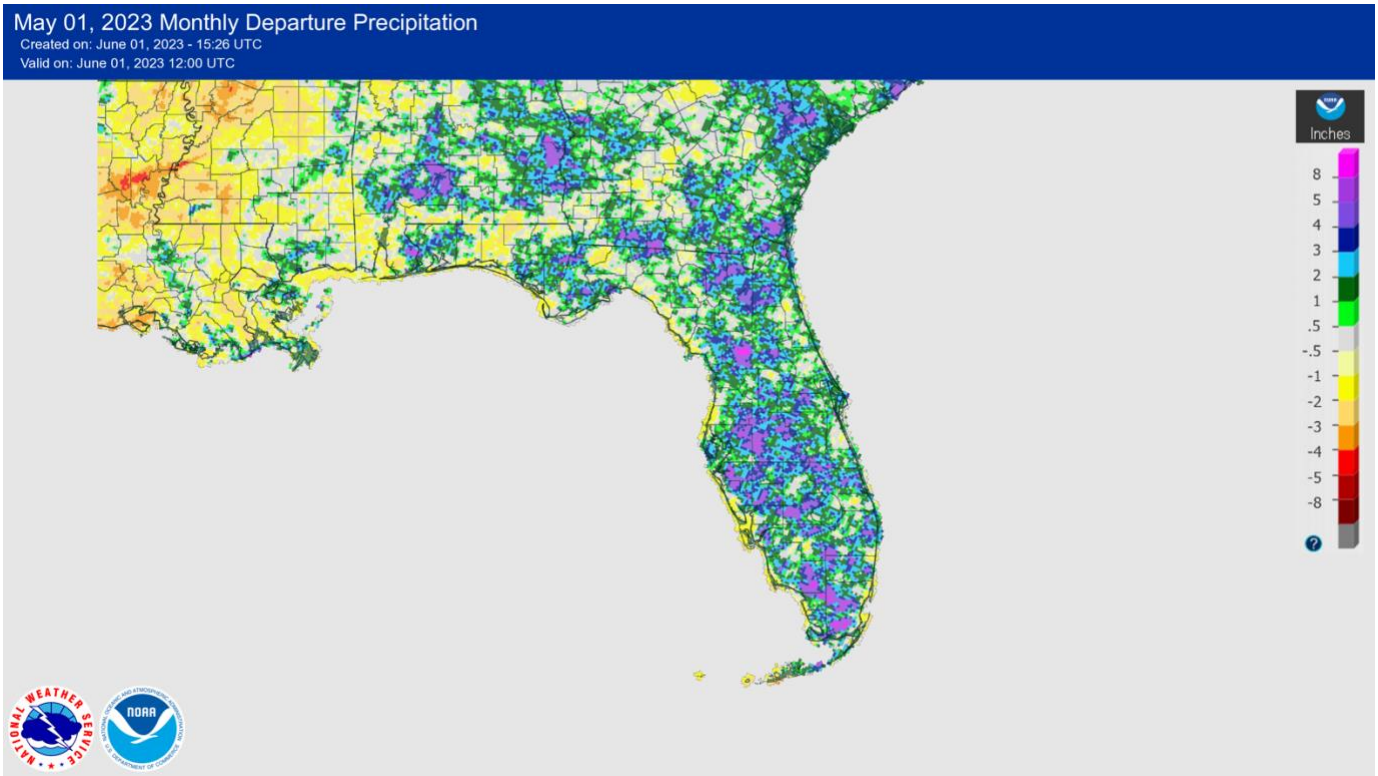
Station	Mean Temperature	Departure from Normal
Pensacola	76.5	+0.5
Tallahassee	75.9	+0.7
Jacksonville	74.2	-0.7
Orlando	78.2	+0.9
Tampa	79.6	+0.1
Miami	81.2	+1.1
Key West	82.0	+0.9

Monthly rainfall totals were generally above normal across the state in May. The monthly precipitation departures from normal ranged from -1.82 inches in Venice to +6.18 inches in Ocala (see Table 2 and Appendix 1 for select locations). **Naples** had its 4th-driest May on record, and some places are experiencing one of their driest starts to the year on record, January-May, including **Naples** with 3.08 inches total this year, to date (1st-driest), **Tarpon Springs** with 3.32 inches total to date (2nd driest), and **Venice** with 5.00 inches this year (4th-driest). On the other hand, several locations experienced one of their wettest Mays on record including **Fort Lauderdale** (5th-wettest), **Lakeland** (5th-wettest), **Bradenton** (6th-wettest), **Orlando** (8th-wettest), **Ocala** (9th-wettest), and **Jacksonville** (9th-wettest). As such, drought conditions improved across the state by the end of the month (see drought information below).

Table 2. May precipitation totals and departures from normal (inches) for selected cities.

Station	Total Rainfall	Departure from Normal
Pensacola	5.19	+1.29
Tallahassee	2.84	-0.52
Jacksonville	5.68	+2.26
Orlando	6.37	+2.35
Tampa	4.11	+1.51
Miami	5.92	-0.40
Key West	3.97	+0.85

Figure 1. A graphical depiction of the monthly rainfall departure from normal (in inches) for May (courtesy of NOAA).



El-Niño Watch.

A transition from ENSO-neutral to El Niño, the warm phase of the El Niño Southern Oscillation, is expected in the next couple of months. There is a greater than 90% chance of El Niño persisting into the Northern Hemisphere winter. Above-average sea surface temperatures (SSTs) expanded westward to the east-central equatorial Pacific Ocean during April and there are now widespread positive temperature anomalies below the surface of the equatorial Pacific Ocean. At the end of the year (November-January), the range of possibilities includes an 80% chance of at least a moderate El Niño (Niño-3.4 ≥ 1.0°C), about a 55% chance of a strong El Niño (Niño-3.4 ≥ 1.5°C), and a 5-10% chance that El Niño fails to materialize, according to the Climate Prediction Center at NOAA.

Hazardous Weather Events in May.

According to the Local Storm Reports issued by the local National Weather Service offices serving Florida, there were 267 individual local reports of hazardous weather events recorded across the state during the month of May (see Table 4 for a breakdown by event type). As the rainy season begins, reports of heavy rainfall and scattered thunderstorm activity have begun to ramp up. One lightning fatality occurred during the month, when a man was struck while on a roof on the 22nd in Volusia County. An injury was reported on the 25th when a short-lived EF0 tornado knocked a semi-tractor on its side, injuring the driver. Several reports of pea to golf ball sized hail were also submitted throughout the month.

Table 3. Breakdown of storm reports submitted in Florida during the month of May (compiled from Iowa State University/Iowa Environmental Mesonet).

Report Type	Number of Reports
Heavy Rain	36
Flood	8
Coastal Flood	1
Flash Flood	2
Hail	61
Lightning	2
Marine Thunderstorm Wind	16
Non-Thunderstorm Wind Gust	29
Non-Thunderstorm Wind Damage	0
Tornado/Waterspout/Funnel Cloud	1 / 22 / 5
Thunderstorm Wind Damage	36
Thunderstorm Wind Gust	40
Rip Currents	1
Wildfire	7

Daily Record Events in May.

Table 4. Summary of daily records broken in Florida in May (source: NCEI Daily Weather Records).

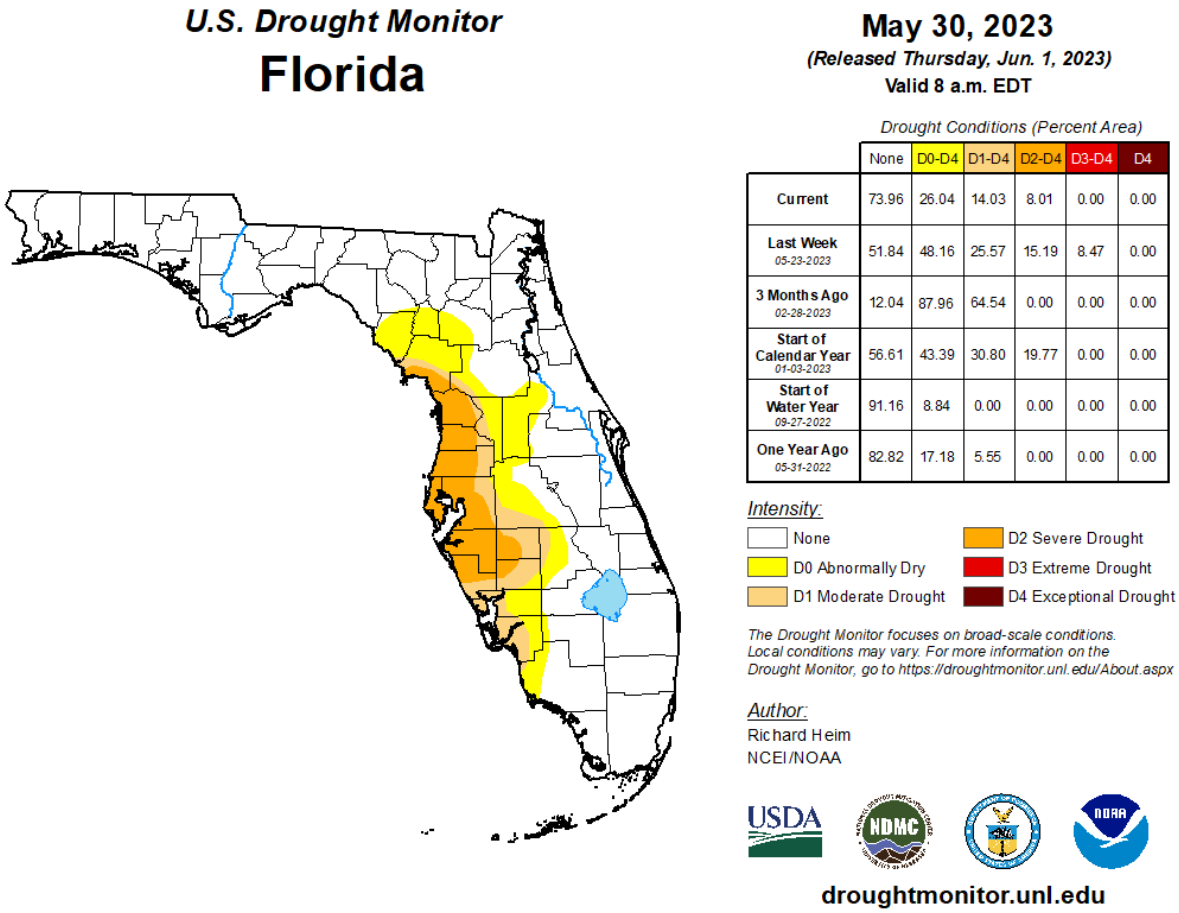
Category	Number of Records
Highest daily max. temp.	15
Highest daily min. temp.	8
Lowest daily max. temp.	5
Lowest daily min. temp.	9
Highest daily precipitation	20
Total	**57**

Drought-Related Impacts.

By the middle of May, extreme drought (D3) had expanded across the west-central Florida Peninsula and severe drought (D2) affected much of the Peninsula. About 9% of the state was in extreme drought (D3), 5% was in severe drought (D2), 30% was in moderate drought (D1), and 14% was abnormally dry (D0), according to the U.S. Drought Monitor. By the end of the month, improvement occurred across the state with ample rainfall and extreme drought (D3) was removed along the west coast. As of May 30, 8% of the state was in severe drought (D2), 6% was in moderate drought (D1), and 12% of the state was abnormally dry (D0) (Figure 2).

As of May 31, the Lake Okeechobee water level was 13.85 ft. above sea level (Feet-NGVD29**)**, which is above average for this time of year. At the first of the month, the water level was 14.30 ft. above sea level.

Figure 2. A graphical depiction of the latest drought conditions in Florida according to the U.S. Drought Monitor (courtesy of the National Drought Mitigation Center, University of Nebraska-Lincoln).



Agriculture-Related Impacts.

Much of the Peninsula was in drought during the month, which resulted in increased irrigation throughout the month. Soil moisture remained mixed due to the scattered nature of thunderstorms. In mid-May, topsoil moisture conditions were adequate in 50% of the state, short in 44%, and very short in 5% of the state, while only 1% of the state was experiencing surplus topsoil moisture conditions. By the end of May, topsoil moisture conditions had begun to improve with levels adequate in 69% of the state, short in 20%, and very short in 3% of the state; 8% of the state was in surplus. For more information, consult the Crop Progress and Conditions report, which is published by the USDA's National Agricultural Statistics Service.

Appendix 1. Additional May departures from normal data for select Florida locations (source: NWS).

Station	Average Temperature (ºF)	Departure from Normal (ºF)	Total Rainfall (in.)	Departure from Normal (in.)
Gainesville	74.6	-0.4	4.11	+1.03
Sarasota	78.3	+0.5	2.27	-0.31
Melbourne	77.0	-1.1	4.80	+1.27
Fort Myers	81.3	+2.0	5.36	+1.90
West Palm Beach	79.5	+0.8	5.63	+0.72

Appendix 2. Select daily record high maximum temperatures broken or tied during May (compiled from NOAA).

Location	Date	Record (ºF)	Broken/Tied	Last
Miami	3	91	Broken	90 in 2016
Bradenton	6	91	Tied	91 in 2021
Cross City	10	93	Tied	93 in 2017
Lakeland	10	95	Tied	95 in 2017
Tallahassee	10	96	Broken	95 in 2015
Tampa	11	95	Broken	93 in 2018
Fort Myers	11	95	Tied	95 in 2012
Tampa	11	94	Tied	94 in 2002
Bradenton	12	93	Broken	92 in 2015
Pensacola	14	92	Broken	91 in 2018
Naples	15	92	Tied	92 in 2003
Fort Myers	15	96	Tied	96 in 1990
Pensacola	15	94	Tied	94 in 1998
Vero Beach	17	95	Tied	95 in 1945
Fort Lauderdale	18	90	Broken	89 in 2016
Vero Beach	18	93	Broken	92 in 2008
Miles City	19	98	Broken	97 in 2003
Ochopee	19	94	Broken	93 in 2022
Key West	19	91	Broken	89 in 2008
Key West	21	91	Broken	90 in 1995
Key West	22	92	Broken	90 in 1990
Key West	23	90	Broken	89 in 2008