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Climate Summary for Florida – August 2023

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

Summary

- Average monthly temperatures in August were above normal across Florida; many new records were set during the month.
- Monthly precipitation totals in August were near or below normal across the state.
- Extreme drought continued to affect coastal west central Florida throughout the month, and drought degradation occurred in the Panhandle due to a combination of below-normal rainfall and extreme heat.
- An El Niño Advisory continues and there is increased confidence that it will persist into the winter (greater than 95% chance). There is also increasing confidence in the probability of a strong El Niño event.
- Hurricane Idalia made landfall near Keaton Beach, Florida as a Category 3 hurricane on August 30 with maximum wind speeds of 125 mph, becoming the strongest hurricane to make landfall in the Big Bend since the Cedar Key hurricane of 1896.

Average monthly temperatures in August were above normal across the state. Average temperature departures from normal ranged from +1.9°F in Key West to +5.3°F in Pensacola for the month (see Table 1 and Appendix 1 for select cities). High temperatures and oppressive humidity affected much of the state again this month. **Pensacola** reached a maximum temperature of 105°F on the 26th, which was the hottest temperature recorded in Florida during the month. New all-time record high minimum temperatures were also set this month, including 88°F in **Key West** on the 9th and 86°F in **Naples** on the 30th. Most stations statewide recorded their hottest August on record, based on monthly average temperatures, including **Pensacola**, **Tallahassee**, **Gainesville**, **Tampa**, **Daytona Beach**, **Sarasota**, **Orlando**, **Fort Myers**, **Naples**, **Miami**, and **Key West**.

In addition, August 2023 was the hottest month ever recorded for several locations based on monthly average temperatures, including **Tallahassee** (old record was 85.5°F set in July 1932), **Pensacola** (old record was 85.7°F set in August 1951), **Tampa** (old record was 86.5°F set in July 2023), **Miami** (old record was 86.5°F set in July 2023), **Naples** at 85.3°F (old record was 85.0 set in July 1942), **Vero Beach** at 84.3°F (old record was 83.8°F set in August 2020), **Daytona Beach** at 85.0°F (old record was 84.5°F set in June 1998), **Orlando** (old record was 85.2°F set in July 2016), and **Gainesville** which tied its old record of 84.0°F set in June 1998 and August 2011. Many stations across the state are on pace to see their warmest year on record, based on year-to-date average temperatures January – August. Select daily high maximum and minimum temperature records tied or broken during the month are provided in Appendices 2 and 3.

Table 1. August average temperatures and departures from normal (°F) for selected cities.

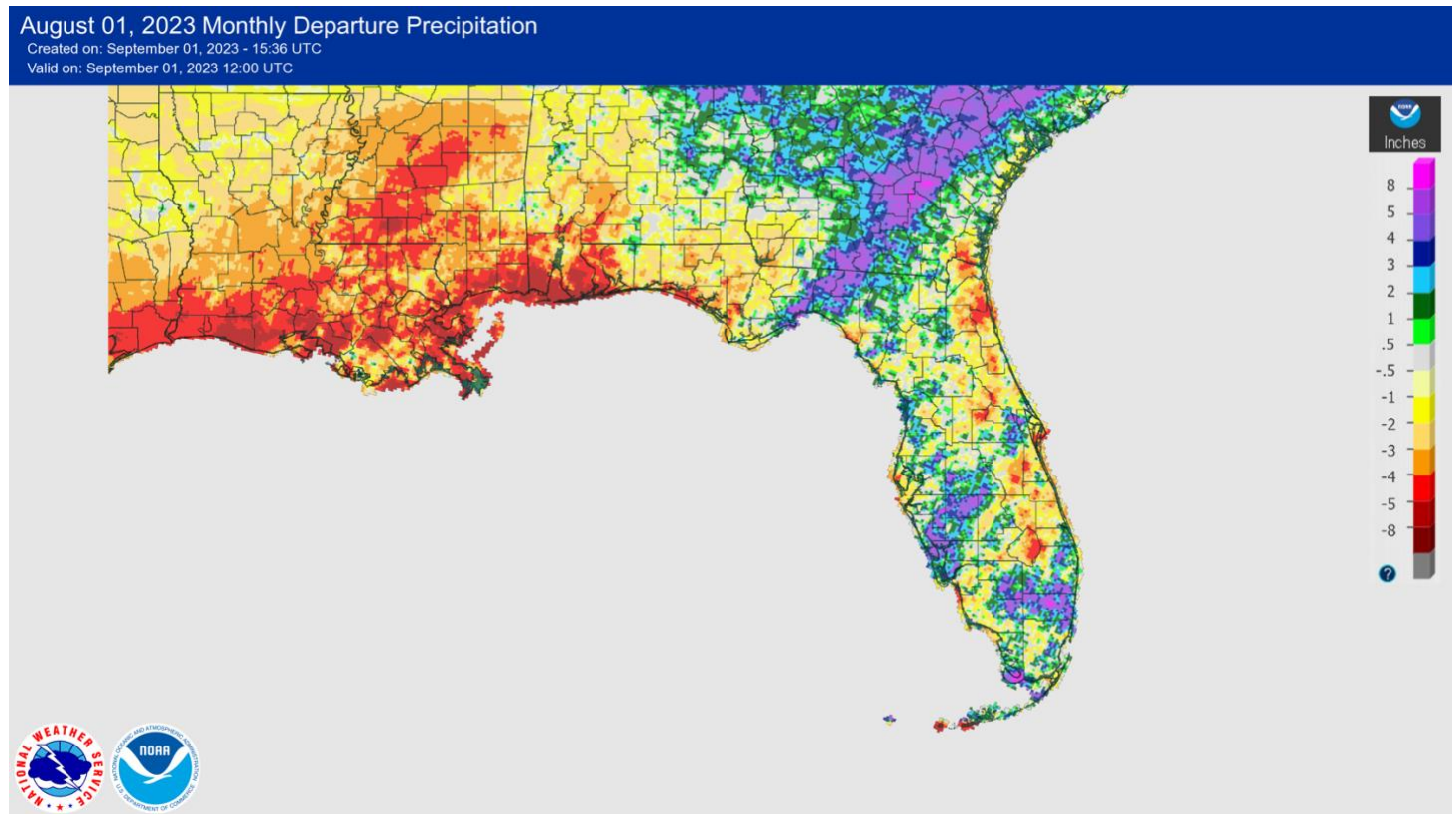| Station	Mean Temperature	Departure from Normal
Pensacola	88.3*	+5.3
Tallahassee	86.4*	+4.0
Jacksonville	84.5	+2.4
Orlando	85.9*	+3.3
Tampa	86.9*	+2.9
Miami	86.6*	+2.4
Key West	87.4	+1.9

Indicates a new record for hottest month ever recorded at station.

Monthly rainfall totals in August were generally near to below normal. The monthly precipitation departures from normal ranged from -4.98 inches in Pensacola to +2.71 inches in Cross City (see Table 2 and Appendix 1 for select locations). Monthly rainfall totals in the Panhandle were generally well below normal, and the monthly deficit at **Pensacola** of -4.98 inches ranked as their 6th-driest August on record. The Peninsula had some winners and losers with spotty rainfall throughout the month. **Naples** collected a mere 4.05 inches, which ranked as the 3rd-driest August on record and did little to alleviate their year-to-date rainfall deficit which now stands at -19.17 inches through August. **Fort Lauderdale** saw 11.49 inches of rain during the month, which ranked as their 4th-wettest August on record. West Florida and Big Bend regions recorded several inches of rain from Hurricane Idalia, with storm totals generally between 2 and 4 inches and over 6 inches in some locations.

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

Station	Total Rainfall	Departure from Normal
Pensacola	2.52	-4.98
Tallahassee	5.20	-2.40
Jacksonville	4.98	-1.90
Orlando	8.15	+0.46
Tampa	9.97	+0.94
Miami	10.25	+0.67
Key West	6.31	+0.94

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

El Niño Advisory.

El Niño conditions, the warm phase of the El Niño Southern Oscillation climate pattern, in the tropical equatorial Pacific Ocean continued in August. There is strong confidence that El Niño will persist through the Northern Hemisphere winter 2023-24, with greater than 95% chance through December 2023 – February 2024. Forecasters are more confident in the probability of a strong El Niño event, with a more than 60% chance of Niño-3.4 ≥ 1.5°C for the November-January seasonal average. However, a strong El Niño event does not necessarily mean stronger impacts locally.

Hazardous Weather Events in August.

According to the Local Storm Reports issued by the local National Weather Service offices serving Florida, there were 799 individual local reports of hazardous weather events recorded across the state during the month of August (see Table 4 for a breakdown by event type). There were many reports of extreme heat during the month, with heat indices in the 110s°F and peaking above 120°F in parts of the Panhandle (Wakulla and Bay Counties). Lightning strikes resulted in 2 injuries and 1 fatality. Another fatality occurred due to rip currents. Hurricane Idalia, a category 3 hurricane at the time of landfall, caused damaging storm surge across much of the western coast and Big Bend regions of Florida, from Naples to St. George Island. Idalia caused very few injuries and no fatalities; one person was injured when a tree fell on a home in Hamilton County on the 30th. More information about the storm is below.

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

Report Type	Number of Reports
Heavy Rain	39
Flood	12
Coastal Flood	1
Flash Flood	6
Hail	3
Lightning	6
Non-Thunderstorm Wind Gust	6
Non-Thunderstorm Wind Damage	0
Tornado/Waterspout/Funnel Cloud/Landspout	2 / 17 / 7 / 1
Thunderstorm Wind Damage	46
Thunderstorm Wind Gust	240
Rip Currents	3
Extreme Heat	78
Tropical Cyclone	325
Storm Surge	7

Daily Record Events in August.

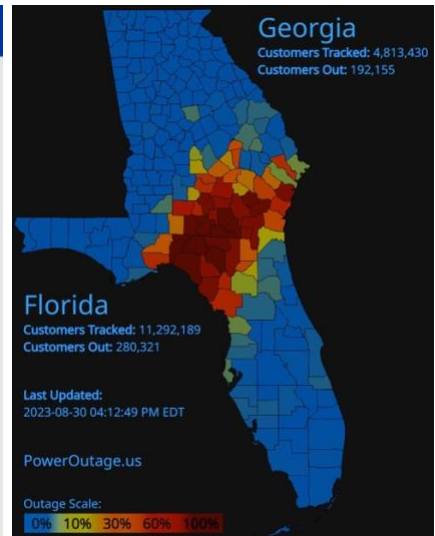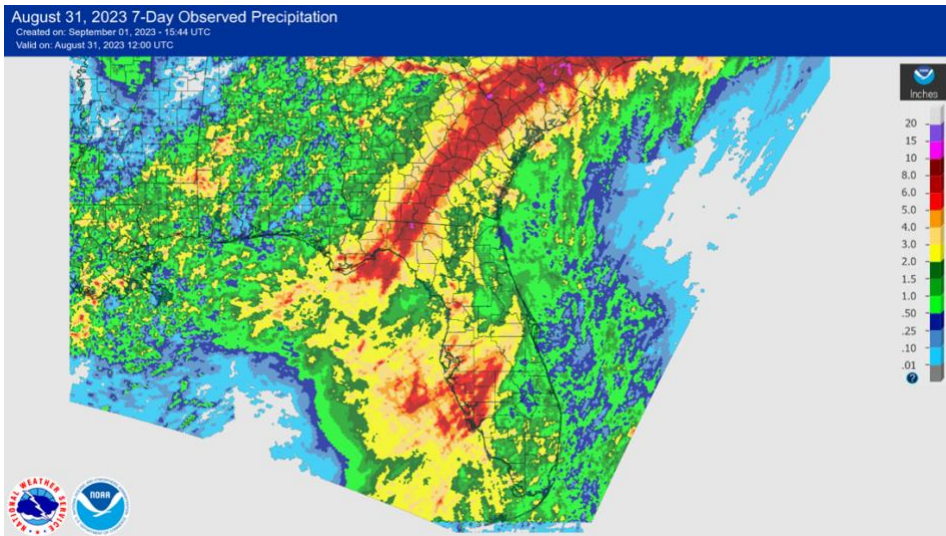**Table 4.** Summary of daily records broken in Florida in August (source: NCEI Daily Weather Records).

Category	Number of Records
Highest daily max. temp.	156
Highest daily min. temp.	196
Lowest daily max. temp.	7
Lowest daily min. temp.	2
Highest daily precipitation	26
Total	**387**

Weather/Climate Highlights of the Month: Hurricane Idalia

Hurricane Idalia made landfall in the Big Bend region at Keaton Beach, Florida on the morning of August 30 as a major Category 3 hurricane with maximum winds of 125 mph. Idalia underwent rapid intensification in the Gulf of Mexico as it approached land, with an increase in wind speeds of 55 mph in less than 24 hours, briefly reaching Category 4 strength. Just before landfall, the storm weakened slightly but still made landfall as a major Cat-3 hurricane.

Idalia became the second major hurricane of the 2023 Atlantic hurricane season and the 10th named storm of the season, a few weeks ahead of climatology. Idalia is the strongest hurricane to make landfall in the Big Bend since the Cedar Key hurricane of 1896, which also had maximum winds of 125 mph. Idalia became the first hurricane since Hurricane Gladys in 1968 (which made landfall as a category 2 storm near Homosassa Springs) to make direct landfall in the Big Bend region. The last major hurricane to hit the Big Bend was in 1950 when Hurricane Easy brushed the coast near Cedar Key and moved south to make a second landfall in western Florida near Hernando Beach.

Idalia caused widespread impacts to Florida's west coast and devastated coastal Big Bend communities with high winds and storm surge, including areas at and near Keaton Beach, Steinhatchee, and Cedar Key, as well as causing flooding further south near Hernando Beach, Punta Gorda, and Tarpon Springs. Inland areas like Perry and Mayo were badly hit as the storm maintained hurricane strength into southeastern Georgia before impacting the Carolinas. Reported rainfall totals in Florida associated with Idalia include 6.67 inches in Madison County (Mesonet station), 6.11 inches in Jefferson County (CoCoRaHS), and 7.66 inches in Charlotte County (CoCoRaHS). Peak wind gusts included 85 mph in Perry, 83 mph in Keaton Beach, and 85.3 mph in Mayo. Many customers in north Florida were without power after the storm and continued to be through the Labor Day weekend.

Hurricane Idalia rainfall clearly seen over Florida and the Southeast U.S. in Weekly rainfall map (Source: National Weather Service)

Power outages as of Aug. 30, 4pm EDT

A Steinhatchee local said Idalia's storm surge reached the top of this building, which sits directly across the street from the Steinhatchee River.

NOAA National Data Buoy Center station knocked down at Keaton Beach, Florida.

Drought-Related Impacts.

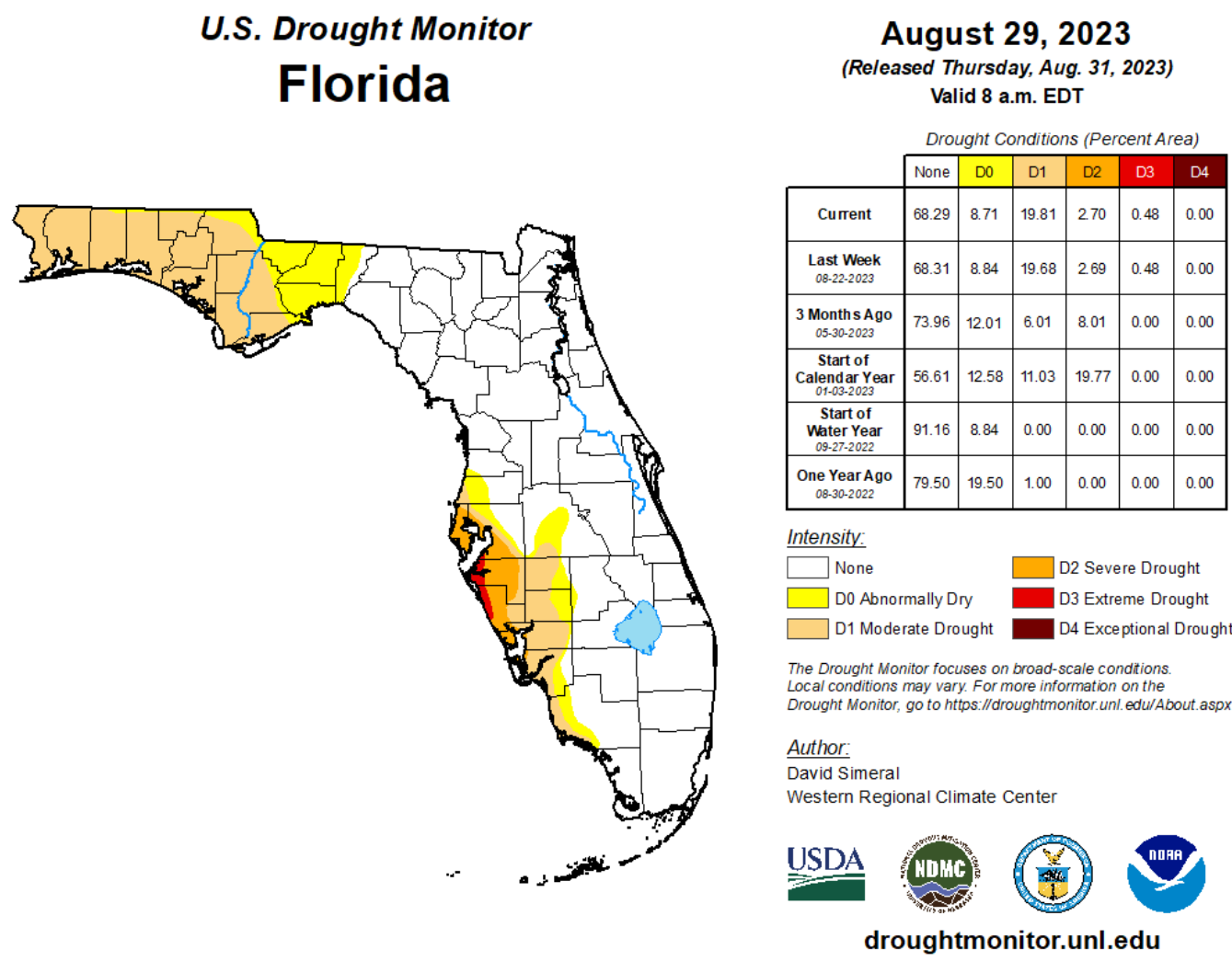In mid-August, a lack of rainfall combined with extreme heat led to the development of abnormally dry conditions in the Panhandle. By the 15th, roughly 1% of the state was in extreme drought (D3), 3% was in severe drought (D2), 4% was in moderate drought (D1), and 23% was abnormally dry (D0), according to the U.S. Drought Monitor. By the end of the month, continued dryness and extreme heat caused drought

degradation in the Panhandle, while rainfall from Hurricane Idalia led to slight improvement in drought along the west central coast. As of August 29th, 0.5% of the state was in extreme drought (D3), 2.7% was in severe drought (D2), 20% was in moderate drought (D1), and about 9% was abnormally dry (D0) (see Figure 2 below).

As of August 31, the Lake Okeechobee water level was 15.36 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 15.18 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).

U.S. Drought Monitor
Florida

August 29, 2023
(Released Thursday, Aug. 31, 2023)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	68.29	8.71	19.81	2.70	0.48	0.00
Last Week 08-22-2023	68.31	8.84	19.68	2.69	0.48	0.00
3 Months Ago 05-30-2023	73.96	12.01	6.01	8.01	0.00	0.00
Start of Calendar Year 01-03-2023	56.61	12.58	11.03	19.77	0.00	0.00
Start of Water Year 09-27-2022	91.16	8.84	0.00	0.00	0.00	0.00
One Year Ago 08-30-2022	79.50	19.50	1.00	0.00	0.00	0.00

Intensity:

None — D2 Severe Drought
D0 Abnormally Dry — D3 Extreme Drought
D1 Moderate Drought — D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

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droughtmonitor.unl.edu

Agriculture-Related Impacts.

In mid-August, topsoil moisture conditions were adequate in 69% of the state, short in 17%, and very short in 6% of the state, while 8% of the state was experiencing surplus topsoil moisture conditions. Toward the end of August, topsoil moisture conditions were adequate in 62% of the state, short in 17%, and very short in 16% of the state; just 5% 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 August 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	84.0	+2.7	6.14	-0.26
Sarasota	85.9	+2.5	9.12	+0.01
Naples	87.0	+3.7	4.05	-4.84
Fort Myers	85.9	+2.5	9.69	-0.74
West Palm Beach	85.3	+2.1	5.68	-3.00
Cross City	84.3	+3.1	10.81	+2.71

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

Location	Date	Record (ºF)	Broken/Tied	Last
Homestead	1	96	Broken	95 in 2010
Key West	1	94	Broken	93 in 1991
Key West	2	95	Broken	93 in 2007
Crestview	2	101	Broken	100 in 1990
Pensacola	2	99	Tied	99 in 1986
Homestead	3	97	Broken	96 in 1990
Crestview	3	100	Broken	99 in 2015
Plant City	4	100	Broken	99 in 2022
Key West	4	94	Broken	93 in 2007
Crestview	4	102	Broken	99 in 2011
Pensacola	4	99	Tied	99 in 1951
Jacksonville Beach	5	97	Broken	95 in 1954
Niceville	5	100	Broken	99 in 1989
Orlando	5	96	Tied	96 in 1956
Key West	5	94	Broken	93 in 2007
Pensacola	5	102	Broken	98 in 1989
Bradenton	6	98	Broken	95 in 2017
Bradenton	7	99	Broken	97 in 1989
Fort Pierce	7	97	Tied	97 in 1989
Homestead	7	99	Broken	95 in 2016
Plant City	7	103	Broken	98 in 2022
Ochopee	7	99	Broken	97 in 2007
Marianna	7	100	Broken	99 in 2007
Key West	7	96	Broken	95 in 2022
Tallahassee	7	99	Broken	98 in 1956
Bradenton	8	100	Broken	96 in 1993
Clermont	8	99	Broken	98 in 2007
Plant City	8	104	Broken	98 in 2022
Sanford	8	98	Broken	97 in 2007
Titusville	8	99	Broken	98 in 2011
Orlando	8	99	Broken	98 in 1987
Daytona Beach	8	98	Broken	97 in 1989
Pensacola	8	98	Broken	97 in 1956

Jacksonville	8	102	Tied	102 in 1987
Bradenton	9	101	Broken	96 in 1993
Clermont	9	100	Broken	97 in 2020
Fort Pierce	9	98	Broken	96 in 1999
Lake City	9	98	Broken	97 in 1987
Tampa	9	97	Broken	96 in 2020
Vero Beach	9	97	Broken	95 in 1989
Daytona Beach	9	98	Broken	96 in 2019
Orlando	9	98	Tied	98 in 1960
Bradenton	10	99	Broken	97 in 1993
Homestead	10	98	Broken	96 in 2019
Kissimmee	10	98	Broken	96 in 1987
Plant City	10	104	Broken	98 in 2022
Titusville	10	99	Tied	99 in 1930
Mayport	10	101	Broken	97 in 2007
Orlando	10	98	Broken	97 in 2007
Gainesville	10	97	Broken	96 in 1987
Daytona Beach	10	99	Broken	96 in 1984
Vero Beach	10	98	Broken	97 in 1955
Bradenton	11	99	Broken	95 in 2007
Homestead	11	100	Broken	97 in 2018
Sanford	11	99	Broken	96 in 2009
Orlando	11	99	Broken	98 in 2007
Gainesville	11	98	Broken	96 in 2011
Key West	11	95	Broken	94 in 1989
Jacksonville	11	102	Broken	99 in 2006
Bradenton	12	100	Broken	96 in 1984
Homestead	12	97	Broken	95 in 2020
Ocala	12	100	Broken	98 in 2011
Sanford	12	100	Broken	98 in 2015
Tampa	12	97	Broken	95 in 2013
Orlando	12	100	Broken	97 in 2011
Pensacola	12	100	Broken	99 in 1954
Tallahassee	12	100	Tied	100 in 2011
Clermont	13	101	Broken	97 in 2021
Ocala	13	100	Broken	99 in 1938
Tampa	13	100	Broken	96 in 1999
Gainesville	13	99	Broken	97 in 1999
Apalachicola	14	97	Broken	96 in 2011
Lake City	14	102	Broken	98 in 1918
Usher Tower	14	100	Broken	96 in 2007
Gainesville	14	97	Broken	96 in 2007
Tallahassee	14	100	Broken	99 in 2007
Usher Tower	15	100	Broken	97 in 1995
Daytona Beach	15	97	Broken	95 in 2010
Pensacola	15	99	Broken	97 in 1990
Clermont	16	99	Broken	98 in 2010
Kissimmee	16	98	Broken	96 in 1998
Homestead	18	96	Broken	95 in 2020
Panama City	20	98	Broken	97 in 1972

Usher Tower	21	100	Broken	97 in 1980
Chipley	23	100	Broken	99 in 2007
Crestview	23	102	Broken	100 in 2011
Venice	24	97	Broken	95 in 2009
Wewahitchka	24	100	Broken	99 in 1987
Tallahassee	25	102	Broken	99 in 1989
Tampa	26	97	Broken	96 in 2020
Pensacola	26	105	Broken	100 in 2011
Chipley	27	102	Broken	100 in 2011
Niceville	27	101	Broken	98 in 2011
Crestview	27	103	Broken	99 in 2011
Pensacola	27	101	Broken	98 in 2011
Cross City	28	97	Broken	96 in 2011
Miami	31	96	Broken	95 in 1998

Appendix 3. Select daily record high minimum temperatures broken during August (compiled from NOAA).

Location	Date	Record (^{o}F)	Last
Jacksonville Beach	1	84	81 in 1999
Key West	1	86	85 in 2015
Bradenton	2	79	78 in 2022
Daytona Beach	3	81	79 in 2014
Orlando	3	78	77 in 2020
Pensacola	4	82	81 in 2008
Bradenton	7	82	79 in 2015
Key West	7	87	85 in 2016
Ochopee	7	81	80 in 2017
Miami	7	83	82 in 2017
West Palm Beach	7	83	82 in 2017
Lakeland	7	80	77 in 2022
Pensacola	7	84	82 in 1972
Bradenton	8	81	79 in 2012
Fort Pierce	8	81	80 in 1981
Melbourne	8	80	79 in 2022
Daytona Beach	8	80	79 in 1978
Fort Myers	8	82	80 in 2008
Key West	8	87	85 in 2009
Orlando	8	82	79 in 2017
Tampa	8	83	80 in 2021
Vero Beach	8	81	80 in 2017
Lakeland	8	81	77 in 2013
Bradenton	9	81	79 in 2019
Clermont	9	80	78 in 2019
Fort Pierce	9	81	78 in 2009
Vero Beach	9	79	78 in 2022
Orlando	9	81	79 in 1987
Fort Myers	9	82	79 in 2019
Key West	9	88	85 in 2007
Tampa	9	83	82 in 2019
Bradenton	10	83	79 in 2018

Hastings	10	79	77 in 2007
Kissimmee	10	80	78 in 2017
Sanford	10	81	77 in 2022
Venice	10	81	80 in 2019
Pensacola	10	84	79 in 2015
Jacksonville	10	79	78 in 1968
Orlando	10	82	79 in 2022
Key West	10	87	86 in 2020
Lisbon	11	78	76 in 2007
Sanford	11	80	79 in 2019
Jacksonville	11	79	77 in 1951
Pensacola	11	84	80 in 1987
Cross City	12	78	75 in 2019
Deland	12	81	77 in 1955
Melbourne	12	79	78 in 2019
Sanford	12	80	77 in 2020
Tampa	12	79	77 in 2019
Hastings	13	79	75 in 2017
Perrine	13	78	76 in 2020
Tampa	13	80	77 in 2019
Vero Beach	13	80	77 in 2020
Pensacola	13	83	80 in 2019
Tallahassee	13	79	76 in 2019
Miami	14	83	82 in 2020
Homestead	15	79	77 in 2020
Naples	15	81	79 in 1949
Orlando	20	78	77 in 2007
Jacksonville Beach	21	82	80 in 2019
Perrine	22	79	76 in 2022
Pensacola	23	81	79 in 2021
Tallahassee	23	79	77 in 2021
Key West	28	85	84 in 2020
Lakeland	29	80	79 in 2020
Naples	30	86	81 in 2005
Clermont	31	78	77 in 2022
Fort Lauderdale	31	82	81 in 2014
Fort Myers	31	80	79 in 1995