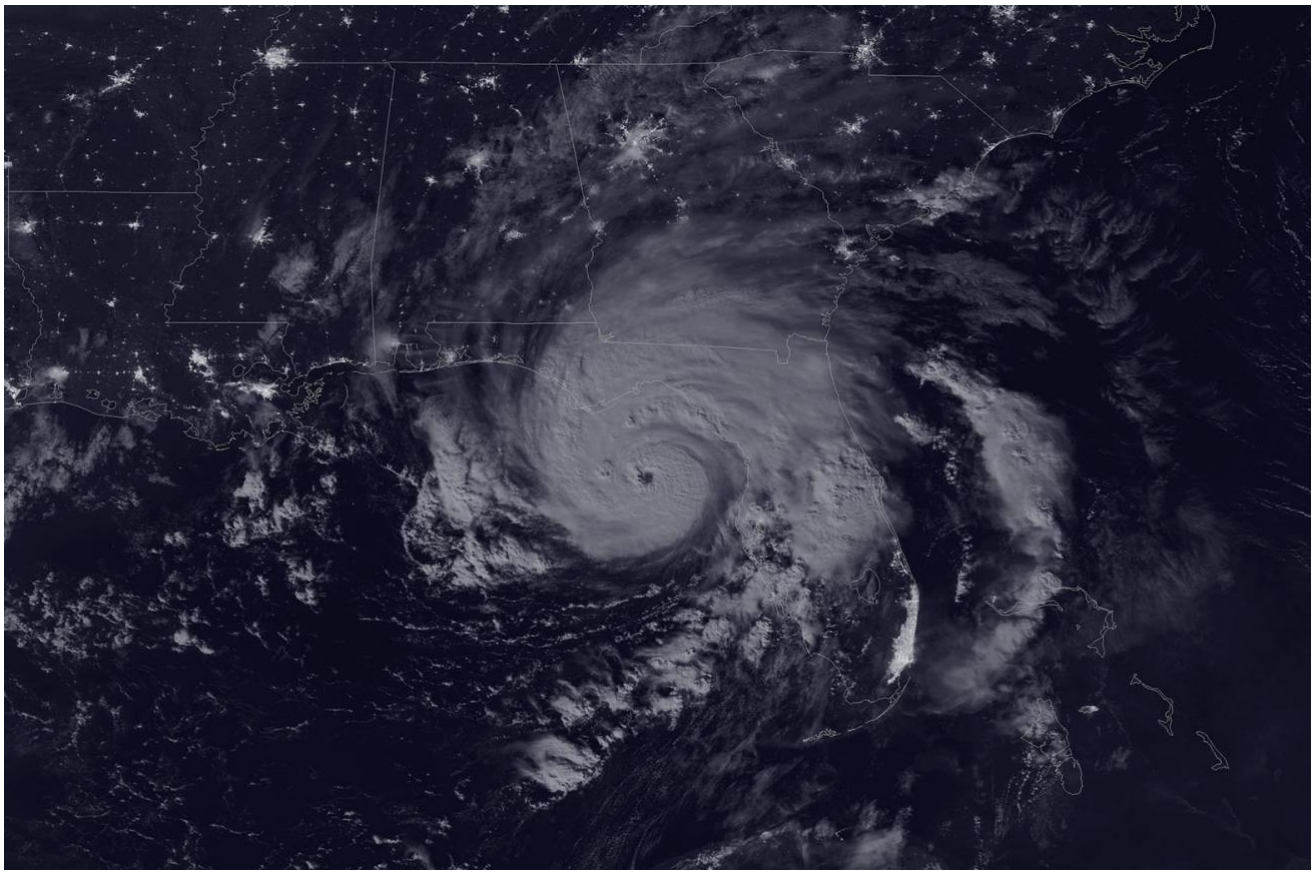
FloridaClimateCenter
Office of the State Climatologist

HURRICANE IDALIA
Preliminary Post-Storm Summary

Prepared by Emily Powell, Florida Climate Center
September 7, 2023



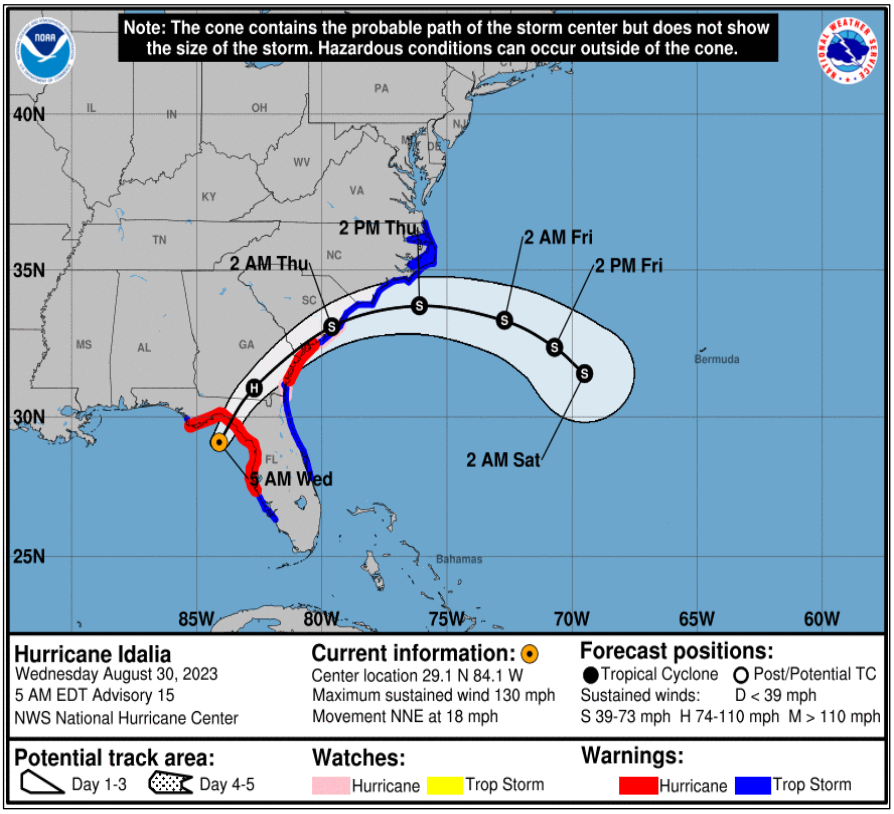
Hurricane Idalia at on Aug. 30 a few hours before landfall from the NOAA-20 satellite's VIIRS instrument (credit: NOAA).

SYNOPTIC OVERVIEW

Hurricane Idalia formed in the Gulf of Mexico on Sunday, August 27 and became Tropical Storm Idalia later that day. It reached hurricane strength on Tuesday, August 29 and rapidly intensified into a major Category 3 hurricane with an increase in wind speeds of 55 mph in less than 24 hours.

Idalia briefly reached Category 4 strength but weakened slightly just before landfall. The storm may have begun an eyewall replacement cycle as it approached land according to preliminary analysis.

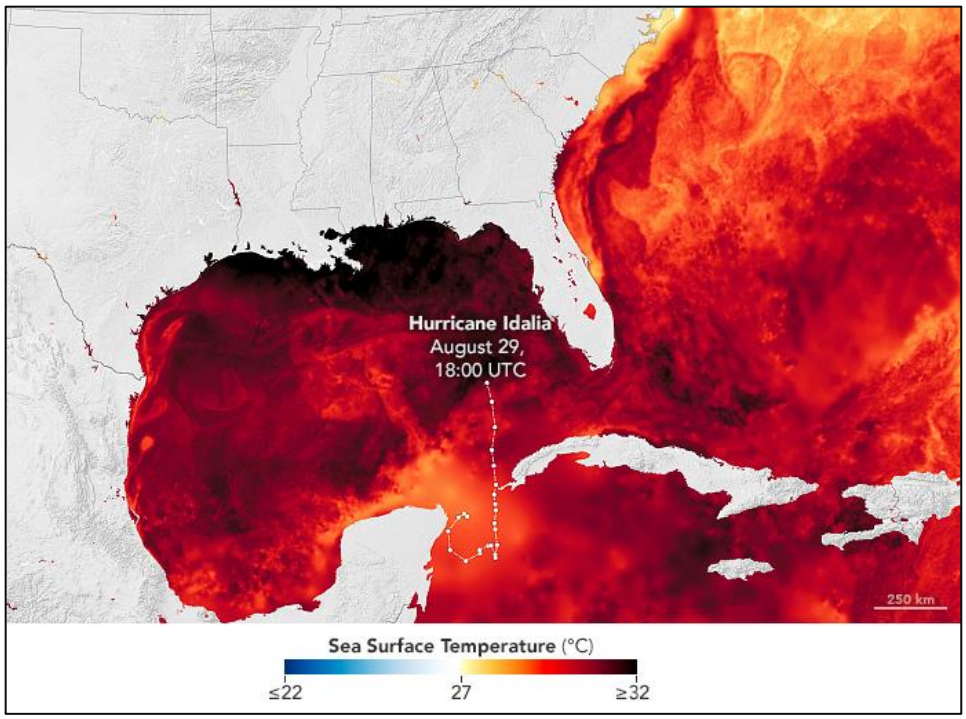
Idalia became the first storm of the 2023 Atlantic hurricane season to directly impact Florida. The storm made landfall around 7:45 am EDT on August 30 along the Florida Big Bend coast at Keaton Beach with maximum wind speeds of 125 mph. The storm devastated areas along the coast, including Keaton Beach, Cedar Key, and Steinhatchee, with storm surge and high winds. Areas inland were also hit hard, such as Perry, Mayo, and Live Oak. Because the storm curved east just before landfall, locations north and west of the storm like St. Marks and Tallahassee avoided severe damage.



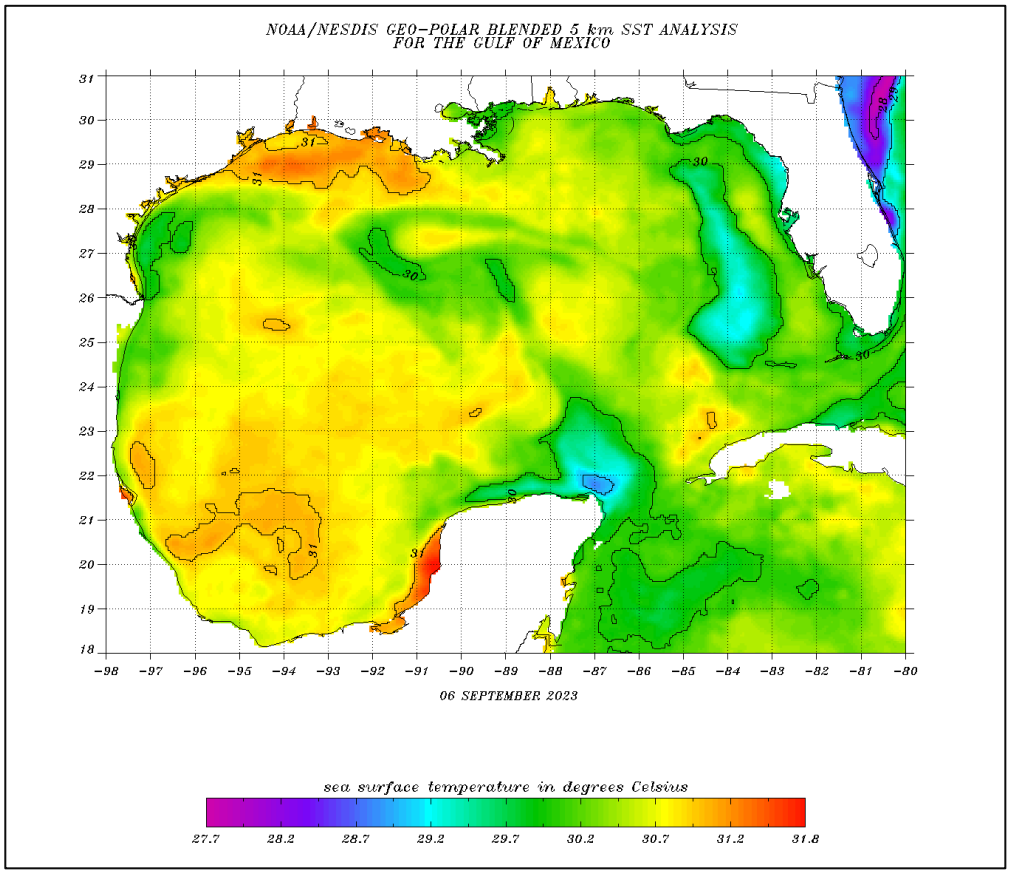
NHC's Advisory 15 for Hurricane Idalia right before landfall, issued Aug. 30 at 5AM EDT.

Damage to homes on Keaton Beach, FL, where Idalia made landfall on Aug. 30 as a category 3 storm.

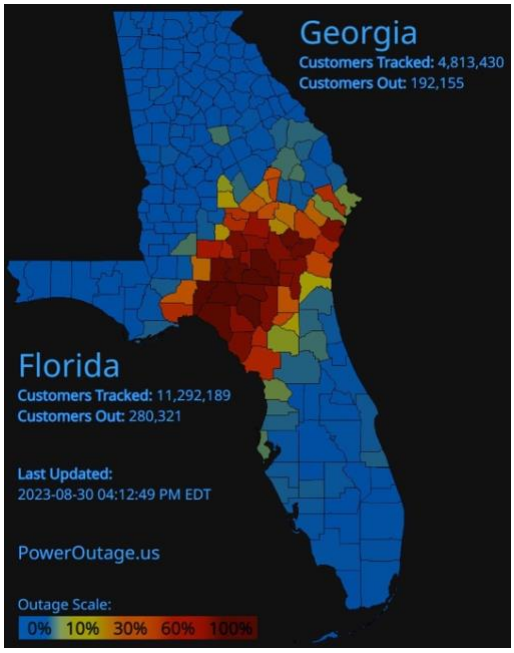
Sea surface temperatures in the Gulf of Mexico were anomalously warm, which helped to fuel Idalia as it moved north toward Florida and the Gulf Coast. SSTs were generally near 90°F, about 2-3°C (3.6 – 5.4°F) above normal. These warm ocean temperatures contributed to Idalia's rapid intensification. Once the storm moved through, Idalia left a cold wake that can be seen in sea surface temperature maps following Idalia's passage, stretching from the northwest Caribbean up along the west Florida shelf, providing at least temporary relief from the marine heat wave.



Sea surface temperatures, °C, on August 27, 2023, from the NASA Multiscale Ultrahigh Resolution SST project.



SSTs, in °C, on September 6, 2023, after Idalia, from NOAA/NESDIS Geo-Polar Blended 5 km imagery.



Before Idalia, the Big Bend region of Florida had not been directly hit by a hurricane, let alone a major hurricane, in a long time. Idalia is only the 3rd major hurricane on record to directly hit the Big Bend. It 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. The last major hurricane (Cat 3 or higher) before Idalia to impact the Big Bend was in 1950 when Hurricane Easy, a Cat 3 hurricane with winds of 121 mph, brushed the coast near Cedar Key and moved south to make landfall in western Florida near Hernando Beach. In 1968, Hurricane Gladys made landfall as a Category 2 storm near Homosassa Springs.

Hurricane Idalia caused widespread power outages, with over 560,000 utility customers losing power at some point. As of the afternoon of August 30, about 280,000 customers were without power. Thousands of customers experienced multi-day power outages which stretched into the Labor Day weekend, especially in Dixie, Taylor, Citrus, and Levy Counties. Many also lost network connectivity, from Crawfordville and Tallahassee to Live Oak and Alachua. Preliminary insured losses in Florida are estimated to be at least $9.6 billion.

HURRICANE IDALIA's PEAK WINDS

Hurricane-force wind gusts were felt near the storm's center as it moved inland from Keaton Beach, while tropical storm-force winds extended out much further. The highest wind gust recorded in the state was 86.3 mph in Mayo from a WeatherSTEM station in Lafayette County. The table below provides select wind speeds and wind gusts from around the state.

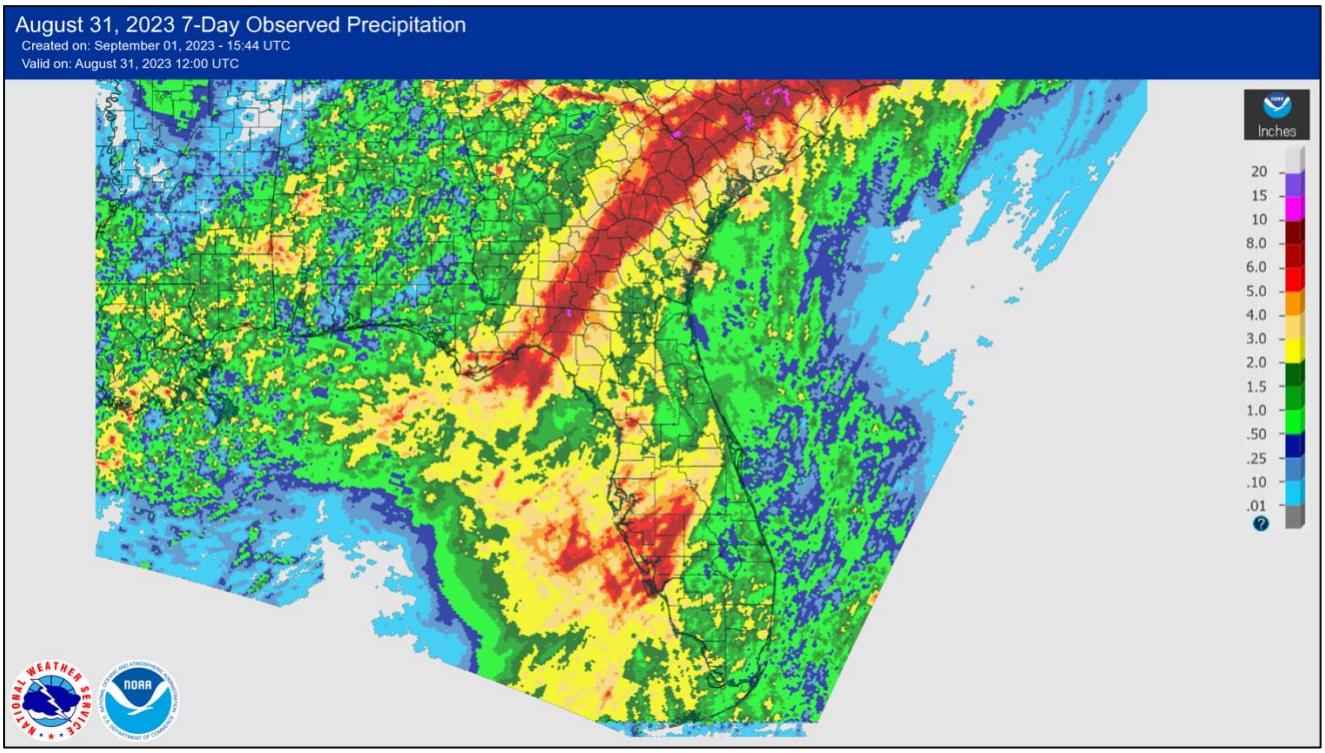
Select Peak Wind Speed Reports from Idalia

Station Name	County	Max Sustained Winds (mph)	Peak Wind Gusts (mph)	Station Type
Keaton Beach	Taylor	55.5	82.7	NDBC
Perry-Foley Airport	Taylor	62.1	85.2	AWOS
Lafayette High School, Mayo	Lafayette	61.0	86.3	WeatherSTEM
FSWN Horseshoe Beach	Dixie	72.5	80.6	WeatherSTEM
FSWN Madison County EOC	Madison	55.2	64.4	WeatherSTEM

FSWN Wakulla St. Mark's Lighthouse	Wakulla	51.8	57.5	WeatherSTEM
FSWN Hamilton Crossroads	Hamilton	52.0	79.0	WeatherSTEM
1.3 SE Jacksonville	Duval	45.0	62.0	WeatherSTEM
FSWN Suwannee County Airport	Suwannee	37.0	62.0	WeatherSTEM
Tallahassee International Airport	Leon	33.4	46.0	ASOS
Cedar Key	Levy	52.9	69.1	NDBC
St. Pete-Clearwater Intl. Airport	Pinellas	39.1	61.0	ASOS
Sarasota/Bradenton Intl. Airport	Sarasota	39.1	70.2	ASOS

HURRICANE IDALIA's RAINFALL

Idalia affected a wide area of the Florida west coast, from Charlotte to Apalachicola. Reported rainfall totals associated with Idalia in the state were generally between 3.0 and 6.0 inches. Among the highest rainfall totals associated with the storm include 10.8 inches reported in Manatee County (CoCoRaHS), 8.64 inches in Citrus (WeatherSTEM), 7.11 inches in Arcadia (FAWN), 6.67 inches in Madison County (Mesonet station), and 6.35 inches in Citrus County (CoCoRaHS). The map below shows the radar sampled precipitation estimates for the week ending August 31, with Idalia's rainfall clearly seen as a northeasterly path from the Big Bend through the Carolinas. Additional high rainfall reports from various networks are provided in the table below.

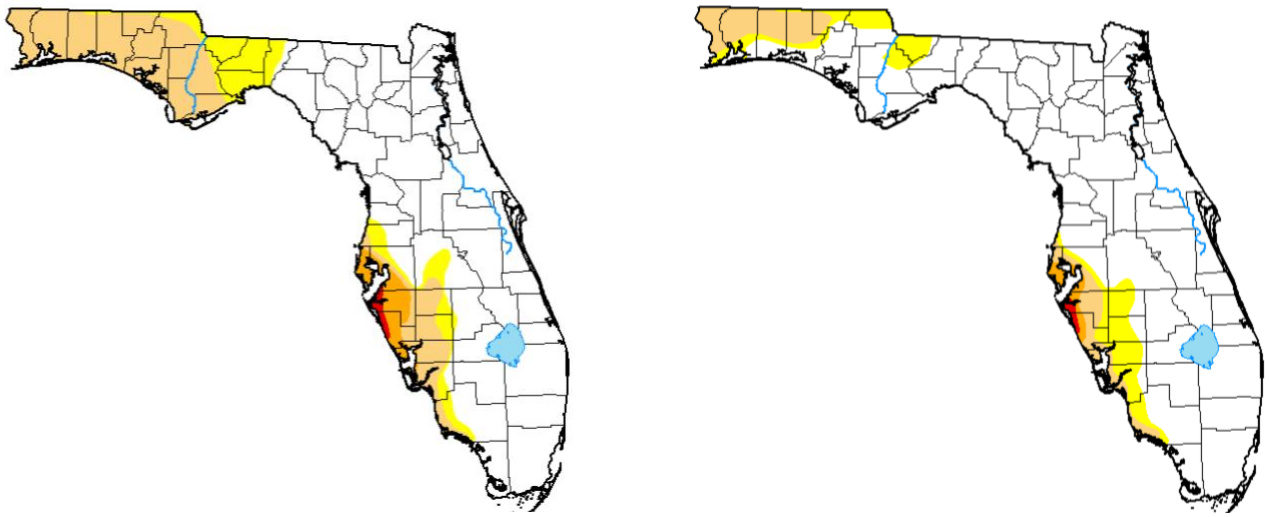


Select Highest Rainfall Reports from Idalia, August 30 – 31, 2023

Station Name	County	Station Type	Amount (inches)
Desoto Lakes 4.2 NNE	Manatee	CoCoRaHS	10.80
Citrus Springs Middle School	Citrus	WeatherSTEM	8.64
Arcadia	Desoto	FAWN	7.11
Hernando 5.1 NNW	Citrus	CoCoRaHS	6.35
Bradenton 10.8 SE	Manatee	CoCoRaHS	6.74
Ellenton 6.6 E	Manatee	CoCoRaHS	6.51
Sarasota 1.4 E	Sarasota	CoCoRaHS	6.50
Sarasota Springs 4.4 E	Sarasota	CoCoRaHS	6.50
Riverview 4.8 SSW	Hillsborough	CoCoRaHS	6.26
Harbour Heights 3.0 NNW	Charlotte	CoCoRaHS	6.11
Monticello 4.3 ENE	Jefferson	CoCoRaHS	6.11

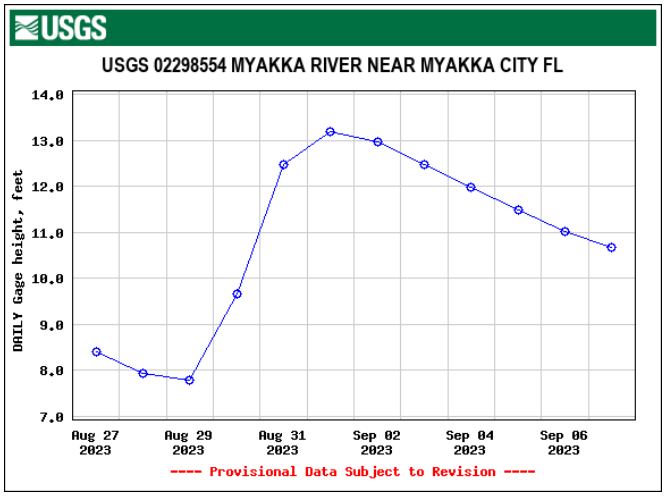
Idalia's rainfall helped to alleviate drought conditions along the west central coast of Florida. Compared to the week before (Aug. 29), all U.S. Drought Monitor categories improved as of Sept. 5. Extreme drought (D3) slightly improved from 0.5% to 0.32%, severe drought (D2) changed from 2.7% to about 1%, and moderate drought (D1) improved from 20% to 8% overall in the state.

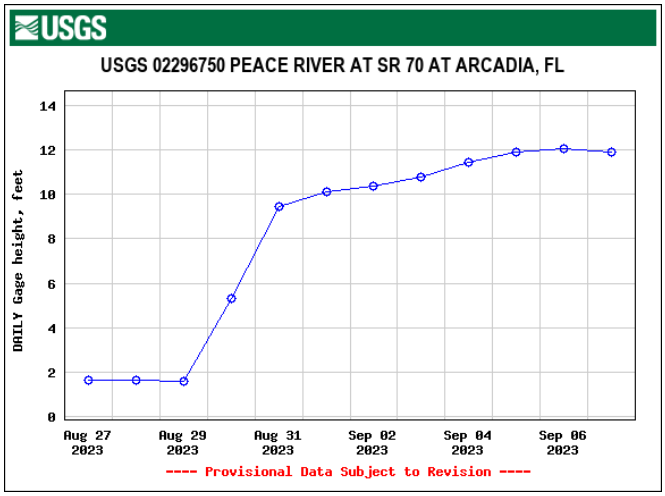
U.S. Drought Monitor - Florida

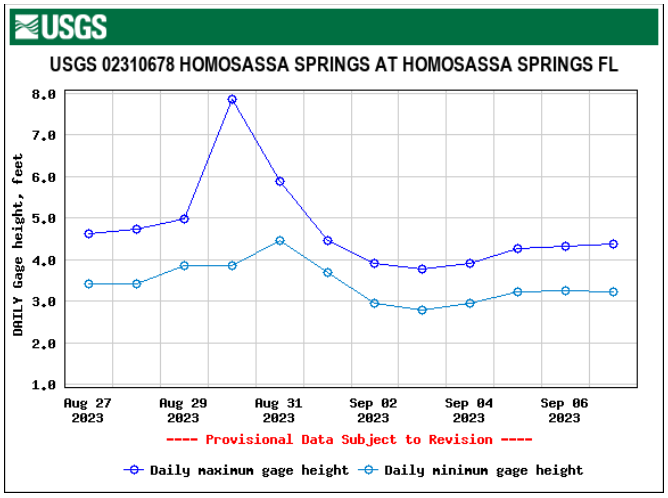


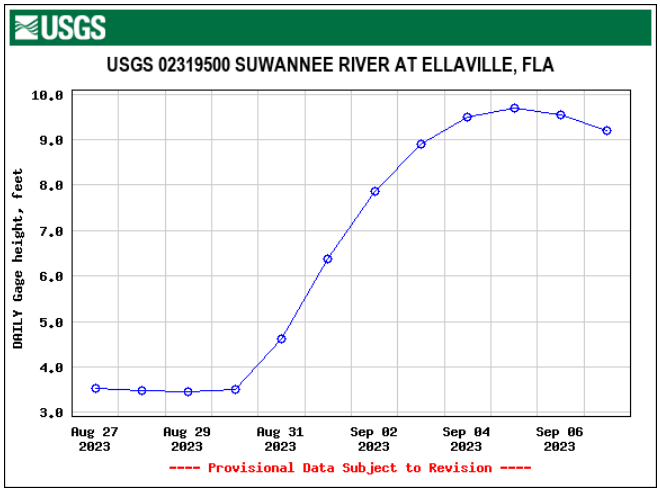
a. Week ending August 29 (before Idalia) b. Week ending September 5 (after Idalia)

Riverine flooding occurred along several rivers, such as the Peace River at Arcadia and Myakka River at the Myakka River State Park. Below are river gauge data for select locations from August 27 through September 6.









HURRICANE IDALIA'S STORM SURGE

Idalia was a large storm that produced storm surge flooding up and down Florida's west coast. Peak storm surge levels occurred at and just south, or east, of the storm's center in Steinhatchee where it reached 8.0 feet above MHHW. A 6.9 foot storm surge devasted Cedar Key. Other locations also experienced flooding with generally 3-4 feet of surge, such as Tarpon Springs, Hernando Beach, and Punta Gorda.

A Steinhatchee local said the water level reached the top of this building, which sits directly across the street from the Steinhatchee River.

Select high water levels during Idalia (datum is generally in reference to mean higher high water (MHHW), unless otherwise indicated).

Station Name	County	Peak Water Level (feet)	Source
Steinhatchee River at Steinhatchee	Taylor	8.0	SRWMD
Crystal River 1	Citrus	7.1	USGS
Cedar Key	Levy	6.9	NOS
Alafia River Riverview	Hillsborough	6.56 (NAVD88)	USGS
Crystal River 2	Citrus	6.19	USGS
Crystal River 3	Citrus	6.07	USGS
Yankeetown	Levy	5.48	USGS
Suwanee River Above Gopher River Confluence	Dixie	5.1	USGS
Gulf Hammock	Levy	4.9	USGS
East Bay	Hillsborough	4.56	NDBC
Chassahowitzka 2	Citrus	4.56	USGS
Homosassa	Citrus	4.44	USGS
Gulf of Mexico Tide Gauge at Shell Point	Wakulla	4.32	COMPS-USF
Old Port Tampa	Pinellas	4.18	NOS
Clearwater Beach	Pinellas	4.05	NOS
North Port Charlotte	Charlotte	3.57	USGS

IMPACTS FROM IDALIA

Catastrophic damage to a structure along the Steinhatchee River in Steinhatchee, Florida.

Damaged structures and debris in Keaton Beach.

Debris and possible water line at Keaton Beach.

The National Data Buoy Center station at Keaton Beach.

Aerial imagery of Horseshoe Beach after Idalia (Source: NOAA)

Additional Information:

Much of the data in this report was compiled from preliminary post-storm event summaries from local National Weather Service offices. For more information, view the post-storm event reports and data from each of the following local Weather Forecast Offices:

- Tallahassee - https://www.weather.gov/tae/TropicalEventSummary
- Jacksonville - https://www.weather.gov/JAX/TropicalEventSummary
- Tampa Bay - https://www.weather.gov/TBW/TropicalEventSummary