



Tropical Update



6:30 PM EDT

Sunday, August 4, 2024

Debby Expected to Become a Hurricane Tonight and Make Landfall in the Florida Big Bend on Monday; Weather Prediction Center Introduces a Rare High Risk (level 4 of 4) for Flash Flooding Across the Florida Big Bend & Suwannee Valley

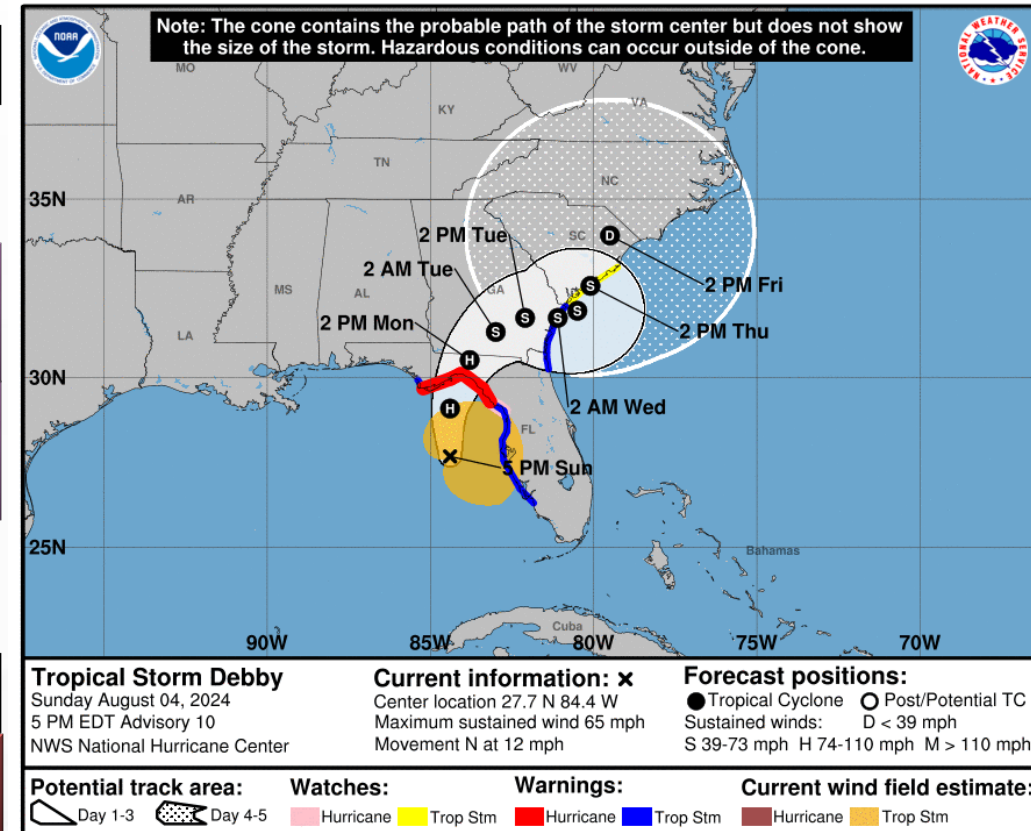
This update is intended for government and emergency response officials, and is provided for informational and situational awareness purposes only. Forecast conditions are subject to change based on a variety of environmental factors. For additional information, or for any life safety concerns with an active weather event please contact your County Emergency Management or Public Safety Office, local National Weather Service forecast office, or visit the National Hurricane Center website at www.hurricanes.gov.



Tropical Storm Debby

5:00 PM EDT Sunday: Florida Threats & Changes Since Last Packet

	MINIMAL	Low	MODERATE	HIGH	EXTREME
WINDS					
STORM SURGE					
FLASH FLOODING					
TORNADOES					
	Low	MODERATE		HIGH	
RIP CURRENTS					



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Overview/Recent Changes: As of 5:00 PM EDT, Tropical Storm Debby is located about 120 miles west of Tampa, Florida and is moving northward at 12 mph. Maximum sustained winds remain near 65 mph; however, the Hurricane Warnings have been extended westward to Indian Pass (coastal Franklin County). Tropical Storm Warnings have been issued from coastal Franklin County to the Mexico Beach (coastal Gulf County) and extended southward to Ponte Vedra Beach (St. Johns/Duval County-line). The Tropical Storm Warnings for the Dry Tortugas (Monroe County) and south of Lee County have been discontinued. The Weather Prediction Center (WPC) has not introduced a rare and catastrophic High Risk (level 4 of 4) for Flash Flooding across the Florida Big Bend and Suwannee River Valley.



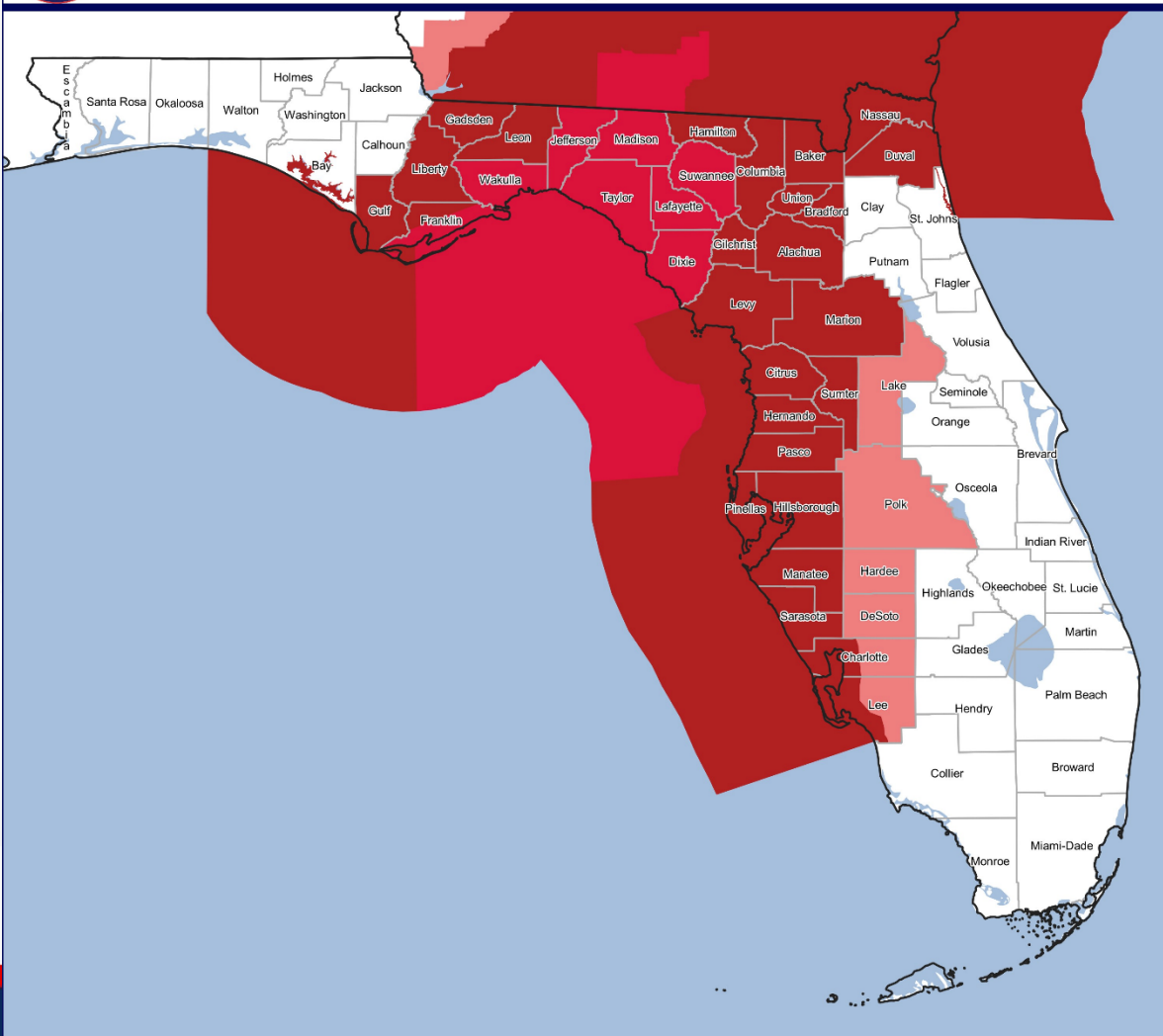
Current Wind Watches/Warnings

Tropical Storm Debby



Tropical Storm Watches & Warnings - 5 PM EDT

Created by FDEM State Meteorological Support Unit || Data from NWS, US Census Bureau, Natural Earth



- **Hurricane Warnings:**

- Wakulla, Dixie, Taylor, Jefferson, Madison, Suwannee, and Lafayette Counties.

- **Hurricane Watches:**

- Levy County.

- **Tropical Storm Warnings:**

- Coastal Lee, Coastal Charlotte, Sarasota, Manatee, Hillsborough, Pinellas, Pasco, Hernando, Sumter, Citrus, Levy, Gadsden, Baker, Union, Bradford, Liberty, Gulf, Nassau, Duval, Marion, Alachua, Gilchrist, Columbia, Hamilton, Leon, and Inland Franklin Counties.

- **Tropical Storm Watches:**

- Lake, Polk, Hardee, DeSoto, Inland Charlotte, and Inland Lee Counties.



Threats & Impacts

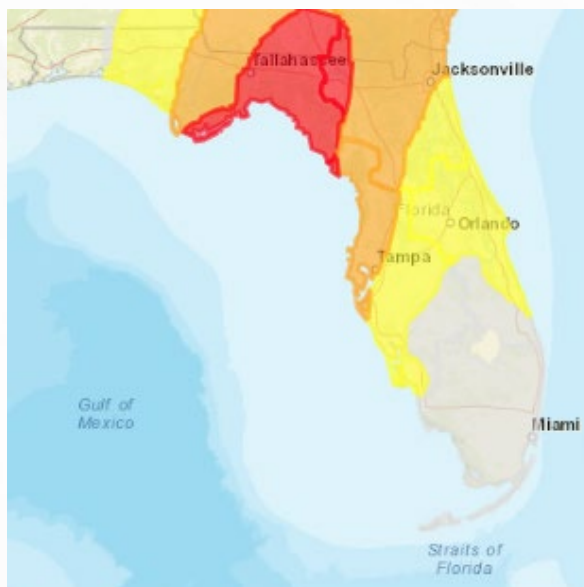
From the National Weather Service

Storm Surge



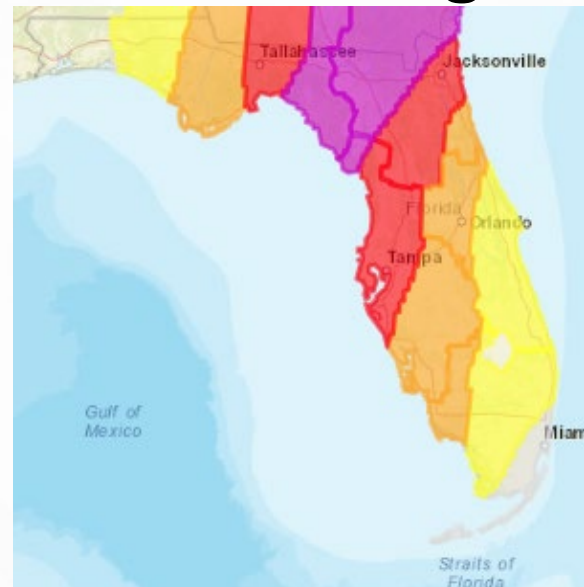
- Widespread deep inundation, with storm surge flooding greatly accentuated by powerful battering waves. Structural damage to buildings, with many washing away. Damage greatly compounded from considerable floating debris. Locations may be uninhabitable for an extended period.
- Near-shore escape routes and secondary roads washed out or severely flooded. Flood control systems and barriers may become stressed.
- Extreme beach erosion. New shoreline cuts possible.
- Massive damage to marinas, docks, boardwalks, and piers. Numerous small craft broken away from moorings with many lifted onshore and stranded.

Wind



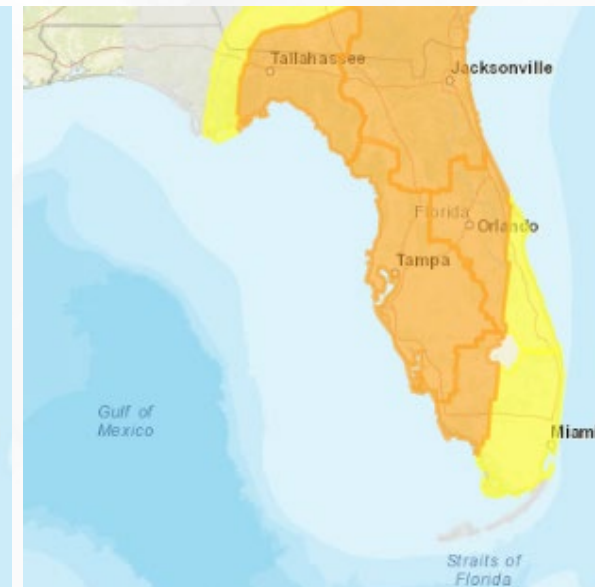
- Considerable roof damage to sturdy buildings, with some having window, door, and garage door failures leading to structural damage. Mobile homes severely damaged, with some destroyed. Damage accentuated by airborne projectiles. Locations may be uninhabitable for weeks.
- Many large trees snapped or uprooted along with fences and roadway signs blown over.
- Some roads impassable from large debris, and more within urban or heavily wooded places. Several bridges, causeways, and access routes impassable.
- Large areas with power and communications outages.

Flooding



- Major rainfall flooding may prompt many evacuations and rescues.
- Rivers and tributaries may rapidly overflow their banks in multiple places. Small streams, creeks, and ditches may become dangerous rivers. Flood control systems and barriers may become stressed.
- Flood waters can enter many structures within multiple communities, some structures becoming uninhabitable or washed away. Many places where flood waters may cover escape routes. Streets and parking lots become rivers of moving water with underpasses submerged. Driving conditions become dangerous. Many road and bridge closures with some weakened or washed out.

Tornadoes



- The occurrence of scattered tornadoes can hinder the execution of emergency plans during tropical events.
- Several places may experience tornado damage with a few spots of considerable damage, power loss, and communications failures.
- Locations could realize roofs torn off frame houses, mobile homes demolished, boxcars overturned, large trees snapped or uprooted, vehicles tumbled, and small boats tossed about. Dangerous projectiles can add to the toll.



Current Storm Surge Watch

As of 11:00 AM EDT Sunday

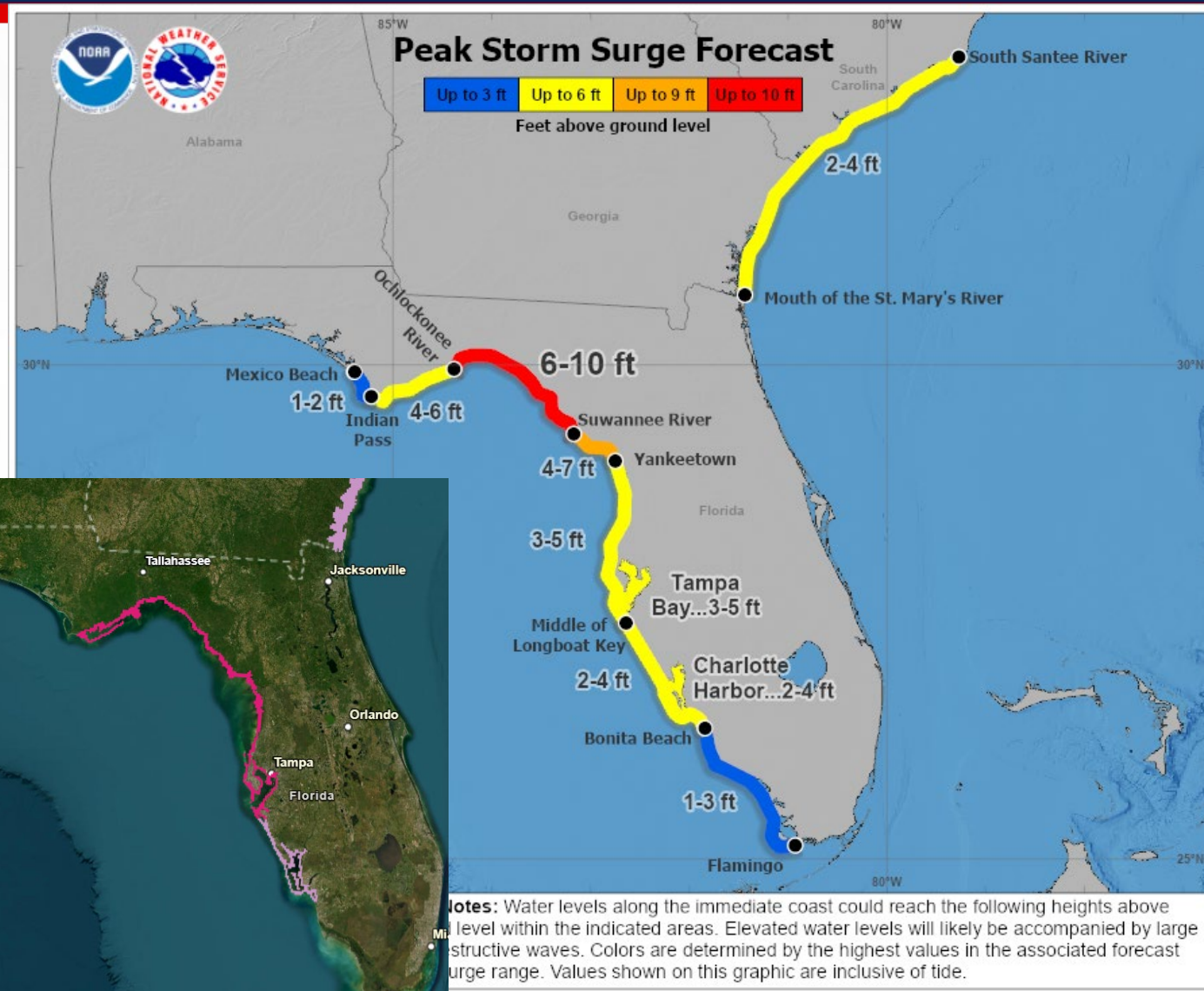
• Storm Surge Warning:

Coastal Manatee, Hillsborough (including Tampa Bay), Pinellas, Pasco, Hernando, Citrus, Levy, Dixie, Taylor, Jefferson, Wakulla, and Franklin Counties.

Storm Surge Watch:

Coastal Lee, Charlotte (including Charlotte Harbor), and Sarasota Counties.

Onshore winds will lead to storm surge and increasing tides to cause normally dry ground along the coastlines to become flooded with rising water moving onshore. Storm surge of **6-10'** will be possible from the Ochlockonee River to the Suwannee River. East of the Ochlockonee River, storm surge could reach upwards of **4-6'**. West of the Suwannee River to Yankeetown, storm surge could reach **4-7'**. The western Peninsula can anticipate storm surge of **3-5'** from Yankeetown to Middle of Longboat Key (including Tampa Bay) and **2-4'** from Middle of Longboat Key to Bonita Beach (including Charlotte Harbor). Water levels at or near times of high tide will need to be closely monitored given the new moon cycle.

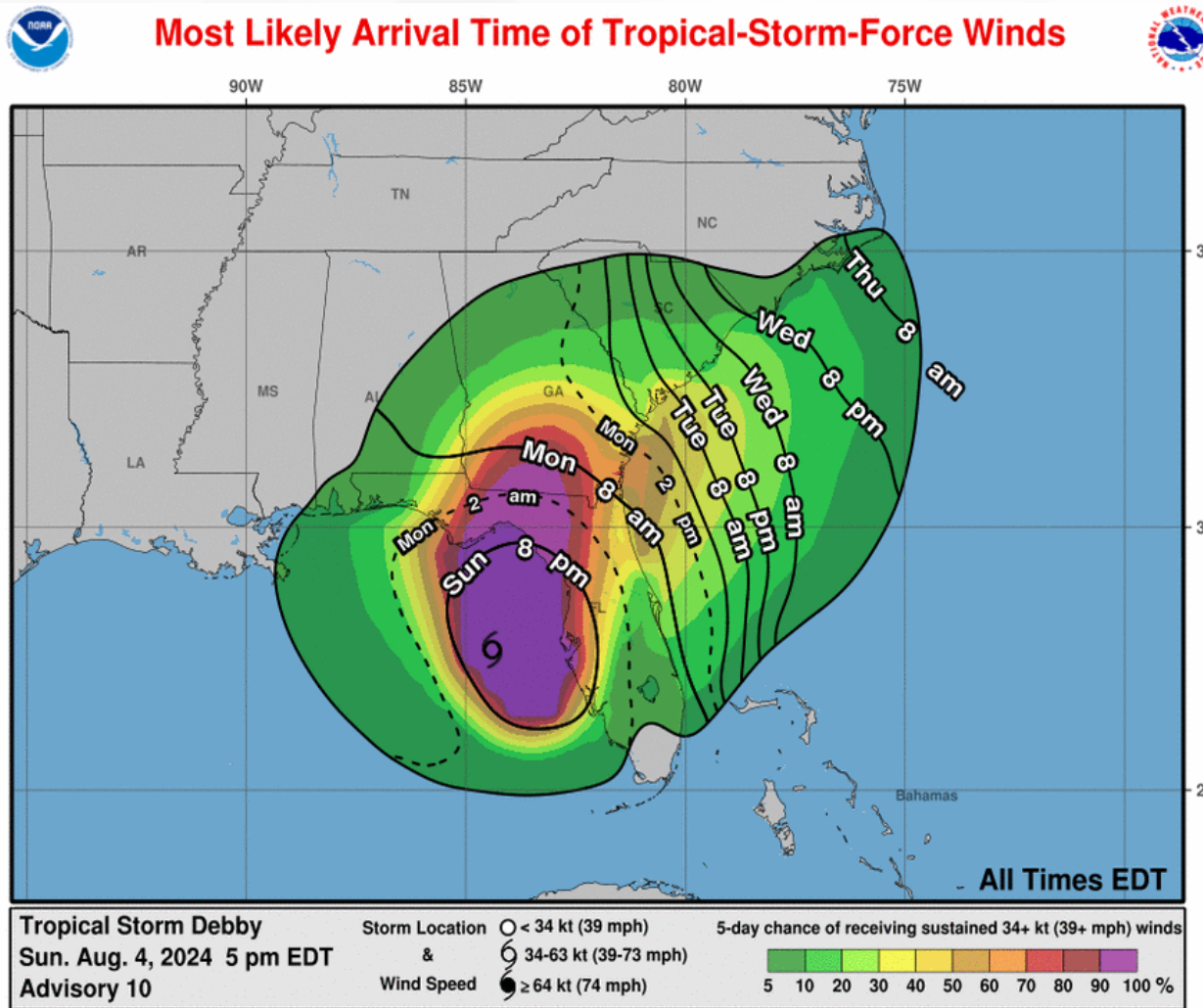


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Tropical Storm-Force Wind Probabilities

Tropical Storm Debby



Tropical storm-force winds will continue to become increasingly widespread along the Florida Nature Coast this evening and overnight, reaching the Florida Big Bend and eastern Panhandle early Monday morning. However, wind gusts embedded within Debby's outer rainbands cannot be ruled out.

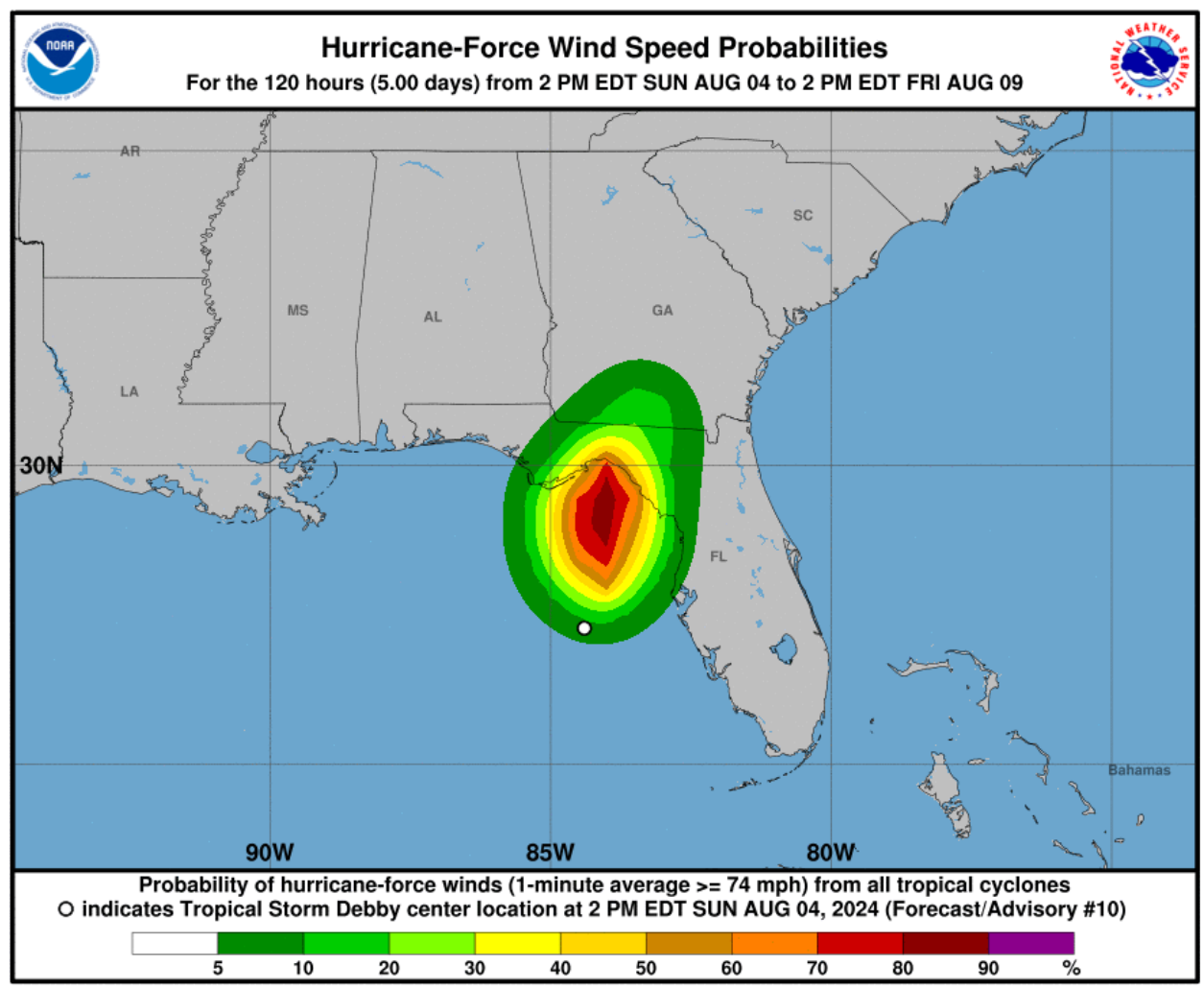
Conditions are forecast to deteriorate throughout the remainder of the Sunshine State Monday.

City	Tropical Storm-Force Wind Probability	Percent Change from Previous Update
Key West	3%	-21%
Naples	12%	-13%
Fort Myers	6%	-4%
Tampa	83%	+3%
Cedar Key	94%	+1%
Orlando	13%	-3%
Gainesville	77%	+15%
Tallahassee	95%	+16%
Jacksonville	53%	+8%
Apalachicola	94%	+16%
St. Marks	99%	+16%



Hurricane-Force Wind Probabilities

Tropical Storm Debby



With additional strengthening expected over the eastern Gulf of Mexico before approaching the eastern Panhandle and Big Bend, hurricane-force winds will be likely near and along Debby's future path. Hurricane-force winds are possible along coastal portions of the Florida Big Bend through Monday afternoon.

City	Hurricane-Force Wind Probability	Percent Change from Previous Update
Cedar Key	13%	+1%
St. Marks	17%	+9%
Tallahassee	10%	+6%
Apalachicola	26%	+10%
Panama City	3%	+/- 0%
Tampa	0%	0%



Key Messages

From the National Hurricane Center (NHC)

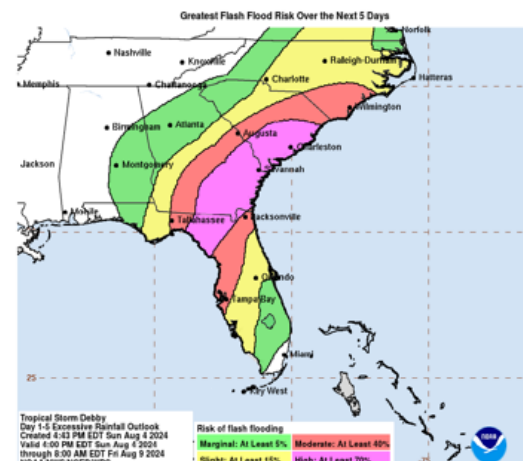
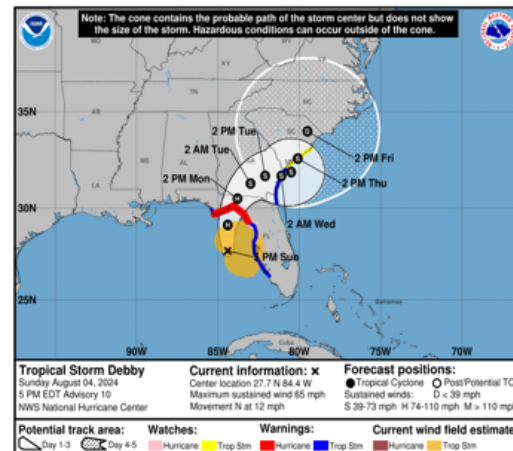


Key Messages for Tropical Storm Debby

Advisory 10: 5:00 PM EDT Sun Aug 04, 2024



1. Potentially historic heavy rainfall across southeast Georgia and South Carolina through Friday morning will likely result in areas of catastrophic flooding. Heavy rainfall will likely result in considerable flooding impacts from the Florida Big Bend region through southeast GA and the Coastal Plain of the Carolinas through Friday.
2. There is a danger of life-threatening storm surge along portions of the Gulf Coast of Florida, with 6 to 10 feet of inundation above ground level expected somewhere between Ochlockonee River and Suwannee River on Monday. Residents in the Storm Surge Warning area should follow any advice given by local officials.
3. Hurricane conditions are expected Monday along portions of the Florida Big Bend region where a Hurricane Warning is in effect, with tropical storm conditions beginning this evening. Tropical storm conditions are expected through Monday farther south within the Tropical Storm Warning along Florida's west coast, including the Tampa Bay area.
4. Dangerous storm surge and wind impacts are expected along portions of the southeast U.S. coast from northeastern Florida to North Carolina through the middle of the week, and storm surge warnings and tropical storm watches and warnings have been issued for portions of these areas.



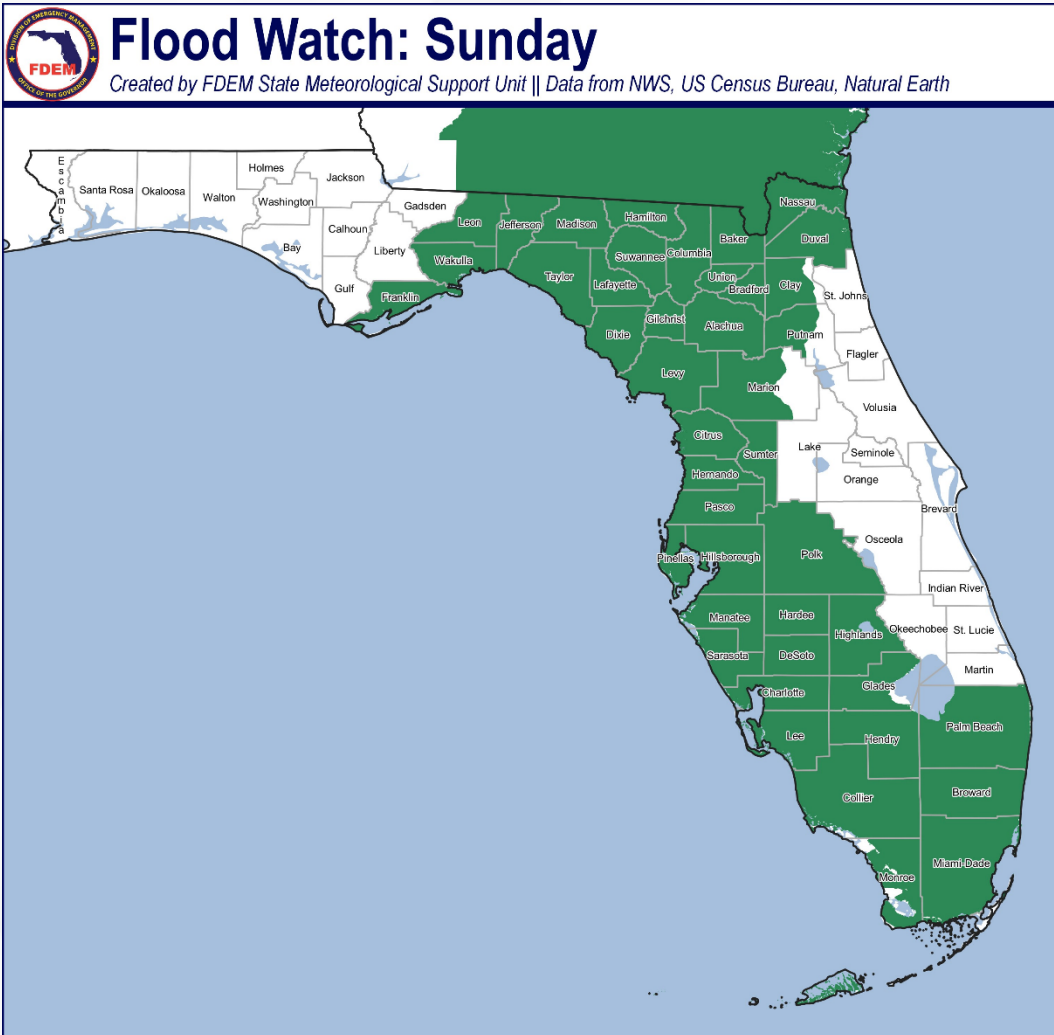
For more information go to hurricanes.gov

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Flood Watches in Effect

From the National Weather Service



Flood Watches extend from the Florida Big Bend (until 11:00 PM EDT Tuesday), through Northeast Florida (until 8:00 PM EDT Tuesday), the western Peninsula (8:00 PM EDT Monday), South Florida including the Florida Keys (until 8:00 PM Sunday. Additional Flood Watches, or extensions of existing ones, are possible throughout the next day or so depending on forecast rainfall totals with Tropical Storm Debby. The following counties are under Flood Watches:

- Alachua
- Baker
- Bradford
- Broward
- Charlotte
- Citrus
- Western Clay
- Collier
- Columbia
- DeSoto
- Dixie
- Duval
- Franklin
- Gilchrist
- Glades
- Hamilton
- Hardee
- Hendry
- Hernando
- Highlands
- Hillsborough
- Jefferson
- Lafayette
- Lee
- Leon
- Levy
- Madison
- Manatee
- Western & Central Marion
- Miami-Dade
- Monroe
- Nassau
- Palm Beach
- Pasco
- Pinellas
- Polk
- Western Putnam
- Sarasota
- Sumter
- Suwannee
- Taylor
- Union
- Pinellas
- Wakulla



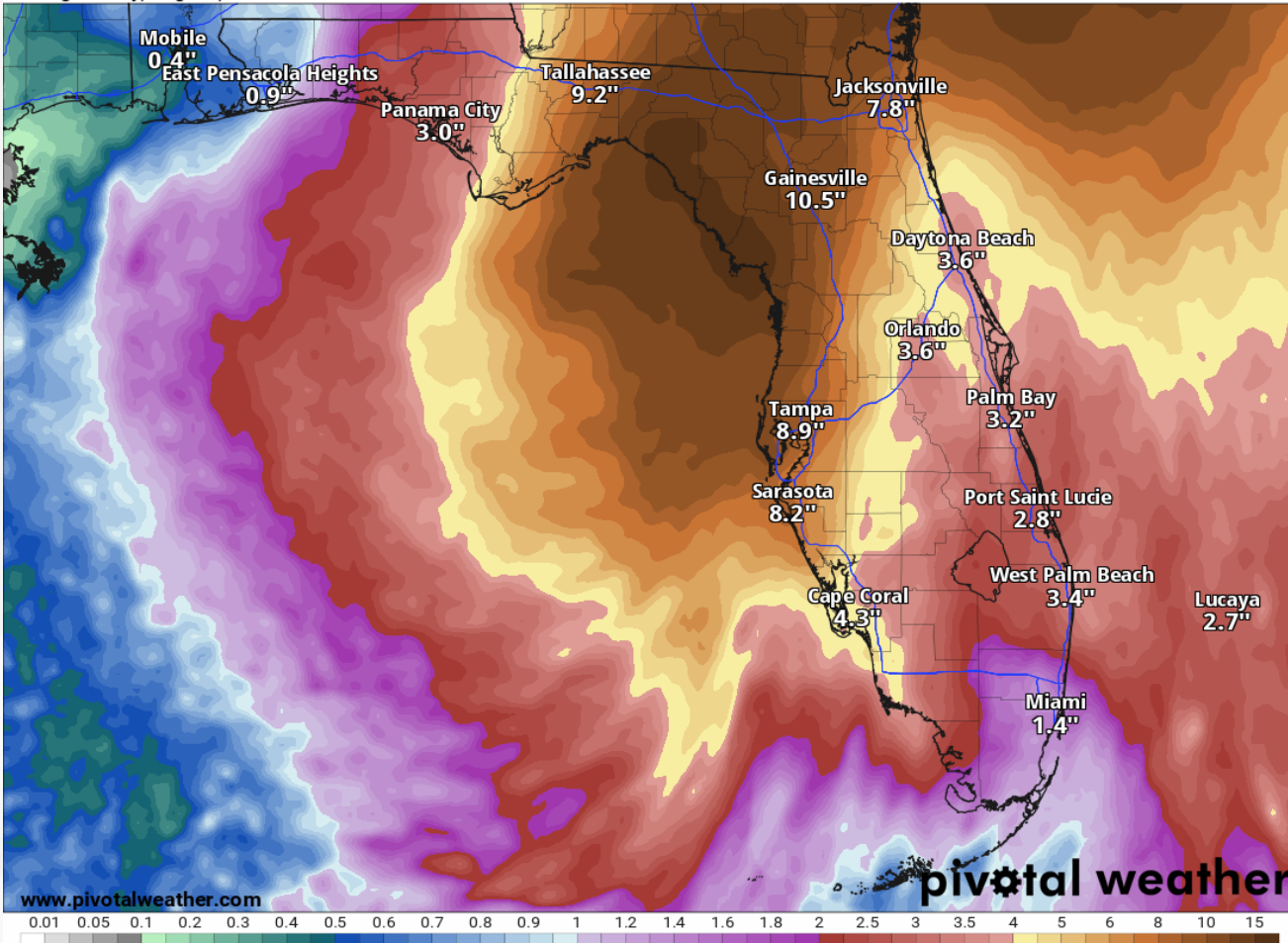
Rainfall Totals – Next 7 Days

From the Weather Prediction Center (WPC)

7-Day Precipitation (in)

Ending Sunday, Aug. 11, 2024 at 8 a.m. EDT

Init: Sun 2024-08-04 12z WPC



Rainfall totals are heavily tied to the eventual track and forward speed of the tropical system, so there remains forecast uncertainty regarding where the heaviest totals will occur.

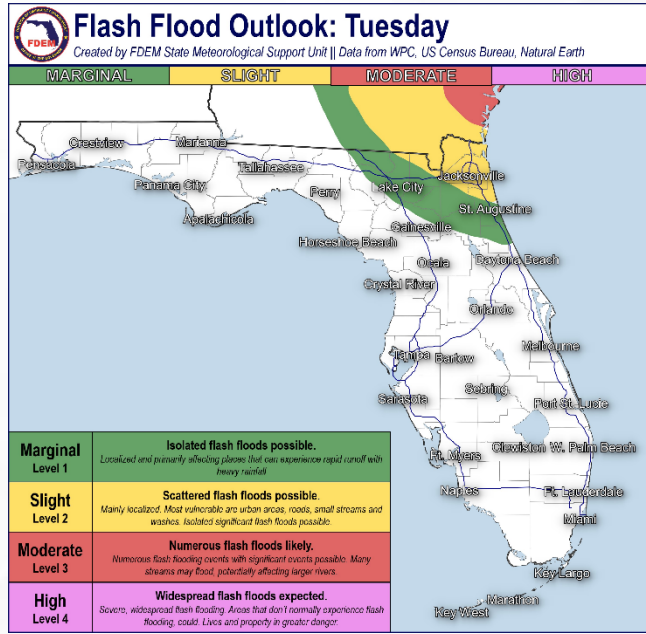
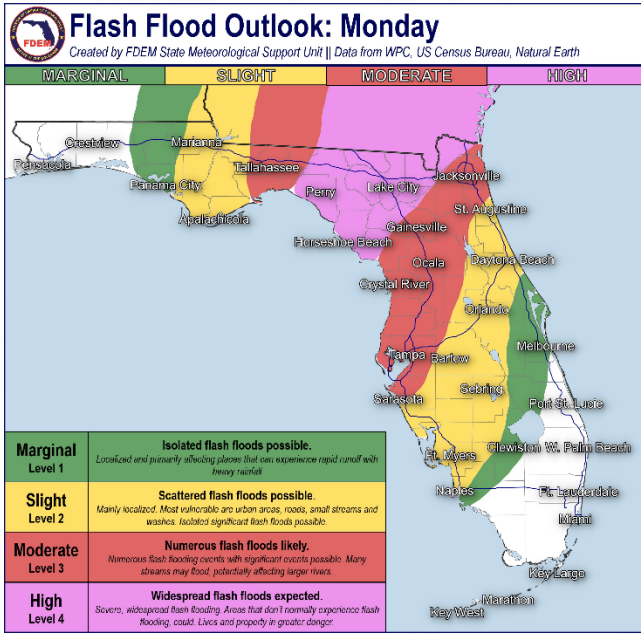
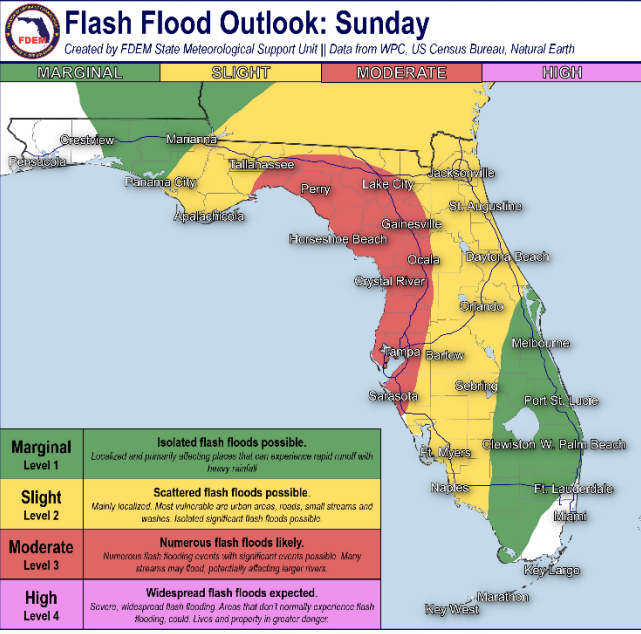
The heaviest swath of rainfall within tropical systems will largely occur along and to the 'right' of the track, with computer forecast models coming into general agreement that the greatest swath of rainfall residing along the eastern Florida Panhandle, Florida Big Bend, and into the Suwannee River Valley.

Widespread rainfall totals of 6-12" can be expected across the Eastern Panhandle, Northern Peninsula, and Western Peninsula, with locally higher amounts exceeding 15-20" cannot be ruled out. **Catastrophic and life-threatening flash flooding** can be expected within these locations that experience the highest rainfall totals.



Flash Flood Outlooks – Sunday through Tuesday

From the Weather Prediction Center (WPC)



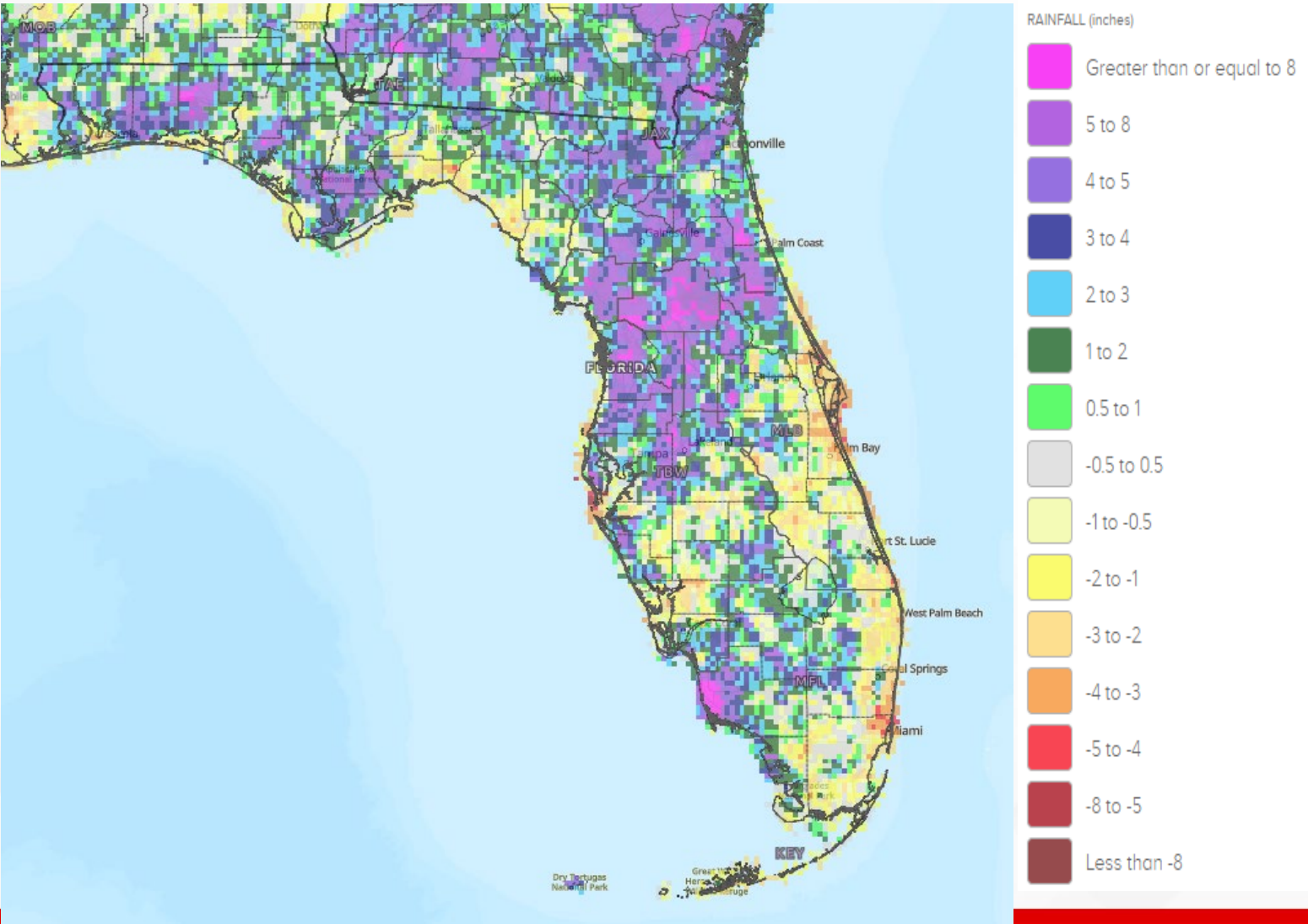
The Weather Prediction Center (WPC) is outlooking a **Moderate Risk (level 3 of 4) for Flash Flooding** along the coastal Big Bend today, with a **Slight Risk (level 2 of 4)** extending from the Apalachicola River through Southwest Florida as tropical downpours from slower-moving Tropical Storm Debby could bring flash flooding over saturated grounds and soils. WPC is outlooking a rare **High Risk (level 4 of 4) for Flash Flooding** across the eastern Big Bend, Suwannee Valley, and portions of Northeast Florida Monday with the **Slight to Moderate Risk** expands into the central Big Bend and along the northern Peninsula southward through the Tampa Bay area on Monday as Tropical Storm Debby is forecast to move inland along the Florida Big Bend, nearly stalling and bringing numerous rounds of heavy rainfall.

Understanding WPC Excessive Rainfall Risk Categories				
No Area/Label	MARGINAL (MRGL)	SLIGHT (SLGT)	MODERATE (MDT)	HIGH (HIGH)
Flash floods are generally not expected.	Isolated flash floods possible	Scattered flash floods possible	Numerous flash floods likely	Widespread flash floods expected
	Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.	Mainly localized. Most vulnerable are urban areas, roads, small streams and washes. Isolated significant flash floods possible.	Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.	Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could. Lives and property in greater danger.
@NWSWPC				
Flash flooding near me?				
WEATHER PREDICTION CENTER				



30-Day Rainfall Departure from Normal

From the National Water Prediction Service (NWPS)



Much of North Florida and southward the Florida Gulf Coast have experienced rainfall 6-10" above normal over the past 30 days. This would likely lead to rapid onset of flooding as well as increased drainage into area rivers.

Several eastern Panhandle and North Florida rivers are already running high at this time. Flooding in coastal riverine basins could be exacerbated with multiple days of onshore winds and ocean waves.



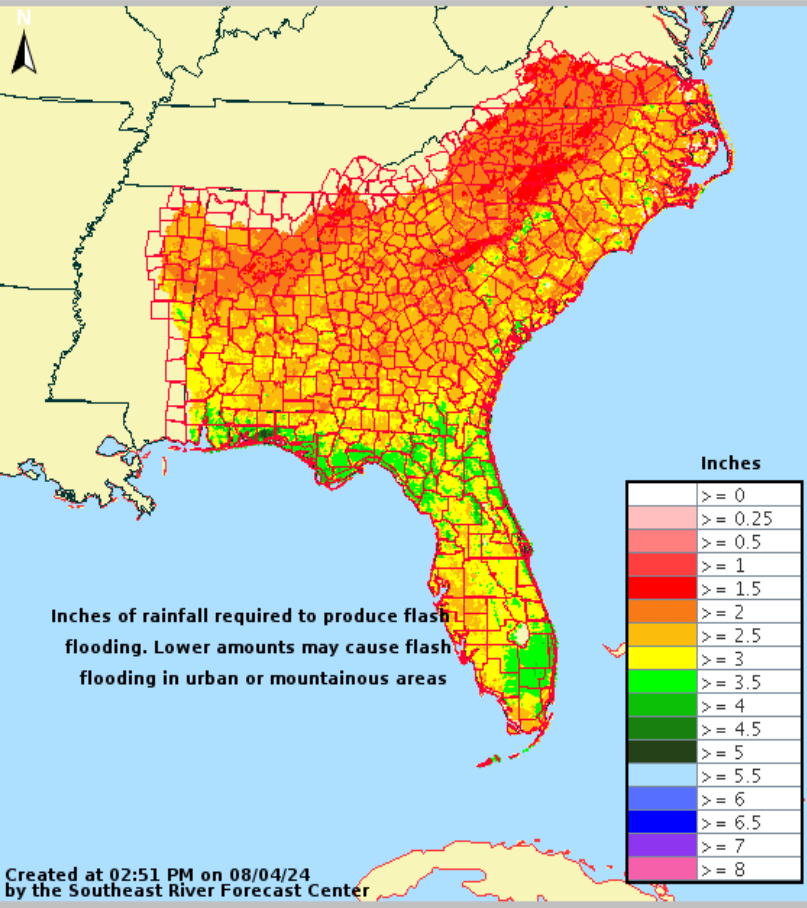
Flash Flood Guidance

How Much Rain is Needed to Create Flash Flooding?



1-hr Flash Flood Guidance

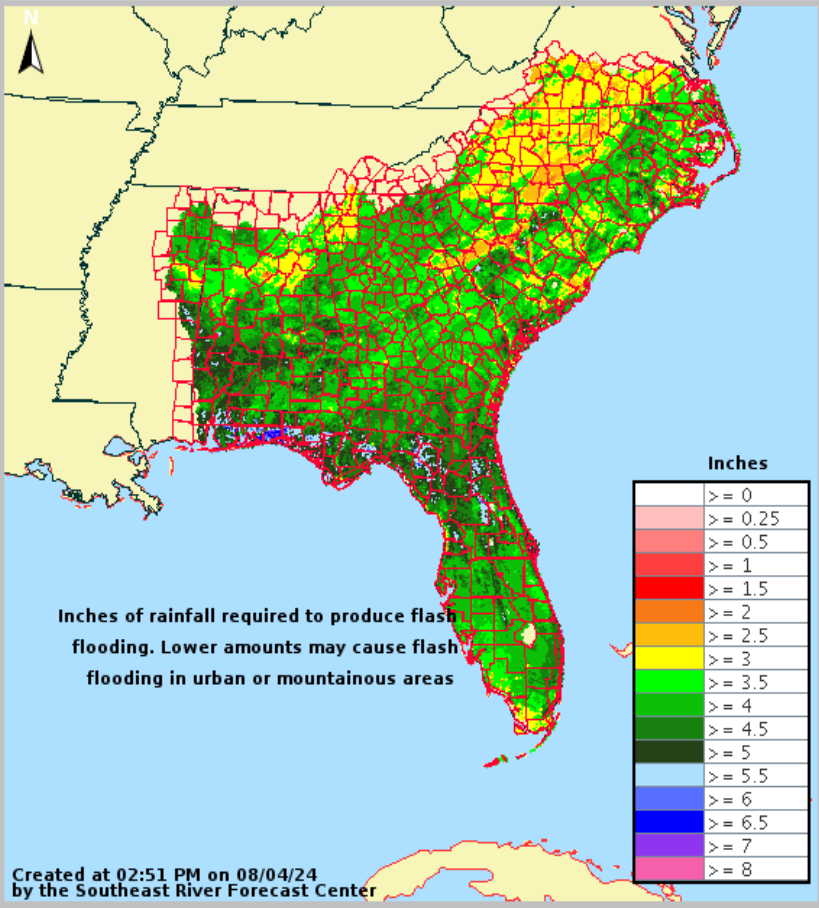
Valid: 08/04/2024 @ 02:51 PM





6-hr Flash Flood Guidance

Valid: 08/04/2024 @ 02:51 PM



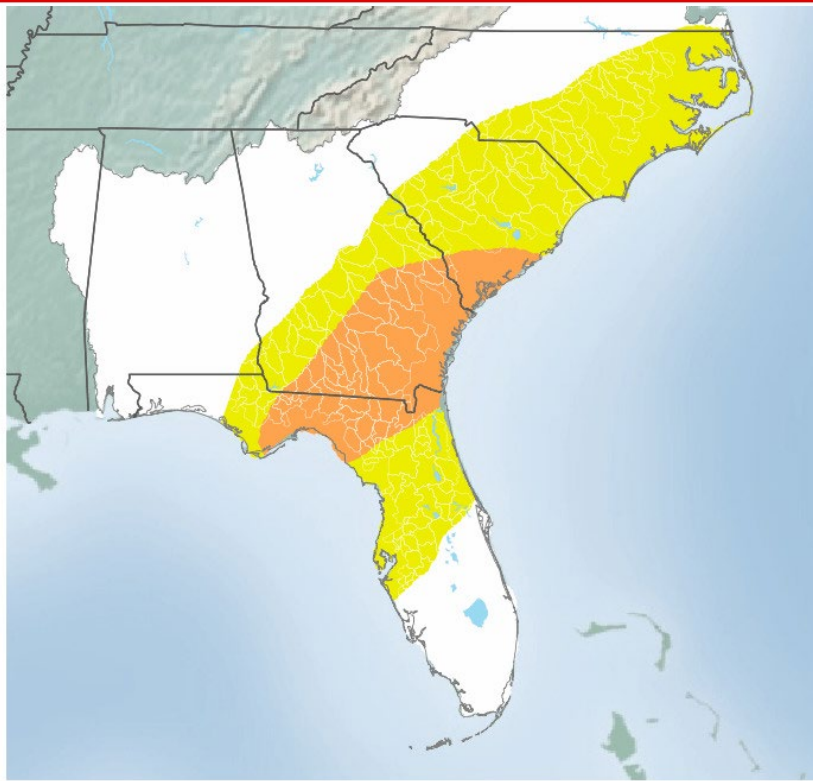
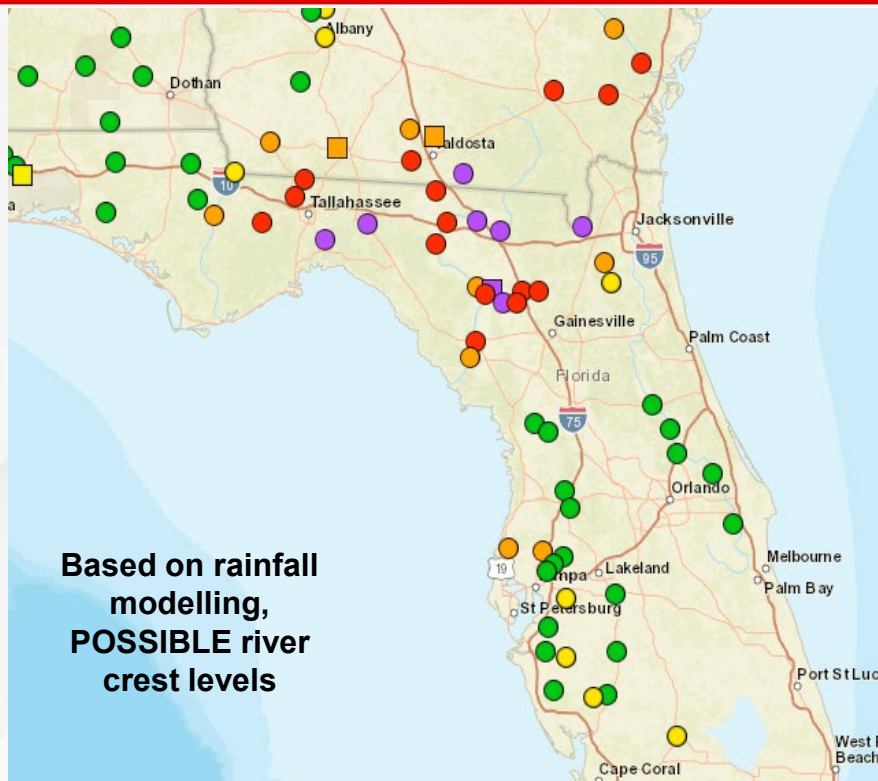
Along portions of the Florida Panhandle, Nature Coast, and Southwest Florida, it will only take about 1-2" within 1 hour or 3-4" within 6 hours to produce flash flooding due to already saturated grounds.

Elsewhere, it will take about 2-4" in 1 hour or 4-6" within 6 hours to cause flash flooding.



Riverine Flooding

Chance of River Flooding Based on Range of Forecast Rainfall



Rivers, creeks/streams, and waterways across North Florida are already running above normal for this time of year. Computer forecast models are indicating the potential for **moderate to major flooding** along several mainstems and branches including the Suwannee, Santa Fe, Withlacoochee, Aucilla, Myakka, and Alafia by Tuesday or Wednesday next week.

Riverine flooding will be closely tied to which basin receives the greatest swath of rainfall. Trends will continue to be monitored.

Chance of Exceedance

30%	Level	70%
	Action	
	Minor Flood	
	Moderate Flood	
	Major Flood	

= less than 30% chance of reaching Action level



National Weather Service
Peachtree City, GA
08/04/2024 11:31 AM EDT

Follow Us:
weather.gov/serfc

Significant River Flooding impacts include road hazards and damage to residential, commercial, and/or agricultural areas. Evacuation may be required. Flash flooding or Minor river flooding are NOT included in this outlook. Check your local weather forecast frequently for the most up-to-date information for your area.

Shaded areas are the forecast region of the Southeast River Forecast Center



Significant River Flooding Not Expected



Significant River Flooding Possible

Weather conditions indicate, without certainty that significant river flooding



Significant River Flooding Not Expected



Significant River Flooding Possible

Weather conditions indicate, without certainty that significant river flooding could occur



Significant River Flooding Likely
Weather conditions indicate that significant river flood conditions can be expected



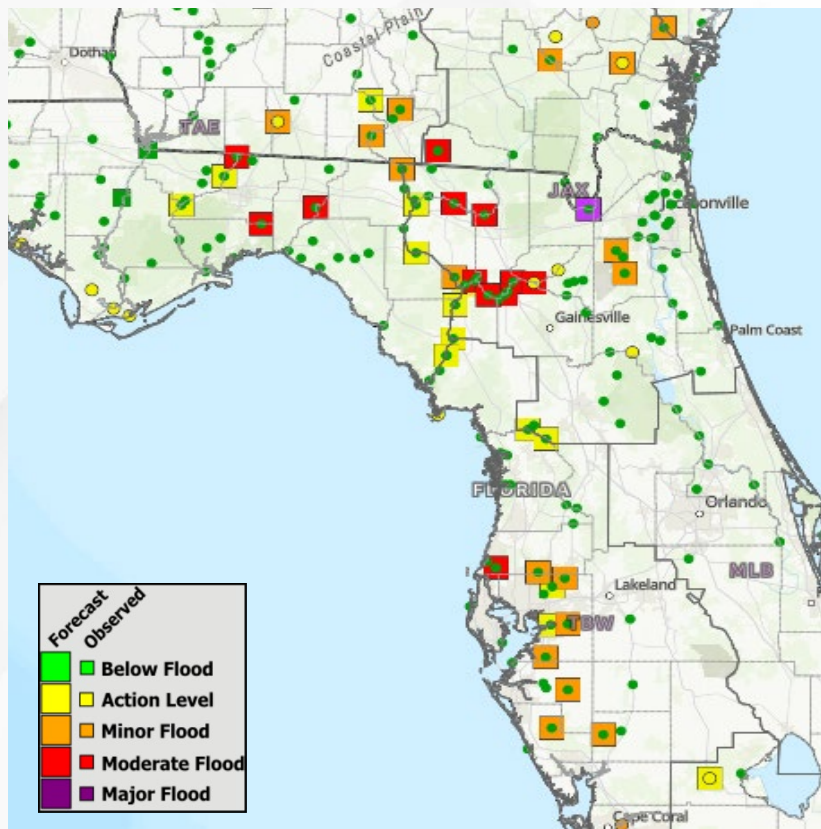
Significant River Flooding Occurring
Significant river flooding is occurring at this time

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River Flood Warnings

From the National Weather Service



River Name	Current Status	Forecast Status
Horse Creek near Arcadia at SR 72	Below Flood Stage	Minor Flood Stage
Little Manatee River at Mimauma at US 301	Below Flood Stage	Minor Flood Stage
Manatee River near Myakka Head at SR 64	Below Flood Stage	Minor Flood Stage
Alafia River at Riverview near US 301	Below Flood Stage	Minor Flood Stage
North Fork Black Creek near Middleburg	Below Flood Stage	Minor Flood Stage
South Fork Black Creek near Penney Farms	Below Flood Stage	Minor Flood Stage
Santa Fe River at Worthington Springs	Action Stage (Bank-full)	Minor Flood Stage
Santa Fe River at Three Rivers Estates	Below Flood Stage	Moderate Flood Stage
Santa Fe River near O'Leno State Park	Below Flood Stage	Moderate Flood Stage
Suwannee River at White Springs	Below Flood Stage	Moderate Flood Stage
St. Mary's near Macclenny	Below Flood Stage	Major Flood Stage
St. Marks River near Newport on Old Magnolia	Below Flood Stage	Moderate Flood Stage
Aucilla River at Lamont	Below Flood Stage	Moderate Flood Stage

River Flood Warnings have been issued across several North and West Florida Rivers this afternoon. Additional River Flood Warnings will be possible over the next several days depending on rainfall across portions of the state, as well as portions of southern Georgia. Rainfall totals will remain track dependent, and slight changes can impact riverine forecasts. Riverine forecasts will likely change in peak height in future updates as the full envelope of rainfall enters the forecast period.

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Tornado Watches in Effect

From the National Weather Service

Tornado Watch

Valid Until
8:00 PM EDT Sunday
August 4, 2024

Threat Information



TORNADOES

A few Tornadoes
Possible



HAIL

Isolated Hail Up To
Half Inch Size Possible



WIND

Isolated Gusts
Up To 70 MPH Possible

Potential Exposure



Population: 13,151,513
Schools: 2574
Hospitals: 179



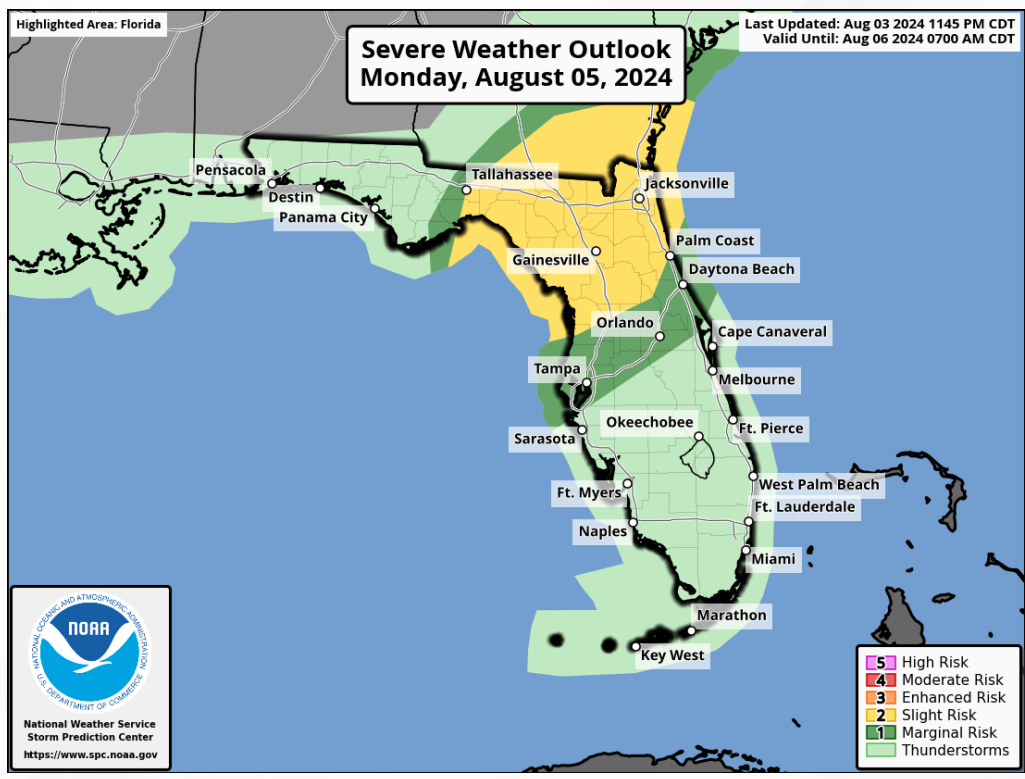
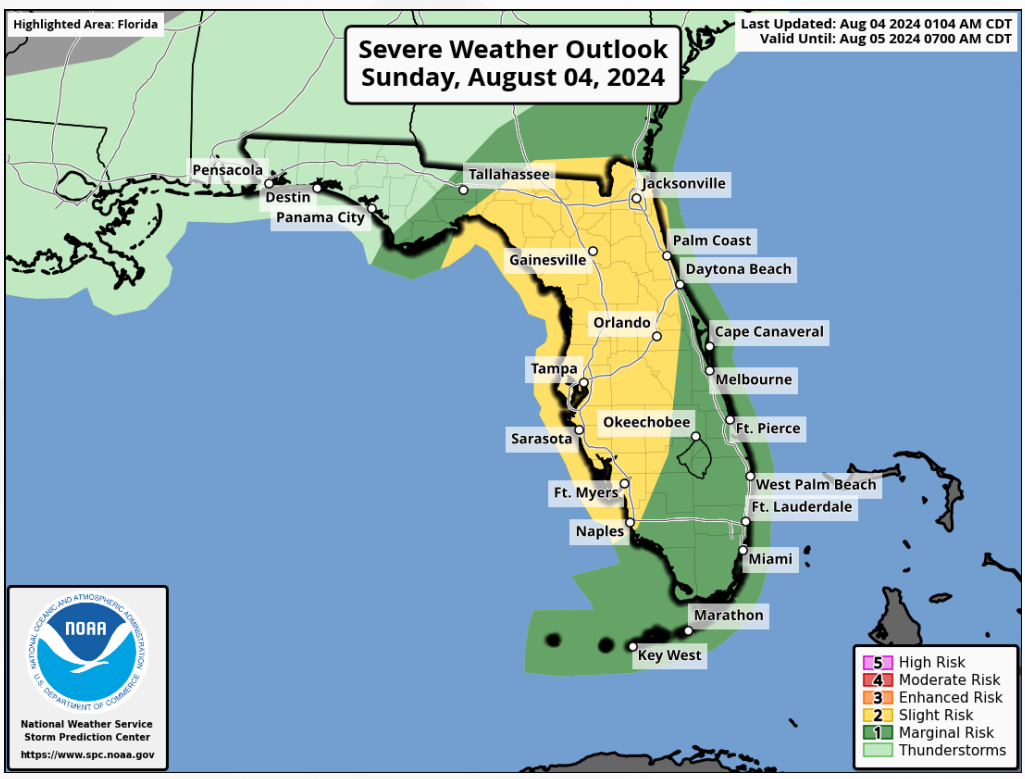
Tornado Watch #594 remains in effect across the Northern Peninsula and portions of Big Bend, Central Florida, and Southwest Florida and will remain in effect until 8:00 PM EDT this evening. A few tornadoes and isolated damaging wind gusts up to 70 mph will be possible within stronger cells in the outer bands of Tropical Storm Debby this afternoon. This includes the following counties:

- | | | |
|-------------|----------------|--------------|
| - ALACHUA | - HARDEE | - OKEECHOBEE |
| - BAKER | - HENDRY | - ORANGE |
| - BRADFORD | - HERNANDO | - OSCEOLA |
| - CHARLOTTE | - HIGHLANDS | - PASCO |
| - CITRUS | - HILLSBOROUGH | - PINELLAS |
| - CLAY | - JEFFERSON | - POLK |
| - COLLIER | - LAFAYETTE | - PUTNAM |
| - COLUMBIA | - LAKE | - SARASOTA |
| - DESOTO | - LEE | - SEMINOLE |
| - DIXIE | - LEON | - ST. JOHNS |
| - DUVAL | - LEVY | - SUMTER |
| - FLAGLER | - MADISON | - SUWANNEE |
| - GILCHRIST | - MANATEE | - TAYLOR |
| - GLADES | - MARION | - UNION |
| - HAMILTON | - NASSAU | |
| - WAKULLA | - VOLUSIA | |



Severe Weather Outlooks – Sunday & Monday

From the Storm Prediction Center (SPC)



The Storm Prediction Center (SPC) is outlooking a **Slight Risk (level 2 of 5) for Severe Weather** across the eastern Big Bend and southward through the I-4 corridor into portions of Southwest Florida on Sunday as outer bands from Tropical Storm Debby could produce isolated tornadoes. A **Marginal Risk (level 1 of 5)** extends from the southern Apalachicola River through the Florida Peninsula, including the Keys. The **Slight Risk (level 2 of 5) for Severe Weather** continues on Monday throughout Northeast Florida and the Big Bend ahead of Debby turning towards the northeast ahead of landfall. A **Marginal Risk (level 1 of 5) for Severe Weather** extends from the Capital City and through the I-4 corridor. *Additional Tornado Watches and Warnings may be issued as conditions warrant.*



Summary

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Tropical Storm Debby:

- As of 5:00 PM EDT, Tropical Storm Debby is located about 120 miles west of Tampa, Florida and is moving northward at 12 mph.
- A gradual decrease in forward speed with a turn toward the northeast and east is expected Monday and Tuesday. On the forecast track, the center will move across the northeastern Gulf of Mexico through tonight and reach the Florida Big bend Coast around midday.
- Maximum sustained winds are near 65 mph, with rapid strengthening forecast. Debby is expected to become a hurricane tonight, with additional strengthening likely before it reaches the Florida Big Bend Coast on Monday.
- Tropical storm-force winds extend outward up to 140 miles from the center of Debby.

Tropical Watches & Warnings Issued (NHC):

- **Hurricane Warnings:** Wakulla, Dixie, Taylor, Jefferson, Madison, Suwannee, and Lafayette Counties.
- **Hurricane Watches:** Levy County.
- **Tropical Storm Warnings:** Coastal Lee, Coastal Charlotte, Sarasota, Manatee, Hillsborough, Pinellas, Pasco, Hernando, Sumter, Citrus, Levy, Gadsden, Baker, Union, Bradford, Liberty, Gulf, Nassau, Duval, Marion, Alachua, Gilchrist, Columbia, Hamilton, Leon, and Inland Franklin Counties
- **Tropical Storm Watches:** Lake, Polk, Hardee, DeSoto, Inland Charlotte, and Inland Lee Counties
- **Storm Surge Warnings:** Coastal Manatee, Hillsborough (including Tampa Bay), Pinellas, Pasco, Hernando, Citrus, Levy, Dixie, Taylor, Jefferson, Wakulla, and Franklin Counties
- **Storm Surge Watches:** Coastal Lee, Charlotte (including Charlotte Harbor), and Sarasota Counties

The next briefing packet will be issued tonight. For the latest information, please visit the [National Hurricane Center website](#).



Summary

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Florida Outlook:

- The heaviest swath of rainfall within tropical systems will largely occur along and to the 'right' of the track, with computer forecast models coming into general agreement that the greatest swath of rainfall residing along the eastern Florida Panhandle, Florida Big Bend, and into the Suwannee River Valley.
 - Widespread rainfall totals of 6-12" can be expected across the Eastern Panhandle, Northern Peninsula, and Western Peninsula, with locally higher amounts exceeding 15-20" cannot be ruled out. **Catastrophic and life-threatening flash flooding** can be expected within these locations that experience the highest rainfall totals.
- The Weather Prediction Center (WPC) is outlooking a rare **High Risk (level 4 of 4) for Flash Flooding** across the eastern Big Bend, Suwannee Valley, and portions of Northeast Florida Monday with the **Slight to Moderate Risk** expanding into the central Big Bend and along the northern Peninsula southward through the Tampa Bay area on Monday.
 - The WPC High Risk (level 4 of 4) for Flash Flooding are only outlooked for 4% of days, but High Risks have accounted for nearly 40% of all flood-related fatalities.
- River Flood Warnings have been issued across several North and West Florida Rivers this afternoon. Additional River Flood Warnings will be possible over the next several days depending on rainfall across portions of the state, as well as portions of southern Georgia. Rainfall totals will remain track dependent, and slight changes can impact riverine forecasts. Riverine forecasts will likely change in peak height in future updates as the full envelope of rainfall enters the forecast period.
- The Storm Prediction Center (SPC) is outlooking a **Slight Risk (level 2 of 5) for Severe Weather** across the eastern Big Bend, through Northeast Florida and southward beyond the I-4 corridor and into Southwest Florida today as outer rainbands of Tropical Storm Debby could produce isolated tornadoes. The **Slight Risk (level 2 of 5) for Severe Weather** continues on Monday from the Capital City through Northeast Florida and into Nature Coast as Tropical Storm Debby is forecast to move towards the Big Bend and inland.
 - **Tornado Watch # 594** remains in effect across the Northern Peninsula and portions of Big Bend, Central Florida, and Southwest Florida until 8:00 PM EDT this evening as a few tornadoes and isolated damaging wind gusts up to 70 mph will be possible within stronger cells in the outer bands of Tropical Storm Debby this afternoon.

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Florida Division of Emergency Management

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