

Tropical Update



12:30 PM EDT

Sunday, August 4, 2024

Debby Expected to Rapidly Intensify and Make Landfall As a Hurricane Along the Big Bend Coast Monday

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 <u>www.hurricanes.gov</u>.

Tropical Storm Debby 11:00 AM EDT Sunday: Florida Threats & Changes Since Last Packet



-FOUO-For-Government-Official-Use-Only

Overview/Recent Changes: As of 11:00 AM EDT, Tropical Storm Debby is located about 130 miles west-southwest of Tampa, Florida and 160 miles south-southwest of Cedar Key, Florida and moving north-northwestward at 13 mph. A turn toward the north is expected later today, followed by a slower motion toward the northeast on Monday and Tuesday. On the forecast track, the center will move across the eastern Gulf of Mexico through tonight and reach the Florida Big Bend coast Monday morning. Debby is then expected to move slowly across northern Florida and southern Georgia Monday and Tuesday. Maximum sustained winds have increased to near 65 mph with higher gusts. Rapid strengthening is forecast, and Debby is expected to become a hurricane by tonight before it reaches the Florida Big Bend coast. Weakening is expected on Monday and Tuesday after Debby moves inland. Storm Surge Warnings now extend from the middle of Longboat Key northward to Indian Pass (including Tampa Bay). Peak storm surge is forecast to reach 6-10 feet from the Suwannee River to the Ochlockonee River to Indian Pass, 3-5 feet across Tampa Bay and from the middle of Longboat Key to Yankeetown. A Tornado Watch has been issued for the Northern Peninsula and portions of the Big Bend, Central Florida, and Southwest Florida.

Current Tropical Wind Watches/Warnings As of 11:00 AM EDT Sunday



Hurricane Warnings:

- Coastal Wakulla, Dixie, Taylor, Jefferson, Madison, and Lafayette Counties.
- Hurricane Watches:
 - Levy County.

Tropical Storm Warnings:

 Mainland Monroe and the Dry Tortugas, Coastal Collier, Coastal Lee, Coastal Charlotte, Sarasota, Manatee, Hillsborough, Pinellas, Pasco, Hernando, Sumter, Citrus, Levy, Western Marion, Western Alachua, Gilchrist, Columbia, Suwannee, Hamilton, Leon, Inland Wakulla, and Inland Franklin Counties.

Tropical Storm Watches:

• Gadsden, Liberty, Gulf, Baker, Union, Bradford, Central and Eastern Alachua, Central and Eastern Marion, 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.



- 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 Charlott Harbor). Water levels at or near times of high tide will need to be closely monitored given the new moon cycle.



Model Forecasts – Next 5 Days Tropical Storm Debby

Tropical Storm DEBBY Model Track Guidance Initialized at 12z Aug 04 2024 Levi Cowan - tropicaltidbits.com 50°N 45°N 40°N 35°N 25°N 20°N 60°W 85°W 80°W 75°W 70°W 65°W 90°W

Computer models this morning are in good agreement that Tropical Storm Debby will turn to the north later today. Uncertainty increase beyond 24 hours as Debby turns to the northeast; however, a turn to the northeast is expected Monday as the system approaches the Florida Big Bend. Debby will continue to decrease in forecast speed through the next few days, and computer models suggest the system could stall near the Florida-Georgia state line.

Both oceanic and atmospheric conditions remain favorable for additional strengthening as Tropical Storm Debby enters the eastern Gulf of Mexico and moves northward to northeastward. Rapid intensification is possible through landfall; however, the extent of intensification will depend on how quickly Debby is able to organize this morning. Debby is expected to strengthen into a hurricane prior to landfall along the Florida Big Bend.



Tropical Storm Debby



FOUO – For Government Official Use Only

Tropical storm-force winds will continue to spread northward to northeastward across the western Florida Peninsula and the Big Bend through the next 24-hours. Tropical storm-force winds look to reach the I-4 corridor late this morning and early in the afternoon, then continue to extend northward into the Florida Big Bend late this evening and overnight.

However, tropical-storm force conditions may begin <u>as early as</u> this morning along the western I-4 corridor, and the eastern I-4 corridor this afternoon. Tropical storm-force conditions could begin as early as late this afternoon and early this evening along the Nature Coast and the eastern Big Bend. The rest of the Big Bend could see tropical storm force winds as early as this evening and into early Monday morning.

Wind speed probabilities will likely continue to increase in future packets as the eventual forecast track and intensity forecast become realized.

City	Tropical Storm-Force Wind Probability	Percent Change from Previous Update
Key West	24%	-19%
Naples	25%	-34%
Fort Myers	10%	-25%
Tampa	81%	-4%
Cedar Key	93%	+10%
Orlando	16%	-9%
Gainesville	62%	-5%
Tallahassee	79%	0%
Jacksonville	45%	0%
Apalachicola	78%	-7%
St. Marks	83%	0%



Hurricane-Force Wind Probabilities



With additional strengthening expected over the eastern Gulf of Mexico before approaching the eastern Panhandle and Big Bend, hurricaneforce winds are possible. Hurricane-force winds are possible along coastal portions of the Florida Big Bend through Thursday afternoon. These winds are likely possible just before landfall where there is anticipated additional strengthening.

City	Hurricane-Force Wind Probability	Percent Change from Previous Update
Cedar Key	12%	+1%
St. Marks	8%	+3%
Tallahassee	4%	+1%
Apalachicola	16%	-3%
Panama City	3%	-1%
Tampa	0%	0%

From the National Hurricane Center (NHC)

IDAR

Key Messages for Tropical Storm Debby Advisory 9: 11:00 AM EDT Sun Aug 04, 2024

1. 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. Potentially historic heavy rainfall across southeast Georgia and South Carolina through Friday morning may result in areas of catastrophic flooding. Significant river flooding is also expected.

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. Impacts from storm surge and strong winds are possible along the southeast coast from Georgia to North Carolina through the middle of the week, and storm surge watches and tropical storm watches have been issued for portions of these areas. Additional watches and warnings will likely be required later today.



For more information go to hurricanes.gov

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



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

The heaviest swath of rainfall within tropical systems will largely occur along and to the 'right' of the track.

Widespread rainfall totals of 6-12" can be expected across the Eastern Panhandle, Northern Peninsula, and Western Peninsula, with locally higher amounts exceeding 10-18" cannot be ruled out.

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. The Moderate Risk (level 3 of 4) expands throughout the Big Bend and Northeast Florida 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 MARGINAL SLIGHT MODERATE HIGH No Area/Label (MRGL) (SLGT) (MDT) (HIGH) Flash floods are **Scattered flash Isolated flash** Numerous flash Widespread flash generally not floods possible floods possible floods likely floods expected expected. Localized and Mainly localized. Mos Numerous flash narily affecting vulnerable are urbar ash flooding, Areas areas, roads, smal places that car experience rapic streams and washes possible, Many experience flash noff with heav Isolated significant flooding, could. Lives ww.wpc.pcep.poaa.go flash floods possibl and property ir @NWSWPC areater danger 174 A.A NORA 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?



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



Significant River Flooding Not

Expected

Significant River Flooding

Possible

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.

= less than 30% chance of reaching Action level

Major Flood

Significant River Flooding Not Expected

Significant River Flooding Likely

significant river flood conditions can be

Weather conditions indicate that



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

Significant River Flooding Occurring

Significant river flooding is occurring at this time

Weather conditions indicate, without expected certainty that significant river flooding **FOUO – For Government Official Use Only**

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	Minot Flood Stage
Santa Fe River at Worthington Springs		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 along the Western Peninsula and have extended northward into the Northern Peninsula and Big Bend ahead of anticipated rainfall from Tropical Storm Debby. 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 <u>track dependent</u>, and slight changes can impact riverine forecasts.



Tornado Watches in Effect From the National Weather Service



A Tornado Watch has been issued 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
-	BAKER	- HENDRY
-	BRADFORD	- HERNANDO
-	CHARLOTTE	- HIGHLANDS
-	CITRUS	-HILLSBOROUGH
-	CLAY	- JEFFERSON
-	COLLIER	- LAFAYETTE
-	COLUMBIA	- LAKE
-	DESOTO	- LEE
-	DIXIE	- LEON
-	DUVAL	- LEVY
-	FLAGLER	- MADISON
-	GILCHRIST	- MANATEE
-	GLADES	- MARION
-	HAMILTON	- NASSAU
-	WAKULLA	- VOLUSIA

- OKEECHOBEE
- ORANGE
- OSCEOLA
- PASCO
- PINELLAS
- POLK
- PUTNAM
- SARASOTA
- SEMINOLE
- ST. JOHNS
- SUMTER
- SUWANNEE
- TAYLOR
- UNION



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.



FOUO – For Government Official Use Only

Tropical Storm Debby:

- As of 11:00 AM EDT, Tropical Storm Debby is located about 130 miles west-southwest of Tampa, Florida and 160 miles south-southwest of Cedar Key, Florida and moving north-northwestward at 13 mph.
- A turn toward the north is expected later today, followed by a slower motion toward the northeast on Monday and Tuesday.
- On the forecast track, the center will move across the eastern Gulf of Mexico through tonight and reach the Florida Big Bend coast Monday morning.
- · Debby is then expected to move slowly across northern Florida and southern Georgia Monday and Tuesday.
- Maximum sustained winds have increased to near 65 mph with higher gusts.
- Rapid strengthening is forecast, and Debby is expected to become a hurricane by tonight before it reaches the Florida Big Bend coast.
- Weakening is expected on Monday and Tuesday after Debby moves inland.

Tropical Watches & Warnings Issued (NHC):

- Hurricane Warnings have been issued for Coastal Wakulla, Dixie, Taylor, Jefferson, Madison, and Lafayette Counties.
- Hurricane Watches have been issued for Levy County.
- Tropical Storm Warnings have been issued for Mainland Monroe and the Dry Tortugas, Coastal Collier, Coastal Lee, Coastal Charlotte, Sarasota, Manatee, Hillsborough, Pinellas, Pasco, Hernando, Sumter, Citrus, Levy, Western Marion, Western Alachua, Gilchrist, Columbia, Suwannee, Hamilton, Leon, Inland Wakulla, and Inland Franklin Counties.
- **Tropical Storm Watches** have been issued for Gadsden, Liberty, Gulf, Baker, Union, Bradford, Central and Eastern Alachua, Central and Eastern Marion, Lake, Polk, Hardee, DeSoto, Inland Charlotte, and Inland Lee Counties.
- Storm Surge Warnings are in effect from the middle of Longboat Key northward to Indian Pass (Coastal Manatee, Hillsborough (including Tampa Bay), Pinellas, Pasco, Hernando, Citrus, Levy, Dixie, Taylor, Jefferson, Wakulla, and Franklin Counties).
- Storm Surge Watches are in effect from Bonita Beach northward to the middle of Longboat Key (Coastal Lee, Charlotte (including Charlotte Harbor), and Sarasota Counties).

The next briefing packet will be issued this evening. For the latest information, please visit the National Hurricane Center website.



Florida Outlook:

- A Tornado Watch has been issued 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 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.
- A Coastal Flood Watch has been issued for the Florida Keys (Coastal Monroe). Coastal Flood Advisories are in effect along portions of the coastal Southern Peninsula and along the Florida Keys as minor coastal flooding is expected (Coastal Collier, Monroe, and Miami-Dade).
- 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. Tropical Rainfall totals up to 6-12" are forecast across much of the state, but locally higher amounts exceeding 15-20" cannot be ruled out.
 - Trends within the computer forecast models will be monitored through the week. A more disorganized tropical system may produce higher rain chances and greater rainfall totals over portions of the Florida Peninsula this weekend into early next week.
 - The Weather Prediction Center (WPC) is outlooking a Moderate Risk (level 3 of 4) for Flash Flooding today along portions of the Florida Big Bend, closer towards the coastline, with a Slight Risk (level 2 of 4) extending from the Apalachicola River through Southwest Florida where numerous showers and thunderstorms associated with Tropical Storm Debby will bring heavy rainfall that could bring instances of flash flooding. The Moderate Risk (level 3 of 4) extends throughout the entire Florida Big Bend and into Northeast Florida on Monday as Tropical Storm Debby is forecast to slowly move onshore and inland.
 - Additional rounds of heavy rainfall can be expected into early next week as this system works to gradually move northeastward further inland. Flood Watches have been
 issued for portions of South Florida, the Keys through 8:00 PM EDT Sunday, the western Peninsula through 8:00 PM EDT Monday, Northeast Florida through 8:00 PM
 EDT Tuesday and the Big Bend through 11:00 PM EDT Tuesday.
- 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 riverine 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.
- River Flood Warnings are in effect for several Big Bend and Suwannee River Valley rivers and creeks ahead of anticipated rainfall allowing water levels to rise into minor to moderate flood stage over the next several days. Additional River Flood Warnings are possible over the coming days depending on how much rainfall and where the heaviest rainfall occurs with Debby's track.
- 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 on Sunday 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.

The next briefing packet will be issued this evening. For the latest information, please visit the National Hurricane Center website.



Tropical Update



FOUO – For Government Official Use Only

Created by:

Melissa James, Assistant State Meteorologist

Melissa.James@em.myflorida.com

State Meteorological Support Unit

Florida Division of Emergency Management

Users wishing to subscribe (approval pending) to this distribution list, register at: https://public.govdelivery.com/accounts/FLDEM/subscriber/new?topic_id=SERT_Met_Tropics. Other reports available for subscription are available at: https://public.govdelivery.com/accounts/FLDEM/subscriber/new?preferences=true