

Tropical Update



5:30 PM EDT

Wednesday, September 25, 2024

Hurricane Helene Continues to Strengthen

Life-Threatening & Catastrophic Storm Surge Likely Along the Florida Big Bend

Poses Significant Destructive Wind Threat and Flash Flood Risk

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>.



Hurricane Helene 5:00 PM EDT Wednesday: Florida Threats & Changes Since Last Packet



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Overview/Recent Changes: As of 5:00 PM EDT, Hurricane Helene is located about 460 miles southwest of Tampa, Florida and about 505 miles south-southwest of Apalachicola, Florida and moving northward at 12 mph. A northward or north-northeastward motion at a faster forward speed is expected during the next 36 hours. On the forecast track, Helene will move across the eastern Gulf of Mexico tonight and Thursday and cross the Florida Big Bend coast Thursday evening. After landfall, Helene is expected to turn northwestward and slow down over the Tennessee Valley on Friday and Saturday. Maximum sustained winds are near 85 mph with higher gusts. Strengthening is forecast, and Helene is expected to be a major hurricane when it reaches the Florida Big Bend coast Thursday evening. Weakening is expected after landfall, but Helene's fast forward speed will allow strong, damaging winds, especially in gusts, to penetrate well inland across the southeastern United States, including over the higher terrain of the southern Appalachians. Storm Surge Watches have been upgraded to Storm Surge Warnings along the Panhandle from east of Mexico Beach to Indian Pass.



Hurricane Helene From the National Hurricane Center (NHC)



- Location: 460 miles SW of Tampa, Florida; 505 miles SSW of Apalachicola, Florida
- Maximum Sustained Winds: 85 mph; Category 1
- Current Movement: N at 12 mph

A northward or north-northeastward motion at a faster forward speed is expected during the next 36 hours. On the forecast track, Helene will move across the eastern Gulf of Mexico tonight and Thursday and cross the Florida Big Bend coast Thursday evening. After landfall, Helene is expected to turn northwestward and slow down over the Tennessee Valley on Friday and Saturday. Strengthening is forecast, and Helene is expected to be a major hurricane when it reaches the Florida Big Bend coast Thursday evening. Weakening is expected after landfall, but Helene's fast forward speed will allow strong, damaging winds, especially in gusts, to penetrate well inland across the southeastern United States, including over the higher terrain of the southern Appalachians.

A ragged eye is becoming apparent in visible satellite imagery and has also been observed in recent radar data from Cancun and western Cuba.



Current Tropical Wind Watches/Warnings As of 5:00 PM EDT Wednesday



Hurricane Warning:

Jackson, Calhoun, Gulf, Gadsden, Liberty, Franklin, Leon, Wakulla, Jefferson, Madison, Taylor, Hamilton, Suwannee, Lafayette, Columbia, Gilchrist, Dixie, western Alachua, Levy, western Marion, coastal Citrus, coastal Hernando, coastal Pasco

Tropical Storm Warning:

Walton, Holmes, Washington, Bay, Baker, Nassau, Duval, Union, Bradford, Clay, St. Johns, eastern Alachua, Putnam, Flagler, eastern Marion, Volusia, inland Citrus, Sumter, Lake, Seminole, Brevard, Orange, inland Hernando, inland Pasco, Pinellas, Hillsborough, Polk, Osceola, Indian River, Manatee, Hardee, Highlands, Okeechobee, St. Lucie, Martin, Glades, DeSoto, Sarasota, Charlotte, Palm Beach, Hendry, Lee, Collier, Broward, Miami-Dade, Monroe

Hurricane Watches:

Inland Citrus, inland Hernando, inland Pasco, Pinellas, coastal Hillsborough, coastal Manatee, coastal Sarasota

From the National Hurricane Center (NHC)

NDAR

Key Messages for Hurricane Helene Advisory 10: 4:00 PM CDT Wed Sep 25, 2024

1. A catastrophic and deadly storm surge is likely along portions of the Florida Big Bend coast, where inundation could reach as high as 20 feet above ground level, along with destructive waves. There is also a danger of life-threatening storm surge along the remainder of the west coast of the Florida Peninsula. Residents in those areas should follow advice given by local officials and evacuate if told to do so.

2. Potentially catastrophic hurricane-force winds are expected within the eyewall of Helene when it makes landfall in the Florida Big Bend region late Thursday. Preparations to protect life and property should be completed by early Thursday before tropical storm conditions arrive. Damaging and life-threatening hurricane-force winds, especially in gusts, will penetrate well inland over portions of northern Florida and southern Georgia late Thursday and Thursday night where Hurricane Warnings are in effect. Strong wind gusts are also likely farther north across portions of northern Appalachians.

3. Catastrophic and life-threatening flash and urban flooding, including landslides, is expected across portions of the southern Appalachians through Friday. Considerable to locally catastrophic flash and urban flooding is likely for northwestern and northern Florida and the Southeast through Friday. Widespread minor to moderate river flooding is likely, and isolated major river flooding is possible.

4. Hurricane and tropical storm conditions are expected over northeastern portions of the Yucatan Peninsula of Mexico this evening where Tropical Storm and Hurricane Warnings are in effect. Tropical storm conditions are occurring over portions of western Cuba within the Tropical Storm Warning area, and hurricane conditions are possible this evening within the Hurricane Watch area. Helene will bring heavy rain to portions of the western Caribbean with potentially significant flooding across western Cuba and the northeastern Yucatan Peninsula into early Thursday.



For more information go to hurricanes.gov

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.



- Structural damage to sturdy buildings, some with complete roof and wall failures. Complete destruction of mobile homes. Damage greatly accentuated by large airborne projectiles. Locations may be uninhabitable for weeks or months.
- Numerous large trees snapped or uprooted along with fences and roadway signs blown over.
- Many roads impassable from large debris, and more within urban or heavily wooded places. Many bridges, causeways, and access routes impassable.
- Widespread power and communications outages.



- Extreme rainfall flooding may prompt numerous evacuations and rescues.
- Rivers and tributaries may overwhelmingly overflow their banks in many places with deep moving water. Small streams, creeks, and ditches may become raging rivers. Flood control systems and barriers may become stressed.
- Flood waters can enter numerous structures within multiple communities, some structures becoming uninhabitable or washed away. Numerous places where flood waters may cover escape routes. Streets and parking lots become rivers of raging water with underpasses submerged. Driving conditions become very dangerous. Numerous road and bridge closures with some weakened or FOUO – For Government Official Use Only washed out.

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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.

Tropical Storm-Force Wind Probabilities

Hurricane Helene



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As Hurricane Helene moves into the eastern Gulf of Mexico, tropical storm-force conditions are likely to arrive along the Florida Keys and South Florida overnight tonight and into the early pre-dawn hours Thursday. The forecast quick forward motion of Helene will allow for deteriorating conditions quickly. During the predawn hours and into the morning on Thursday, tropical storm-force winds will mostly likely arrive along the West-Central and western I-4 corridor. Deteriorating conditions and the quick forward motion will allow for tropical storm-force winds to most likely arrive across the Florida Big Bend during the afternoon and early evening hours, then extend towards the I-10 corridor into the evening hours.

However, tropical-storm force conditions may begin <u>as early as</u> late this evening along the Southwest Florida coast and through South Florida overnight. Along the West-Central and Nature Coast, as well as the western Peninsula, tropical storm-force winds could begin <u>as early as late</u> overnight tonight and into the predawn hours. The Florida Big Bend could see tropical storm-force winds <u>as early as</u> Thursday 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
Key West	43% (+8%)
Naples	54% (+9%)
Miami	7% (+/-0)
Fort Myers	46% (+12%)
Tampa	79% (+6%)
Cedar Key	88% (+2%)
Cocoa Beach	31% <mark>(+1%)</mark>
Orlando	29% (+2%)
Gainesville	64% (-4%)
Tallahassee	97% (+2%)
Jacksonville	38% (-4%)
Apalachicola	98% (+3%)
Panama City	90% (+6%)
Pensacola	18% (-3%)



Hurricane-Force Wind Probabilities

Hurricane Helene



The additional strengthening and intensification of Hurricane Helene will allow for hurricane-force winds throughout the Florida Big Bend and extending along the Panhandle as well as Nature Coast and along the West-Central Florida coast.

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

City	Strong Tropical Storm- Force Wind Probability
Tampa	1%
Cedar Key	4%
St. Marks	29%
Apalachicola	62%
Panama City	31%
Tallahassee	26%

As of 5:00 PM EDT Wednesday



Hurricane Helene Wednesday September 25, 2024 04 PM CDT Advisory 10 NWS National Hurricane Center **User Notes:** Water levels along the immediate coast could reach the following heights above ground level within the indicated areas. Elevated water levels will likely be accompanied by large and destructive waves. Colors are determined by the highest values in the associated forecast peak surge range. Values shown on this graphic are inclusive of tide.

Catastrophic and life-threatening storm surge can be expected along the Florida Big Bend. Inundation above normally dry ground could reach as **high as 20**' along with destructive wave action. Given the large radii and wind footprint of Helene, storm surge will be able to travel a significant distance inland, and especially within coastal river systems and basins. There is a danger of lifethreatening storm surge along the West Coast of Florida.

Storm Surge Warnings extend along the entire Florida Gulf Coast to coastal Gulf County.

- **15-20' of storm surge** can be expected from Carabelle to the Suwannee River; **10-15'** from Carabelle to Apalachicola and the Suwannee River south to Chassahowitzka.

- 8-12' of storm surge is now forecast for the Nature Coast to the Anclote River, with 5-8' along the West-Central Florida Coast including Tampa Bay.

Rainfall Totals – Next 7 Days From the Weather Prediction Center (WPC)

7-Day Precipitation (in) Ending Wednesday, Oct. 2, 2024 at 8 p.m. EDT



- South Florida and the Keys have begun to feel the outer influences of Hurricane Helene as the system pushes northward across the northwestern Caribbean Sea and pulls deep tropical moisture northward. A few outer bands from Helene will likely move across South and South-Central Florida and the Keys today with breaks of sunshine in between.
- As Helene moves through the northwestern Caribbean and towards the southern Gulf of Mexico, tropical moisture will push northward through the state today and Thursday.
- Increasing rain chances can be expected along to increase from south to north along the Peninsula, then extend into northeastern Gulf of Mexico.
- Widespread rainfall totals of 2-4" can be expected across the state through the next 7 days, with locally higher totals upwards of 6-10" along the Panhandle and immediate Gulf Coast. Localized instances upwards of 12-15" cannot be ruled out along portions of the western coastal Big Bend.

Flash Flood Outlooks

From the Weather Prediction Center (WPC)



The Weather Prediction Center (WPC) is outlooking a Slight Risk (level 2 of 4) for Flash Flooding along the southern Apalachicola River and towards the coast, with Marginal Risk (level 1 of 4) for Flash Flooding today across the Florida Panhandle extending along the West Coast and through South Florida as outer rainbands from this system will begin to bring heavy rainfall as Hurricane Helene moves over the eastern Gulf of Mexico. As Hurricane Helene approaches the northeastern Gulf of Mexico and towards the Florida Big Bend on Thursday, tropical downpours can be expected nearly statewide due to the large size of this system. The Weather Prediction Center (WPC) is outlooking a rare High Risk (level 4 of 4) for Flash Flooding across Apalachicola through eastern and central portions of the Big Bend with a Moderate Risk (level 3 of 4) stretching across the Florida Big Bend and extending into the eastern Florida Panhandle on Thursday, with a Slight Risk (level 2 of 4) across the rest of the Panhandle and along the I-75 corridor along the West Coast. A Marginal Risk (level 1 of 4) extends statewide on Thursday as hazards will likely extend well away from the center. Regardless, tropical downpours and multiple rounds of rainfall may be possible that lead to instances of flash flooding as the system moves into the southeastern Gulf of Mexico, especially with potentially training showers and thunderstorms over the same areas and moving onshore. There is a Marginal Risk (level 1 of 4) for Flash Flooding on Friday as well along West-Central and Southwest Florida.

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	
www.wpc.ncep.noaa.gov @NWSWPC	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.	





- Flood Watches have been issued across nearly the entire state (all except Escambia, Santa Rosa, and Okaloosa Counties) as tropical downpours associated with Hurricane Helene could bring instances of localized flooding beginning today.
- **Moderate to heavy rainfall** is expected with this system, which could lead to instances of localized flash flooding.
- With recently saturated grounds and soils, additional heavy rainfall across low-lying/poor drainage areas could **exacerbate the potential for localized flooding**.
- As well, with elevated water levels along the coast and extending into rivers and creeks along the coast due to storm surge, heavy rainfall over surrounding areas could **slow the rate of heavy rainfall depositing into system and running off** towards the gulf waters. This may also exacerbate potential flooding concerns.

From the National Weather Service (NWS)



A **Coastal Flood Warning** are in effect along the Florida Keys until Thursday night as **major saltwater flooding of 1-3**' above normally dry ground is possible, especially near and during times of high tide from Hurricane Helene.

Coastal Flood Warnings extend along the Florida Northeast Coast as saltwater flooding of 1-3' is possible, with locally higher totals upwards of 4' due to winds from Hurricane Helene.

Due to compounding effects of lingering runoff from recent heavy rainfall, onshore flow, and recent high astronomical tides (King tides) courtesy of the recent Full Moon, minor coastal flooding can be expected along the St. Johns River through the middle of the week. A Coastal Flood Advisory remains in effect throughout the basin and along the Intracoastal Waterway and Atlantic Coast.

Minor beach erosion cannot be ruled out at times near and during times of high tide along the East Coast, especially for vulnerable beaches.

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 **minor to moderate flooding** along several mainstems and branches including the Apalachicola, Ochlockonee, Santa Fe, Myakka, Manatee, and Alafia by next week.

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



River Flood Warnings From the National Weather Service

River Guage	County(ies) Affecte 👻	Current Level 🔻	Crest Level 🔻	Record Leve-	Status 🔽	Crest Da	Warning Expire
Alafia River at Riverview near US 301	Hillsborough	Below: 2.58 ft	Major: 7.00 ft	6.60 ft	Rising	26-Sep	0948 EDT 27-Sep
St. Johns River at Astor	Volusia, Lake	Minor: 2.96 ft	Moderate: 3.10 ft	4.70 ft	Steady	26-Sep	Until Further Notice
St. Mary's River near Macclenny	Baker, Nassau	Below: 5.30 ft	Minor: 12.50 ft	24.40 ft	Falling	27-Sep	0000 EDT 28-Sep

A River Flood Warning remain in effect in the <u>St. Johns River at Astor</u> as water levels are holding steady within minor flood stage just below the line for moderate flood stage due to trapped tides within the river basin. Water levels are forecast to rise back into moderate flood stage in the next few days in response to heavy rainfall across the basin and elevated tides and ocean swells preventing these waters from discharging. Additional forecast points along the St. Johns River are forecast to remain near or within Action Stage (bank-full) due to recent heavy rainfall over the area; however, river flooding is not anticipated at this time. Tidal portions of the lower St. Johns River could fluctuate in between Action and minor flood stage due tide fluctuations. A River Flood Warning has been issued for the <u>Alafia River at Riverview near US 301</u> as major flooding is forecast due to tidal fluctuations and anticipated storm surge associated with Hurricane Helene. A River Flood Warning has been issued for the <u>St. Mary's River near</u> <u>Macclenny</u> as water levels are forecast to rise into minor flood stage later this week. Additional River Flood Warnings will likely be issued later this week and this weekend as heavy rainfall expected from Hurricane Helene is observed across the state; however, Riverine flooding will be closely tied to which basin receives the greatest swath of rainfall. Trends will continue to be monitored. For more details, please visit the <u>River Forecast Center</u>.

Tropical Tornadoes From the Storm Prediction Center (SPC)



- The Storm Prediction Center (SPC) is outlooking a **Marginal Risk (level 1 of 5) for Severe Weather** across much of the state today.
- A Slight Risk (level 2 of 5) for Severe Weather is being outlooked on Thursday across the Northern Peninsula south of the I-4 corridor towards Lake Okeechobee. A Marginal Risk (level 1 of 4) extends from the Capital City through the Florida Keys.
- Isolated tropical tornadoes are possible within outer bands of Hurricane Helene today and Thursday as outer rainbands from Helene extend along the Peninsula and Big Bend Coast.
- The greatest tropical tornado threat will exist along and to the east of the eventual path.
- Tornado Watches and Warnings will be issued as conditions warrant.



Hurricane Helene:

- As of 5:00 PM EDT, Hurricane is currently located about 460 miles southwest of Tampa, Florida and is moving north at 12 mph.
- A northward or north-northeastward motion at a faster motion at a faster forward speed is expected during the next 36 hours. On the forecast track, Helene will move across the eastern Gulf of Mexico tonight and Thursday and cross the Florida Big Bend Coast Thursday evening.
- Maximum sustained winds are near 85 mph, making Helene a Category 1 hurricane.
- Strengthening is forecast, and Helene is expected to be a major hurricane when it reaches the Florida Big Bend Coast Thursday evening.
- Hurricane-force winds extend outward 25 miles from the center and tropical storm-force winds extend outward up to 345 miles.
- Hurricane Warnings have been issued for the following counties: Jackson, Calhoun, Gulf, Gadsden, Liberty, Franklin, Leon, Wakulla, Jefferson, Madison, Taylor, Hamilton, Suwannee, Lafayette, Columbia, Gilchrist, Dixie, western Alachua, Levy, western Marion, coastal Citrus, coastal Hernando, coastal Pasco
- Hurricane Watches have been issued for the following counties: Inland Citrus, inland Hernando, inland Pasco, Pinellas, coastal Hillsborough, coastal Manatee, coastal Sarasota
- Tropical Storm Warnings have been issued for the following counties: Walton, Holmes, Washington, Bay, Baker, Nassau, Duval, Union, Bradford, Clay, St. Johns, eastern Alachua, Putnam, Flagler, eastern Marion, Volusia, inland Citrus, Sumter, Lake, Seminole, Brevard, Orange, inland Hernando, inland Pasco, Pinellas, Hillsborough, Polk, Osceola, Indian River, Manatee, Hardee, Highlands, Okeechobee, St. Lucie, Martin, Glades, DeSoto, Sarasota, Charlotte, Palm Beach, Hendry, Lee, Collier, Broward, Miami-Dade, Monroe
- Catastrophic and life-threatening storm surge can be expected along the Florida Big Bend. Inundation above normally dry ground could reach as high as 20' along with destructive wave action. Given the large radii and wind footprint of Helene, storm surge will be able to travel a significant distance inland, and especially within coastal river systems and basins.
- There is a danger of life-threatening storm surge along the West Coast of Florida.
 - Storm Surge Warnings extend along the entire Florida Gulf Coast to coastal Gulf County.
 - 15-20' of storm surge can be expected from Carabelle to the Suwannee River; 10-15' from Carabelle to Apalachicola and the Suwannee River south to Chassahowitzka.
 - 8-12' of storm surge is now forecast for the Nature Coast to the Anclote River, with 5-8' along the West-Central Florida Coast including Tampa Bay.

The next briefing packet will be issued on Wednesday night. For the latest information, please visit the National Hurricane Center website.



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Florida Outlook:

- Hurricane Helene will be a significant multi-hazardous event, bringing the risk for life-threatening storm surge, dangerous to catastrophic winds, catastrophic to life-threatening flash flooding, and isolated tropical tornadoes to the Florida Gulf Coast.
- Widespread showers and thunderstorms within Helene's outermost influence are continuing to move from south to north throughout the Florida Peninsula, with additional rounds of more widespread rainfall likely to arrive Thursday morning.
- Tropical storm-force winds will mostly likely arrive to the Southwest Florida Coast overnight tonight, reaching the western I-4 corridor by Thursday morning.
 - Destructive to potentially catastrophic hurricane-force winds are expected within the eyewall of Helene when it makes landfall in the Florida Big Bend late Thursday.
 - Damaging and life-threatening hurricane-force winds, especially in gusts, will penetrate well inland over portions of northern Florida late Thursday and Thursday night.
- Deteriorating conditions can be expected along the Florida Nature Coast and Florida Big Bend Thursday early to mid-afternoon.
- Significant rainfall totals will also accompany this system, despite its fast forward speed. Catastrophic to life-threatening rainfall and flooding cannot be ruled out and there is
 now a High Risk (level 4 of 4) for Flash Flooding along the Forgotten Coast and into the interior Florida Big Bend.
 - Widespread rainfall totals of 4-8" can be expected, with higher totals of 10-12" likely. Localized amounts of 12-15" cannot be ruled out.
 - Flood Watches have been raised nearly statewide, from the central Florida Panhandle through the remainder of the Florida Peninsula.
 - · Widespread minor to moderate river flooding is likely.
- As with any tropical system, isolated tornadoes will be possible even prior to landfall particularly for areas to the east of the center of circulation later in the day today and into Thursday (Marginal to Slight Risk for Severe Weather level 1-2 of 5).



Tropical Update



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Created by: **Caitlyn Gillespie** Caitlyn.Gillespie@em.myflorida.com **Melissa James** 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