



Beryl Briefing

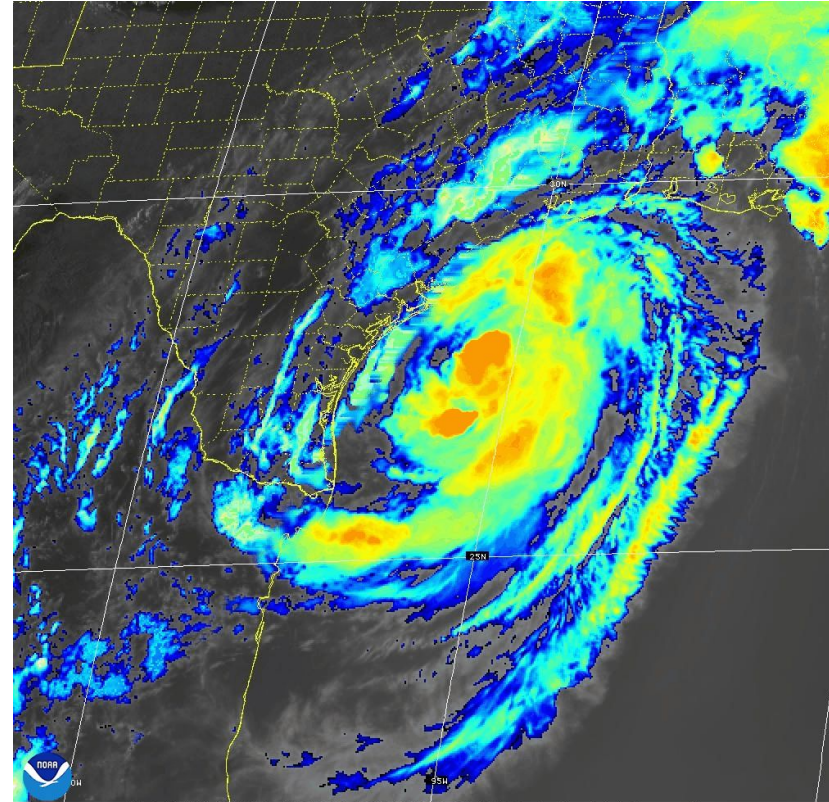
1030 PM Sunday, July 7th, 2024

Lance Wood
NWS Houston/Galveston



Situation Overview: What's New?

- Beryl remains a tropical storm.
- Currently a 70 mph tropical storm.
- Beryl is still forecast to make landfall as a category 1 hurricane.
- Galveston island Hurricane Watch has been upgraded to a Hurricane Warning.
- The threat of a few tornadoes in bands will increase late tonight around time of landfall and continue into Monday.



08 Jul 2024 01:14Z - NOAA/NESDIS/STAR - GOES-East - Sandwich Composite

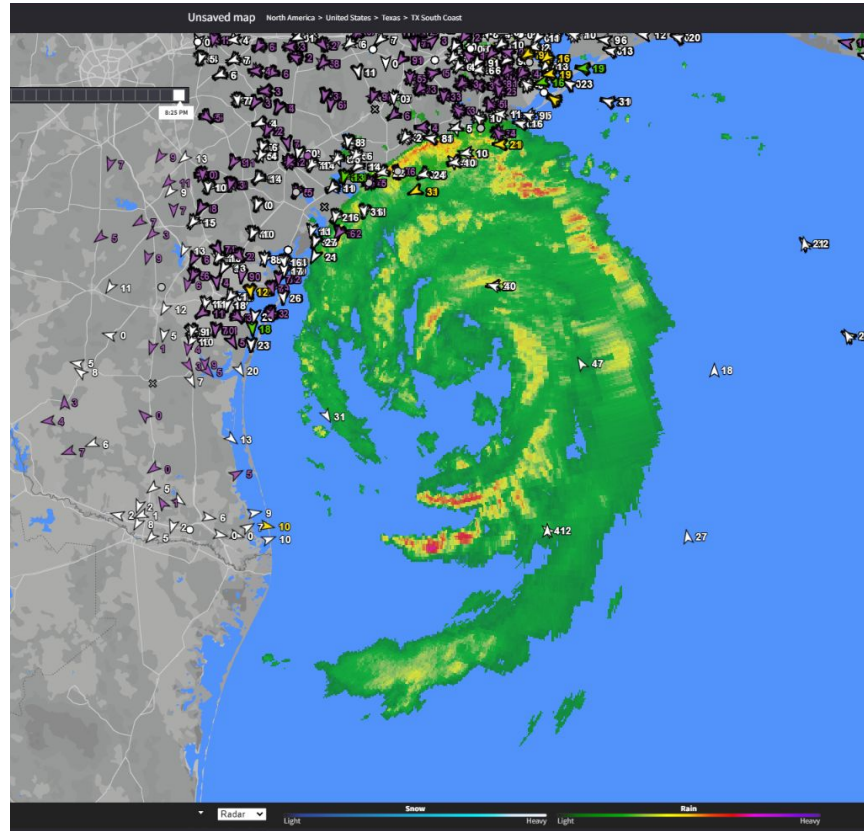


Latest Radar/Observations

Tropical Storm Beryl seen on radar offshore. Spiral bands increasing, getting better organized.

TS force winds are now on the mid-coast coast in the outer significant rainband.

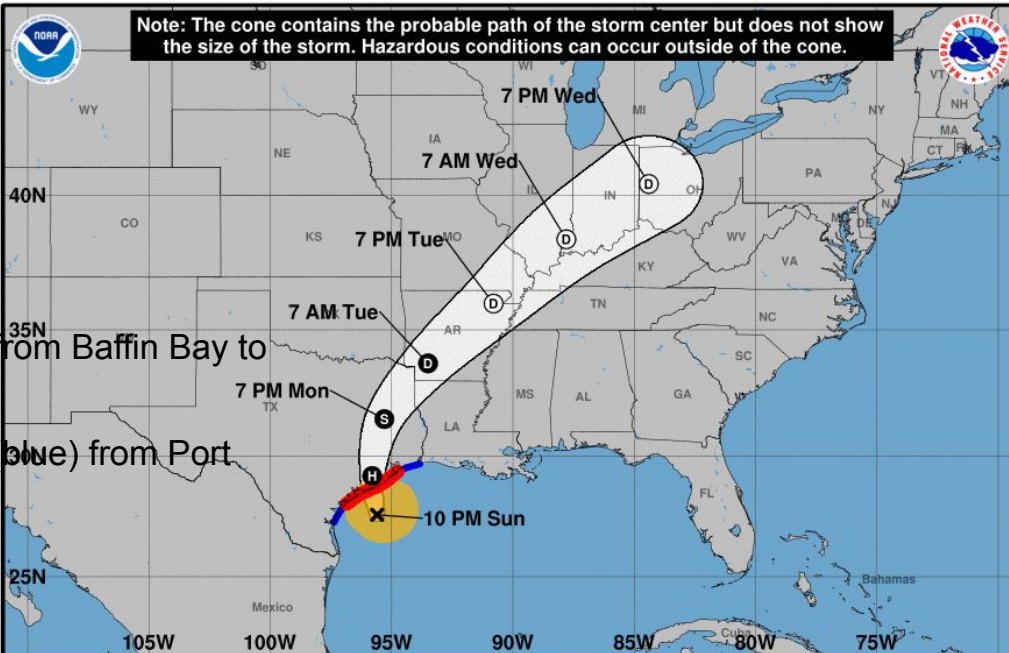
Aircraft data shows a more vertically aligned storm and more deep convection around then center.





Tropical Storm Beryl

Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



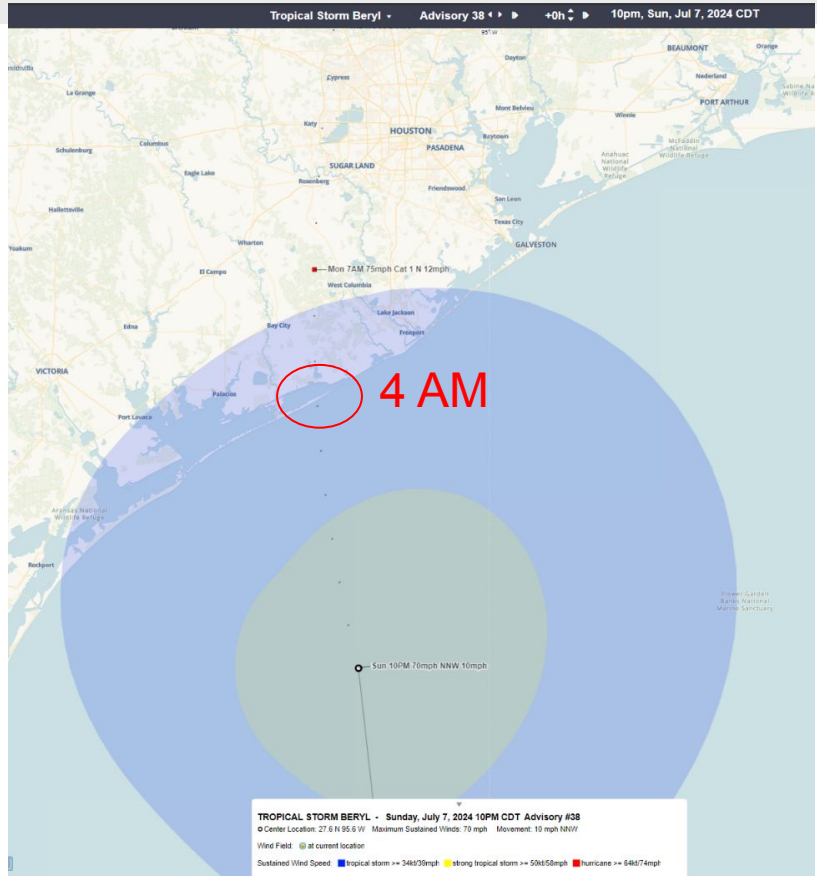
from Baffin Bay to
(blue) from Port

Tropical Storm Beryl
 Sunday July 07, 2024
 10 PM CDT Advisory 38
 NWS National Hurricane Center

Current information: x
 Center location 27.6 N 95.6 W
 Maximum sustained wind 70 mph
 Movement NNW at 10 mph

Forecast positions:
 ● Tropical Cyclone ○ Post/Potential TC
 Sustained winds: D < 39 mph
 S 39-73 mph H 74-110 mph M > 110 mph

Potential track area: Day 1-3 Day 4-5
Watches: Hurricane Trop Stm
Warnings: Hurricane Trop Stm
Current wind field estimate: Hurricane Trop Stm





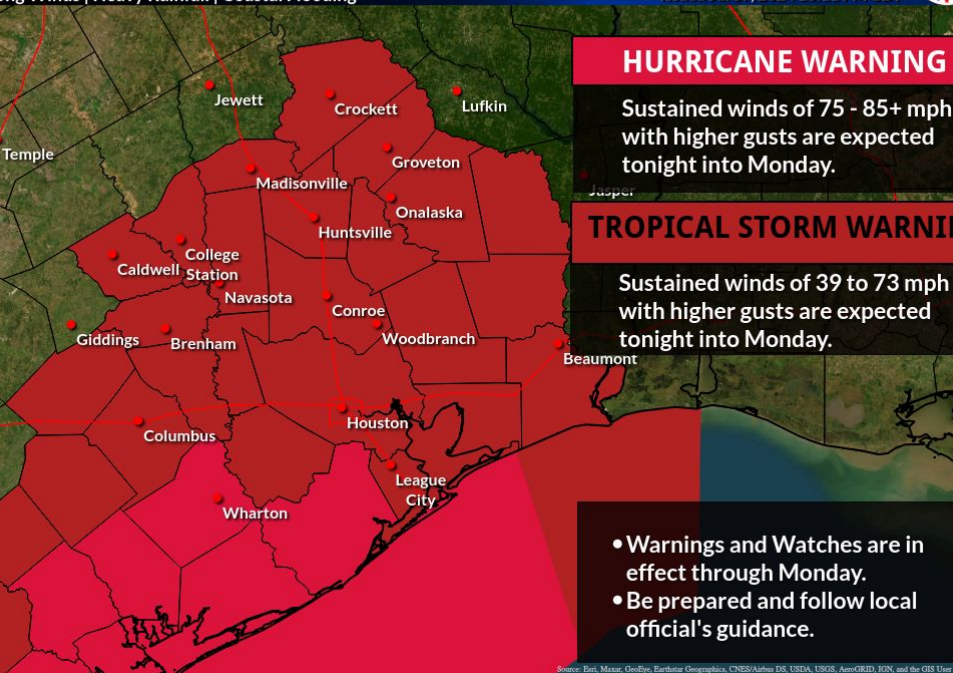
Watches and Warnings

Maps Showing Various Wind and Surge Flooding Related Warnings and Watches

Tropical Storm Beryl - Hazards

Strong Winds | Heavy Rainfall | Coastal Flooding

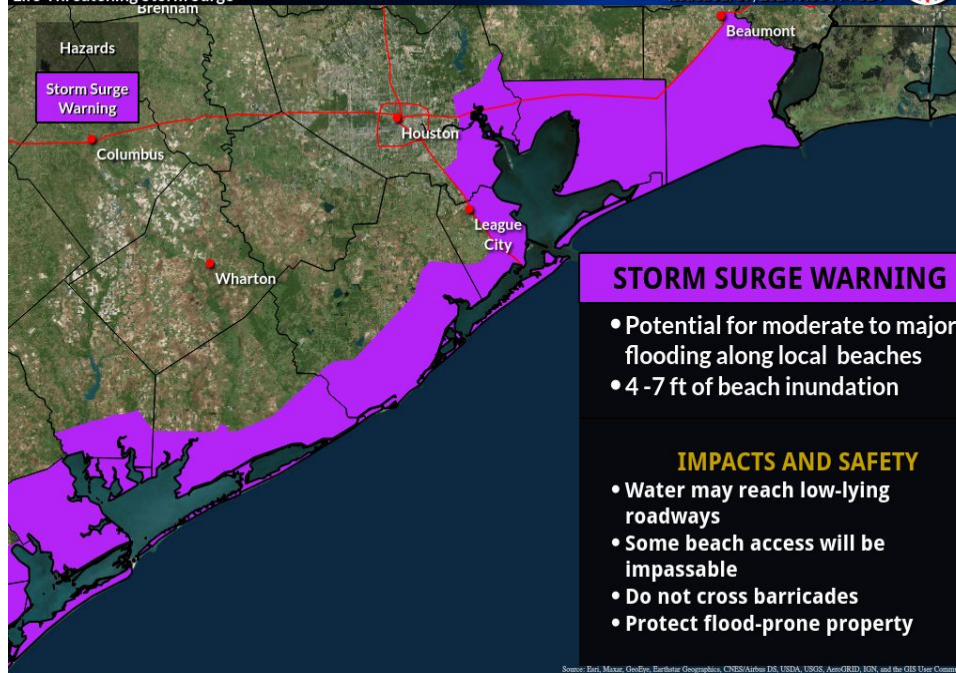
Weather Forecast Office
Houston/Galveston TX
Issued Jul 07, 2024 10:11 PM CDT



Tropical Storm Beryl - Hazards

Life-Threatening Storm Surge

Weather Forecast Office
Houston/Galveston TX
Issued Jul 07, 2024 9:56 PM CDT



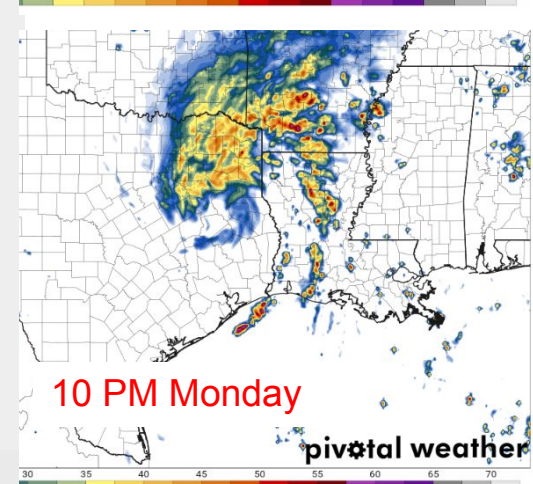
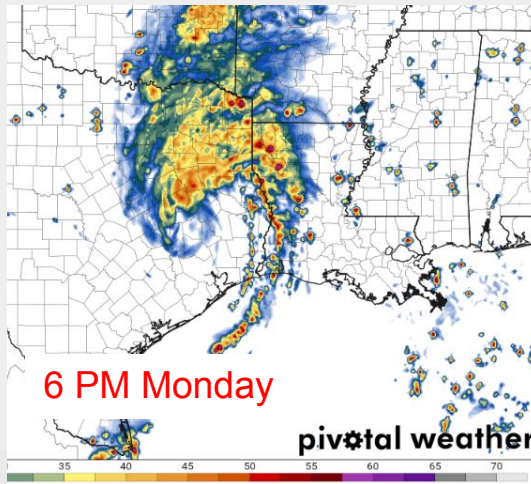
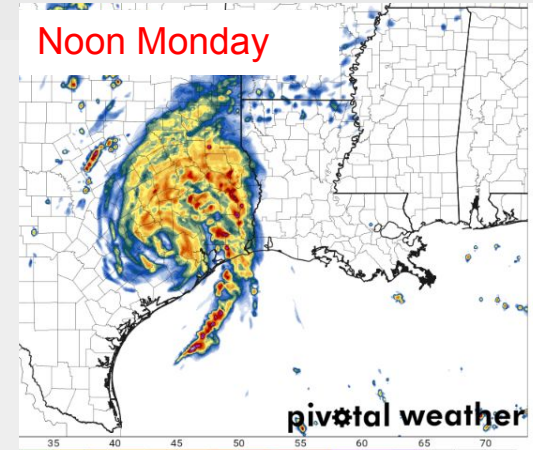
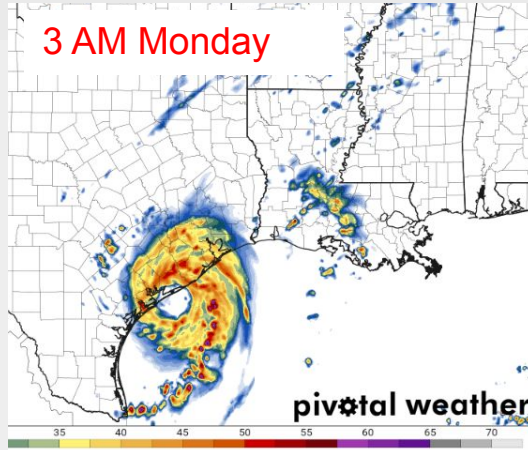


Simulated RADAR

Model forecasted radar from 7 PM run of HRRR model.

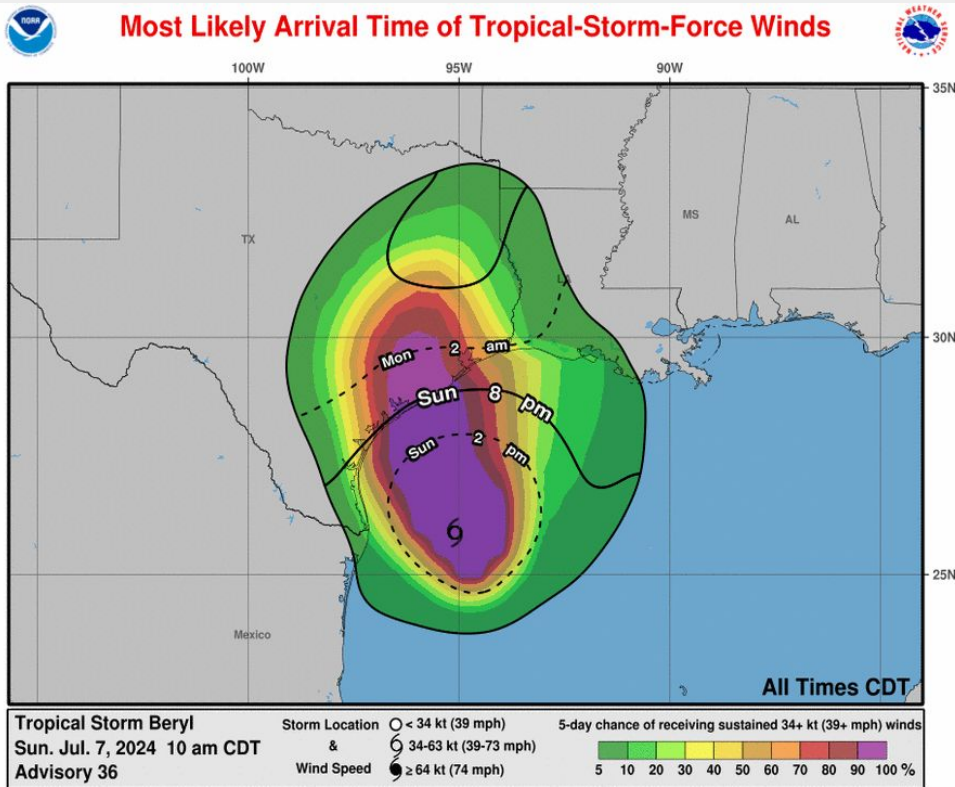
Don't focus on details - but can get a sense of the timing, structure, banding.

Morning commute could be difficult with heavy rain, high winds and surge coastal areas.





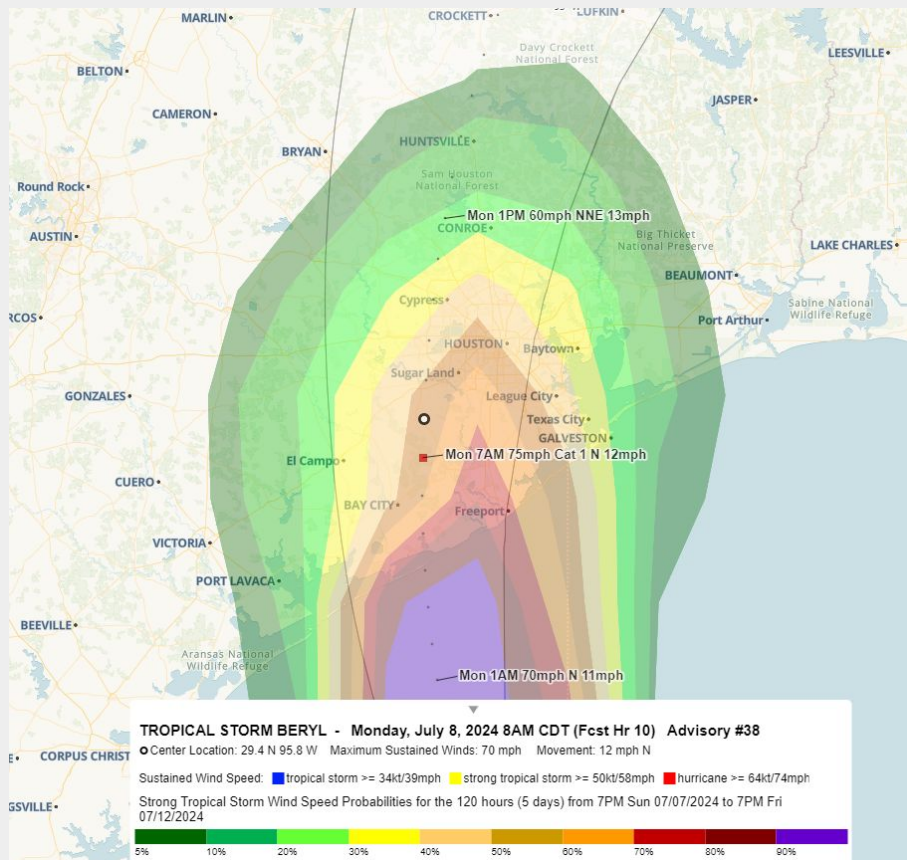
Most Likely Time of Arrival of TS Force Winds



- Most likely time of arrival of TS force winds will be this evening at the coast, overnight inland
- Note the high probabilities cover a large area and extend well inland! Storm is larger than forecast yesterday morning, wind probabilities reflect that.



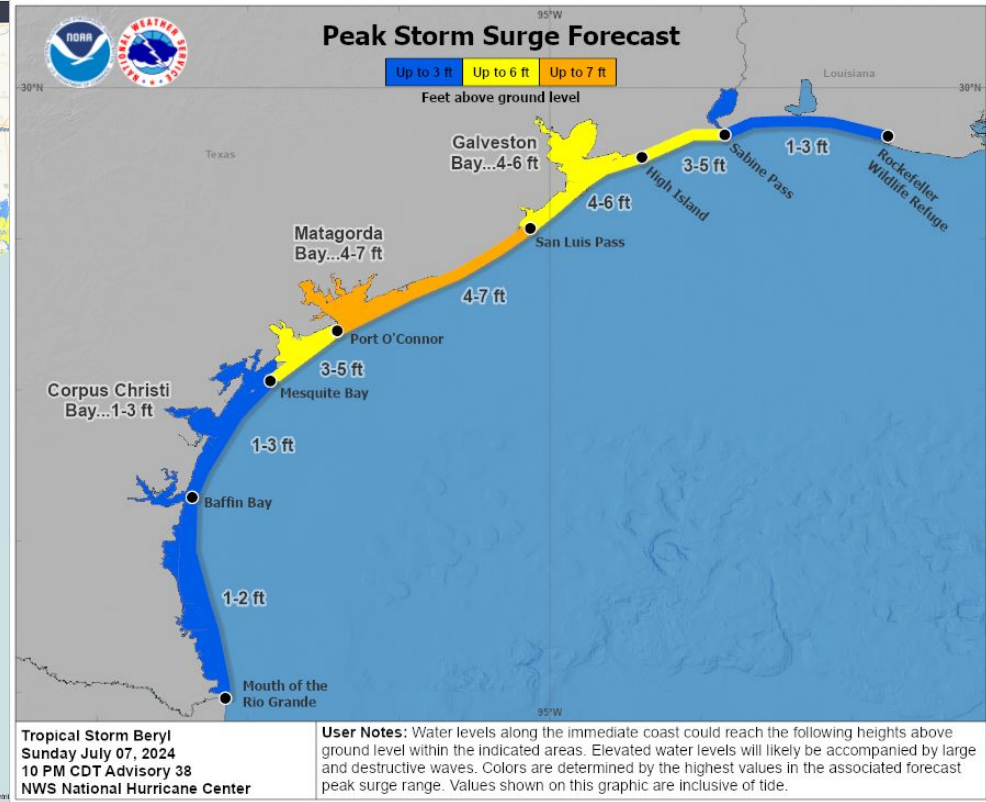
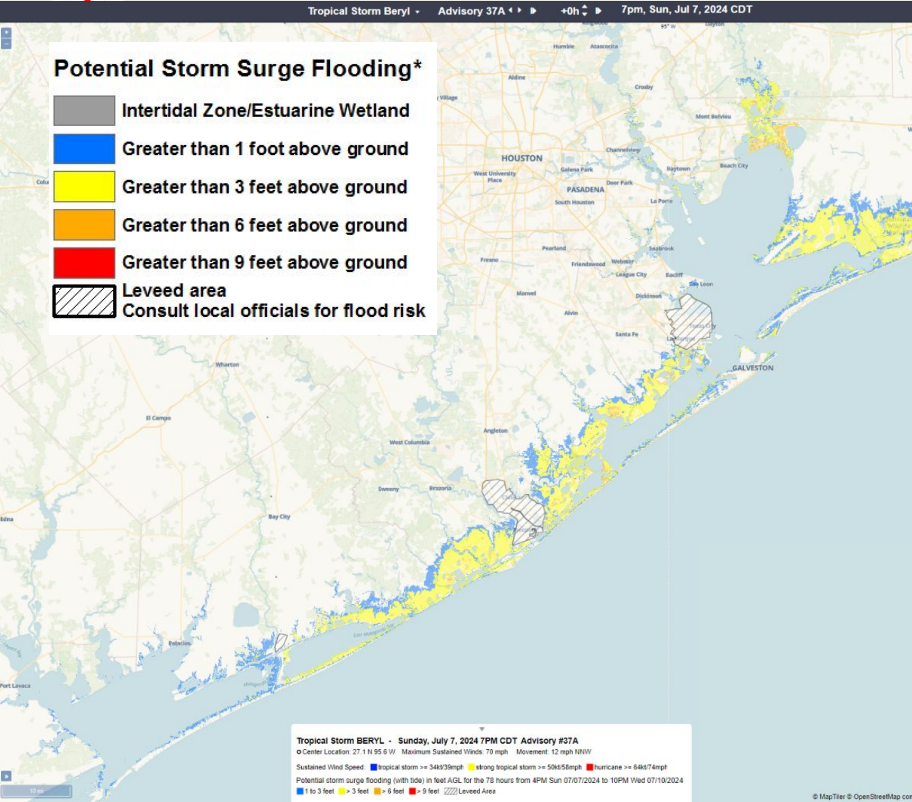
Probability of Strong TS Force Winds: 58 MPH or greater



This wind speed threshold (58 mph) correlates well to a higher potential for power outage areas.



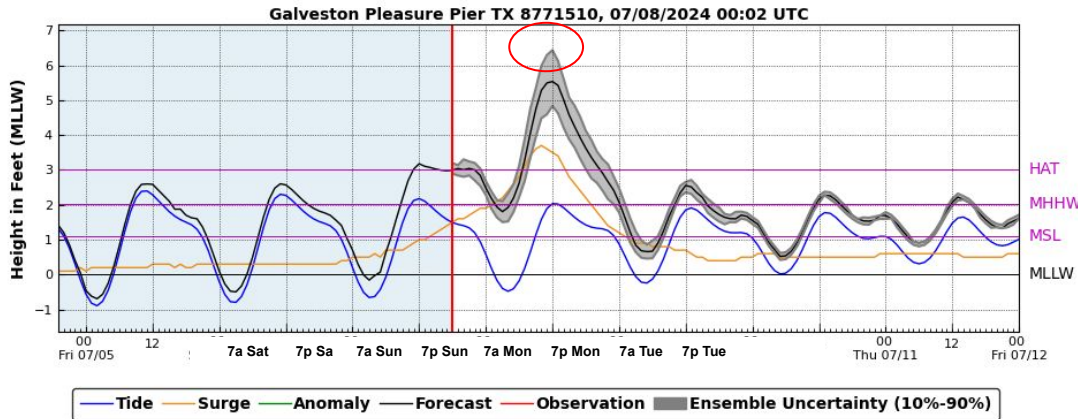
Potential Storm Surge Flooding, Peak Surge Above Ground





Tide Forecast – Probabilistic Model (PETSS)

Peak Surge at high tide could result in 7 feet above MLLW
Tomorrow morning.

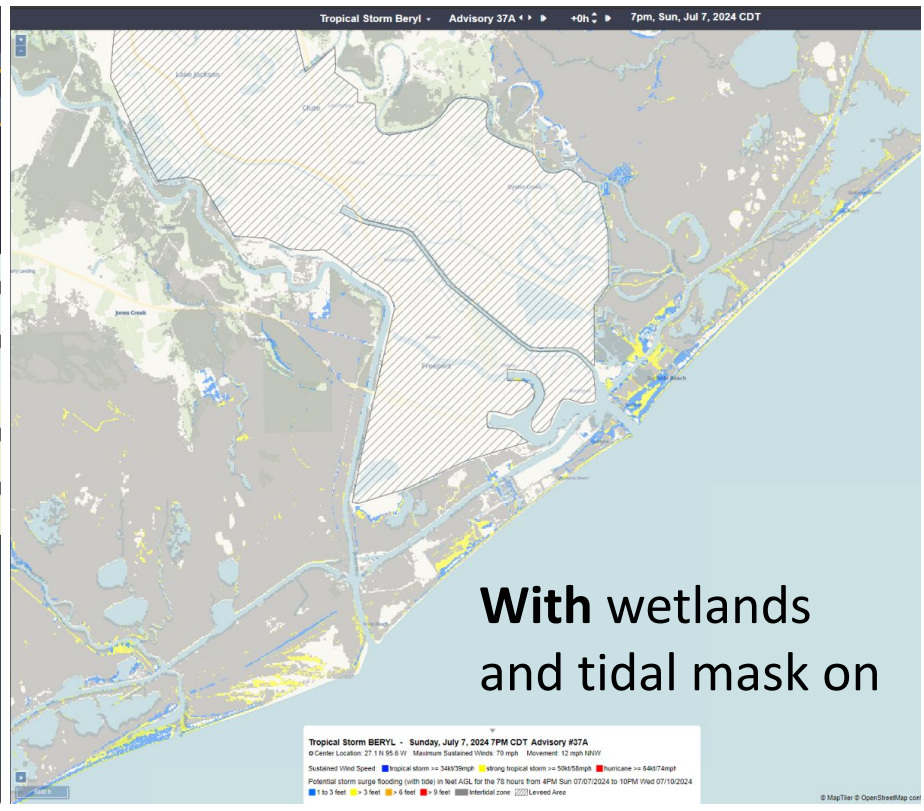
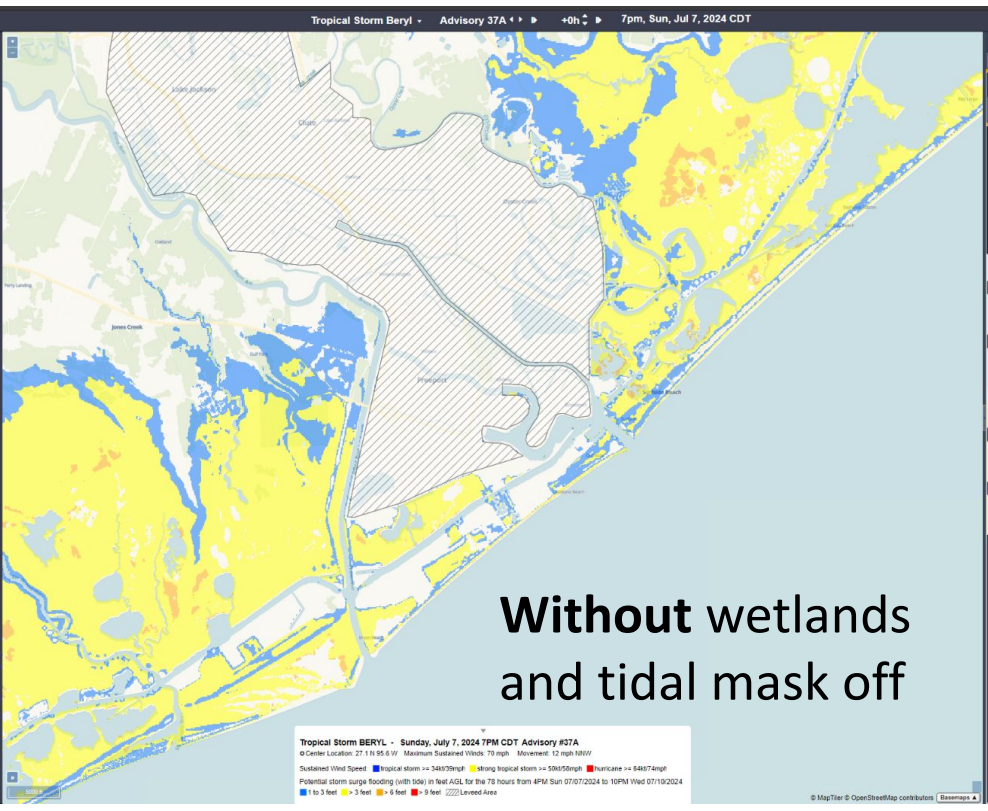


- Elevated tides are expected tonight, but the highest water levels are expected on Monday morning.
- Graphics are meant to show timing. For peak values refer to National Hurricane Center guidance which is superior for this type of storm.



Potential Storm Surge Inundation

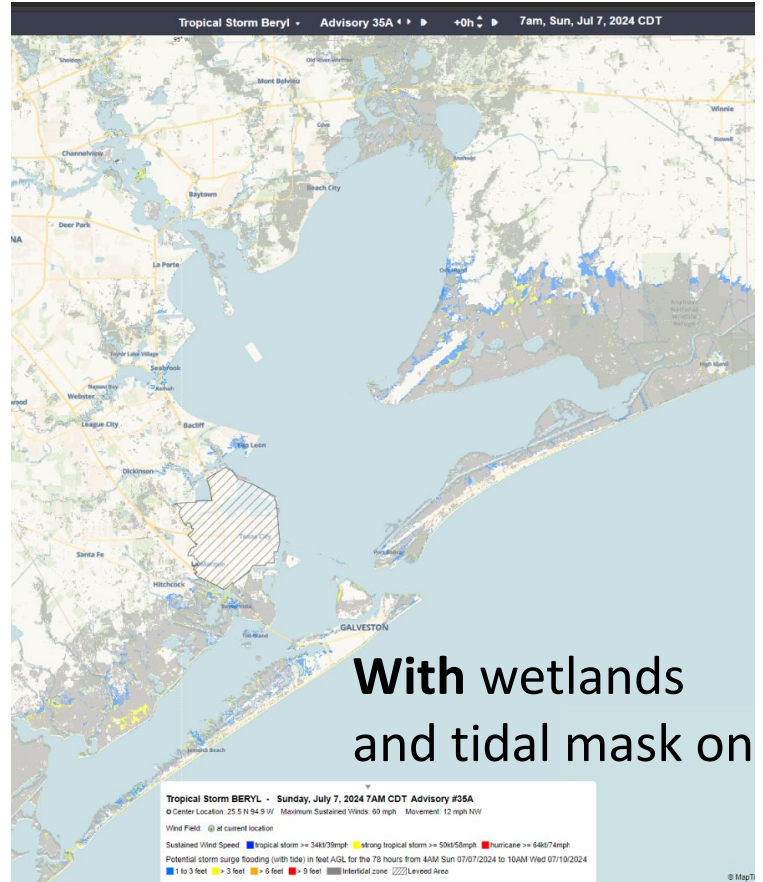
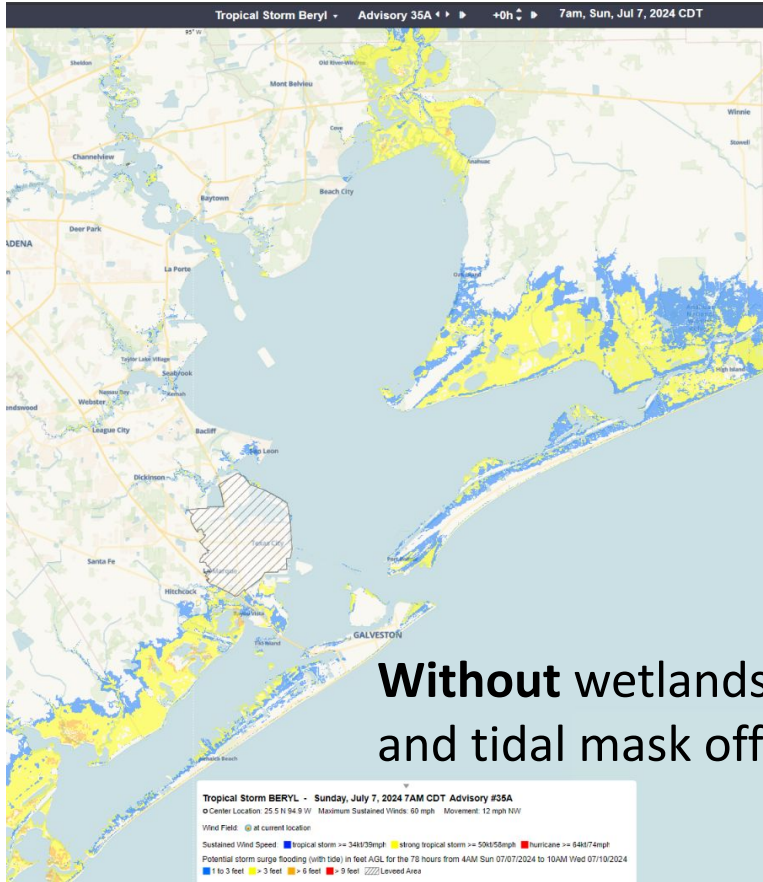
Tropical Storm Beryl - Freeport





Potential Storm Surge Inundation

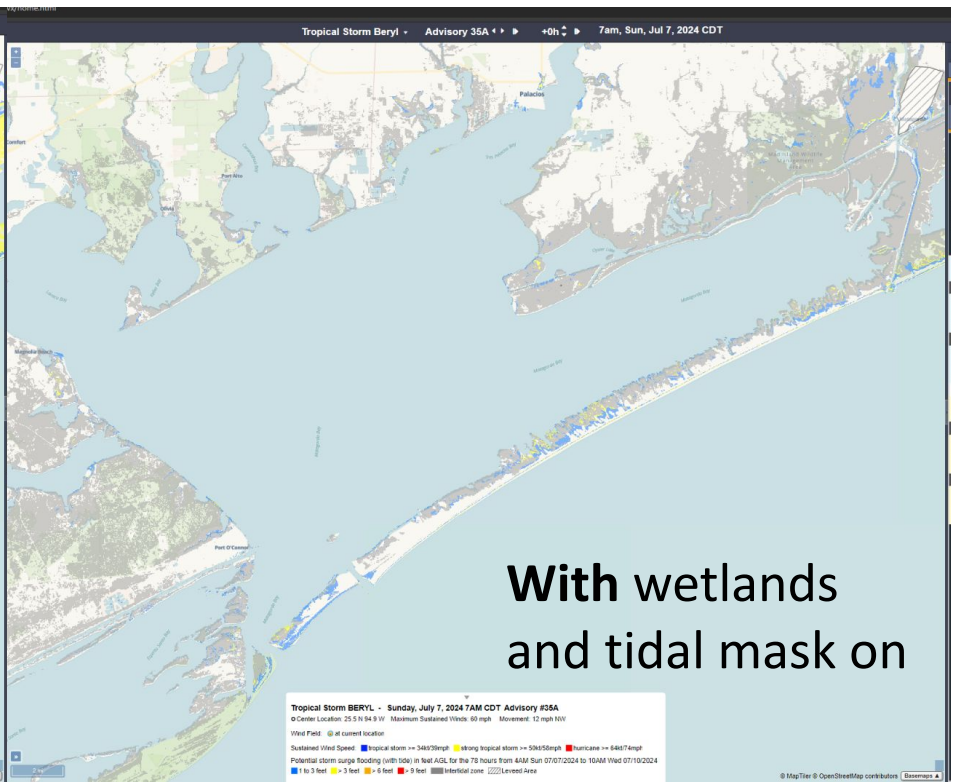
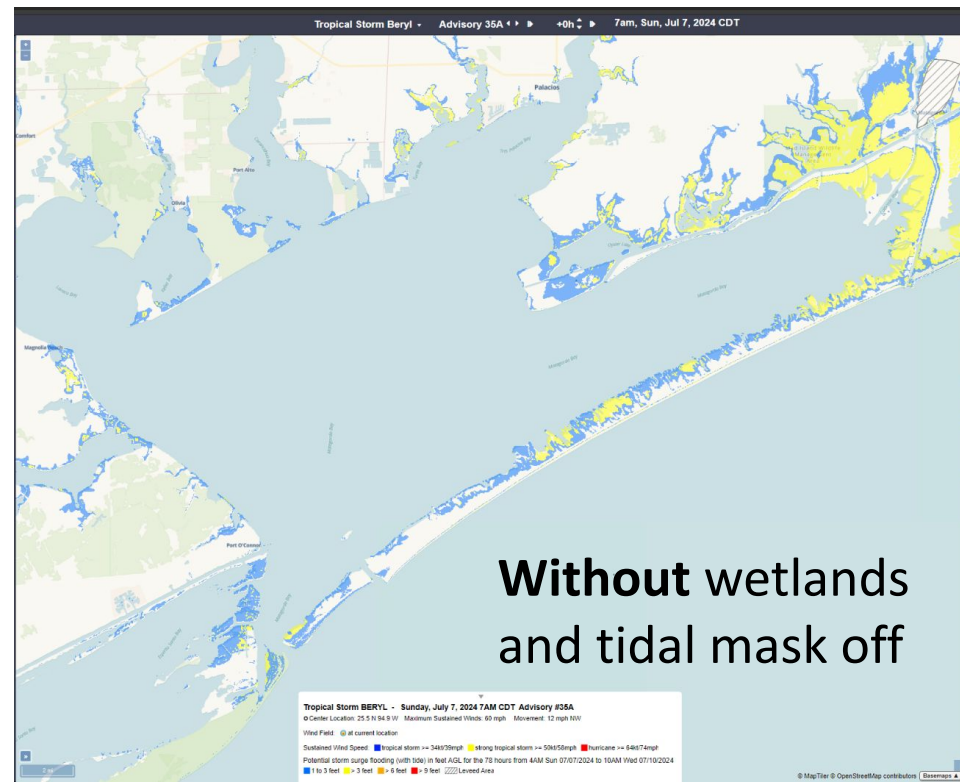
Tropical Storm Beryl - Galveston Bay





Potential Storm Surge Inundation

Tropical Storm Beryl - Matagorda Bay



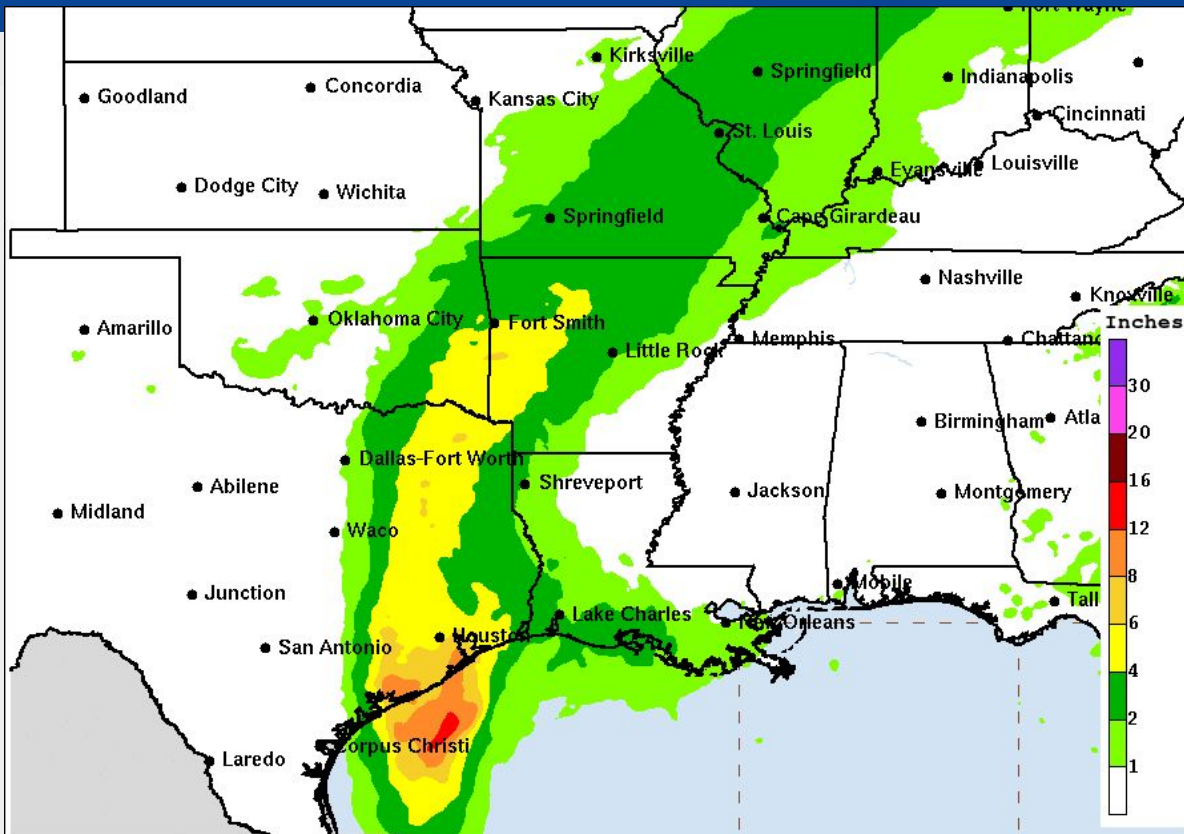


Rainfall Forecast

Storm total rainfall amounts of 5 to 10 inches with localized higher amounts expected. Beginning today (some bands already ongoing).

Period of heaviest rain tonight and Monday.

The heaviest band will be generally near or right of the center track.



Tropical Storm Beryl
 Day 1-3 Rainfall Forecast (inches)
 Created 3:40 PM CDT Sun Jul 7 2024
 Valid 1:00 PM CDT Sun Jul 7 2024
 through 7:00 PM CDT Wed Jul 10 2024
 DOC/NOAA/NWS/NCEP/WPC

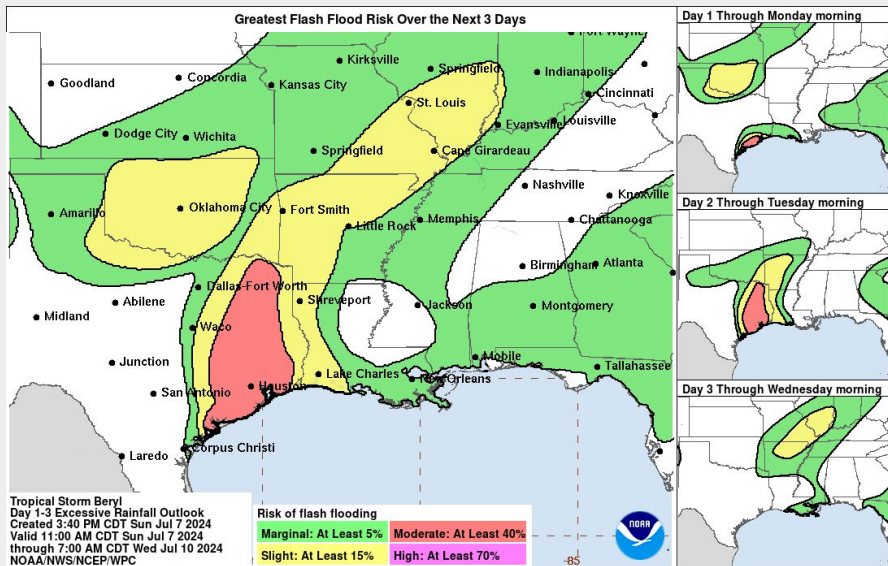
Local point maximum rainfall may be higher than shown.
 See the NHC public advisories for the latest tropical cyclone information.





Excessive Rainfall Outlook/Flood Watch

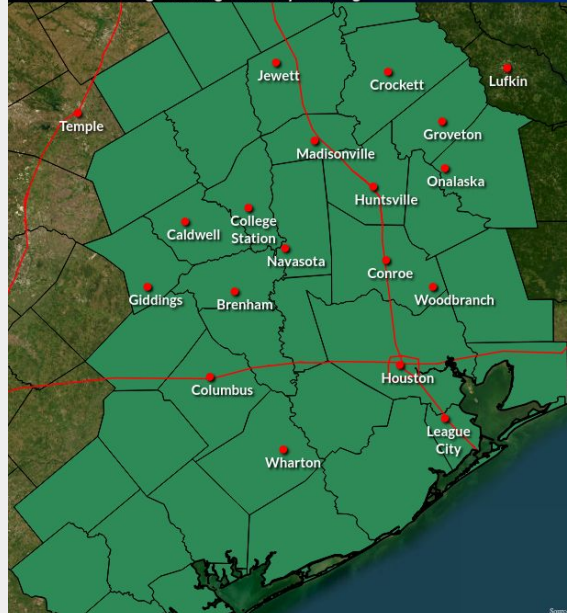
Main heavy rain/flash flood threat will be tonight into Tuesday for the local area. Risk rated as Moderate for western counties which will be closer to the track, highest rainfall.



Flood Watch

In effect from tonight through Tuesday morning

Weather Forecast Office
Houston/Galveston TX
Issued Jul 07, 2024 9:39 AM CDT



FLOOD WATCH

In effect tonight through Tues Morning

- Heavy rain associated with Tropical Storm Beryl could produce rainfall amounts from 5 to 10 inches, with locally higher amounts possible
- Flooding caused by excessive rainfall will be possible.

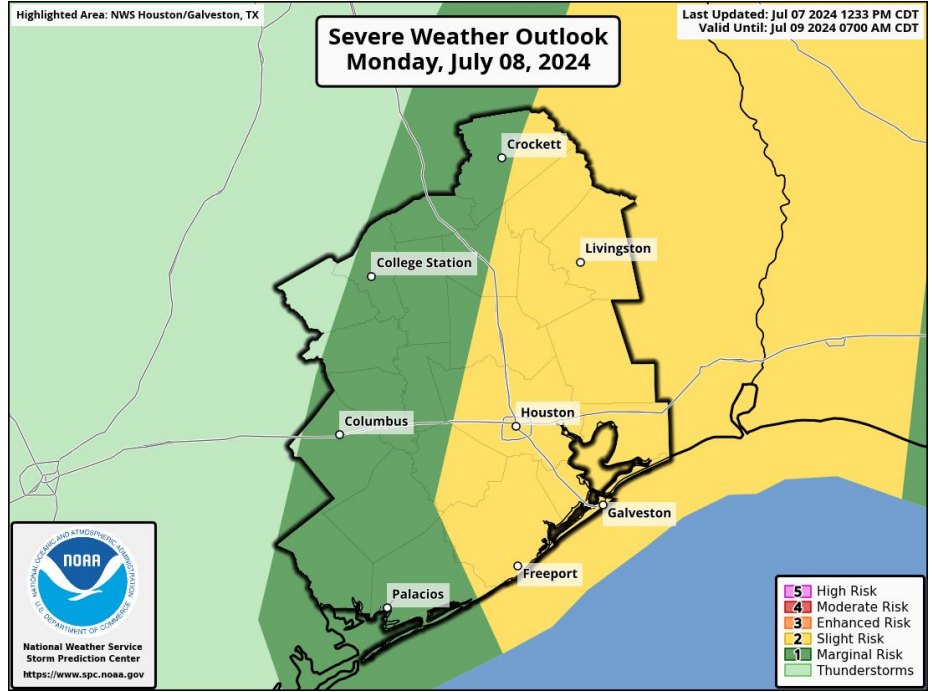
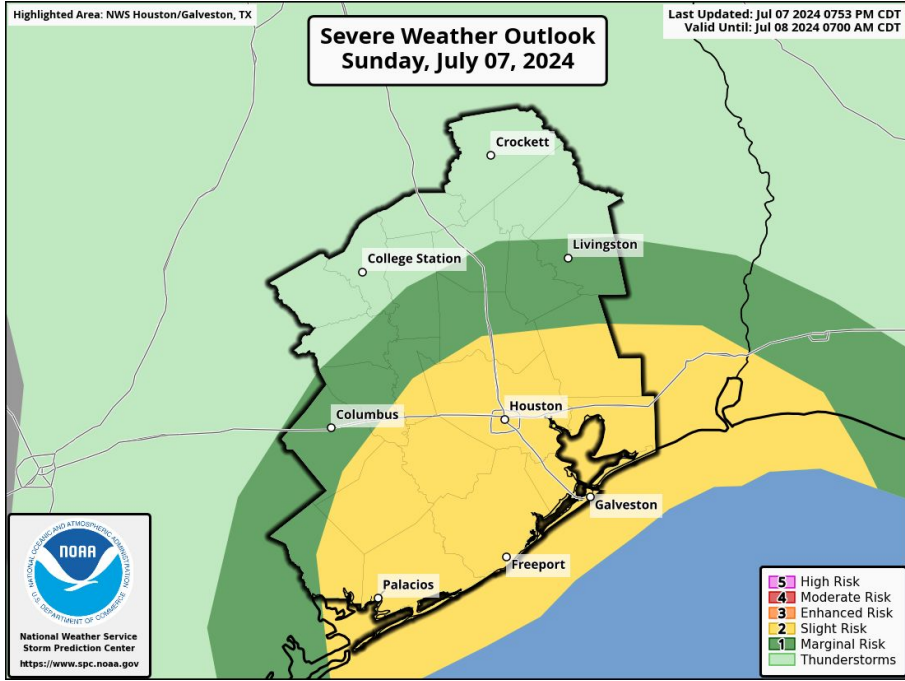
IMPACTS AND ACTIONS

- Excessive runoff may result in flooding of rivers, creeks, streams, and other low-lying and flood-prone locations, particularly urban areas.
- Monitor latest forecast updates and be prepared.



Tornado Risk

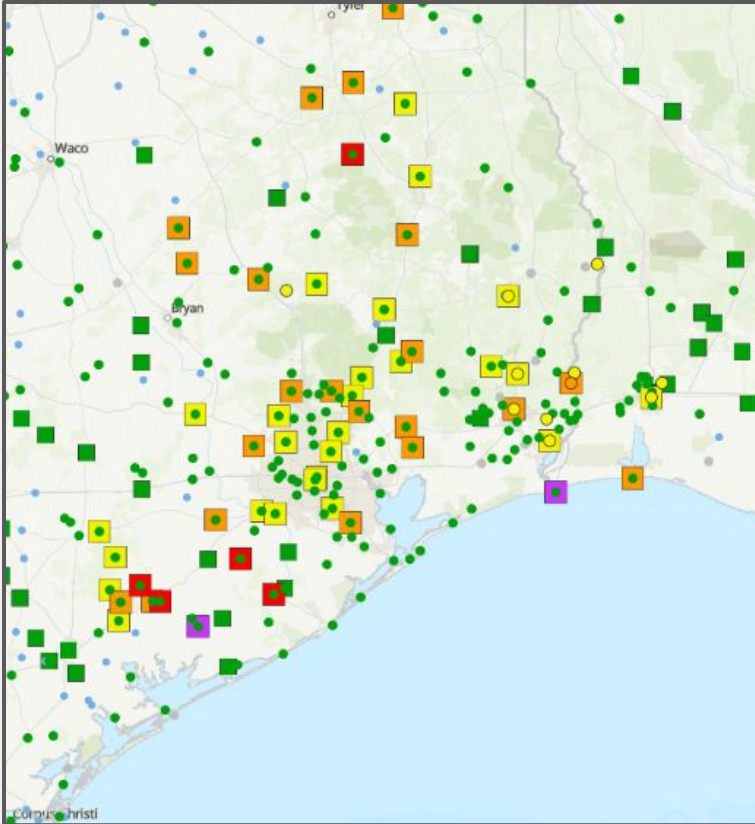
Isolated tornadoes are possible in spiral bands tonight through Monday.





River Forecasts

48-Hour QPF



Not much change. River flooding expected to begin early tomorrow morning and extend into late week.

Focus is on Lavaca/Navidad, Tres Palacios, and San Bernard Rivers.

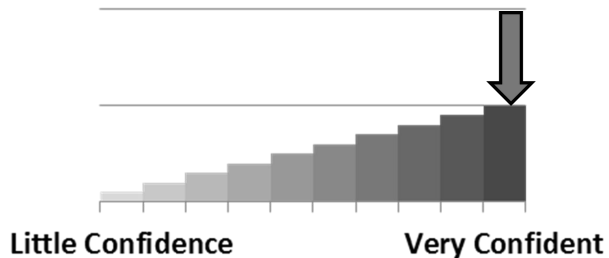
Need to monitor tributaries of Brazos and Trinity Rivers, as well as San Jacinto River/Houston Bayous for any training.



Key Take-Aways

- Beryl remains a tropical storm, still forecast to strengthen to a category 1 hurricane before landfall.
- Beryl will bring a variety of hazards including high winds, heavy rains and storm surge flooding to low lying coastal area.
- Isolated tornadoes will be possible.
- Looks to be a very stormy night and Monday morning with potential for damaging winds, flooding rains and storm surge flooding near the coast. Improving conditions Monday afternoon and evening.

Forecast Confidence



Confidence overall is high on significant impacts from Beryl, all hazards. Still some question whether or how much Beryl will intensify before landfall.



Next Webinar Briefing: None Planned Method: Email



Web: weather.gov/houston



Phone: 281-337-5074



E-mail: sr-hgx.nws@noaa.gov



Facebook: facebook.com/NWSHouston/



Twitter: twitter.com/NWSHouston



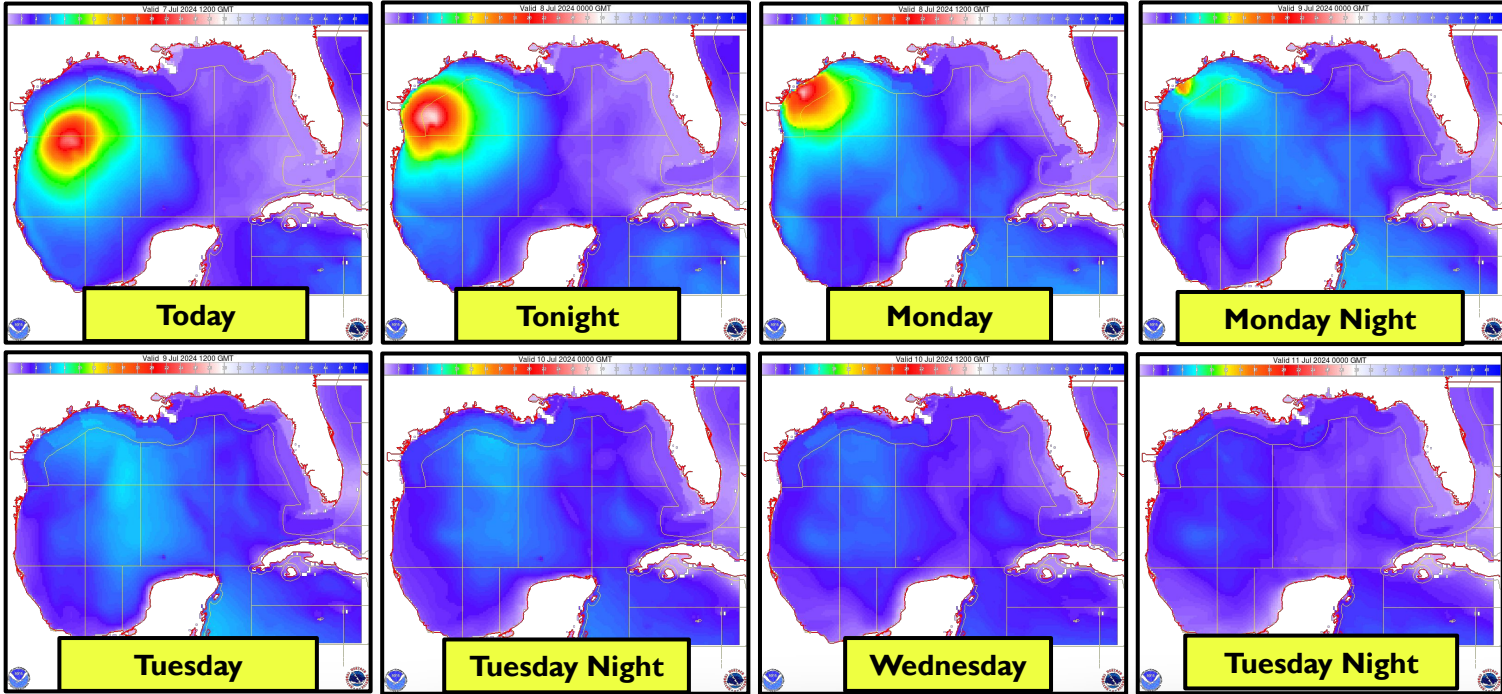
YouTube: youtube.com/nwshouston



Forecast Wave Heights: Gulf of Mexico

See <http://www.hurricanes.gov> for the latest on the tropics or any active storms

Offshore wave heights of up to 30 ft possible as Beryl nears the Texas Coastal Bend and South Texas on tonight and Monday.





For Marine Planning Purposes...

Tropical Storm Beryl

Seas:

- ❑ Arrival of 6+ foot seas: **within 20 nm this morning**
- ❑ Arrival of 15+ foot seas: **this afternoon >20 nm offshore, within 20 nm tonight**
- ❑ Peak seas: 20-30 feet near mid-Texas coast.
- ❑ Potential improvement (seas < 6 feet nearshore): **Tuesday morning**

Winds:

- ❑ Onset of sustained TS winds (34kt+): **this evening for mid coast, late evening/early tonight for upper coast.**
- ❑ Onset of hurricane force winds (64kt+): **Monday night for mid coast**
- ❑ Potential improvement (winds <30 kt): Speeds decreasing **late afternoon/eve Monday for coast.**

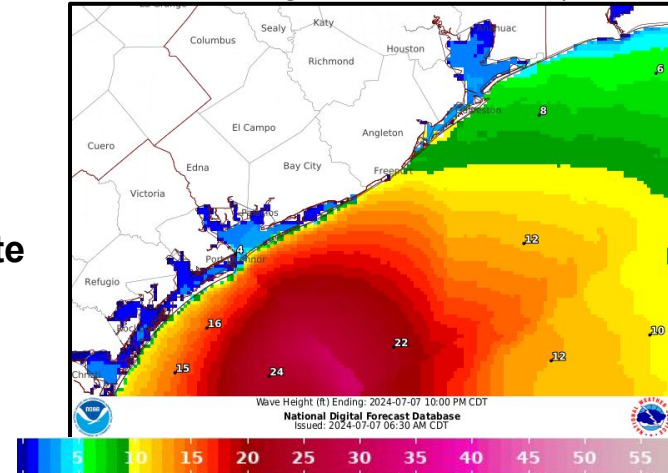
Coastal flooding / surge:

- ❑ Water levels will likely begin to **rise on today, peaking Monday morning.**

Beach:

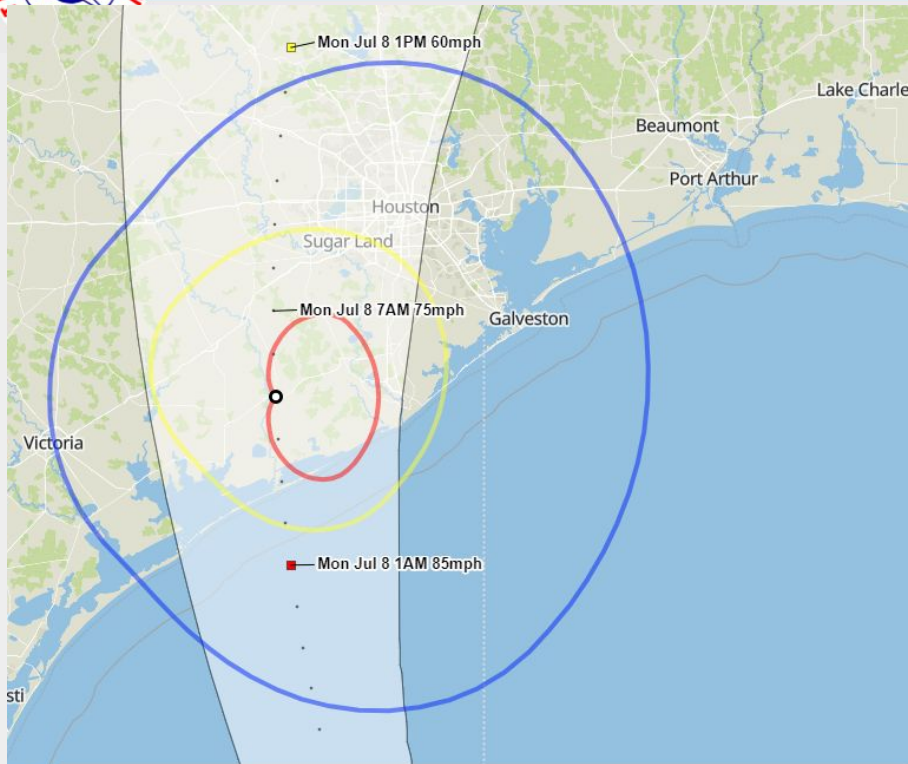
- ❑ Increasing surf and threat for dangerous rip currents: **beginning today.**

Wave Height (ft) at 10 PM Sunday





Wind Radii, Timing, Cone

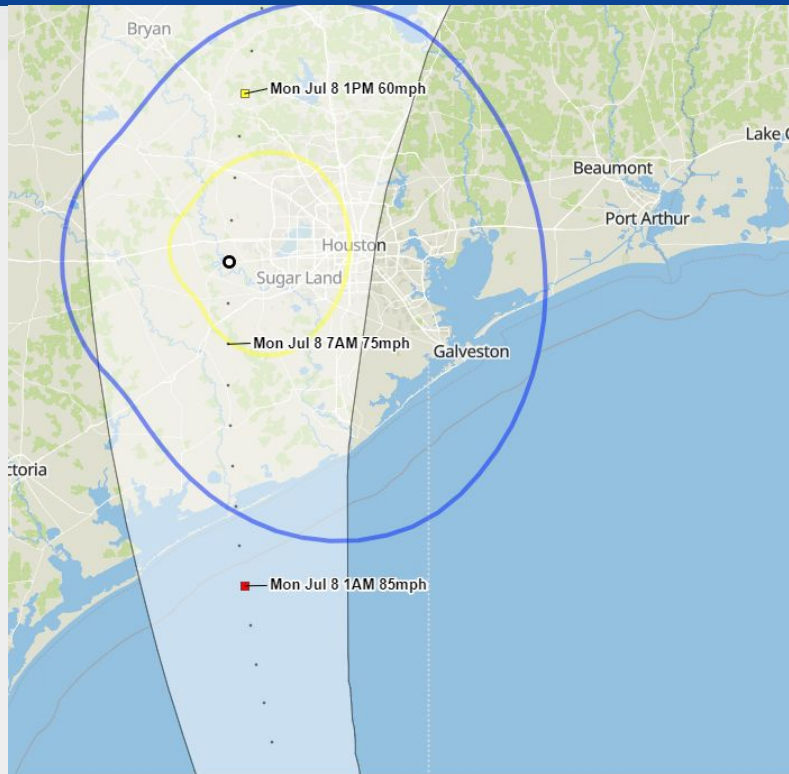


TROPICAL STORM BERYL - Monday, July 8, 2024 5AM CDT (Fcst Hr 13) Advisory #37

Center Location: 29.0 N 96.0 W Maximum Sustained Winds: 80 mph (Cat 1) Movement: 12 mph N

Wind Field: at current location Potential Track Area: 1-3 day 4-5 day

Sustained Wind Speed: tropical storm \geq 34kt/39mph strong tropical storm \geq 50kt/58mph hurricane \geq 64kt/74mph



TROPICAL STORM BERYL - Monday, July 8, 2024 9AM CDT (Fcst Hr 17) Advisory #37

Center Location: 29.7 N 96.0 W Maximum Sustained Winds: 70 mph Movement: 12 mph N

Wind Field: at current location Potential Track Area: 1-3 day 4-5 day

Sustained Wind Speed: tropical storm \geq 34kt/39mph strong tropical storm \geq 50kt/58mph hurricane \geq 64kt/74mph



Hurricane Beryl

Latest updates from the
National Hurricane Center: [Hurricanes.gov](https://www.hurricanes.gov)



What We Know



What we DON'T Know

Track

- Hurricane Beryl will cross the Yucan and reemerge out over the Gulf later today.
- The storm will likely reach the South Texas coast early Monday as a hurricane.
- Move into the Bay of Campeche/Southwest Gulf this weekend

Strength

- Currently a Major Hurricane
- Will be moving into a more hostile environment over the next few days leading to gradual weakening
- Land interaction with the Yucatan Peninsula will likely further weaken Beryl into a Tropical Storm as it moves into the SW Gulf

Track

- Where Beryl goes after moving into the SW Gulf
→ the current most likely spot will be making landfall somewhere in Northeastern Mexico or Southern Texas

Strength

- If Beryl will restrengthen after moving into the SW Gulf
→ the current most likely scenario is it remains a Tropical Storm before landfall

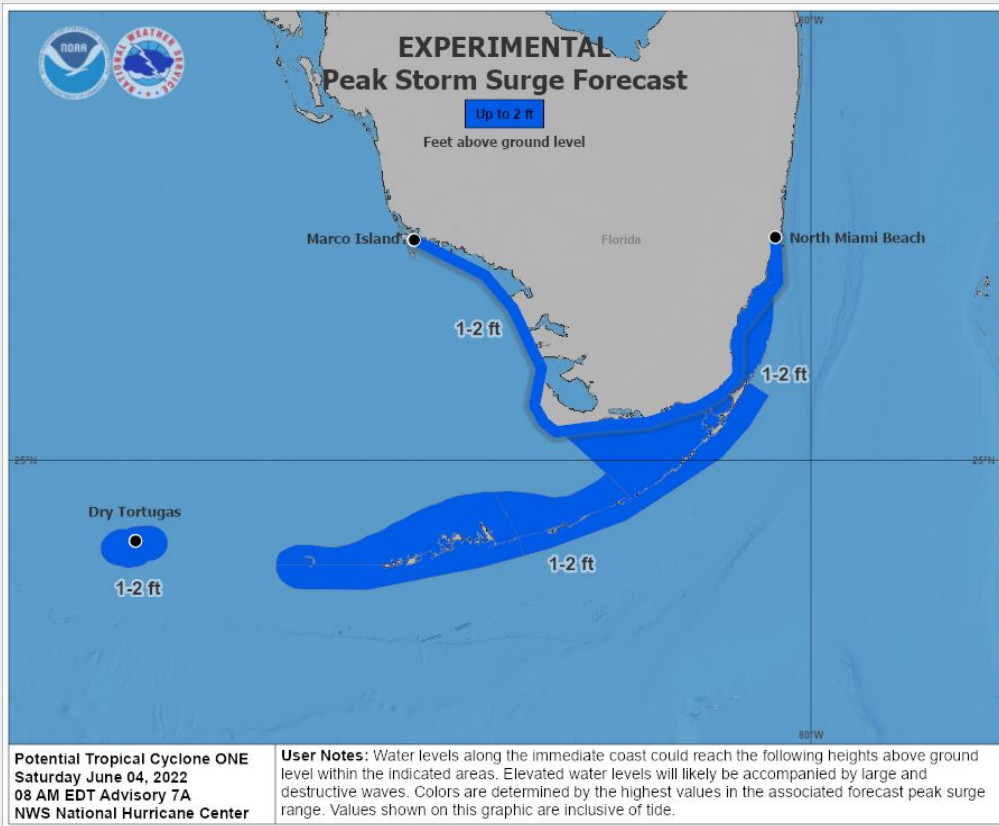
Most Likely Impacts for SE Texas

Increased risk for strong rip currents beginning this weekend
Long period swells in the waters and elevated tides



Peak Storm Surge

Hurricane Kay



Last updated: 9/8/2022 11:10:07 AM

National Weather Service - Houston/Galveston, TX



Situation Overview

Hurricane Beryl

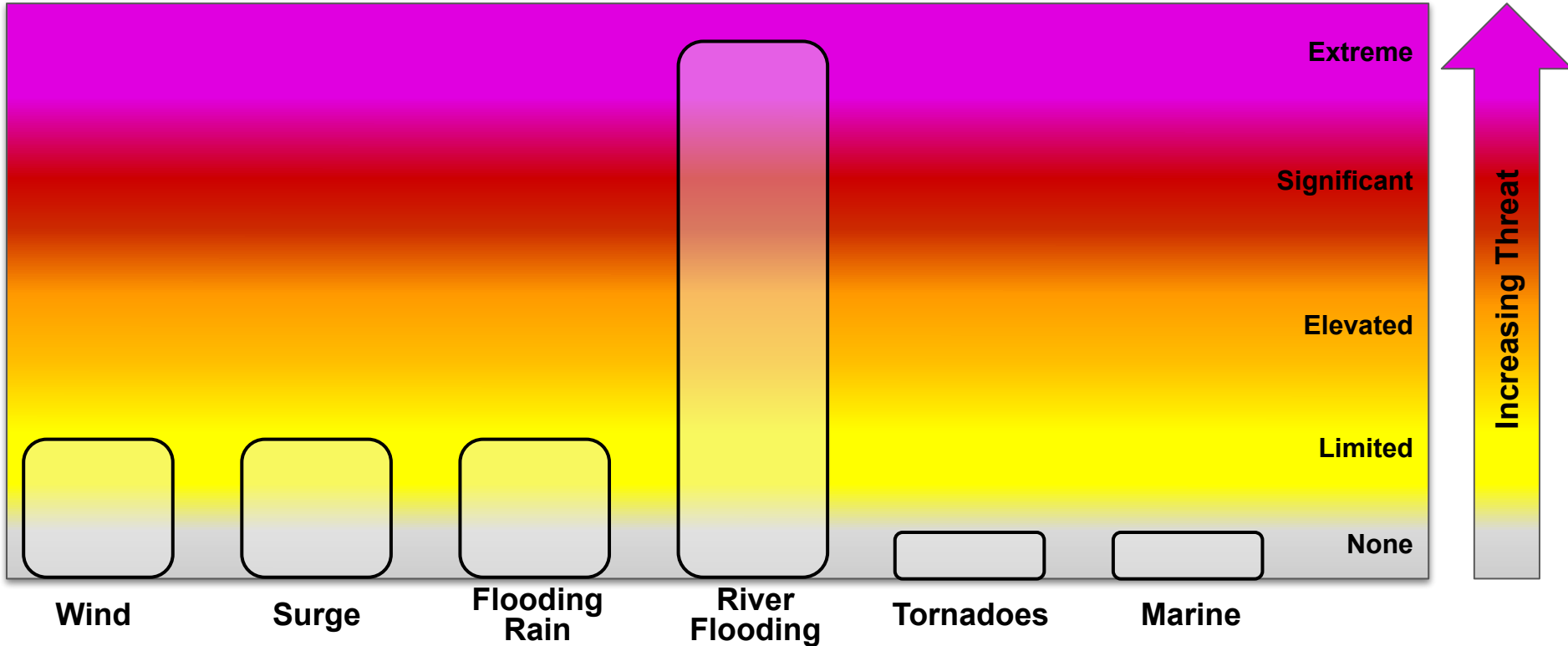
Hazard	Impacts	Location	Timing
 Wind			
 Storm Surge & Inundation			
 Flooding Rain			
 Tornado			
 Marine			



Threat Levels

None

For information on specific hazards in this area, please go to: <https://www.weather.gov/srh/tropical?office=bro>

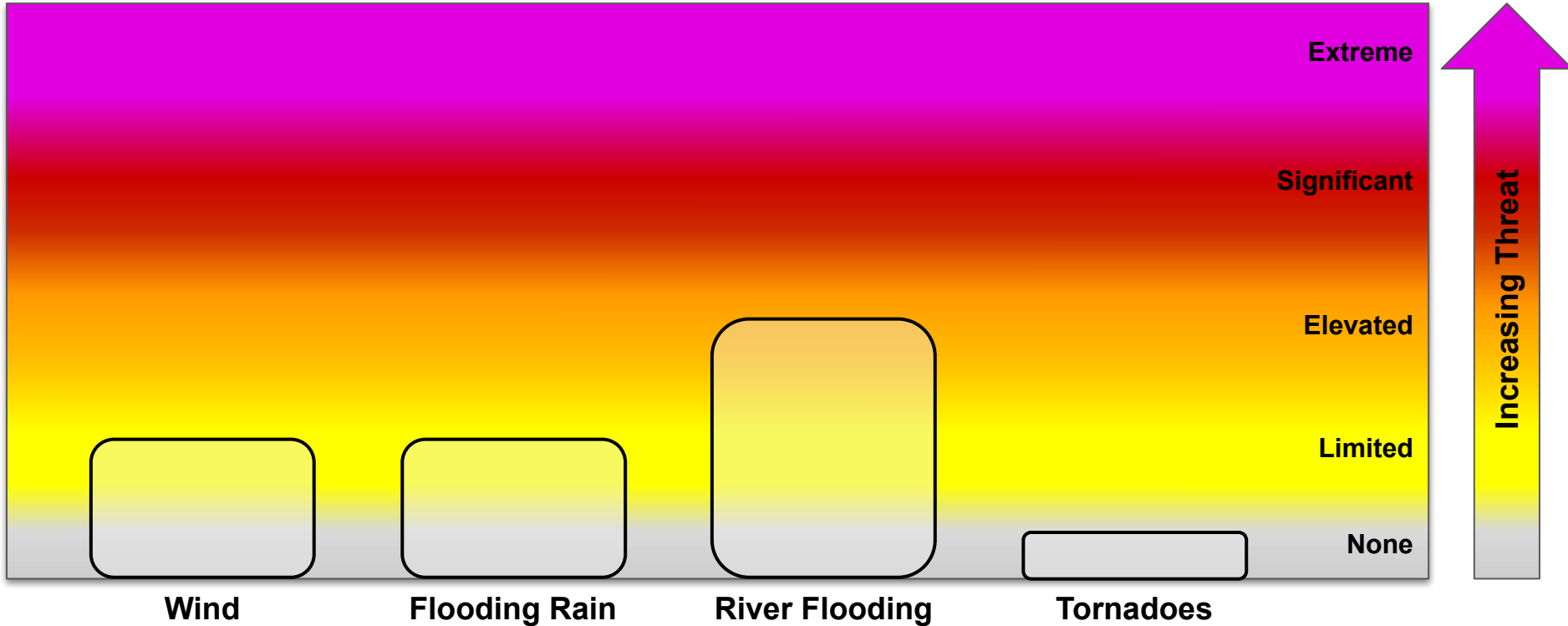




Threat Levels

None

For information on specific hazards in this area, please go to: <https://www.weather.gov/srh/tropical?office=mfl>





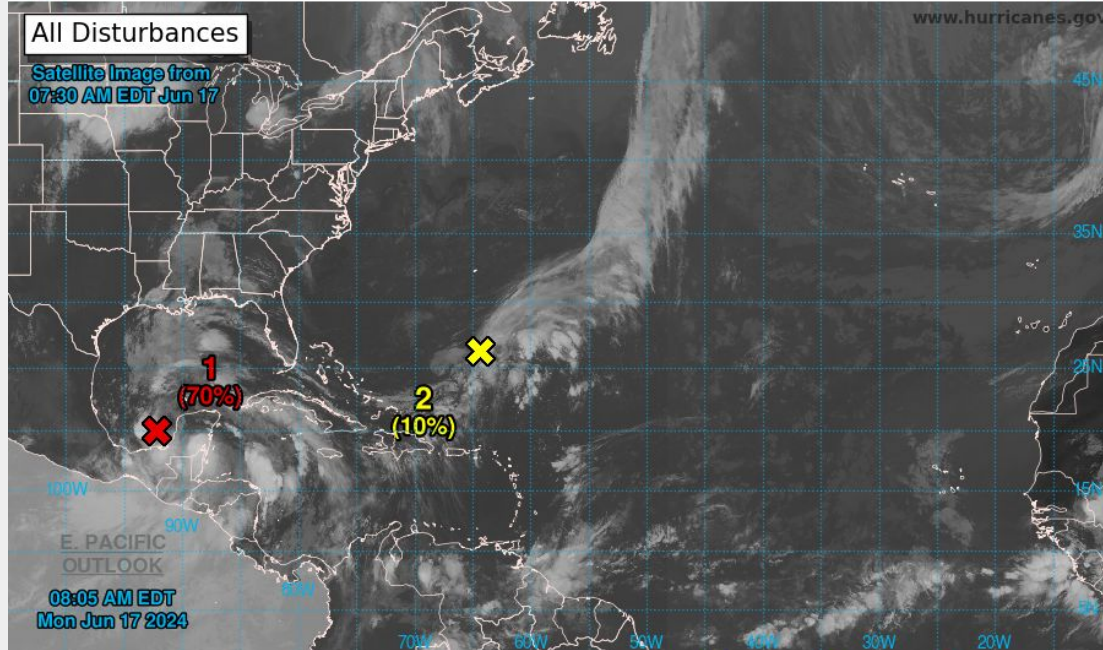
Tropical Weather Outlook

None



Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Two-Day Cyclone Formation Chance: X < 40% X 40-60% X > 60%

Tropical or Sub-Tropical Cyclone: ○ Depression ◉ Storm ● Hurricane

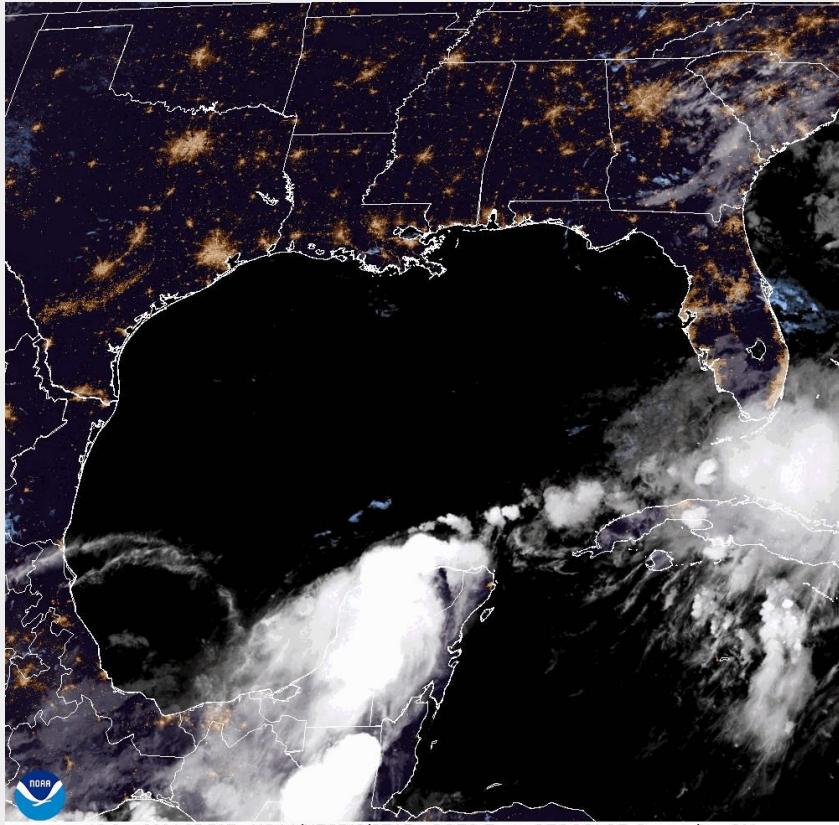
⊗ Post-Tropical Cyclone or Remnants

- Area of interest in the southwest Gulf of Mexico now has a 40% probability of development into a tropical cyclone over the next 7 days.
- Anticipated impacts to SE Texas at this time are similar whether a tropical cyclone forms or not - gustier winds, higher chances for rain and storms, increased potential for rip currents and high tide levels, and rougher seas.
- Reminder: The hatched area represents a possible development area, not the system's path after development occurs.



Current Satellite View

None



13 Jun 2024 05:51Z - NOAA/NESDIS/STAR - GOES-East - GEOCOLOR Composite - GM

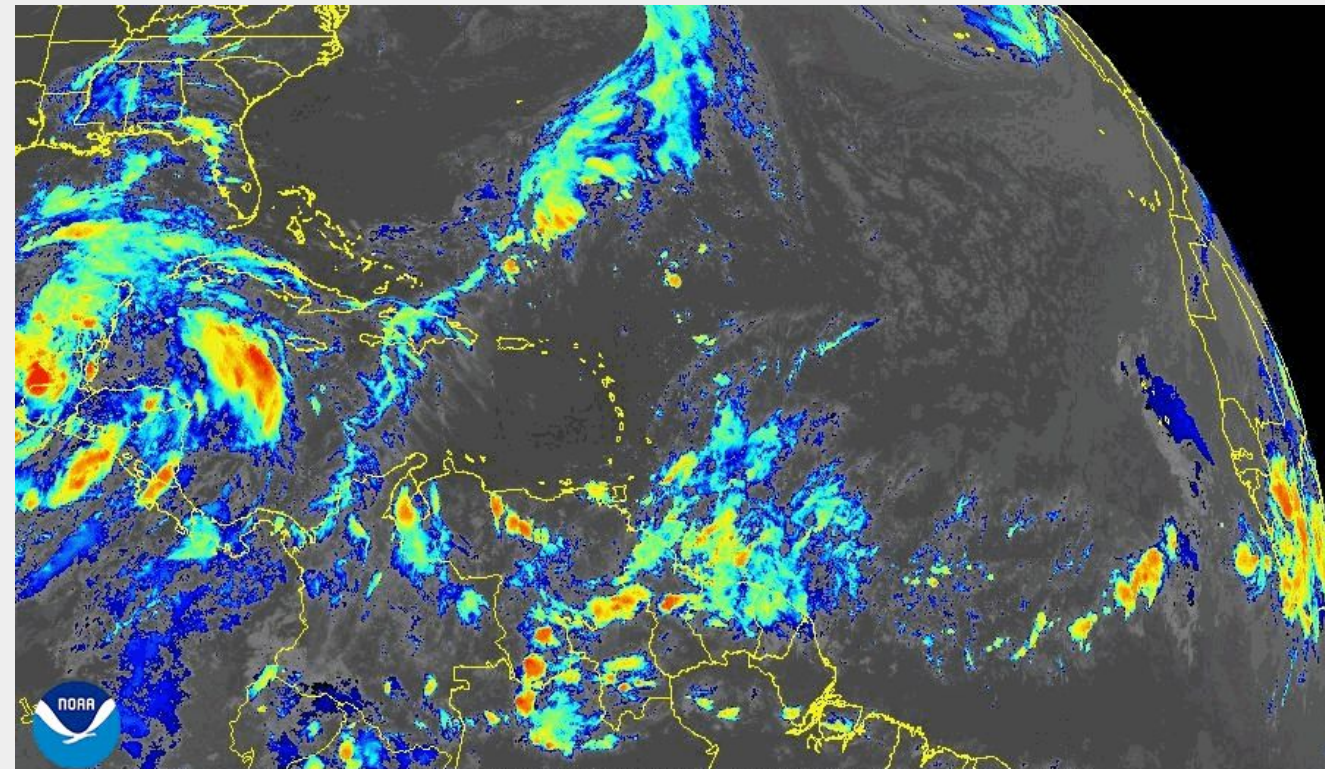
Last updated: 6/13/2024 5:30 AM CDT

National Weather Service - Houston/Galveston, TX



Current Satellite View

None

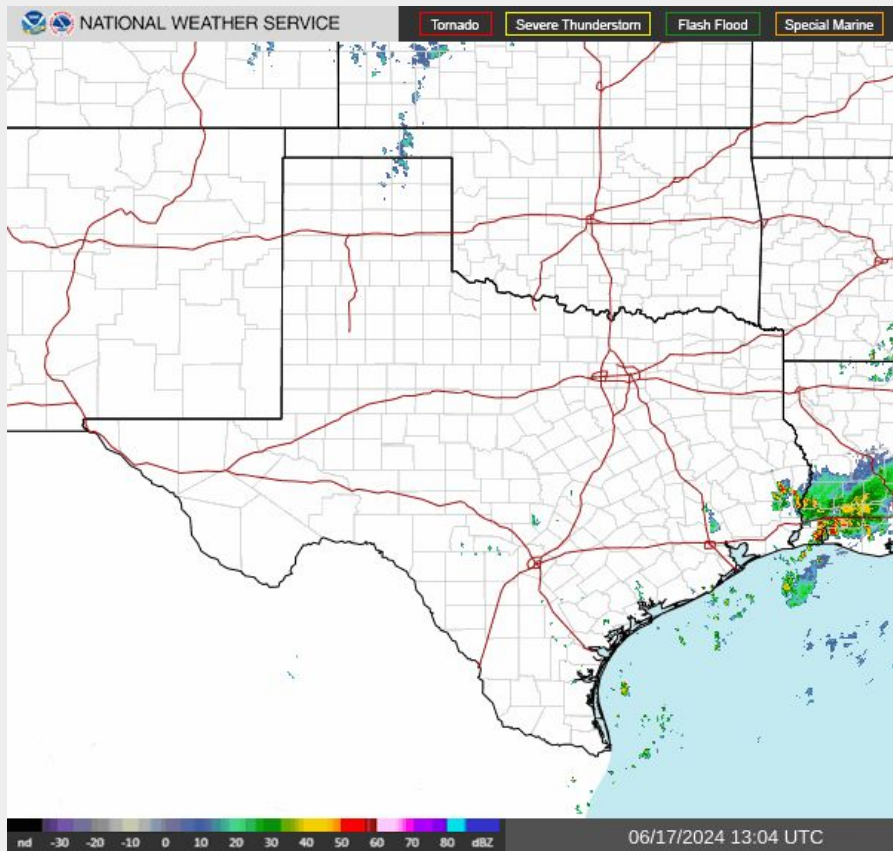


17 Jun 2024 02:30Z - NOAA/NESDIS/STAR - GOES-East - Sandwich Composite



Current Radar View

None



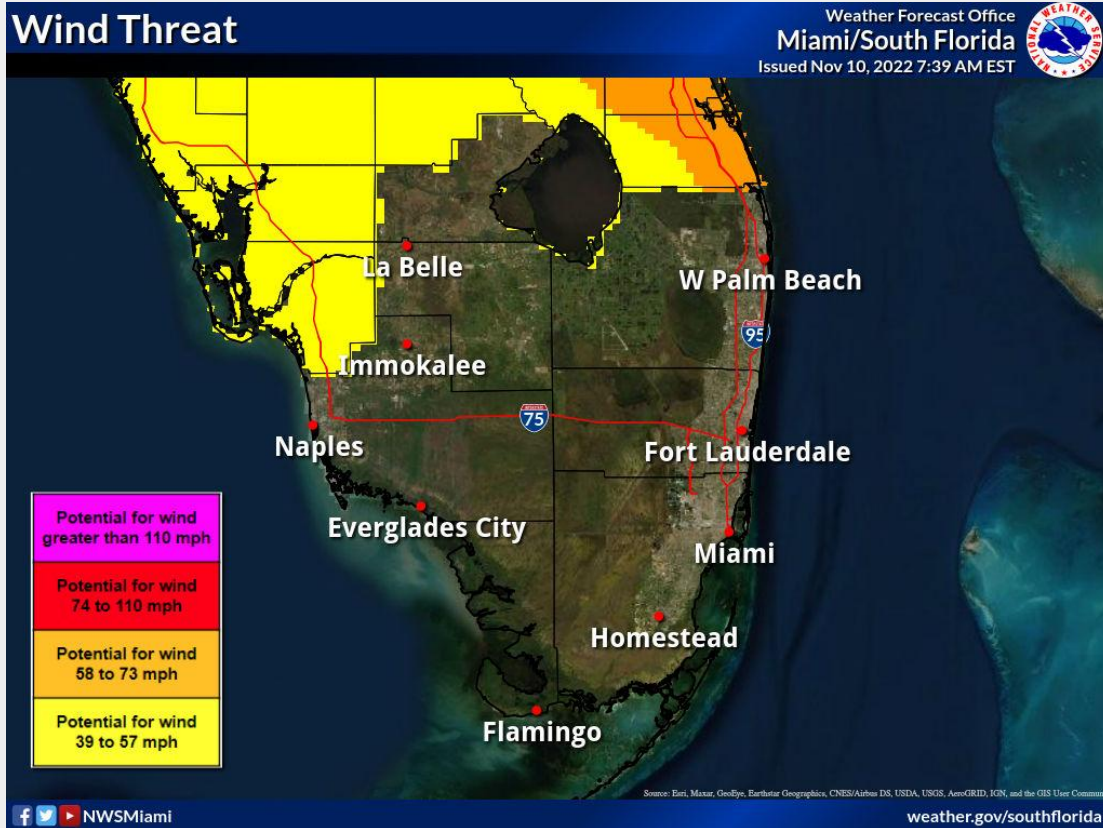
Last updated: 6/17/2024 8:31 AM CDT

National Weather Service - Houston/Galveston, TX



Wind Threat / Potential Impact

None



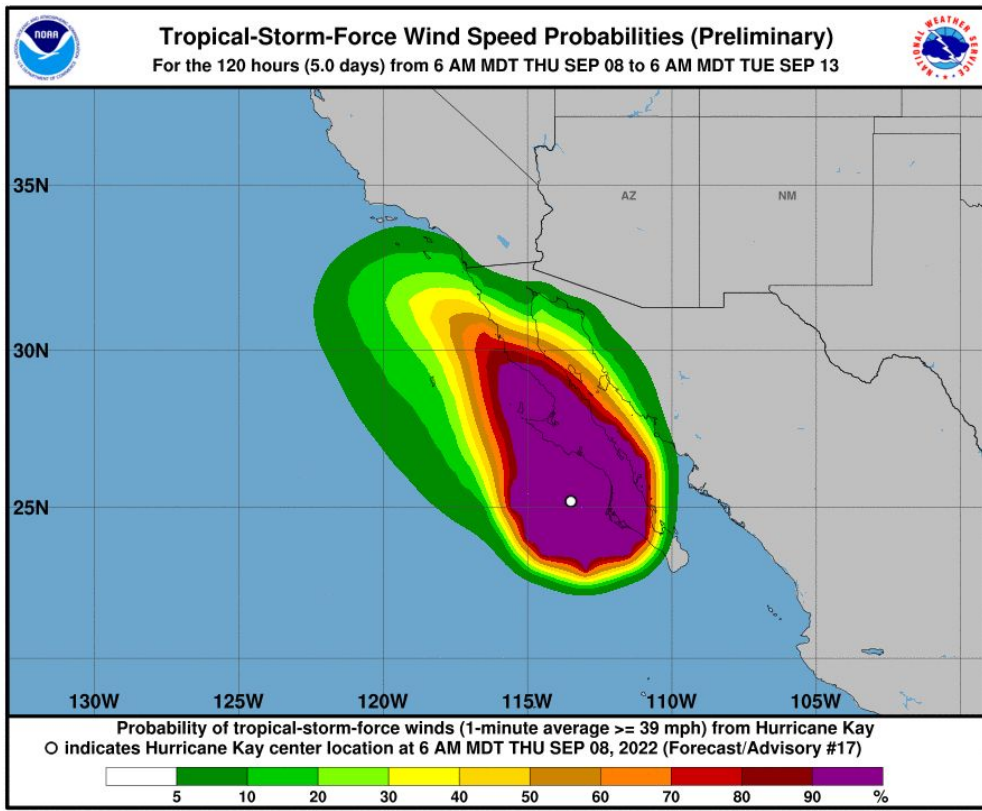
There is a potential for:

- Include 2-3 major threat and impact statements here (widespread power outages, etc)
- Recommend using mosaic graphics here (that do not stop at CWA borders)



Tropical Storm Wind Speed Probabilities

Hurricane Kay



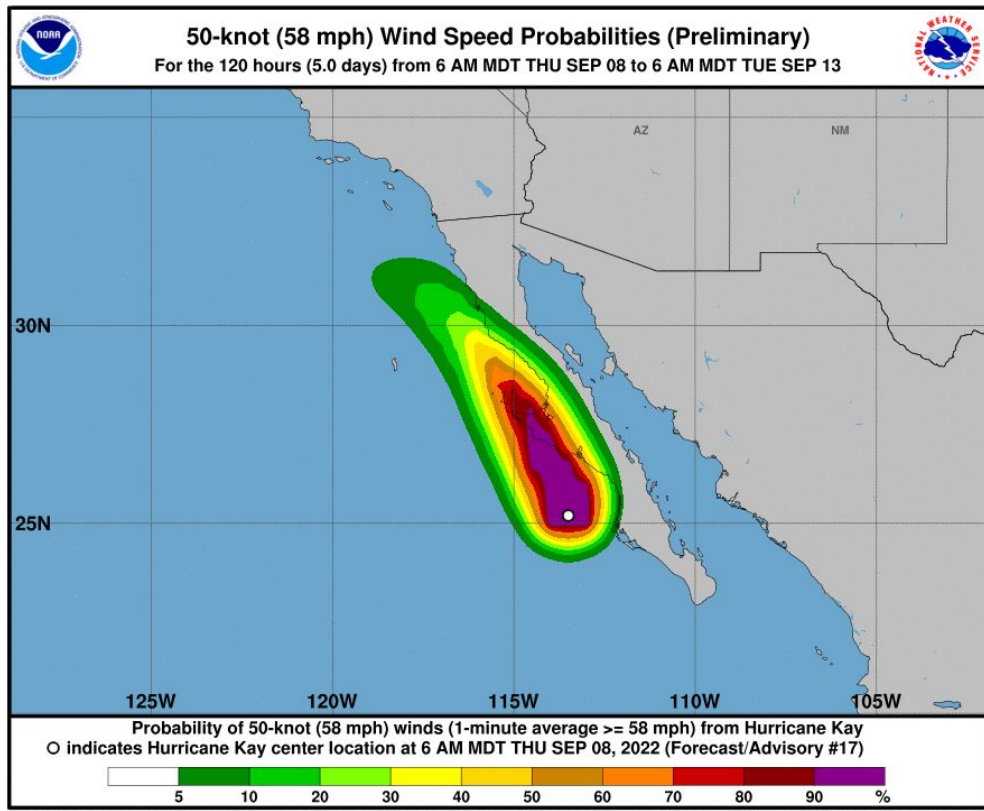
Last updated: 9/8/2022 11:10:07 AM

National Weather Service - Houston/Galveston, TX



50 kt (58 mph) Wind Speed Probabilities

Hurricane Kay



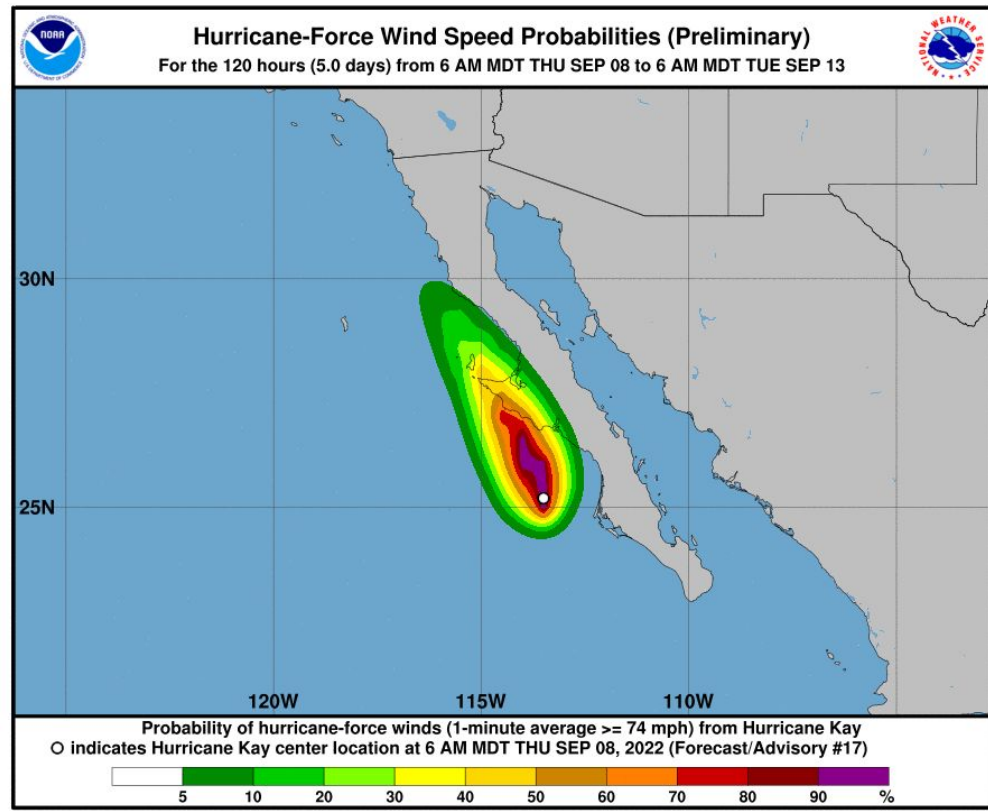
In THREE bullet points or less:

- Use terms such as 9 in 10 chance, “near certainty”, or “still equal chances”
- Add trends in probabilities (steady, increasing, decreasing)
- Describe locations of greatest risk: {Area Description}. However,
- Similar chance of 50kt wind speeds occurring at all locations from (location) to (location)
- 50kt winds could begin as early as Sunday (if applicable).
- *If applicable*: 50kt winds could linger through {General Time Descriptor (24hr time scale)}.



Hurricane Wind Speed Probabilities

Hurricane Kay



In THREE bullet points or less:

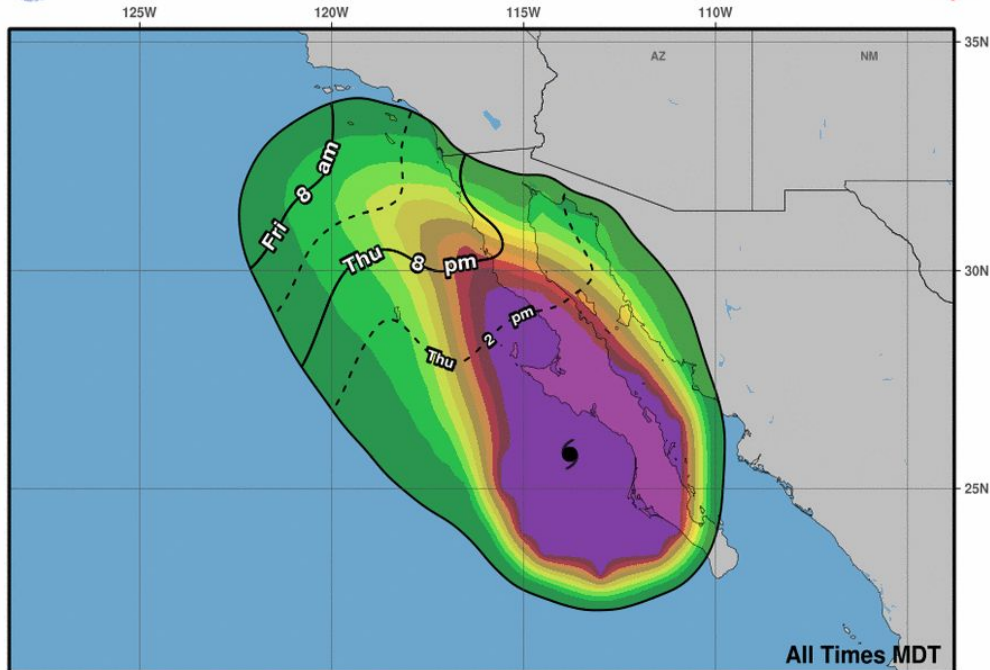
- Use terms such as 9 in 10 chance, “near certainty”, or “still equal chances”
- Add trends in probabilities (steady, increasing, decreasing)
- Describe locations of greatest risk: {Area Description}. However,
- Similar chance of hurricane conditions occurring at all locations from (location) to (location)
- Hurricane conditions could begin as early as Sunday (if applicable).
- ***If applicable:*** Hurricane conditions could linger through {General Time Descriptor (24hr time scale)}.



Earliest Reasonable Time of Arrival

Hurricane Kay

Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds



Hurricane Kay
Thu. Sep. 8, 2022 9 am MDT
Advisory 17

Storm Location ○ < 34 kt (39 mph)
& ○ 34-63 kt (39-73 mph)
Wind Speed ● ≥ 64 kt (74 mph)

5-day chance of receiving sustained 34+ kt (39+ mph) winds
5 10 20 30 40 50 60 70 80 90 100 %

- The earliest reasonable time of arrival of Tropical Storm Force Winds for the Big Bend of Florida is Thursday morning
- However, the most likely time this area could see Tropical Storm Force Winds will be during the day on Thursday



Wind Timing

None

Expected Duration of Wind Speeds

Location	Tropical Storm Force Winds	Hurricane Force Winds
Region 1	Start/end times in an appropriate time frame (6hrs only when close to landfall)	Start/end times in an appropriate time frame (6hrs only when close to landfall)
Region 2	Start/end times in an appropriate time frame (6hrs only when close to landfall)	Start/end times in an appropriate time frame (6hrs only when close to landfall)
Region 3	Start/end times in an appropriate time frame (6hrs only when close to landfall)	Start/end times in an appropriate time frame (6hrs only when close to landfall)
Region 4	Start/end times in an appropriate time frame (6hrs only when close to landfall)	Start/end times in an appropriate time frame (6hrs only when close to landfall)
Region 5	Start/end times in an appropriate time frame (6hrs only when close to landfall)	Start/end times in an appropriate time frame (6hrs only when close to landfall)



Potential Storm Surge Impacts

None



There is a potential for:

- Include 2-3 major threats and impact statements here (damage to several buildings, moderate damage to marinas, docks, etc)



Storm Surge - Initial Estimates

None

Estimated surge values are preliminary numbers only, they have not been verified

Location	Current Observations or Estimated Surge Level	Timing of when water is expected to recede
Region 1	Make sure you specify datum	Expected end time
Region 2	Make sure you specify datum	Expected end time
Region 3	Make sure you specify datum	Expected end time
Region 4	Make sure you specify datum	Expected end time
Region 5	Make sure you specify datum	Expected end time

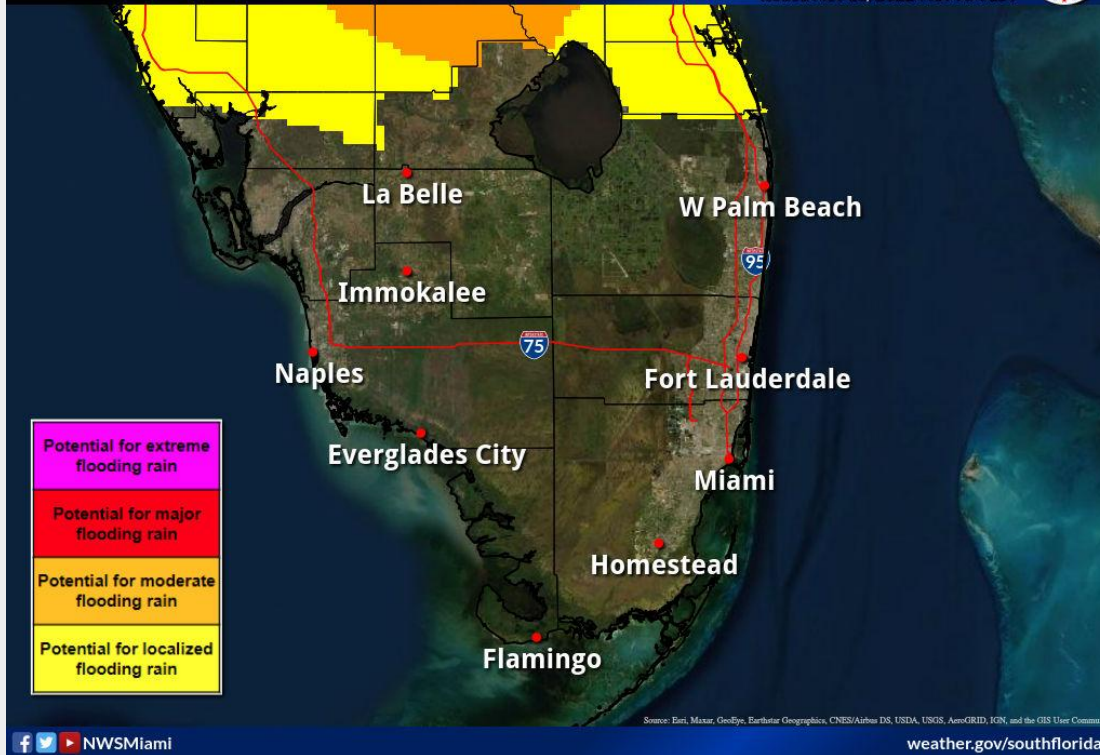


Inland Flooding Impacts

None

Flooding Rain Threat

Weather Forecast Office
Miami/South Florida
Issued Nov 10, 2022 7:39 AM EST

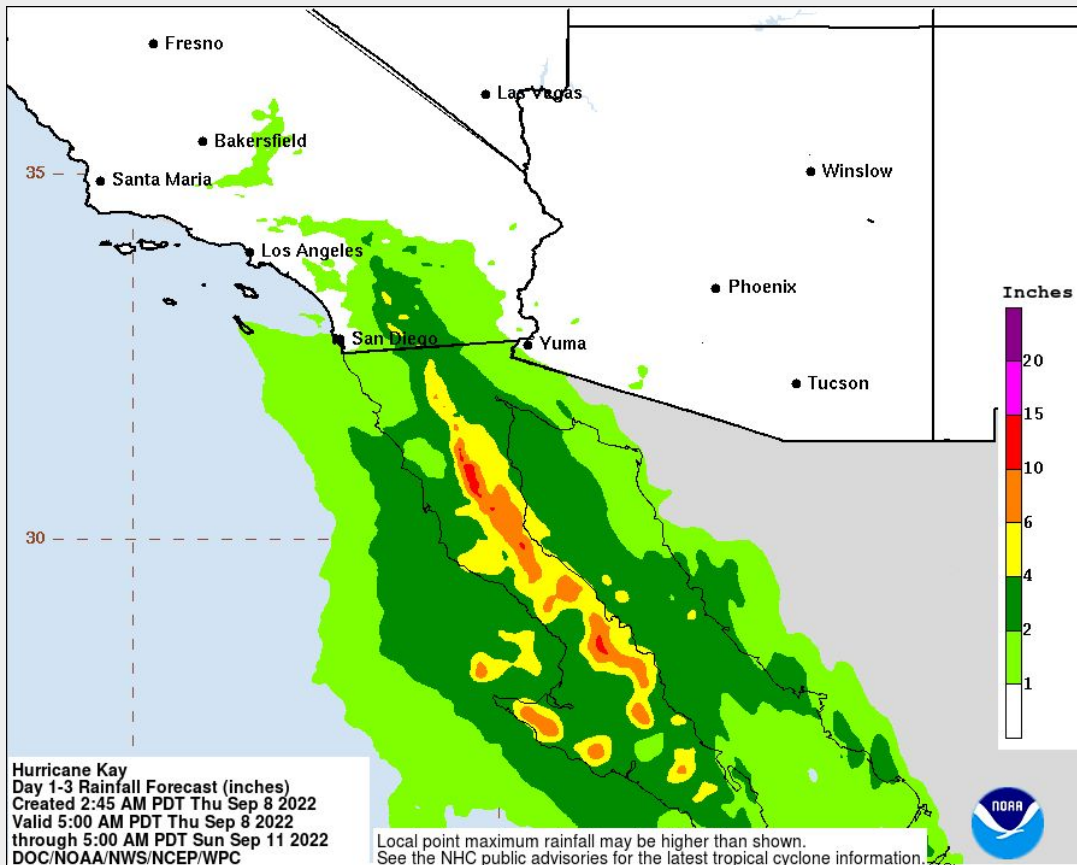


- Areas outlined in <yellow> <orange> <red> have the greatest potential for flash flooding on < day >
- For generalized potential impacts, use Impact Graphics statements as guidelines



Expected Storm Total Rainfall

Hurricane Beryl



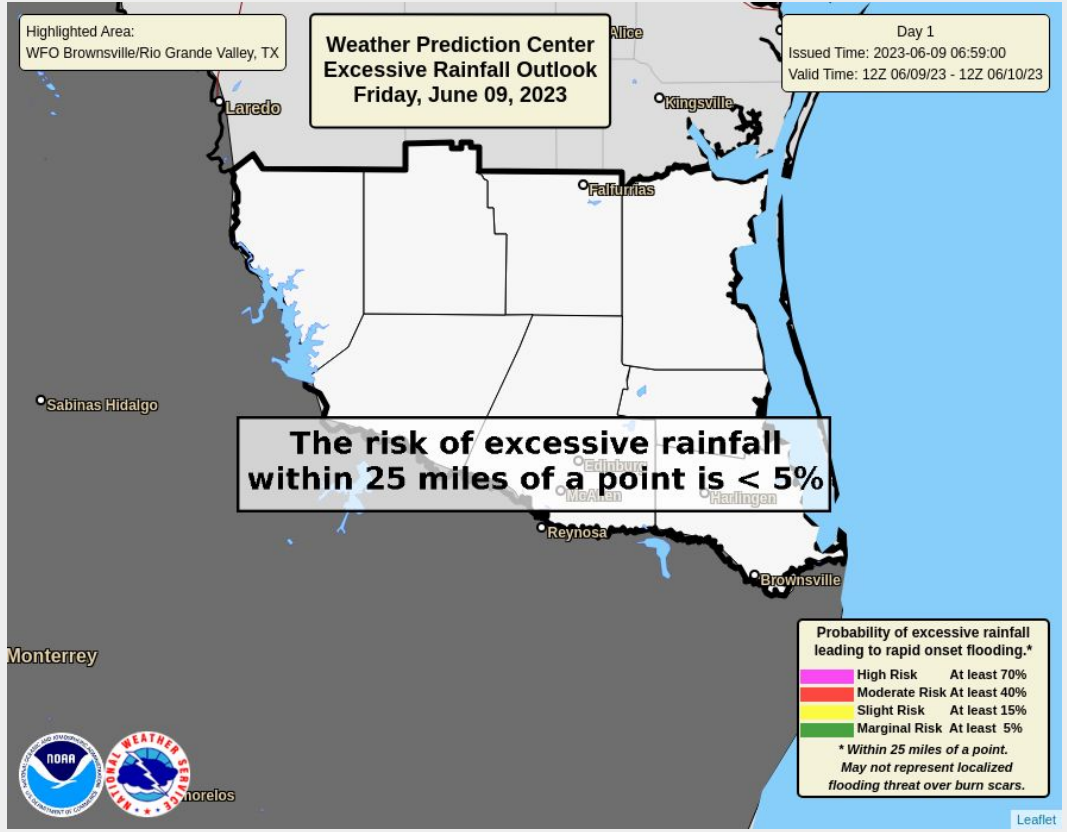
Last updated: 7/5/2024 8:06 AM CDT

National Weather Service - Houston/Galveston, TX



Excessive Rainfall Outlook

None



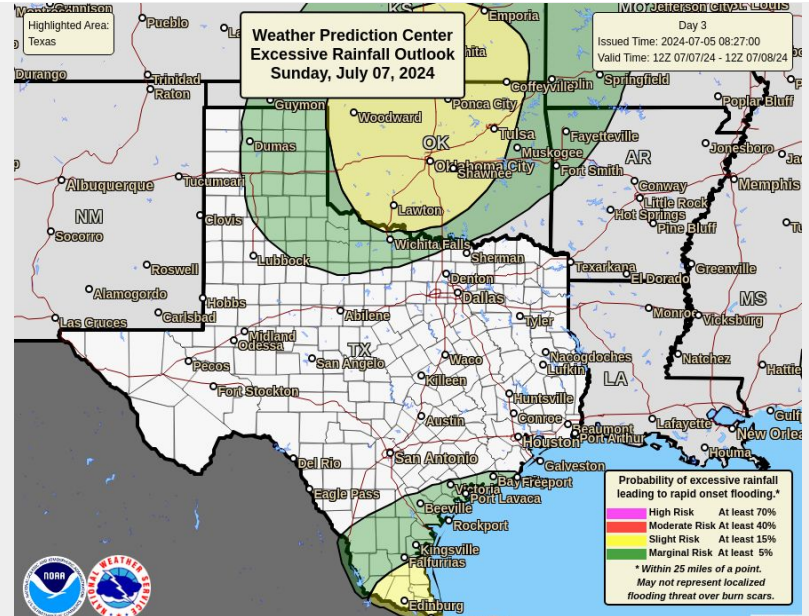
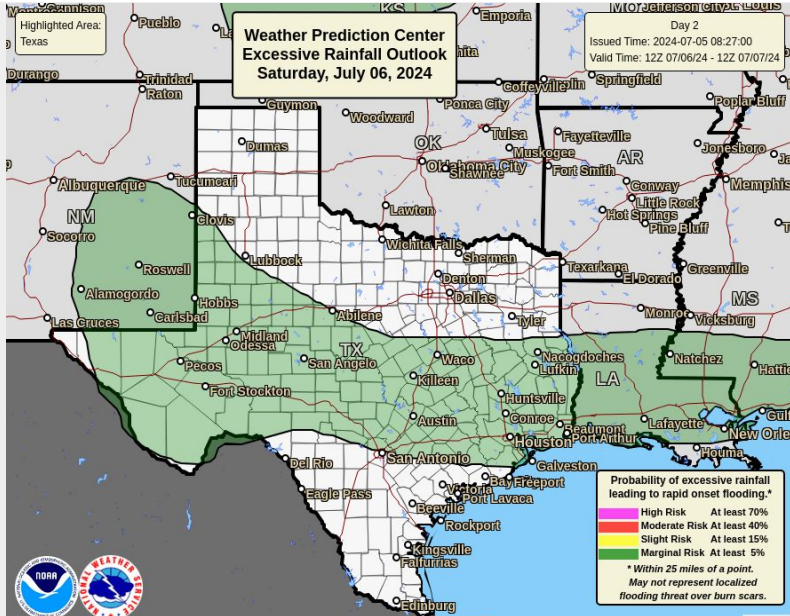
- Areas outlined in <yellow> <orange> <red> have the greatest potential for flash flooding on < day >
- For generalized potential impacts, use Impact Graphics statements as guidelines



Excessive Rainfall Outlook

Hurricane Beryl

- Areas outlined in <yellow> <orange> <red> have the greatest potential for flash flooding on < day >
- For generalized potential impacts, use Impact Graphics statements as guidelines



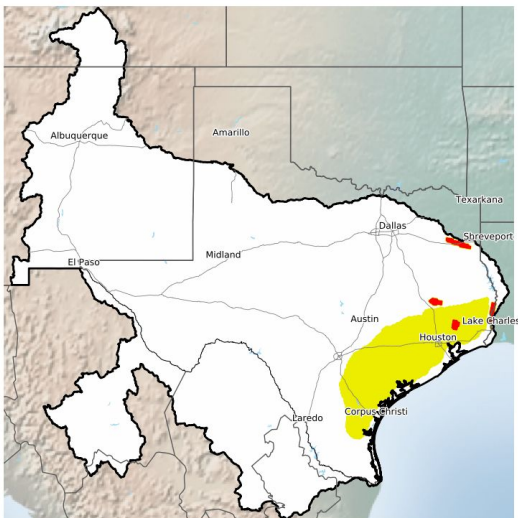


River Flood Outlook

None

5-Day Significant River Flood Outlook

Valid: 06/16/2024 07:00 AM - 06/21/2024 07:00 AM CDT



National Weather Service
West Gulf RFC

06/16/2024 10:50 AM CDT

Follow Us:



weather.gov/WGRFC

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 West Gulf River Forecast Center



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



Flood Hazard Outlook

Hurricane Kay

Experimental 7-Day Flood Hazard Outlook: Tropical Storm Earl
Includes Flash, River, and Tidal Flood Hazards

Issued: 2022-09-05 04:00 PM CDT (21:00 UTC) | Valid Through: 2022-09-12 04:00 PM CDT (21:00 UTC) | Next Issuance: 2022-09-06 04:00 PM CDT (21:00 UTC)

Flood Hazard Messages

Puerto Rico

- Earl is expected to produce additional rainfall amounts of 1 to 4 inches, with isolated storm totals of 8 inches, across the Leeward Islands, U.S. and British Virgin Islands, and Puerto Rico through Monday.
- Limited flash, urban, and small stream flooding impacts and rapid rises on rivers are possible through early this week, especially across northern portions of Puerto Rico, including the metropolitan area of San Juan.
- Locally considerable flood impacts cannot be ruled out in areas that receive heavier rainfall totals.
- Mudslides are also possible in areas of steep terrain across the central interior region of Puerto Rico for the next several days.
- Please see smaller inset map in the bottom right for the potential flooding impacts and timing.

Potential Flooding Impacts	Timing	Official Forecast Points
 Catastrophic	 Days 1-3	 Major Flood
 Considerable	 Days 4-7	 Moderate Flood
 Limited	 Days 1-7	 Minor Flood

Puerto Rico & U.S. Virgin Islands

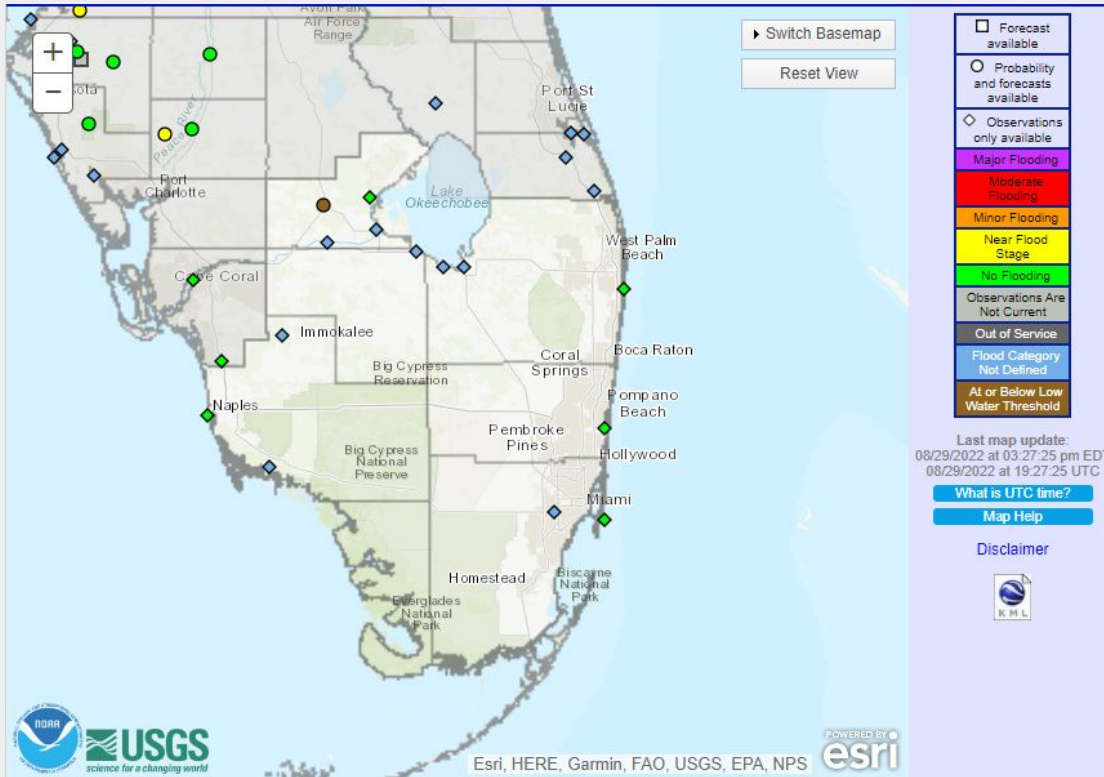
Disclaimer: This outlook provides an overview of potential flooding impacts. Please refer to detailed products issued by local National Weather Service offices for official forecasts and warnings. (www.weather.gov)

To learn more or provide feedback, visit: https://nws.weather.gov/products/PDB/PDD_ExpFloodHazardOutlook_2022.pdf



River Flooding

None



- Discuss what rivers are in moderate/major flood, or forecast to soon rise into moderate/major flood
- Be sure to discuss what additional rainfall not currently included in the RFC forecast may do



River Flood Table

None

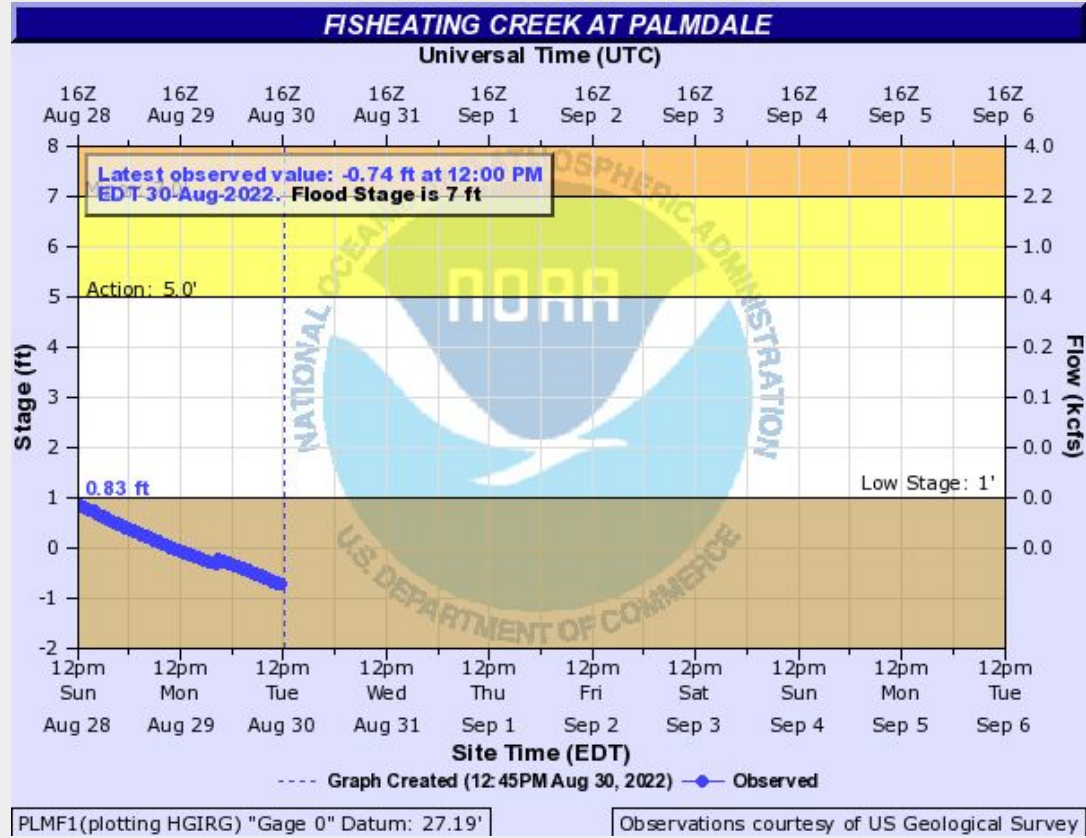
Location	Flood Stage	Current Level	Forecast Crest & Category	Crest Date

Major River Flooding **Moderate River Flooding** **Minor River Flooding** **Near Flood**



Expected River Flooding

None



PLMF1(plotting HGIRG) "Gage 0" Datum: 27.19'

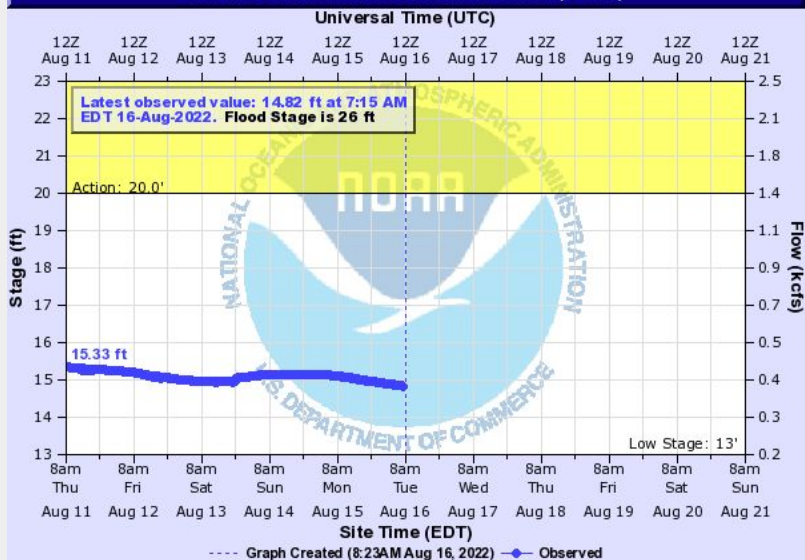
Observations courtesy of US Geological Survey



Expected River Flooding

None

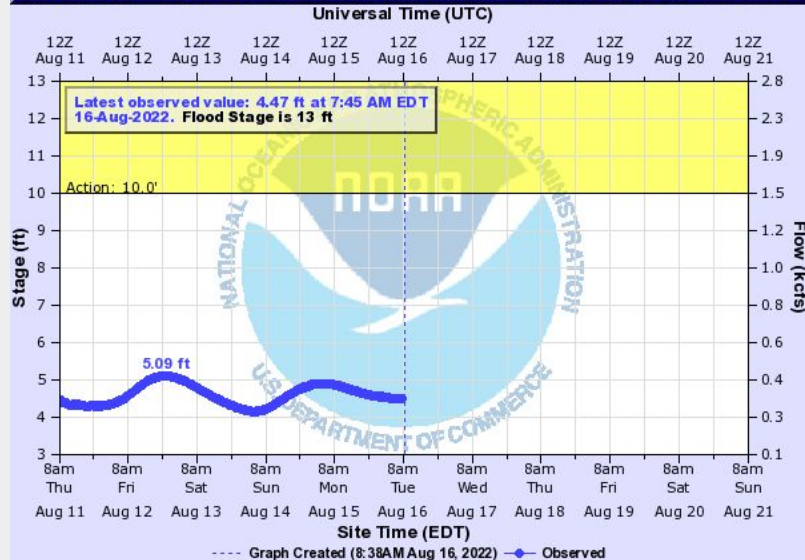
OCHLOCKONEE RIVER NEAR HAVANA (US 27)



HVNF1(plotting HGIRG) "Gage 0" Datum: 59.36'

Observations courtesy of US Geological Survey

KINCHAFOONEE CREEK AT 11 E OF DAWSON AT PINWOOD RD IN LEE COUNTY



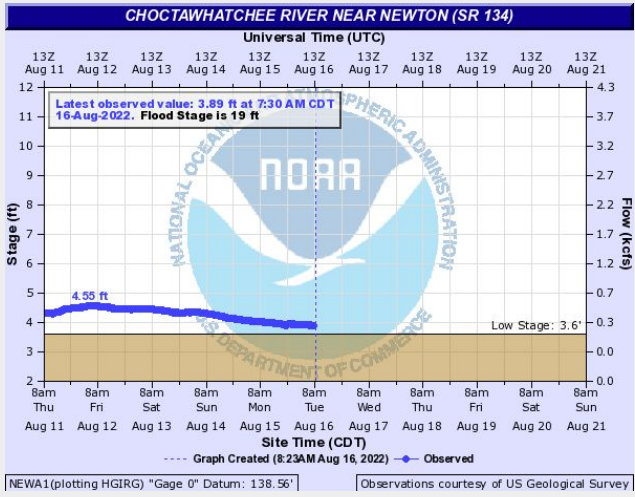
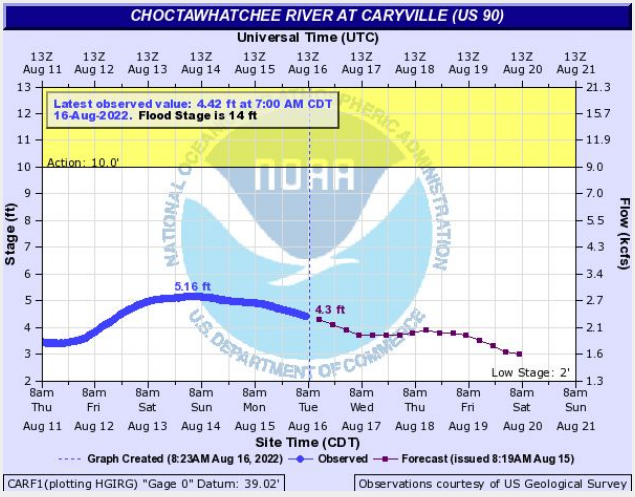
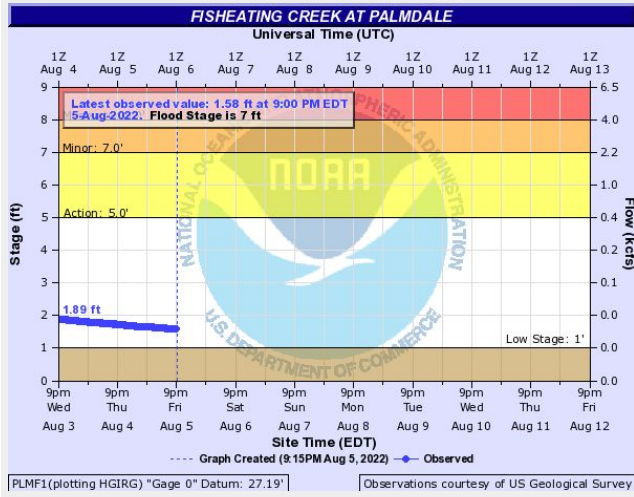
DSNG1(plotting HGIRG) "Gage 0" Datum: 210.67'

Observations courtesy of US Geological Survey



Expected River Flooding

None



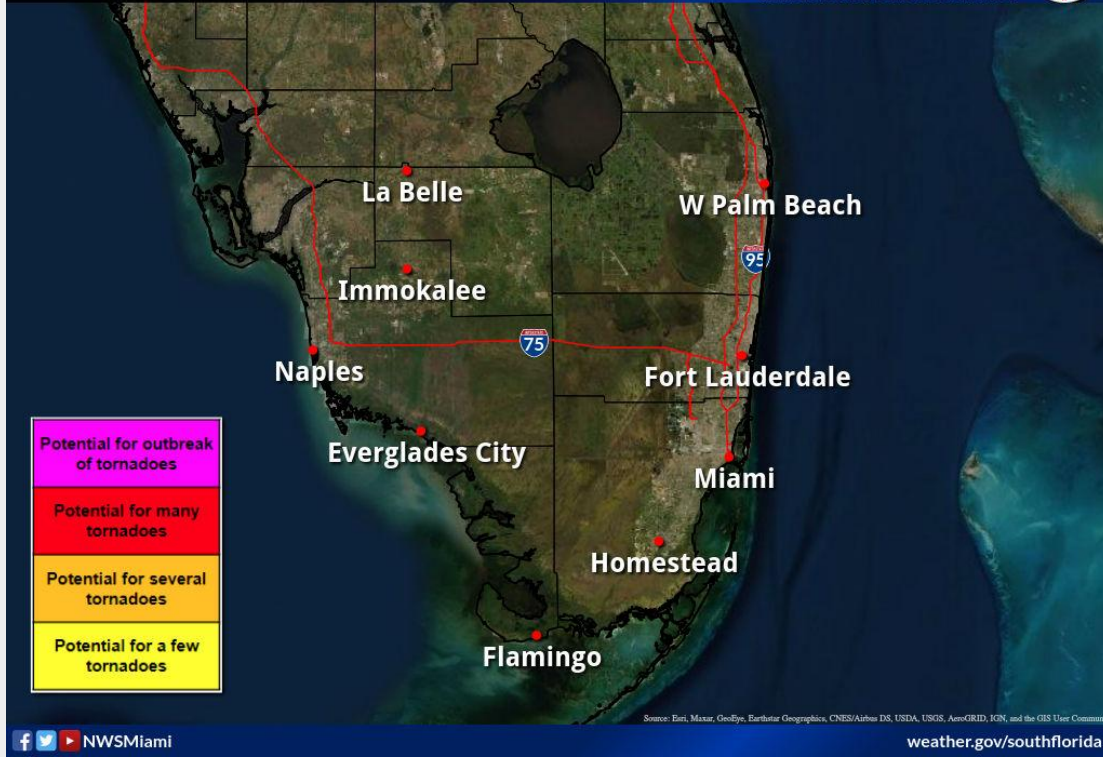


Potential Tornado Impacts

None

Tornado Threat

Weather Forecast Office
Miami/South Florida
Issued Nov 10, 2022 7:39 AM EST



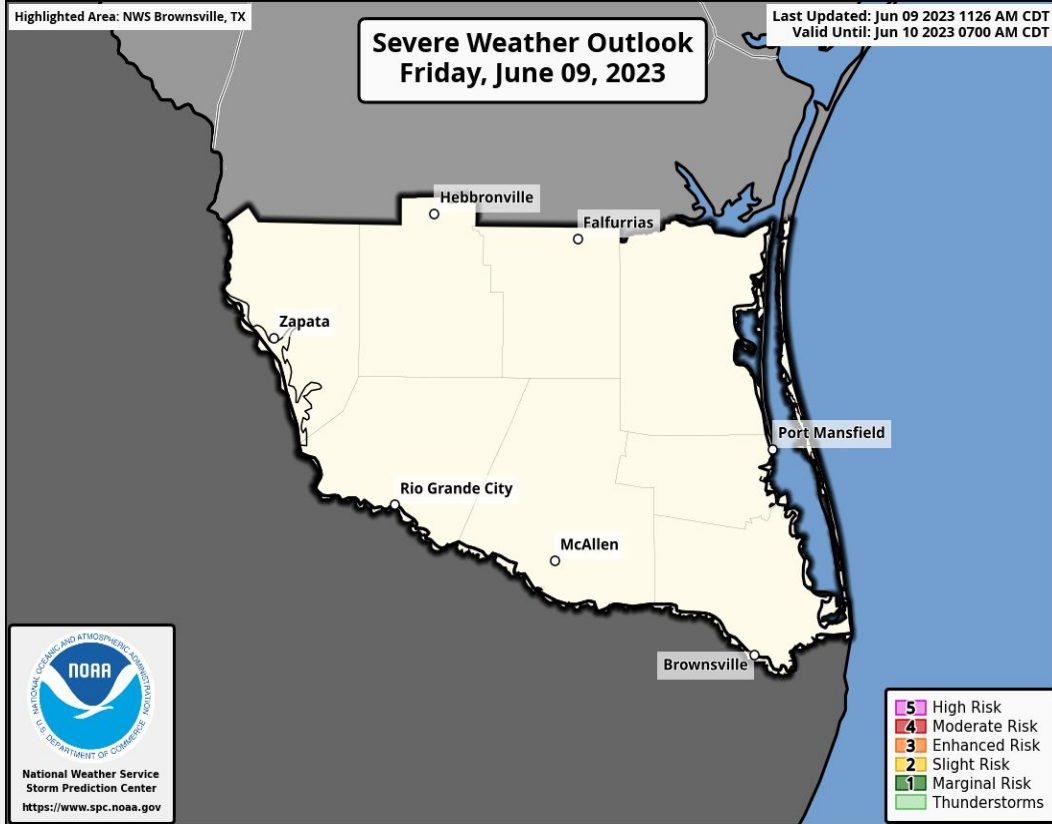
f t NWSMiami

- Main threat of tornadoes would be from (day) (timing) to (day) (timing)



Tornado Potential

Tropical Storm Alberto



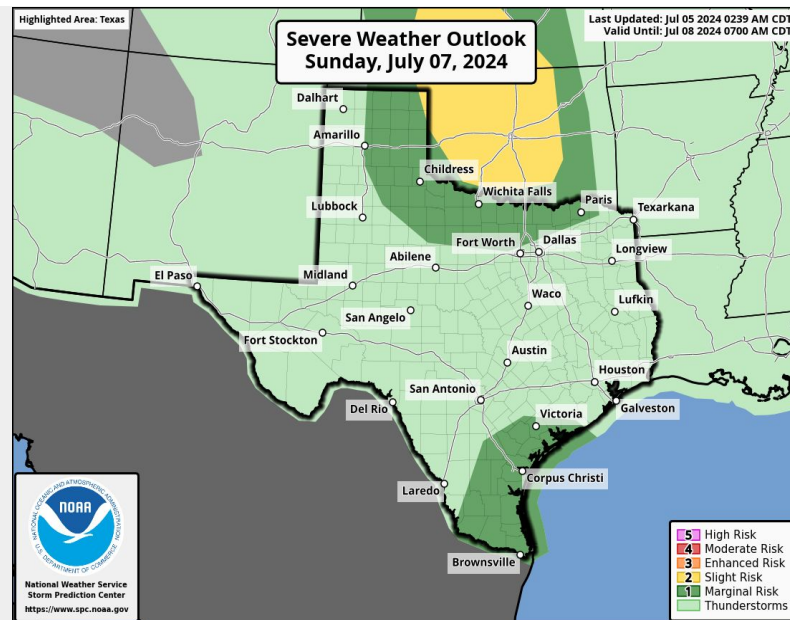
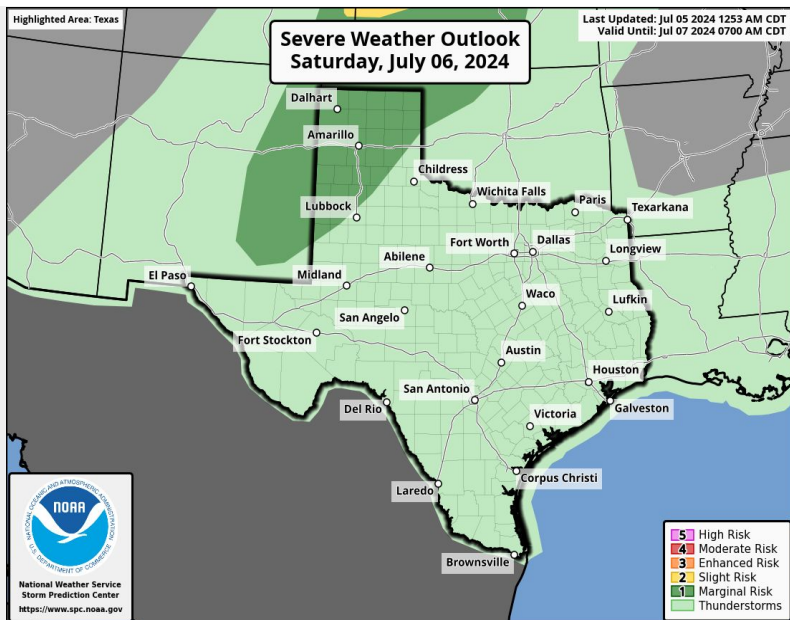
- Main threat of tornadoes would be from (day) (timing) to (day) (timing)



Tornado Potential

Hurricane Beryl

- Main threat of tornadoes would be from (day) (timing) to (day) (timing)



Last updated: 7/5/2024 7:53 AM CDT

National Weather Service - Houston/Galveston, TX



5-Day Outlook

None

	Tuesday	Wednesday	Thursday	Friday	Saturday
Severe Thunderstorm	Orange	Yellow	White	White	White
Lightning	Red	Light Orange	White	White	White
Excessive Heat	White	White	White	White	White
High Surf	Light Green	Light Green	Light Green	Light Green	Light Green
Rip Current	Light Green	Light Green	Light Green	White	White

Risk Level	None	Limited	Elevated	Significant	Extreme
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5-Day Outlook

None

Threat	Monday	Tuesday	Wednesday	Thursday	Friday
Severe Storms					
Lightning					
Heat Index					
Insert other hazard here					
Risk Level	None	Limited	Elevated	Significant	Extreme



Key Take-Aways

None

Confidence is [LOW/MODERATE/HIGH] that the event will occur
Confidence is [LOW/MODERATE/HIGH] regarding impacts



Strong wind gusts expected, mainly north of <location>.



Surge flooding expected, mainly north of <location>.



Rainfall flooding likely, mainly north of <location>.



Isolated weak tornadoes, mainly north of <location>.



Dangerous marine conditions expected across the coastal waters.