



NATIONAL ASSOCIATION OF
Community Health Centers®

Weathering the Storm: National Weather Service (NWS) Hurricane Products and Seasonal Outlook for Community Health Centers

Wednesday, Aug 14th

2:00-3:00pm EDT/11:00-12:00pm PST



HRSA ACKNOWLEDGEMENT

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HOUSEKEEPING

- This meeting is being recorded
- Slides and recording will be shared after the webinar via email
- Please introduce yourself in the chat with your name, organization and location.
- Lines will be muted, kindly direct all questions to Q&A function and comments in chat!

Taina Lopez

Director of Emergency Management NACHC

- Taina Lopez has over 10 years of public health and healthcare emergency management experience across diverse sectors, including United Nations agencies, local government and working with Federal, State and private partners. Including: Director of Public Health Emergency Response for Orange County, NY, Senior Manager for Healthcare Coalition Planning with NYC Dept of Health and Mental Hygiene and worked on public health/healthcare emergencies in New York, Kurdistan, Iraq and supporting the West Africa Ebola Epidemic.
- She joined NACHC in Nov 2023. In her role, she continues NACHC's commitment to supporting health centers, PCAs, and HCCNs prior to, during, and post disasters. She will focus on developing NACHC's EM training and technical assistance, aligned with partner needs. Additionally, she will work with NACHC leaders, national, federal, and private partners to secure equitable representation and consideration of Health Centers in emergency planning and response.





SPEAKERS

Matthew Rosencrans

Lead seasonal hurricane forecaster, NOAA's Climate Prediction Center

- Mr. Matthew Rosencrans is the director of NOAA's Climate Testbed and lead for the seasonal hurricane outlook at NOAA's Climate Prediction Center (CPC) –a division of the National Weather Service. Previously, Matt was CPC's lead forecaster, making and improving outlooks for weather and climate extremes, including tropical cyclones, heavy precipitation, and droughts. Before coming to NOAA and the National Weather Service, Matt was a weather officer for the United States Air Force, where his work included a focus on the tropics.



Jessica Schauer

Tropical Weather Services Program Manager

- Jessica Schauer is the Tropical Weather Services Program Manager for the National Weather Service (NWS). Jessica manages policy for tropical cyclone products and services primarily from the National Hurricane Center, the Central Pacific Hurricane Center, and local NWS Weather Forecast Offices. She works closely with physical and social scientists and developers on tropical product and service innovations. Jessica manages the solicitation and incorporation of comments from NWS partners and the public on proposed tropical cyclone product/service changes and experimental products. She is also responsible for the formal announcement of tropical cyclone service changes.
- Jessica served as an NWS forecaster for 17 years before moving into this position in 2016. She has a bachelor's degree in physical oceanography from the Florida Institute of Technology and a master's degree in meteorology from the University of Hawaii at Manoa.

Chris Maier

National Warning Coordination Meteorologist

- National Warning Coordination Meteorologist, Chris Maier, has served in the NWS for 30+ years. Most of that time Chris has spent working directly with our nation's emergency management community. He is the NOAA liaison with the Big City Emergency Managers (BCEM), the National Emergency Management Association (NEMA), and the International Association of Emergency Managers (IAEM).
- Chris has also worked with FEMA. He has collaborated recently with FEMA on their Resilience Analysis and Planning Tool (RAPT) and their Dam Safety Collaborative Technical Assistance. He is part of the current NWS team that supports FEMA's Integrated Public Alert & Warning System (IPAWS) and the Alert and Warning Technical Assistance. Chris also serves as the NOAA coordination lead for FEMA's Interagency Modeling and Atmospheric Assessment Center (IMAAC).
- Within his agency, Chris oversees the NWS' Warning Coordination Meteorologist (WCM) program ensuring they work with local, county, state, and tribal emergency management agencies in the mitigation, preparedness, response and recovery in accordance with the 2017 Weather Act.
- Chris served as the Warning Coordination Meteorologist in Juneau, Alaska, and as the Utah Fire Weather Program Manager in Salt Lake City



- He was awarded a Department of Commerce Silver Medal for his pioneering response work on the Selendang Ayu shipwreck and oil spill in December 2004 in Dutch Harbor, Alaska.



NWS Tropical Storm/Hurricane Products



- *Seasonal (6 months)*
- *Subseasonal (2-3 weeks)*
- *Weekly/Daily*
- *Daily/Local*





Seasonal Hurricane Outlooks - When

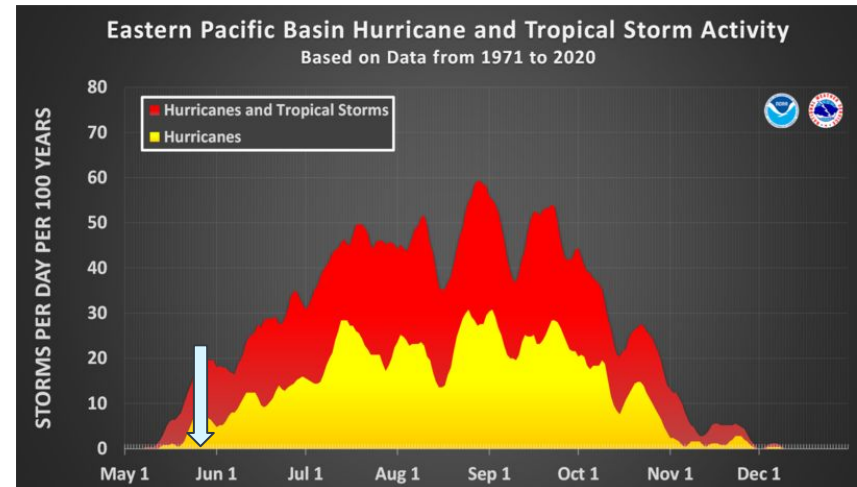
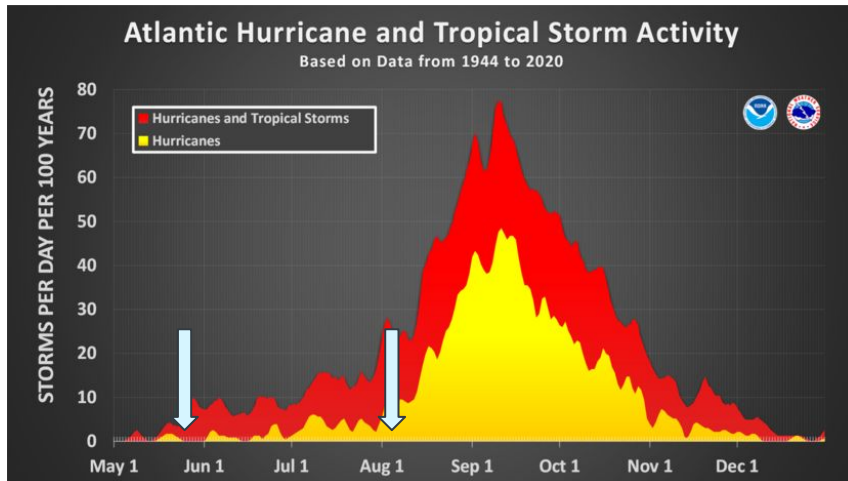


Seasonal Hurricane Outlooks are release in late May and early August.

May - Atlantic, East Pacific, Central Pacific, West Pacific

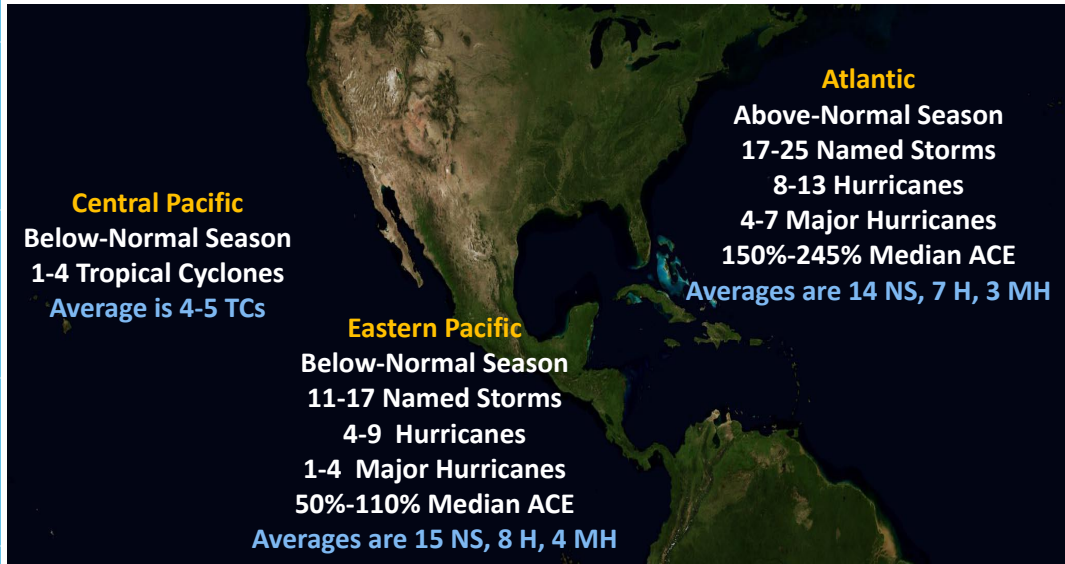
August - Atlantic, West Pacific (if needed)

November - South Pacific (American Samoa)



NOAA's 2024 Hurricane Season Outlooks

All ranges of activity are given with a 70% probability.



highest range of NS,H,MH.
2nd for ACE (2010)

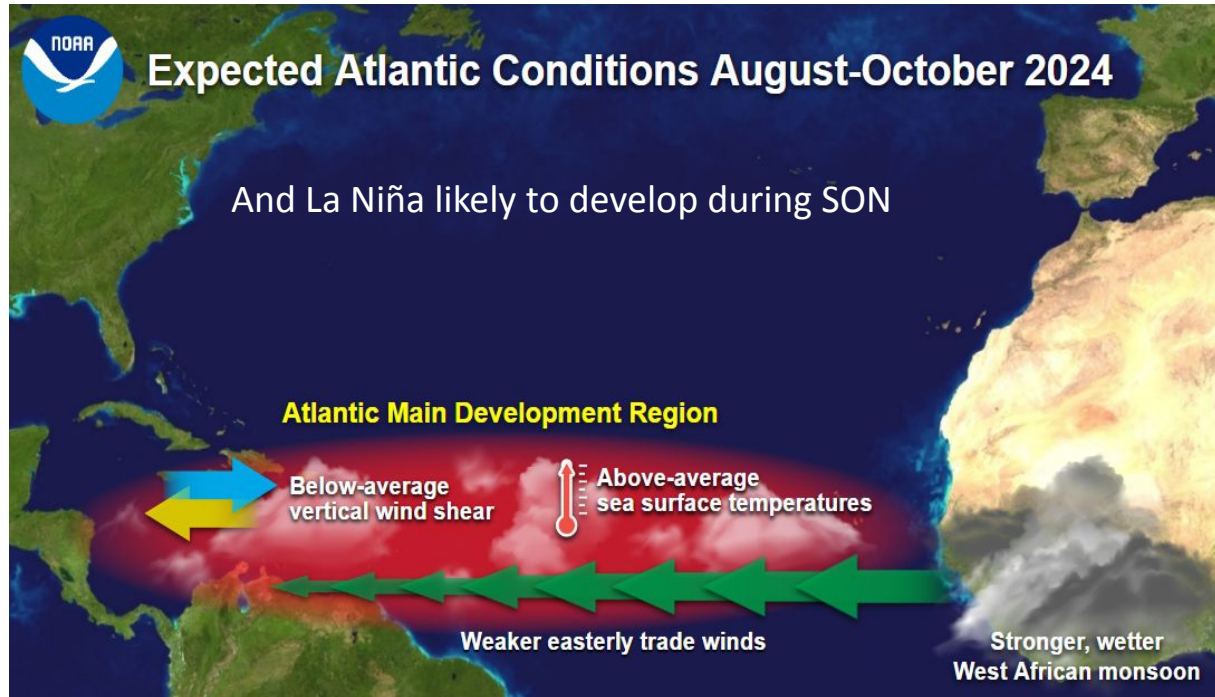
	Atlantic	Eastern Pacific	Central Pacific
Above Normal	85%	10%	20%
Near Normal	10%	30%	30%
Below Normal	5%	60%	50%

For the Atlantic hurricane season, climate signals and model forecasts indicate that an above-normal season is most likely (**85%** chance), with a 10% chance for near-normal and a 5% chance for a below-normal season. The asymmetry is reflective of the likely complementary impacts of the major climate factors.

For the Eastern and Central Pacific hurricane regions, the outlooks indicate a **below**-normal season is most likely (**60% for East Pacific** and **50% Central Pacific**), with a 30% chance for a near-normal and a 10% chance for an above-normal season (20% for the Central Pacific).

- Accumulated Cyclone Energy (ACE) measures the overall strength of the hurricane season. These outlooks are for overall seasonal activity.
- For the Central Pacific, Tropical Cyclones (TCs) include tropical depressions, tropical storms and hurricanes. They are not a hurricane landfall forecast.

Expected Atlantic Conditions August-October 2024



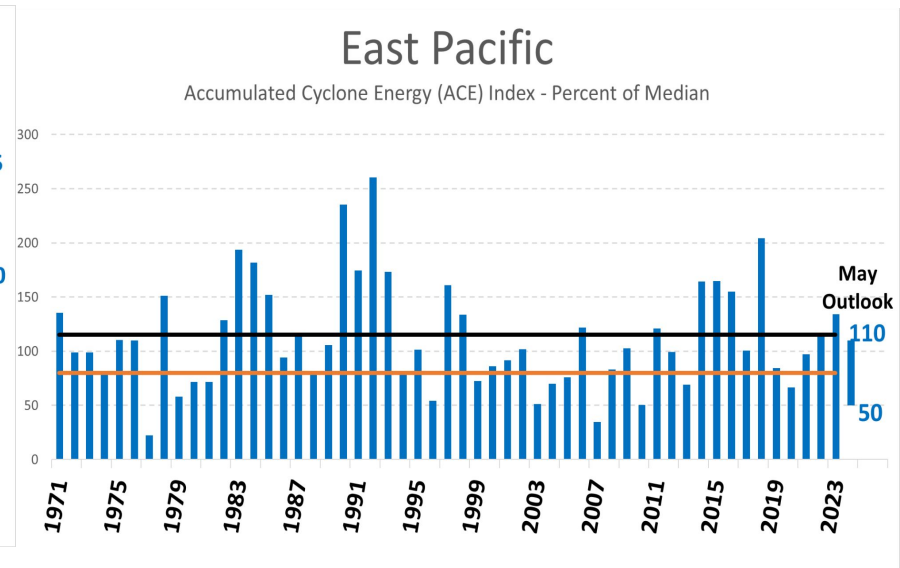
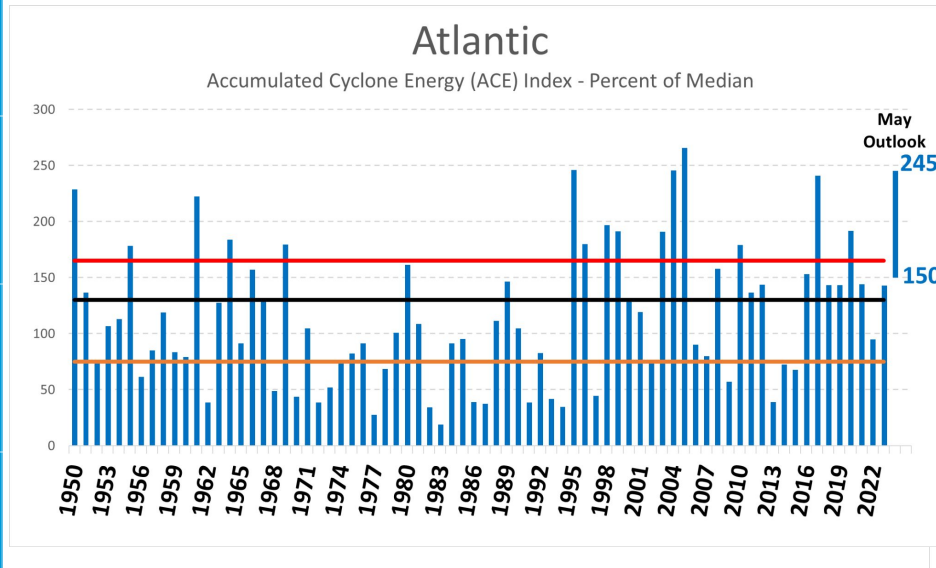
Ongoing high-activity era conditions favor more hurricane activity. These conditions include:

- Above-average sea surface temperatures in the Main Development Region. At or near record warmth.
- Weaker trade winds, weaker vertical wind shear, and stronger West African monsoon.

The predicted La Niña can complement those factors by reducing wind shear and decreasing instability.

2024 Atlantic and East Pacific Outlooks

Historical Perspective

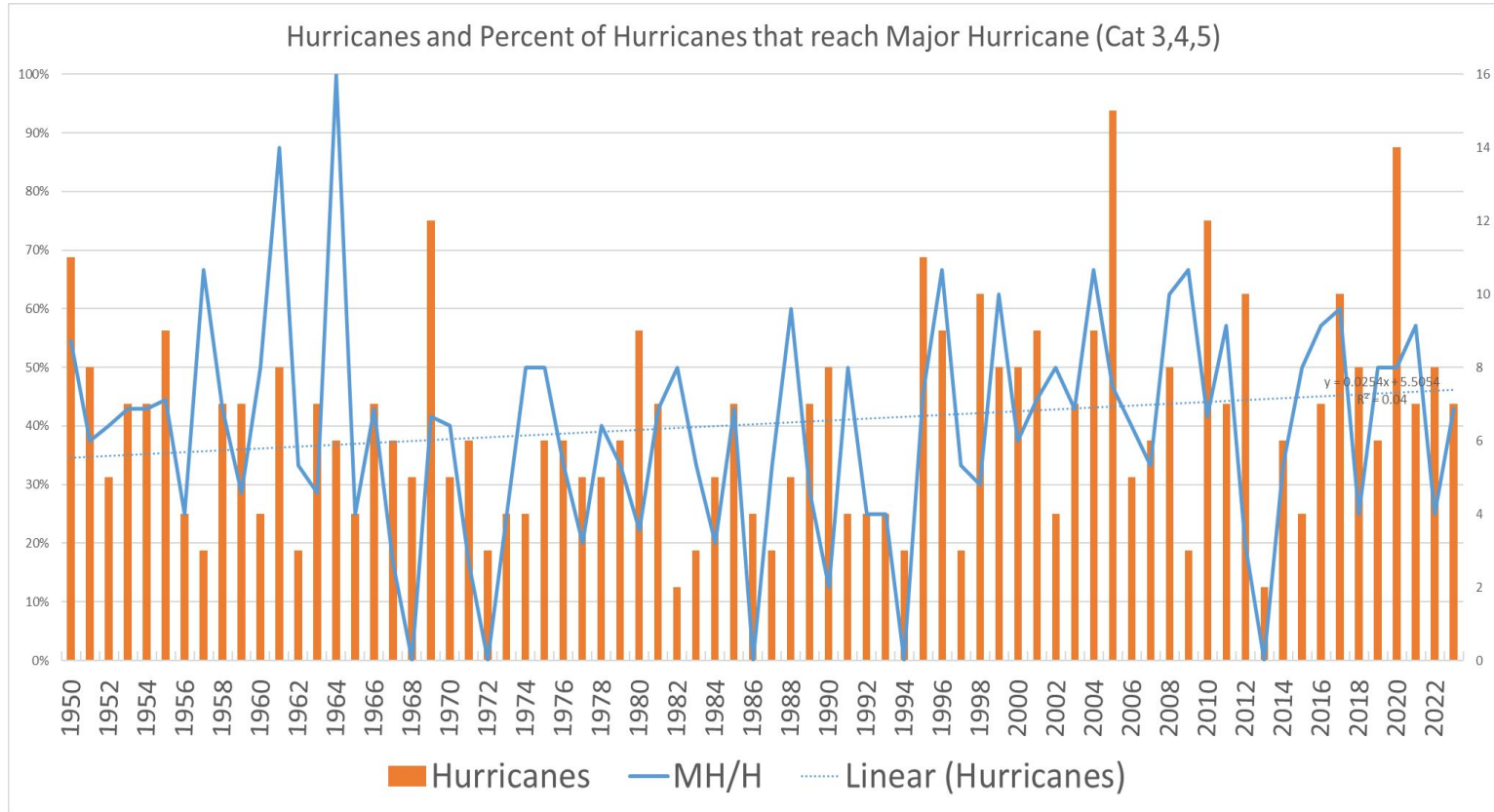


(Left) NOAA's 2024 Atlantic hurricane season outlook predicts a 70% probability for an ACE range of 150%-245% of the median

(Right) NOAA's 2024 East Pacific hurricane season outlook predicts a 70% probability for an ACE range of 50%-110% of the median.

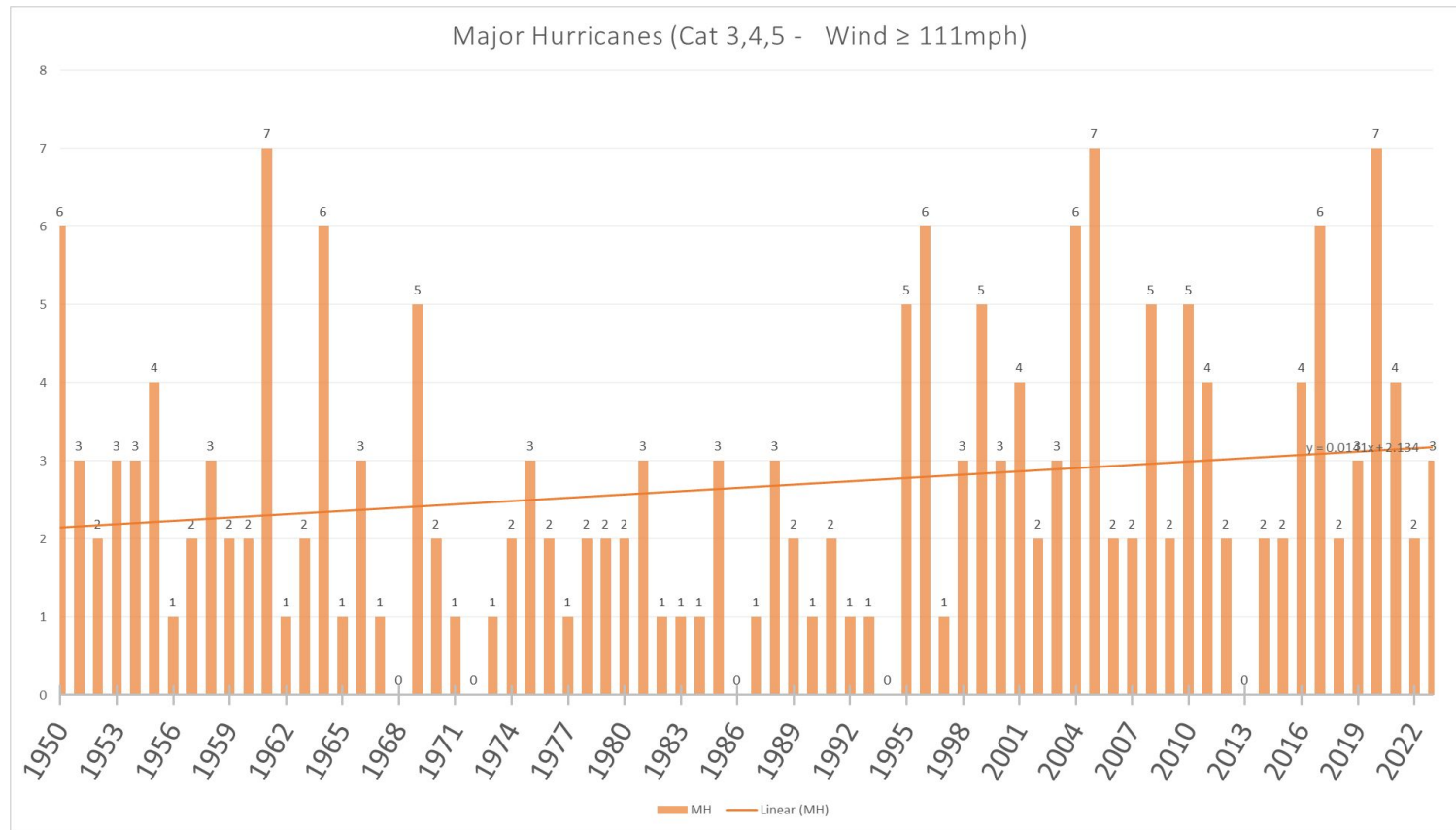
Caption: Seasonal Accumulated Cyclone Energy (ACE) indices (Blue bars) and NOAA's 2024 outlook range with a 70% probability of occurrence (rightmost column in each panel) are shown for (Left) the Atlantic basin and (Right) the East Pacific basin. Black (orange) lines indicates NOAA's ACE thresholds for classifying hurricane season strength as above (below). For the Atlantic, the 165% threshold (red line) reflects a hyper-active season.

Hurricanes and Major Hurricane Trends





Major Hurricane Trends



NOAA 2023 Atlantic Hurricane Season Outlook Verification

Season Activity and Type	May 2023	August 2023	Actual Observed
Chance Above Normal	30%	60%	Above
Chance Near Normal	40%	25%	
Chance Below Normal	30%	15%	
Total Named Storms	12 - 17	14 - 21 ✓	20
Hurricanes	6 - 10 ✓	6-11 ✓	7
Major Hurricanes	1 - 4 ✓	2 - 5 ✓	3
ACE - Accumulated Cyclone Energy (% Median)	70% -145% ✓	105% - 200% ✓	143

In 2023, Named Storms forecast from May was too low.
The fraction of named storms that intensified to hurricane strength was anomalously low.



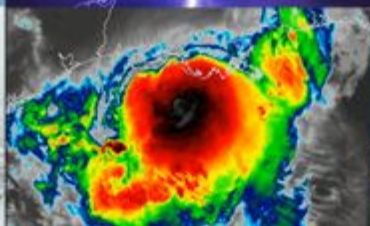
NOAA

The Global Tropics Hazards (GTH) Outlook at the Climate Prediction Center

Jon Gottschalck

Chief, Operational Prediction Branch
Climate Prediction Center, NWS/NOAA

NWS Climate Webinar Series
August 14, 2024



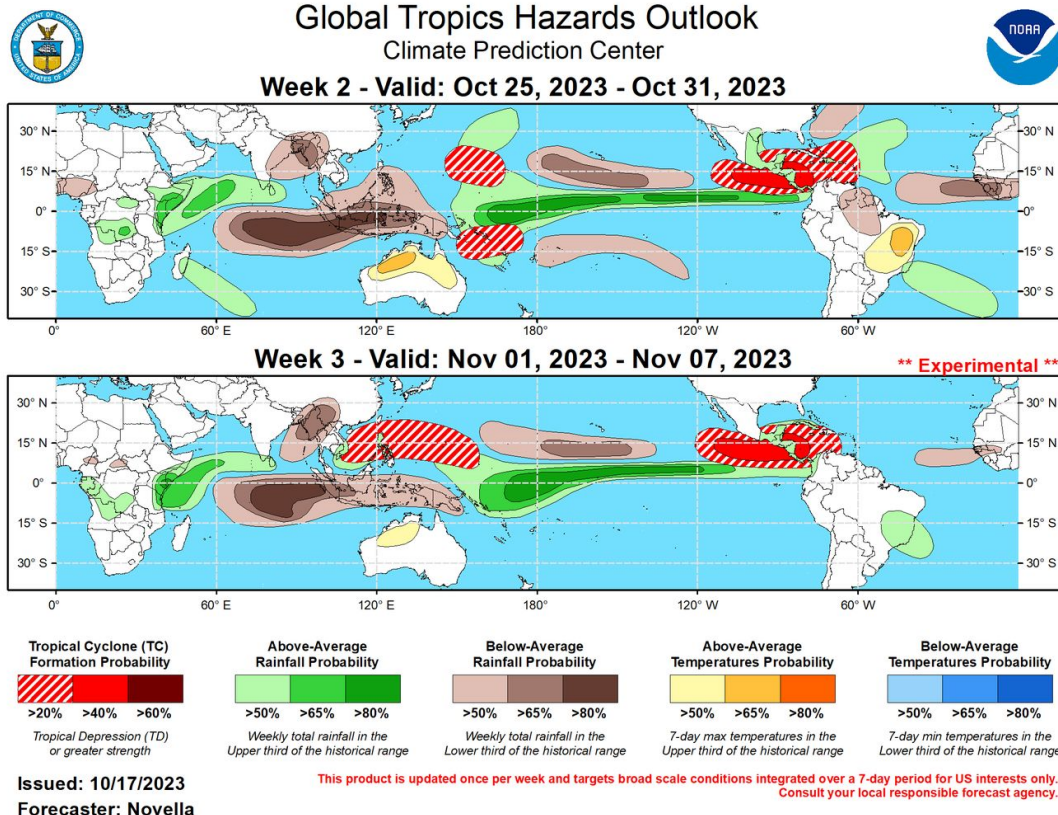
Overview

Global Tropics Hazards Outlook

- Product format, objectives, and other information available
- Scientific basis for outlook (climate, forecast tools)
- Available verification

Global Tropics Hazards Outlook

<https://www.cpc.ncep.noaa.gov/products/precip/CWlink/ghaz/index.php>



Forecast elements include:

- Hazardous weekly total precipitation
- Hazardous weekly average extreme heat/cold
- Favored TC genesis areas

Forecast Format:

- Targets the Week 2 and Week 3 weekly periods
- Confidence is defined by the probabilities

Global Tropics Hazards (GTH) Outlook

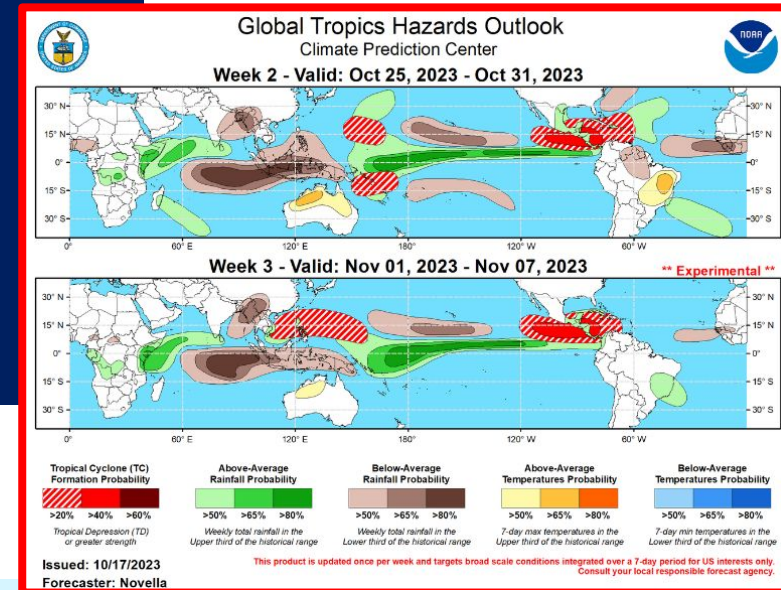
✓ Purpose:

- ✓ Provide situational awareness, early watch and potential early decision steps for tropical related hazards such as tropical cyclones and associated hazards, atmospheric rivers, active/non-active periods of monsoon systems, etc.
- ✓ Through above - support sectors of the U.S. economy (finance, emergency management, energy, agriculture, water resource management) that are impacted by these systems - both for a domestic and international domain

✓ Stakeholders:

- ✓ NWS, NOAA, Federal, state and local government, aid organizations, emergency management entities, private industry (sectors above), media and the general public

Product released at 2:30 PM ET
Tuesday afternoons, once per week



Global Tropics Hazards (GTH) Outlook

✓ Other Information Provided with Release:

- ❑ Text discussion to outline the forecast, rationale behind the forecast, uncertainty information and potential favored impacts for the Tropics and U.S.
- ❑ Outlook available in various formats (next slide)

GTH Outlook Discussion

Last Updated - 03/19/24

Valid - 03/27/24 - 04/09/24

A robust MJO event continues to unfold, with the enhanced convective phase now crossing the Western Pacific. During the past week or so, widespread enhanced convection overspread the eastern Indian Ocean and western Maritime Continent, which is a departure from the weakening ENSO base state. Dynamical models are in good agreement with tight ensemble clustering that strong MJO activity continues to propagate eastward from the Western Pacific and into Western Hemisphere over the next two weeks, though it should be noted that the forecasted phase speed is on the fast end of the MJO frequency range. As the suppressed phase of the MJO is moving into the Maritime Continent, this tends to suppress tropical cyclone (TC) activity in the Australia and South Pacific regions, which have been active recently.

One TC formed over the last week. On March 15 TC Megan formed in the Gulf of Carpentaria. It intensified quickly, reaching category 1 strength, and came ashore into northern Australia on March 18. The Joint Typhoon Warning Center (JTWC) expects Megan to dissipate in the next day or so, but indicate that the system will be closely monitored for signs of regeneration.

Consensus among the model ensembles depicts the MJO in phases 8 and 1 during week-2, which would slightly favor TC genesis in the southwest Indian Ocean. This is also supported by the ECMWF extended range TC genesis forecast, so a slight risk (>20% probability) for TC genesis is posted east of Madagascar. The MJO in phase 8 or 1 tends to suppress TC activity for the Australia and South Pacific regions, which have been quite active lately. Model solutions diverge by week-3 but generally still indicate eastward propagation of the MJO signal into the Indian Ocean, which would once again begin to favor TC genesis off the northwest coast of Australia for week-3.

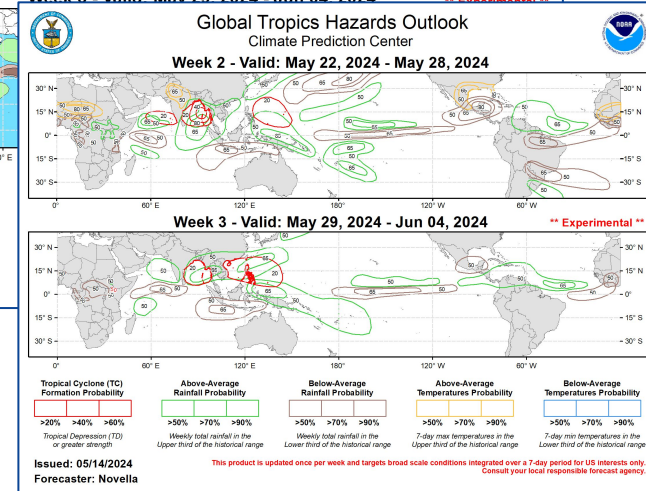
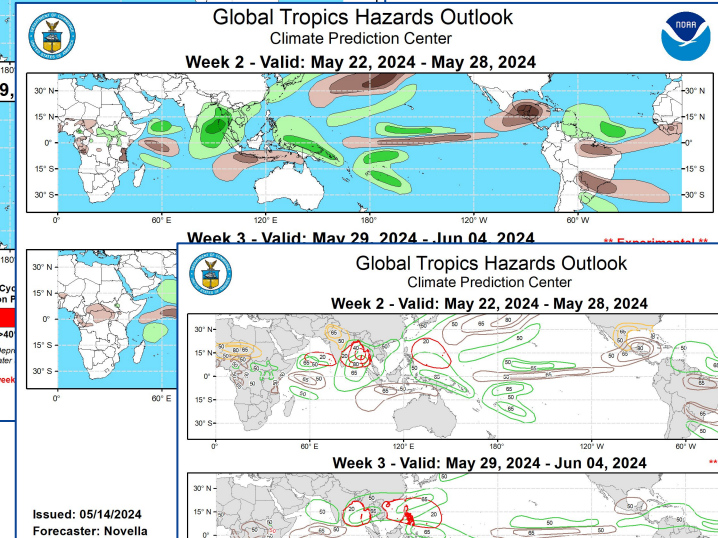
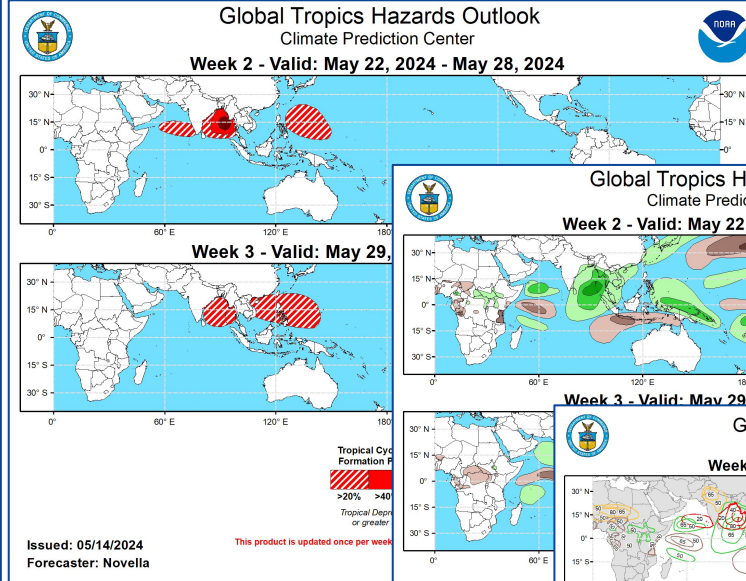
Global Tropics Hazards (GTH) Outlook

GIS Ready Formats

Hazard	Week-2	Week-3
Tropical Cyclone Formation Probability	KMZ KML SHP	KMZ KML SHP
Enhanced Precipitation Probability	KMZ KML SHP	KMZ KML SHP
Suppressed Precipitation Probability	KMZ KML SHP	KMZ KML SHP
Above Average Temperatures Probability	KMZ KML SHP	KMZ KML SHP
Below Average Temperatures Probability	KMZ KML SHP	KMZ KML SHP

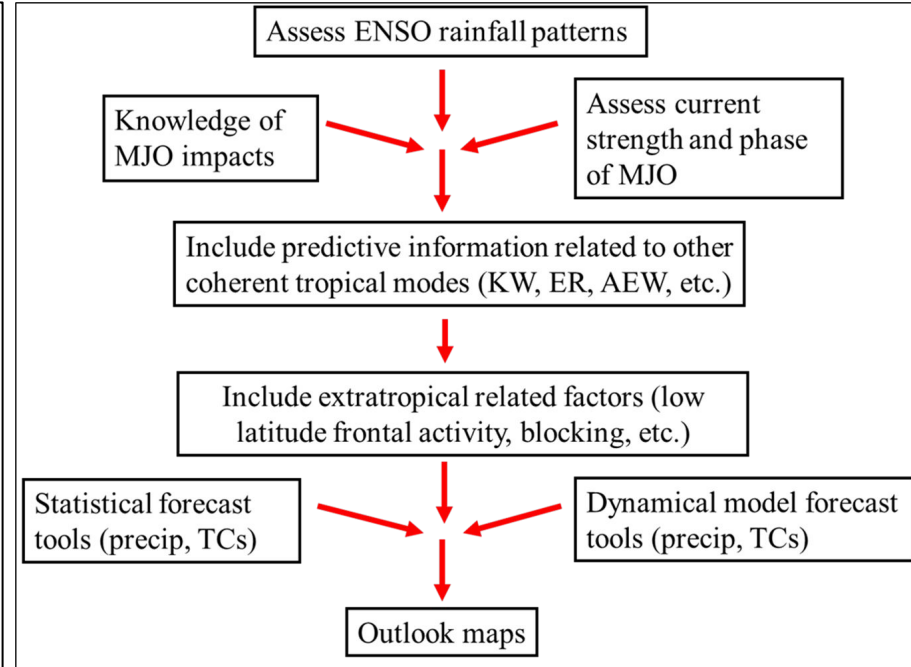
- [Tropical Cyclone Only GTH Map](#)
- [Precipitation Only GTH Map](#)
- [Temperature Only GTH Map](#)
- [Lines Only GTH Map](#)

- [Latest Product \(PDF Format\)](#)
- [Latest Briefing \(PDF Format\)](#)
- [GTH Archive](#)



Global Tropics Hazards (GTH) Outlook

- ✓ Forecasters use a variety of Subseasonal-to-Seasonal (S2S) types of tropical climate variability (ENSO, MJO, other coherent types of subseasonal variability) to frame the forecast
- ✓ Forecast guidance products from both dynamical and statistical model methods
- ✓ Post processed dynamical model guidance from the CFS, GEFsv12, ECMWF and ECCO ensemble systems



Global Tropics Hazards (GTH) Outlook

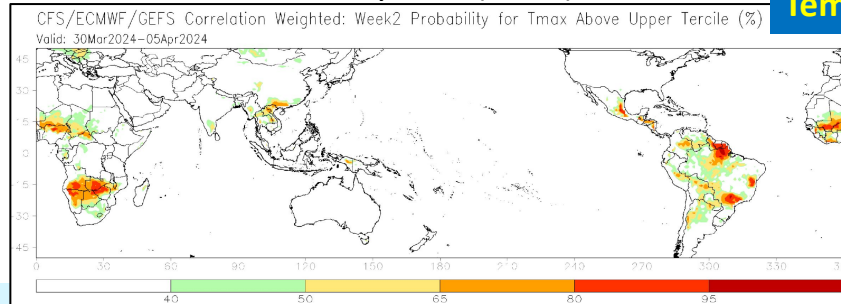
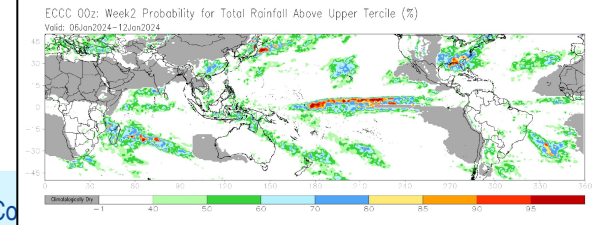
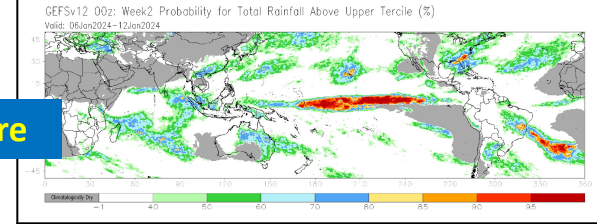
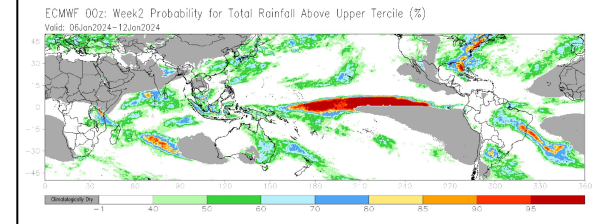
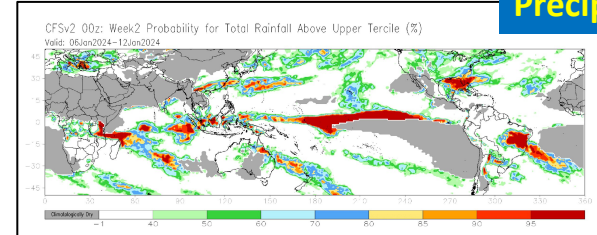
Precipitation

✓ Dynamical model guidance from several operational ensemble model systems (*objective, skill-based combination product also available*)

✓ Post processed (bias-corrected, calibrated)

✓ Forecast systems utilized:

- NCEP Climate Forecast System (CFS)
- NCEP Global Ensemble Forecast System (GEFS)
- ECMWF Ensemble Prediction System (EPS)
- Environment Climate Change Canada (ECCC) Global Ensemble Prediction System (GEPS)



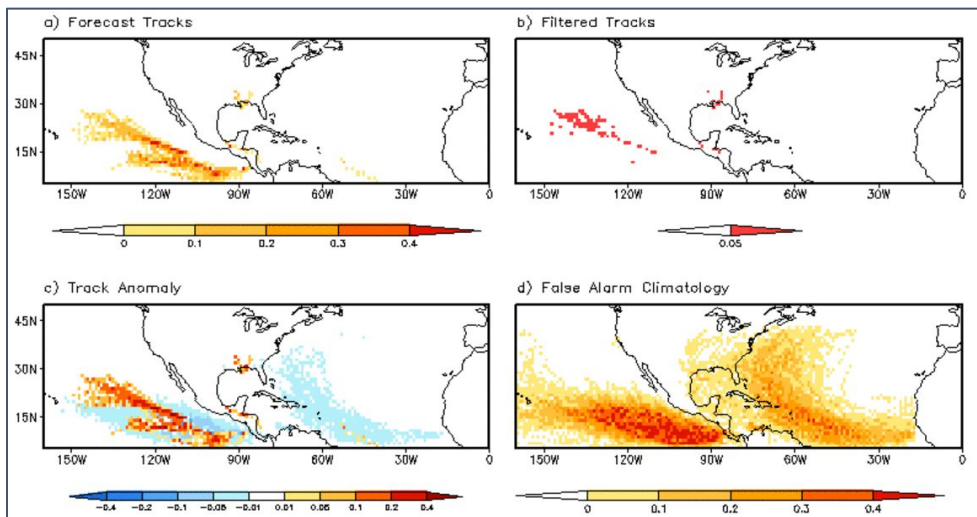
Temperature



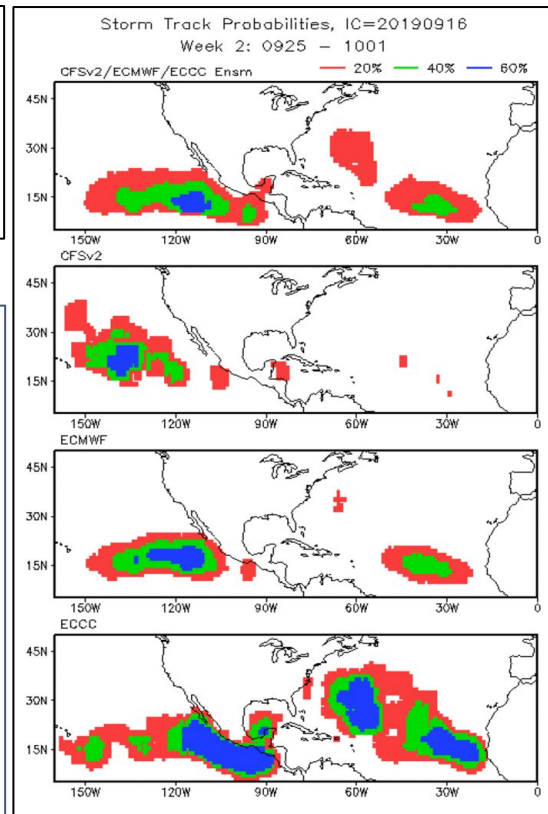
Global Tropics Hazards (GTH) Outlook

Tropical Cyclone Detection / Tracking

- Method based on Camargo and Zebiak (2002)
- Detection thresholds model based on reforecasts
- Verification: HURDAT2 and JTWC Best Track Data



Forecast tracks



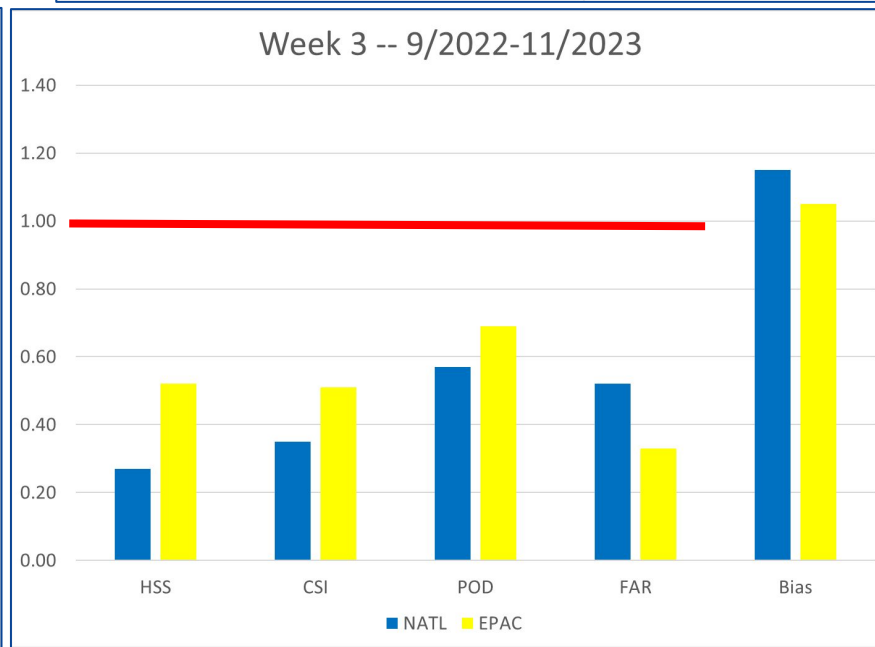
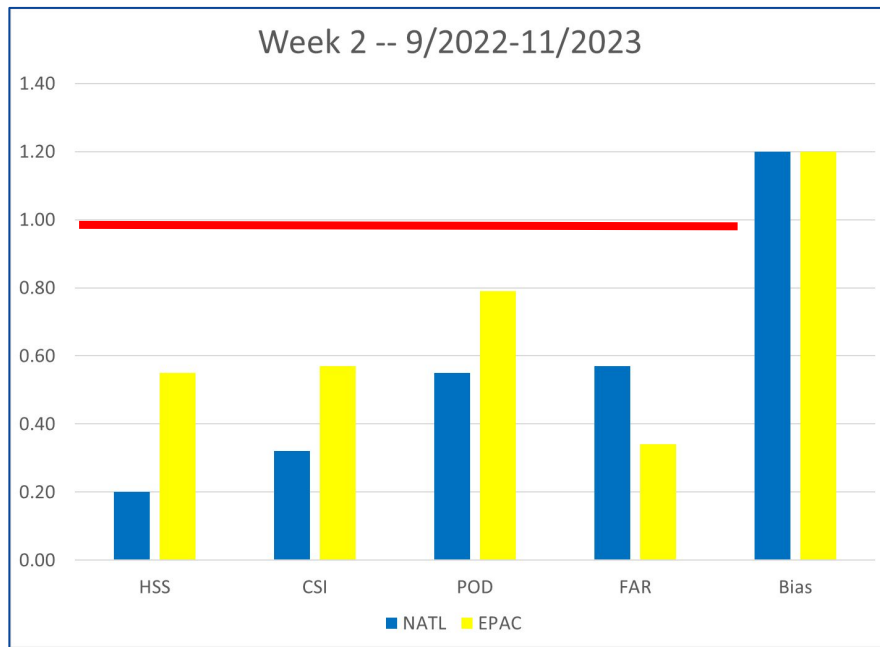
Probabilities (Each model, multi-model)

Global Tropics Hazards (GTH) Outlook

CPC Week 2-3 GTH Official Outlook to Date

Heidke Skill Score	$= (a + d) - E / (n - E)$
Critical Success Index	$= a / (a + b + c)$
Probability Of Detection	$= a / (a + c)$
Accuracy	$= (a + d) / n$
False Alarm Rate	$= b / (a + b)$
Bias	$= (a + b) / (a + c)$

		Observed	
		YES	NO
Forecast	YES	A	B
	NO	C	D



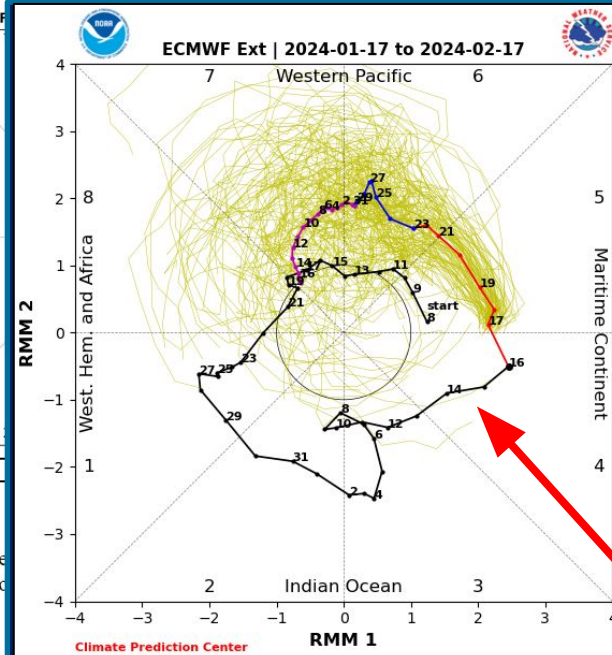
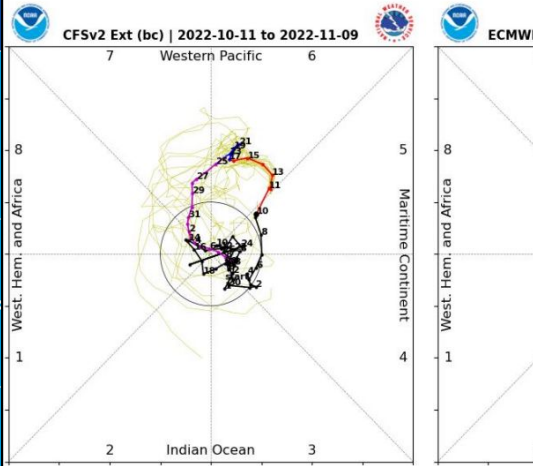


Thank you

Questions or suggestions?
Jon.Gottschalck@noaa.gov



Global Tropics Hazards (GTH) Outlook



MJO index forecast from ECMWF for the next 1-4 weeks

Products/Tools:

Phase diagram forecasts from ECMWF, NCEP (GEFSv12) and other extended ensemble systems through Week 4.

MJO composite analysis for multiple atmospheric variables by season.

MJO Composites

- All composites based on CPC's observed RMM amplitude
- For atmospheric field composites, an eastward propagation

Atmospheric Fields By MJO Phase:

CDAS 850mb Geopotential Height (NH) | Oct-Nov-Dec

Tropical Cyclones By MJO Phase:

Genesis Points | Oct

Select Season

- Dec-Jan-Feb*
- Jan-Feb-Mar
- Feb-Mar-Apr
- Mar-Apr-May
- Apr-May-Jun
- May-Jun-Jul
- Jun-Jul-Aug
- Jul-Aug-Sep
- Aug-Sep-Oct
- Sep-Oct-Nov
- Oct-Nov-Dec
- Nov-Dec-Jan



Global Tropics Hazards (GTH) Outlook

Hovmollers:

Select variable Select Level Select Model Select Latitude

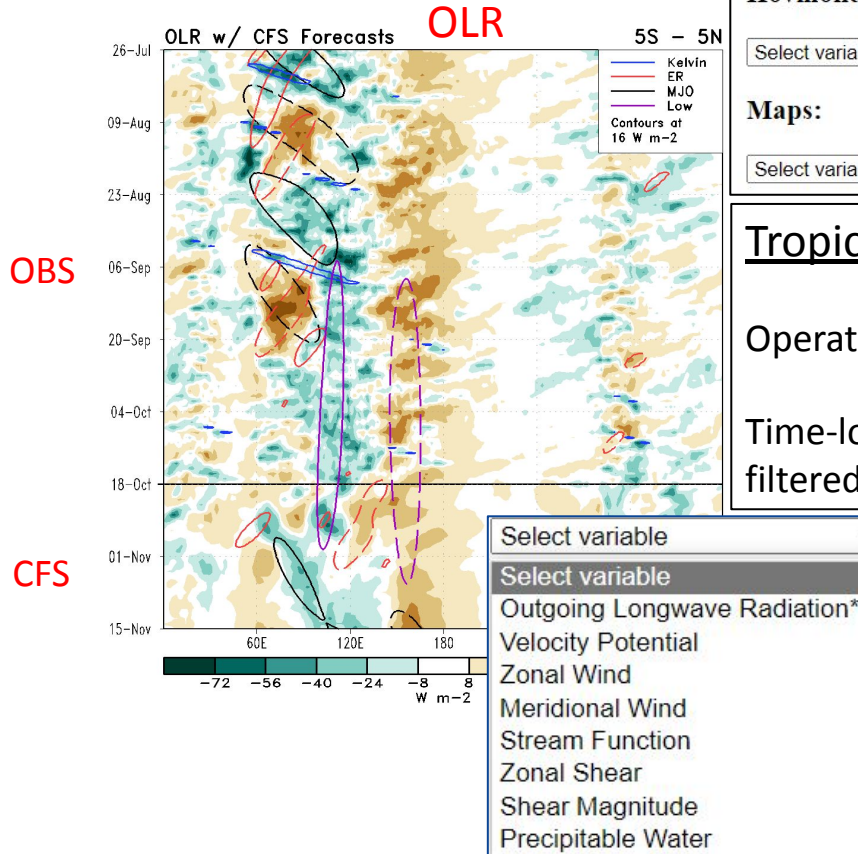
Maps:

Select variable Select Level Select Model Select Region Select Days

Tropical Variability Monitoring and Prediction:

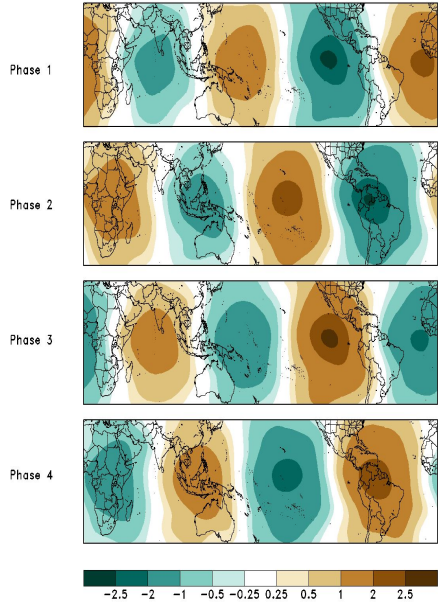
Operational implementation at CPC in partnership with CICS-NC

Time-longitude diagrams and spatial maps of key variables filtered for coherent subseasonal tropical modes



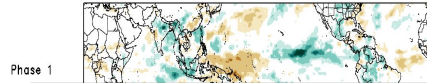
Global Tropics Hazards (GTH) Outlook

KW wave-2 Composite: Filt CHI200 ($\times 10^{-6}$ m²/s)

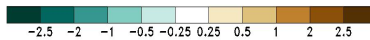
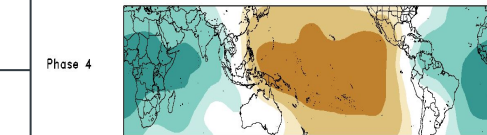
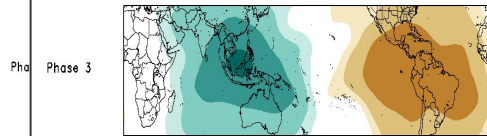
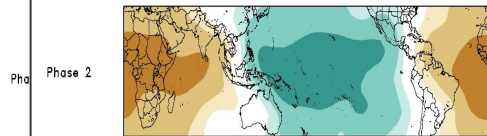
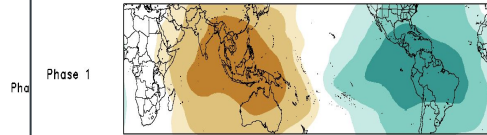


Kelvin wave

KW wave-2 Composite: GPCP1DD (mm/day)

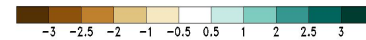
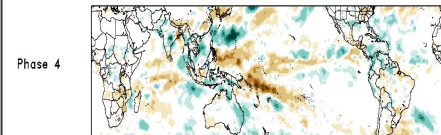
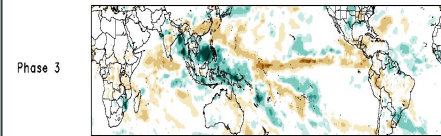
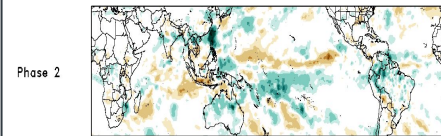
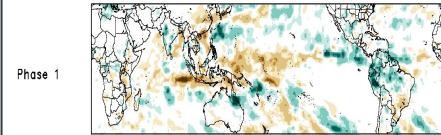


RW wave-1 Composite: Filt CHI200 ($\times 10^{-6}$ m²/s)



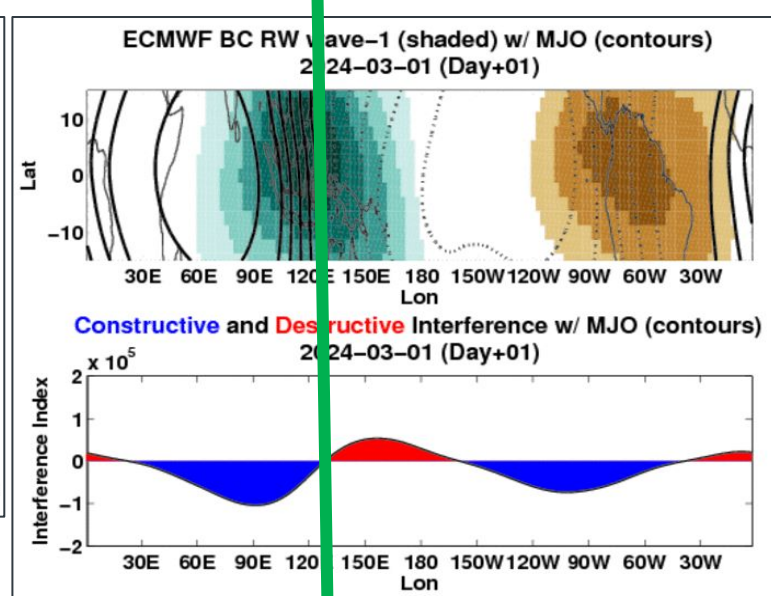
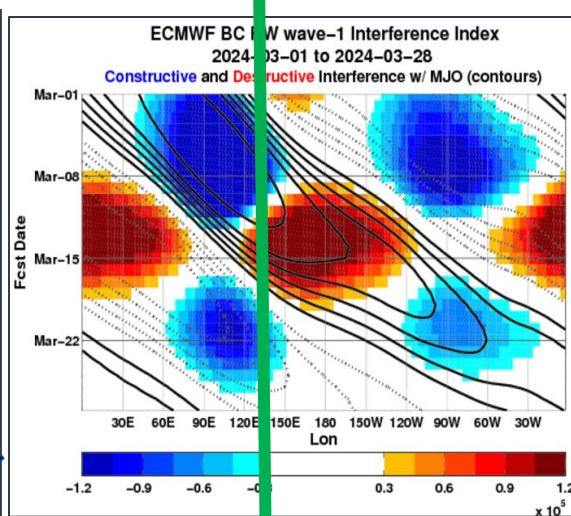
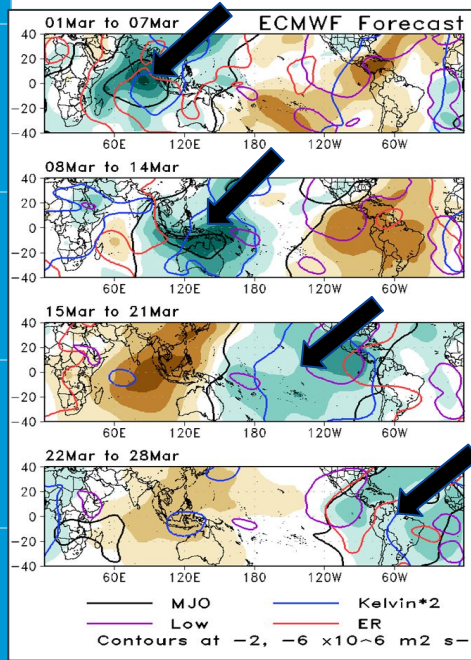
Equatorial Rossby wave

RW wave-1 Composite: GPCP1DD (mm/day)



Global Tropics Hazards (GTH) Outlook

- ✓ To quantify interactions between all waves, the predicted wave fields of KW and ERWs are multiplied by that of the MJO and averaged from 15S-15N to form an Interference Index (II)
- ✓ This illustrates where and when MJO phases maybe further enhanced or suppressed by higher frequency modes in the forecast period.



Courtesy: Nick Novella

Global Tropics Hazards (GTH) Outlook

Week 1

Week 2

Week 3

✓ Critical Success Index (CSI):

$$CSI = a / (a+b+c)$$

a = Hits

b = False Alarms

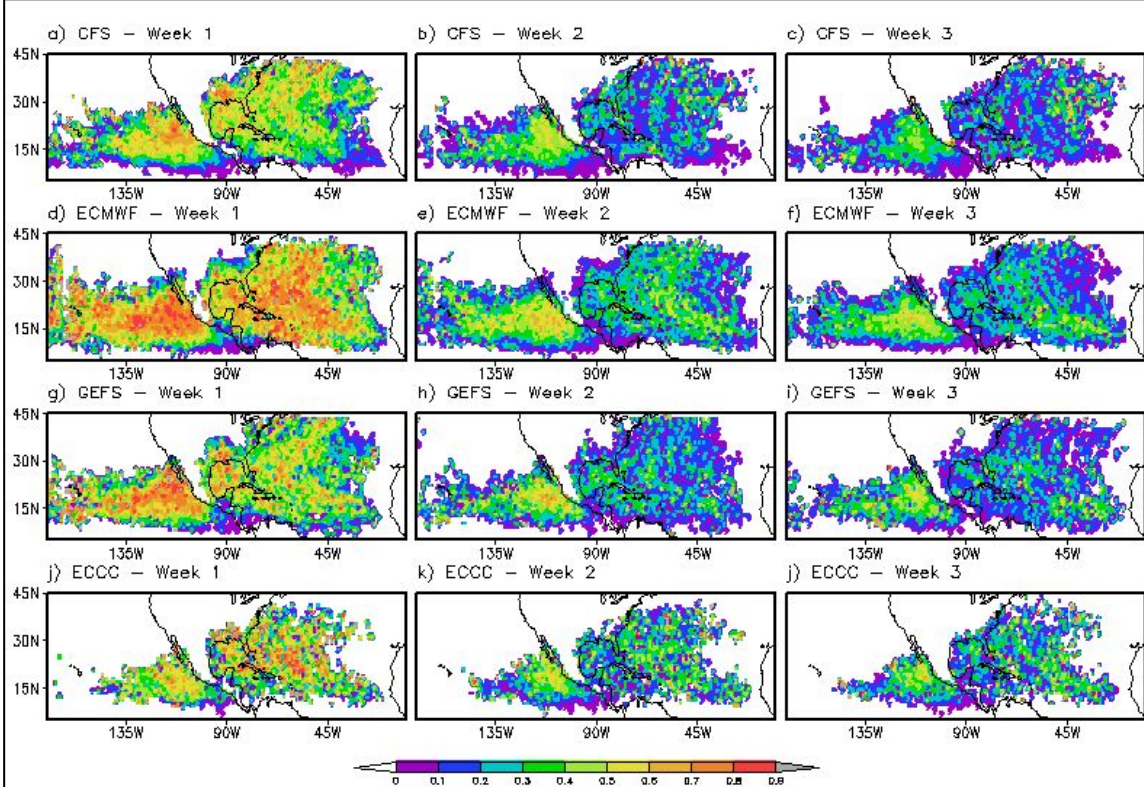
c = Misses

✓ Reforecast overlap period:
2000-2012

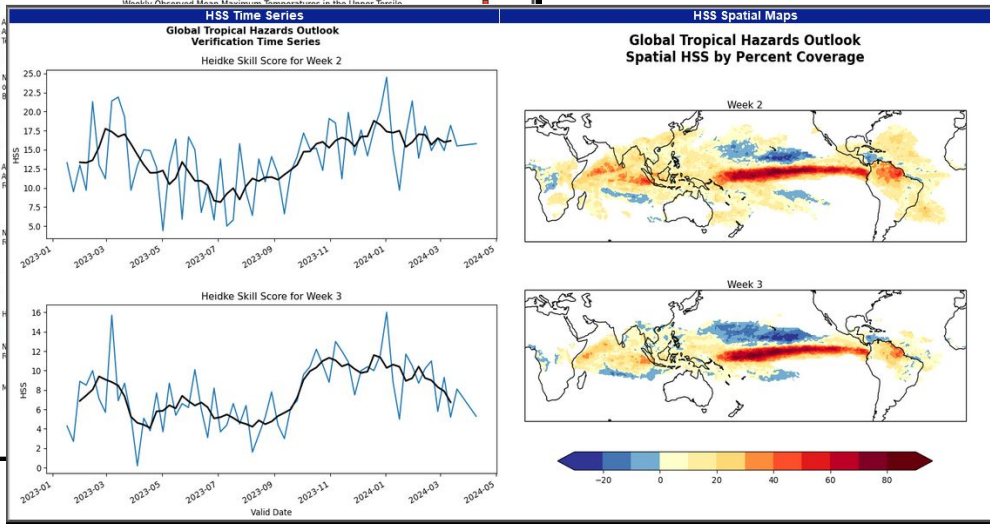
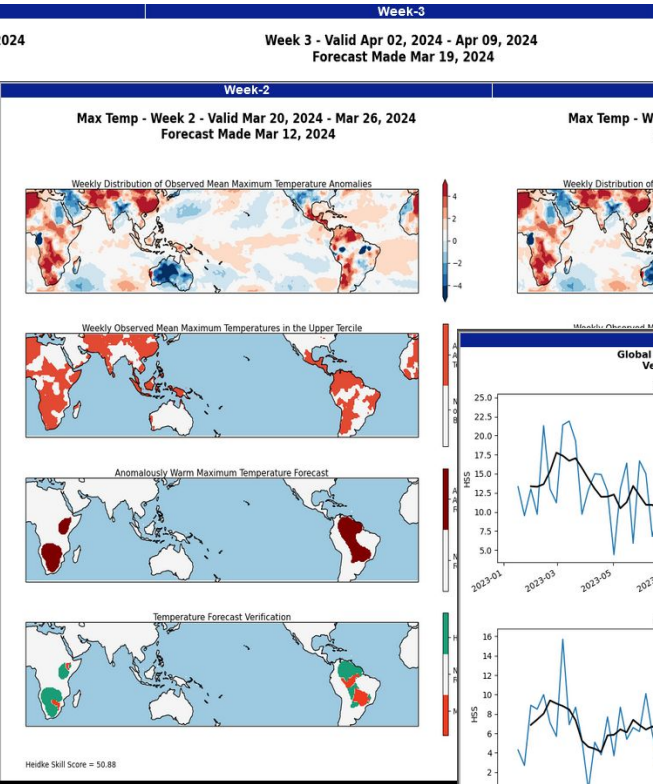
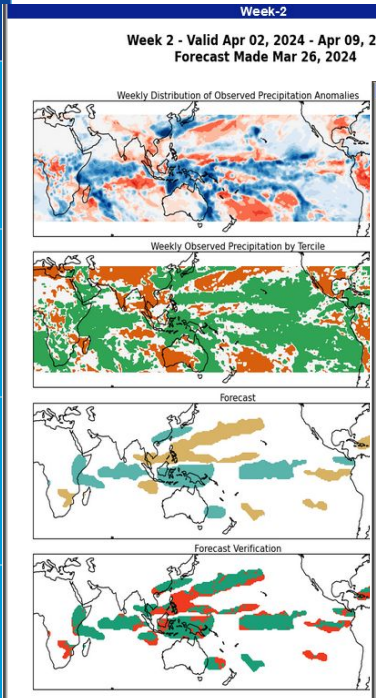
✓ ECMWF, GEFSv12 perform the
best in this sample

✓ EPAC shows higher forecast skill
than NATL

✓ Some skill remains during Week
3



Global Tropics Hazards (GTH) Outlook

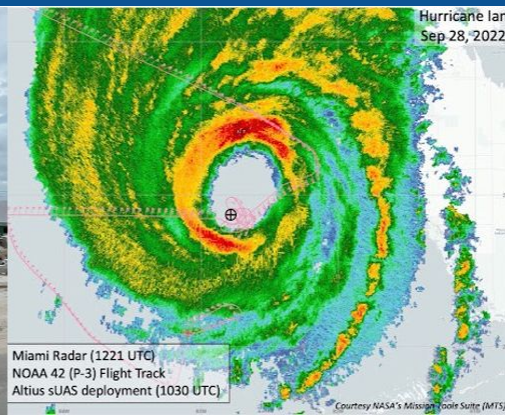
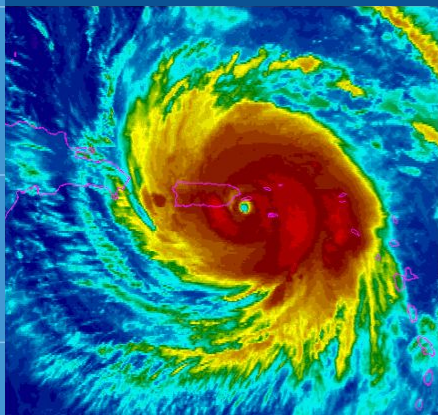


National Weather Service Tropical Products for Days 0-7



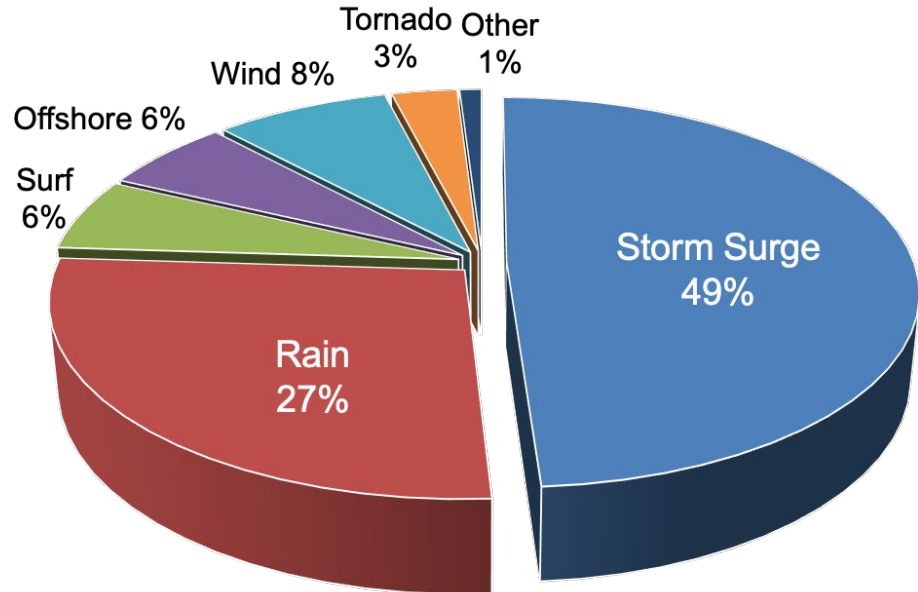
National
Weather
Service

Jessica Schauer
National Tropical Program Manager
National Weather Service



Messaging Safety – Know What Kills

- **Water accounts for nearly 90% of direct deaths**
- **Fewer storm surge deaths in the past few years – new Storm Surge Warning may be having a positive effect**
- **Lots of vehicle related flood fatalities in recent years**
 - *Turn around don't Drown!*



**U.S. Tropical Cyclone Direct Fatalities
1963-2012**

The Goal: Saving Lives

Goal: Community scale evacuation in areas with the potential for life-threatening storm surge



Kimberly and David King



Preparation: Evacuation Zones & Storm Surge Risk Maps

Know Your Zone

Pinellas County is currently not under an Evacuation Order.

Search Address Below

Search Address for Evacuation Zone

Evacuation Zones

- A
- B
- C
- D
- E
- MOBILE HOME

Shelters

- General
- Special Needs
- Pet Friendly

Evacuation Routes

- Pinellas
- Statewide

To find your evacuation zone, search your address to the left.

County of Pinellas, FDEP, Esri, TomTom, Garmin, SafeGraph, FAO, MET/NASA, USGS, EPA, NPS, USEWS
 For assistance, please contact Pinellas County Emergency Management at (727) 464-3800 or visit our website at Disaster.pinellas.gov.

National Hurricane Center Storm Surge Risk Maps

This is not a real-time product. For severe tropical cyclones, please see hurricanes.gov and consult local products issued by the National Weather Service

This national depiction of storm surge flooding vulnerability helps people living in hurricane-prone coastal areas. These maps make it clear that storm surge is not just a beachfront problem, with the risk of storm surge extending many miles inland from the immediate coastline in some areas. Storm Surge Risk Maps are provided for the US Gulf and East Coasts, Hawaii, Southern California, US territories - Puerto Rico, US Virgin Islands, Guam and American Samoa. Additional mapped areas include Micronesia, and parts of the Northern Pacific.

Atlantic

- US East and Gulf Coast
- Puerto Rico and USVI
- Hispaniola

Pacific

- Hawaii (category 1-4)
- Southern California (category 1-2)
- Guam
- American Samoa

Legend:

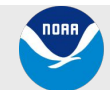
- Less than 3 feet above ground
- Greater than 3 feet above ground
- Greater than 6 feet above ground
- Greater than 9 feet above ground
- Leveed area
- Consult local officials for flood risk

Toggle Map Opacity: map:window

Storm Surge Risk Maps Category v3

STORM SURGE RISK MAPS ARE ALSO AVAILABLE:
<https://hurricanes.gov/nationalsurge/>

THERE IS NO NATIONAL EVACUATION ZONE WEBSITE
 Find your evacuation zone from your local emergency management agency



Where to Get Reliable Info?

hurricanes.gov

Home Mobile Site Text Version RSS Local Forecast Enter City, St or ZIP code Go

NATIONAL HURRICANE CENTER and CENTRAL PACIFIC HURRICANE CENTER
U.S. DEPARTMENT OF COMMERCE | NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ANALYSES & FORECASTS DATA & TOOLS EDUCATIONAL RESOURCES ARCHIVES ABOUT SEARCH

Top News of the Day... view past news Last update: Thu, 1 Aug 2024 18:57:39 UTC

- NHC issuing advisories for the Eastern Pacific on TS Carlotta
- Marine warnings are in effect for the Eastern Pacific
- Why Tropical Cyclone Size Matters: A Comparison of Hurricanes Charley (2004) & Ian (2022)

Central Pacific Eastern Pacific Atlantic

Atlantic Tropical Cyclones and Disturbances

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

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

Active Storms Marine Forecasts

Graphical Tropical Weather Outlook 7-Day Graphical Tropical Weather Outlook

Atlantic 7-Day Graphical Tropical Weather Outlook

Archived Outlooks GIS Shapefiles

Central Pacific Eastern Pacific Atlantic

Disturbances: ALL [1]

Seven-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

All Disturbances

01:37 PM EDT Thu Aug 01 2024

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

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

View 2-Day Graphical Tropical Weather Outlook

Tropical Weather Outlook Text

Español Tropical Weather Discussion

ZCZC MIATW0AT ALL
TTAA00 KNHC DDHMM

Tropical Weather Outlook
NWS National Hurricane Center Miami FL
280 PM EDT Thu Aug 1 2024

For the North Atlantic...Caribbean Sea and the Gulf of Mexico:

- Southwestern Atlantic and Eastern Gulf of Mexico (AL97):
A well-defined tropical wave is producing a large area of disorganized showers and thunderstorms over Hispaniola, Puerto Rico, the Southeastern Bahamas, and the adjacent waters of the southwestern Atlantic and northeastern Caribbean Sea. Development of this system should be slow to occur during the next day or so while it moves west-northwestward over portions of the Greater Antilles. However, environmental conditions are forecast to be more conducive for development after the wave passes the Greater Antilles, and a tropical depression is likely to form this weekend or early next week over the eastern Gulf of Mexico near the Florida Peninsula. Interests across the Greater Antilles, the Bahamas, and Florida should continue to monitor the progress of this system.
* Formation chance through 48 hours...low...30 percent.
* Formation chance through 7 days...high...70 percent.

Forecaster Beven

NOAA NWS National Hu... was live. 22m •

National Hurricane Center Director Dr. Michael Brennan provides an update on the tropic... See more

Michael Brennan, NHC Director

National Hurricane Center Facebook Live Briefings

Where to Get Reliable Info?

hurricanes.gov

Atlantic - Caribbean Sea - Gulf of Mexico
Tropical Weather Outlook (en Español) 200 PM EDT Sat Jul 6 2024
Tropical Weather Discussion 1805 UTC Sat Jul 6 2024

Tropical Storm Beryl | [Satellite](#) | [Buoy](#)s | [Grids](#) | [Storm Archive](#)

...HURRICANE AND STORM SURGE WARNINGS ISSUED FOR PORTIONS OF THE COAST OF TEXAS... ...HURRICANE-FORCE WINDS, LIFE-THREATENING STORM SURGE, AND HEAVY RAINS EXPECTED IN PORTIONS OF SOUTH TEXAS...

4:00 PM CDT Sat Jul 6
 Location: 23.9°N 93.0°W
 Moving: NW at 13 mph
 Min pressure: 997 mb
 Max sustained: 60 mph

Public Advisory #33 400 PM CDT	Forecast Advisory #33 2100 UTC	Forecast Discussion #33 400 PM CDT	Wind Speed Probabilities #33 2100 UTC
NWS Local Products 442 PM CDT	US Watch/Warning 457 PM EDT		

Productos en español: (más información) | **Aviso Publico** | **Pronóstico Discusión**

Wind Speed Probabilities	Arrival Time of Winds	Wind History	Warnings/Cone Interactive Map	Warnings/Cone Static Images	Warnings and Surface Wind	Key Messages
Mensajes Claves	Storm Surge Inundation	Storm Surge Watch/Warning	Peak Surge	Rainfall Potential	Flash Flooding Potential	

AVAILABLE FOR ONGOING OR POTENTIAL TROPICAL CYCLONES
 One-Stop Shop for NWS Products/Services

NATIONAL HURRICANE CENTER and CENTRAL PACIFIC HURRICANE CENTER
 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ANALYSES & FORECASTS • DATA & TOOLS • EDUCATIONAL RESOURCES • ARCHIVES • ABOUT • SEARCH

Top News of the Day... [view past news](#) Last update Sat, 6 Jul 2024 22:15:27 UTC

- NHC issuing advisories for the Atlantic on TS Beryl
- Marine warnings are in effect for the Gulf of Mexico
- Key Messages regarding Tropical Storm Beryl (en Español): Mensajes Claves
- Local info on Beryl: Corpus Christi, Brownsville, Houston/Galveston, Austin/San Antonio, Lake Charles
- Why Tropical Cyclone Size Matters: A Comparison of Hurricanes Charley (2004) & Ian (2022)

Central Pacific | **Eastern Pacific** | **Atlantic**

Atlantic Tropical Cyclones and Disturbances www.hurricanes.gov

09:41 PM EDT Sat Jul 06 2024

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

Tropical or Sub-Tropical Cyclone: ○ Depression ○ Storm ○ Hurricane
 ○ Post-Tropical Cyclone or Remnants

Active Storms | Marine Forecasts
2-Day Graphical Tropical Weather Outlook | 7-Day Graphical Tropical Weather Outlook

Atlantic - Caribbean Sea - Gulf of Mexico
Tropical Weather Outlook (en Español) 200 PM EDT Sat Jul 6 2024
Tropical Weather Discussion 1805 UTC Sat Jul 6 2024

Tropical Storm Beryl | [Satellite](#) | [Buoy](#)s | [Grids](#) | [Storm Archive](#)

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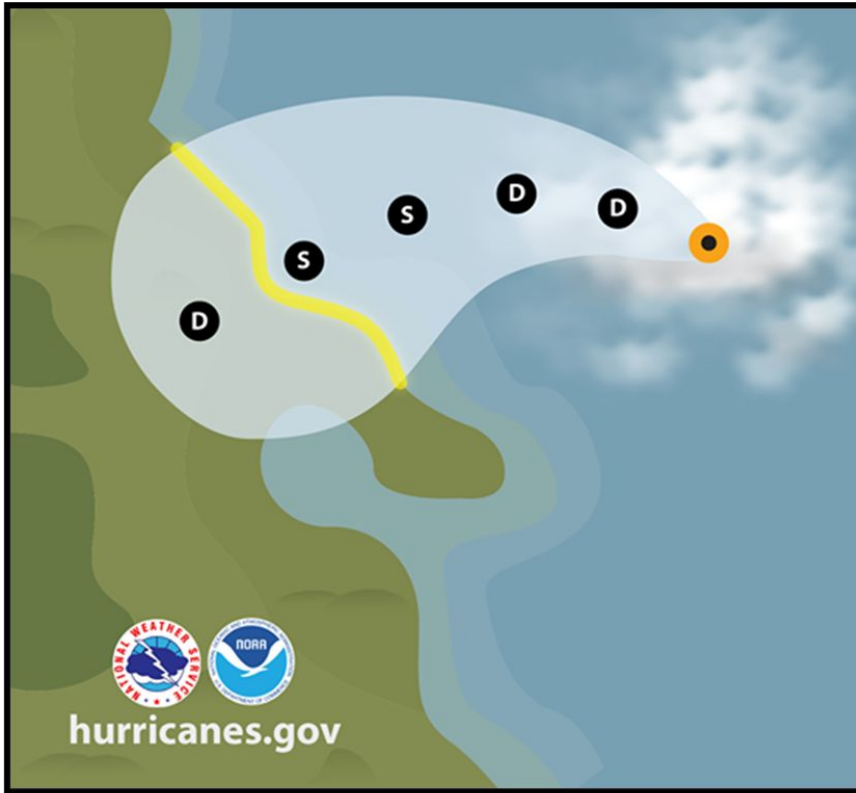
Public Advisory #33 400 PM CDT	Forecast Advisory #33 2100 UTC	Forecast Discussion #33 400 PM CDT	Wind Speed Probabilities #33 2100 UTC
NWS Local Products 442 PM CDT	US Watch/Warning 457 PM EDT		

Productos en español: (más información) | **Aviso Publico** | **Pronóstico Discusión**

Wind Speed Probabilities	Arrival Time of Winds	Wind History	Warnings/Cone Interactive Map	Warnings/Cone Static Images	Warnings and Surface Wind	Key Messages
Mensajes Claves	Storm Surge Inundation	Storm Surge Watch/Warning	Peak Surge	Rainfall Potential	Flash Flooding Potential	



Potential Tropical Cyclone Advisories

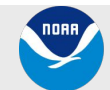


Potential Tropical Cyclone Advisories

Issued **before** a tropical depression or tropical storm forms.

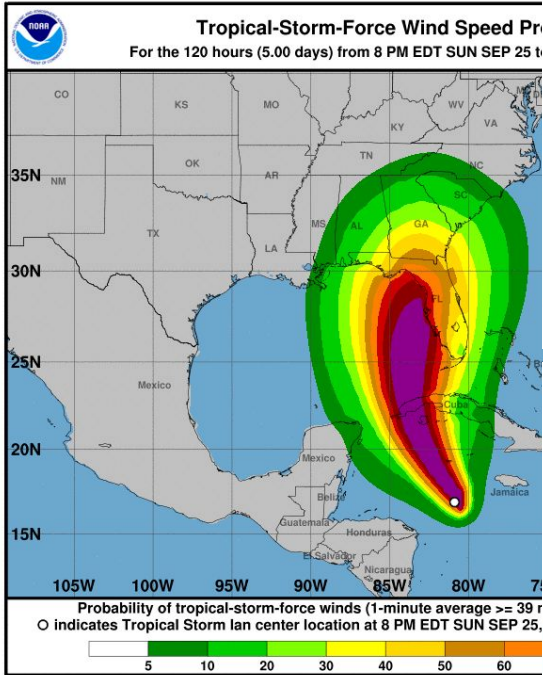
Provide the NWS with the ability to **issue a watch with a full 48 hours of lead time** or **a warning with a full 36 hours of lead time** prior to possible tropical storm, hurricane, or life-threatening storm surge conditions on land.

Contain all of the **standard NHC advisory text and graphical products** and will be issued at the standard advisory times.



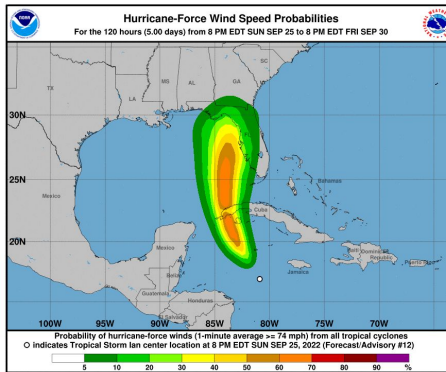
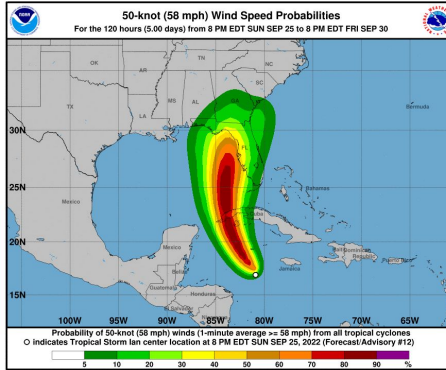


Wind Speed Probability Graphics



TROPICAL STORM FORCE

STRONG TROPICAL STORM FORCE



HURRICANE FORCE

Depicts cumulative probability of tropical storm force (39 mph), strong tropical storm force (58 mph), or hurricane force winds (74+ mph) for a specific location over the next 5 days

Takes into account more than just the center of the storm, it includes typical track, intensity, and size errors

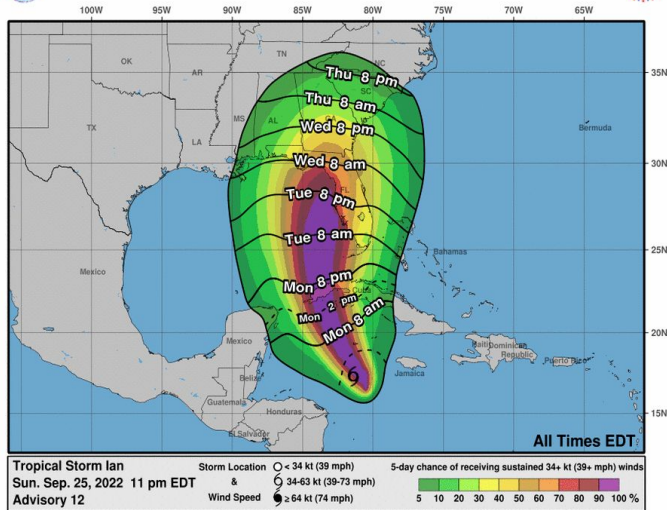




Tropical Storm Force Wind Speed Time of Arrival Graphics

EARLIEST REASONABLE

Earliest Reasonable Arrival Time of Tropical-Storm-Force Winds

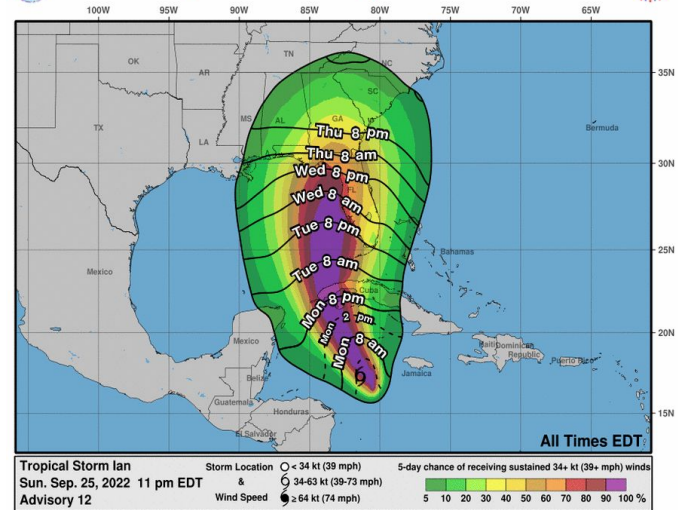


Only 1 in 10 chance of tropical storm force winds arriving earlier than noted time

Best for users with low risk tolerance

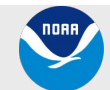
MOST LIKELY

Most Likely Arrival Time of Tropical-Storm-Force Winds



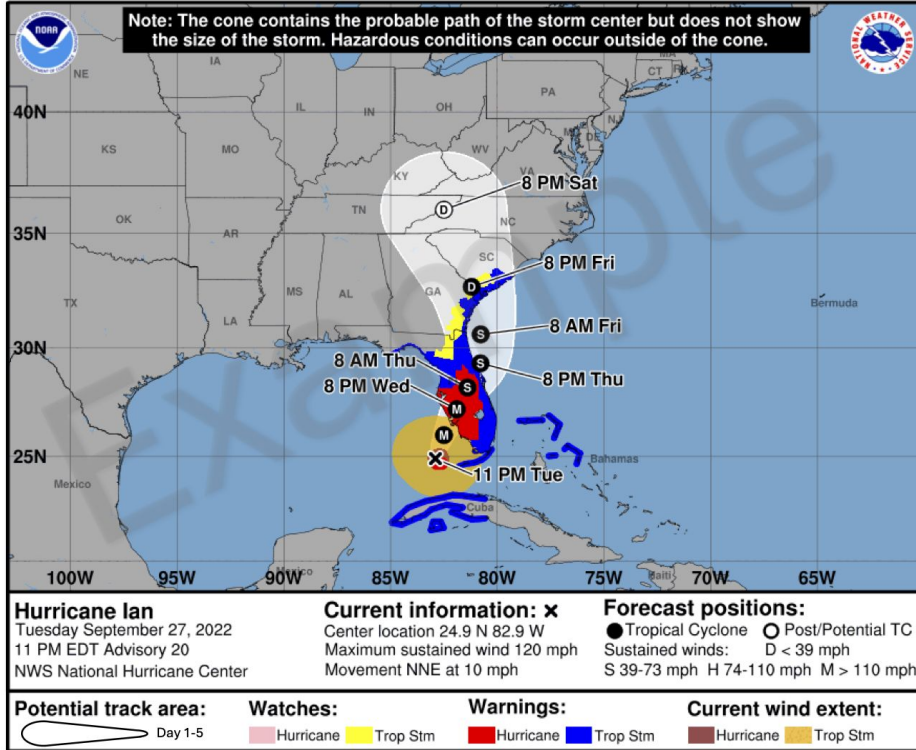
Equal chances of tropical storm force winds arriving before or after the time listed

Preparations should be completed by this time





NEW! Cone Graphic with Inland Tropical Wind Watches/Warnings

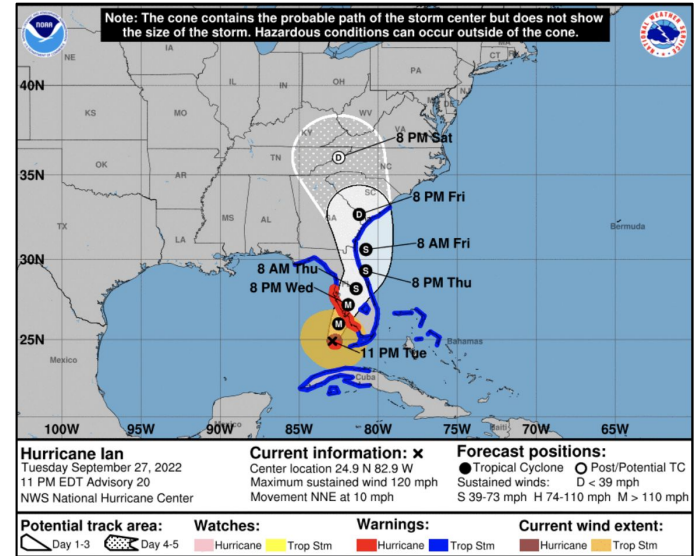


NEW! Experimental Cone Graphic

New experimental cone graphic depicting inland U.S. tropical storm and hurricane watches and warnings

Will help convey wind hazard risk over land

Graphic may not be available as soon as the current cone graphic due to the time need to compile complete inland watch and warning information



Operational Cone Graphic

Conditions found **SOMEWHERE**
within the watch/warning area...

Hurricane Warning

Hurricane force winds
(sustained winds of 74 mph or higher)
are **expected** within the **next 36 hours**

Hurricane Watch

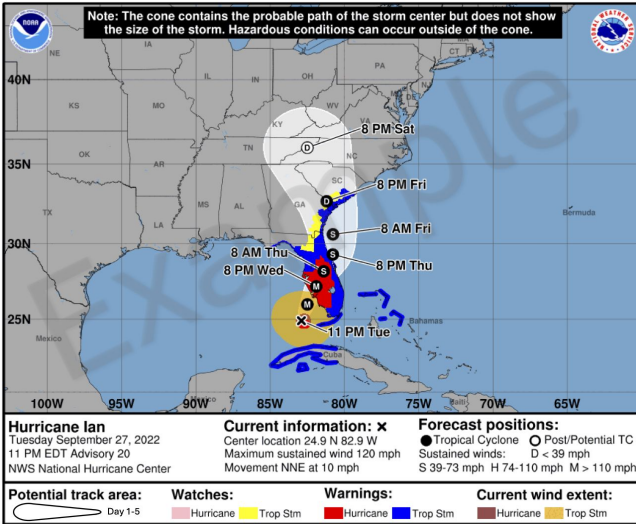
Hurricane force winds
(sustained winds of 74 mph or higher)
are **possible** within the **next 48 hours**

Tropical Storm Warning

Tropical Storm force winds
(sustained winds of 39 to 73 mph)
are **expected** within the **next 36 hours**

Tropical Storm Watch

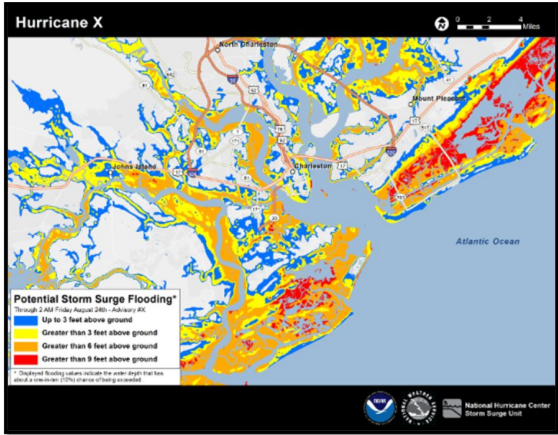
Tropical Storm force winds
(sustained winds of 39 to 73 mph)
are **possible** within the **next 48 hours**





Storm Surge Products

POTENTIAL STORM SURGE FLOODING MAP

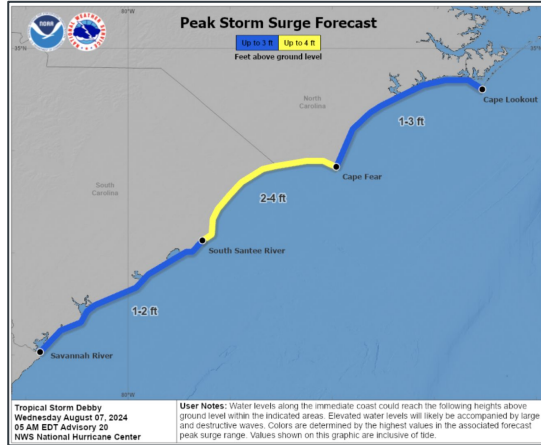


Reasonable worst case scenario

Only a 1 in 10 chance storm surge will be greater than shown

Doesn't represent a flooding footprint

PEAK STORM SURGE FORECAST



Peak values water is expected to reach above normally dry ground

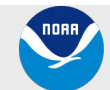
Only valid along the immediate coast - does not depict inland extent

STORM SURGE WATCH/WARNING



Storm Surge Watch - Possibility of life-threatening inundation generally within 48 hours

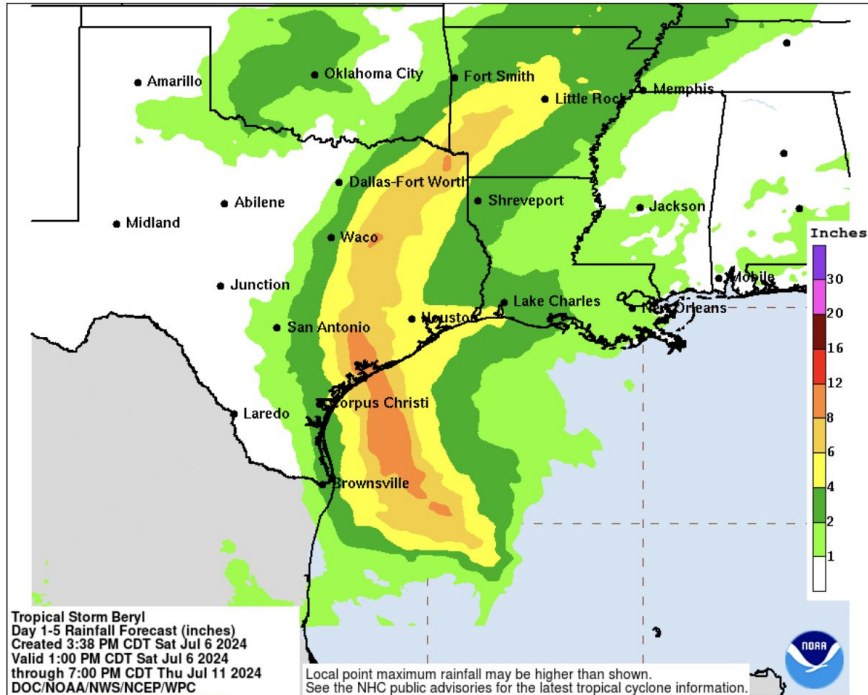
Storm Surge Warning - Danger of life-threatening inundation generally within 36 hours



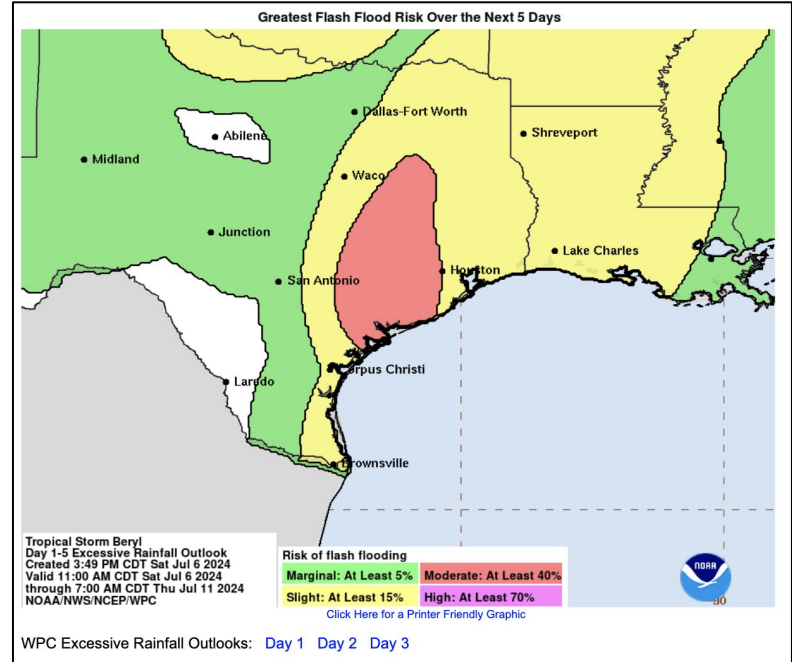


Tropical Cyclone Rainfall Products

Rainfall Forecast (from the Weather Prediction Center)



RAINFALL: Heavy rainfall of 5 to 10 inches with localized amounts of 15 inches is expected across portions of the Texas Gulf Coast and eastern Texas beginning late Sunday through midweek. This rainfall will likely produce areas of flash and urban flooding, some of which may be locally considerable. Minor to isolated moderate river flooding is also possible.



WEATHER PREDICTION CENTER FORECASTS:
<https://www.wpc.noaa.gov/>



Local Forecast Info From hurricanes.gov

Two ways to get your local forecast from hurricanes.gov

1

Home Mobile Site Text Version RSS

Local Forecast

NATIONAL HURRICANE CENTER and CENTRAL PACIFIC HURRICANE CENTER
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

ANALYSES & FORECASTS DATA & TOOLS EDUCATIONAL RESOURCES ARCHIVES ABOUT SEARCH

Local Forecast

ENTERING YOUR ZIP CODE TAKES YOU TO THE 7-DAY FORECAST:

Extended Forecast for 3 Miles WNW Bonita Springs FL

Click here for hazard details and duration

Hurricane Warning until further notice
Storm Surge Warning until further notice

Extreme... NOW: Multiple hazards in effect	Today	Tonight	Thursday	Thursday Night	Friday	Friday Night	Saturday	Saturday Night
Click HERE for Details	Tropical Storm Conditions With Hurricane Conditions Possible	Tropical Storm Conditions Expected With Hurricane Conditions Possible	Tropical Storm Conditions Possible With Hurricane Conditions Also Possible	Heavy Rain and Windy	Heavy Rain and Breezy	Heavy Rain	Heavy Rain	Heavy Rain
High: 86 °F	Low: 77 °F	High: 85 °F	Low: 75 °F	High: 86 °F	Low: 72 °F	High: 87 °F	Low: 72 °F	

2

Atlantic - Caribbean Sea - Gulf of Mexico
Tropical Weather Outlook (en Español)
200 PM EDT Sat Jul 6 2024

Tropical Weather Discussion
1805 UTC Sat Jul 6 2024

Tropical Storm Beryl

...HURRICANE AND STORM SURGE WARNINGS ISSUED FOR PORTIONS OF THE COAST OF TEXAS...
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Public Advisory #33
400 PM CDT

Forecast Advisory #33
2100 UTC

Forecast Discussion #33
400 PM CDT

Wind Speed Probabilities #33
2100 UTC

NWS Local Products
442 PM CDT

US Watch/Warning
457 PM EDT

Productos en español: (más información)

Aviso Publico

Pronóstico Discusión

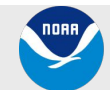
Wind Speed Probabilities
Arrival Time of Winds
Wind History
Warnings/Cone Interactive Map
Warnings/Cone Static Images
Warnings and Surface Wind
Key Messages

Mensajes Claves
Storm Surge Inundation
Storm Surge Watch/Warning
Peak Surge
Rainfall Potential
Flash Flooding Potential

LINKS TO LOCAL INFO IN THE STORM TABLE ON

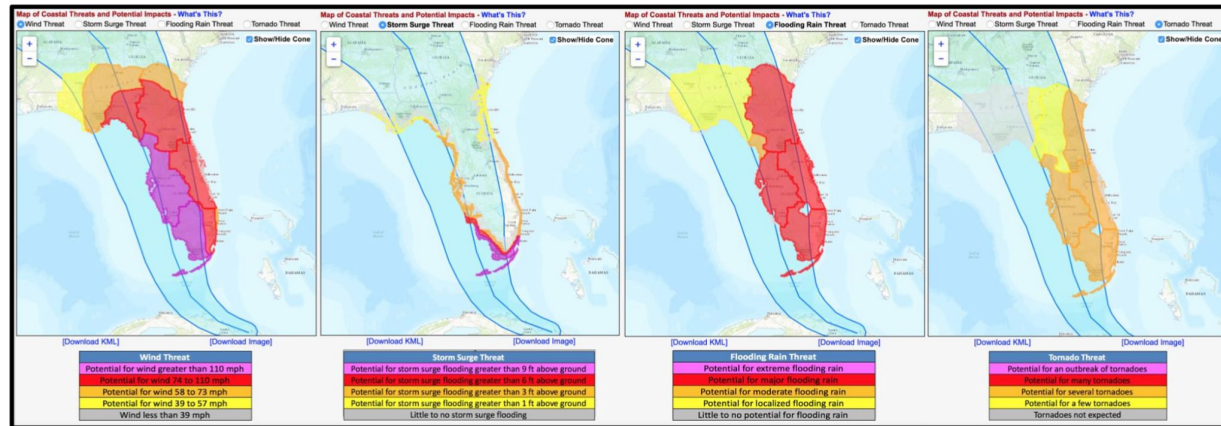
<https://hurricanes.gov/>

This will take you to local web pages & Hurricane Threats and Impacts Interface...





Local Tropical Webpages & Hurricane Threats Graphics



ZOOMABLE GRAPHICS THAT TELL YOU WHAT TO PREPARE FOR:

Wind
Storm Surge
Flooding Rain
Tornadoes

Threat Level - Potential for major flooding rain

- *Major rainfall flooding may prompt many evacuations and rescues.
- *Ditches and canals may rapidly overflow their banks in multiple places. Flood control systems and barriers may become stressed.

For: Metro Palm Beach County

...HURRICANE WARNING REMAINS IN EFFECT...

- * LOCATIONS AFFECTED
 - Boca West
 - Palm Springs
 - Florida Gardens
 - Palm Beach Gardens
- * FLOODING RAIN
 - LATEST LOCAL FORECAST: Flood Watch is in effect
 - Peak Rainfall Amounts: Additional 8-12 inches, with locally higher amounts
 - Emergency plans should include a reasonable threat as depicted on the left.
- * FOR MORE INFORMATION:
 - <http://www.weather.gov/nml>
 - www.co-palm-beach.fl.us
 - For storm information call 2-1-1

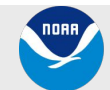




Thank you!

Questions?

Jessica.Schauer@noaa.gov



Local NWS Weather Forecast Office (WFO) Services

National Association of Community Health Centers
August 14, 2024

Chris Maier, National Warning Coordination Meteorologist, Silver Spring MD
chris.maier@noaa.gov



National Weather Service

Where NWS Operations Are Conducted

Community Based Services

122

Weather Forecast Offices

21

Center Weather Service Units

13

River Forecast Centers

9

National Centers for Environmental Prediction

7

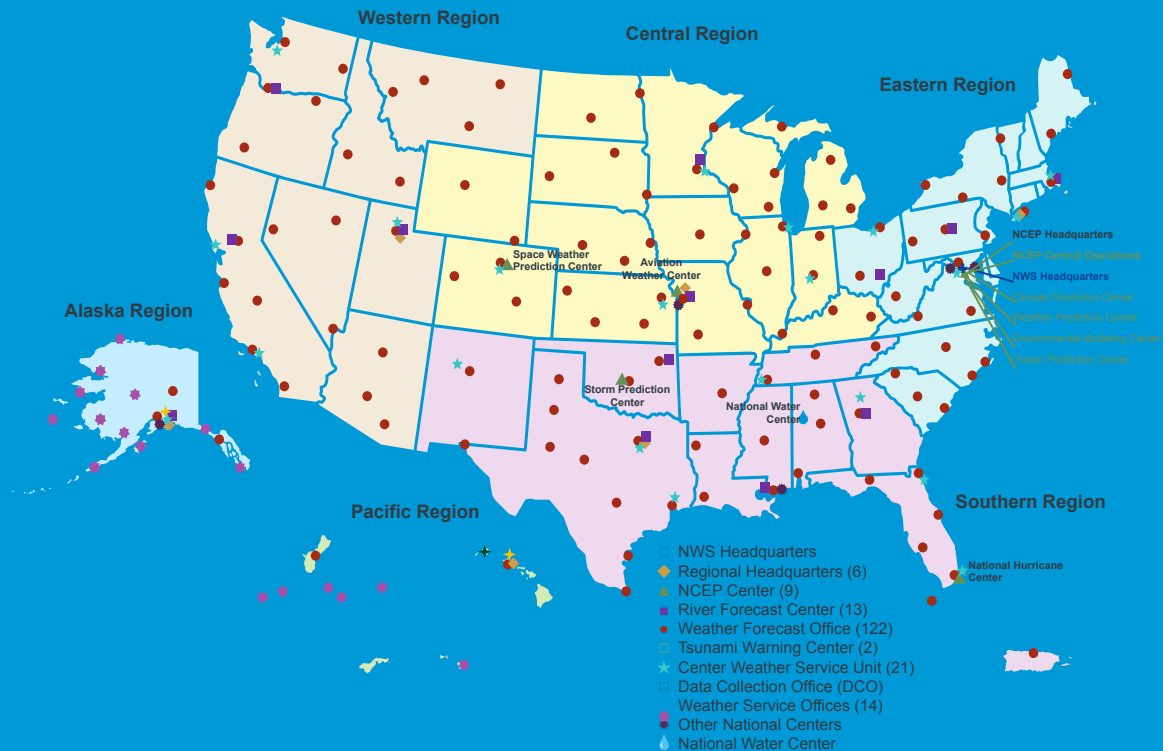
National/Regional Headquarters

2

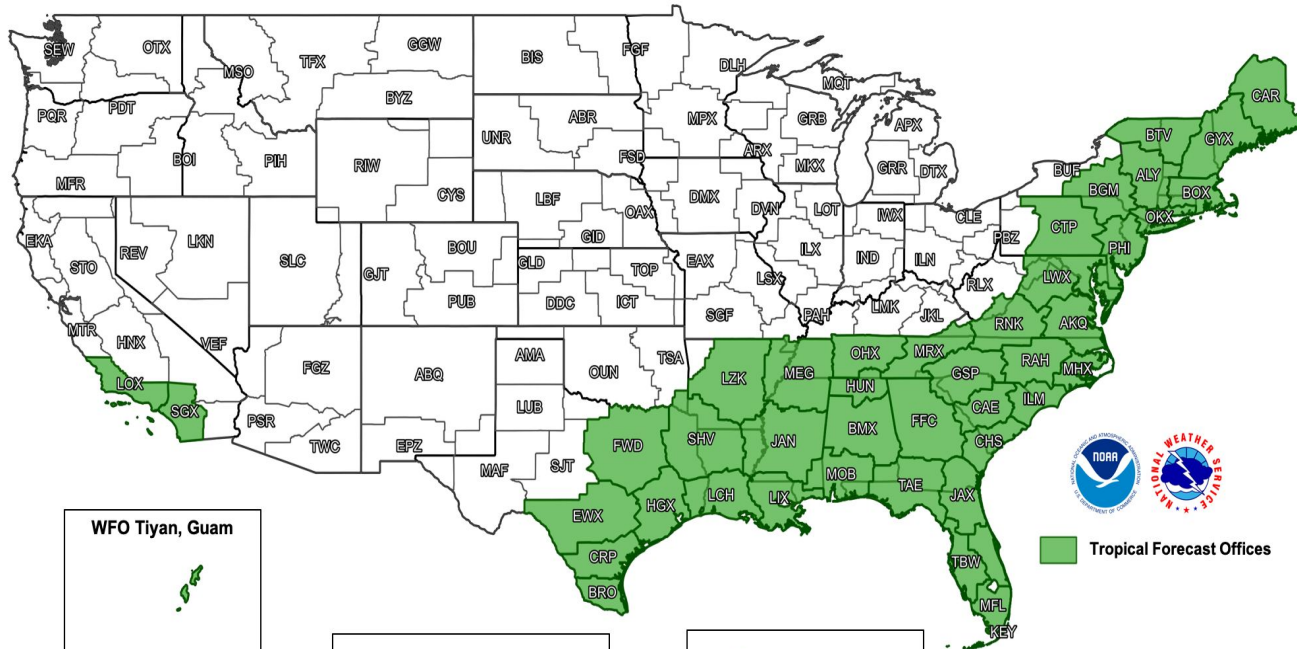
Tsunami Warning Centers

1

National Water Center



Local NWS Offices that issue Topical Products



The NHC (or CPHC) determines the **coastal** tropical storm, hurricane and/or storm surge watches and warnings

Local NWS Weather Forecast Offices (WFOs) determine **inland** tropical wind, flooding and/or severe weather watches and warnings



Tropical Forecast Offices

WFO Tiyan, Guam

Including Micronesia (Republic of the Marshall Islands, Federated States of Micronesia, Republic of Palau)

WSO Pago Pago, American Samoa
Including Swains Island

WFO Honolulu, Hawaii

WFO San Juan, Puerto Rico

www.weather.gov/safety/hurricane-ww

Wireless Emergency Alerts (WEAs)

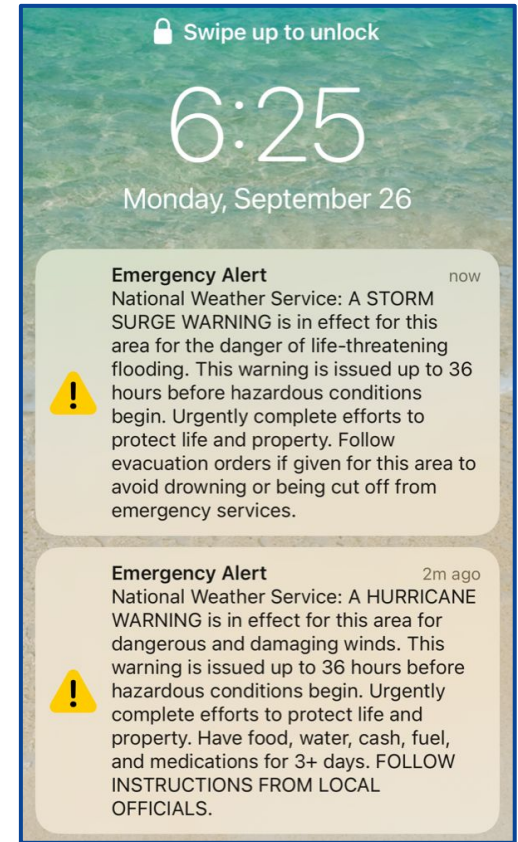
An alerting network in the United States designed to disseminate emergency alerts to mobile devices

WEA messages are triggered by the NWS for the following tropical warnings:

- Hurricane Warnings
- Extreme Wind Warnings
- Storm Surge Warnings

WEA messages are also issued by your local NWS for:

- Flood Warnings
- Severe Thunderstorm Warnings
- Tornado Warnings
- And other extreme weather warnings



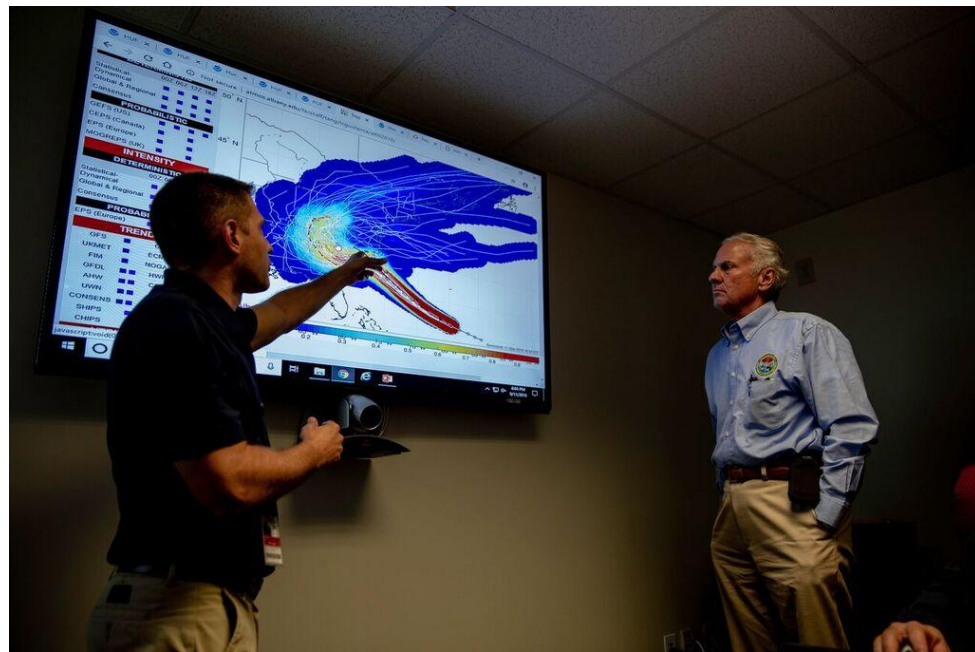
www.weather.gov/wrn/wea360



NWS is coordinating key information ahead of the storm

NWS Impact-Based Decision Support Services (IDSS) is about people - leveraging the state of the science to serve our Core Partners and our communities in order to protect life and property

Core Partners with access to NWS IDSS are normally the “Emergency Management/Public Safety official” that supports your center



A briefing on Hurricane Florence is provided by the NWS to the South Carolina Governor

www.weather.gov/about/idss



Tools and Services for Emergency Management

Daily NOAA NWS Briefings – <https://www.weather.gov/briefing/>

NOAA NWS Weather and Hazards Data Viewer - <https://www.wrh.noaa.gov/map/>

NOAA NWS Geographic Information Services (GIS) - <https://www.weather.gov/gis/>

NWS Ops Center national e-mail briefings

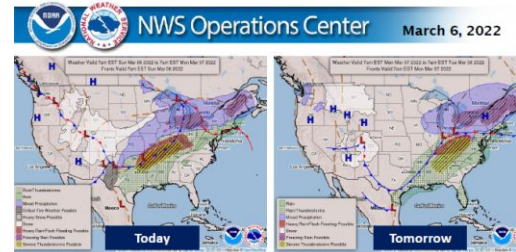
- National Daily Weather Summary and Impacts Briefings
- Significant Event Reports

NWSChat - <https://nwschat.weather.gov/>

- Real-time instant messaging program that allows your local NWS office to communicate with EMs and other core partners during incidents like hurricanes
- NWSChat uses the Slack.com interface

iNWS (Interactive NWS) - <https://inws.ncep.noaa.gov/>

- Smartphone “app” for NWS core partners only
- Receive NWS and NWEM alerts via text message and/or your email
- Free **FEMA app** is another way to receive weather and flood alerts



Recent Significant Weather Impacts

- Preliminary 42 reports of tornadoes across the State of Iowa, along with damaging winds and baseball sized hail on Saturday.
- A potentially long-track tornado in south-central Iowa tracked from approximately Winterset - to the southeast side of the Des Moines metro - to near Newton on Saturday night, destroyed multiple houses, overturned an 1 1/2 wheeler, and caused six fatalities. NWS Des Moines said an initial estimate shows it was an EF3 tornado, with wind speeds of at least 136 MPH in Madison County.
- In Kansas, a grassland fire developed in Reno County, southeast of Hutchinson, where it burned 65 homes, and spread into Harvey County resulting in evacuations in both counties.

Weather Outlook

- Two succeeding storm systems will produce multiple hazards as they track from the Central Plains to the Northeast through Monday.

The screenshot shows the iNWS app interface on a smartphone. At the top, there's a header for 'iNWS' with a search icon. Below that, a map shows the location of Avelar Creek. A prominent alert box reads: 'New event: Tornado Watch for Avelar Creek. Start via SMS at 11:13 pm EST, Feb 6th 2022'. Below the alert, there's a detailed map of the watch area in Florida, showing major cities like Tallahassee, Gainesville, Orlando, and Jacksonville. A text box on the right side of the screen provides additional information: 'FLC017-049-053-057-075-081-101-103-105-115-119-071200- /O/NEW.KTBW.TO.A.0006.2102070412Z-21020711200Z/ THE NATIONAL WEATHER SERVICE HAS ISSUED TORNAO WATCH 6 IN EFFECT UNTIL 7 AM EST SUNDAY FOR THE FOLLOWING AREAS IN FLORIDA THIS WATCH INCLUDES 11 COUNTIES IN CENTRAL FLORIDA HARDEE POLK SUMTER IN NORTHERN FLORIDA LEVY IN WEST CENTRAL FLORIDA CITRUS HERNANDO HILLSBOROUGH MANATEE PASCO PINELLAS SARASOTA THIS INCLUDES THE CITIES OF BAYSHORE GARDENS, BEVERLY HILLS, BOWLING GREEN, BRADENTON, BRANDON, BRONSON, BROOKSVILLE, BUSHNELL, CEDAR KEY, CHIEFLAND, CITRUS'.

To contact your local NWS Warning Coordination Meteorologists - <https://www.weather.gov/stormready/contact>



Follow your local NWS office on social media

Search for your local NWS social media here: www.weather.gov/socialmedia/ (press “go” button)

Example: NWS New Orleans/Baton Rouge

Website: <https://www.weather.gov/lix>



FB.COM/NWSNEWORLEANS



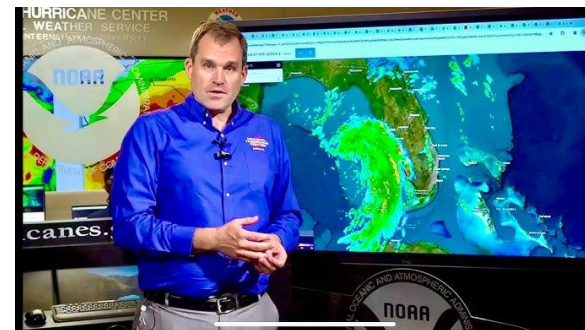
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You can follow
NHC on social too!

National Hurricane Center Director
Dr. Michael Brennan provides a morning
update briefing on Tropical Storm Debby
(from August 4th):





Questions?