

National Hurricane Center Products and Services Update for 2026 Hurricane Season

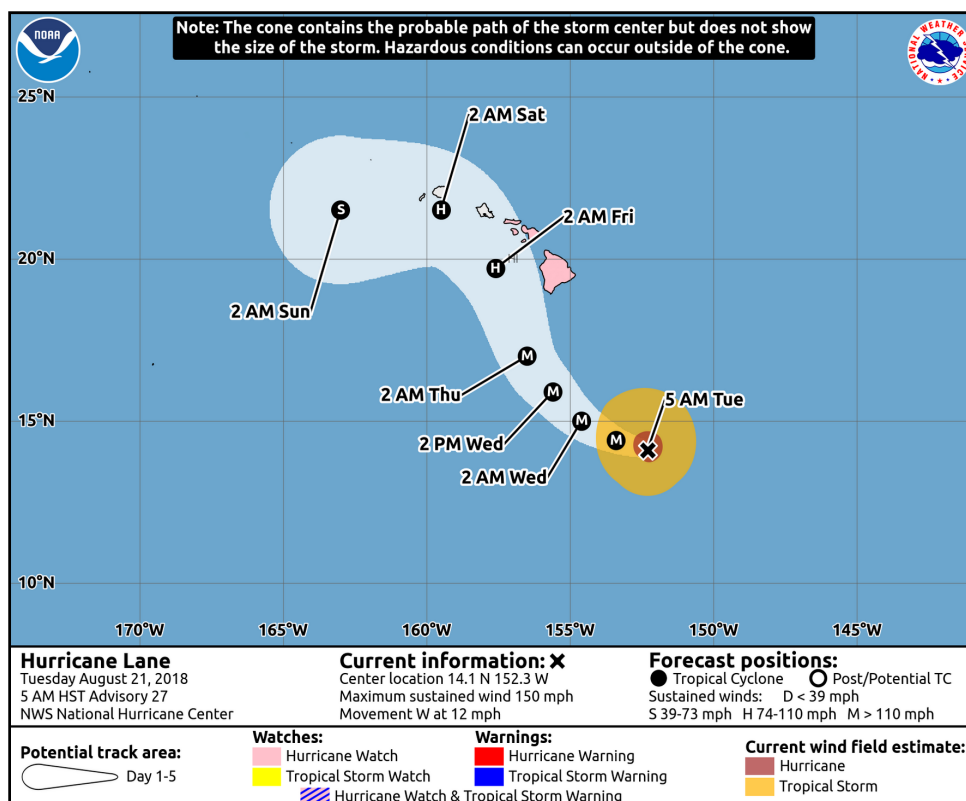
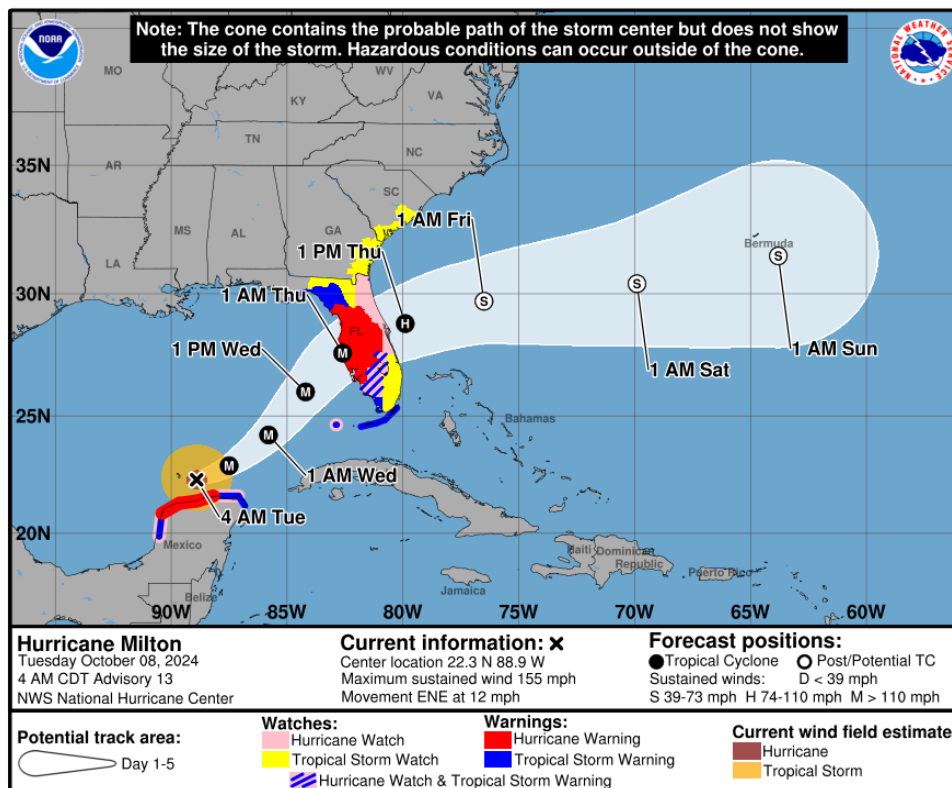
Updates to Products and Services in 2026:

1) Cone Graphic with a depiction of inland tropical storm and hurricane watches and warnings for the United States becomes operational:

NHC will implement a new version of the cone graphic that includes a depiction of all land-based (coastal and inland) tropical storm and hurricane watches and warnings in effect for the continental United States, Hawaii, Puerto Rico, and the U.S. Virgin Islands. This version of the cone graphic went through an experimental phase during the 2024 and 2025 hurricane seasons and replaces the version that only depicted coastal U.S. tropical storm and hurricane watches and warnings. User feedback showed strong support for the addition of inland watches and warnings. In addition, recommendations from social science research suggest that the addition of inland watches and warnings to the cone graphic helps communicate wind risk during tropical cyclone events while not overcomplicating the graphic with too many data layers. Note that the legend on the new version of the cone includes symbology for areas where a hurricane watch and tropical storm warning are simultaneously in effect (diagonal pink and blue lines), and there is one shading for the entire 5-day cone.

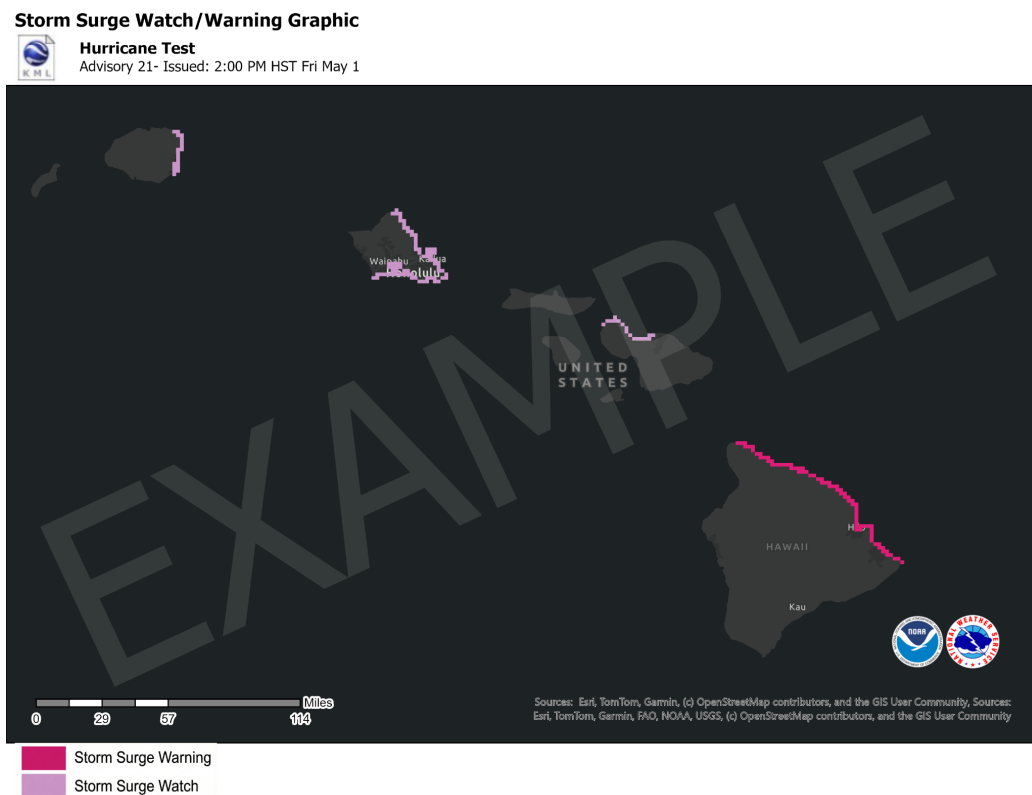
The cone graphic will be available on hurricanes.gov for full and intermediate advisories when the full forecast advisory package is released. In rare circumstances, a "preliminary" cone with only coastal U.S. watches and warnings may be posted until a final version with inland U.S. watches and warnings is available.

Examples of the 2026 version of the cone graphic for Hurricane Milton (2024) and Hurricane Lane (2018) with inland watches and warnings is shown on the next page:



2) Storm Surge Watches and Warnings, Peak Storm Surge Graphic, and Potential Storm Surge Flooding Map for Hawaii

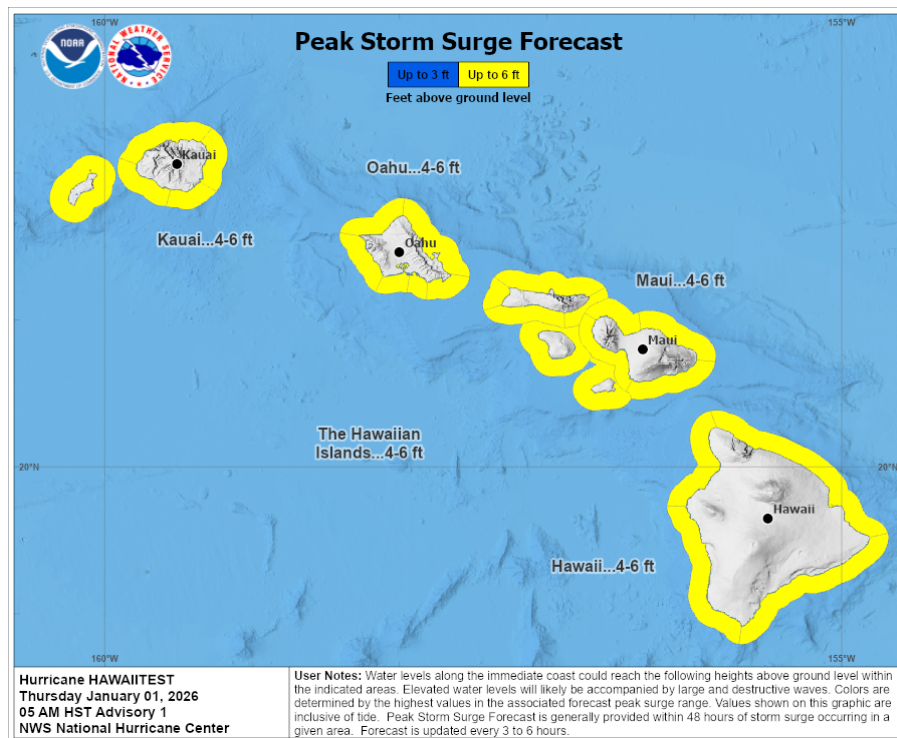
Beginning in 2026, NWS will have the ability to issue Storm Surge Watches and Warnings for the main Hawaiian Islands, identical to those issued for the U.S. East and Gulf coasts, Puerto Rico, and the U.S. Virgin Islands. A Storm Surge Warning communicates the danger of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours, in association with an ongoing or potential tropical cyclone, a subtropical cyclone or a post-tropical cyclone. A Storm Surge Watch communicates the possibility of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 48 hours. An example of a hypothetical Storm Surge Watch and Warning for the Hawaiian Islands is shown below:



Example Storm Surge Watch and Warning for the Hawaiian Islands

NHC will also begin issuing a Peak Storm Surge Forecast Graphic for the main Hawaiian Islands that shows the expected inundation along the immediate coast from storm surge and tide that are provided in the tropical cyclone public advisory (TCP). These values represent the height that water could reach above normally dry ground somewhere within the specified areas. A range of values is given to express forecast uncertainty and to account for varying coastal geography. Colors are based on the highest value in the associated forecast range, thus different forecast ranges can appear as the same color. The graphic is subject to change every

three hours in association with a new NHC full or intermediate public advisory. An example of the Peak Storm Surge graphic for Hawaii is shown below:

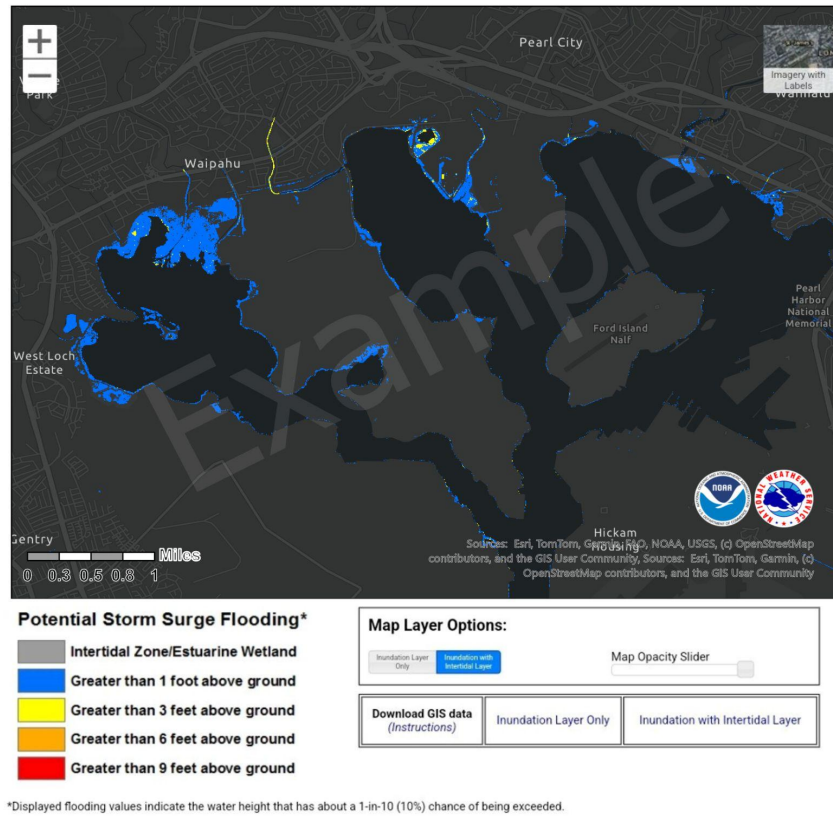


Example Peak Storm Surge Graphic for the main Hawaiian Islands

NHC will also issue the Potential Storm Surge Flooding Map for the main Hawaiian Islands. The Potential Storm Surge Flooding Map shows geographical areas where inundation from storm surge could occur and how high above ground the water could reach in those areas. The map is based on the Probabilistic Tropical Cyclone Storm Surge and Tides (P-Surge) model that uses the latest NHC official forecast and historical forecast errors to create an ensemble of simulations that accounts for uncertainty related to the storm's landfall location and forward speed, intensity, and size. The shading on the Potential Storm Surge Flooding Map represents inundation levels that have a 10 percent chance of being exceeded, which can be thought of as representing a reasonable worst-case scenario for any individual location. An example of the Potential Storm Surge Flooding Map for the Pearl Harbor area of Oahu is shown below:

Potential Storm Surge Flooding Map (Inundation) EXAMPLE

NHC Potential Storm Surge Flooding Map
Hawaii Test CP82 (2025) Advisory 01
From 06 AM HST Monday November XX to 09 AM
HST Friday November XX

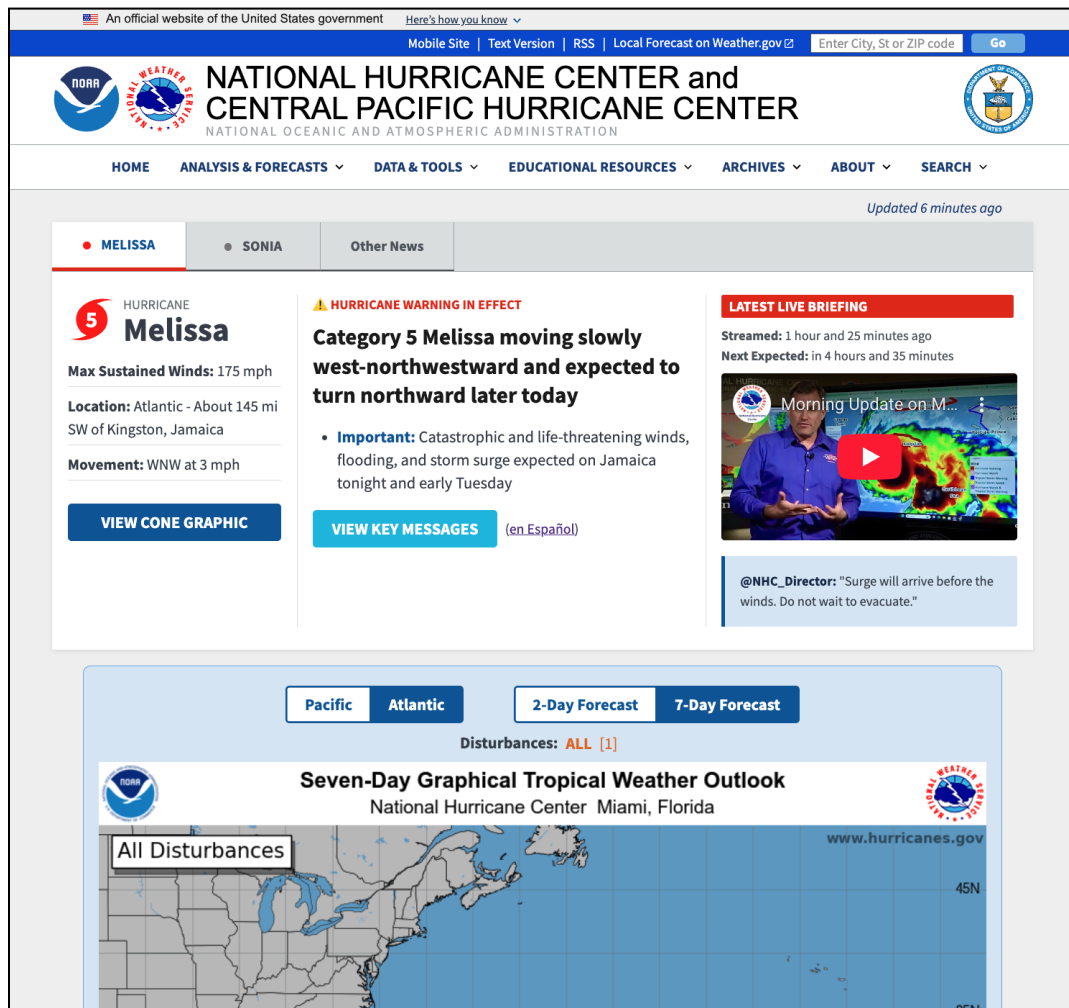


Example Potential Storm Surge Flooding Map for the Pearl Harbor area of Oahu

3) Mobile-friendly front page of the NHC website

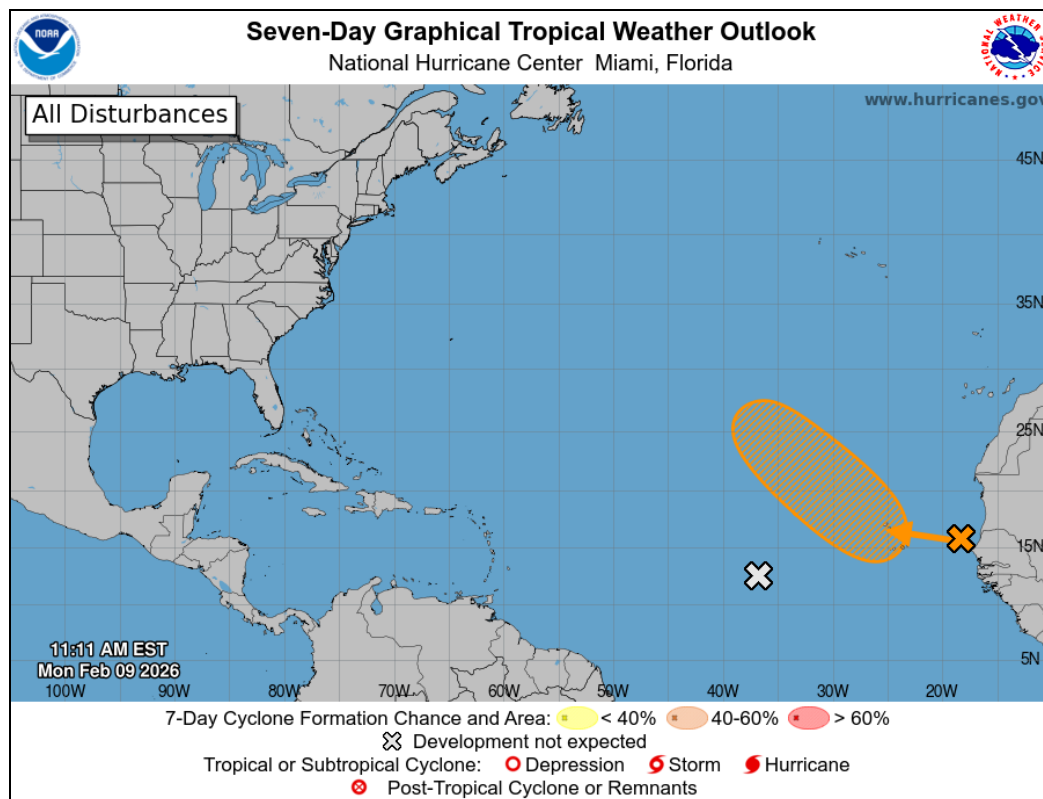
NHC is beginning to work on a version of its website, [hurricanes.gov](https://www.hurricanes.gov), that is more mobile friendly and more accessible. As a first step, a refreshed version of the front page of the NHC website will be hosted on NHC's mobile URL (<https://www.nhc.noaa.gov/mobile/>) around the beginning of the 2026 hurricane season. This version will work on mobile, tablet, and desktop devices.

A prototype of the front page of the mobile-friendly website is shown below:



4) Updated symbology of disturbances in the Graphical Tropical Weather Outlook for which development is not expected

In previous years, the Graphical Tropical Weather Outlook has depicted all systems with a low chance (less than 30%) of development as a yellow X, including systems that had a near 0% chance in both the 2-day and 7-day forecast periods. Beginning in 2026, systems in which development is not expected (near 0% in both 2- and 7-day forecast periods) will be depicted as a gray X. This includes systems where development chances have decreased to near 0%, and/or are mainly being highlighted to communicate a significant rainfall/flooding threat. Note that systems that have a near 0% chance of development in 2 days but a non-zero chance in the next 7 days will still be depicted with a yellow X.



Example of a 7-Day Graphical Tropical Weather Outlook showing a gray X, denoting a system in which development chances are near 0% in both 2 days and 7 days.

5) Annual update to the track forecast error cone

The size of the tropical cyclone track forecast error cone for the Atlantic basin in 2026 will be about 4–8% smaller as compared to 2025. For the eastern North Pacific basin, it will also be about 3–8% smaller than the 2025 cone. The cone represents the probable track of the center of a tropical cyclone, and is formed by enclosing the area swept out by a set of imaginary circles

placed along the forecast track (at 12, 24, 36 hours, etc.). The size of each circle is set so that two-thirds of historical official forecast errors over the previous five years (2021-2025) fall within the circle. The circle radii defining the cones in 2026 for the Atlantic and eastern and central North Pacific basins are given in the table below. The changes from 2025 values (in parentheses) are expressed in both nautical miles (n mi) and percent.

2026 Track Forecast Cone Two-Thirds Probability Circles (n mi)		
Forecast Period (h)	Atlantic Basin	Eastern and Central North Pacific Basins
3	16 (0: 0%)	16 (0: 0%)
12	25 (-1: -4%)	25 (-1: -4%)
24	39 (0: 0%)	37 (-1: -3%)
36	49 (-3: -6%)	48 (-2: -4%)
48	62 (-5: -8%)	56 (-3: -5%)
60	77 (-5: -8%)	66 (-5: -8%)
72	95 (-5: -5%)	78 (-5: -6%)
96	134 (-8: -6%)	106 (-7: -7%)
120	200 (-13: -7%)	138 (-8: -6%)

Experimental Products

Experimental Cone Graphic

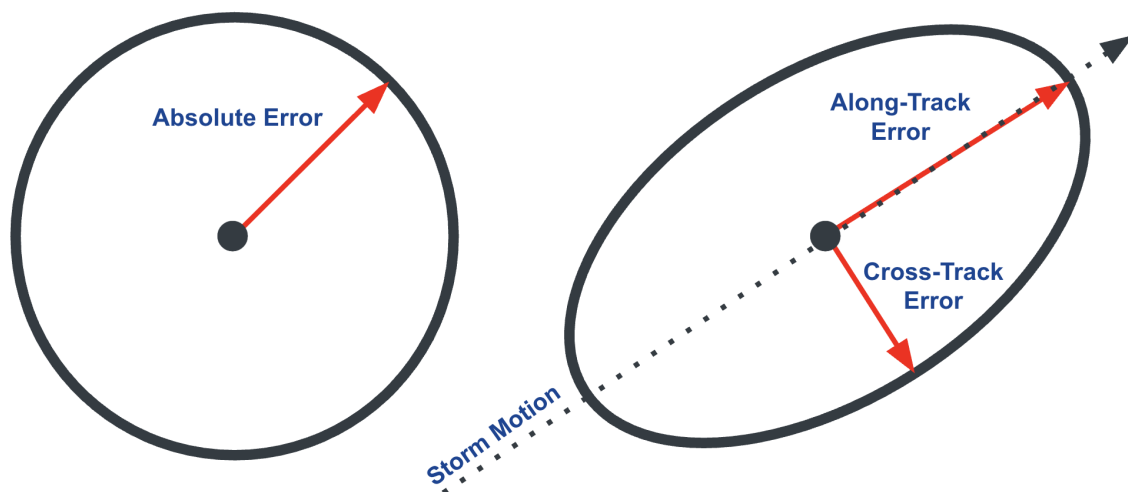
With the Cone Graphic with inland watches and warnings for the United States becoming operational in 2026, NHC will be introducing a new experimental version of the track forecast cone. Since the debut of the National Hurricane Center's Tropical Cyclone Track Forecast Cone in 2002, the cone has been constructed by drawing a line around **circles** anchored at each NHC forecast point. Absolute forecast track errors have been determined by calculating

the distance between where the center of a tropical cyclone is forecast to be by NHC at a specified forecast time, and where it ends up at that time. Initially, the radii of the circles used to construct the cone were based on the average absolute error over the previous 10 years, but since 2007, the radii have been calculated using the 67th percentile of these absolute errors over the previous 5 years. In practice, this means that the center of the tropical cyclone would be expected to fall within each circle two-thirds of the time.

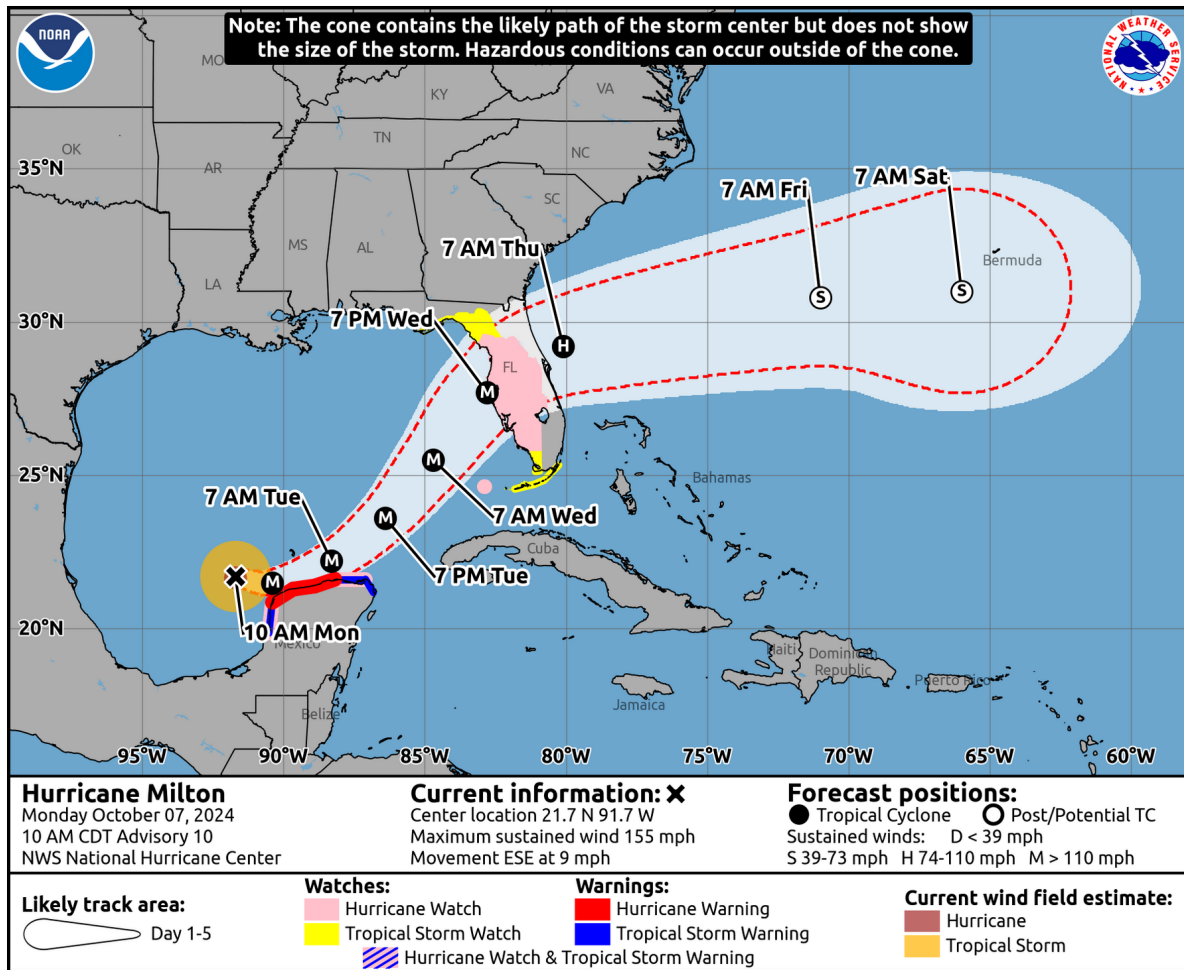
Beginning in 2026, NHC will experiment changing two aspects of the cone:

- (1) Using ellipses (instead of circles) that account for along- and cross-track errors
- (2) Using the 90th percentile of the along- and cross-track errors

The experimental cone will be constructed by drawing a line around ellipses anchored at each NHC forecast point. Along-track errors are determined by calculating how far the center of a tropical cyclone ends up ahead of (faster than) or behind (slower than) the NHC forecast. Cross-track errors are determined by calculating how far the center of a tropical cyclone deviates to the left or right of the NHC track forecast. The “radii” (or more technically, the semi-major and semi-minor axes) of the ellipses are based on the “90th percentile” of NHC’s along- and cross-track errors over the previous 5 years. In practice, this means that the center of a tropical cyclone would be expected to fall within each ellipse 90% of the time. The experimental cone will be released shortly after the advisory. During the experimental phase, technical issues could arise and affect the timeliness or availability of the graphic. There will be opportunity to provide comments and feedback during the product’s experimental phase.



Schematic showing the difference between absolute forecast error and along- and cross-track forecast error



Example cone graphics for Hurricane Milton showing the current operational cone based on absolute errors (dashed red line) and the experimental cone based on along- and cross-track errors (white shading). Note that the red dashed line on this graphic is for illustration purposes only and will not be included on the experimental cone graphic.

Experimental Graphical Marine Wind Warning

Starting this year, the National Hurricane Center/Tropical Analysis and Forecast Branch (NHC/TAFB) is introducing the Experimental Graphical Marine Wind Warnings, a new service for marine partners. This product is a graphical depiction of official marine warnings, based on cumulative wind speed (gridded) forecasts where the resultant warning reflects specific wind speed thresholds.

This experimental service offers shapefiles of graphical marine wind warnings for the next 48 hours, encompassing all of the tropical oceanic domains (tropical North Atlantic Ocean, Caribbean Sea, Gulf of America, and tropical Northeast Pacific Ocean).

The Graphical Marine Wind Warning product enables the display of wind-based warnings in the high seas (areas of 34-47 kt, 48-73 kt, and 64 kt or greater) for both the 0-24 hour and 24-48 hour forecast periods, a capability beyond the previous wind speed-based warnings which were only available previously via text products and broad brush graphics.

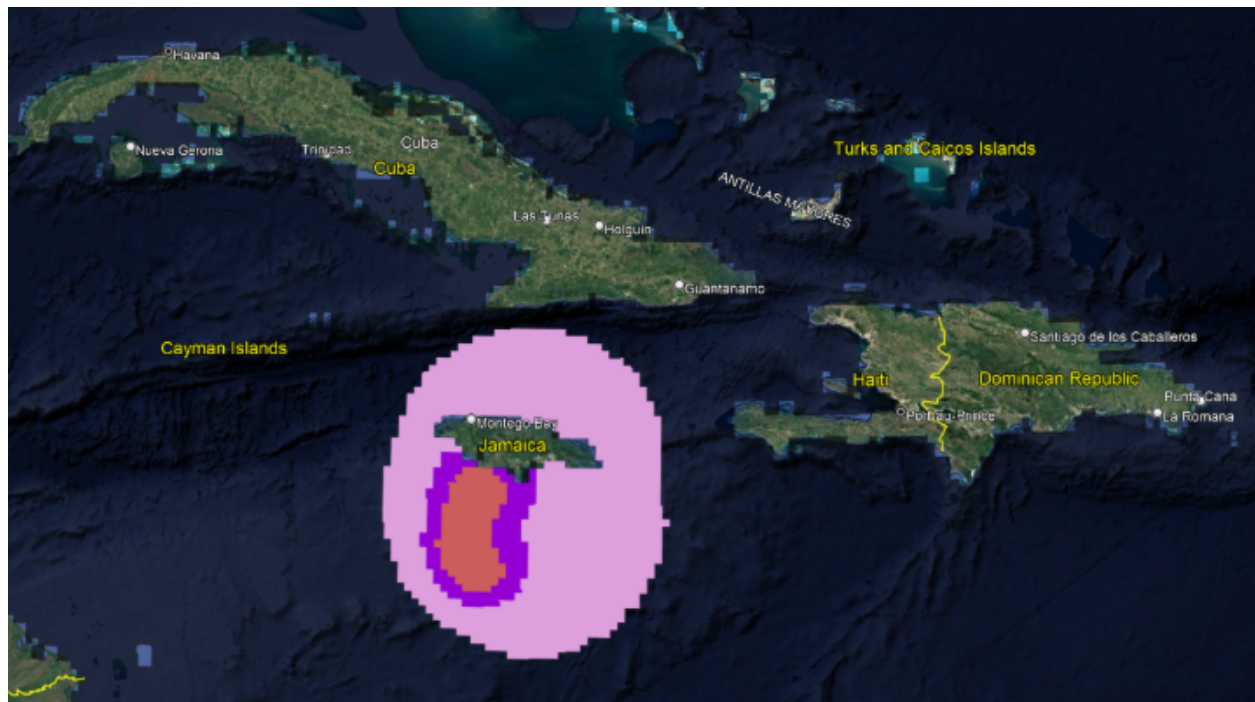
The experimental phase is providing this information live, updated four times daily with each forecast cycle.

The intent is for these experimental warning graphics to be displayed in a user-friendly format for integration into various navigational ship software and displays, such as Electronic Chart Display and Information Systems (ECDIS). By accessing these products that indicate active Tropical Storm, Hurricane and Hurricane Force, Gale, or Storm Warnings, captains and mates can make better hazardous weather avoidance decisions for their vessels, crew, and cargo.

The Experimental Graphical Marine Wind Warning are available at the following link:

<https://www.nhc.noaa.gov/gis/marine/warnings/>

An example of the GMWW in the Atlantic (Hurricane Melissa, 2025):



The legend for the GMWW:

Sustained Winds 34 to 47 kt:		Plum
Sustained Winds 48 to 63 kt:		Darkviolet
Sustained Winds 64 kt or greater:		Westernred

The Experimental Graphical Marine Wind Warnings are scheduled to be available daily by: 0445 UTC, 1045 UTC, 1645 UTC, and 2245 UTC. *Note: that because these are experimental, there may be times when they are not available or delayed.

GMWWs are valid for both tropical cyclones (tropical storms and hurricanes) as well as extratropical cyclones (gale, storm, and hurricane force).

For an explanation of the KML format, please visit:

www.weather.gov/media/cio/Keyhole%20Markup%20Language.pdf which is provided by NOAA's National Weather Service.

Input on the Experimental Graphical Marine Wind Warnings is being sought from users:

https://www.surveymonkey.com/r/ExpGraphicalMarineWindWarnings_2025

Reminders of Other Recent Changes to Products and Services

U.S. Risk Current Map

NHC introduced a rip current risk map in 2025 that highlighted the risk of dangerous rip current conditions. The information originates from local National Weather Service (NWS) Weather Forecast Offices (WFOs) in a national rip current risk map when at least one active tropical system is present. The map is designed for beach goers to easily view, on one webpage, rip current risk provided by WFOs and is updated when new information is available from a WFO. The rip current risk is provided for the current day, the next day, and as a composite showing the highest risk over both days for areas along the East and Gulf coasts of the United States, Puerto Rico and the U.S. Virgin Islands, and the coast of southern California.

Issuance Criteria for Potential Tropical Cyclone Advisory Products

The issuance criteria for tropical cyclone advisory products for Potential Tropical Cyclones was updated in 2025 to allow the issuance of tropical cyclone advisory products up to 72 hours

before the anticipated arrival of storm surge or tropical-storm-force winds on land regardless of the immediate need for land-based tropical storm, hurricane, or storm surge watches or warnings. A Potential Tropical Cyclone (PTC) is a disturbance that is not yet a tropical cyclone but poses the threat of bringing tropical storm or hurricane conditions to land areas. Before 2025, NHC only began issuing advisory products for PTCs that required land-based watches (issued 48 hours in advance of conditions beginning) or warnings (issued 36 hours in advance of conditions beginning). This change allowed NHC the option to issue PTC advisory products at longer lead times when confidence is high that there is a significant risk of wind and storm surge impacts to land areas.

Pronunciation of storm names

Pronunciation guides for storm names, including the phonetic pronunciations of all Atlantic and eastern North Pacific storm names is found on the NHC website at:

Atlantic: www.nhc.noaa.gov/pdf/aboutnames_pronounce_atlc.pdf

Eastern North Pacific: www.nhc.noaa.gov/pdf/aboutnames_pronounce_epac.pdf

Alternate name lists (used when the 6-year list is exhausted):

Atlantic: https://www.nhc.noaa.gov/pdf/aboutnames_pronounce_atlc_alt.pdf

Eastern North Pacific:

https://www.nhc.noaa.gov/pdf/aboutnames_pronounce_epac_alt.pdf

Social Media

Live Stream

The National Hurricane Center is providing simultaneous live stream broadcasts via the **YouTube** and **Facebook** platforms whenever there is an area of interest in the tropics that may pose a threat to land. Live streams will be provided more frequently when the media pool is activated. The media pool is typically activated when a hurricane watch is issued for any portion of the U.S. contiguous coastline. NHC will generally provide these live stream broadcasts around 11:30 am EDT and 5:30 PM EDT.

Outreach

- The National Hurricane Center has a **Facebook** page. The “[NOAA NWS National Hurricane Center](#)” page provides updates about the NHC outreach and education campaign and other items that might be of interest to the public throughout the year.
- The National Hurricane Center maintains an **Instagram** account. The [NHC Instagram](#) page shares updates regarding the NHC's outreach and education initiatives, along with other relevant information.

Real-time Updates throughout the Hurricane Season

- The National Hurricane Center is on **X** – and has five accounts:

Interactive Outreach (**@NWSNHC**) - The broadest in scope of NHC's X accounts, **@NWSNHC** is our primary mechanism for engaging the public and our partners in two way conversations. This account will cover general topics such as education and outreach, NWS products and policies concerning tropical cyclones, significant events, or just fun facts – from across all the branches that comprise NHC.

There are two operational X feeds, one for the Atlantic basin - **@NHC_Atlantic** (which includes the Gulf of America and Caribbean Sea) and one for the eastern North Pacific basin - **@NHC_Pacific**. Automated posts are sent via these accounts whenever NHC issues a public advisory regarding a tropical cyclone (TCP).

Each post contains a link to access the corresponding product on the NHC website. These two operational accounts will also be used to supplement and augment the formal tropical cyclone product suite, with occasional notices on such topics as reconnaissance aircraft status, announcements on NHC's intention to initiate advisories on a new tropical cyclone, highlights of key messages during active cyclones, etc. These accounts are also used to send notifications when NHC Tropical Cyclone Reports are posted on the NHC website.

The NHC storm surge group can be followed on X at **@NHC_Surge**.

This account enhances storm surge forecasts by providing real-time reports and observations during an event (resources permitting). The feed will enhance preparedness and outreach efforts throughout the year, and provide news and announcements on updates to the SLOSH modeling system and storm surge decision support tools.

The Tropical Analysis and Forecast Branch (TAFB) is on X at **@NHC_TAFB**. TAFB, an operational arm of the NHC, is responsible for issuing more than 100 marine products daily covering millions of square miles of the Atlantic and eastern Pacific Ocean. This account highlights significant weather events over the marine area as well as its outreach programs.

Find us on the Web:

National Hurricane Center: www.hurricanes.gov

Tropical Weather Outlook: www.nhc.noaa.gov/aboutnhcgraphics.shtml#GTWO

Definition of NHC Track Forecast Cone: www.nhc.noaa.gov/aboutcone.shtml

National Hurricane Preparedness www.nhc.noaa.gov/cone_usage.php

National Hurricane Preparedness Week: www.hurricanes.gov/prepare

National Hurricane Center Facebook page: www.facebook.com/NWSNHC

National Hurricane Center X page: <https://www.nhc.noaa.gov/twitter.php>

Contact: NHC Public Affairs: nhc.public.affairs@noaa.gov

March 24, 2026