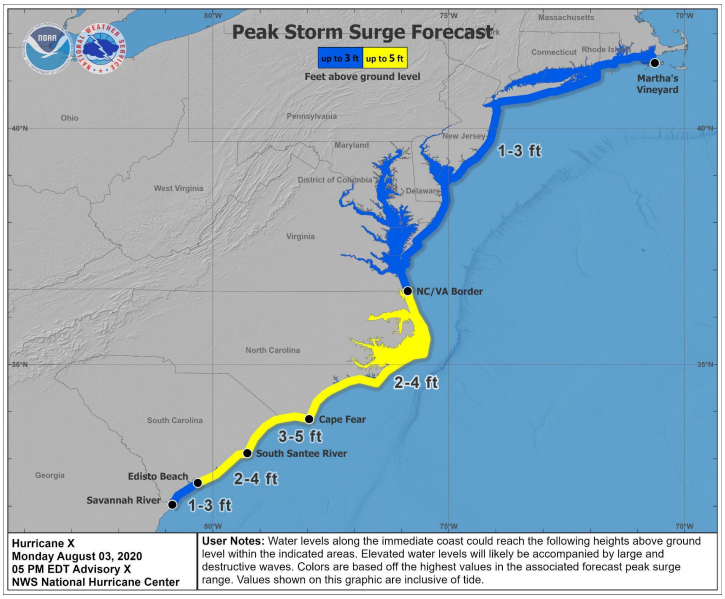
Update on National Hurricane Center Products and Services for 2023

1) Peak Storm Surge Forecast graphic becomes operational

The Peak Storm Surge Forecast graphic that the NWS has provided experimentally since 2020 will become operational in 2023. The graphic depicts the Peak Storm Surge Forecast inundation values from the Tropical Cyclone Public Advisory when storm surge watches or warnings are in effect.

Storm surge watches and warnings are currently issued in the Atlantic basin only for locations along the U.S. East and Gulf Coasts and in Puerto Rico and the U.S. Virgin Islands. The graphic will be made available approximately 15 minutes after the scheduled advisory release time. Scheduled advisory times are 5 a.m., 11 a.m., 5 p.m. and 11 p.m. EDT. When storm surge watches or warnings are in effect, this graphic can be found in the relevant storm table on the NHC website. The graphics will also be available in KML format here: https://www.nhc.noaa.gov/gis/

An example of the graphic is shown below:



2) Potential Storm Surge Flooding Map will now be available for Puerto Rico and the U.S. Virgin Islands

The Potential Storm Surge Flooding Map issued by the National Hurricane Center (NHC) that is currently produced for the U.S. Gulf and East Coasts will be expanded to include Puerto Rico and the U.S. Virgin Islands (USVI). The Potential Storm Surge Map shows the geographical areas where inundation from storm surge could occur and how high above ground the water could reach in those areas.

The Potential Storm Surge Flooding map takes into account:

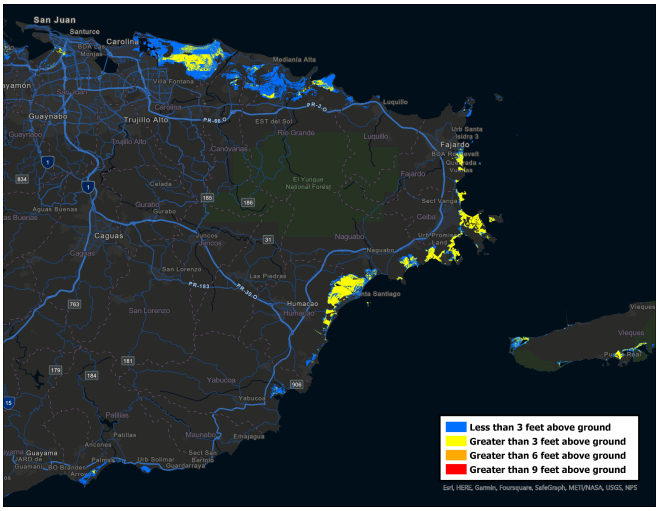
- Flooding due to storm surge from the ocean, including adjoining tidal rivers, sounds, and bays
- Normal astronomical tides
- Land elevation
- Uncertainties in the track, landfall location, intensity, forward speed, and size of the cyclone

The map does not take into account freshwater flooding from rainfall, riverine discharge, and flooding inside and overtopping of certain levees. *However, unlike the Potential Storm Surge Flooding Maps issued elsewhere, the map issued for Puerto Rico and the USVI does account for water level rise resulting from nearshore breaking waves.*

Additional information on this product is available at:

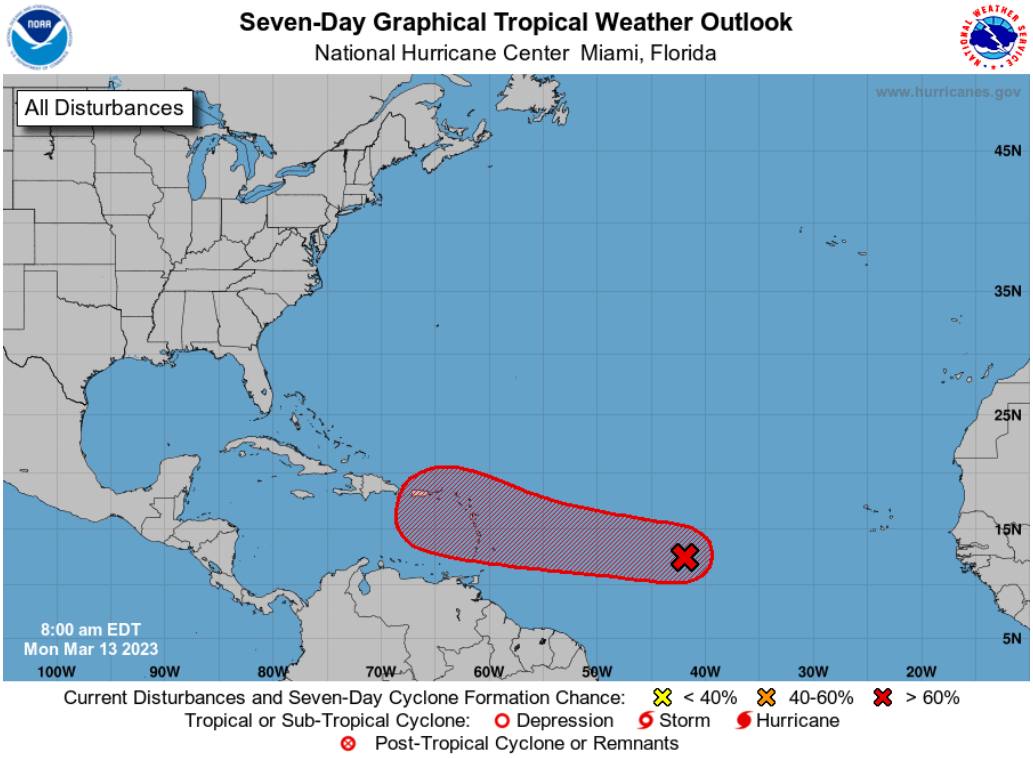
http://www.nhc.noaa.gov/surge/inundation

An example of the graphic is shown below:



3) Extension of the Tropical Weather Outlook to 7 days and inclusion of Invest number information

The NHC text and graphical Tropical Weather Outlook products provide information on disturbances with tropical cyclone formation potential. Beginning in 2023, the time period covered by the outlook will be extended from 5 to 7 days, with both 2-day and 7-day formation probabilities provided. An example of the 7-day graphical Tropical Weather Outlook is shown below:



Additionally, invest identification numbers will be added to the geographic headers within the body of the Tropical Weather Outlook text product, when appropriate. Invest identification numbers are a way to distinguish areas of disturbed weather that have the potential for tropical cyclone formation. The invest identification numbers are composed of 4 characters: a 2-letter basin identifier (e.g., AL), and a 2-digit number that begins with a 9 (e.g., 90, 91, 92, etc.). An example of a text Tropical Weather Outlook with the invest identification numbers is shown on the next page:

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ABNT20 KNHC 020539
TWOAT

Tropical Weather Outlook
NWS National Hurricane Center Miami FL
200 AM EDT Fri Sep 2 2022
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For the North Atlantic...Caribbean Sea and the Gulf of Mexico:

Active Systems:
The National Hurricane Center is issuing advisories on Tropical Storm Danielle, located about 925 miles west of the Azores.

East of the Leeward Islands (AL91):
Satellite imagery indicates there has been little change in the organization of the area of low pressure located several hundred miles east of the Leeward Islands during the past several hours. Although environmental conditions remain only marginally conducive, any additional development of the system over the next few days would lead to the formation of a tropical depression. The disturbance is expected to move slowly west-northwestward, toward the adjacent waters of the northern Leeward Islands. Regardless of development, locally heavy rains may occur over portions of the Leeward Islands during the next couple of days, and interests in that area should monitor the progress of the system. An Air Force Reserve Hurricane Hunter aircraft is scheduled to investigate the system this afternoon, if necessary. Additional information on this system can be found in High Seas Forecasts issued by the National Weather Service.
* Formation chance through 48 hours...medium...50 percent.
* Formation chance through 7 days...high...70 percent.

Eastern Tropical Atlantic:
Shower activity associated with a broad area of low pressure located just northwest of the Cabo Verde Islands has increased some over the last several hours, but remains poorly organized. This system is moving into an area of less favorable environmental conditions, and significant development is not anticipated.
* Formation chance through 48 hours...low...10 percent.
* Formation chance through 7 days...low...10 percent.

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Public Advisories on Tropical Storm Danielle are issued under WMO header WTNT35 KNHC and under AWIPS header MIATCPAT5. Forecast/Advisories on Tropical Storm Danielle are issued under WMO header WTNT25 KNHC and under AWIPS header MIATCMAT5.

High Seas Forecasts issued by the National Weather Service can be found under AWIPS header NFDHSFAT1, WMO header FZNT01 KWBC, and online at ocean.weather.gov/shtml/NFDHSFAT1.php

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Forecaster Beven

4) Removal of Watch and Warning information in the Forecast/Advisory

The National Hurricane Center (NHC) will remove land-based tropical cyclone watches and warnings from the Tropical Cyclone Forecast/Advisory (TCM). Currently, a list of tropical cyclone watches and warnings are provided in both the TCM text product and the Tropical Cyclone Public Advisory (TCP) issued by NHC. To reduce the duplication of information and the opportunity for errors, the tropical cyclone watches and warnings will be removed from the TCM. Additional details on the Tropical Cyclone Forecast/Advisory (TCM) can be found at: https://www.nhc.noaa.gov/aboutnhcprod.shtml#TCM. The webpage listed above will not be updated to reflect the change in the TCM until closer to the implementation date.

5) Annual update to the track forecast error cone

The size of the tropical cyclone track forecast error cone for the Atlantic basin will be about the same as compared to 2022. For the eastern North Pacific basin, it will be similar in size to the 2022 cone through 60 h, and slightly smaller at days 3 through 5.

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 (2018-2022) fall within the circle. The circle radii defining the cones in 2023 for the Atlantic and eastern North Pacific basins are given in the table on the next page. The change from 2022 values (in parentheses) are expressed for both nautical miles (n mi) and percent.

A video showing how to properly interpret and use the cone graphic can be found at: www.nhc.noaa.gov/cone_usage.php

2023 Track Forecast Cone Two-Thirds Probability Circles (n mi)		
Forecast Period (h)	**Atlantic Basin**	**Eastern North Pacific Basin**
3	16 (0: 0%)	16 (0: 0%)
12	26 (0: 0%)	25 (0: 0%)
24	39 (0: 0%)	38 (0: 0%)
36	53 (1: 2%)	51 (-1: -2%)
48	67 (0: 0%)	63 (-2: -3%)
60	81 (-3: -4%)	78 (-1: -1%)
72	99 (-1: -1%)	86 (-7: -8%)
96	145 (3: 2%)	110 (-10: -8%)
120	205 (5: 3%)	137 (-9: -6%)

6) 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

7) Social Media

The National Hurricane Center is experimentally providing simultaneous live stream broadcast via its **YouTube**, **Facebook** and **Twitter** accounts where 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 provide these live streams broadcast at 11:30 am EDT.

- 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 is on **Twitter** – and has five twitter accounts:

  Interactive Outreach **(@NWSNHC**) - The broadest in scope of NHC's Twitter 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 Twitter feeds, one for the Atlantic basin - **@NHC_Atlantic** (which includes the Gulf of Mexico and Caribbean Sea) and one for the eastern North Pacific basin - **@NHC_Pacific.** Automated tweets are sent via these accounts whenever NHC issues a public advisory regarding a tropical cyclone (TCP).

  Each tweet 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.

  The NHC storm surge group can be followed on Twitter 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 Twitter 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.

8) On the Web:

National Hurricane Center: www.hurricanes.gov

Graphical 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 Twitter page: www.nhc.noaa.gov/twitter.shtml

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

March 31, 2023