



## Update on National Hurricane Center Products and Services for 2016

New or recent changes to NOAA's National Hurricane Center (NHC) products include:

### 1) Prototype Storm Surge Watch/Warning Graphic

NHC will again offer an experimental graphic to highlight those areas along the Gulf and Atlantic coasts of the United States most at risk for life-threatening inundation by storm surge from a tropical cyclone. (The experimental program began in 2015, but none of the 2015 storms produced a storm surge threat that met the issuance criteria.)

The graphic, which will be available on the NHC website [www.hurricanes.gov](http://www.hurricanes.gov), is designed to introduce the concept of a watch or warning specific to the storm surge hazard, displaying areas that would qualify for inclusion under a storm surge watch or warning system currently being developed by the National Weather Service. As part of a phased implementation plan, storm surge watches and warnings are expected to debut in 2017.

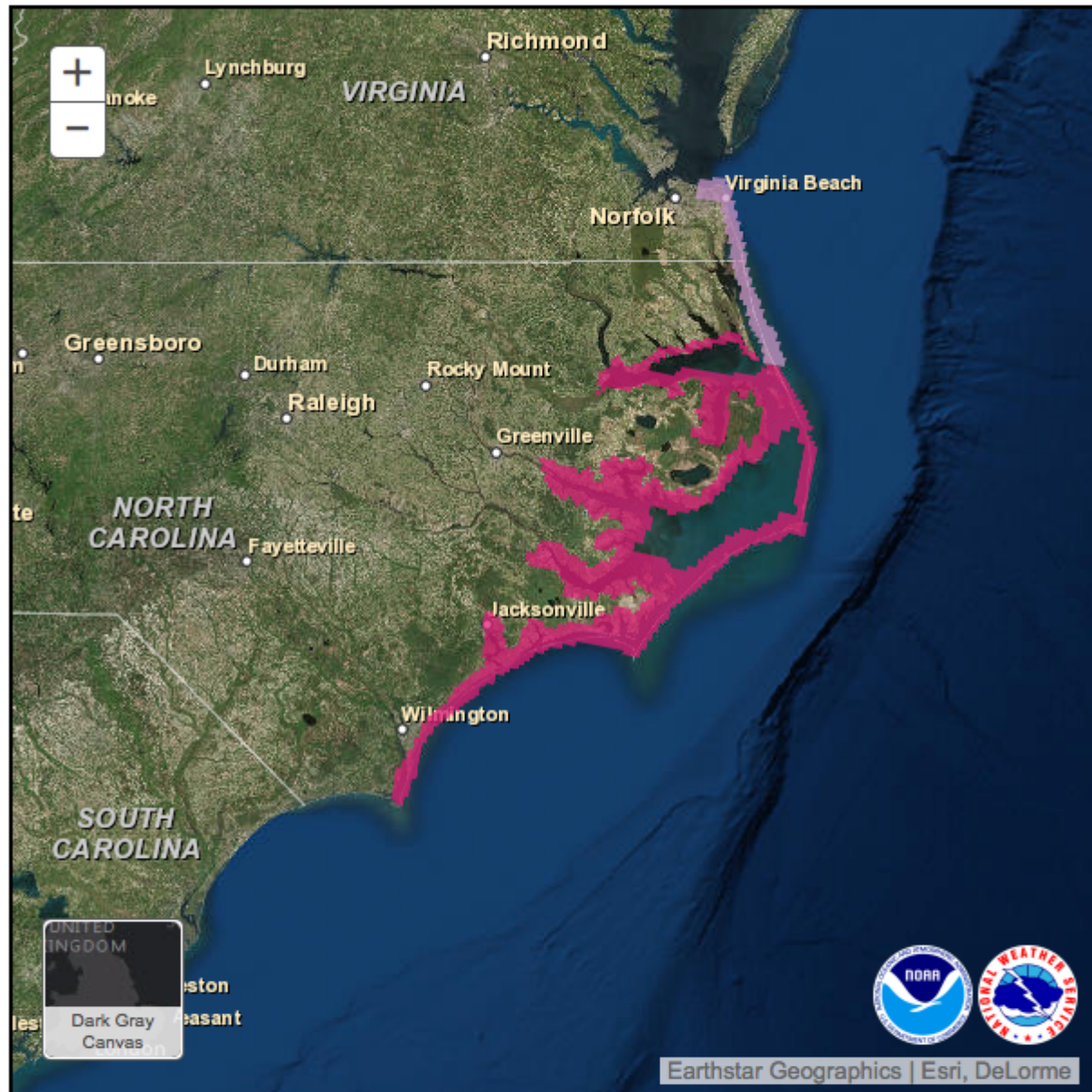
Storm surge is often the greatest threat to life and property from a tropical cyclone, and it can occur at different times and at different locations from a storm's hazardous winds. In addition, while most coastal residents can remain in their homes and be safe from a tropical cyclone's winds, evacuations are generally needed to keep people safe from storm surge. Having separate warnings for these two hazards should provide emergency managers, the media, and the general public better guidance on the hazards they face when tropical cyclones threaten. NHC and NOAA National Weather Service (NWS) Forecast Offices will determine the area most at risk from life-threatening surge through a collaborative process.

Below is an example of the graphic:



# Prototype Storm Surge Watch/Warning Graphic\*

Hurricane Zelda

Advisory 12 Issued: Fri Jul 04 2014 8 PM EDT



## Prototype Storm Surge Watch/Warning

-  Prototype Storm Surge Warning
-  Prototype Storm Surge Watch

\*Prototype Product - For official NWS tropical cyclone information, see [hurricanes.gov](http://hurricanes.gov). This graphic displays areas that would qualify for inclusion under a storm surge watch/warning that is under development by the National Weather Service. A storm surge warning indicates there is a danger of life-threatening inundation from rising water moving inland from the shoreline somewhere within the specified area, generally within 36 hours. A storm surge watch indicates that life-threatening inundation is possible somewhere within the specified area, generally within 48 hours. All persons, regardless of whether or not they are in the highlighted areas shown in the graphic, should promptly follow evacuation orders and other instructions from local officials. User feedback on the prototype storm surge watch/warning graphic can be provided at [LINK](#). Upon completion of development, formal public comment/review of this graphic and the experimental storm surge watch/warning will take place in 2016, with operational implementation planned in 2017, if approved.

In addition to the graphic, the risk areas will be mentioned in Hurricane Local Statements issued by NWS Forecast Offices in the affected areas and in the Hazards section of the NHC Public Advisory.

Here is a sample surge statement from the Hazards section of a Public Advisory:

HAZARDS AFFECTING LAND

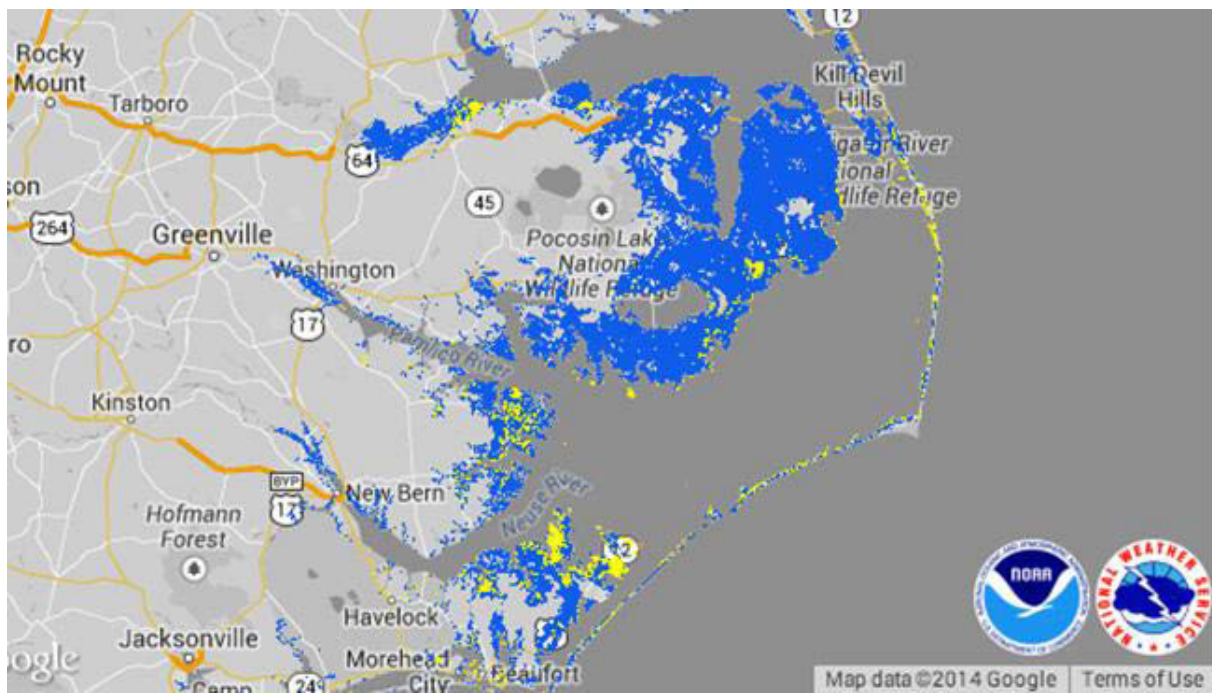
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STORM SURGE: The combination of a dangerous storm surge and the tide will cause normally dry areas near the coast to be flooded by rising waters moving inland from the shoreline. There is a danger of life-threatening inundation during the next 36 hours along the North Carolina coast from Cape Fear to Duck, including the Outer Banks, the Pamlico and Albemarle Sounds, and along adjacent rivers and estuaries. For a depiction of areas at risk, please see the prototype National Weather Service storm surge watch/warning graphic. This is a life-threatening situation. Persons located within these areas should take all necessary actions to protect life and property from rising water and the potential for other dangerous conditions. Promptly follow evacuation and other instructions from local officials.

## **2) Potential Storm Surge Flooding Map becomes operational**

The experimental Potential Storm Surge Flooding Map that debuted during the 2014 hurricane season will become operational in 2016. This product provides quantitative information on the storm surge hazard associated with tropical cyclones, highlighting geographical areas where inundation from storm surge could occur and the height above ground that the water could reach. The map depicts 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.

The first map will usually be issued at the same time as the initial hurricane watch, although in some cases it will be issued with the initial tropical storm watch. The map is based on the latest forecast track and intensity for the tropical cyclone, and takes in to account likely forecast errors. The map is subject to change every six hours in association with each new NHC full advisory package. Due to the processing time required to produce the map, it will not be available until about 60 to 90 minutes following the advisory release.

Below is an example of the map used during 2014's Hurricane Arthur:



### 3) Tropical Cyclone forecast cone update

The size of the tropical cyclone track forecast error cone for the Atlantic basin will be slightly smaller this year, except at 120 hours. The eastern Pacific cone will be essentially unchanged through 72 hours, and slightly smaller after that. 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 (2011-2015) fall within the circle. The circle radii defining the cones in 2016 for the Atlantic and eastern North Pacific basins are given in the table below:

Forecast Period (hours)	Circle radius Atlantic Basin (nautical miles)	Circle radius Eastern North Pacific Basin (nautical miles)
12	30	26
24	49	42
36	66	55
48	84	70
72	115	100
96	165	137
120	237	172



#### 4) Other items of interest for 2016:

1) Pronunciation guides for storm names including the phonetic pronunciations of all Atlantic and Eastern North Pacific storm names can be found on the NHC website at:

Atlantic: [http://www.nhc.noaa.gov/pdf/aboutnames\\_pronounce\\_atlc.pdf](http://www.nhc.noaa.gov/pdf/aboutnames_pronounce_atlc.pdf)

Eastern North Pacific: [http://www.nhc.noaa.gov/pdf/aboutnames\\_pronounce\\_epac.pdf](http://www.nhc.noaa.gov/pdf/aboutnames_pronounce_epac.pdf)

2) 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. During the hurricane season, the site contains a daily tropical weather update for both the Atlantic and eastern North Pacific basins, as well as alerts regarding any tropical cyclone activity as needed. The NHC Facebook page is found at: <http://www.facebook.com/NWSNHC>

3) The National Hurricane Center is on Twitter – and has six 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. Tweets will be composed by NHC managers, the Warning and Coordination Meteorologist, the Public Affairs Officer, and other non-operational staff. 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 of the branches that comprise NHC. Whenever possible, we'll try to respond to your questions and comments.

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)
- A tropical cyclone update (TCU)

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. These accounts will not, however, be able to engage in two-way conversations with users.

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.

The NHC Director, Dr. Richard Knabb, is on Twitter at **@NHCDirector**

4) An audio podcast will be available when the media pool is activated.

The audio podcast RSS/XML feed for top-of-the-hour briefings will be operational when the media pool is activated: <http://www.nhc.noaa.gov/audio>. The media pool is typically activated when a hurricane watch is issued for any portion of the U.S. contiguous coastline.

#### **5) Products under development:**

In 2016, NHC will be working behind the scenes on potential future enhancements to its products and services. One of these in-house developmental projects involves the creation of track, intensity, and size forecasts for disturbances that pose a threat of bringing tropical storm or hurricane conditions to land areas within 48 hours. Under current NWS policy, it is not possible to issue a hurricane or tropical storm watch or warning for these systems - the tropical cyclone has to actually form before the first watch can be issued.

NHC has been creating in-house track and intensity forecasts for disturbances since 2011, and is now beginning the technical work to expand its tropical cyclone product suite to these high-risk disturbances. Under a plan that could be implemented as soon as 2017, advisories, watches, and warnings would be issued for these "Potential Tropical Cyclones", with the text and graphical advisory products looking just like the existing tropical cyclone products. The disturbances would share the numbering system currently used for depressions, so the first land-threatening disturbance of the year would be called Potential Tropical Cyclone One (and if it became a depression it would be called Tropical Depression One).

NHC also continues to work on in-house 6- and 7-day track and intensity forecasts for tropical cyclones. This project does not have a target implementation date, in part because the forecasts haven't proven to be sufficiently reliable. However, NHC plans to continue this effort in 2016.

#### **6) On the Web:**

National Hurricane Center: <http://www.hurricanes.gov>

Graphical Tropical Weather Outlook: <http://www.nhc.noaa.gov/aboutnhcgraphics.shtml#GTWO>

Saffir Simpson Hurricane Wind Scale: <http://www.nhc.noaa.gov/aboutsshws.php>

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

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

National Hurricane Center Twitter page: <http://www.nhc.noaa.gov/twitter.shtml>

**Contact:** NHC Public Affairs: [nhc.public.affairs@noaa.gov](mailto:nhc.public.affairs@noaa.gov)

*March 7, 2016*