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National Weather Service, Newport/Morehead City, NC



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Summer 2018 Edition

2018 Hurricane Season Preview

By Chris Collins, Meteorologist

The 2017 Atlantic hurricane season was active and catastrophic with 17 named storms, 10 hurricanes and 6 major hurricanes. This was the fifth-most active season since records began in 1851. Among the hurricanes were devastating Category 5 storms Irma and Maria and Category 4 Harvey, which killed 106 people in the United States and produced over 60 inches of rain in Texas, the highest-ever rainfall total for any tropical system in the United States.

Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. Hurricanes can produce winds exceeding 155 miles per hour as well as tornadoes and microbursts. Additionally, hurricanes can create storm surges along the coast and cause extensive damage from heavy rainfall. Floods and flying debris from the excessive winds are often the deadly and destructive results of these weather events. Slow moving hurricanes moving inland tend to produce especially heavy rain. Flash flooding can occur due to intense rainfall. Learn what you can do if a hurricane is headed your way and how to take action before, during and after the storm by reading pages 6 and 7 of this newsletter.

CONTENTS

Hurricane Season Outlook 2018	2-3
Changes to NHC Tropical Products	4-5
Hurricane Preparedness	6-7

2018 Hurricane Names

Alberto	Gordon	Leslie	Rafael
Beryl	Helene	Michael	Sara
Chris	Isaac	Nadine	Tony
Ernesto	Joyce	Oscar	Valerie
Florence	Kirk	Patty	William

2018 Seasonal Hurricane Outlook

By Bel Melendez, Meteorologist

Ready or not, the 2018 hurricane season has arrived! The NOAA Hurricane Seasonal forecast came out on May 24, 2018. NOAA's [Climate Prediction Center](#) (CPC) is forecasting a near to above-normal Atlantic hurricane season this year, with NOAA forecasters calling for a 70% likelihood of 10-16 named storms, of which 5 to 9 could become hurricanes (winds equal to or greater than 74 mph), and 1 to 2 becoming major hurricanes (Category 3 or higher). Typically, the North Atlantic Basin hurricane season averages 12 named storms with 6 hurricanes and 3 major hurricanes.

Each year, the NOAA Climate Prediction Center and [National Hurricane Center](#) work together to produce an Atlantic Basic Hurricane Outlook. The seasonal outlooks are based on 3 main climate factors that strongly control the Atlantic hurricane season.

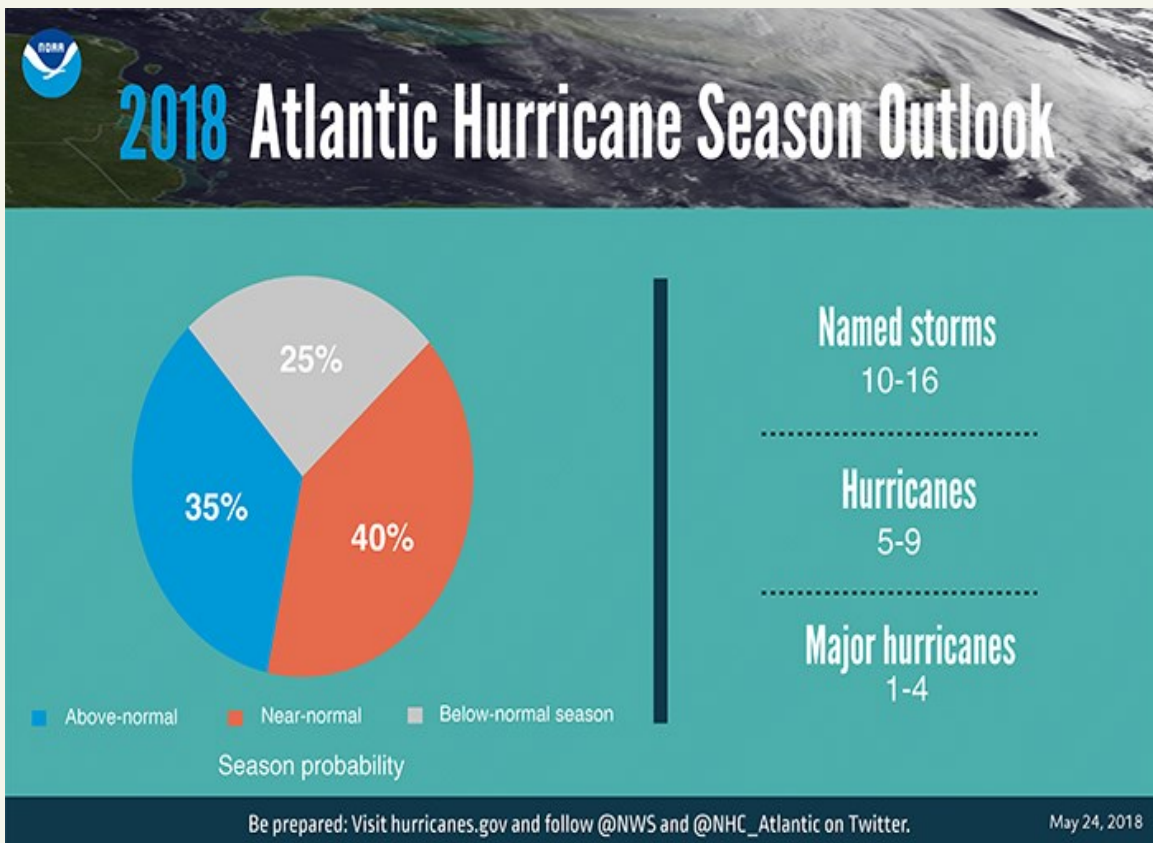
1. The Atlantic Multi-Decadal Oscillation is a 25-40 year signal which reflects fluctuations in Atlantic sea surface temperatures.
2. The current and future state of El Nino and La Nina (ENSO), which reflects the changes in the tropical Pacific ocean temperatures.
3. Year-to-year fluctuations in the Atlantic sea surface temperatures.

This year's Atlantic Hurricane outlook reflects the predictions of an ENSO-neutral, meaning no El Nino or La Nina, with the possibility of a weak El Nino developing during the late summer to early fall. Sea surface temperatures are near-average along the primary tropical storm development region, while near-average to weaker wind shear is expected.



2018 Seasonal Hurricane Outlook (Continued)

Overall, it is best to be prepared for this Hurricane Season! Determine the vulnerability of your home and property and have an evacuation plan. Prepare your home and determine if you have enough insurance coverage for your home and other personal property. Lastly, have your disaster supply kit that can last three or more days. Remember, it only takes one storm to change your life and your community.



Hurricane Center Product Changes for 2018

By Chris Collins, Meteorologist

Here is a quick [summary of changes](#) to [National Hurricane Center](#) products for the 2018 Hurricane Season.

1. The Cone of Uncertainty Will Shrink:

Each year, the National Hurricane Center adjusts the size of its cone of uncertainty based on its average error over the previous five hurricane seasons. The cone of uncertainty refers to the projected path map you frequently see on the internet or television for a given storm. The cone encapsulates 66 percent of the historical forecast track errors, and does not represent where impacts like surge, wind, flooding or tornadoes will be felt.

For the 2018 Atlantic hurricane season, the NHC will use the average track error for the 2013-2017 hurricane seasons. Track errors have gone down over the last 10 years as forecasts have improved. In fact, since 2008, the size of the cone of uncertainty at 120 hours, or five days, has shrunk by 35 percent. Since last year, the size of the cone at five days has shrunk by more than 6 percent. This cone does not encapsulate all impacts from a given storm or hurricane. In fact, most impacts will fall outside of the cone of uncertainty within a forecast out to a day or two. For this reason, among others, the NHC will be leaning more toward forecast impacts rather than this cone alone in the upcoming hurricane season.



Comparison of the cone of uncertainty used to display forecast position through 5 days from 2013 to 2017.

Source: Weather Channel

Hurricane Center Product Changes for 2018 (Continued)

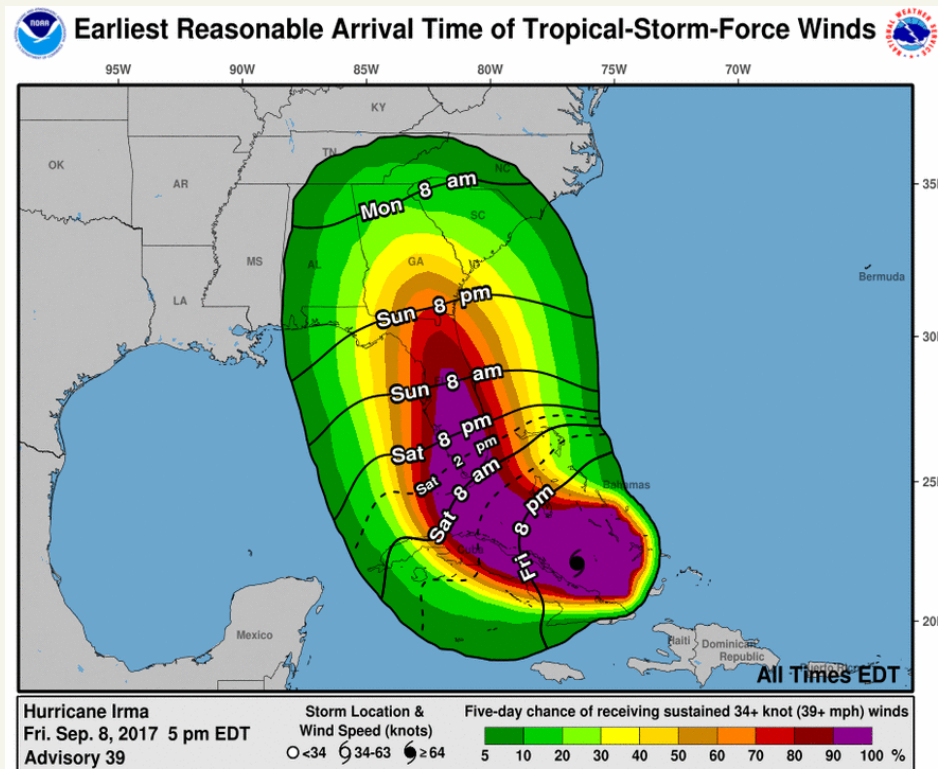
2. Hazard Information will be conveyed more than 48 hours in advance:

The National Hurricane Center's formal advisory package includes a text statement that includes all hazards — storm surge, wind, inland flooding, tornadoes, increased surf — ahead of a tropical storm or hurricane.

Beginning in 2018, when the forecast confidence is high enough, a discussion of any applicable hazards will go well beyond two days in advance. This will allow forecasters at NHC to discuss high-impact high-confidence storms, like Hurricane Maria in 2017, as much as 5 days in advance.

3. Changes in forecast wind products.

The National Hurricane Center will make one of its trial products from 2017 operational this year: a forecast for the time when it is too late to be making preparations for a tropical storm or hurricane outside. This product shows when sustained winds could at the earliest reach 40 mph or make it dangerous to be outside doing anything, including preparedness activities. Winds of this intensity and higher gusts can cause damage to structures and can overturn and/or move some objects like ladders and plywood. Generally, police, fire and ambulance support will stop answering requests for help when winds reach between 35 and 45 mph in a given area.

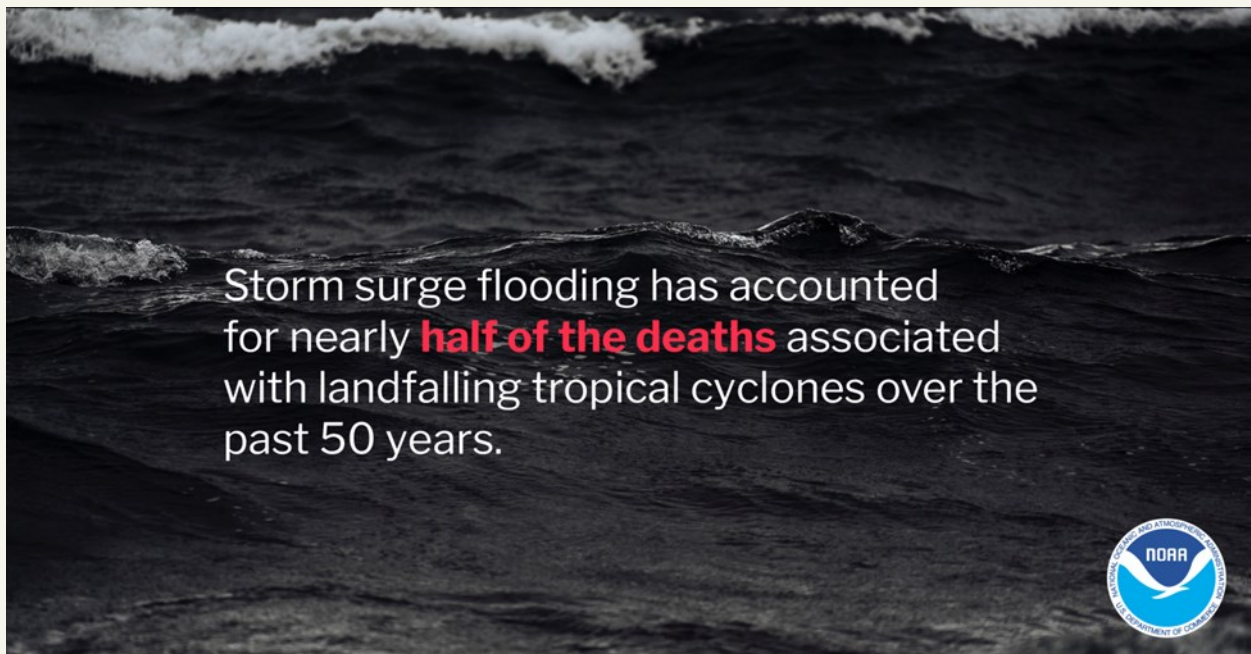


Sample earliest arrival of tropical storm force winds and wind speed probabilities product during Hurricane Irma (2017). Not a current product. (National Hurricane Center)

Hurricane Preparedness

By Erik Heden, Warning Coordination Meteorologist

With hurricane season now underway, now is the time to prepare. Preparation is a good idea each and every year. Knowing and understanding your risks is an important step in preparation. Hazards from hurricanes include more than just wind. In addition to wind, risks can include storm surge, inland flooding, tornadoes and rip currents. What is your risk? Water, whether it is from storm surge or flooding accounts for around 80% of fatalities with land falling tropical systems.



Having a hurricane safety plan can help you be ready in the event of a disaster. For tips on making a plan, including information on strengthening your home and evacuation information go here: <https://www.weather.gov/safety/hurricane-plan> In addition [ready.gov](https://www.ready.gov) and [flash.org](https://www.flash.org) are great sources of disaster preparation information of all types. As a hurricane approaches, it's important to understand where you can get reliable hurricane information. Be familiar with [hurricanes.gov](https://www.hurricanes.gov) for forecast information or your local trusted news source.

Hurricane Preparedness (Continued)

Inland Flooding
It doesn't take a major hurricane to cause major impacts to an area. Even relatively weak tropical systems can produce vast amounts of rainfall well inland from the coast, leading to devastating flooding.

Storm Surge along the Coast

Tropical System

INLAND FLOODING

Your Location

Flooding from Heavy Rain

weather.gov/flood

Assemble Disaster Supplies
Get your supplies before hurricane season begins. Have enough food and water for each person for at least one week. Be sure to fill your prescriptions and have medicine on hand. Radios, batteries and phone chargers on are also must haves. Gas up your vehicle and extra cash on hand.

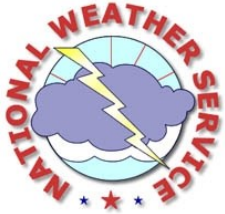
Food/Water

Medicine

Batteries, Radio, Chargers

Gas Up

Cash on Hand



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