

# HOW HURRICANES IMPACT YOU

Where do hurricanes come from? Is one heading your way? Are you and your family prepared to ride out the storm? Don't worry! Our infographic provides the information and tips you need on what to expect, how to prepare, and what to watch for during hurricane season.

## THE HURRICANE THREAT

### HURRICANE TRACKS

Common, approximate tracks shown. Storm tracks vary throughout the season<sup>1</sup> and many will be influenced by larger weather systems moving eastward across **NORTH AMERICA**.

**1** **SANDY WAS A CATEGORY 1 HURRICANE**<sup>2</sup> that collided with an eastward-moving early winter storm and then a cold Canadian air mass that produced record rain and snow falls.

**\$** Between **1992 AND 2008**, storm tracks leading into the Gulf of Mexico have produced the **TOP TEN COSTLIEST HURRICANES**.<sup>3</sup>

**🏠** While the **EASTERN SEABOARD** tends to see fewer hurricanes and few stronger than **CATEGORY 3**, storm tracks either move straight inland or, like Sandy, parallel to the coast until they either turn inland or head back out to sea. Storms on this track can produce storm surge, rain, and flooding over a huge area.

### HURRICANE FORMATION

**5** Storm system intensifies drawing on heat on heat energy of warm water. As winds reach 74 mph, the storm becomes a **CATEGORY 1 HURRICANE**.

**1** **DRY, HOT WINDS** blow westward across the **Sahara Desert**. This air is so hot that it has little density and can carry dust from the Sahara and deposit it in the **Caribbean, South America, and North America**.

**4** In-rushing air brings more heat energy to the system. Water condenses out of the clouds as rain. Cooled air flows outward at the top. Wind speed builds and the storm begins rotating counter clockwise. As winds reach 39 mph, it becomes a **TROPICAL STORM**.

**3** Warm air rises, cool air sinks. Circulation intensifies, pulling in more moist warm air. The system strengthens into a **TROPICAL DEPRESSION**.  
**2** Some of this hot, dry air evaporates the warm sea surface water in the **Atlantic Ocean** and forms clouds. More heat energy collects and builds more clouds. Moving westward, it becomes a **TROPICAL WAVE**.  
As long as the storm passes over calm, warm water, there is a good possibility that it will grow to be a tropical storm.

### HURRICANE FORCE WIND STRENGTH

**STORM FORCE WINDS** are rated according to the **SAFFIR-SIMPSON HURRICANE WIND SCALE**.<sup>4</sup> This scale estimates potential property damage according to the hurricane's sustained wind speed.<sup>5</sup>

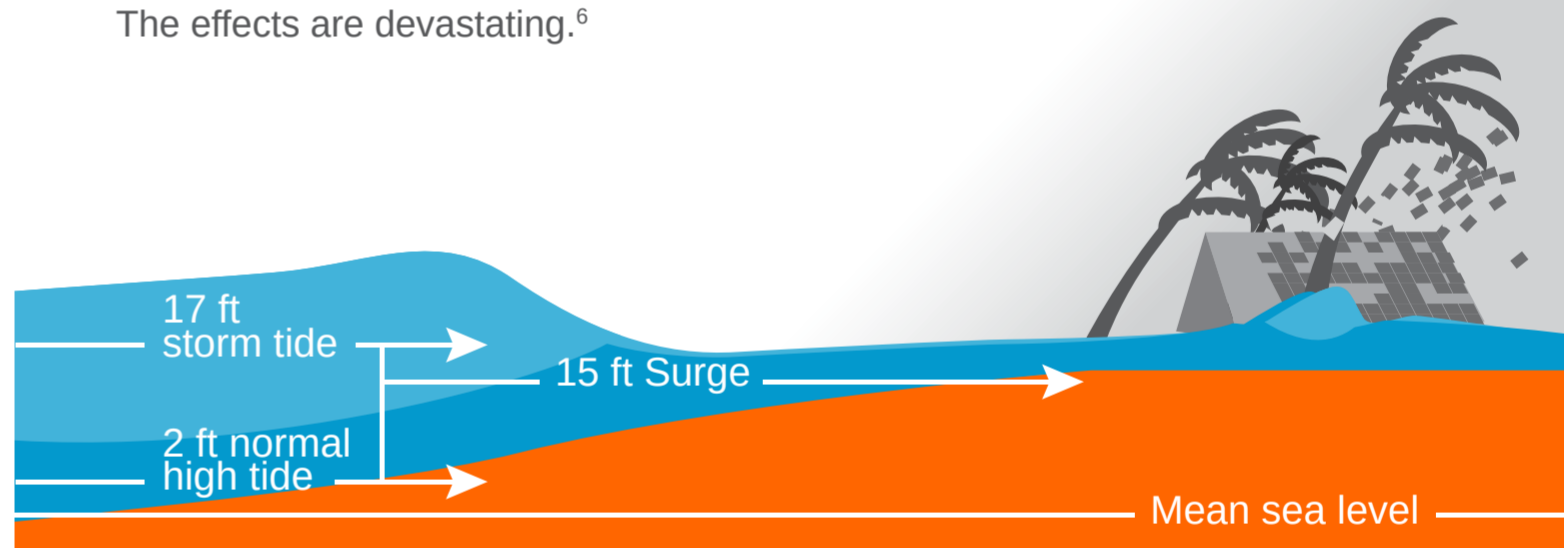
#### CATEGORY WINDS DAMAGE TYPES

<b>1</b>	<b>75-95 mph</b>	<b>VERY DANGEROUS.</b> Well-constructed frame homes could have damaged roofs and broken tree branches. Some power loss.
<b>2</b>	<b>96-110 mph</b>	<b>EXTREMELY DANGEROUS.</b> Homes sustain major roof and siding damage. Shallow rooted trees snapped or uprooted. Near-total power loss is expected.
<b>3</b>	<b>111-129 mph</b>	<b>DEVASTATING DAMAGE.</b> Major damage to house roof decking. Many trees uprooted or snapped. Electricity and water will be unavailable for several days or weeks.
<b>4</b>	<b>130-156 mph</b>	<b>CATASTROPHIC DAMAGE.</b> Many homes severely damaged, most trees snapped or uprooted. Power outages extensive, lasting weeks to months.
<b>5</b>	<b>157+ mph</b>	<b>CATASTROPHIC DAMAGE.</b> Most homes destroyed. Most of the area will be uninhabitable for weeks or months.

### STORM SURGE – WIND AND WAVE

**Storm surges** affect coastal areas and regions with large estuaries that can reach hundreds of miles inland. These include **Galveston Bay in Texas, the Chesapeake Bay in Virginia, and the bays of the Port of New York and New Jersey**.

- Storm winds pile up sea water pushing on the ocean surface. Water is added to height of the normal tide and is known as a the storm tide or "surge".
- Let's say today's normal tide height is 2 feet and normally stays in the ocean. Hurricane winds add 15 feet on top producing a total 17 foot storm tide.
- When the storm tide hits the shore line, it only sends the 15 feet of extra ocean water surging inland.
- Storm tide height depends on whether the tide is high or low and the movement of the hurricane. The worst case is when a hurricane has generated a storm tide during a normal high tide. The effects are devastating.<sup>6</sup>



## HURRICANE PREPARATION

### HOW CAN I PREPARE MY FAMILY?

If you're going to stay, prepare your **DISASTER SUPPLIES KIT**,<sup>7</sup> which will allow you to shelter in place. Your kit should include:



**1** One gallon of **CLEAN DRINKING WATER** per individual (and pets) for 3-7 days. Fill bathtubs with water for cleaning. Save used soapy water to flush toilets.



**2** **NON-PERISHABLE FOOD** to last 3-7 days for individuals and pets.



**3** **FIRST AID KIT** plus a 3-7 day supply of any prescription medications.



**4** **BATTERY-POWERED WEATHER RADIO** and extra batteries.



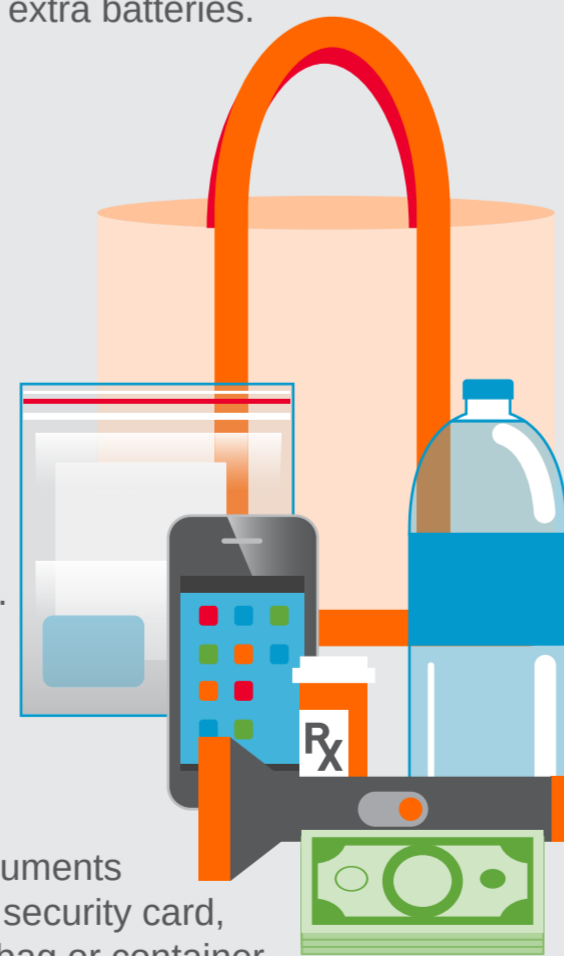
**5** **FULL GAS TANKS** in your vehicles.

### BE READY TO EVACUATE

Situations change. Prepare a **GO BAG**<sup>8</sup> for each individual with you. Each Go Bag should be light and portable, carry an ID tag, and at least contain:

- Some food and water.
- A personal-sized first aid plus any prescription medicines.
- A flashlight, portable radio, fully charged cell phone.
- Emergency cash in small denominations and quarters for phone calls.

Your GO BAG should also contain important family documents (insurance, medical records, bank account numbers, social security card, pet care information) inside a watertight re-sealable plastic bag or container.



### HOW FAR INLAND CAN A HURRICANE REACH?

Rain from hurricanes and their remnants have struck **EVERY STATE IN THE UNION**.<sup>9</sup>

Inland mountainous regions where towns are situated at the bottoms of river valleys are especially vulnerable to flash flooding. Torrential rains strike mountain sides and rush down to the rivers, quickly inundating towns below.



### HOW DO I KNOW IF I SHOULD EVACUATE?

Monitor weather reports about the on-coming hurricane threat. You should consider evacuating/leaving the area:

- IF** you live on a barrier island with a history of storm surge damage.
- IF** you live in a low-lying or flood prone area.
- IF** you live in a mobile home in a coastal area.
- IF** your home is in a coastal area and lacks hurricane structural reinforcing.<sup>10</sup>
- IF** you are vacationers with young or elderly dependents.
- IF** local officials order or recommend that residents evacuate depending on expected storm severity.



SOURCES:

<sup>1</sup> <http://www.weather.com/outlook/weather-news/hurricanes/articles/hurricane-origins-tracks-2010-05-24>

<sup>2</sup> <http://www.globalpost.com/dispatch/news/regions/americas/united-states/121029/hurricane-sandy-five-reasons>

<sup>3</sup> <http://www.nhc.noaa.gov/pdf/hws-nhc-6.pdf>

<sup>4</sup> <http://www.nhc.noaa.gov/aboutshws.php>

<sup>5</sup> <http://www.nhc.noaa.gov/prepare/hazards.php#wind>

<sup>6</sup> [http://www.nhc.noaa.gov/surge/animations/hurricane\\_stormsurge.swf](http://www.nhc.noaa.gov/surge/animations/hurricane_stormsurge.swf)

<sup>7</sup> <http://emergency.cdc.gov/preparedness/kit/disasters>

<sup>8</sup> [http://72hours.org/go\\_bag.html](http://72hours.org/go_bag.html)

<sup>9</sup> [http://en.wikipedia.org/wiki/List\\_of\\_wettest\\_tropical\\_cyclones\\_in\\_the\\_United\\_States](http://en.wikipedia.org/wiki/List_of_wettest_tropical_cyclones_in_the_United_States)

<sup>10</sup> <http://www.fema.gov/media-library-data/20130726-1505-20490-3483/agtswnd.pdf>



directenergy.com  
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