Public Service Announcement

Hurricane Hazards Inland

Provided by your

Metcalfe County Emergency Management Office

Hurricane Hazards: Winds, Rainfall and Flooding

Hurricane Winds

The intensity of a landfalling hurricane is expressed in terms of categories that relate wind speeds and potential damage. According to the Saffir-Simpson Hurricane Scale, a Category 1 hurricane has lighter winds compared to storms in higher categories. A Category 4 hurricane would have winds between 131 and 155 mph and, on the average, would usually be expected to cause 100 times the damage of the Category 1 storm. Depending on circumstances, less intense storms may still be strong enough to produce damage, particularly in areas that have not prepared in advance.

Tropical storm-force winds are dangerous to those caught in them. For this reason, emergency managers plan on having their evacuations complete and their personnel sheltered before the onset of tropical storm winds, not hurricane-force winds.

Hurricane-force winds can easily destroy poorly constructed buildings and mobile homes. Debris such as signs, roofing material, and small items left outside become flying missiles in hurricanes. Extensive damage to trees, towers, water and underground utility lines (from uprooted trees), and fallen poles cause considerable disruption.

High-rise buildings are also vulnerable to hurricane-force winds, particularly at the higher levels since wind speed tends to increase with height. Recent research suggests you should stay below the tenth floor, but still above any floors at risk for flooding. It is not uncommon for high-rise buildings to suffer a great deal of damage due to windows being blown out. Consequently, the areas around these buildings can be very dangerous.

The strongest winds usually occur in the right side of the eye wall of the hurricane. Wind speed usually decreases significantly within 12 hours after landfall. Nonetheless, winds can stay above hurricane strength well inland.

Hurricane Ike (2008), for example, battered Kentucky with wind gusts to nearly 75 to 80 mph.

Rainfall and Flooding

Learn your vulnerability to flooding by determining the elevation of your property. Evaluate your insurance coverage; as construction grows around areas, floodplains change. If you are in a flood area, consider what mitigation measure you can do in advance.

In highly flood-prone areas, keep materials on hand like sandbags, plywood, plastic sheeting, plastic garbage bags, lumber, shovels, work boots and gloves. Call your local emergency management agency to learn how to construct proper protective measures around your home.

Be aware of streams, drainage channels and areas known to flood, so you or your evacuation routes are not cut off.

Avoid driving into water of unknown depth. Moving water can quickly sweep your vehicle away.

Restrict children from playing in flooded areas.

Test drinking water for potability; wells should be pumped out and the water tested before drinking.

Do not use fresh food that has come in contact with floodwaters. Wash canned goods that come in contact with floodwaters with soap and hot water.

Hurricanes are capable of producing copious amounts of rainfall. During landfall, rainfall amounts of 10 to 15 inches or more is common. If the storm is large and moving slowly, less than 10 mph, the rainfall amounts from a well-organized storm are likely to be even more excessive. This heavy rain usually occurs slightly to the right of the hurricane's track. The amount of rain depends on the size, forward speed and whether the hurricane interacts with other weather systems.

To get a generic estimate of the rainfall amount (in inches) that can be expected, divide 100 by the storm's forward motion, for example, 100/5 mph = 20 inches of rain. For specific rainfall forecasts please monitor local forecasts from the National Weather Service.

Inland Flooding From Hurricanes

The next time you hear hurricane -- think inland flooding!

While storm surge has the highest potential to cause hurricane related deaths, more people died from inland flooding associated with tropical systems from 1970 to 1999. Since the 1970's, inland flooding has been responsible for more than half of all deaths associated with tropical cyclones in the United States. Flooding from hurricanes can occur hundreds of miles from the coast placing communities, which would not normally be affected by the strongest hurricane winds, in great danger.

Facts About Inland Flooding From Hurricanes

- From 1970 to 1999, 78% of children killed by tropical cyclones drowned in freshwater floods.
- The average person can be swept off their feet in 6 inches of moving water.
- One cubic yard of water weighs 1700lbs. The average automobile weighs 3400lbs. Many automobiles will float in just 2 feet of water or can be swept off the road in 12 inches of moving water.
- At least 23% of U.S. tropical cyclone deaths occur to people who drown in, or attempting to abandon, their cars.
- Rainfall is typically heavier with slower moving storms.
- Some of the greatest rainfall amounts associated with tropical systems occur from weaker Tropical Storms that have a slow forward speed (1 to 10mph) or stall over an area. Due to the amount of rainfall a Tropical Storm can produce, they are capable of causing as much damage as a category 2 hurricane.