

Tropical Weather Terminology

The official Atlantic Hurricane Season is upon us and we have already had our first named storm -- Subtropical Storm Andrea. By all indications, this will be an active year for hurricanes but both 1983 and 1992 were "inactive". 1983 brought Alicia to San Luis Pass on August 18th, and 1992's Andrew brought devastation to the southern Florida Peninsula. This will be a brief refresher on some of the tropical weather terms and products.

A Tropical Cyclone is a closed area of low pressure whose energy source is convection (thunderstorms).

A Tropical Depression is a Tropical Cyclone with top sustained winds below 39MPH.

A Tropical Storm is a Tropical Cyclone with top sustained winds between 39MPH and 73MPH.

A Hurricane is a Tropical Cyclone with top sustained winds of 74MPH or higher.

The Saffir-Simpson Hurricane Scale (SSHS) is a scale used to predict the effects of a hurricane based on top sustained wind speeds. It was developed by Herbert Saffir, a structural engineer, and Robert Simpson, the Director of the National Hurricane Center when the SSHS was developed. Unlike the Enhanced Fujita Scale, the SSHS is used for predictions, rather than post storm assessments.

Storm Surge is the water pushed up by the winds of the tropical cyclone that impact the coast. It is an urban legend that the low pressure of the tropical cyclone pushes up the water, but the minimum pressure observed would only support a column of water 5 feet high. Tropical depressions have storm surges in the 5 foot range.

Storm Tide is Storm Surge with astronomical tides factored in.

Tropical Storm Watches are issued when Tropical Storm conditions are possible in the watch area usually within 36 hours.

Tropical Storm Warnings are issued when Tropical Storm conditions are expected in the warning area usually within 24 hours.

Hurricane Watches are issued when Hurricane conditions are possible in the watch area usually within 36 hours.

Hurricane Warnings are issued when Hurricane conditions are expected in the warning area usually within 24 hours.

The Tropical Storm/Hurricane Watches/Warnings are issued by the Tropical Prediction Center/National Hurricane Center in Miami and include only coastal areas. Local NWS Offices will issue Inland Tropical Storm/Hurricane Watches/Warnings for inland counties. The Inland Watches/Warnings use the same criteria as the coastal Watches/Warnings. One very important thing to remember is that due to the long lead time for evacuations in the Houston/Galveston area in the event of a Catastrophic Hurricane (Categories 4 or 5 on the

SSHS or winds in excess of 130MPH), an evacuation may be called *before* a Hurricane Watch is issued. This happened during the Hurricane Rita emergency in 2005.

Public Advisories are issued by the Tropical Prediction Center/National Hurricane Center in Miami and states the present intensity, track, and forecast intensity and track. They also include the issuance, continuation, and expiration of Hurricane/Tropical Storm Watches/Warnings. They are usually issued at six hour intervals when an active tropical cyclone is present. Issuance times are 0400 CDT, 1000 CDT, 1600 CDT, and 2200 CDT but can be issued out-of-sequence if conditions warrant. Public Intermediate Advisories are issued when an active Watch/Warning is in effect and are issued at three-hour intervals when a watch/warning is in effect and at two-hour intervals when a reliable center is visible on radar.

Tropical Weather Outlooks are issued by the NHC and include any active tropical cyclone, any areas of weather that may evolve into tropical cyclones, and the 24 hour outlook. They are issued four times daily at 0430 CDT, 1030 CDT, 1630 CDT, and 2230 CDT.

Special Tropical Disturbance Statements are issued by the NHC as warranted for systems close to evolving into a tropical cyclone

Tornado Watches are issued by the Storm Prediction Center, Norman OK as warranted for the potential for tornadic development. A Tornado Watch means that tornadoes are possible in or near the watch area.

The Hazardous Weather Outlook is issued by local National Weather Service offices and indicate the potential for severe or other hazardous weather in the NWS County Warning and Forecast Area. It has a span of seven days with the most detail in the first 24 hours. It is usually issued at approximately 0700 CT, but can be issued when warranted.

Hurricane/Tropical Storm Local Statements are issued by local NWS offices after the issuance of a Public Advisory issued by the NHC. Local Statements include the present position, track, and intensity, and forecast track and intensity. They also include all watches and warnings related to the system, the hazards associated with the system such as tornadoes, high winds, and flooding, evacuations in progress, shelters opened, and facility closings such as hospitals.

Tornado Warnings are issued by local NWS offices when a tornado has been spotted by either a spotter or the WSR-88D. Since the embedded supercells inside tropical cyclone feeder bands do not have the deep rotation of supercells observed in other severe weather outbreaks, the predictability is lower than for a normal severe weather outbreak. Tornado Warnings were also issued starting with Hurricane Charley in 2004 by the local Tampa NWS office to warn of extreme winds due to the eyewall. Although not tornadic, it was felt that since there was no specific warning for eyewall winds, a Tornado Warning was the best way to warn of these extreme winds since the means of protection are the same as for a tornado. Tornado Warnings were also used during Hurricanes Katrina and Rita in 2005 to warn of extreme eyewall winds..

Extreme Wind Warnings are issued by local NWS offices to warn of extreme winds due to a hurricane with winds of 115MPH or greater. The Extreme Wind Warning was developed by

the NWS for the 2007 Hurricane Season to replace the Tornado Warnings that were issued prior to this year. Extreme Wind Warnings will be broadcast on EAS and NWR as Tornado Warnings.

Severe Weather Statements are issued by local NWS offices to update/cancel severe weather warnings such as Tornado or Extreme Wind Warnings.

Flood/Flash Flood Watches are issued by local NWS offices when flooding/flash flooding is possible in the watch area.

Flood/Flash Flood Warnings are issued by local NWS offices when flooding/flash flooding is imminent or occurring in the warned area.

This concludes this training session of the SE Harris County ARES Net. This is KB5PGY back to Net Control.