

HURRICANES

Charleston has seen its fair share of hurricanes over its 350-year history on the South Carolina coast. In more recent memory, we remember the destructiveness of Hurricane Hugo in 1989. As with most storms, Charlestonians returned home or emerged from their safe places to survey the damage and record it for history through written and photographic record.



1911 Hurricane: East Battery facing northwest
South Carolina Historical Society



1911 Hurricane: East Battery
South Carolina Historical Society



1911 Hurricane: East Bay Street
South Carolina Historical Society

We may think we know hurricanes because they are an active part of our lives in South Carolina, but do you know how and why they form?

Tropical Disturbance
Surface winds meet around an area of low pressure.

Team Work!
If the winds get organized, their speed increases and they start circulating.

Tropical Depression
Circulating winds form an identifiable center of low pressure.

Tropical Storm
Circulating winds start moving forward at a speed of 39 mph+

Hurricane
Circulating winds start moving forward at a speed of 74 mph+

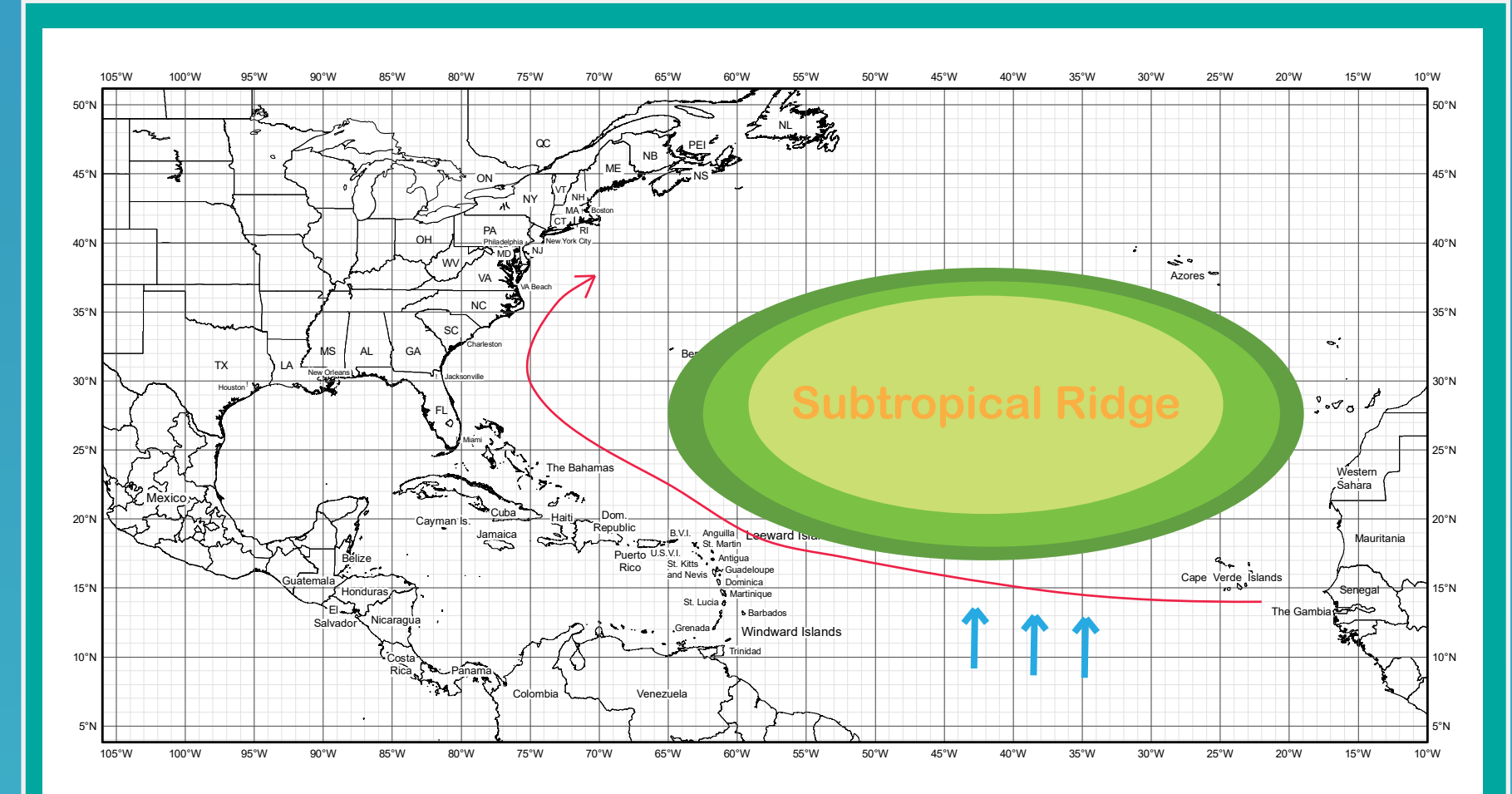
The Saffir-Simpson Hurricane Wind Scale places the storms into five categories based on the wind speed.

- All storms are dangerous, but Category 3-5 are the most destructive and deadly.
- The storm damage grows 4x for each category.
- The angle that the storm hits land can make a Category 1 or 2 storm feel like a Category 3 or 4.
- Storm surge, or the water pushed onto land, is often just as destructive as the wind gusts.

Recipe

The Perfect Hurricane

1. Sea surface temperature (SST) set to 80F or warmer.
2. Vertical temperature profile (the air above the warm water) must be cooler than the SST.
3. The air between the cool vertical temp and the warm waters must be humid.
4. Must be at least 300 miles from the equator for the Coriolis Force to push the winds into a circular motion.
5. Low wind shear.



Subtropical Ridge

Global winds, called trade winds, push the storms off the coast of Africa into the Atlantic Ocean.

The Coriolis force, from the rotation of the Earth, pushes up on the storms, keeping them from dropping too far south.

The Subtropical Ridge is a center of high pressure that the storms hug as they move westward. If the ridge remains closer to Africa, the storm will follow the curve up into the open north Atlantic. However, if the ridge is too far west, the storm follows the curve to North America and will make landfall.

Coastal Warning Display Signals

Weather stations may display symbols along the coast to warn people of an approaching hurricane.



Daytime Warning Flags



Night time Warning Lights

As the sea surface temperature rises, the storm intensity grows stronger! Hang on!!!



Does your family have an evacuation plan?
For help with your plan, visit:
www.scemd.org

The National Weather Service began keeping official records in 1851. Historical notes revealed four major storms in the Carolina Colony: 1686, 1700, 1713, and 1752.

