

The Saffir-Simpson Hurricane Wind Scale

The Saffir-Simpson Hurricane Wind Scale is a one to five categorization based on the hurricane's intensity at the indicated time. The scale provides examples of the type of damages and impacts associated with winds of the indicated intensity.

Normally, damages rise by about a factor of four with every category increase. Historical examples are provided for each category that corresponds with the intensity of the hurricane at the time of landfall in the location experiencing the strongest winds and does not always correspond with the peak intensity reached by the hurricane during its lifetime.

The scale does not address the potential for such other hurricane-related impacts, as storm surge, rainfall-induced floods, and tornadoes. These wind-caused impacts are to apply to the worst winds reaching the coast and the damage would be less elsewhere. Wind-caused damage descriptions are to some degree dependent upon the local building codes in effect and how well and how long they have been enforced.

The recently enacted Florida Building Codes are likely to somewhat reduce the damage to newer structures from what is described later in this article. Wind damage is also dependent upon other factors like duration of winds, change of direction, age of structures and amount of rainfall. Previous versions of the Saffir-Simpson Hurricane Scale - used central pressure and storm surge as components of the categories. The central pressure was utilized during the 1970s and 1980s as

a proxy for the winds as accurate wind speed intensity measurements from aircraft were not routinely available for hurricanes until 1990. Storm surge was also quantified by category in the earliest published versions of the scale. However, the extent of hurricane force winds, the depth of near-shore waters, and topographic features can also be important in forecasting storm surge. Other aspects of hurricanes - such as the system's forward speed and angle to the coast - also impact the storm surge that is produced.

Thus to help reduce confusion about the impacts associated with the various hurricane categories as well as to provide a more scientifically defensible scale, the storm surge ranges, flooding impact and central pressure statements have been removed from the scale and only peak winds are employed in the revised version of the Saffir-Simpson Hurricane Wind Scale.

Category One Hurricane:

Sustained winds of 74-95 mph. Damaging winds are expected. Some damage to building structures could occur, primarily to unanchored mobile homes (mainly pre-1994 construction). Some damage is likely to poorly constructed signs. Loose outdoor items will become projectiles, causing additional damage. Persons struck by windborne debris risk injury and death. Large branches of healthy trees will snap. Some will be uprooted if the ground is saturated. Many areas will experience power outages with some downed power poles. Hurricane Cindy (2005, with 75 mph winds at landfall in Louisiana) is an example of a Category One hurricane.

Category Two Hurricane:

Sustained winds of 96-110 mph. Very strong winds will produce widespread damage. Some roofing material, door, and window damage of buildings will occur. Considerable damage to mobile homes and poorly constructed signs is likely. A number of glass windows in high rise buildings will be dislodged. Loose outdoor items will become projectiles, causing additional damage. Persons struck by windborne debris risk injury and death. Numerous large branches will break. Many trees will be uprooted or snapped. Extensive damage to power lines and poles will result in widespread power outages that can last a few to several days. Hurricane Erin (1995, 100 mph at landfall in northwest Florida) is an example of a Category Two hurricane.

Category Three Hurricane:

Sustained winds of 111-130 mph. Dangerous winds will cause extensive damage. Some structural damage to houses and buildings will occur with a minor amount of wall failures. Mobile homes and poorly constructed signs are destroyed. Many windows in high rise buildings will be dislodged. Persons struck by windborne debris risk injury and possible death. Many trees will be snapped or uprooted and block numerous roads. Near total power loss is expected with outages that could last from several days to weeks. Hurricane Rita (2005, 115 mph landfall in east Texas/Louisiana) is an example of a Category Three hurricane.

Category Four Hurricane:

Sustained winds of 131-155 mph. Extremely dangerous winds causing

devastating damage are expected. Some wall failures and complete roof structure failures on houses will occur. All signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows is likely. Numerous windows in high rise buildings will be dislodged. Windborne debris will cause extensive damage and persons struck by the wind-blown debris will be injured or killed. Most trees will be snapped or uprooted. Fallen trees could cut off residential areas for days to weeks. Electricity will be unavailable for weeks after the hurricane. Hurricane Charley (2004, 145 mph at landfall in southwest Florida) is the latest example of a Category Four hurricane.

Category Five Hurricane:

Sustained winds greater than 155 mph. Catastrophic damage is expected. Complete roof failure on many residences and industrial buildings will occur. Some complete building failures with small buildings blown over or away are likely. All signs are blown down. Complete destruction of mobile homes. Extensive window and door damage will occur. Nearly all windows in high rise buildings will be dislodged. Severe injury or death is likely for persons struck by debris. Nearly all trees will be snapped or uprooted and power poles downed. Fallen trees and power poles will isolate residential areas. Power outages will last for weeks to possibly months. Hurricane Camille (1969, 190 mph at landfall in Mississippi) is a good example of Category Five hurricane at landfall.

1

For more information contact the Emergency Management Office in your county

CHARLOTTE
(941)
833-4000

COLLIER
311

DESOTO
(863)
993-4831

GLADES
(863)
946-6020

HARDEE
(863)
773-6373