



Weather Spotter Quick Reference Guide

National Weather Service (NWS) – Charleston, SC

weather.gov/chs

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Your reports are critical to helping the NWS achieve its mission of saving lives and property through the issuance of timely warnings. The **NWS needs these reports**: tornadoes, funnel clouds, hail of any size, wind gusts (estimated or measured) of 50 mph or higher, flooding (water closing roads or entering buildings), impacts of damage (property, trees, power-lines, etc). Being an effective weather spotter may take years to master, and takes practice. **Remember, you are mobile! Report severe weather or damage wherever you are.**

Damaging Winds

Straight-line Wind Gust Estimates	
45-57 mph (39-49 kts)	Non Severe - Large trees bend; twigs, small limbs break, and a few larger dead or weak branches may break. Old/weak structures (e.g., sheds, barns) may sustain minor damage (roof, doors). Some loose shingles may be removed from houses.
58-74 mph (50-64 kts)	Severe - Large limbs break; shallow-rooted trees pushed over. Semi-trucks overturned. More significant damage to old/weak structures. Shingles, and awnings removed from houses; damage to chimneys and antennas; mobile homes, carports incur minor structural damage; large billboard signs may be toppled.
75-89 mph (65-77 kts)	Hurricane Force - Widespread tree damage (trees either broken or uprooted). Mobile homes may incur more significant structural damage; be pushed off foundations or overturned. Roofs may be partially peeled off industrial/commercial/warehouse buildings. Some minor roof damage to homes. Weak or open structures (ex.: farm buildings, airplane hangars) may be severely damaged.
90+ mph (78+ kts)	Significant Severe - Groves of trees flattened. Mobile homes severely damaged; moderate roof damage to homes. Roofs partially peeled off homes and buildings. Barns and sheds completely demolished.

Tornado

Enhanced Fujita Scale (EF Scale)	
EF0: 65 – 85 mph	Light Damage – Loss of roofing material, large tree branches broken, some large trees uprooted
EF1: 86 – 110 mph	Moderate Damage – Considerable loss of roofing, mobile homes flipped, bent light poles
EF2: 111 – 135 mph	Considerable Damage – Large root sections removed, most walls standing, light poles collapsed
EF3: 136 – 165 mph	Severe Damage – Exterior walls & some interior walls removed, mobile homes destroyed
EF4: 166 – 200 mph	Devastating Damage – All home walls collapsed, partial destruction of masonry hotels and strip malls
EF5: >200 mph	Incredible Damage – Destruction of home/building, building slab swept clean, steel deformed

Note: EF-scale estimate is not needed with a tornado report. Tornado intensity is determined after NWS damage assessment.

Hail Size

Hail Size Diameter	
0.25 – 0.375" - Pea	0.75" – Penny
0.88" – Nickel	1" – Quarter
1.25" – Half Dollar	1.5" – Ping Pong Ball
1.75" – Golfball	2" – Lime
2.5" – Tennis Ball	2.75" – Baseball
3" – Large Apple	4" – Softball
4.5" – Large Grapefruit	4.75 - 5" – CD/DVD

Note: Avoid using "Marble sizes" to describe hail, since there are many different sizes of marbles

Watch/Warning Definitions

Severe Thunderstorm Watch - Conditions are favorable for thunderstorms to produce large hail in excess of 1 inch, and/or damaging winds 58+ mph; Isolated tornado possible.

Severe Thunderstorm Warning - Radar has detected, or a report has indicated, a severe thunderstorm producing large hail or damaging winds in progress or imminent.

Tornado Watch - Conditions are favorable for tornadoes.

Tornado Warning - Radar has indicated a possible tornado or a report has indicated a tornado in progress

Tips for Providing Useful Reports

- **Safety first** (report is #2 priority). Never put yourself or others in harm's way.
- **Know what you're reporting.** False reports do more harm than no report at all. Not sure, then Don't Report OR Call us and ask
- **Tools to help you provide accurate reports include:**
 - NOAA Weather Radio
 - Accurate Clock
 - Map/mobile device
 - Paper and Pencil
 - Ruler
 - This Guide Sheet
- **Report the Time, Event and Location (TEL) of event:**
 - Exact Time event occurred and time of call.
 - Event details, including any damage, injuries and fatalities.
 - Location of Event – Lat/Lon, or distance and direction from a landmark (city, intersection, etc).
 - (Optional) Your name, e-mail, or phone number, so we can contact you if we have questions.

An example of an accurate report to the NWS:

"My name is Joe Smith and I am a trained weather spotter. At 558 pm, I observed straight-line wind gusts estimated at 65 mph about 1.2 miles south of Any Town, SC in Any County. A tree fell onto a house injuring 2 people near the intersection of A and B Streets."

Ways to report to the National Weather Service:

- Unlisted NWS Spotter number – (For trained Spotters)
- e-mail - nws.charlestonsc@noaa.gov
- General NWS toll-free number: 888-383-2024
- X/Twitter – @NWSCharlestonSC, using #wxreport tag