

The National Weather Service – Spotter Quick Reference Guide

Date of class: June 06.2023

Time : 1730-1900 Local

Location : Payson Public Library
328 North McLane Road
928-474-9260

The weather service was started on February 09.1870 under President: Ulysses S. Grant the 18th U.S. President who served from: 1869-1877 = 8 years. There are 122 weather stations located across the United States. Which includes: Alaska, Hawaii and Puerto Rico.

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From the Flagstaff Weather Station Field Office

A. What To Report:

1. Flooding – Water that covers the road or
2. Threatens property

B. High Winds (Estimate in 10 MPH increments)

1. 40 MPH - Small trees sway
2. 50 MPH - Large trees sway
3. 60 MPH - Small tree branches break (up to 1" diameter)
4. 70 MPH - Large tree branches break (1" – 3" diameter)
5. 80 MPH - Tree uprooted
6. 100 MPH – Large tree trunk snap

C. Blowing Dust

Reduced visibilities to one-half mile or less

D. Hail (any size)

Measure the diameter of the **LARGEST** hail stone with a ruler

E. Tornado

Swirling dust on the ground of a funnel cloud

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How to report (**Please, use ONLY one the following**)

Phone - 1-888-745-1637

Online - [HTTPS://INWS.NCEP.NOAA.GOV/REPORT/](https://inws.ncep.noaa.gov/report/)

Facebook - FACEBOOK.COM/NWSFLAGSTAFF

Twitter - @NWSFLAGSTAFF

Official NWS Forecasts: Mobile.weather.gov

[WWW.Weather.gov/Flagstaff](http://www.weather.gov/Flagstaff)

Radio Weather Frequencies

Frequency	Area Of Coverage:
162.400	Show Low & Tucson
162.420	Payson & Pumpkin Center
162.500	Globe
162.525	Flagstaff & Prescott
162.550	Phoenix

Severe Thunderstorm – Definition:

A storm that generates 58+ MPH winds. Or a storm that produce 1” or larger in hail stone activity.

Tornado/Funnel – Definition:

Tornado: A violently rotating column of air in contact with the ground.

Funnel Cloud: A violently rotating column of air **NOT** in contact with the ground.

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Monsoon Season Normally Runs From: June 15th – Sept. 30th

June is characterized by dry southwesterly flow across Arizona. In July, high pressure shifts the door to a moist southerly flow. Both June and July air mass flows at about 18,000 feet.

Thunderstorm Ingredients – Moisture

A. The primary source of moisture come up from the areas of the Western side of Mexico and the Gulf of California.

B. The secondary source of moisture come up from the Eastern side of Mexico and the Gulf of Mexico.

C. Thunderstorm ingredients – Convective instability. Simply put warm air rises. The ground acts as a source of warm or hot air when heated by the Sun. Very similar to boiling water. Which is called “Orographic lift.”

D. Cumulus Stage, which is normally between 5 to 20 thousand feet, at the start of the buildup. Then, as the cloud continues to build. The cloud can build to as much as 45,000 feet or even higher. Temperatures can fluctuate from low temps. to high temps.

E. Thunder storm types are **NOT** the same. There are three main types:

1. Single Multi Cells,
2. Multi Cell cluster storms / squall lines,
3. Supercells

F. The most common in Arizona is referred to as a: “Single Cell Thunderstorm.” General lifespan for this type of storm is anywhere from 20 to 45 minutes.

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G. The second most common thunder storm in Arizona is called: “The Multi-cell Cluster.” These storms can back up and continue to pour rain within the very same areas, causing flash flooding. These storms can be extremely dangerous.

H. The Squall line thunderstorms typically roll out of the mountains and into the central and southern deserts of Arizona. Frequently producing straight line wind damage and the ever famous “Haboob.”

I. The Supercell thunderstorms are an individual storm cell with an intense and persistent updraft. Most frequently seen in the late summer or early fall in Arizona. When weather disturbances over the Pacific interact with monsoon moisture.

I. The three stages of a “Multi-cell Cluster” are: **A.** Towering cumulus, **B.** Mature stage and **C.** Dissipating stage

Weather Fatalities In 2021 - There’re 9 categories... (They are based on a ten-year average 2012-2021, Number represents total deaths caused during that ten-year cycle from those incidents.)

1. Cold - 38	4. Hurricanes – 8	7. Wind - 58
2. Floods – 98	5. Lighting - 23	8. Winter - 30
3. Heat - 153	6. Tornados - 49	9. Rip Currents - 69

On average the highest cause of weather-related deaths in America is: **HEAT**

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Weather safety – Floods

Water flows faster, is deeper and hides more damage than may appear.
Be safe when it comes to flooding – “Turn Around Don’t Drown”

2021 – U.S. Flood fatalities / Activities of drowning victims:

Driving – 55%	Boating – 1%
At Home - 29%	Fell In - 1%
Other - 7%	Working – 1%
Walking - 6%	

Weather safety – Lightning

Remember: When thunder roars **GO INSIDE !!!**

Lightning is hotter than the surface of the Sun and can reach temperatures around: 50,000 degrees Fahrenheit.

Weather safety – Tornadoes

Important – An interior bathroom on the lowest floor of your house or apartment is the safest room. **There are no guarantees when it comes to tornado safety.** But, in most cases, the advice works. Remember: duck, cover and hold. Protect your head and chest areas. Getting under a bed mattress in the bath tub may add to your overall protection.

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Be prepared by being prepared

Wireless Emergency Alerts –

1. Weather warnings automatically sent to your cell phone.
2. Download from your phones “app store.”
3. Information is based on your location.
4. Some phones automatically set up to your receiver. **Double check.**
5. Other phones you can configure weather information and data in your phones settings.
6. In severe cases within your area. You may receive an “Emergency Alert” of pending severe conditions.
7. When and if this were to happen. Take the appropriate action(s.)
8. Don’t forget the National Weather Service frequencies listed for your area on page: 02 of this handout.
9. Also, don’t forget your amateur (ham) radio equipment to use also.

HAM RADIO & GMRS FREQUENCIES FOR THE PAYSON AREA

1. **Simplex:** (Direct - in case the repeater is knocked off the air)
146.520 - National calling & assistance or 146.460
2. If **repeater use** is available:
146.390 + PL 100.0 / 448.775 + PL 77.0 – Both located in North Payson
147.500 Simplex Node* PL 107.2 North Payson
147.360 + PL 162.2 – Mount Ord, Rim Link Number: 5
* Node Number for the Payson area: 526070
3. G.M.R.S. – 462.5750 + PL 82.5 Diamond Point
G.M.R.S. – 462.6125 Simplex Emergency Freq.
G.M.R.S. – 462.6750 Simplex National calling & assistance