



## Monsoon Safety

Although the monsoon brings welcome rains and relief from the summer heat, the thunderstorms that come with the monsoon bring their own hazards. This is the most dangerous time of year weather-wise in Arizona, so before and during the season, it is a very good idea to review these safety tips:

### Lightning:

- If you hear thunder, you are close enough to a storm to be struck by lightning. Go to a safe place immediately! The safest locations are sturdy buildings and hard-topped vehicles. Wait there until 30 minutes AFTER the last rumble of thunder is heard.
- Get away from open areas, including armadas, porches, trees, convertible cars, swimming pools, and open areas.
- Plan outdoor activities to avoid being outside between mid afternoon and mid evening, especially in higher elevations where lightning is more common.
- Do not touch any wires or plumbing inside a building
- Remember that it does not have to be raining for you to be struck by lightning. Lightning can strike up to 60 miles away from the nearest rainfall!
- Bring pets indoors. Lightning and thunder are very scary for pets, and they are likely to panic or even run away to try and escape the storm.
- If someone is struck by lightning, call 911 immediately!



### **Straight-line winds:**

- Thunderstorm wind gusts in Arizona almost always exceed 40 mph. The strongest straight line wind gusts can exceed 100 mph, and can produce damage similar to a tornado! Anytime a thunderstorm approaches, no matter how weak it seems, move indoors to avoid flying debris. Winds rushing down from a thunderstorm can develop very quickly.
- When a Severe Thunderstorm Warning is in effect, it means damaging wind gusts of 60 mph or higher are likely. Move into a central interior room. Stay away from windows.
- Unanchored mobile homes are NOT safe in any severe thunderstorms, and even anchored mobile homes can be heavily damaged in winds over 80 mph. Move to a more sturdy structure.
- Stay away from trees. The vast majority of people are killed or injured in severe thunderstorms by falling trees, from flying debris, or from downed power lines.
- Never touch a downed power line, even if it appears dead. Assume that it is live. Call for help instead.
- Straight line winds can travel dozens of miles away from the thunderstorm that produced them. If the wind suddenly shifts and blows toward you from an approaching storm, while the temperature either becomes much colder or much hotter, the winds are likely to become even stronger. Move indoors!
- Before the monsoon season, it is a good idea to either secure loose outdoor furniture and garbage cans, or move them indoors. These are frequently blown around in our summer thunderstorms – even the weakest ones.



**Dust storms:**

- These are an underrated killer in Arizona! Straight line winds in any thunderstorm can lift huge clouds of dust and reduce visibilities to near zero in seconds, which can quickly result in deadly, multi-vehicle accidents on roadways.
- Dust storms are more common in the early part of the monsoon, near agricultural areas, and near Willcox Playa in Cochise County. Use caution in these areas any time thunderstorms are nearby.
- If you encounter a dust storm, pull off the road immediately. Turn off your headlights and taillights, put your vehicle in “PARK,” and take your foot off the brake. Other motorists may tend to follow taillights in an attempt to get through the dust storm, and may strike your vehicle from behind.
- Dust storms usually last a few minutes, and up to an hour at most. Stay where you are until the dust storm passes.



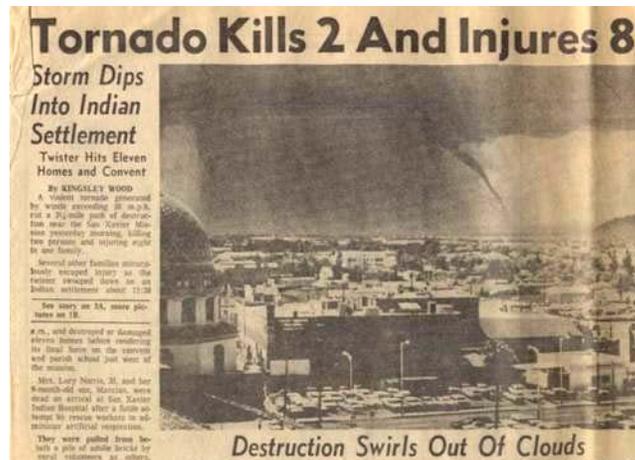
### **Flash Floods:**

- Flash floods are common in Arizona. There are thousands of low water crossing and dips which flood every summer. Know where they are, and avoid them during heavy rains.
- Never ever drive into a flooded roadway. The water depth is very easy to misjudge, and the road itself may be damaged or destroyed underneath. It only takes about 1 to 2 feet of water to float most vehicles, including SUVs.
- Never drive around barricades. They are there for a reason – usually because flash flooding is about to take place, is already happening or the road is damaged by flooding and is unsafe.
- Never allow children to play near washes or storm drains after any rainfall, no matter how light. These flood easily and rapidly, and storm drains are usually so large that children can be swept away.
- Beware of distant thunderstorms, especially if they're over mountains. Flash flooding can occur many miles away from the thunderstorm as the runoff flows into the valleys and deserts.
- No not camp overnight near streams during the monsoon. Although many of our thunderstorms occur during the afternoon and evening, some of our worst flash floods have occurred in the middle of the night.
- Hikers and mountain bikers should try to get out earlier in the day to avoid the dangers of not only flash flooding, but also lightning. Wherever you are hiking during the monsoon, be aware of your escape routes, follow ranger instructions, and be prepared to move to higher ground quickly.



## Tornadoes:

- Tornadoes do occur in Arizona. Unfortunately, many of them here are not detectable by radar because they are either too small, hidden by interfering mountains, or develop from the ground up. While they do not last long, they can occur with little or no warning, and can do considerable damage. If you see a tornado, which stretches from the clouds all the way down to the surface, take the same precautions you would for a severe thunderstorm. Move inside a strong building away from windows. A small, central, interior room like a bathroom is best.



## Hail:

- Large hail is uncommon in the deserts and valleys, but more common in the mountains and mid elevations. If possible, move your vehicle to a carport or garage if hail is larger than dime size. But do not put your life at risk! Lightning and straight line winds are far more dangerous than hail.



## **Excessive Heat:**

Although the monsoon is generally associated with slightly cooler temperatures and rainfall, excessive heat is still by far the number-one, weather-related killer in Arizona. Unfortunately, many heat-related deaths occur during the monsoon as our typical summertime heat is combined with increased monsoon humidity. Here are some heat safety tips to keep in mind throughout the summer:

- Drink plenty of water. It is very easy to become dehydrated in our desert climate without realizing it.
- Avoid alcoholic or caffeinated beverages. Both increase stress on the body and actually accelerate dehydration.
- Wear light, loose-fitting clothing.
- Stay out of the sun.
- Shift strenuous outdoor activities to cooler parts of the day, especially during the early morning.
- Check on elderly friends, neighbors and family often. Elders are generally more susceptible to heat-related illness.
- Take advantage of air conditioning when possible. Many homes in southern Arizona still use evaporative cooling (swamp coolers) which are much less effective during the monsoon.
- If you, or someone you're with, begins to feel tired and flushed and begin to sweat excessively, you may be suffering from heat exhaustion. Stop any strenuous activities immediately, drink more water, and find a cool place to rest.
- If someone becomes disoriented, stops sweating, has hot dry skin, or even worse, passes out, that person is probably experiencing heat stroke – a serious medical condition. Call 911 immediately! If possible, move them to a cooler location.
- Provide plenty of water and shade for pets.

**Finally, it is a very good idea to have a Safety Kit ready in your home!** This is true any time of year, but is especially true during the monsoon when severe weather is most likely. Your kit should include:

- A flashlight and extra batteries
- A NOAA Weather/All Hazards radio, and/or a battery-operated commercial radio
- Extra food and water (3 gallons of water per person in your home)
- A first-aid kit
- Canned food and a hand can opener
- Extra clothing and bedding
- An extra set of car keys
- Credit card or cash
- Special items like diapers, baby formula, prescription and essential medications, extra eyeglasses or hearing aids, and pet supplies

**Here is a summary of the severe weather watches, warnings and advisories the National Weather Service issues during the monsoon season:**

***Severe Thunderstorm Watch:*** Conditions are favorable for widespread thunderstorms with damaging winds and even large hail to develop. These are usually issued only when an especially active day is expected. Watch weather reports and conditions closely.

***Severe Thunderstorm Warning:*** A thunderstorm with damaging winds of 60 mph or greater is about to occur, or is already underway. These winds could also produce a dust storm with visibilities below ¼ mile. Hail over 3/4” in diameter or larger is also possible. Take cover now! Note that heavy rain doesn’t always accompany a severe thunderstorm.

***Dust Storm Warning:*** A dust storm, with visibilities of ¼ mile or less, is about to strike, or has already developed. Pull off the road now! Wind gusts between 40 and 60 mph are also likely. If winds associated with a dust storm are 60 mph or greater, then a Severe Thunderstorm Warning is issued instead.

***Tornado Warning:*** A tornado has been sighted and is still on the ground, or is about to develop based on radar information. Take cover now!

***Flash Flood Watch:*** Conditions are favorable for flash flooding over large or multiple areas of the region. These are usually issued only when an especially active day is expected. Watch weather reports and conditions closely.

***Flash Flood Warning:*** Life-threatening, rapid flooding is about to occur, or is already underway. Move to higher ground now! It is particularly dangerous to be in a low lying area or near a wash.

***Urban and Small Stream Flood Advisory:*** Minor flooding is expected or underway in low lying and flood prone areas. While it may not be life threatening, extreme caution is advised, particularly for motorists. The same flash flood safety rules apply.

***Hazardous Weather Outlook:*** Issued anytime there is a risk of strong winds, heavy rain, flash flooding, and/or dust storms. These outlooks provide advanced and detailed information on what the main thunderstorm hazards are expected to be, how widespread, and when.

