# Tornado

## General

Tornadoes typically occur in Pennsylvania during the spring and summer months. In the past 125 years, records show that about 250 tornadoes have been reported in 58 of the 67 counties in Pennsylvania. The National Weather Service estimates that Pennsylvania experiences 10 tornadoes annually. Tornadoes are measured by wind speeds on the Fujita Scale.

| Fujita Scale |
|---|
| **F0**: 40-72 mph: Gale Tornado. Light Damage: Some damage to chimneys; breaks twigs and branches off tress; pushes over shallow-rooted trees; damages signboards; some windows broken; hurricane wind speed begins at 73 mph. |
| **F1**: 73-112 mph: Moderate Tornado. Moderate damage: Peels surfaces off roofs; mobile homes pushed off foundations or overturned; outbuildings demolished; moving autos pushed off the roads; trees snapped or broken. |
| **F2**: 113-157 mph: Significant Tornado. Considerable damage: Roofs torn off frame houses; mobile homes demolished; frame houses with weak foundations lifted and moved; boxcars pushed over; large trees snapped or uprooted; light-object missiles generated. |
| **F3**: 158-206 mph: Severe Tornado. Severe damage: Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forests uprooted; heavy cars lifted off the ground and thrown; weak pavement blown off roads. |
| **F4**: 207-260 mph: Devastating Tornado. Devastating damage: Well constructed homes leveled; structures with weak foundations blown off some distance; cars thrown and disintegrated; large missiles generated; trees in forest uprooted and carried some distance away. |
| **F5**: 261-318 mph: Incredible Tornado. Incredible damage: Strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 300 ft (100 m); trees debarked; incredible phenomena will occur. |
| **F6**: 319+ mph: The maximum wind speeds of tornadoes are not expected to reach the F6 wind speeds. |

*Source: National Climatic Data Center*

As stated by the National Climatic Data Center, "wind speeds in tornadoes range from values below that of hurricane speeds to more than 300 miles per hour." The NCDC continues by reporting that, "the maximum winds in tornadoes are often confined to extremely small areas, and vary tremendously over short distances." This is why one house will be completely demolished by a tornado, and the house next to it might be untouched. Additionally, the forward motion of tornadoes can range from speeds between 0-50 miles per hour.

## History

Snyder County has witnessed five tornados since 1957. Of these, the most significant was in 1980, when a Category 2 storm hit the County, resulting in seven injuries and $600,000 in damages.

**Snyder County Tornado History**

| Date | Time | Mag. | Deaths | Injuries | Property Damage |
|---|---|---|---|---|---|
| 9/15/1957 | 18:00 | F0 | 0 | 2 | $ 25K |
| 8/28/1978 | 16:00 | F2 | 0 | 1 | $ 25K |
| 4/9/1980 | 18:30 | F2 | 0 | 0 | $ 250K |
| 7/17/1992 | 15:44 | F1 | 0 | 4 | $ 250K |
| 4/16/1993 | 20:45 | F0 | 0 | 0 | $ 50K |

*Source: National Climatic Data Center*

## Vulnerability

Tornadoes are common in the southeastern and southwestern parts of the Commonwealth, which does not include Snyder County. Tornadoes can be expected June-July. Factors that impact the amount of damage caused by a tornado are its strength, the time of day, and the area of impact. Usually these distinct funnel clouds are a localized phenomena impacting a small area. However, the high winds of tornadoes make them one of the most destructive natural hazards.

**F-3 Tornado, Campbelltown, PA, July 14, 2004**

## Probability

Five tornados have occurred in Snyder County since 1957. Therefore, it is probable a tornado could occur in the County every five years or less. However, the threat of such a storm depends largely on its strength and location.

## Maximum Threat

All municipalities in Snyder County are equally vulnerable to tornados. Yet, Snyder County does not lie in the major tornado pathways of the Commonwealth, which are typically the southeastern and southwestern corners of the state.

## Secondary Effect

Power outages are the most common secondary effect of tornadoes. The severe wind strength of these storms can dismantle power sources in its path. Structural damage can also be great, resulting in difficult redevelopment in the affected area.