

Mitigation on Farms Against Tornadoes

Although the warning time provided by modern tornado detection systems in most cases provides an opportunity to seek personal protection, it is clearly too short to evacuate or move to safety large numbers of animals, such as horses and livestock. Therefore the only way to mitigate tornadoes on farms and in other situations involving large numbers of animals that cannot be moved to safety in a hurry is to build appropriately secure buildings where they can seek shelter themselves or be housed.



Tie down straps are useful to prevent complete displacement of prefabricated (mobile) homes.

Housing for animals should be constructed with the building's narrow sides facing east and west to avoid the most likely high impact of high winds. Local geography may indicate other directions. The other principal recommendation is to reduce to a minimum the number of objects that could become flying debris in a tornado or other high winds. Examples are to tie down or store securely lumber, fence posts, and any other object that one or two people can lift. Pastures where livestock and horses graze should have low-lying areas with easy access for animals so that they will naturally congregate there during strong winds.

Other measures include replacing windows in barns with materials that will not shatter and cut animals or people when broken. Any loose or potentially loose materials, including tanks for hazardous material such as heating oil or propane, should be stored and secured.



Tie down straps are not useful in preventing displacement of prefabricated (mobile) homes from their foundations if winds exceed 50 mph. This is the site where a home once stood before being hit by tornadic winds.



This horse survived a tornado but could have been killed easily when the roof collapsed. (Photo by Lynn Caldwell.)



Flying debris is extremely hazardous in tornadoes and is responsible for the majority of injuries in people and animals.

Other Mitigation Measures Against Storms

- Support the adoption and enforcement of a flood plain management ordinance.
- Insure crops against loss from storm damage through the Federal Crop Insurance Corporation of the U.S. Department of Agriculture.
- Buy flood insurance through local property insurance agent.
- Build fences around single trees in pastures where horses and livestock graze. This will reduce the risk of these animals congregating under these trees in a storm and being struck by lightning.
- Install appropriate smoke detectors and sprinkler systems. Lightning strikes can cause a

fire.

- Install surge suppressors for all susceptible equipment in house, office, and farm.
- Switch off susceptible appliances. Air conditioners appear to be particularly susceptible to the effects of power surges. To avoid the costs of repair, turn these off as a storm approaches.

If animals are known to get nervous and pose a safety risk in thunderstorms, contact a veterinarian for advice on how to mitigate this situation.



Trees are hazardous in tornadoes. This tree fell on a barn and injured horses. Note the escaping pig (*bottom center*), which later inflicted serious injury on a horse. (Photo by Lynn Caldwell.)

- Sheep that have been shorn within 2 weeks of a severe storm should be moved to areas where they are protected from sudden temperature drops and possible hypothermia. They must also be prevented from excessive crowding together because this can result in suffocation.
- Fish ponds should have aerators to prevent catastrophic oxygen depletion caused by pond destratification (turnover of the naturally oxygenated layers).