

Prepare your trees for severe weather



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Spring showers, summer thunderstorms, a winter dusting of snow; these are familiar weather events for Midwesterners, but as climate changes so do weather events. Extreme weather is increasing in Illinois.

Over the past 120 years, significant changes have occurred that are causing more extreme weather events, according to [a recently published report](#) from The Nature Conservancy in Illinois “An Assessment of the Impacts of Climate Change in Illinois.” Heat waves have increased, and as a result, summer storm intensity has increased. The number of extremely cold days, with temperatures less than 32°F, will decrease and the freeze-free season will be extended. Warmer winter temperatures result in heavy rain and snow events.

The impact of climate change is not limited to humans. Plants, especially long-lived plants such as trees, are affected by these changes too.

So many of us love the trees in our lives and it can be devastating to see one fail because of a weather event. Taking actions before and after a storm can help promote tree resilience and longevity.

Regardless of the type of storm, healthy trees are better able to withstand severe weather. Healthy trees are well balanced in form, free from disease and injury, and have adequate root systems.

Proper, regular care of young trees contributes to the development of healthy mature trees. Planting the right tree in the right place is the first step to having resilient trees.



Tree species vary in site condition preferences and tolerances so matching tree requirements to site conditions will promote its establishment and overall health. Assessing a tree’s form and making proper pruning cuts when necessary, can create a canopy that is well balanced, encourages a single leader, and has strong branch attachment angles. Providing supplemental water to young trees during times of drought encourages root system development. Strong root systems support healthy canopies by providing adequate amounts of water and nutrients and help anchor the tree.

During a severe weather event, extra stress is put on the tree. Snow and ice storms add extra weight to the branches and cause breaking or failure. High winds can ‘push’ trees over in an event known as wind throw when root systems are not capable of resisting the extra force put on the canopy. Winds may also cause tree trunks to fail at weak points or trunks may sustain damage due to twisting of the canopy.

Drought stress can cause short- and long-term damage to trees. Extreme heat can contribute to canopy dieback and health decline. Extreme cold can cause twig and branch die back or destroy flower and leaf buds.

After a storm or weather-related event, your safety is the priority. Stay away from any fallen powerline or tree interacting with a powerline.

Utility lines should always be considered live and dangerous. Call the utility provider before damage assessment and site clean-up.

After a weather-related event, many factors contribute to determining which trees require maintenance to restore health or have sustained fatal injuries. A certified arborist is a trained professional who can assist with assessment and tree removal if necessary. It is recommended that routine inspections be conducted on trees remaining on a site to monitor for decline or disease.

Finally, trees provide a wide variety of services in our communities – from cooling homes to creating habitat for wildlife. If trees are lost, after clean-up has occurred, replanting is the final step in recovery. Planting and caring for trees ensures that the landscape will continue to have these life supporting species for years to come.

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Gardeners Corner Fall, 2022
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Dealing with storm damaged trees and preparing for the next disaster



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Weather-related disasters create so much upheaval in people's lives, any opportunity to bring things back to equilibrium or how they used to be, is vital to morale. While I am not advocating that upon leaving the storm shelter homeowners immediately pick up a shovel and start planting trees, the question of what to do to remediate the landscape will come up eventually. So what can you do to protect your valued landscape trees and shrubs when we find ourselves amidst severe weather? What does it take to make our landscapes more resilient?

Type of disaster - Wind

Wind is the natural movement of air caused by the uneven heating of the earth's atmosphere. Air at different temperatures jockey for position, hot air rises, and cooler air moves to take its place, resulting in wind. Stronger wind events can occur as a result of greater differences in atmospheric pressure. Wind events come in multiple forms in the Midwest. We experience remnants of hurricanes, thunderstorms, sheer or straight-line winds, and of course tornadoes.

After the Disaster

During an outbreak of strong winds or tornadoes, the best course of action is to protect you first. After the storm has passed it is time to evaluate your property for those items which may pose a danger to you and others. Avoid areas with downed power lines. Do NOT try to remove any limbs or debris from power lines. Anything at all involving power lines is a job for the power company.

Ensure that large shade trees are stable and that there are no hanging limbs in the trees. Hanging limbs pose an unforeseen danger as individuals surveying the damage believe they are safe until a gust of wind blows broken limbs out of a tree. Hire a certified arborist to remove hanging and damaged limbs. You can find a list of certified arborists by going to Treesaregood.org and search via zip code.



Questions to ask of damaged trees

It is advisable to have the arborist evaluate your landscape trees. This is important for preventing damage during a future disaster.

- Despite the storm damage, is the tree healthy with good growth?
- Did the trunk experience significant damage? The vascular tissue of a tree resides directly behind the bark. If this critical tissue is severed, a tree cannot move water and nutrients through its system.
- Are major limbs broken? The larger the lost limb, the harder it will be for the tree to seal off that wound.
- Is the tree desirable, or is it prone to problems? Sometimes storms present opportunities to replace a problem tree.
- Is the overall shape of the tree still intact? For instance, if a white pine loses the central leader, the tree will lose its pyramidal shape and become a hazard in the future.

Guidelines to determine the qualifications of a professional arborist

- When it comes to identifying qualified professionals, don't get scammed. Following large disasters, many fly-by-night tree trimmers arrive with little experience in proper tree care. However, many Good Samaritan arborists do travel to disaster-stricken areas to aid in recovery efforts.
- Determine what business they are associated with. For those arborists from out of town inquire where they are from and check online or their local listings if their company is listed, typically under Tree Service.
- Ask to see a current certificate of insurance showing they are fully insured for property damage, personal liability, and workers' compensation. Every arborist or tree trimmer should have this in his or her glovebox.

- Ask about professional associations. Is anyone on staff is a member of the International Society of Arboriculture (ISA), National Arborist Association (NAA), Illinois Arborist Association (IAA), or American Society of Consulting Arborists (ASCA)

If you are removing landscape debris with a chainsaw remember these three important items:

- Wear proper safety gear- gloves, chaps, ear protection, and a helmet with a face shield.
- Never cut anything that is above your waist.
- Your feet should never leave the ground when using a chainsaw. This means no ladders!

CAUTION! There are many more items that are necessary to know when operating a chainsaw, make sure you read your equipment operator's manual and seek help from qualified professionals!



Preparing for Next Time

Getting your landscape trees evaluated by a certified arborist is the first step to preparing for future disasters. A certified arborist can guide you on tree removal, tree health, and tree pruning. Get in the habit of having the arborist make routine visits to monitor the health of your trees. Ask questions to educate yourself on what they are observing in your trees.

Thinning tree canopies can reduce a tree's wind load and make it act less like a sail during high winds. Thinning the canopy is NOT tree topping. It is never advisable to top your trees, even though some landscape companies still practice this nasty habit. Topping your tree activates latent buds along the limbs left behind. These buds become the new branches and have a very weak attachment to the tree itself. This sets up the property owner to be in even worse shape than before the tree was topped.

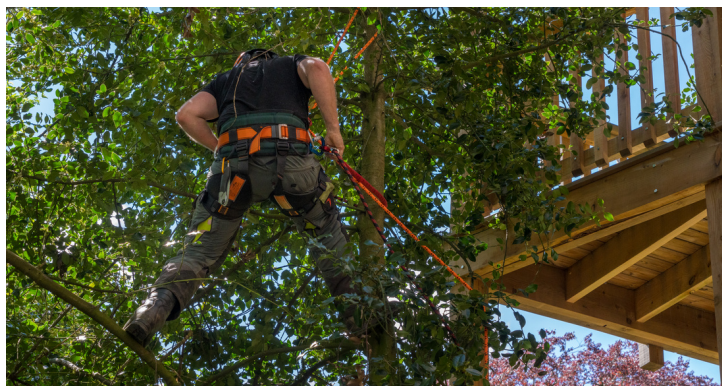
If a tree must be cabled or braced to support a damaged portion, it is best to have a certified arborist perform this task.

Sometimes a weather-related disaster gives us a blank slate and we have to start over from scratch. When planting for the future, select tree species that can withstand the wind loads common in your area. There are some common landscape trees to avoid such as the ornamental pear tree. Ornamental pear is notorious for being weak-wooded, yet the garden centers still sell this tree by the semi-truck load. At the end of this article is a listing of trees that are rated as being resistant to high winds.

It is important to select tree species that are conducive to the planting site. Yes, that five-foot maple is cute nestled near the house. But what happens when that tree hits 30-foot with more to go and its roots are constricted by your foundation and patio? You now have a poorly established tree that is not anchored well enough to withstand the increasing wind loads it is facing.

Avoid construction damage. Do you really need that retaining wall six feet away from the trunk of your mature oak? Roots that are severed or compacted by construction activities will stress out a tree and make it less resilient to extreme weather events such as strong winds. It is best to omit any construction activities under the canopy of the tree. This is the critical area of the tree's support and feeder roots, however, tree roots usually extend well-beyond the canopy. Truly, it is best to give a mature tree as much room as you can. Construction damage may not become apparent as much as six years later.

In short, there are preventative actions that can be taken to make your landscapes more resilient to disasters. Of course, disasters vary by time and place and little can be done when facing an F-5 tornado, but we can always rebuild our landscapes to be resilient and sustainable for us and future generations.



Resources and References

Dark, Sandra. Hill, Dean. (2011). Weatherproofing Your Landscape, A homeowner's guide to protecting and rescuing your plants. Gainesville, FL: University Press of Florida.



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 Good Growing Blog, posted March 31, 2021
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