

# MANAGING VEGETATION AROUND TRANSMISSION LINES



 **Ameren**  
TRANSMISSION



Electricity is available on demand at the flip of a switch because of the bulk electric transportation system that routes power from generating facilities to our customers. The workhorses of this system are the high-voltage transmission poles, towers and lines that span thousands of miles, linking the nation's electrical system. Ameren has a robust transmission system; we own and operate more than 7,800 miles of these high voltage transmission lines. Ameren's transmission lines carry power across multiple states, making them part of the North American Eastern grid.

### Why Control Vegetation on Transmission Rights-of-Way?

Safety and reliability are the driving factors behind managing trees, and other forms of vegetation, around our transmission lines.

Trees, and other vegetation growing around transmission lines, hinder our ability to safely and reliably deliver electric service. They can make the job of storm restoration more difficult, extend restoration times, and pose additional hazards to line crews.

To protect the public and reduce the risk of extended power outages, Ameren has a vegetation management program designed to ensure proper clearances around these lines.

The program reduces the potential for damage and allows access for crews to maintain and repair transmission equipment. This vegetation management work may include mowing, manual and aerial trimming, removal of vegetation, and the application of environmentally-safe herbicides.

### National Impact

Tree contact on the transmission system in 2003 was a major factor in the multi-state blackout that left 50 million people in the Northeastern and Midwestern regions of the United States, and Eastern Canada, without power for an extended time.

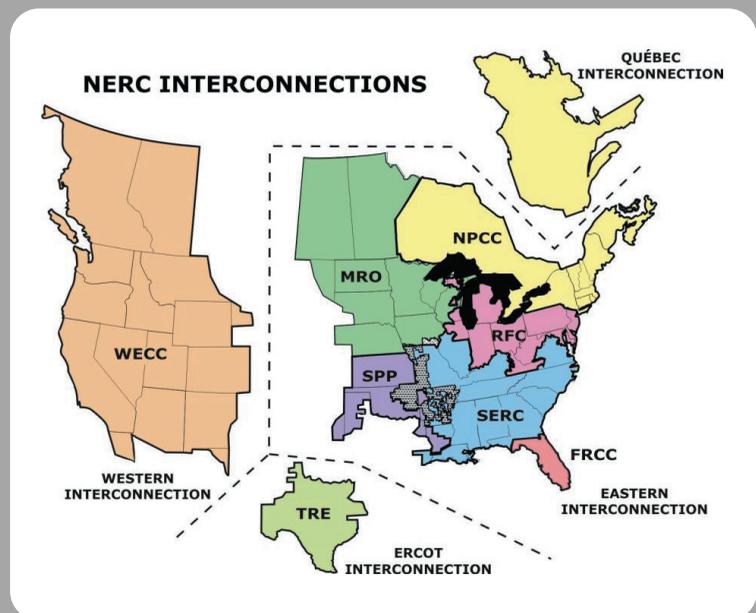
This widespread outage resulted in the shutdown of 12 major airports, over 250 power plants and estimated costs of \$4.5 billion.

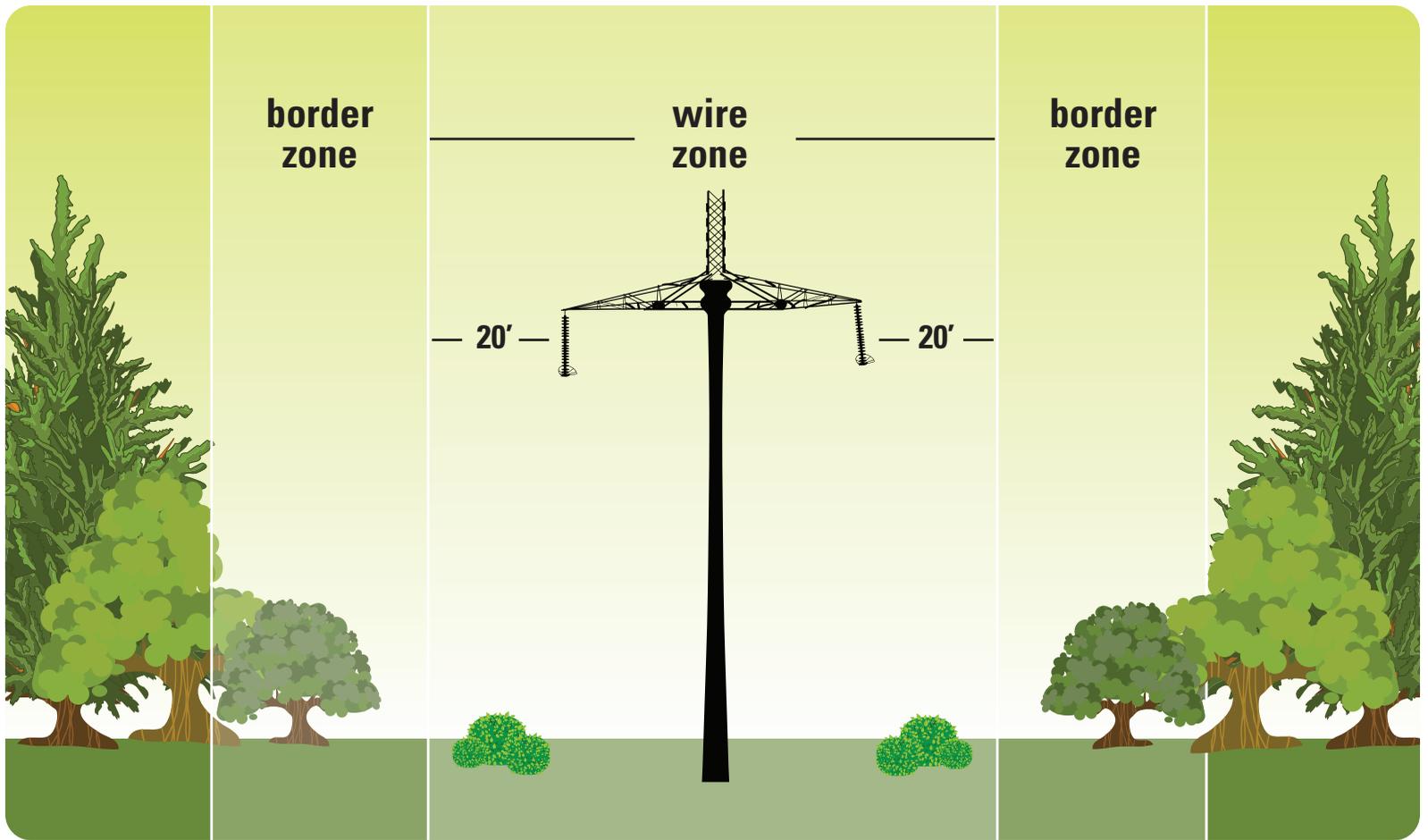
### Adequate Clearances Must be Maintained Everywhere the Wire Moves

Clearances between power lines and other objects, including trees, must allow for the sagging of lines during extreme weather, when ice accumulates on lines or when lines are carrying heavy electrical loads that heat up wires causing them to stretch.

Wind can also cause structures and lines to sway and blow out to the side far from where the wire normally rests. The wire height and line movement at the point of maximum movement must be considered to achieve the required clearances. Trees may also blow towards the wires.

Since transmission lines are so important and clearances must be in place all the time, the transmission lines are inspected on an annual basis. Dense stands of trees, shrubs or hedges can limit access to the right-of-way needed to perform necessary inspections or maintenance.





## Federal Reliability Requirements

To protect the transmission grid from disturbances, the Federal Energy Regulatory Commission (FERC) has developed mandatory and legally enforceable reliability requirements. Some of these requirements address the need for transmission-owning electric utilities to establish a vegetation management program. This program must eliminate threats to safety and reliability due to trees and other vegetation on rights-of-way.

In response to these requirements, Ameren is adopting a more proactive approach to right-of-way management. This involves:

- Establishment of greater clearances between trees and transmission lines
- Cutting incompatible trees down when the same trees had been trimmed in the past
- Asking landowners to move newly planted trees that are found to be inappropriate for the location.

## Zoned Approach

Where applicable, Ameren uses a zoned approach to vegetation management on transmission rights-of-way. This approach divides the right-of-way into two zones—a wire zone and a border zone.

## Wire Zone

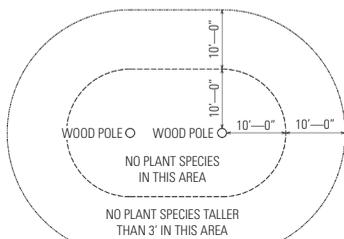
The wire zone is the area directly under wires extending 20 feet to either side of the outer-most conductors. In general, this area is managed to promote plant species with a mature height less than 10 feet. However, if the conductor is less than 30 feet from the ground when in operation (or loaded), the ROW should be maintained as grass. In some circumstances, like over a deep valley, vegetation height exceptions may occur in the wire zone.

## Border Zone

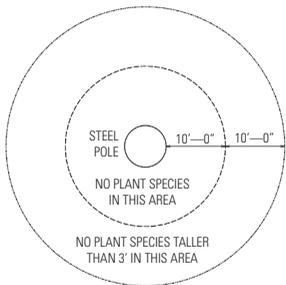
The border zone, when present, is an area from the wire zone to the edge of a maintained right-of-way or easement. In general, this area is managed to allow plant species that have a mature height of less than 20 feet. Consequently, tall-growing trees and vegetation will be managed to obtain appropriate clearances.

Keep in mind that the young, small tree you want to plant today can grow into a large tree at maturity, presenting safety and reliability problems in the future.

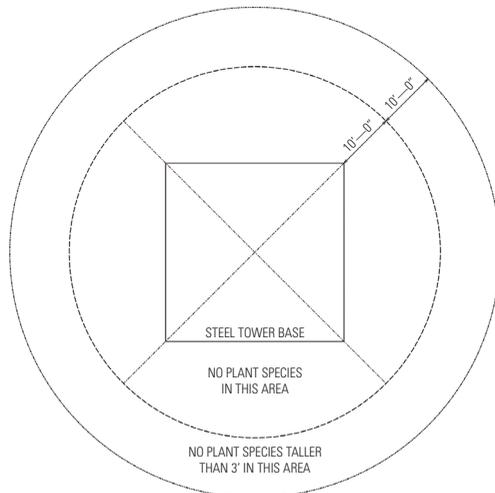




**WOOD POLE STRUCTURE**  
THREE POLE STRUCTURE SIMILAR



**STEEL POLE STRUCTURE**



**STEEL TOWER**

## Clearing Around Structures

To ensure safety and reliability, plant species within 10' of any transmission structure/tower base or guy wire will be removed.

From 10' to 20' around structure/tower base or guy wire, plant species that normally reach a mature height greater than 3' will be removed.

Exceptions will be made for annual crops such as corn, soybean, rye, winter wheat, and wildlife food plots.

## Landowner Restriction

Often the question comes up, “Why can’t homeowners prune their own trees?” While this may seem logical, there are good reasons why this cannot be permitted. Under the right conditions, trees that grow too closely to electric transmission lines can conduct electricity and provide a path for electricity to reach the ground. If electricity flows through a tree, anyone touching—or in the area of—an energized tree could sustain serious injury—even loss of life.

Most people don’t understand that trees can also conduct electricity without actually making contact with an energized line. Electricity can arc or “jump” from an energized line to a tree, energizing the tree and possibly causing a fire. High winds can also blow a tree or limb into an energized power line – pulling wires down and causing a safety hazard.

Never attempt to prune trees near power lines yourself or hire a private tree service to do this work. Only qualified line-clearance tree contractors are allowed to work within 13 feet of high voltage lines; this is a federal requirement—OSHA Regulation 1910.333. (That distance can be more than 20 feet for some high voltage lines). No matter the distance, never prune vegetation near power lines!

**Call Ameren for any questions or for an inspection of your tree and line situation.**

Illinois: **1.800.755.5000**

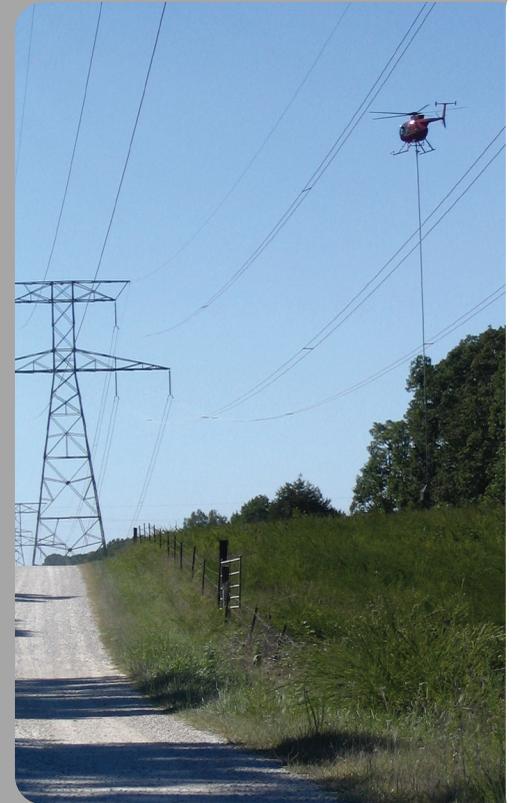
Missouri: **1.800.552.7583**

## Easement Agreements

When building new lines, Ameren typically acquires easements for transmission rights-of-way. An easement is a permanent, legal right to use the property of a landowner for a specific purpose. The easement width is based on the voltage of the line—the higher the voltage, the wider the easement—typically these are 100 to 150 feet, but can be larger.

Easements typically give Ameren the right to build, operate, and maintain a transmission line. Tree trimming and brush removal is an important part of transmission maintenance.

Compensation is made to landowners at the time the easement is initially acquired, and the terms of the easement remain in place as property is transferred, or sold, to new owners.



## Establishing Native Warm Season Grasses and Forbs as Wildlife Habitat

### RECOMMENDED MIDWEST UPLAND MIX:

#### *Native Warm Season Grasses —*

- Big Bluestem
- Little Bluestem
- Sideoats Grama
- Indiangrass
- Prairie Dropseed
- Switchgrass

#### *Forbs —*

- Beardtongue
- False Sunflower
- Lanceleaf Coreopsis
- Purple Prairie Clover
- Blackeyed Susan
- Foxglove
- Ohio Spiderwort
- Wild Bergamot
- Butterfly Milkweed
- Greyheaded Coneflower
- Partridge Pea
- Wild Bergamot
- Common Milkweed
- Illinois Bundlesflower
- Purple Coneflower
- Culvers Root



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## General Tree Planting Information

Missouri Department of Conservation  
**1.573.522.4115**

Forest ReLeaf  
**1.887.406.6867**

University of Illinois Extension  
**1.217.333.5900**

Illinois Department of Natural Resources  
**1.217.782.6302**

The National Arbor Day Foundation  
**1.888.448.7337**

### For more information about Ameren's transmission vegetation management program:

Missouri  
**1.800.552.7583**

Illinois  
**1.800.755.5000**

Or contact us on the internet at  
**Ameren.com/Transmission**

## More Information

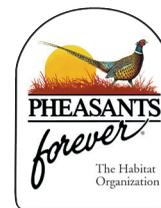
Although transmission lines are not typically underground, homeowners who plan on digging anywhere should call:

In Missouri  
**1.800.344.7483 (1.800.DIG.RITE)**

In Illinois (JULIE)  
**811 or 1.800.892.0123**



**Ameren - a Tree Line USA Utility**



**Wildlife & Pollinator  
Habitat Partner**

## DISCLAIMER

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