



CASSITY TREE & LANDSCAPE SERVICE

Sturtevant, WI • 886-5224

"Plant Health Care with A Conscience"

Since 1978

ARBOR NEWS

This newsletter has adapted articles and graphics from the publications of the following organizations in addition to our original pictures and stories.



2018

The Birds and the Trees:

By: Kevin Nolan, Certified Arborist # MW-4399A

The sun is setting over the forest, the sky is filled with color and a gentle breeze blows in the warm air. The sound of Barry White crooning out love songs fills the air. Oh yeah, it's time to make some trees. Plants have amazingly diverse methods of reproduction, so let's settle into the groove and find out how forests get made.

Vegetative reproduction requires only one plant and creates offspring genetically identical to the parent plant. Rhizomes, for example, are underground stem-like structures that can produce vertical shoots. Many perennials use this method to spread. The Live Oak family is known to use rhizomes, which is sometimes a nuisance.

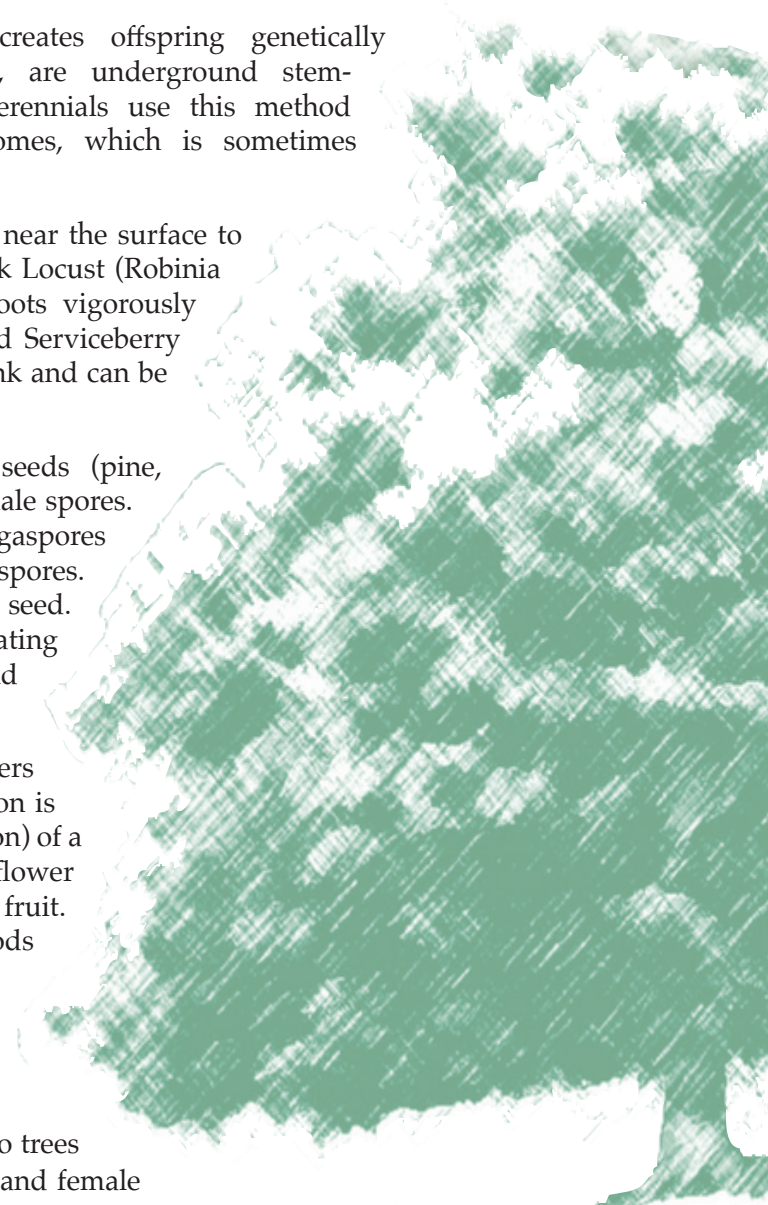
More commonly in vegetative reproduction trees utilize roots near the surface to create new shoots. Tree of Heaven (*Ailanthus altissima*), Black Locust (*Robinia pseudoacacia*), and Paw Paw (*Asimina triloba*) produce shoots vigorously from their root systems. Trees such as apple (*Malus* spp.) and Serviceberry (*Amelanchier* spp.) often produce these shoots close to the trunk and can be irritating in a sculpted landscape.

Gymnosperms, cone bearing plants that produce naked seeds (pine, spruce, etc.), are heterosporous and produce both male and female spores. Microspores are male and are distributed by wind or insects. Megaspores are female and are retained in the ovule to receive the microspores. Once combined, the micro and megaspores develop into a seed. Microspore release is an impressive, and for some people irritating display. Thick clouds of microspores bandy about in the wind and cover all kinds of surfaces with a yellow dusting.

Angiosperms are a group of trees that produce flowers. Flowers are actually the reproductive portion of these plants! Pollination is the transfer of pollen from the anthers (male reproductive portion) of a flower to the stigma (female reproductive portion) of the same flower or another flower. After pollination, the seed grows within a fruit. Once the fruit ripens the seed is released by a variety of methods and germinates under specific conditions.

Self pollinating plants can complete pollination by the transfer of pollen from one flower on the plant to another flower on the same plant. In some cases a flower can pollinate itself.

Cross pollinating plants, including many fruit trees, require two trees to complete pollination. Dioecious plants have separate male and female specimens. Monecious plants have both male and female parts on the same individual. *Cont'd. on Page 4*



Root Plate Enhancement

By: Adam Colbenson Certified Arborist MN-4075A

What is the Root Plate of a tree? Generally speaking, it is the trunk centric area of the ground under the canopy of a tree. This area has the main order of structural roots that are so important to the stability of the tree. This area is commonly referred to as the critical root zone (CRZ) of a tree and it should be protected at all times for the optimal health of the tree.

The most important function of the Root Plate is to resist wind-throw and overturning by anchoring the connecting root flare and trunk. Have you ever noticed the overturned half of a Root Plate on a wind-thrown tree?



So how do we enhance the Root Plate area of a tree? The process starts with an examination of the present situation.

(1) How large is the Root Plate? A good

formula one can use to determine the minimal Root Plate size is $.9 \times \text{trunk diameter at breast height (DBH)}$. For example a 10" DBH tree will have Root Plate diameter of 9 feet or a trunk centric circle with a 4.5 foot radius. This is the minimal area that should be protected, though the larger the area beyond that the better for the health of the tree.

(2) How is the Root Plate positioned relative to the topsoil?

(A) If you don't see the root flare connecting the trunk to the main order of roots, then the tree is buried too deep and soil should be removed. (B) If you see the main order of roots above the soil surface, then the tree is too shallow and soil, compost, or mulch should be added.

(3) What are the qualities of the soil? Take a close look at an undisturbed natural forest soil sometime and then compare it to yours. The topsoil should be dark to black in color which would indicate the presence decayed organic matter (compost). The soil should be loose and crumble easily. If not it would indicate over compaction, lack of moisture availability, lack of oxygen, or too much clay. Other tests can be useful in determining the soil pH, nutrient availability, and available rooting depth.

(4) Is the tree surrounded by turf grass? Many people like the way it looks but it is very problematic for the tree. The roots of the turf will out-compete the roots of the tree for nutrients and moisture. The turf tends

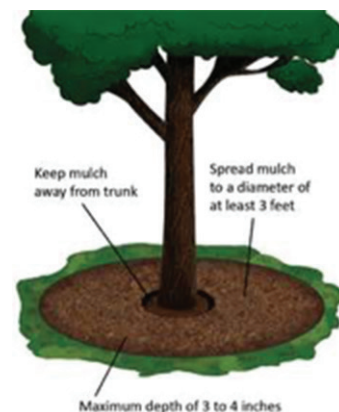
to make organic matter levels decrease and soil pH to increase. Turf and trees are not usually compatible and can be thought to be at war with each other.

So a Root Plate Enhancement is accomplished by removing the turf and improving the soil. Turf can be either killed with a liquid sulfur solution, or removed using a sod cutter. Then using an Air Spade tool, we can air stir the soil in the Root Plate area to eliminate compaction, prune out stem girdling roots, and mix in compost or other amendments as needed without tearing or cutting delicate roots. We then add a top dressing of 3-4" of natural wood chip mulch, which helps reduce soil re-compaction and further improves root growing conditions.

There are many benefits:

- Reducing the potential for wind-throw and Root Plate overturning
- Reducing competition from turf
- Protecting the trunk, root flare, and surface roots from lawn mower and weed whip damage
- Reducing soil compaction
- Improving soil fertility and fine root development for the tree
- Exposing stem girdling or compressing roots for pressure release pruning
- Reducing storm water runoff

Please consider helping your trees not only by proper pruning above the ground, but by improving the soil to build stronger roots under the ground. Even just covering the turf with 3-4" of mulch in the minimal root plate area is a step in the right direction. There are also many options for maintaining a neat looking Root Plate area including "tree wells" and "borders" using surface set stone, pavers, and/or timbers.



Firewood

By: Kevin Nolan, Certified Arborist #MW-4399A

Much of the wood generated by pruning and removals is brought back to our yard to be processed into firewood. There are several questions we are routinely asked when selling this firewood, the most common with regards to hardwood vs. softwood.

Technically a hardwood is any species of flowering tree (Angiosperms) that are not monocots. Softwood comes from cone bearing plants (Gymnosperms). Well, that explains it! I suppose we had better go through a few more definitions.

Angiosperm: seed producing flowering plants whose seeds are enclosed within an ovary.

Ex. Oak, hickory, maple

Gymnosperm: seed producing non flowering plant whose seeds are not enclosed or “naked” Ex. Pine, spruce, yew

Here comes the fun part! The true definition of hardwood and softwood has absolutely nothing to do with the density of the wood or if it makes good firewood! For example, balsa is technically a hardwood but wouldn't keep you warm very long on cold night. Yew is technically a softwood but is quite dense and impact resistant.

So what makes good firewood? Both hardwoods and softwoods have their place in starting and maintaining a fire. The best firewood has high density, high BTU's (British Thermal Units), and good coaling properties. Properly seasoned firewood with a low moisture content is key to getting the most out of your firewood.

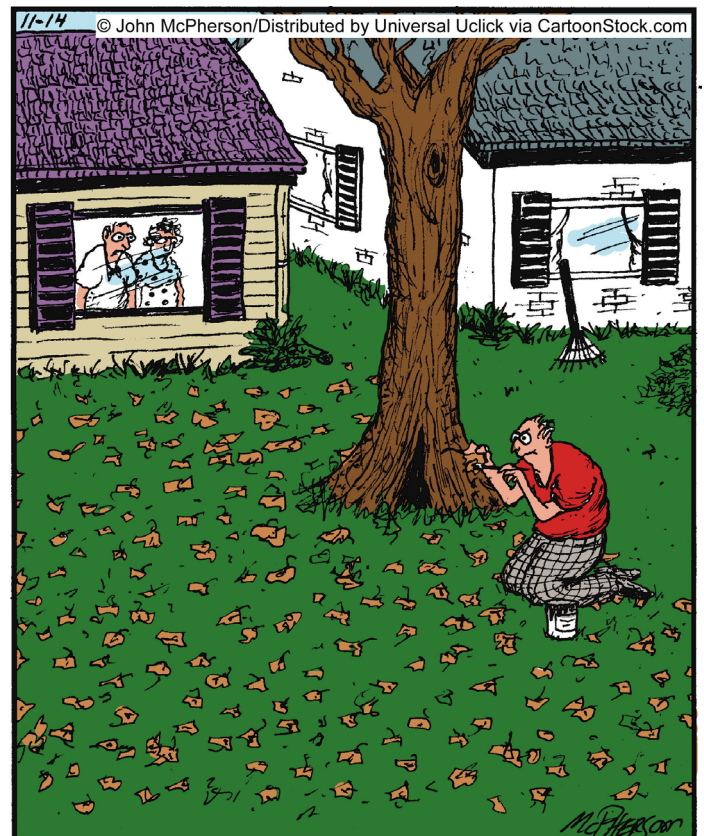
Hickory, oak, beech, ash, and black locust are commonly considered the “best” firewood, however many species produce good results. Species with slightly less density, such as birch and softwoods are excellent for fire starting or to toss on an established fire to give nice light, aroma, and flames. Evergreen wood, such as pine and yew, are typically only used out doors as they release quite a bit

of creosote as they burn and tend to produce a lot of sparks.

Willow, linden, aspen, and cottonwood are generally undesirable species for firewood due to the low amount of heat produced, lots of sparking, and poor coaling properties. These species are really only suited for burning out doors.

Maple trees vary between desirable/undesirable firewood depending on the species. For example, sugar maples burn well but box elder is a poor choice of firewood.

All of our firewood here at Cassity Tree Service is seasoned for at least one year. Client's can expect a mix of high quality, dense wood. Our firewood orders do not contain any evergreen or undesirable species.



To avoid undue leaf raking, Ray tagged his neighbors' leaves in case any of them blew onto his lawn.

Accreditation Audit Areas Include:

- Consumer Satisfaction
- Business Ethics
- Safety
- Industry Standards
- Insurance Coverage
- Best Business Practices
- Employee Training
- Quality
- Arborist Certification
- Work Estimates & Specifications



**Racine & Kenosha's only
Accredited Tree Service**

The Birds and the Trees:

By: Kevin Nolan, Certified Arborist # MW-4399A

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Many angiosperms rely on insects for pollination. Flower color, structure, scent, and size are designed to attract specific pollinators. These flowers produce relatively little pollen compared to wind pollinated plants. This is one of the reasons protecting pollinators is so important!

Angiosperms relying on wind pollination produce copious amount of pollen, much like the gymnosperms do.

Ginkgo (*Ginkgo biloba*) has a style all its own! This tree is considered a living fossil; no other tree like it exists on the Earth today. While resembling a flowering tree in form, they are more closely related to the gymnosperms. Being dioecious they have completely separate male and female trees. The male releases pollen from cone like structures which come into contact with ovules at the branch ends of female trees. Fertilization involves motile sperm, making them unique among our landscape plants. Cycads are the only other group of planting currently on Earth that use motile sperm for fertilization.

If you have a female ginkgo tree, you'll know it! The plum-like fruits drop from the tree and become rather pungent (to put it nicely). Most ginkgo purchased from a nursery are male trees and do not produce these stinky fruits.

The story doesn't end here! There are a number of interesting variations, oddities, and mysteries surrounding plant reproduction. I won't even get into Apomixis... It's important to remember those clouds of sneeze inducing microspores and pollen serve a purpose to the continued survival of our plants, and that without pollination or pollinators (bees, insects, etc.) many species of plants would be lost forever.

Lawn Care Division – Reduced Risk Care

Cassity Tree and Landscape has been in the business of Plant Health Care for 39 years. With our motto of "Plant Health Care with a Conscience", we are now offering our expertise as Certified Arborists and Degreed Horticulturalists to Lawn care since 2015. We have found that many traditional lawn care companies apply products that are counter productive to tree and shrub health and/or duplicate services to trees and shrubs that can result in detriment to the plants and the environment. We are excited to offer this service and have applied extensive research to provide you with environmentally friendly yet effective lawn care.

- Organically based
- Improves Soil
- Gentle on the Environment
- Spot Weed Control and reduced risk application
- Complimentary to all Plant Care



CASSITY TREE SERVICE

offers all of the traditional tree care operations (selecting, planting, pruning, removal) and specializes in Plant Health Care including:

- Bio-stimulant Soil Injection
- Root Zone Treatments
 - Fine Root Development
- Annual Care Programs and Diagnosis
- Direct Tree Injection
- Prescribed Tree and Shrub Spraying and Fertilizing
- Growth Regulators

