

TREE TIPS

TREE & SHRUB CARE FROM BARTLETT TREE EXPERTS

Check for Frost Cracks in Spring *by Thomas Smiley, PhD*

Due to this winter's extreme cold temperatures we have seen the appearance of a large number of frost cracks in susceptible tree species. Frost cracks are vertical splits in tree trunks caused by internal stresses associated with cold temperatures. Most frost cracks close when temperatures warm and wound wood may cover the crack in a few years. However, if the crack is very deep or if there was decay in the tree before the crack formed, the likelihood of tree failure is increased. If there is a frost crack or other type of crack in your tree's trunk it is best to have it inspected by your Bartlett Arborist.

Tree species prone to frost cracks in northern climates are: sycamore/plane tree, linden/basswood, maples, horse chestnut, beech, willow, oak, crabapple, and tulip poplar.



Photos by
Erik Grossnickle, Arborist
Representative, Chicago, IL



How Climate Change Affects Trees *by Neil Hendrickson, PhD*

What might happen to your landscape plants?

We've all heard about climate change, but the effects on plants are not well understood, and are pretty complicated. Plants do respond to environmental changes, because "everything is connected to everything else."

Trees remove and store CO₂ from the atmosphere as they grow. Plant growth might be enhanced initially by warmer temperatures and increased CO₂ in the atmosphere, but there are other factors that may change growth conditions. Faster growth could mean that nutrients in the soil are used up more quickly, and that growth (including CO₂ absorption) might suffer later on. Warmer temperatures could mean more breakdown of soil organic matter and soil microorganisms, and increase stress on plants.

The winter of 2014 was extreme; however, trends indicate warmer winters and warmer winter nights. Spring is coming earlier and autumn is also lasting longer. As a result, insect pests will be able to overwinter more successfully in the future. This will expand their numbers and range. Also, invasive plants could spread over larger areas.

The phrase "right plant in the right place" is becoming more challenging as all of these environmental conditions change. Despite the common goal to plant with native species, planting with adapted species is likely to be more successful and sustainable.

Environmental changes have raised the possibility of more frequent and more

extreme weather events. Droughts, heavy downpours, and severe storms may become more commonplace. Trees can be blown over or structurally damaged in high winds, especially when soils are saturated. Water soaked soils can lead to root diseases. Snow and ice accumulation can cause limb breakage.

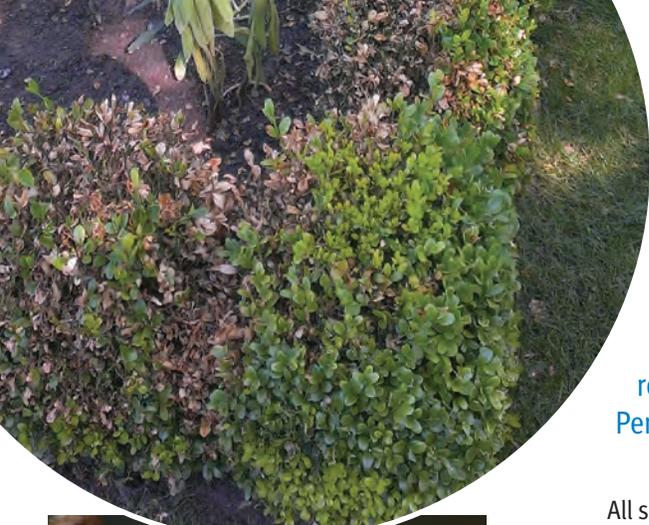
So what's the answer for your landscape?

Plant a diverse landscape. A variety of plants is always preferable for long-term landscape health than just a few species.

Keep plant stress to a minimum by making sure your soil supports healthy plant growth. This includes optimizing soil conditions for your plants, including balancing soil chemistry, based on a soil nutrient sample and optimizing pH. Be sure physical conditions like soil aeration and drainage have not been impaired by compaction. These can be easily tested and treated.

And remember that water availability for plants might become more extreme – either too much or too little. Consider storing water for later use, or planting less water-demanding species. Monitoring by your Bartlett Plant Health Care Specialist is the best way to make sure all these issues are checked and treated before problems become too advanced to be addressed.





Disease Alert-

Boxwood Blight Blues by Andrew Loyd, Bartlett Laboratories Diagnostician

Boxwood blight is a recently identified disease in the United States and Canada caused by the fungus *Calonectria pseudonaviculata* (syn. *Cylindrocladium buxicola*). As of July 2013, boxwood blight has been reported in Connecticut, Rhode Island, Massachusetts, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and Ohio.

All species and cultivars of boxwood are susceptible to boxwood blight. Based on varietal trials, American and English boxwood are the most severely affected by the disease. The boxwood blight fungus causes leaf spots, twig cankers, blighting, severe defoliation, and eventually death of boxwood. Proper diagnosis requires microscopic examination.

Under the right environmental conditions, spores are produced profusely on diseased tissue and can cause future infections of healthy tissue. Avoiding overhead irrigation can help reduce the risk of disease spread in the nursery and in your landscape. The boxwood blight fungus can overwinter in infected plant tissue and boxwood debris in the soil. To reduce the risk of future outbreaks, dispose of infected plants and as much residual debris (i.e. fallen leaves) as you can by double bagging and designating for the landfill.

For management of boxwood blight, avoid overcrowding of plants and don't use overhead irrigation. In addition, succession plantings using alternatives for boxwood, such as gardenia, camellia, dwarf yaupon, and lorapetalum will help create a more diverse and sustainable landscape. Your Bartlett Arborist can recommend which species would be best for your property.



Spore



Leaf Spot



Twig Canker

Microscopic examination is required to properly diagnose the boxwood blight fungus. This fungus causes leaf spots, twig cankers, blighting, severe defoliation, and eventually death of boxwood.



Tree Focus-

The Blood Twig Dogwood for Year-Round Beauty

by Greg Paige, Bartlett Arboretum Curator

Garden space in the landscape is a hot commodity. Too often our yards are small which limits the wide array of plants we can place in these valuable slots. As a result of our shrinking landscape I like to recommend, and use, plants with multiple seasons of interest. They need to have appeal winter, spring, summer and fall. *Cornus sanguinea* 'Winter Flame', Blood Twig Dogwood is ideal for such demands. 'Winter Flame' gets this cultivar name from its very showy, bright orange to yellow winter color show. The stems and twigs are aglow through the dreary winter months. When spring approaches it fills in nicely with soft green foliage

often with creamy white flowers on the end of the new season's growth. In the fall it is ablaze in bright golden yellow color. It can reach a height of five to 15 feet with an equal spread. It is easily kept in bounds by thinning out older stems as the younger growth has the brightest winter interest. This zone four to seven multi-stemmed shrubby dogwood works best planted in small to large masses; it also could work in a shrub border. Culturally, this shrub is tough and very adaptable to a wide range of conditions. However, for best performance in the landscape it prefers sun and moist, well drained soils.



Creamy white flowers in spring, and bright twigs in winter make the "Winter Flame" dogwood a great choice.

Past Winter's Weather has Affected Many Landscape Plants

by Bruce Fraedrich, PhD

For much of the United States and Canada,

the winter of 2014 brought prolonged periods of sub-normal temperatures, snow and ice storms that have damaged many landscape plants.

- Broadleaf evergreen species such as holly and boxwood have leaf browning and defoliation because moisture lost from the foliage could not be replenished from the frozen soil.
- Damage is particularly prevalent on exposed windy sites.
- Many landscape species planted outside of their hardiness zone, and/or newly planted trees and shrubs have damage such as branch dieback, stem injuries and even death.
- Plants in containers suffered because roots are not as adapted to cold as the above ground portion plants.
- Snow and ice accumulation caused branch and stem breakage or deformation on many plants.
- Cedar and cypress hedges were severely impacted as were pines, willows, birches, magnolias and dogwood.
- Deicing salts negatively affected roots, foliage and buds of sensitive species exposed to runoff or spray from melting snow and ice.

Now that it's warmer, trees should be inspected closely:

- Look for broken branches, cracks in stems and branches and lifted root plates. This type of damage could be hazardous and requires attention.
- Trees should be inspected to have the dead and damaged portions of the crown removed. Pruning of live branches should be limited until winter stress recovery has begun. Your Bartlett Arborist can advise based on your current conditions.
- Plants damaged by winter generally respond to fertilization in the spring. On severely damaged plants and ones exposed to deicing salts, soil analysis is recommended to guide fertilization and other soil treatments.
- If rainfall is limited in spring or summer, irrigation is essential to aid recovery.

Weather issues can extend into subsequent seasons, but care at the proper times will alleviate many problems. Contact us for an evaluation of your property.



Prolonged periods of sub-normal temperatures as well as snow and ice storms have damaged many landscape plants.

Tree Related Cryptogram

Code-breakers can decrypt the following message about trees.

“K'Q WKVD LY FY HA IWKPHKXF B HKGIU LGDD, BJQ

IWKPH HWBIV HGBJIUDM RT B MJYE-EUKLD LGRJV

LYEBGQ UDBSDJ, LKWW LUD LGDD IYRWQ HDBG

JY PYGD, HRL CKTTDQ KLM LYT BJQ MDL PD QY EJ

BNBKJ. LUBL EYRWQ HD FYYQ HYL U FYKJF BJQ

IYPKJF HBIV. YJD IYRWQ QY EYGM D LUBJ HD B

MEKJFDG YZ HKGIUDM.”



Check the answers at www.bartlett.com/puzzles or

by scanning this QR code with your smartphone.

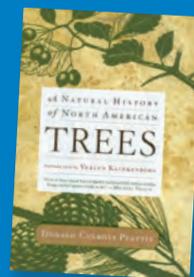
What's a QR Code?

A type of barcode which you scan with a smart phone to immediately access additional information or a web site. In selected printed material, like *Tree Tips*, we may occasionally include a QR code that will link you to additional information online.

Book Reviews

A Natural History of North American Trees

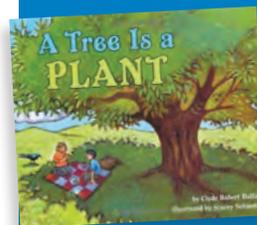
by Donald Colross Peattie



In this beautiful new one-volume edition of two books first published in 1950s, modern readers are introduced to one of the best nature writers of the last century. More than one hundred of the original illustrations by Paul Landacre highlight the eloquent and entertaining accounts of American trees. As we read Peattie's descriptions, we catch glimpses of our country's history and past daily life that no textbook could ever illuminate so vividly.

A Tree is a Plant

by Clyde Robert Bulla



A tree is the biggest plant that grows. Trees can live for a very long time, and they are alive all year long, even when they look

dead in winter. The author's accessible text and Stacey Schuett's lush, accurate illustrations follow a tree's continuous life cycle through spring, summer, winter, and fall.

Seeing Trees

by Nancy Ross Hugo



This book invites readers to watch trees with the care and sensitivity that birdwatchers watch birds. Focusing on 10 common trees of North America, the author highlights the rewards of tree viewing and describes some of the most visually interesting leaves, flowers, fruits, buds, leaf scars, twigs, and bark of familiar trees. Robert Llewellyn created incredibly sharp close-up photographs of the tree detail by stitching together eight to 45 images of each subject—each shot at a different focal point. The combination of these lavish photos with Nancy Ross Hugo's writing makes each page come alive with the beauty of the growing process. The result is a gorgeous journey into the life cycle of trees.

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Its easy to enroll in our paperless program for electronic *Tree Tips*. Find your 7-digit client code in the yellow box on the back page. Then, log on to www.bartlett.com/newsletter (select US), click on the registration link and sign up using your client number and postal code. If you ever want paper service again, just advise us.

TREE TIPS

I'm sure you'll find this issue interesting and useful.
Please call me if you have any concerns with your property.

LAB NOTES

Unusual Relationship Between an Armored Scale and a Fungus

The growth on the twigs shown here is fungal and commonly referred to as brown felt fungus (*Septobasidium* sp.). The fungus grows on top of scale insects and the symbiotic 'relationship' is said to be mutually beneficial. The scale insects 'mobilize' food for the fungus and the fungus

'protects' the scale. Samples examined at our diagnostic lab have revealed most scales beneath the fungus to be either dead or underdeveloped indicating a more sinister impact of the fungus on the scale.

The research of Bartlett scientists discovering facts such as this about pests and diseases and their interactions helps us develop solutions to problems on your property.



Brown felt fungus on a Japanese holly.



Armored scale insects on Japanese holly.



Brown felt fungus on a dogwood; it grows on top of scale insects.



**BARTLETT
TREE EXPERTS**

SCIENTIFIC TREE CARE SINCE 1907

