Currituck Garden News

NC State University A&T State University COOPERATIVE EXTENSION 100 YEARS Empowering People · Providing Solutions

December 2014

Tree Troubles Part 3

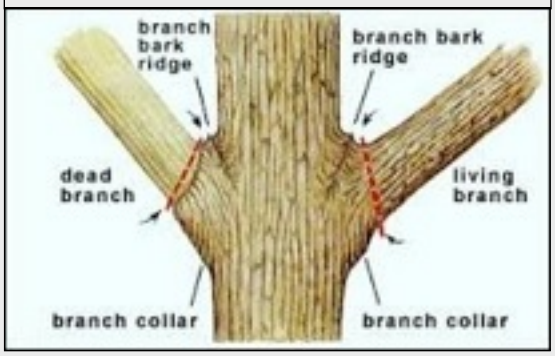
So far we have looked at the canopy and the roots of trees to see how they grow. Now we need to dig a little deeper and look at how trees protect themselves. Tree branches must communicate with roots and trunks to ensure proper growth and defense. Communication occurs through chemicals produced in the shoot and root tips. Buds produce auxin, a hormone that passes from the shoot tip and leaves to the root tips. Root tips produce a second communication substance, cytokinin, which enters the water stream and moves to the top of the tree. The ratio of these, and other growth hormones, change with seasonal activity and are influenced by the health of shoots and roots. Tree growth requires the right chemical signal, cell replication and enough water to enlarge the new cells. The better the water conditions, the more growth a tree will experience. Synthetic communication substances, such as herbicides, can disrupt growth.

Improper pruning can lead to decay.

Trees defend themselves by sealing off problems from the rest of the tree with barrier walls, which develop when damage occurs. Decay, disease, insect and mechanical damage are walled-in to seal damaged portions off from the rest of the tree. Mechanical damage and improper pruning leads to the invasion of wood by many organisms. Some fungi cause wood decay. Decaying fungi enter damaged wood but will not move into new wood produced after the injury occurred. As the wood decays, a hollow space will form inside the trunk. Termites, carpenter ants and other insects may add to the formation of this hollow space. Do not clean out hollows. Scraping or cutting the inside can break protective barriers, causing extensive damage and making the tree susceptible to further decay. Hollows may contain water. Do not drain hollows. If water is present for one or more growing seasons, the tree has already adjusted. Drilling holes or cutting slices for drainage will break protective barriers and allow more decay. Filling hollows can also damage trees. Do not fill hollows with cement, asphalt, gravel or other hard, abrasive material. The strength of a hollow tree comes from the new wood produced around the hollow.

Wounds on trees are serious. The larger the wound the greater the chance of long-term health problems. Remove loose bark, loose wood and all dead material but do not aggravate the wound with excessive shaping. Dead tissue will pull away easily. If it does not, leave it alone. Wounds should not be covered, painted or sealed. Wound paints are not necessary and are ineffective in reducing wood decay or promoting wound closure. Leave wounds open to the atmosphere and allow the tree to seal off the injury and adjust to the wound without interference.

The branch collar tissue forms a natural protective barrier against pests and decay.



Continued on page 2

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The Garden News is published to provide you with educational information, upcoming programs and opportunities on gardening issues. Feel free to share with others.

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Tree Troubles - Part 3

Top: Flush Cut removes branch collar and damages trunk.

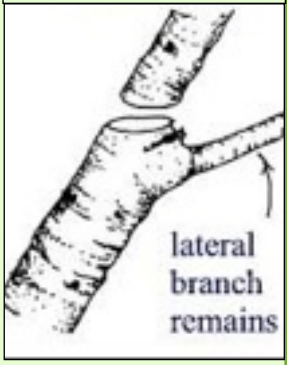
Bottom: Proper pruning cut.

Much too often, tree injuries and damage come not from nature but from humans. Correct pruning prolongs tree health and reduces future maintenance. But improper pruning may be life threatening. Branches attach to the tree trunk by interlocking branch and trunk tissues. A wood branch collar produced by the trunk holds the branch base. The branch collar tissue forms a natural protective barrier against pests and decay. Proper pruning leaves the branch collar intact with no branch stub. Stubs prevent wound closure and can result in decay entering directly into the tree trunk. A proper pruning cut leaves the smallest possible wound to callus over. Small wounds close more rapidly than larger ones. Flush-cut pruning causes severe damage to the branch collar, damages the trunk, inhibits natural barrier formation and provides entry for pest or decay organisms.

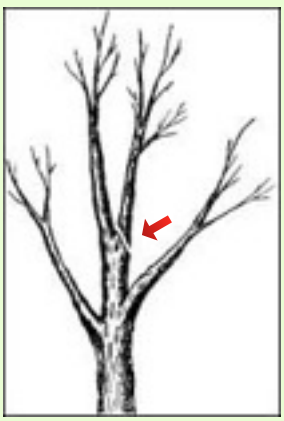
Use proper branch pruning techniques to remove unwanted branches and to shape your trees. Never stub back or shear trees. Cutting off the ends of the outside branches leads to dead stubs that become a liability. Pests and decay may enter into the stubbed branch ends. Dormant buds will grow, forming a proliferation of new branches around the wounds. These new branches grow rapidly and densely. Large numbers of weak branches will continue to grow and repeated and progressively heavier pruning will be required over time. “Topping” a tree involves cutting off the main trunk and / or major branches. Consider total tree removal before topping. Improper crown removal results in decay, heavy re-sprouting, loss of aesthetic form and severely reduced life span. Trees that have been topped are weakened and are more susceptible to damage and pests. Improper pruning such as topping, cutting roots, flush cutting and injuring the trunk and main branches can reduce the amount of stored energy available for growth and maintenance. This makes the tree more susceptible to attack by insects and diseases and makes it tough for trees to recover from floods, drought and other stresses. To shape a tree or remove unwanted branches, prune the branches at the trunk or where they are attached to a major branch. Pruning wounds are left inside the tree crown, rather than at branch tips, reducing the number of sprouts because of shading. Drop-crotch crown removal (cutting back to existing large branches) is the best way to lower a tree’s crown. Do not over prune or remove excessive foliage. Always leave two-thirds of the tree height in the living crown.

Young trees may require corrective pruning. Early pruning improves overall structure and corrects branch defects. Early pruning eliminates problems that can become severe in middle and old age. Pruning street and shade trees will develop and maintain a central dominant leader by removing double or co-dominant leaders (forks). Select the main leader early and maintain strong side branches. These side branches become the major branches supporting the weight of the tree later in life. Remove dead, diseased and broken branches. Prune out deformed and crossing branches.Main side branches should occur singly. However, trees such as ash and maple frequently have major branches occurring in pairs across from each other. Young trees can be pruned alternately. Select and maintain major side branches spaced 24 to 36 inches apart on alternating sides of the stem. Select branches with wide angles of attachment, usually 60 to 90 degrees between the trunk and branch.

Drop crotch crown removal cut.



Water sprouts on the trunk or in the crown and suckers around the tree base arise when dormant buds are released. Stress caused by insects, disease, breakage or drought may release dormant buds. These buds rapidly grow into long water sprouts or basal suckers. Water sprouts and suckers can interfere with normal growth. Prune out water sprouts and suckers or growth control will shift from the crown to these new vigorous branches. Excessive sprouting is a sign of serious tree stress problems.



Left: A tree with three co-dominant leaders.
Middle: Prune branches at the trunk or where they are attached to a major branch. Never leave a stub.
Right: A topped tree.

O Christmas Tree … How lovely are thy branches.

Choosing the "right " Christmas tree is very much a matter of personal taste. There are many factors to consider such as appearance, availability, price and durability. The most popular choices are Scotch pine, Eastern white pine, blue spruce, Douglas fir, Frasier fir and Norway spruce. Fraser fir ranked the highest among these in terms of needle retention, firmness of branches, resistance to ignition, and fragrance. The average tree will grow for 6 to 12 years before reaching a marketable size. Pines usually grow faster than spruce or fir, which makes them available at a lower price. Scotch pine has strong branches that will support heavy ornaments and the needle retention is excellent. Scotch pine tends to hold its needles even when the tree becomes very dry. Eastern white pines have slender flexible branches that will only support smaller ornaments. The needle retention of White pine is very good to excellent. Blue spruce branches are relatively stiff and will support relatively heavy ornaments. The needle retention is good but it will not tolerate periods without water. Frasier fir is the most fragrant. It has relatively strong branches to support heavy ornaments and the needle retention is excellent.

The best way to tell if a tree is fresh, is to lightly grasp a branch of the tree and gently pull the branch and needles through your hand. If the tree is fresh, very few needles will come off. It is normal to have some brown needles drop out from inside the tree. Each year a new batch of needles develops and the oldest needles on the tree die. These needles should be shaken from the tree before it is taken into your home. Cover the tree with a tarp while traveling home from the store to prevent it from drying out, particularly if it is going to be on the roof of your car. If the tree is to be kept for several days before setting it up inside the house, place it in a bucket of water and store it in a cool, shaded and protected place. If it has been more than 6 to 8 hours since the tree was last cut, recut the tree before placing it in water. Remove an inch or more each time the tree is recut. The lower the temperature and the higher the humidity, the longer a cut tree will last indoors. Do not locate the tree near sources of heat such as a fireplace, heaters, open vents, or direct sunlight. A fresh cut tree will absorb a large amount of water especially during the first week. If the water level drops too low, the end of the trunk will form a seal of dried sap in as little as 4 to 6 hours. A tree stand should have a water basin that provides 1 quart of water per inch of trunk diameter. For most trees, the stand should hold at least 1 gallon of water. Replenish the water daily. Do not use anti-transpirants, water holding gels, additives (floral preservatives, molasses, sugar, bleach, soft drinks, or asprin) or flame retardants on your tree. Clean water is all that is needed to maintain freshness. A well cared for tree should last at least 3 to 4 weeks before drying to an unacceptable level.

Master Gardener Training Program

Extension Master Gardener
NC COOPERATIVE EXTENSION

Master Gardeners are members of the local community who enjoy learning, gardening and volunteering. Master Gardeners receive intensive training from their local Cooperative Extension center. In return, they volunteer to help Extension staff meet community needs by sharing research based information on sustainable gardening. In addition to their role as a gardening information source, Master Gardeners host a Flower and Garden Show each spring, a Fall Plant Sale in September, maintain a demonstration garden and a community garden, manage a greenhouse and work with youth. The Currituck County Extension Master Gardener program is currently accepting applications for individuals to become volunteers. Anyone with an interest in both gardening and volunteer services can apply. Applicants should be comfortable working with a diverse group of people and willing to share their knowledge with both new and experienced gardeners. Classes begin on January 13, 2015 and end on April 7, 2015. Students will meet every Tuesday from 9:00 am to 12:00 noon. The fee for the class is $100. Contact Deborah Foster 252-232-2262 to obtain an application.

Currituck County Extension
http://currituck.ces.ncsu.edu/

For additional information on any of the contents of this newsletter call or email Debbie Foster at 252-232-2262, **deborah_kelso@ncsu.edu**

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Mission, Vision and Goals

North Carolina Cooperative Extension partners with communities to deliver education and technology that enrich the lives, land and economy of North Carolina.

For accommodations for persons with disabilities, contact the Currituck County Center at 252-232-2262 no later than five business days prior to the event.

The First Christmas Tree

The oldest record of a cut Christmas tree decorated in today's tradition is reported in a travel diary from 1605, which describes a fir tree in Strasbourg, Germany, hung with paper roses, apples, wafers, and candies. Tradition suggests that the first Christmas trees in the United States were wooden pyramids covered with evergreen boughs decorated by children in a German Moravian church settlement at Bethlehem, Pennsylvania, on Christmas Day in 1747. From that beginning, the use of a real Christmas tree as part of the Christmas holiday celebration in the United States has grown until today more than 30 million real Christmas trees are purchased each year in the United States.

For more information about Christmas trees see:
http://go.ncsu.edu/christmas_trees

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