

FRUIT



PLANTING



University of  
Connecticut

COOPERATIVE  
EXTENSION SYSTEM

*College of Agriculture  
and Natural Resources*

## TREE PLANTING



### *How to Plant and Care for Trees for Connecticut Homes and Public Landscapes*



*"Acts of creation are ordinarily reserved for gods and poets, but humbler folk may circumvent this restriction if they know how. To plant a pine, for example, one needs to be neither god nor poet; one need only own a shovel. By virtue of this curious loophole in the rules, any clodhopper may say: Let there be a tree and there will be one. If his back be strong and his shovel sharp there may eventually be 10,000. And in the seventh year he may lean upon his shovel, and look upon his trees, and find them good."*

— Aldo Leopold

*A properly selected, correctly planted and well maintained tree will provide a multitude of benefits for generations. An ill chosen, incorrectly planted and/or neglected young tree, will die in only a few years, at best, and become a risk and a hazard at worst.*

*“Tree planting can be a community building activity where kid’s can be easily included.”*



*This brochure is for Connecticut urban and community forestry volunteers, homeowners, and green industry professionals. It describes current knowledge and thinking about new tree planting and early tree care methods.*

# Selecting the Right Tree

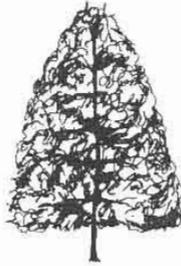
**Think Ahead Before Planting!** Select a tree having a mature size and shape that will fit the site and will be in scale with the surrounding buildings long after the tree matures.

- Trees should not be planted near building foundations or walls.
- Do not plant fruit or nut trees in pedestrian areas.

## Tree shapes and sizes



Oval (taller than wider)



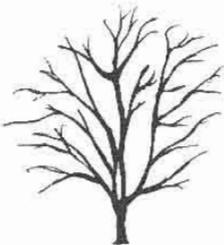
Pyramidal



Vase Shaped



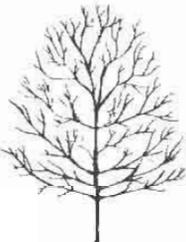
Broad (wider than taller)



Layered



Weeping



Rounded

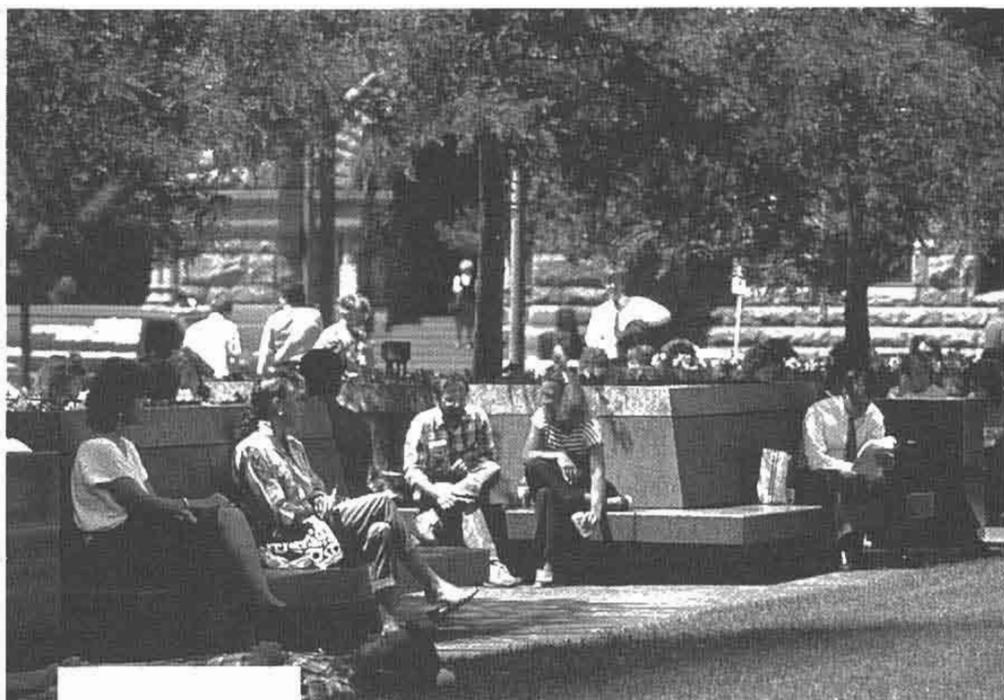


Shrubby

*Interested in learning more about tree selection? Log onto the UConn Plant Database, at <http://www.canr.uconn.edu/plsci/mbrand>, to see pictures and information about the different landscape trees available, and how they grow and mature.*

*Avoid planting trees under utility wires and near ground utilities.*

*To find out if there are underground utilities near where you want to plant a tree, contact **CALL BEFORE YOU DIG** at 1-800-922-4455.*



*“Trees help  
improve the  
quality of  
life in  
Connecticut  
cities and  
towns.”*

## Establishing the Planting Hole

The depth of the planting hole will always depend on what is known as the *trunk flare* of the tree. A *trunk flare* is the very point where roots begin to branch from the trunk. The top of the root ball or nursery container is not always the trunk flare. Be sure to fold back burlap, and remove excess soil or mulch until root flare is exposed. The depth of the planting hole should be the same as the distance between the trunk flare and the bottom of the root ball.

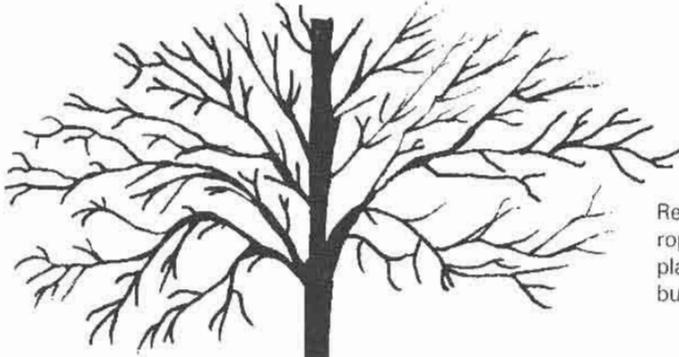
The planting hole should be roughly three times wider than the root ball or spread of roots.

Dig the hole so that it is saucer or bowl-shaped, with the sides sloping gradually. Do not cultivate the bottom of the planting hole in any way. This will cause the root ball to settle, making the tree sink deeper into the hole.

Do not amend the soil with fertilizer, topsoil or manure, unless planting in soil heavily compacted or damaged by construction.

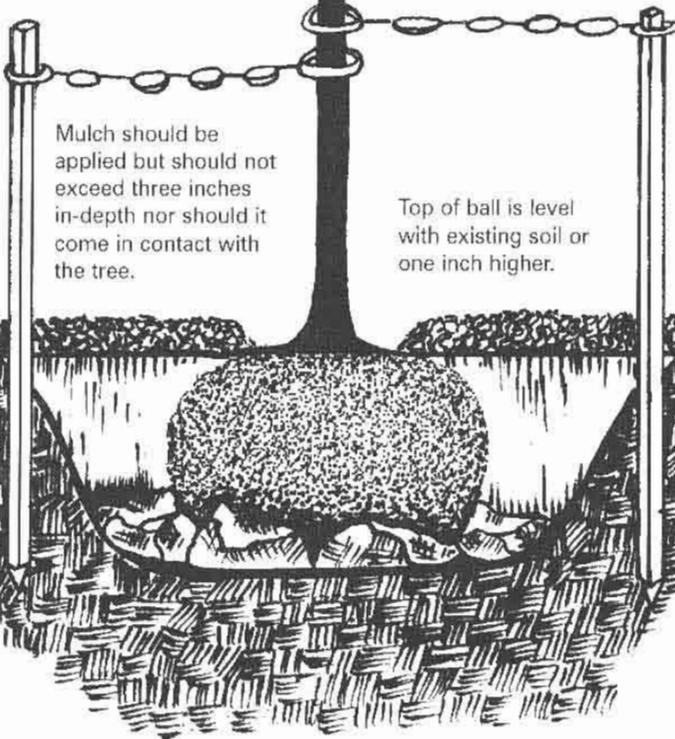
# Tree Planting Details

Prune only dead, weak, poorly formed or diseased branches.



Remove any rope, wire, tags, plastic, and burlap.

Stake only when absolutely necessary.



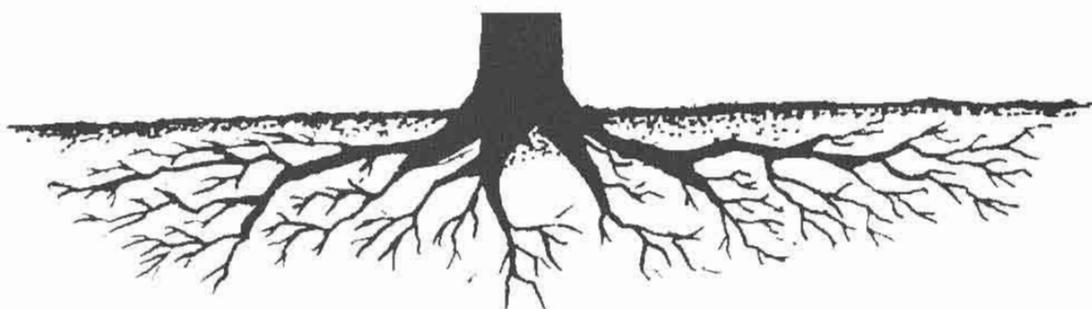
Dig a hole as wide as possible. Back fill should be the same soil as removed when hole was dug.

Either remove or roll down wire basket and burlap into the bottom of the hole.

## Planting the Tree

With the burlap (and wire basket, if there is one) still on the root ball, place tree upright, in the center of the hole by handling the root ball, not the trunk; orient tree in hole to achieve optimum visual balance.

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It is a myth that tree roots grow down into the earth as tall as the tree and as wide as the tree crown (to the drip line). In fact, tree roots will grow anywhere as long as there are no limiting factors such as a lack of water (or too much), oxygen, or nutrients. Physical barriers, such as granite outcrops, compacted soil, curbing, also serve to restrict root growth. Tree roots usually grow no more than two feet downward and as wide as the soil conditions, tree genetics and environmental factors permit. Most of the small absorbing roots of trees are concentrated in the upper six inches of soil. So, be careful not to disturb through grading, cutting, or compaction, flooding or over-heating of this soil layer.

Remove burlap (or nylon wrap and wire) from the top and sides of the root ball to allow roots to grow beyond the planting hole into adjacent soil. It is an old myth that burlap decays fast enough in a few years allowing root growth. Do not remove the burlap from the bottom of the ball if there is a risk of the root ball crumbling; root hairs could be damaged as a result. An alternative to removing the burlap is rolling it down into the bottom of the hole.



Prune cleanly any dead or crushed roots and straighten or cut encircling roots.

Back-fill with soil dug from the hole. New or amended soil will be of a different structure and texture, and will cause root ball settling, and an artificial environment for roots to grow in.

Fill soil around and underneath the root ball. Do not stamp on soil with boots, instead gently tamp to avoid compaction. Once the hole has been back-filled by half, fill the hole partially with water to evenly settle the soil. Continue back filling once water has drained.

NEVER plant too deep; this may kill the tree. Back-fill until the trunk flare of the tree is level with the perimeter of the planting hole (the grade).

Any tree wrap, tape or string on trunk should be removed. These materials should only be used to protect the tree during transit to the planting site.

Stake and brace trees at planting time only if absolutely necessary (such as in high pedestrian traffic areas). Support the tree to allow it to move or sway in the wind, while preventing the root ball from shifting in the ground.

*“We need to understand how tree roots grow so we can prevent construction damage to trees.”*

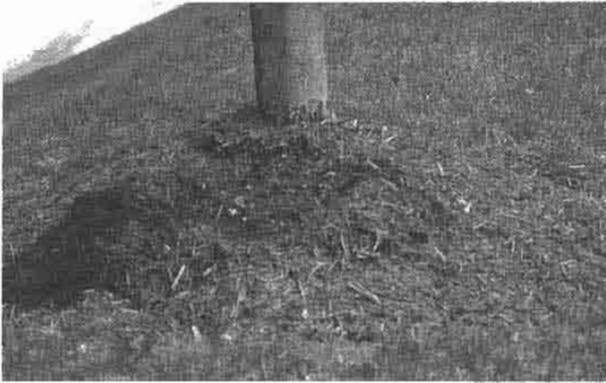
## *The Problem of Over-Mulching*

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A recent and serious trend has been the over-mulching of trees and shrubs. Though mulching has many benefits, trees are, quite literally, killed by over-mulching. Mulch piled high around and in contact with the stem or trunk causes slow death. It is also a waste of money and labor. Why over-mulching has become a common landscape practice is unclear. What is absolute, however, is that over-mulching is a practice that needs to stop.

Over-mulching kills trees by:

- Oxygen Starvation
- Inner bark death
- Nitrogen deficiencies
- Lack of micro-nutrients
- Excess heat
- Disease susceptibility
- Rodent infestation

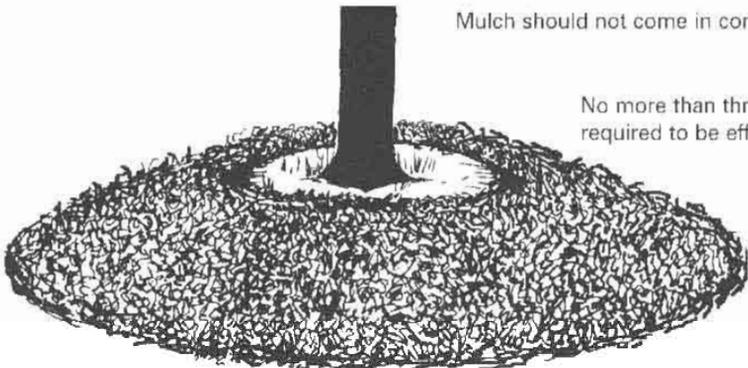


Excessively mulched trees.



*Diagram showing properly mulched tree*

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Mulch should not come in contact with tree trunk.

No more than three inches of mulch is required to be effective.

## Caring for Newly Planted Trees

Water a newly planted tree *at least* twice a week for two months and during dry spells thereafter. Soak the soil by allowing the water to run slowly at the perimeter or edge of the planting site.



Create a mulch circle around the tree that is 3 times the size of the root ball. A mulch circle will keep lawn mowers and string trimmers away from the tree thereby avoiding trunk wounding. Even the smallest wound could potentially cause disease that could kill the tree.

Mulch lightly and evenly with 3" of composted material to three times the size of the root ball. Do not mulch around the trunk, instead, leave a 3" circle of bare soil around the trunk. Avoid mulching excessively, or above 3"; deep layers of mulch will only harm the tree.

## After-care

Replace mulch as needed, and keep grass and weeds out of mulched area. They compete for the same water and nutrients as the tree. For this reason, it is best not to plant flowers around the base of the tree.

Remove stakes after one year unless site is extremely windy. Do not stake longer than two years.



It is critical to encourage the best possible branching pattern of a tree, which is best achieved when it is still young. Remove all crossing branches and if possible, do not allow for more than one branch to originate at the same location. There is no need to prune live branches to decrease leaf surface area. This is an old myth that remains with the plant industry. Also prune branches that are dead, diseased, broken, touching other branches, or form weak v-crotches.

## References on Tree Selection, Planting and Care

- American National Standards Institute. 2000. *The American National Standard for Tree Care Operations – Pruning, Trimming, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements: ANSI Z133.2000*. New York, NY.
- American National Standards Institute. 1995. *The American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody-Plant Maintenance – Standard Practices: ANSI 300-1995*. New York, NY.
- Arnold, H.F. 1993. *Trees in Urban Design, 2nd ed.* Van Nostrand Reinhold: New York.
- Craul, P.J. 1992. *Urban Soil in Landscape Design*. John Wiley & Sons, Inc.: New York.
- Dirr, M.A. 1997. *Dirr's Hardy Trees and Shrubs*. Timber Press: Portland, OR.
- Dirr, M.A. 1998. *Manual of Woody Landscape Plants*. Stipes Publishing Company: Champaign, IL.
- Gerhold, H.D., N.L. Lacasse, and W.N. Wandell, eds. 1993. *Street Tree Factsheets*. The Pennsylvania State University: University Park, PA.
- Grey, G.W. 1996. *The Urban Forest: Comprehensive Management*. John Wiley & Sons, Inc.: New York.
- Harris, R.W. 1992. *Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines*. Prentice Hall: New Jersey.
- International Society of Arboriculture. 1994. *Buying High Quality Trees*. The International Society of Arboriculture: Champaign, IL.
- Koller, G.L. and M.A. Dirr. 1979. *Street Trees for Home and Municipal Landscapes*. *Arnoldia*, 39(3). May/June 1979.
- Lipkis, A. and K. Lipkis. 1990. *The Simple Act of Planting a Tree*. Tarcher, Inc.: Los Angeles.
- National Arbor Day Foundation. 1998. *How To Prune Young Shade Trees*. *Tree City USA Bulletin No. 1*. Lincoln, NE.
- Phillips, I.E. 1993. *Urban Trees: A Guide for Selection, Maintenance, and Master Planning*. McGraw-Hill, Inc.: New York.
- Pirone, P.E. 1988. *Tree Maintenance, 6th ed.* Oxford University Press: New York.
- Reynolds, M.K. and R.M. Boivin. 1995. *Selecting Trees for Urban Landscape Ecosystems: Hardy Species for Northern New England Communities*. State of New Hampshire, Department of Resources and Economic Development, Division of Forest and Lands. Concord, NH.
- Reynolds, M.K. and H. S. Ossenbruggen. 1998. *Planting Trees in Designed and Built Community Landscapes: Checklist for Success, 2nd ed.* USDA Forest Service.
- Shigo, A.L. 1991. *Modern Arboriculture: A Systems Approach to the Care of Trees and Their Associates*. Shigo & Trees Associates: Durham, NH.
- Watson, G. and E.B. Himelick. 1997. *Principles and Practice of Planting Trees and Shrubs*. The International Society of Arboriculture: Champaign, IL.
- Watson G.W. and D. Neely, eds. 1993. *The Landscape Below the Ground*. The International Society of Arboriculture: Savoy, Ill.



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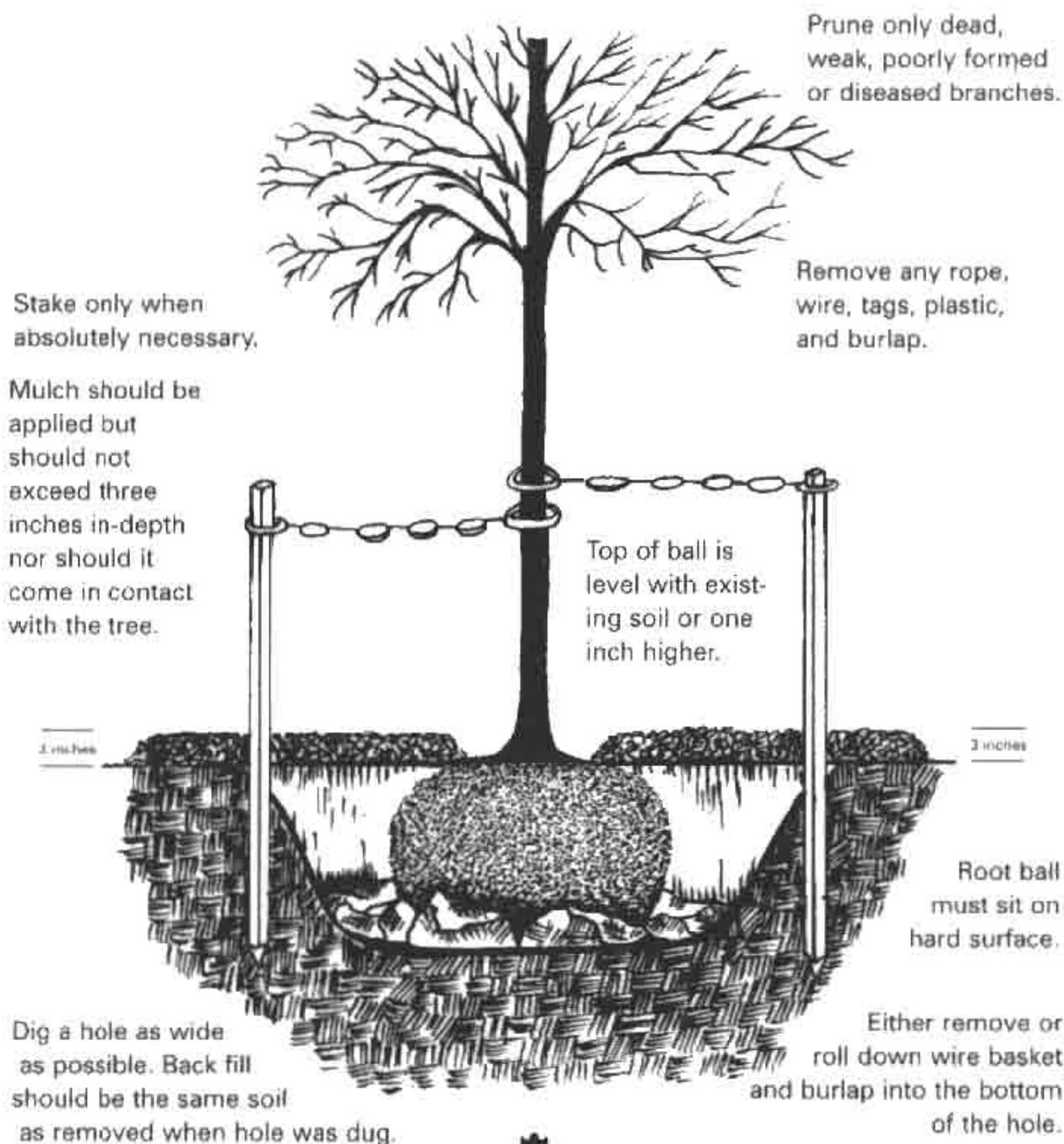
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# Tree Planting Details



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