

Success with Trees in Your Yard

*Debbie D. Dillion
Extension Agent, Horticulture
Serving Culpeper, Madison, & Orange Counties*



Virginia Cooperative Extension

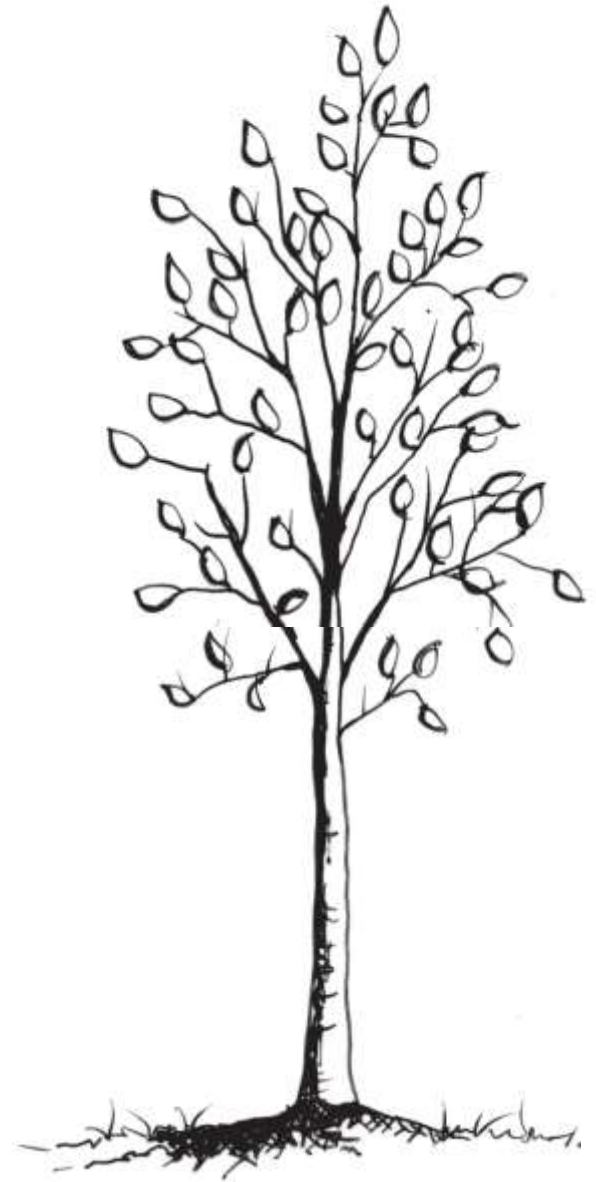
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P's for Success with Trees

- **P**lanning
- **P**roper selection
- **P**roper planting
 - planting hole
 - rootball prep
 - backfill
 - staking
 - mulching
 - watering
 - pruning



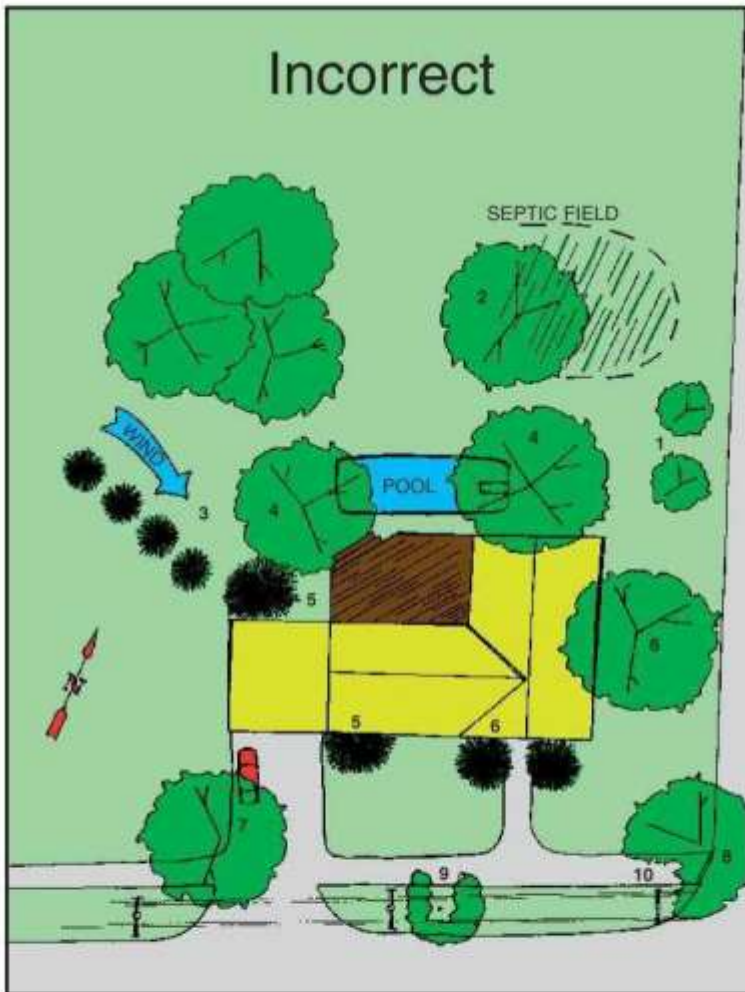
Planning – Things to Consider

- Function
 - Screening, shade, wildlife, flowers, fall color
 - Formal, informal
- Site
 - utilities, easements, undesirable view/noise, existing landscape plants/hardscape
 - Available space – above & below
- Microclimate
 - slope, exposure, elevation, nearby buildings
 - soil structure, pH, drainage, pollution
- Hardiness zones/Heat tolerance
- Native/Non-native

Right Tree/Right Location

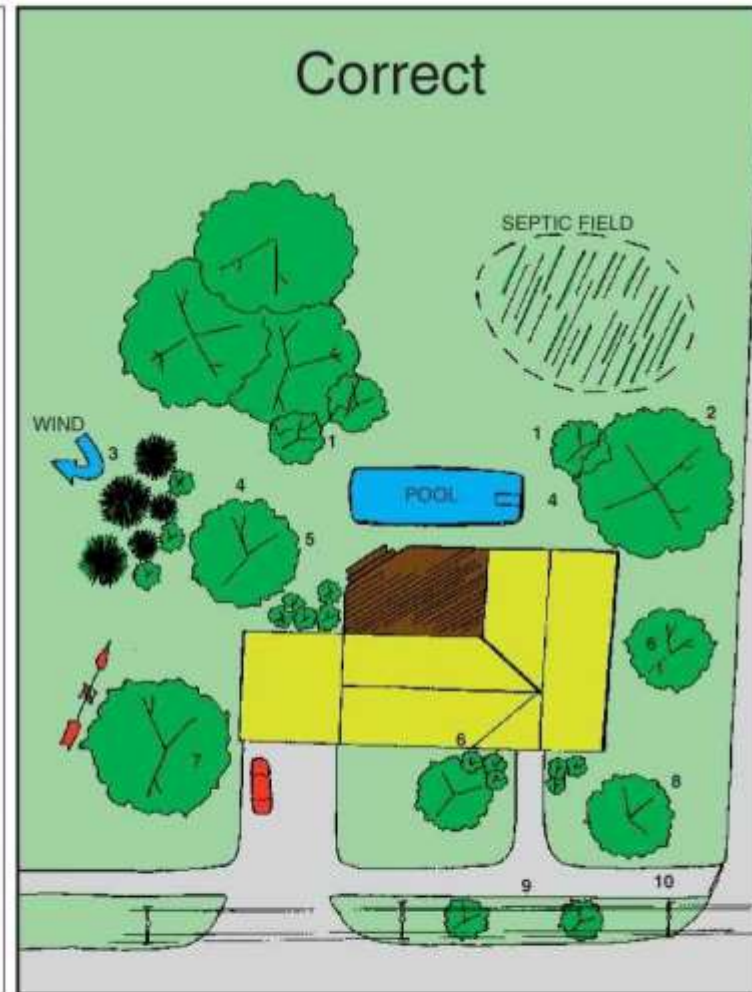
Even the most correctly planted tree will not grow well or meet your expectations if it is selected for or planted in the wrong location. Take the time to carefully plan your landscape before you plant your trees. Remember that a tree is a long term investment -- *plant the right tree in the right location!*

Incorrect



1. Plant understory trees, like dogwoods, in shade, not in full sun.
2. Do not plant water-loving trees, like willows, near septic fields or water sources. Relocate or change species.
3. Align trees for wind screens where they will block winter wind, not where wind will funnel around or between them.
4. Avoid planting trees with leaf or fruit "litter" near pools, decks and paving. Locate where they shade and self mulch.
5. Avoid planting evergreens where they block winter sun. Instead, plant deciduous trees for summer shade and winter solar radiation.
6. Avoid planting trees too close to the house. Plant further away, or plant smaller trees and shrubs.
7. Cars often scrape and bruise tree trunks. Locate trees away from parking spaces or areas where they can be vandalized.
8. Branches can create hazards or block views. Locate trees away from street corners, or vehicle and pedestrian traffic.
9. Avoid planting trees directly under utility lines. Locate trees away from lines or plant smaller, low-growing trees or large shrubs.
10. Plant trees away from sidewalks to allow root expansion without pavement buckling.

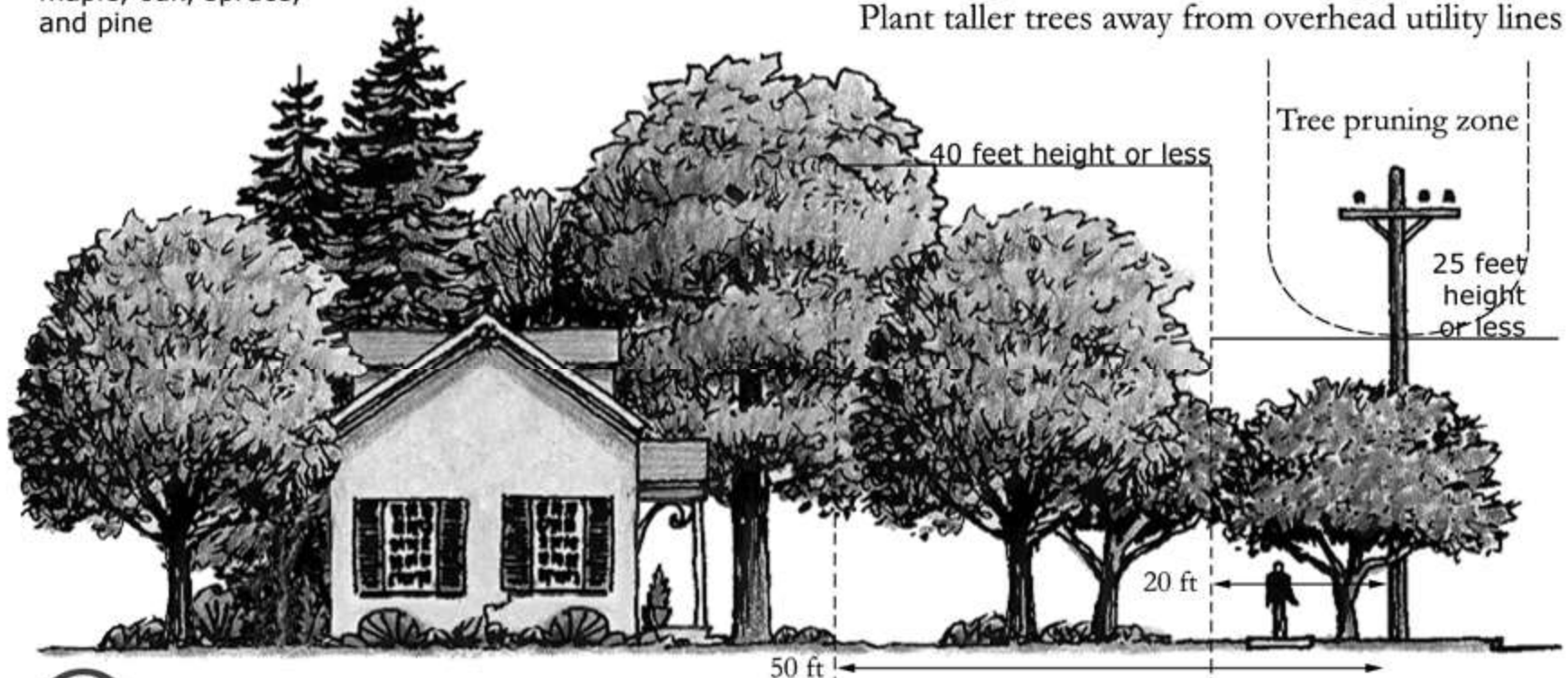
Correct



Tall trees, such as:
maple, oak, spruce,
and pine

Plant the right tree in the right place

Plant taller trees away from overhead utility lines



 **Arbor Day Foundation™**
arborday.org

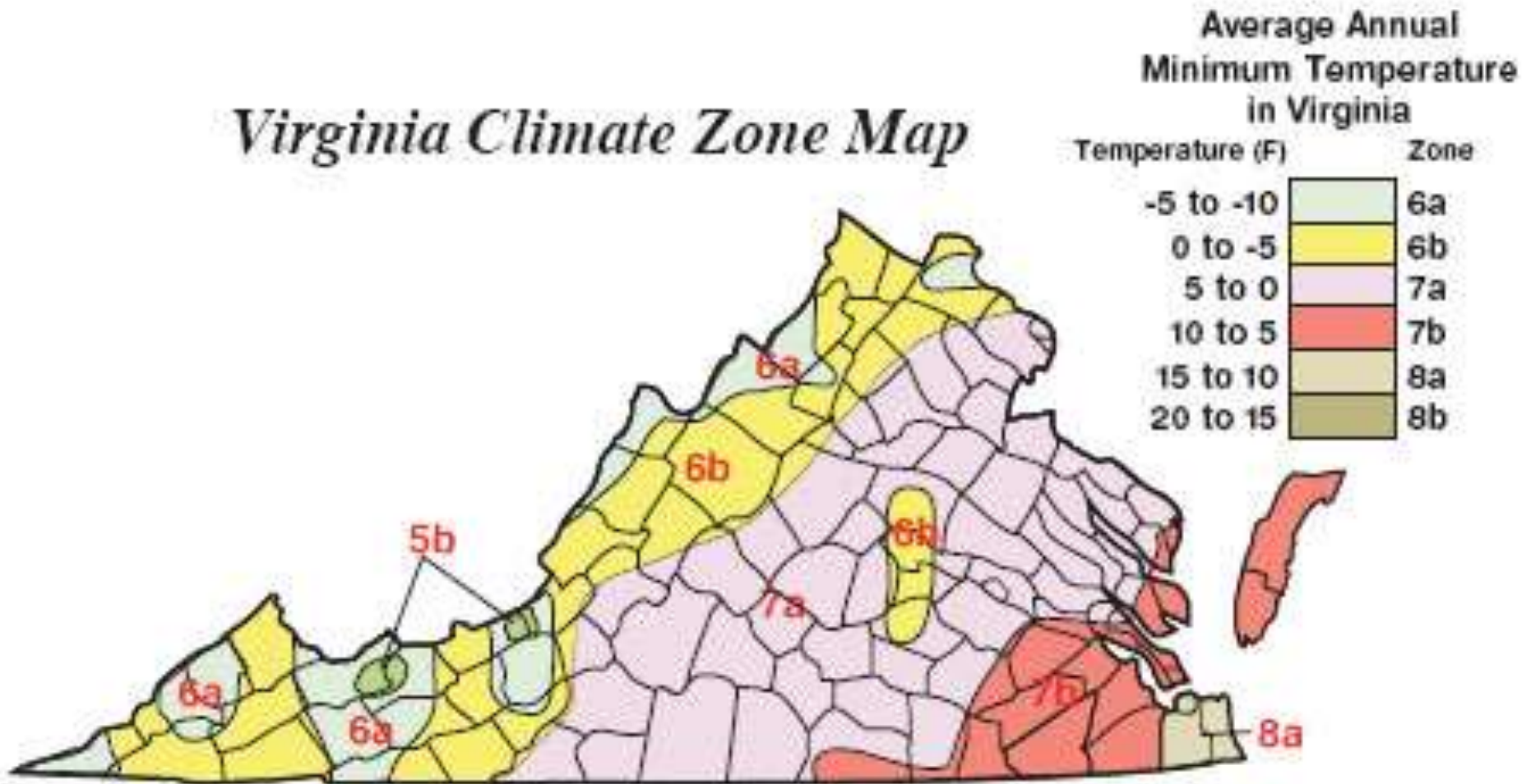
Medium trees, such as:
washington hawthorn
and goldenraintree

Small trees, such as:
redbud, dogwood,
and crabapple

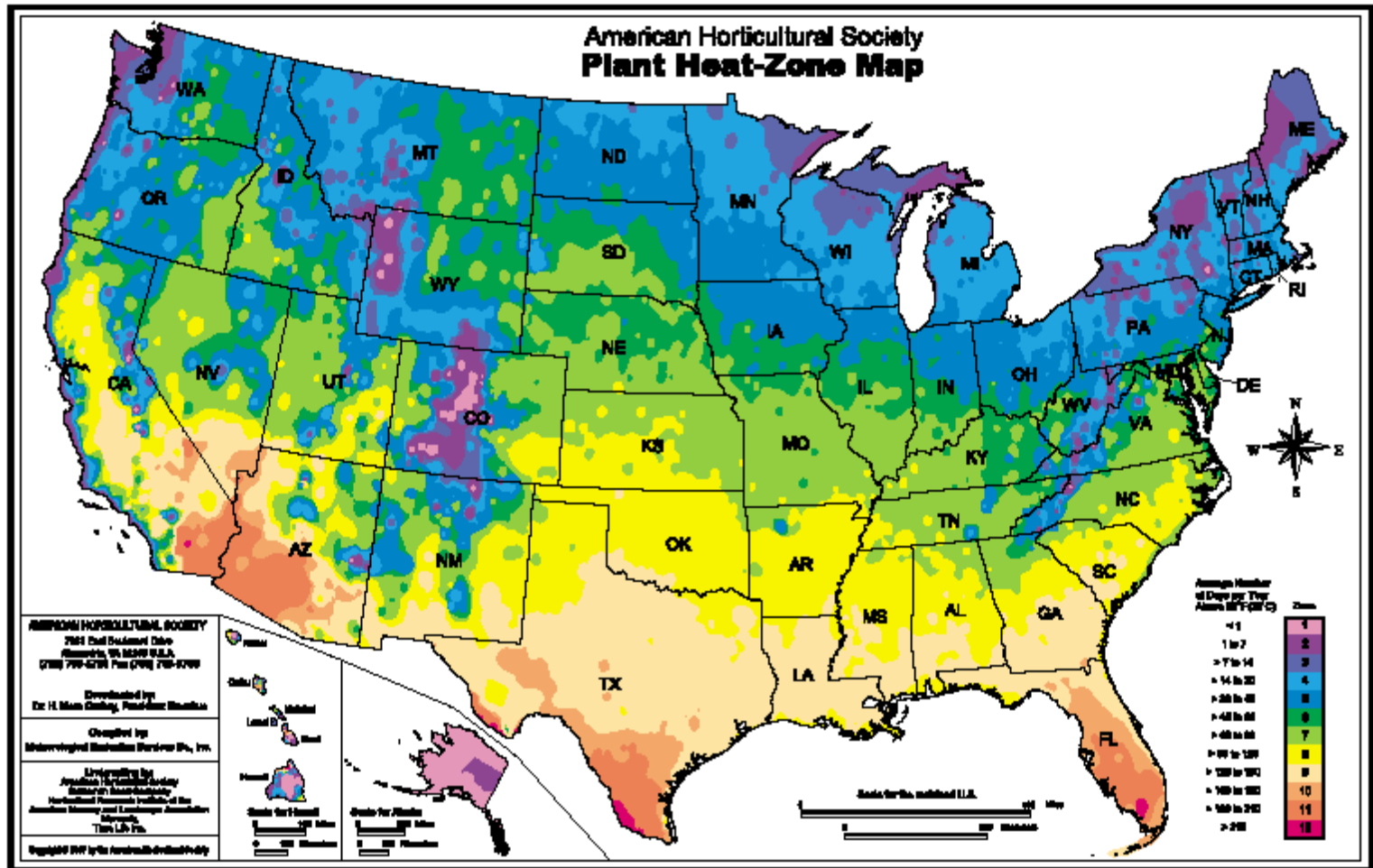
Hardiness Zones/Heat Tolerance

- Hardiness zones
 - indicate a plant's ability to survive low temperatures
- Heat tolerance
 - indicate a plant's adaptability to high temperatures
- Maps
 - Hardiness Zone Map – USDA
 - Heat Tolerance – AHS
 - 12 zones indicate average number of days/year that a given region experiences "heat days"- temperatures over 86°
 - zones range from Zone 1 (less than one heat day) to Zone 12 (more than 210 heat days)

Virginia Climate Zone Map



http://pubs.ext.vt.edu/426/426-044/L_IMG_climatemap.jpg



http://www.ahs.org/pdfs/05_heat_map.pdf

Native vs. Non-native

- **Native**

- those found growing naturally within a geographic region
- to a natural environment
 - may grow naturally in riparian, upland, or mountainous areas

- **Non-native**

- those that have been “imported” to the region
- include species native to other lands
- many popular because of ornamental traits or tolerance to extreme conditions

- **Non-native invasive**

- introduced species that spread aggressively, competing against and reducing native plants & habitat



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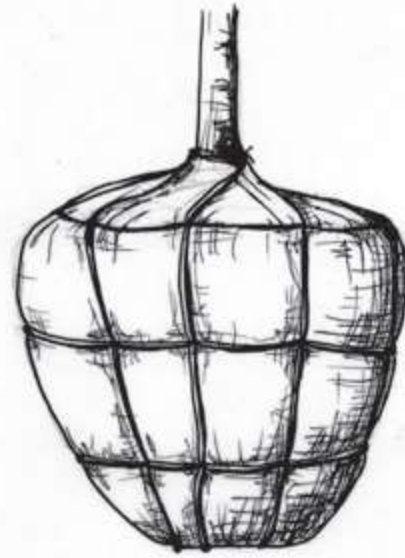
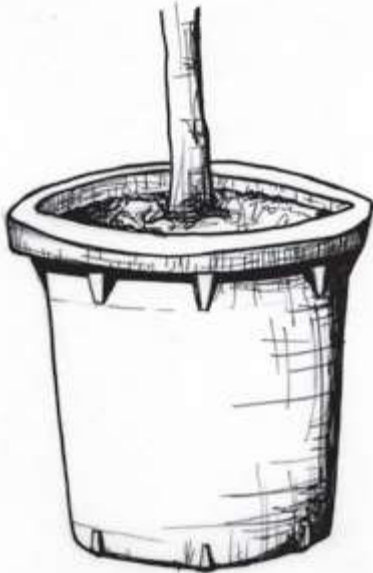
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Proper Selection

Buying Quality Trees - Types

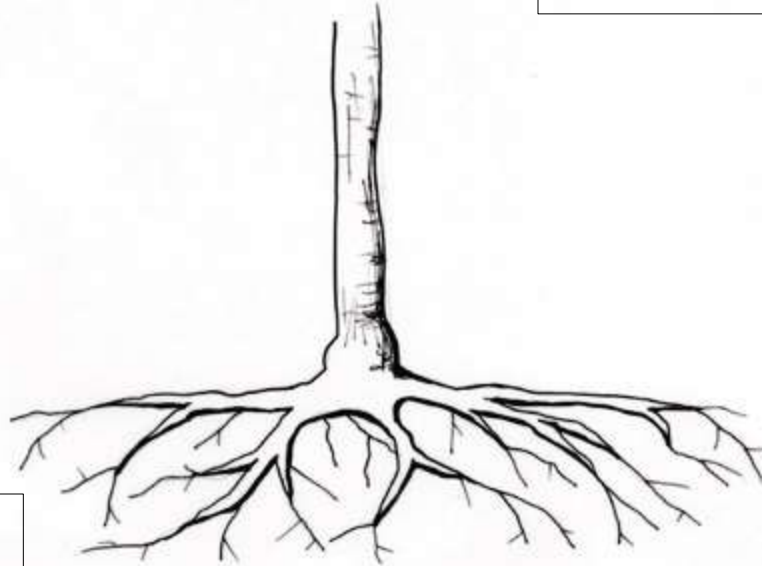
- **Bare-root**
 - trees are dug & shipped without any soil during fall & winter
 - should be protected from drying
 - should be heeled in if not planted immediately
- **Container-grown**
 - plants should have been in the container for one season (at least three months), but not long enough to become root-bound or to develop circling roots
 - can be held for some time before planting as long as they are watered & supplied with a general timed-release fertilizer
- **Balled & burlapped (B&B)**
 - trees have been dug from the field by lifting a root ball of roots & soil
 - Root ball wrapped & tie or wired closed

Container



Balled & Burlapped

Bareroot



Proper Selection

Checklist for Selecting Quality Trees

- Look for well-formed, vigorous trees
- Check the trees for obvious signs of damage
- Examine the roots
- Avoid stock with heavy base suckering
- Branching should be evenly distributed top 2/3
- Examine the bark & foliage for obvious signs of disease or insects

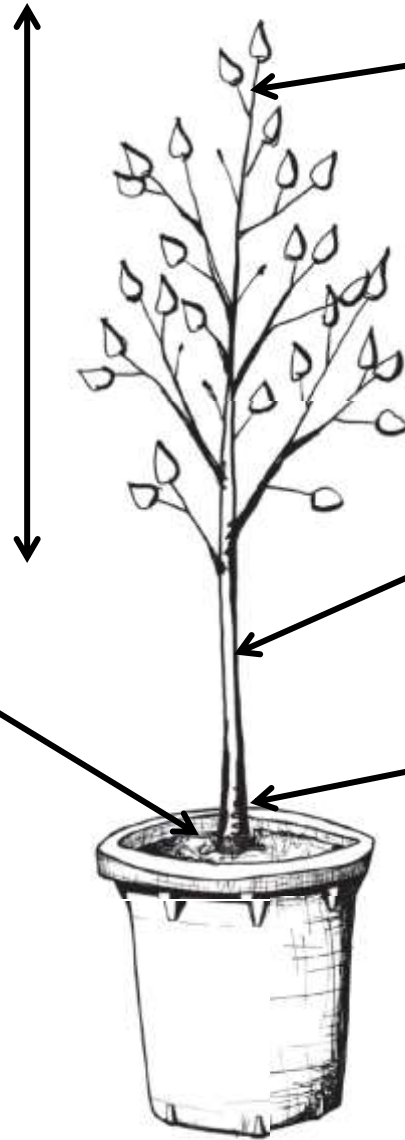
Crown height should be at least 60% for deciduous trees; 75% for evergreens

No more than 4" of soil over roots

One central leader is ideal

Bark should be free of scrapes & cracks

Trunk should be centered in soil & not move independently of root ball



Proper Planting

- Healthy tree is a happy tree
- Poor planting - most common cause of poor health
 - too deep
 - too shallow
 - too small root area
- Healthy roots give you a healthy tree



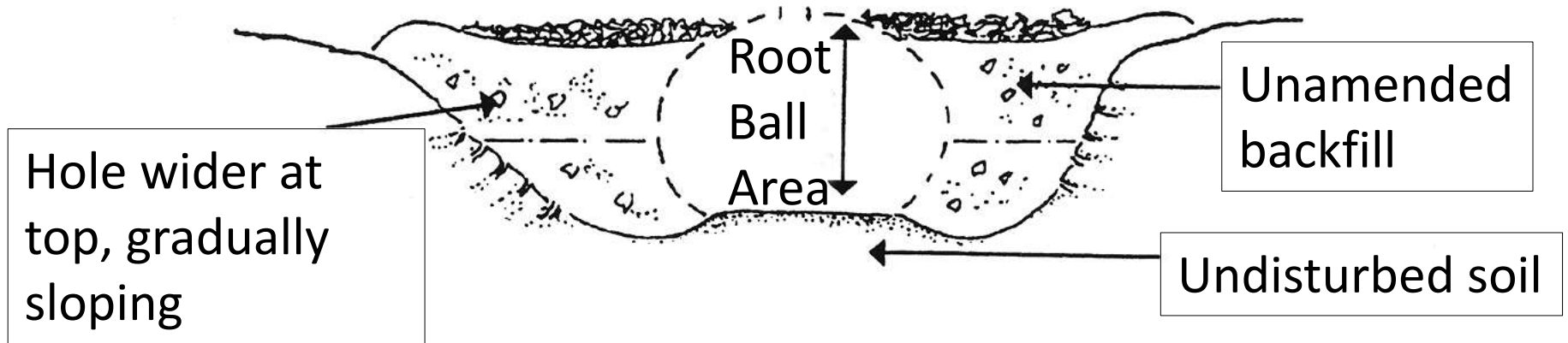


Proper Planting

- **Create a root zone** – not just a planting hole
- remove turf & weeds from planting site
- locate root flare & measure depth of root ball
 - dig hole slightly less shallow than this leaving undisturbed area where root ball will sit
- for planting area - break up soil 3 -5 times the diameter of root ball
 - roots grow out horizontally much further than tree canopy
 - most in the top 8-12” of soil
- **Objective** – create a strong base for root ball & decompact soil so new roots can spread, creating a strong support system

Proper Planting

Well-constructed planting hole



Proper Planting

Trunk/Root ball Preparation

- Remove tags, labels, twine, burlap . . .
- Loosen, straighten outside & bottom roots
- Prune any broken or damaged roots
- Straighten winding or girdling roots so perpendicular to root ball or prune to point where you can adjust to perpendicular
- Do not let roots dry out





Proper Planting

Backfilling

- Position tree so trunk/central leader in straight upright position
- Backfill soil around base of rootball to about ½ depth of rootball, making sure tree stands in straight upright position
- Best not to amend backfill
- Water backfill to settle around rootball
- Finish backfilling planting hole to existing soil grade; avoid covering top of rootball
- Water again to settle soil around rootball
- Build berm 3" wide & high at outside edge of rootball



Proper Planting

Staking

- May not be needed if plant small, in protected area, bareroot
- If needed use minimum of two stakes
 - one on windward side & one on leeward side
 - place in undisturbed soil at least 2' outside planting zone
 - one tie per stake place at lowest point on trunk where crown stands upright
 - place tie using a “figure 8” crossing pattern wrapped around the trunk & firmly tied/attached to stake
 - ties must be loose enough so crown can move & tight enough so crown does not rub stakes (cut stakes above ties so branches don't rub them)
 - Monitor stakes & ties & remove within one year or sooner

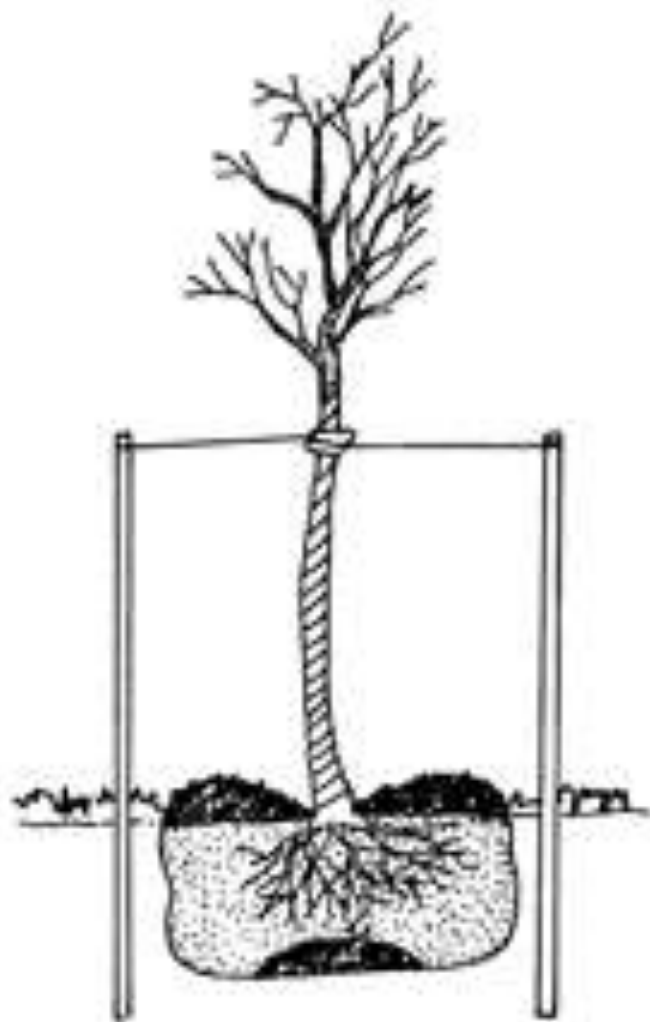


Figure 2. Staking of a small tree using two parallel stakes.

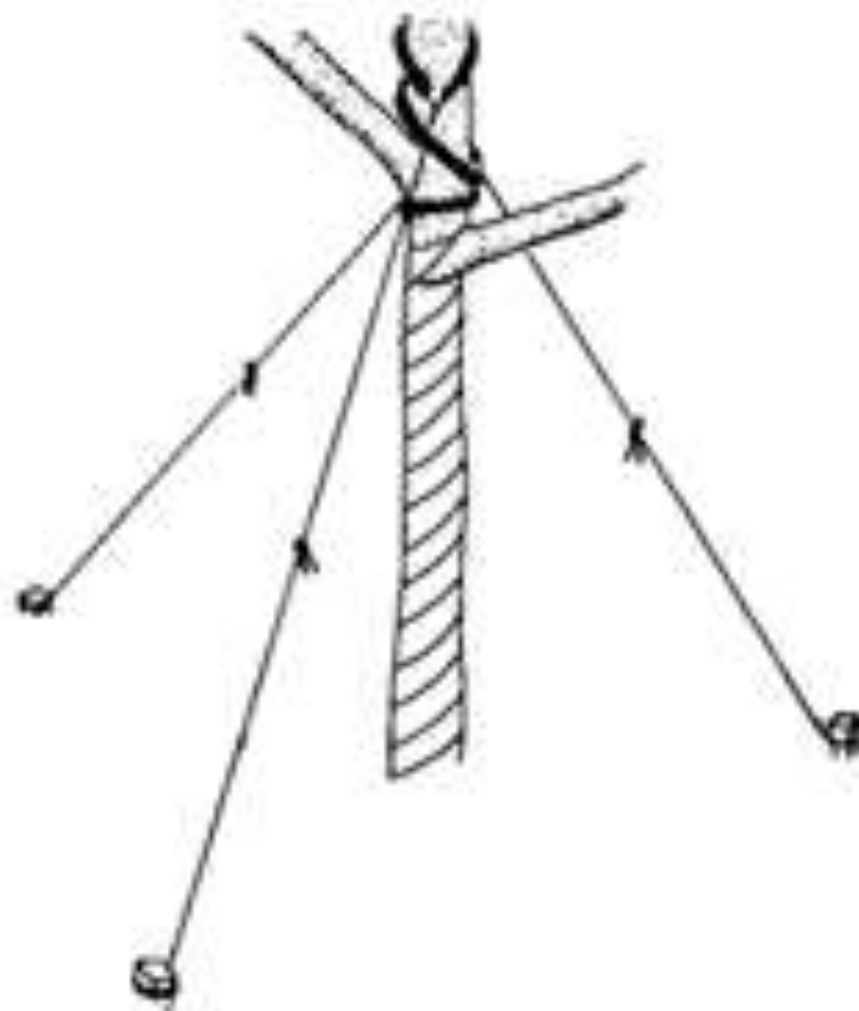


Figure 3. Staking of a small tree using three stakes.

Proper Planting Mulching

- Apply 3-4” wood chips or organic mulch over excavated planting area
 - inside, outside, and over berm
 - Keep mulch material minimum of 4” away from trunk flare
 - Keep planting area clear of grass & landscape plantings





Proper Planting

Watering

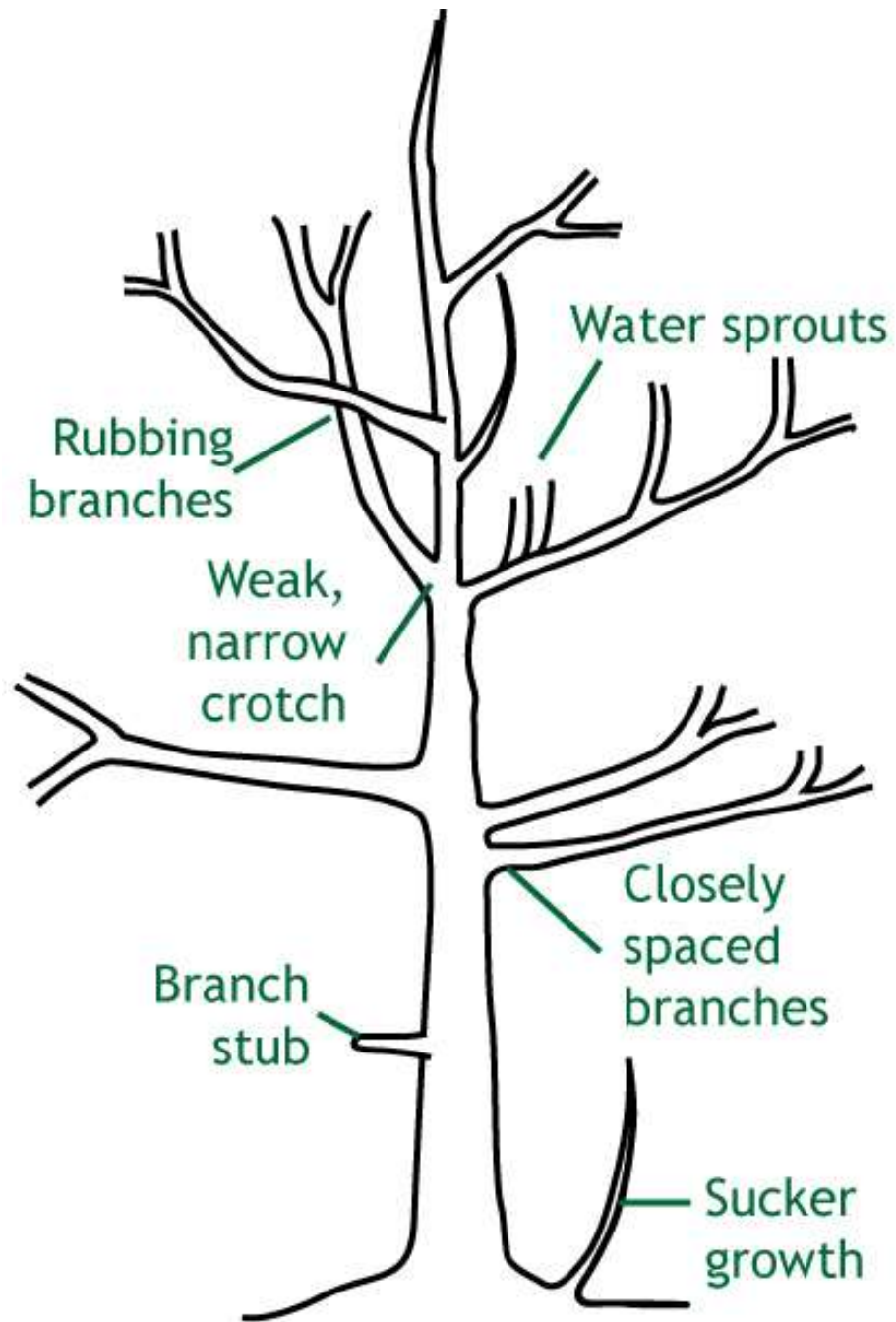
- Use low volume to apply irrigation water – apply long enough to saturate root ball & planting area
- Initial watering frequency must be checked by monitoring soil moisture
 - learn how long soil retains moisture based on temperature & humidity
- Irrigation frequency will change as weather & seasons change
- Irrigation should be applied for first three years



Proper Planting

Pruning

- Remove any broken/dead branches
- Identify central leader unless multi-stem tree
 - prune so taller than any other branch
 - reduce co-dominant leaders or remove to improve tree structure
- Retain low, temporary branches on lower trunk
 - may be shortened, if needed for clearance



Virtual Pruning Practice

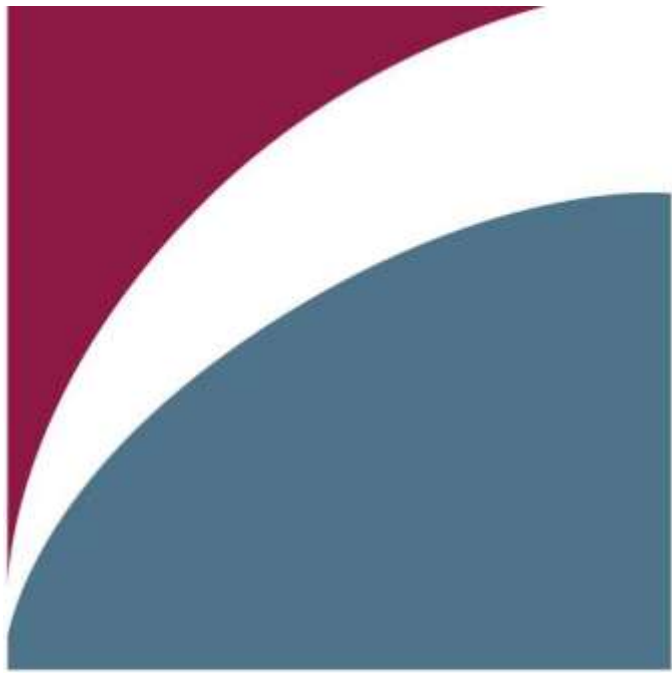
Arbor Day Foundation

[Tree Pruning Guide at arborday.org](http://arborday.org)

Proper Planting Maintenance

- Fertilization not recommended at planting
 - if soil analysis indicates a need, apply in fall of second season after planting
- Water may be needed in winter if rainfall insufficient
- Mulch deteriorates, so replace to maintain at 3-4”
- Prune to remove suckers & watersprouts, damaged branches
- Discourage planting of turf or ornamentals under canopy
- Monitor for insects & disease





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Questions & Discussion