

Campus Tree Care Plan

University of Arkansas – Monticello (UAM)

(updated November 2010)

1. PURPOSE

The purpose of the UAM Campus Tree Care Plan is to address the planting, maintenance, protection, and removal of trees on the three UAM campuses (Monticello, Crossett, McGehee). The overall goal of the plan is to ensure a safe, attractive, and sustainable campus urban forest and to promote the benefits of our community forest resources.

Specific objectives include:

- Ensure proper species selection
- Promote species diversity and proper age structure in tree population
- Achieve a 16% canopy cover
- Protect high-value campus trees during construction projects
- Promote tree health and safety by following best management practices for tree care
- Ensure a minimum 2:1 tree replacement for removed trees
- Encourage campus community members to respect and value their campus urban forest

Note: This Campus Tree Care Plan is meant to address the urban forest on the main Monticello campus, in addition to the campuses at Crossett and McGehee, and does not include the peripheral UAM forests under management of the UAM Forest Manager.

2. RESPONSIBLE DEPARTMENT

The UAM Physical Plant/Grounds Division is responsible for the implementation and enforcement of the UAM Campus Tree Care Plan.

3. CAMPUS TREE ADVISORY COMMITTEE

The Campus Tree Advisory Committee (Campus Tree Board) is made up of at least six members, with representatives from students, faculty, facility management (Grounds Division), and the community. Members are appointed by the UAM Chancellor, and at least one member must represent the UAM School of Forest Resources. The committee will meet quarterly (third Wednesday in February, April, September, November), or more often if needed to address specific circumstances. The committee will provide input to the care and improvement of the campus urban forest.

4. UAM TREE CARE POLICIES

General

- Conduct periodic (at least annual) inspections/inventory to assess tree conditions, tree maintenance needs, tree hazards (twice per year), tree planting opportunities, and tree protection needs

- Use this inventory information to generate an annual work plan/report/updated tree management plan
- Review and update campus Tree Care Plan and Policies at least every 5 years (2015, 2020, etc.)

Tree Planting and Establishment

- **Plant the right species, in the right place, at the right time, for the right reason**
- Campus trees that die naturally should be replaced on a two-to-one (2:1) basis during the next planting season (spring or fall)
- Campus trees that are removed due to construction should be replaced on a diameter-equivalent basis during the next planting season (spring or fall) (EXAMPLE: if remove 10-inch tree, replace with five (5) 2-inch trees or two (2) 5-inch trees)
- Definitions of tree size: (maximum tree size at maturity)
 - Small tree: up to 30 ft tall
 - Medium tree: 31-50 ft tall
 - Large tree: more than 50 ft tall

Tree Planting Locations

- Minimum width of planting site:
 - small tree: 3-4 ft wide
 - medium tree: 4-6 ft wide
 - large tree: greater than 6 ft wide
- Consider eventual mature size of tree – branch spread above, and roots below ground
- Consider potential conflicts with tree branches and roots – sidewalk, curb, pavement, utility lines, sewer, structures, etc.
- Consult Physical Plant or call Arkansas One Call (1-800-482-8998) for location of underground cables, pipes, and other utilities before digging
- Only small trees may be planted under or within 10 lateral feet of any overhead utility wire, or over or within 5 lateral feet of any underground utility (water line, sewer line, transmission line, etc.)
- Spacing:
 - Between trees (50 ft if large trees, 40 ft if medium, 30 ft if small) except as permitted
 - From street intersection: minimum 35 ft
 - From streetlight/sign: 10-20 ft
 - From curb or sidewalk: small tree 2 ft, medium tree 3 ft, large tree 4 ft
 - From fire hydrant: 10 ft

- Trees (trunk and branches) must not impede the line of sight on any street or intersection
- Trees must not be planted to conceal a fire hydrant from the street

What to Plant

- To assure longer lives of campus trees (40-60 years) select species and cultivars based on hardiness, pest resistance, mature size, shape, branch structure, root flare, fruitlessness, foliage color and texture, urban soil conditions
- Use Campus Recommended Tree List - list of suitable (recommended) species – small, medium, large trees
- Other species may be planted only with permission of Campus Tree Board
- Do not plant tree species on Prohibited Tree List
- Trees purchased must comply with American Standard for Nursery Stock
- Size - minimum diameter at planting – 2” caliper preferred (less vandalism), ½” or 1” caliper acceptable in certain areas
- Selected trees should have a healthy, well-balanced crown, no insect or disease damage or other wounding
- A straight, single trunk is best, centered and firmly attached to root ball
- Tree should have evenly distributed branches with wide angles of attachment, smooth bark with no cracks, and green/dark green leaf color
- Tree should have healthy, white roots, with evenly distributed lateral growth, not root-bound and with no circling roots
- Avoid tree species with a very fast growth rate, they tend to break easier

When to Plant

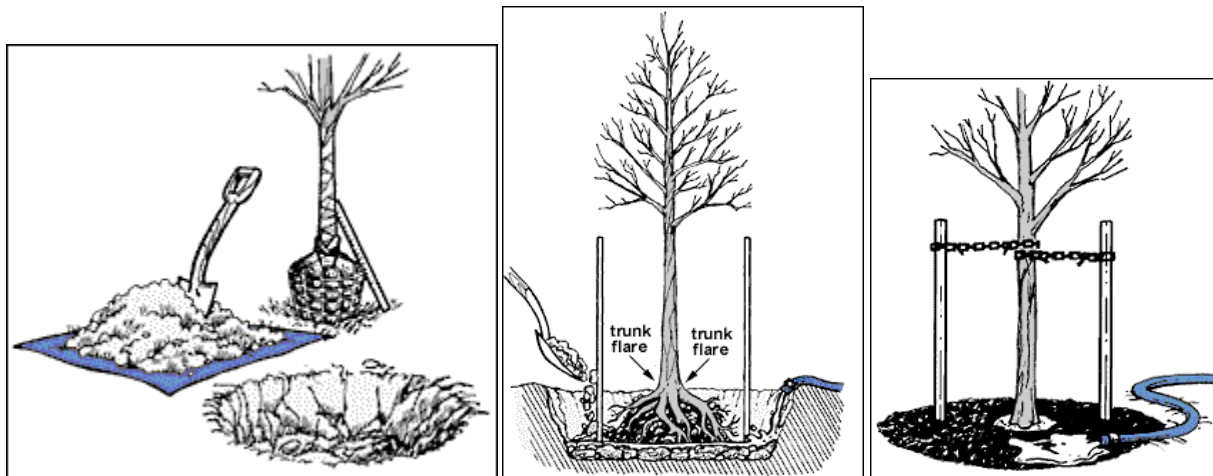
- Time of year – Late Fall or Winter is best, temperatures are moderate, moisture is available, allows more root growth over winter
- Best to plant deciduous trees when they are dormant, before leaves appear in Spring or after leaves drop off in the Fall or Winter.

How to Plant

- Protect trees after delivery to site, keep watered until planted
- Pick up tree by container or root ball, not by trunk
- Planting area should be shallow and wide, most roots occur in upper 12 inches of soil
- Planting hole should be 3-5 times as wide as rootball
- Planting hole should be as deep as rootball or slightly less. Planting too deep can limit

oxygen available to roots, leading to death

- There should be enough loosened soil in hole for adequate root growth, the more the better
- Soil at the bottom of the hole should be firm, not loose
- Roughen the sides of the hole to help roots penetrate soil
- Do not add soil amendments like organic matter, fertilizer, etc., or gravel in bottom
- Remove containers, ropes, cords and wrappings (synthetic) from trunk and root ball just before planting
- Cut circling roots if necessary
- Natural wrapping (burlap) – remove if root ball stays intact, otherwise remove only the upper 1/3 to 1/2 of burlap
- Wire baskets – remove all if root ball stays intact, otherwise cut away as much as possible, especially top of basket
- Remove tags and labels
- Make sure tree is straight (trunk is vertical)
- Backfill with same soil, firm up lightly to eliminate air pockets
- Water thoroughly to help settle soil
- Do not fertilize at planting, wait one growing season
- Use slow-release fertilizers if possible
- Do not use tree wraps unless thin-barked species are prone to sun scald



Watering

- Water well soon after planting, and with at least 10-20 gallons water per week unless at least 1 inch of rainfall has fallen
- Do not over water, can kill roots
- Water newly planted trees for at least two years

Mulching

- Mulching is inexpensive, but can be one of the most beneficial urban forestry maintenance activities available
- Apply mulch 2-4 inches deep, and 2 feet in diameter for each inch of trunk diameter
- Mulch should not touch trunk/bark
- Use organic mulch if possible (shredded bark, wood chips, pine needles, etc.)
- Group trees in mulch bed when possible
- Newly planted trees must be mulched within 1 week of planting
- Reapply mulch annually (every February/March) for all trees 6 inches DBH and smaller

Protective Collar

A protective collar (1 ft long black drain pipe or equivalent) should be placed around the bottom of the trunk of each newly planted tree (for protection from lawn mowers and string trimmers). Collars must be maintained to prevent fire ant mounds, accumulation of trash/soil that leads to moisture problems. Collars must be removed before tree trunk touches collar.

Staking

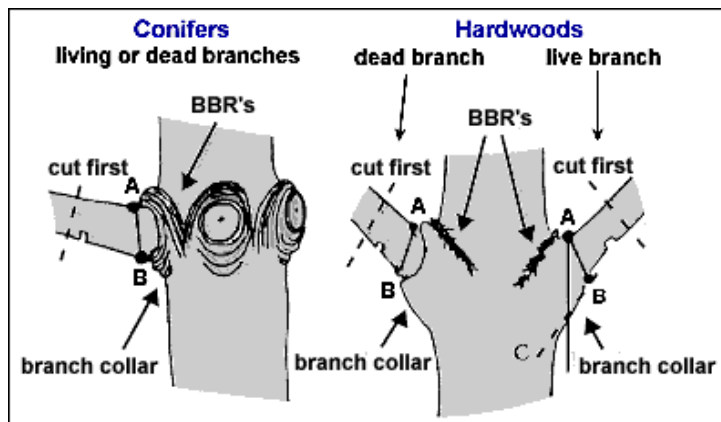
- Staking is not necessary unless site is windy, soil is loose (sandy), tree has a small root system, tree must be straightened, or tree is subject to pedestrian traffic, lawnmower damage, etc.
- Use 1 or 2 stakes, 3 stakes if tree is more than 3 inches in diameter
- Remove staking materials after 1 growing season or 1 year
- Use soft guying materials to protect trunk, leave some slack, not tight

Pruning

- Prune only broken or damaged branches initially (at planting and during first growing season)
- Prune non-flowering hardwoods in late winter, flowering trees in spring after flowering
- Use proper pruning tools – by-pass shears/loppers/saws, do not use anvil tools
- Do not prune more than ¼ of live growth from tree in any one year

- Follow proper pruning method – 3-cut method just outside branch collar (see diagram)
- Topping, flush cuts, wound dressings are not allowed, do not leave stubs
- Only properly trained and qualified individuals are allowed to prune trees/branches near above-ground electric utilities
- Prune trees for 7 ft vertical clearance to first branch
- Aerial pruning should be done during Semester breaks
- Major pruning should be done by an ISA Certified Arborist

How to Prune



1. Locate branch bark ridge (BBR) and branch collar.
2. Find target A – outside BBR.
3. Find target B – where branch meets collar.
4. For stub cut, cut a notch under the branch about $\frac{1}{4}$ - $\frac{1}{3}$ through to prevent tearing the bark (cut #1).
5. Cut the branch, leaving a long stub (cut #2), then
6. Make a final cut at line AB (cut #3).

DO NOT

- make flush cuts behind BBR
- leave stubs, living or dead
- injure or remove the branch collar
- paint cuts

Pest Management

Appropriate pest management (insect/disease) activities should be applied as necessary.

Fire ant mounds at the base of young trees should be treated with insecticide.

Tree removal

Trees that are 100% dead (nothing green remaining) can be removed without prior approval.

Trees that are less than 100% dead require approval from the Campus Tree Board before removal (case by case basis).

Hazard Tree Inspections and Emergency Tree Removal

Inspect all trees at least twice per year for defects and pest infestations.

Trees near a high-value target will be inspected at least quarterly.

Inspect trees in high traffic areas after big storms.

Trees that pose an immediate safety hazard can be removed without prior approval.

Stump grinding

Stump grinding should occur within 1 month of tree removal.

Recommended tree species for planting and Prohibited tree species

See list at end of Tree Care Plan.

Storm response

See Tree Removal and Hazard and Emergency Tree Removal above.

Tree waste removal

Debris from removed trees must be removed from the site within 3 days.

Fallen leaves and branches should be chipped for mulch or composted.

5. PROTECTION AND PRESERVATION PROCEDURES

Design phase

During the design phase of a construction activity, consult the Campus Tree Board and a representative of the UAM School of Forest Resources for advice about protecting existing trees during construction.

All construction projects (buildings, roads, parking lots, sidewalks, trenching, etc.) should incorporate tree protection measures during the design phase. These protection measures should be clearly outlined on construction plans.

Replacement policy – DBH equivalent – EXAMPLE: if remove 10-inch DBH tree, replace with 5 2-inch trees or 2 5-inch trees; the diameter removed should equal the sum of the replacement tree diameters

Construction

- Development plans must show trees present and those trees to be protected and removed
- Protect trees during construction
- Use protection fencing (4 foot high chain-link) around trees, place at least to dripline of tree or 1-1/2 feet radius per inch of tree DBH from trunk (Critical Root Zone (CRZ)) Example: a 12” DBH tree requires a CRZ radius of 18 ft., so fencing should be placed at least 18 ft. from tree trunk
- Do not store materials or equipment within CRZ
- Do not cut or fill more than 2-4 inches within CRZ, causes root damage
- If digging within critical root zone, tunnel when possible, avoid cutting roots more than 1 inch in diameter; use Air Knife to remove soil whenever possible to avoid cutting roots
- Development plans for construction projects should include tree protection guidelines and procedures
- Development plans should include provisions for planting new trees as appropriate
- Spread mulch at least 4 inches deep in areas of heavy traffic to reduce compaction
- UAM or a contractor will install protection structures (fencing, etc.) as required by UAM
- Remove protection measures (fencing, heavy mulch, etc.) within one week after construction is complete

6. GOALS AND TARGETS

The campus tree inventory will be completed and updated annually.

Trees with a high-value target will be inspected at least quarterly (and after storms). All other trees will be inspected at least annually.

Campus tree canopy coverage will be maintained at a minimum of 10%, and increased as possible to a target of 16%. A class project in Spatial Information Systems will be to more accurately determine the present campus tree canopy cover.

7. TREE DAMAGE ASSESSMENT, ENFORCEMENT, PENALTIES, AND APPEALS

Tree damage assessment will be performed by a representative from the UAM Physical Plant/Grounds Division in consultation with a representative of the UAM School of Forest

Resources (preferably a Grounds Committee/Campus Tree Board member). If possible, an ISA certified arborist should be consulted to help assess high profile campus trees.

Enforcement of tree care practices and tree protection and preservation procedures as described in the UAM Tree Care Plan will be performed by a representative from the UAM Physical Plant/Grounds Division in consultation with a Grounds Committee/Campus Tree Board member, preferably a representative of the UAM School of Forest Resources. For contractors, the contract specifications will include a clause about tree damage.

In case of violation of any practices or procedures as described in the Tree Care Plan, the UAM Physical Plant/Grounds Division representative will issue an oral or written notice to the person in violation. The person will immediately commence remedial actions as determined by the Physical Plant/Grounds Division. In this case, “person” can include an individual, organization, contractor, or company.

For students and employees, fines and appeals will be as determined by the Executive Council upon recommendation of the Physical Plant/Grounds Division.

8. PROHIBITED PRACTICES

Tree removal, destruction, injury, breaking, in whole or part, is prohibited without permission from the UAM Grounds Division, in consultation with the Campus Tree Board.

Tree topping, except in emergency situations, is prohibited

Nothing may be parked by or affixed on a tree (vehicles, bikes, signs, ropes, wires (except guy wires/cables on newly planted trees))

Minimize the use of street vehicles (pick-up trucks, etc.) on grass except when absolutely necessary – use carts to minimize soil compaction

9. DEFINITIONS

Caliper – tree trunk diameter measured at 6 inches above ground line (used for trees 4 inches in diameter and less)

Construction – any major earth-moving activity that impacts a tree, either above or below ground

Critical Root Zone – the area around a tree with a radius in feet of 1 to 1-1/2 times the DBH in inches

Diameter, breast height (DBH) – the diameter of a tree trunk measured at 4.5 feet above the ground

Hazardous tree – a tree having a defect that could cause the tree or part of the tree to fall on a target of high value (structure, sidewalk, parking lot, road, picnic table, etc.)

Topping – also known as heading, hat-racking, etc. Cutting a branch in the internode zone to leave a stub

Tree – a woody plant with a single or multiple stems that can grow to at least 10 feet in height at maturity.

10. COMMUNICATION STRATEGY

The tree care plan will be summarized in an article in The Voice.

The tree care plan will be posted on the UAM web site.

The tree protection guidelines will be included in all construction project specifications.

UAM Assembly meeting notice.

Current and new Grounds Division employees must become familiar with this Tree Care Plan; also use training videos/DVDs for tree care

The campus community will be encouraged to phone in comments/problems/praises (call Grounds Division 1018)

RECOMMENDED TREE LIST

Small trees (< 30 ft. tall)

<i>Amelanchier arborea</i>	Serviceberry
<i>Cercis canadensis</i>	Redbud
<i>Chionanthus virginica</i>	Fringetree
<i>Cornus florida</i>	Flowering dogwood
<i>Lagerstromia</i> spp	Crape myrtle

Medium trees (30-50 ft. tall)

<i>Acer rubrum</i>	Red maple (Autumn Flame, Red Sunset cultivars)
<i>Amelanchier canadensis</i>	Serviceberry
<i>Betula nigra</i>	River birch
<i>Ginkgo biloba</i>	Ginkgo (male only)
<i>Ilex opaca</i>	American holly
<i>Koelreuteria paniculata</i>	Goldenrain tree
<i>Magnolia virginiana</i>	Sweetbay magnolia
<i>Nyssa sylvatica</i>	Blackgum
<i>Pistacia chinensis</i>	Chinese pistache
<i>Pyrus calleryana</i>	Callery pear (Chanticleer or Aristocrat cultivars)
<i>Ulmus parvifolia</i>	Lacebark elm
<i>Zelkova serrata</i>	Japanese zelkova

Large trees (> 50 ft. tall)

<i>Fraxinus pennsylvanica</i>	Green ash
<i>Gleditsia triacanthos</i>	Honeylocust (Shademaster cultivar)
<i>Magnolia grandiflora</i>	Southern magnolia
<i>Pinus echinata</i>	Shortleaf pine

<i>Pinus taeda</i>	Loblolly pine
<i>Platanus occidentalis</i>	American sycamore
<i>Quercus alba</i>	White oak
<i>Quercus coccinea</i>	Scarlet oak
<i>Quercus pagoda</i>	Cherrybark oak
<i>Quercus phellos</i>	Willow oak
<i>Quercus rubra</i>	Northen red oak
<i>Quercus nuttallii</i>	Nuttall oak
<i>Quercus shumardii</i>	Shumard oak
<i>Quercus nigra</i>	Water oak
<i>Taxodium distichum</i>	Baldcypress

.

Other tree species as approved by the Campus Tree Board

PROHIBITED TREE SPECIES

<i>Pyrus calleryana</i>	Callery pear (Bradford cultivar)
-------------------------	----------------------------------