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The A B C's To Planting Trees In Dallas

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Urban Forest Advisory Committee

Dallas City Hall

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CITY OF DALLAS

Dallas is serious about trees. In a 2005 survey of Dallas citizens, 84% of the respondents said they were concerned with tree preservation and the planting of new trees in Dallas. However, the current status of the Urban Forest within the Dallas area is one of decline and disrepair. This is due to damaging pathogens such as Oak Wilt, invasive insects such as the Soapberry Borer, invasive and non-native plants like Kudzu as well as the development of raw land.

Not only are we losing forest, there is NO citywide effort to plant trees. Furthermore, there is NO citywide effort to manage the Urban Forest. The result is the loss of many millions of dollars in tree value and the many benefits trees and forests provide. Trees directly relate to the health, sense of wellbeing, quality of life, and economic future of all citizens.

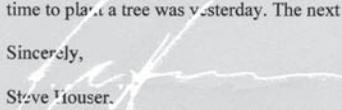
Our Urban Forest **MUST** have your support to sustain its existence and adequately provide for its health and growth. Trees and the Urban Forest are the green infrastructure that can grow in health and value when properly maintained. To continue to watch an asset worth billions of dollars decline in value is squandering the city's most precious asset, its Urban Forest.

With the recent establishment of the Dallas Urban Forest Advisory Committee in December 2005, Dallas is beginning to manage the Urban Forest in a proactive manner. A significant part of the committee's Strategic Plan for Urban Forest Initiatives involves various committee teams. These teams are devoted to specific initiatives and work to develop detailed plans regarding critical areas of forest management.

Mr. Kurt Kretsinger is the Team Leader for the Planting and Transplanting Team, based on his past success in planting trees in Dallas. His team is comprised of many members from the Dallas area which include Councilmember Pauline Medrano, Dick Coupe **Dallas County Master Gardener**; John Stack, Mike Sultan, **Chief Arborist for Dallas**; Michael Anderson, **Downtown Improvement District, Maintenance Committee Chair**; Fred Burrell, **Dallas County Cooperative Extension Agent**; and Ron Kovatis, **Groundwork Dallas**. The team has produced a tree planting guide to assist and educate the Dallas Citizens.

The Dallas Urban Forest Advisory Committee enthusiastically endorses these guidelines as a substantial resource for all Dallas citizens. This guide provides a tool that will help to create a greener and cooler Dallas for future generations to enjoy. Remember, the best time to plant a tree was yesterday. The next best time is today!

Sincerely,



Steve Houser,

Dallas Urban Forest Advisory Committee Chair
ISA Certified Arborist # TX-0107-0692



CITY OF DALLAS

A Chinese poet once wrote,

“ If you are thinking a year ahead, sow a seed.
If you are thinking ten years ahead, plant a tree.
If you are thinking one hundred years ahead, educate the people.”

Thinking along those lines, Dallas’s Urban Forestry Advisory Committee is providing this educational and resource guide in the spirit of planting trees for the future. Our goal is to make the citizens of Dallas aware of the many benefits of trees, the ease with which you can obtain and plant trees and how to maintain trees properly once planted.

Most individuals recognize the obvious benefits of trees. We see the aesthetic value they add to our everyday landscape. We recognize the shade they provide us. We appreciate the value they add to our property. We enjoy the wildlife they support. In short, we all know trees are good.

Trees are more than good, they are essential to sustaining life. Trees contribute to our social wellbeing by reducing stress, crime and patient healing. Additionally, they have enormous economic value through reductions in air pollutants, storm water runoff and energy costs. While recognition of this information among policymakers, developers, builders and other individuals having an impact on our urban forest is increasing, all too often short-term goals outweigh the measurable, long-term value trees add to our city. Simply put, trees are the only component of the city’s infrastructure that appreciates over time, and we need to cultivate and support efforts to continue raising awareness of that fact.

In this guide you will find additional information about the importance of trees, what type of trees to plant and where to find them, how to plant and maintain trees and a special section about xeriscape landscaping including a list of drought tolerant plant materials. Also contained in the guide is contact information for the city’s MOWmentum program (Street Services and Park and Recreation departments) and the urban reforestation program.

We hope this guide will help educate more people about trees and will provide the resources necessary to those individuals committed to making Dallas a greener city.

Sincerely,

Michael Sultan, ISA certified arborist #TX-1282(A)
Chief Arborist

SOURCES AND FUNDING FOR TREES

Public or Nonprofit Sources:

Urban Reforestation Program

City of Dallas Chief Arborist Philip Erwin 214.948.4117
www.dallascityhall.com/arborist/index.html

The City of Dallas encourages the growth of the urban forest by supplying trees and guidance to the citizens of Dallas. In order for projects to qualify for assistance by this program, the project must be sponsored wholly or in part by a planting group; such as community groups or City of Dallas departments. All trees requested through this program must be planted on public property that includes City of Dallas parks, recreation centers, public schools, approved medians and parkways.

** Trees from the Reforestation Fund cannot be used to meet tree mitigation or landscape requirements as prescribed by any City of Dallas ordinance.*

Responsibilities Of The City The City of Dallas arborists will provide guidance to the planting group in obtaining the proper approvals from city departments to plant on public property. Additionally, the arborists will assist the planting group in determining the suitability of a site for tree planting and recommend proper species and spacing requirements. Trees will be purchased for the projects from the Reforestation Fund (Ordinance 22053) through a purchasing procedure. Trees provided for planting will be between 2 and 4 inches in caliper at the time of planting. The trees must be selected from the "Approved Replacement Trees" list.

Responsibilities Of The Planting Group The planting group will provide individuals, a private company, or any other method to dig the planting holes, unload, water and plant the trees on the delivery/planting day. The planting group must commit to maintaining the trees for a period of at least two years from the time of planting. Maintenance includes watering, mulching, and weeding the trees on a regularly scheduled basis. In addition, the planting group must agree to replace the trees at their own expense if the trees die within two years of planting. The minimum amount of trees that can be requested is 10 per project; the maximum amount is 50 per project.

Proposal A planting group must submit a proposal to the city arborist that includes the following:

- Where the trees will be planted, including a drawing or sketch with measurements
- How many trees, what sizes and species will be planted
- How many participants will be supplied by the group on the delivery/planting day
- How the trees will be watered and planted on the planting day
- How the group will maintain the trees
- Include documented clearance from all utility companies for the proposed planting area
- Include a copy of the executed MOWmentum Agreement with the City of Dallas Streets department, when necessary

A planting group must address all of the above items in the tree request proposal submitted to the city arborist. Incomplete requests will not be processed.

SOURCES AND FUNDING FOR TREES

The City of Dallas Street Services MOWmentum

For more information go to the City's web site (www.dallascityhall.com), click on City Departments from the menu on the left, click on Street Services and then **MOWmentum**. 214-670-8139

The **MOWmentum** volunteer service agreement is a joint effort between our city government and residents to keep our right-of-ways and neighborhoods clean and beautiful. This program allows homeowner association groups, businesses and individuals the opportunity to adopt portions of public right-of-ways for the purposes of maintaining and improving the property. Financial support for such initiatives may be available through The **MOWmentum** Funds Program. This program was designed to encourage participation in improving a portion of the public right-of-ways by providing a partial reimbursement of eligible expenses incurred while implementing a **MOWmentum** Agreement. The City of Dallas may provide a one-time reimbursement for a portion of the eligible costs for landscaping. The City's financial participation in any single eligible **MOWmentum** Agreement is limited to one-half of the eligible costs or \$10,000, whichever is less. If the adopted site is within a low to moderate income area, currently eligible for Community Block Grant funds, the City may provide financial reimbursement for up to two-thirds of the eligible costs or \$10,000, whichever is less.

The Texas Trees Foundation www.texasreesfoundation.org
2100 Ross Avenue, Suite 975 Dallas, TX 75201 (214) 953-1184 Through the **Trees For Texas** program, the Texas Trees Foundation provides low cost trees to neighborhood associations, churches, schools, non-profit organizations, and municipalities to improve and beautify our public open spaces. Trees are available for planting on publicly owned land including medians, parkways, parks, school campuses and hike & bike trails. Trees may also be planted on property owned by religious organizations and other non-profits. Trees are available in a variety of native and adapted species suitable to the soils and climate of North Texas. Any qualifying organization or individual can participate in the **Trees for Texas** program. The Texas Trees Foundation Urban Tree Farm is located on the northwest side of the Richland College campus (adjacent to the DART bus stop) at 12800 Abrams Road, Dallas, Texas 75243-2173.

The National Arbor Day Foundation www.arborday.org
100 Arbor Avenue Nebraska City, NE 68410 888-448-7337 The National Arbor Day Foundation is a nonprofit organization whose mission is to inspire people to plant, nurture, and celebrate trees. The organization offers free trees to its members and special pricing for groups and individuals interested in planting trees. Their web site also provides valuable information on selecting and caring for trees.

Alliance for Community Trees www.actrees.org (301) 220 – 2251
5010 Sunnyside Avenue, Suite 305 Beltsville, Maryland 20705-2320

ACT is a grass roots, citizen-based nonprofit organizations dedicated to urban and community tree planting, care, conservation, and education. ACT's newest initiative is NeighborWoods, a nationwide effort to replant entire communities in partnership with the Home Depot Foundation. NeighborWoods supports grass roots partnerships to plant and tend shade trees in neglected urban areas. It provides the trees and training to involve local citizens, teach new skills, enhance affordable housing, and spur community development.

PLANTING AND MAINTAINING TREES

– Before planting

A healthy community Tree Planting begins with careful planning. With a little research and a simple layout, you can produce a landscape that will cool your environment in summer and tame the winter winds. Your well-planned layout will contain trees that grow well in the soil and moisture of your area. A proper landscape plan takes each tree into consideration:

1. **Species & Location:** select planting location / site selection for appropriate species (taking into consideration overhead power lines, nearby pavement and buildings, underground utilities and existing tree canopies)
2. **Height.** Will the tree bump into anything when it is fully grown?
3. **Canopy spread.** How wide will the tree grow?
4. **Is the tree deciduous or coniferous?** (Will it lose its leaves in the winter?)
5. **Form or shape.** A columnar tree will grow in less space. Round and Wide Spreading species provide the most shade.
6. **Growth rate.** How long will it take for your tree to reach its full height? Slow growing species typically live longer than fast growing species.
7. **Soil, sun, and moisture requirements.** Select method of irrigation (drip or bubbler preferred), Water the tree for at least the first 2 years, but do not over water. A newly planted tree requires 3-5 gallons of water per diameter inch of trunk per week during summer months and dry times, less if it rains. A thorough soaking is much better than light, frequent watering.
8. **Fruit.** No one wants messy droppings on busy sidewalks, driveways or pool decks.
9. **Hardiness zone** indicates the temperature extremes in which a tree can be expected to grow. (Arboday.org hardiness zones lookup.)
10. **Source:** determine tree source
11. **Time to plant:** arrange for a fall delivery / planting.

– Planting

If a tree is planted correctly, it will grow twice as fast and live at least twice as long as one that is incorrectly planted. Ideally, dig or roto till an area to the depth of root-ball or soil level of container and approximately 2-5 times the diameter of the root ball. The prepared soil will encourage root growth beyond the root ball and results in a healthier tree. Use an auger to dig the hole if possible (creates a properly shaped hole with loose sides to accommodate future root growth), use the native soil to backfill after the tree is in the ground and water as you backfill, gently working the air out of the soil with a shovel. In transplanting, be sure to keep soil around the roots. Always handle your tree by the ball, not by the trunk or branches. Don't let the root ball dry out. Help prevent root girdling by vertically cutting any roots that show tendencies to circle the root ball. After placing the tree, pack soil firmly but not tightly around the root ball. Water the soil and place a protective 3-foot circle of mulch around the tree but do not place against the trunk.

– After planting

Generally speaking, established trees need about 5-8 gallons of water per caliper inch of trunk diameter per week. Actual water amount required depends on temperature, rainfall, type of soil and soil conditions. Monitor the soil to make sure it is allowed to dry between water cycles to avoid saturated roots. Watering should be less frequent and for a long duration to promote a deeper, healthier root system.

PLANTING AND MAINTAINING TREES

9 Things You Should Know About Trees

1. **Don't Top Trees!** Never cut main branches back to stubs.
2. **1/3 and 1/4 Rules of Pruning;** Never remove more than 1/4 of a tree's crown in a season. Ideally, Lateral branches should not be raised more than 1/3 of the overall height of the tree.
3. **How to Make a Smaller Pruning Cut Under 3" in Diameter**
 - A: Make a partial cut from beneath. B: Make a second cut from above several inches out and allow the limb to fall.C: Complete the job with a final cut just outside the branch collar.
4. **The Value of Mulch:** A tree's best friend, mulch insulates soil, retains moisture, keeps out weeds, prevents soil compaction, reduces lawn mower damage, and adds an aesthetic touch to a yard or street.
5. **Where Roots Really Grow**
 - A: Because roots need oxygen, they don't normally grow in the compacted oxygen-poor soil.
 - B: The framework of major roots usually lies 4-5 feet below the surface. Absorbing roots are in the top 8-12" of soil.
 - C: Roots often grow outward to a diameter 3-5 times the height of the trees, depending on the species.
6. **Girdling Kills Trees:** Girdling is any activity that injures the bark of a tree trunk and extends around much of the trunk's circumference.
7. **How to Plant a Containerized Tree:** In transplanting, be sure to keep soil around the roots. Always handle your tree by the ball, not by the trunk or branches. Don't let the root ball dry out. Help prevent root girdling by vertically cutting any roots that show tendencies to circle the root ball. After placing the tree, pack soil firmly but not tightly around the root ball. Water the soil and place a protective 3-foot circle of mulch around the tree
8. **How to Plant a Bare-root Tree:** It is best to plant bare-root trees immediately, in order to keep the fragile roots from drying out. If you can't plant because of weather or soil conditions, store the trees in a cool place and keep the roots moist.
9. **Your Street Trees May be City Trees:** If you live in a town or city, the trees near the street (often between the sidewalk and street), are probably city-owned.

Resources:

Urban Forest Advisory Committee: www.dallastrees.org

The National Arbor Day Foundation: 888-448-7337
www.arborday.org/trees/righttreeandplace/

The Trinity Blacklands Urban Forestry Council Tree Planting Guide:
www.tbufc.org/feature/treeguide/treeguide.html

Planting tips: www.tbufc.org/feature/treeguide/plantingtips.html

Steps for Planting: www.tbufc.org/feature/treeguide/steps.html

Local Pests and Diseases: www.tbufc.org/pests.htm

Texas Forest Service Phone: 979-458-6606 www.ctucfc.org

Proper Tree Planting Contact: Matt Grubisich mgrubisich@tfs.tamu.edu.

<http://txforestservice.tamu.edu/shared/article.asp?DocumentID=749&mc=urban>

TreeLink 801-359-1933 www.treelink.org

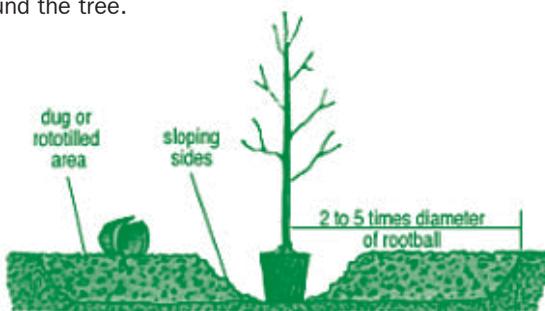
Community Trees: Trees Don't Cost, They Pay. <http://communitytrees.org/index2.html>

www.TexasTreeTrails.org

HOW TO PLANT A TREE

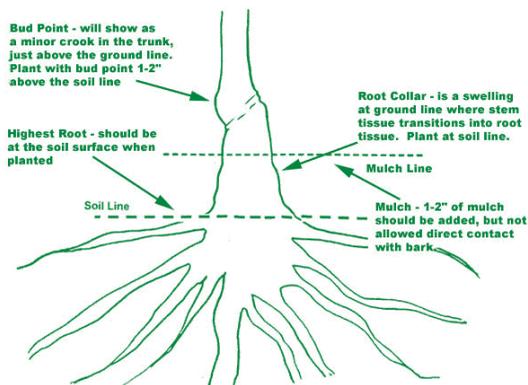
How To Plant A Containerized Tree

If a tree is planted correctly, it will grow twice as fast and live at least twice as long as one that is incorrectly planted. Ideally, dig or roto till an area 2-5 times the diameter of the root ball. The prepared soil will encourage root growth beyond the root ball and results in a healthier tree. In transplanting, be sure to keep soil around the roots. Always handle your tree by the ball, not by the trunk or branches. Don't let the root ball dry out. Help prevent root girdling by vertically cutting any roots that show tendencies to circle the root ball. After placing the tree, pack soil firmly but not tightly around the root ball. Water the soil and place a protective 3-foot circle of mulch around the tree.



How To Plant A Balled Tree

With balled and burlapped trees, dig a hole that is at least twice the width of the root ball and equal in depth to the root ball. Place the tree in the middle of the hole and stabilize the tree with back fill. If there is wire or a cage around the root ball, remove it at this time. Carefully cut away the burlap around the base of the tree and down around the sides of the root ball. It is best to remove the burlap entirely. If the burlap is untreated and is impossible to remove entirely you can leave the bottom portion of the burlap to naturally decompose. Be aware that if you leave any burlap exposed to air it will wick moisture away from the trees roots therefore decreasing its survival chances. Add the rest of the soil back into the hole, avoiding air pockets and soil compaction. Water the tree after planting.



HOW TO PLANT A TREE

How to Plant a Bare Root Tree

Planting your trees the day they arrive:
Follow the simple, step-by-step instructions below.

1. Remove your trees from the outer bag. The trees are twist-tied together with the roots in a plastic bag of hydrating gel.
2. Fill a bucket partly full of water. Untwist the root bag tie and remove your trees from the hydrating gel bag.
3. Carefully separate the roots of your individual trees.
4. IMMEDIATELY place your trees in the bucket, submerging the roots. It is very IMPORTANT to keep the roots moist. Soak your trees up to 3-6 hours.
5. Move your trees to the protected planting site, keeping the roots wet.
6. Using a spade or shovel to open your soil, create a hole as deep as your tree roots are long. The hole should be dug 2-1/2 feet or more in diameter. This gives the tree's new roots plenty of freshly disturbed soil, especially needed in our heavy clay soils.
7. Place one tree in a hole, deep enough so that the top-most root is covered by an inch of soil. The roots should lie naturally. Do not fertilize the first year to avoid "root burn".
8. Partially fill the hole, firming the soil around the lower roots. Shovel in the remaining soil. It should be firmly, but not tightly packed. Construct a water-holding basin around the tree. Continue this step until you have planted all of your trees.
9. Place a 2 inch layer of protective mulch in a 3 foot diameter around the base of each tree (but not touching the trunk).
10. Give each tree plenty of water. During dry weather, water your trees generously every week or 10 days during the first year.



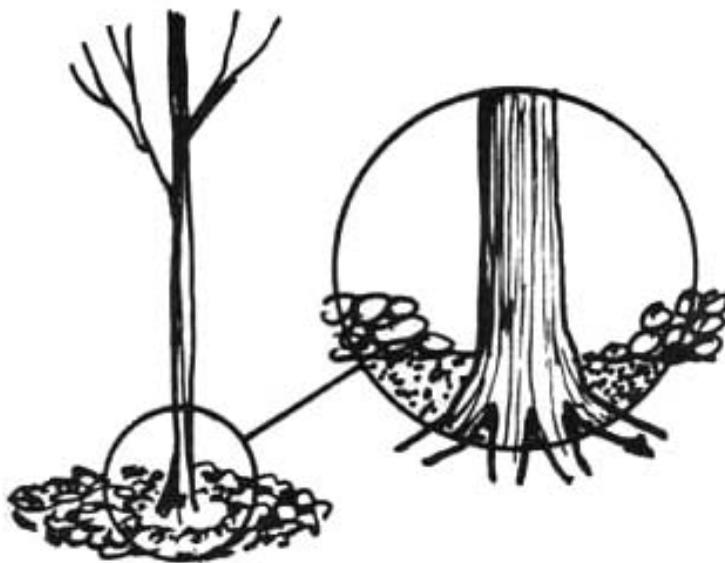
PLEASE NOTE: If your site is a feeding ground for any deer, rabbits, etc., it may be a good idea to fence your new trees.

If you cannot plant your trees right away, follow these guidelines:

Storing your trees for 2-5 days: Make sure the tree roots have hydrating gel around them in the root bag. If you find that the tree roots are dry, open the package and wrap wet paper towels around the roots and enclose them again in the root bag with the twist-tie. Place the trees and root bag in the original bag. Put the trees in a cool place without sunlight (such as a garage, basement, or they can even be stored in a refrigerator between (35-45 degrees F) until they are ready to plant and follow the simple step-by-step instructions above.

TREE MULCHING IS KEY

The single best and easiest thing you can do for trees is to try to duplicate the mulch which nature provides in the forest. Chipped wood, leaves or other organic matter make excellent mulch. It insulates the soil, retains moisture, helps keep out weeds, prevents compaction, protects bark from lawn mowers and even adds an aesthetic touch to the yard or street. Note: To prevent disease and reduce rodent damage, chip mulch should not touch the tree and should not exceed 3" in depth on a newly planted tree.



AVOID GIRDLING A TREE

Girdling roots on a tree can be a serious problem that will lead to the decline and premature death of that tree. A girdling root is exactly as it sounds; a root that grows around the stem or other roots essentially choking the tree. As the tree grows in circumference it encounters a girdling root and attempts to grow around the root. What happens over time is that the flow of water and nutrients is restricted to the above ground portion of the tree and the roots themselves. There is not an immediate impact, but rather a slow prolonged decline, possibly taking many years, resulting in the eventual death of the tree. It can also cause a weakened stem at the point where the tree grows around the root that can result in the tree blowing over or wind throw.



Avoid mower and weedeater damage.



WATERING TREES

Drip or “trickle” irrigation once was complicated and unreliable. Today, this technology is readily available for home use and has reached a state of high-level performance. In dry regions or areas subject to drought, it is the best possible method for watering trees and shrubs. This is because it enables you to provide the exact amount of water needed by each plant and to place the water directly on the root zone. Systems can be installed either beneath the ground or on the surface. They range in size from those used to water a few backyard trees to those used for irrigating orchards, windbreaks, or Christmas tree plantations.

All it takes to get started in drip irrigation is a kit available at most garden stores. It is a good idea to start small, then expand as you become more familiar with the equipment and the water needs of your trees. But considering the advantages over more traditional methods of watering, it is definitely a good idea to get started!

Some Advantages of Drip Irrigation:

- For Shade Trees:
- Cuts water use by up to 70% because less is lost to runoff, evaporation, sidewalks, weed patches and other non-target areas.
- Saves on water bills.
- Reaches trees or shrubs in odd locations that may be missed by sprinklers
- Saves the time and effort of watering with a hose or bucket. You can turn the system on and off manually, use a timer set at regular intervals, or connect the timer to soil moisture sensors for full automation.
- Controls the exact amount of water applied so that each plant receives only the amount it needs for optimum growth.
- Reduces stress caused by wet and dry cycles or soil temperature fluctuations
- Reduces the amount of mortality among newly planted trees and shrubs.
- Helps prevent disease by not wetting the leaves.
- Erosion on hilly terrain and water loss in windy weather are eliminated
- Continues to irrigate without disrupting work or other activities.

What plants are native to our area?

The Texas Forest Service, <http://texasforests.tamu.edu>.

Texas Smartscape web site, www.txsmartscape.com.

Texas Cooperative Extension, <http://dallas-tx.tamu.edu>.

Benny Simpson’s Texas Native Trees, <http://aggie-horticulture.tamu.edu/irbanebtak/natives> (Presented by the Texas Agricultural Experiment Station).

LANDSCAPE WATER CONSERVATION

Environmentally Friendly Landscaping

Water conservation is becoming very important for the residents of the Dallas area. Water impacts everything that the City attempts to do from business development and job formation to enhancing the quality of life for its citizens. It is important for all of us to do what we can to conserve this resource with new landscape methods using more native and drought tolerant plantings.

In urban areas, it is said that about 25% of the water supply is used for watering the landscape. In the summer, as much as 60% of the water used is for maintaining landscapes. Much of this water is applied very inefficiently.

We, as citizens, are able to help conserve water by changing the way we look at our landscape and the plantings that we use for these landscapes. The Texas Cooperative Extension Service, the City of Dallas Water Utilities Conservation District, and many of the area nurserymen and plant growers are recommending Water Wise, Earth Kind and Native species plantings as a way to conserve water. There are other names for this type of landscape plantings that include Wildscapes, Xeriscapes, Wildlife plantings and Smartscales. Xeriscapes, Smartscales, Earth Kind and Water Wise are trade marked. The most common name used in today's terminology is Earth Kind and Water Wise landscapes.

Earth Kind and Water Wise are a quality of landscaping that conserves water and protects the environment. It is the efficient use of water through the planting of drought tolerant plants.

There are seven basic principles that are used to develop water conservation through creative landscaping. A brief description of these principles follows:

1. Start with a plan. Creating a water efficient landscape starts with a well thought out design. Take the time to design your landscape prior to landscaping. Create different water use zones and allocate the water where it will directly contribute to the beauty of your home.
2. Analyze and prepare the soil. Soil is living; a healthy soil contains about 4 billion organisms' so have your soil tested. Soil test kits may be obtained from Texas Cooperative Extension by calling 214-904-3050, To locate your local County Extension office go to <http://county-tx.tamu.edu/> your County Extension Service. The test results will tell you what kind and amounts of fertilizer or nutrients your soil needs. Adding organic matter is a must in the form of compost/mulch.
3. Use practical turf areas. Limit the use of grasses as much as possible. They use more water and maintenance than most other plants. It may be that ground covers, shrubs, a deck or patio are a better choice than grass for a particular area.

When you mow your lawn, please don't blow or remove lawn clippings from your lawn after mowing. Remember "Don't bag it! Lawn clippings are good for increasing organic matter by nutrient recycling. Grass clippings left on your lawn will not contribute to thatch build up, but return valuable nutrients to the soil. Also, please don't blow lawn clippings into the streets because when it rains the grass clippings wash directly into our storm water drains going directly into our rivers and streams. Due to their high nutrient (nitrogen, phosphorus, etc.) content, grass clippings have a very undesirable effect on fish and all aquatic life.

LANDSCAPE WATER CONSERVATION

4. Select appropriate plants. Select plants that are adapted to your particular area. Use native or drought tolerant plants for hot, dry, south and west facing areas. But if your favorite plant is a water guzzler, plant it with other water loving plants in the same watering zone. Select plants that resist pests and use less water. Many pest and disease resistant varieties are now available. Native plants require less water and are drought tolerant. After they're established (2-5 years) many will thrive just on our limited summer rainfall most years, saving you time and money on watering. Call Texas Cooperative Extension Master Gardener's at 214-904-3053 to ask questions and request free brochures to start planning for spring or read more at the following web sites:

<http://aggiehorticulture.tamu.edu/>

<http://aggiehorticulture.tamu.edu/ornamentals/nativeshrubs/>

<http://www.tpwd.state.tx.us/>

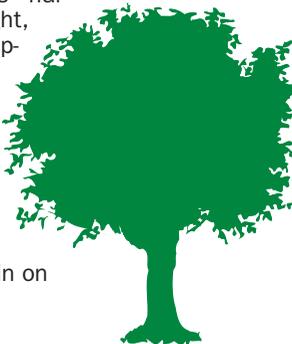
<http://www.tpwd.state.tx.us/huntwild/wild/wildscapes/>.

5. Water efficiently. Watch for the signs that plants need water. When you do water, water deeply. The goal is to give plants enough water without wasting it. Consider using soaker hoses and drip irrigation. Water early in the morning when the sun is low and the wind is calm. For the Dallas area during the hot summer months of 100 degree temperatures, it is recommended that 1 1/4 inches of water be applied to the lawn every 4 to 5 days.
6. Use mulches. Mulches reduce soil water loss and erosion. Mulch prevents soil compaction and keeps soil temperatures moderate. It also helps capture rainfall and prevents it from running off into the street and drainage areas. Mulch stops weeds, conserves water, and builds healthy soil for healthier plants. Spread mulch no more than 3 inches deep and 2-4 inches away from plant stems, depending on the size of the stem. This will reduce runoff and help the soil absorb and store moisture. Healthy plants grow in healthy soil. Soil fertility is one of the most important factors in having a quality landscape; low organic matter equals poor plant growth. Organic or commercial fertilizers will increase soil fertility for proper plant growth.
7. Use good maintenance practices. A well-designed landscape that uses Earth Kind principles can reduce maintenance by as much as 50 percent through proper mowing, once a year mulching and the elimination of unadapted plants that require lots of water and efficient irrigation. A properly maintained landscape is hardier and better able to withstand drought, freezing and pest problems. Mow the grass at proper intervals and at the proper height. (Refer to <http://aggie-horticulture.tamu.edu/>)

Check woody plants, such as trees and shrubs, for pruning needs once a year. Dead, diseased or damaged wood can be removed at any time.

Special thanks to Dallas County Master Gardeners www.DallasMasterGardeners.org

Fertilize in moderation and allow grass clippings to remain on the lawn as a natural fertilizer.



LANDSCAPE WATER CONSERVATION

A listing of some of the most frequently recommended shade trees for the North Texas area:

OVER 40 FEET

Shumard Red Oak
Live Oak
Arizona Cypress
Chinquapin Oak
Cedar Elm
Bur Oak

20-40 FEET

Big Tooth Maple
Panicked Goldenrain Tree
Lacebark Elm
Western Soapberry
Redbud

UNDER 20 FEET

Crape Myrtle
Desert Willow
Mexican Plum
Yaupon Holly
Japanese Maple

The references below give a more detailed listing of trees for North Texas. They also include a listing of Earth Kind plants for your landscape use.

All of us have a stake in the conservation of our natural resources, especially water. Water is the most commonly used, non-renewable resource we have. For without water, plants and animals will not survive. Our land will return to the desert and will become uninhabitable. Our planet will have come to its end.

References:

1. Xeriscape Landscape Water Conservation Texas Cooperative Extension Service Bulletin No. B-1584, Douglas F. Welsh Extension Horticulturist and William C. Welsh Extension Landscape Horticulturist The Texas A&M University System
2. Recommended Landscape Plant Materials for North Central Texas, Prepared by Dr. Steven George Extension Horticulturist The Texas A&M University system
3. Natural Beauties, Available from the City of Dallas DWU Water Conservation, City Hall, Dallas Texas 214-670-3155
4. 2006 Spring Catalogue, High Country Gardens, 2909 Rufina Street, Santa Fe New Mexico, 87507-2929. Phone number 800-925-9387
5. Other Miscellaneous publications available from Texas Cooperative Extensive Service 10056 Marsh Lane, Suite B-101, Dallas Texas, 75229-6071 214-904-3053
6. Trinity Blacklands Urban Forest Council www.tbufc.com

TREES CAN SAVE YOU MONEY

Trees provide a multitude of benefits. Unfortunately, much of the general public is not well informed on the subject. By increasing awareness of the benefits relating to trees, we can utilize current scientific evidence to help resolve many challenging issues to improve the livability of our cities. Proper planting of trees around your home proves to be beneficial in many ways. Studies across the nation show that residential home prices increase from 3% to 20% due to the presence of trees, depending on the type of trees, scarcity of treed lots and the maturity of existing trees.

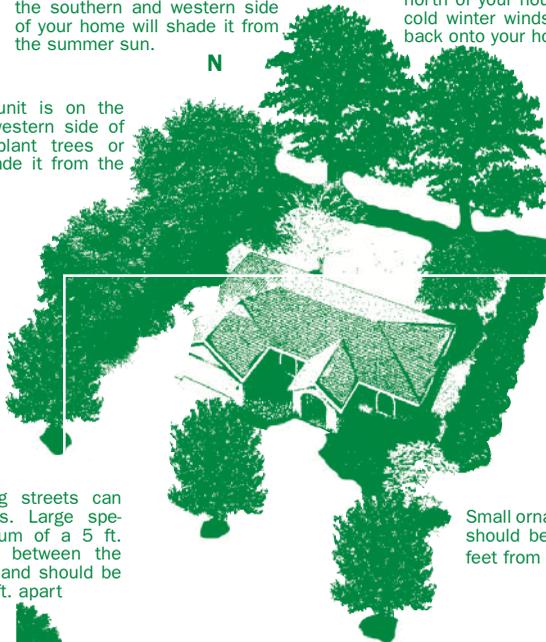
Dallas area neighborhoods with mature trees can be up to 11 degrees cooler than neighborhoods without trees. A one-degree rise in temperature equals a 2% increase in peak electricity consumption. The national Arbor Day Foundation calculates that 100 million additional mature trees in U.S. cities would save \$2 billion annually.

Large deciduous trees placed on the southern and western side of your home will shade it from the summer sun.

A row of large evergreen trees or one large, spreading evergreen tree north of your house will help block cold winter winds and reflect heat back onto your home.

N

If your A.C. unit is on the southern or western side of your home, plant trees or shrubs to shade it from the summer sun.

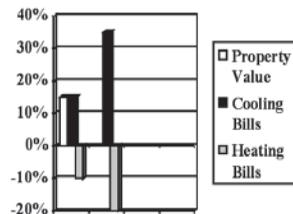


Trees planted along streets can reduce heat islands. Large species need a minimum of a 5 ft. wide planting area between the sidewalks and curb and should be planted at least 25 ft. apart

Small ornamental trees should be at least 10 feet from a building.

Select smaller species of trees if planting under or near power lines

Overall Dollar Savings "%"



TREES CAN SAVE YOU MONEY

Benefits of Shade

- Improved human comfort
- Reduced air conditioning cost
- Reduced peak load demands on utility companies
- Less sun damage to carpets, drapes and furniture
- Lower Heating bills
- Increased property value

Do's

- Choose deciduous trees that shade your home in the summer and reduce air conditioning needs
- Choose deciduous trees that shed their leaves in the fall to warm your home in the winter months
- Choose deciduous trees that will grow to be at least 25' tall and should be planted 20 feet south, east and west of your house.
- Choose Evergreens to block winter winds. Plant them in straight or curved rows, close enough together that their crowns will meet within a few years without over crowding.
- Choose trees to shade paved areas around your home to keep reflective heat away from your home.

Don'ts

- Plant large trees that will interfere with power lines
- Do not plant evergreen trees to the south that extend over the roof as they create too much shade to keep your home comfortable in the winter.

Selecting and Planting Trees and Shrubs

Trees and shrubs come in all shapes and sizes. How you select your trees and shrubs and how you plant them will directly affect your home's comfort and energy efficiency. Trees and shrubs have a life span of many years and can become more attractive and functional with age. But poor planning of landscape improvements often creates trouble. Ensure proper plant placement and minimal maintenance before you plant!

Shape Characteristics

Tree shapes in general are very diverse. Think of the difference in shape between an oak and a spruce. Consider how to use varying tree and shrub characteristics to maximum advantage when landscaping. The density of a tree's leaves or needles is important to consider. Dense evergreens, like spruces, make great wind- breaks for winter winds. If you are just looking to impede summer winds, choose a tree or shrub with more open branches and leaves. Such trees are also good for filtering morning sun from the east, while denser trees are better for blocking harsh, afternoon sun from the west during the summer.

Growth

Should you plant slow-growing or fast-growing tree species? Although a slow growing tree may require many years of growth before it shades your roof, it will generally live longer than a faster growing tree. Also, because slow-growing trees often have deeper roots and stronger branches, they are less prone to breakage by windstorms or heavy snow and ice loads. And they can be more drought resistant than fast-growing trees. Consider growth rate, strength, and brittleness when locating trees near walkways or structures. Ask whether the mature tree's root system is likely to damage sidewalks, foundations, or sewer lines. The smaller your yard, the more important it is to select a tree with manageable roots.

THE BENEFITS TO PLANTING TREES

By increasing the awareness of the benefits relating to trees, the public can utilize current scientific evidence to help resolve many difficult problems and improve the livability of our cities. Proper tree care and sound forest management programs are crucial to the health, longevity, and sustainability of our urban forests, as well as being a wise investment in our future.

1. Air Temperature and Energy Consumption

- Trees decrease air temperature and help to offset the “heat island” effect of hardscapes (streets, sidewalks, parking lots, etc.) by providing shade and by transpiration (the release of water vapor into the air).
- A single large tree can release up to 400 gallons of water into the atmosphere each day. Water from roots is drawn up to the leaves where it evaporates. The conversion from water to gas absorbs huge amounts of heat, cooling hot city air.
- Dallas area neighborhoods with mature trees can be up to 11 degrees cooler than new neighborhoods without trees. A one-degree rise in temperature equals a 2% increase in peak electricity consumption.

2. Air Quality

- Trees produce oxygen and store carbon dioxide – just the opposite of humans, which helps to clean and restore our air. They also trap pollutants, such as greenhouse gases, ozone, and particulate matter (dust, smoke, pollen, etc.).
- A typical tree removes 25-45 pounds of carbon from the air each year.

3. Water/Soil

- Planting trees along the edge of streams, wetlands, and lakes, helps to control storm water runoff. Trees in urban settings have a restorative effect that releases the tensions of modern life. Evidence demonstrating the therapeutic value of natural settings has emerged in physiological and psychological studies. The cost of environmental stress in terms of work days lost and medical care can be substantially greater than the cost of providing and maintaining trees, parks, and urban forestry programs.
- Tree canopy, in one study, reduced surface runoff from a one-inch rain over 12 hours by 17%.
- In natural watersheds with trees and vegetation, 5% to 15% of stream flow is delivered as surface storm runoff. In highly developed areas, over 50% of the stream flow is from surface runoff.
- Stormwater runoff will decrease as surfaces which allow penetration increase.
- As much as 50% of the sediment in some streams results from stream channel erosion attributable to streamside vegetation removal practices and channelization.

4. Trees provide food and shelter for wildlife.

THE BENEFITS TO PLANTING TREES

5. Numerous trees and plants have proven useful in phytoremediation or removal of toxic materials.
6. Trees can become living witnesses to our history and evidence of our cultures. Without a cultural history, people are rootless. Preserving historical trees offers lingering evidence to remind people of what they once were, who they are, what they are and where they are. It feeds our sense of history and purpose.
7. Economic, Health, and Psychological Benefits
 - Studies from all across the nation show that residential home prices increase from 3% to 20% due to the presence of trees, depending on the type of trees, scarcity of treed lots and the maturity of existing trees.
 - People turn to the urban forest, preserved by humans as parks, wilderness, or wildlife refuges, for something they cannot get in a built environment. The quality of human life depends on an ecologically sustainable and aesthetically pleasing physical environment. The surge of interest in conserving open spaces from people motivated by ecological and aesthetic concerns is growing.
8. Trees are a source of food for humans, i.e. Pecans, Walnuts, Almonds, etc. On a large scale, they require less fertilizer and keep the soil healthier than any other crop.
9. Trees can screen objectionable views, offer privacy, reduce glare and light reflection, offer a sound barrier (acoustical control), and help guide wind direction and speed.
10. Trees offer aesthetic functions such as creating a background, framing a view, complementing architecture, and bringing natural elements into urban surroundings.
11. Trees offer unlimited climbing challenges and good physical activity opportunities such as tree swings and tree houses.
12. Trees can attract wildlife to an area and help support a biodiversity of animals as well as habitat.
13. Bioremediation is the use of biological agents, such as bacteria or plants, to remove or neutralize contaminants in polluted soil or water.

trees are the answer

PROJECT NOTES

Water Schedule

Watering Trees: 20 Gallons per tree

Water Time Table:

1st Year Schedule:

5-month period, November thru March

Every 2 weeks unless it has rained.

7-month period, April thru October

Once a week, unless it has rained.

2nd Year Schedule:

7-month period, November thru March

Once every 3 weeks, unless it has rained.

5-month period, April thru October

Every one-two weeks unless it has rained.

Tree Maintenance

Year I

Fall:

Fertilize all trees with an organic mix that may contain some of the following: humates, seaweed extract, micronutrient complex, yucca extract, sugars, amino acids, vitamin B, vitamin K, N fixing bacteria, P solubilizing bacteria, and growth promoting bacteria.

The rate is approximately 5 gallons per tree after properly mixing with water.

Spring:

Monitoring for borer, prevention for new trees, should be done by a licensed applicator and treatments provided as necessary.

April-October: Repeat Deep root fertilization of all trees as above.

Year II

Fall: Repeat Deep root fertilization of all trees as above.

Spring: Continue monitoring for insect and disease control and treat as required.



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