12. Water trees frequently so roots fully establish. Light, frequent irrigation fosters the quickest establishment for trees. Following the initial few months of frequent irrigation, water weekly until plants are fully established. At each watering, apply about 1–2 gallons of water per inch of trunk diameter (i.e., 2–4 gallons for a two-inch tree). Never water if the rootball is saturated. In Florida, trees typically require about three months per inch of trunk diameter to become established, but could take longer depending on climate, watering schedule and species. Fertilizing during the establishment period doesn’t improve survival rates.

To establish a one-gallon size plant with average water requirements:

- Week 1 ............................................................... water daily
- Weeks 2–3 ............................................................ water every two days
- Weeks 4–6 ........................................................... water twice per week
- Weeks 7–12 ......................................................... water once per week
RECYCLE

Landscape maintenance activities — mowing, pruning, raking — generate yard waste that you can return to the soil, recycling valuable nutrients. It is easy to recycle yard waste. Try a few of these simple ideas to get started.

- Compost or mulch with yard wastes to reduce the amount of solid waste to be hauled away. Florida Statutes prohibits disposing of yard trash in landfills.

- Leaves and pine needles provide a source of mulch that is a real asset in the landscape, and it is virtually free! If your yard generates more leaf mulch than you can use, compost the material or share some with a neighbor.

- After pruning trees and shrubs, toss small cuttings into a compost pile or behind a shrub.

- Never dump grass clippings or other yard waste into storm drains or waterways. Such activities are illegal and can pollute water systems and clog drains. Grass clippings are a significant source of nitrogen, so keep them on the lawn and out of the water.

9. Add 10 to 20 gallons of water to the rootball. Fill any air pockets with soil.

10. Cover the backfill soil with mulch. Apply mulch to a minimum 8-foot diameter circle around the tree, if possible. Do not construct a berm from soil, since this soil could end up over the root ball several months later. Water the mulch well after spreading.

11. Stake the tree, if necessary. Staking holds the rootball firmly in the soil. If the tree moves in the wind, the rootball may shift, and emerging roots could break or the plant could fall over. Young trees might require staking until enough trunk strength develops. Remove staking materials after the tree becomes established. If not removed, ties and stakes can girdle a tree, which can kill it.

FYN Glossary Box

**Berm:** a raised earthen area

**Girdle:** to constrict or destroy the bark in a ring around the trunk or branch of a plant, cutting off flow of nutrients and water through the bark; ultimately the plant dies
special strapping mechanisms constructed for carefully lifting trees out of large containers.

5. **Position the trunk flare** (where the topmost root emerges from the trunk) slightly above the surface of the landscape soil. Most horticulturists agree it is better to plant the tree a little high than to plant it too deep. If the tree is a little too deep, tip it to one side and slide some soil under it; then tip it back the other way and slide more soil under the root ball. Once the tree is at the appropriate depth, place a small amount of soil around the rootball to stabilize it. Soil amendments are usually of no benefit. The soil removed from the hole usually makes the best backfill, unless it is substandard or contaminated.

6. **Straighten the tree in the hole.** Before you begin filling the hole with soil, have someone view the tree from two directions perpendicular to each other to confirm that it is straight. Fill in with some more backfill soil to secure the tree in the upright position. Once you add large amounts of soil, it is difficult to reposition the tree.

7. **At planting time, remove all synthetic materials** from around the trunk and root ball. This includes string, rope, synthetic burlap, strapping, plastic and other materials that won’t decompose in the soil.

8. **Fill the planting hole with backfill soil.** As you add the soil, slice a shovel down into it 20 to 30 times, all around the tree. Break up clay soil clumps as much as possible. Do NOT step

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**Recycle While You Mow**

**Following a few simple tips is all it takes to cultivate a lush lawn.**

- Leave clippings on the lawn to decompose and return nitrogen to the soil. Research indicates this practice improves soil fertility over time, gradually reducing the need for nitrogen fertilization up to 50 percent without a decrease in turfgrass quality.

- Never remove more than one-third of an individual grass leaf blade at one time.

- For procrastinators who don’t mow regularly, mulching mowers cut grass into smaller pieces, speeding decomposition.

- If grass grows too tall between mowings, spread clippings behind shrubs or add them to a compost pile to avoid unsightly buildup.

- Sharpen mower blades monthly to protect against pathogen invasion.

- If your yard isn’t turf intensive, you’ll mow less, saving time, energy and money. Where grass doesn’t serve a function, opt for low-maintenance groundcovers instead of grass, or underplant trees with shrubs and groundcovers.
Ideal Grass Height

Each turfgrass grows best when it is mowed to a specific height. Turf cut shorter than the recommended height will be stressed and more susceptible to pests and diseases.

- St. Augustinegrass (Stenotaphrum secundatum) and bahiagrass (Paspalum notatum): Keep at a minimum height of 3”–4”, except for dwarf varieties, which can be cut shorter.
- Centipedegrass (Eremochloa ophiuroides): When actively growing, mow every 7 to 14 days to 1 ½”–2”.
- Bermudagrass (Cynodon dactylon): Cut at a height of ¾”–1 ½”. This may require mowing one to three times per week.
- Seashore paspalum (Paspalum vaginatum): Cut at a height of 1”–2”.

3. Find the point where the topmost root emerges from the trunk and should be within two inches of the soil surface. If the topmost root is buried within the rootball, remove enough soil from the top of the rootball so the point where the topmost root emerges from the trunk will be within the top two inches of soil.

4. Slide tree carefully into the planting hole. To avoid damaging the tree when placing it in the hole, lift it with straps or rope around the rootball, not by the trunk. Use loose circling roots especially in the top half of the rootball. Selectively remove small roots that are kinked or circling. If many roots circle the bottom or sides of the rootball, slice the rootball about one inch deep at the points of a compass from top to bottom before planting. This reduces the likelihood of these roots causing problems later. If you cut large roots, the tree might go into shock and die.

Illustration by Morton Arboretum

Closer mowed turfgrass (left) is finer textured and denser, but has less underground growth of roots and rhizomes. A deeper root system develops in response to taller mowing heights (picture right).

http://hort.ifas.ufl.edu/woody/planting/TreeSelectionIntroduction.htm
Proper Tree Planting

Once you determine which plants you want to add to your Florida-Friendly Yard, it is time to break ground and start planting. Begin your landscape renewal by putting hardscape, such as walkways, irrigation systems or patios, into place first; then plant trees. Because trees are a more permanent addition to the landscape, site selection and proper planting techniques are essential. (This section is adapted from Dr. Ed Gilman's website, http://hort.ifas.ufl.edu/woody/planting, reprinted with permission.)

1. **Look up.** If there is a wire, security light or building nearby that could interfere with the tree as it grows, find a new planting site.

2. **Dig a shallow hole that is as wide as possible.** Shallow is better than deep! Many people plant trees too deep. Dig a hole that is 1½ to 3 times the width of the root ball. Use even wider holes for compacted soil and wet sites. Make sure the depth of the hole is slightly LESS than the height of the root ball, especially in compacted or wet soil. If you inadvertently dig the hole too deep, add soil to the bottom of the hole.

   Break up compacted soil around a newly planted tree to give emerging roots room to expand into loose soil. This will hasten root growth and encourage establishment.

**FYN Glossary Box**

**Establishment:** acclimating a new plant to the environmental conditions of the planting site

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Pruning

Pruning is selectively removing parts of a plant to improve plant health, control growth or enhance fruiting, flowering or appearance. Most often pruning removes shoots and branches.

**Prune using one of three techniques: thinning, heading back or hedging.**

**Thinning**

**What is thinning?** Completely removing side branches. In trees, cut side branches back to lateral branches or the main trunk. In shrubs, remove them to the ground.

**What does thinning do?** Gives a plant an open appearance. Where growth was dense before pruning, afterwards you can see daylight. Thinning encourages new growth inside the plant crown and increases light penetration and air circulation inside the crown. It also results in fewer branches that grow thicker, developing stronger resistance to wind damage.

**Heading back**

**What is heading back?** Selectively cutting the tips of twigs or young branches back to a bud.

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**FYN Glossary Box**

**Bud:** an undeveloped or compressed stem

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http://hort.ifas.ufl.edu/woody/stormprep.htm
What does heading back do? Produces a denser tree or shrub because it usually increases the number of shoots and leaves. Place pruning cuts so they aren’t visible by locating them inside the plant, covered up by remaining foliage. Use heading back on annuals at planting time to create more flowering stems.

**Hedging**

What is hedging? Removing shoots or branches from a shrub to maintain a dense row of plants that creates a barrier. Formal hedges feature neatly clipped shrubs; informal hedges let shrubs grow to their natural shape. Formal hedges must be clipped frequently during the growing season; informal hedges can be trimmed annually, enough to keep growth from overwhelming nearby walkways or structures or from shading lawns.

What does hedging do? Establishes and maintains a barrier that can provide privacy or form a windbreak. Correct hedging cuts help a hedge to remain healthy and grow actively from top to bottom. The way to accomplish this is to cut your hedge so that the top is narrower than the bottom. This ensures that light can reach each part of the hedge — which keeps the entire barrier healthy and growing. Make cuts during the growing season when growth is green and tender.

**Basic Pruning**

Use these simple steps as a guideline for every pruning job you tackle:

- Remove all dead, diseased or injured branches.
- Dip pruning shears and saws in a weak alcohol solution (one part alcohol to nine parts water) to prevent spreading diseases between plants.
- Remove branches that cross or touch each other and any that look out of place.
- If a shrub is too tall, heading and thinning may both be necessary. Don’t use hedge shears, but cut each branch individually to different lengths with hand pruners. This maintains a neat informal shrub with a natural shape.

**Florida Yard Tip:**

Where Are Tree Roots?

A tree resembles a wine glass placed on a dinner plate. Consider the base of the wine glass as the part of the trunk where major roots flare outward. The dinner plate represents the rest of the root system, which extends far beyond the **drip line** — up to five times the canopy’s diameter, depending on the species. Vertically speaking, most tree roots are located in the top two inches of soil, where oxygen is available through exchange between the soil surface and atmosphere.

**FYN Glossary Box**

**Drip line:** the circle that forms at the ends of the branches of a tree where water drips off the leaves onto the ground

http://www.plantatlas.usf.edu/
Landscape Design

Landscape design combines art and science to create functional, aesthetically pleasing and ecologically sound surroundings that complement a home or other structure. Many elements of art — including color, form, line and texture — interact within a landscape to produce the design principles of unity, balance, simplicity and focus.

In a landscape, plants fulfill dual roles: they form eye-pleasing scenes and are a key to reducing energy use and protecting our natural resources. For example, landscape designers often recommend grouping plants into masses to unify the design of plant beds. Groups of three, five or seven plants are visually pleasing to the eye — but this design technique provides environmental benefits as well. Trees planted in groups provide more atmospheric cooling than the same number of evenly spaced, isolated trees. And, as already noted, trees planted with accompanying shrubs and groundcovers beneath them form effective windbreaks.

For a more thorough overview of the artistic elements of landscape design, search for appropriate articles on the EDIS website (http://edis.ifas.ufl.edu), or consult a professional landscape architect.

Color in the Landscape

Choose two or three colors that complement each other and repeat this color combination throughout the landscaped area. This creates a scene that's visually attractive, and the repetition of color draws your eye through the planting beds so that you take in the entire scene — and not just one small piece of it.

Calling the Professionals

If you are unsure about proper pruning techniques, consider hiring a Certified Arborist to prune your trees. An arborist is a specialist in the care of individual trees. Certified Arborists are knowledgeable about the needs of trees and are trained and equipped through continuing education administered by the International Society of Arboriculture to provide proper care.

To find a Certified Arborist in your area, check out the International Society of Arboriculture's website, http://www.floridaisa.org and search by ZIP code.

Pruning trees can be a technical, detailed and dangerous process. Learn more about it online at http://hort.ufl.edu/woody/pruning.

Certified Arborist: an arborist who has passed an exam and receives, on a regular basis, continuing education administered by the International Society of Arboriculture or another certifying agency.
Florida Yard Tip:

Reduce Your Pruning Load
Keep pruning chores to a minimum by doing things the environmentally friendly way.

1. Select slow-growing plants.
2. Place plants far enough from walkways, driveways or buildings to allow them to reach maturity without encountering obstructions that require hauling out the pruners.
3. Forget the clipped, formal look. Soft, flowing, natural lines are attractive and easy to maintain.

To determine which plants to remove, consider this checklist:

- **Unhealthy and invasive plants** are not worth saving. Read more about invasive plants on page 32. Also, don’t think twice about removing plants that are ill-suited for your site. A plant that requires tender loving care to survive may not prove worth the effort in the long run.

- **Foundation plants** located too closely to walls block air currents and prevent access for home maintenance. Mark these plants for removal.

- **Discard tightly spaced plants.** Over time, tight spacing fosters moisture problems, which can lead to disease problems and stress the plants.

- **Plants under eaves** often prove problematic; they may not receive adequate rainfall or may be damaged by the force of rainwater dripping from a gutter. Consider carefully before keeping these plants.

Once you know which plants you intend to save, ensure that roots are not damaged through construction activities or soil compaction, which slows growth. Avoid disturbing the root zone of these plants in any way. This includes driving over them with heavy vehicles, digging into the root zone area or mounding soil against the base of plants. To protect trees, construct barricades at the edge of the canopy dripline to prevent construction equipment from driving over roots. Even though this does not protect the entire root system, it will improve your trees’ odds for survival.

Trees particularly sensitive to soil compaction include beech (Fagus spp.), dogwood (Cornus spp.), sassafras (Sassafras spp.), tupelo (Nyssa spp.), pine (Pinus spp.), white oak (Quercus alba), black oak (Quercus velutina) and most nut trees, such as black walnut (Juglans nigra), hickory (Carya spp.) and pecan (Carya illinoinensis).
Soil mounded against the base of this tree could result in slow decline and eventual death, even years after the problem is corrected.

Plant Sorting: To Keep or Not to Keep

Once you decide that you want to change your landscape, it is wise to keep some of the plants you already have. In an established landscape, retaining trees, shrubs, perennials and other plants will save you money — and it also preserves established wildlife habitat. If you are dealing with new home construction, leaving plants in place will help reduce erosion. The trick is knowing which plants to keep. Follow these simple guidelines to sift through your botanical choices:

- **Keep healthy plants** that show good form and are growing in appropriate locations. Consider pruning healthy, overgrown shrubs or trees if the only reason they are on your discard list is due to appearance. Pruning is less costly than replacement, especially when you are dealing with a mature plant.

- **Retain individual trees with long lifespans.** Some examples are live oak (Quercus virginiana), sweetgum (Liquidambar styraciflua) and bald cypress (Taxodium distichum). Mature laurel oak (Quercus laurifolia), water oak (Quercus nigra), silver maple (Acer saccharinum), cherry laurel (Prunus caroliniana) and wild black cherry (Prunus serotina) are less desirable trees because of their relatively short lifespans.

- **Save clusters of trees and the plants growing beneath them.** Trees growing in groups or shady forests often grow very tall and narrow. If the site is cleared, an isolated tree becomes vulnerable to wind damage and could snap during a windstorm or hurricane. For this reason, it is best to leave trees in clusters. The cluster should include the trees along with any groundcovers or native shrubs growing beneath them. This botanical trio of trees, shrubs and groundcovers buffers wind.

Raking

Deciduous trees reduce energy costs by shading a house in summer and, after leaves fall, by allowing sunshine to heat a house in winter. Many new Floridians avoid having deciduous trees in their yards because they believe that fallen leaves require raking. If you desire high-quality turf under trees, then you should rake leaves to improve light penetration to the turf.

If you do not want turf, permit leaves to remain under trees to form a self-mulching area. Leaves add nutrients to soil as they decompose. If aesthetics are an issue, plant shrubs under trees to avoid raking. They will benefit from decomposing plant litter and help to hold leaves in place so they won’t clutter the landscape.

Composting

A common misconception about plant care is that plants require fertilizer. Plants need nutrients, but they might not need added fertilizer. That is because as organic matter decomposes, nutrients are released into the soil in a form that plants can take up. Some key nutrients for plants include nitrogen, phosphorus, potassium, magnesium, calcium, zinc, iron and manganese.

http://www.nrcs.usda.gov/feature/backyard/
A great way to supply some of these key nutrients to plants while recycling yard waste is by adding compost, which you can make from yard or kitchen waste. As compost decomposes in soil, it releases essential nutrients. Add generous amounts of composted material frequently to soil and it can create the perfect medium for sustained plant health.

**Adding compost to soil can:**

- Improve soil structure, texture and aeration.
- Increase the water-holding capacity of soil.
- Help loosen compacted soils.
- Promote soil fertility and stimulate root development.
- Create a favorable environment for microorganisms, earthworms and insects that are nature’s “soil builders.”

Composting can be as simple as placing leaves, grass clippings and small cuttings behind shrubs or in a hidden corner of the yard and letting nature take its course. Homemade or manufactured compost bins allow you to easily incorporate kitchen waste, such as vegetable and fruit scraps, eggshells and coffee grounds. Numerous types of compost bins are commercially available; many are attractive. Gardening magazines, catalogs and garden centers are good sources for composting products. For more information, visit Florida’s Online Composting Center at [http://compostinfo.com](http://compostinfo.com).

**FYN Glossary Box**

**Composting:** the process of converting plant and animal waste into useful soil additives

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**Soil pH.** Test your soil's pH (acidity/alkalinity). In general, sandy coastal areas are usually alkaline (high pH), while inland areas are acidic (low pH). But different areas on the same property may have vastly different soils, so site-specific pH testing is a good idea. For instance, you might want to test the pH in each bed where you will grow a different kind of plant.

Concrete slab foundations, brick, mortar, plaster and other building materials are strongly alkaline. These materials leach into surrounding soil, drastically changing the pH over time. For this reason, azaleas (*Rhododendron*), flowering dogwoods (*Cornus*), flame-of-the-woods (*Ixora coccinea*) and other acid-loving plants should not be planted near the concrete foundation of a home.

Knowing your soil’s pH will also help you make better use of plant reference guides, which often provide this information along with other requirements for plants listed. Although many plants tolerate a wide pH range, they do best when planted in the right soil. Modifying soil pH is only a temporary solution and not recommended. Contact your county’s UF/IFAS Extension office for information on soil testing services in your area.

**Compacted soil.** Many new homes are built on a raised platform of compacted “fill dirt” imported by construction companies. Such compacted soils don’t absorb water readily and restrict plants’ healthy growth. If you have a landscape that has compacted soil, amend the soil with organic matter as you add planting beds.

**Hardpan.** Some soils have a sub-layer of hardpan, rock or shell, which limits root penetration, essentially establishing a barrier to plant roots. Always examine your soil to a depth of about 18 inches before making final plant selections. If you intend to plant deeply rooted trees that will grow large, examine soil to a depth beyond 18 inches. Your county extension agent can guide you on how deep to check soil.
Soil Know -How

In much of Florida, “soil” and “sand” are almost synonymous. The exceptions to the sand-soil situation occur in three main locations:

1. In Miami-Dade County the soils are clays; drainage is slow.
2. In the Keys there is really no soil at all — it is rock.
3. In parts of the Panhandle the soil is reddish clay.

For the rest of the state, where the soil is essentially sand, water and nutrients move downward quickly. As a result, sandy Florida soils usually dry out rapidly and are not compatible with plants having high water and nutritional needs. Sandy soils are also more likely to allow pollutants to leach into groundwater and waterways.

Improving soil. The simplest way to avoid problems in your landscape is to use plants compatible with your site. To grow roses or vegetables, you will need to amend the planting bed frequently by adding organic matter, such as compost. Organic matter retains moisture, provides nutrients and attracts beneficial organisms like earthworms. On average — in a typical Florida sandy soil — add organic matter to annual flower and vegetable gardens just before planting.

The easiest way to add organic matter to a planting bed is to put down a layer 2–3 inches thick, then mix it into the soil using a tiller, a shovel or a digging fork. In established planting areas, such as a rose bed, add organic matter as mulch around established plantings each spring, before the rainy season. Daily rains will help to work the material down into the soil. Add organic matter to soil each time you plant a shrub, perennial or annual.

FYN Glossary Box

**Mulch**: a material on the soil surface to conserve soil moisture, influence soil temperature and control weeds

A compost pile needs adequate moisture, oxygen, nitrogen and carbon sources to generate the right conditions for decomposition. The more closely you monitor and manipulate these factors, the faster decomposition can occur — and the sooner you will have rich compost for fertilizing plants and amending soil.

**Follow these tips for successful composting:**

- Bins are not necessary, but they help keep piles neat, retain heat and moisture and prevent complaints from neighbors. The minimum recommended size is one cubic yard (three feet square by three feet high).
- Composting can take as little as four to six weeks or as long as one to two years, depending on the size and type of material in the pile and the amount of attention you give it.
- Proper moisture is necessary for microorganisms to decompose the material. Covering the pile retains moisture and prevents the decomposing material from getting too soggy when it rains. You should not be able to squeeze water from the material produced at the bottom of the pile.
- Heat is important in composting, so a sunny location is better than a shady one.
- Combining different materials in the pile, such as grass clippings and leaves, will achieve the right proportions of carbon and nitrogen for effective composting.
Always bury kitchen waste inside the pile to discourage pests and to prevent odor from rotting fruit and vegetables.

Generally, for fastest composting, turn the pile with a pitchfork or stir it on a weekly basis in warm weather. Stabbing the pile with a length of pipe or rake handle will help aerate and mix the material.

Never place meat, animal fat or dairy products in a compost pile.

**Florida Yard Tip:**

**The Squeeze Test**

To find out if your compost pile is getting too much water, try this test. Grab a handful of compost from the bottom of the pile. Squeeze it. You shouldn't be able to squeeze drops of water from the composted material.

*Squeeze test illustrating adequate moisture (above) and excessive moisture (below).*

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**Florida Yard Tip:**

Is It Safe to Dig?

Do you know where your underground utilities are?

Digging without knowing where it is safe to dig can cause tremendous damage, interrupting your electric, telephone, cable television, water, sewer and gas service, even causing injury or loss of life! If you are doing any digging in Florida, state law requires you to notify the Sunshine State One Call of Florida two full business days before you dig. The toll free number is 1-800-432-4770.

Underground facility owners will locate any underground utilities in the area you wish to dig. The service is free. If you don't follow this procedure and underground lines are damaged, you could be fined. This can be a substantial amount if a fiber optics cable is cut. For more information, visit the website [http://www.callsunshine.com](http://www.callsunshine.com).