

Home Landscape Guide for Central Florida



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Preface

This booklet is intended primarily for first time homeowners or for homeowners who would like to make their home landscape more functional and eco-friendly. I realize that many homeowners now rely on landscape service companies to plant and maintain their turfgrass and other outdoor plants. However, it is still useful for homeowners to have some basic knowledge of landscape design and maintenance. The landscape service industry is largely an un-regulated industry. Some industry workers have extensive training, while others have little or none. So even if you don't plant or maintain your own landscape, being a knowledgeable consumer can help you make sure that the landscape operator doesn't perform unnecessary or ineffective services.

This publication is not comprehensive, but it cites websites that include plant photos and detailed research-based information on numerous landscape and gardening topics.

Central Florida's Natural Environment

Climate and weather

Central Florida has a sub-tropical climate, with a distinct rainy season and dry season. The rainy season typically starts in mid June and ends in mid September, while the dry season runs from October through May. November and April are historically the two driest months of the year in central Florida. (The old saying "April showers bring May flowers" doesn't apply to this area!)

Air temperatures during sunny summer days will consistently rise to the mid 90s inland, with air along the coast slightly cooler. Thunderstorms can lower air temperatures into the 80s or even high 70s – at least temporarily. Daily high temperatures during the winter are often in the 70s, with daily lows in the 50s. However, occasionally a strong cold front will move down the peninsula from

the north or northwest and lower nighttime air temperature to 32 degrees or below.

The duration of these freezes is usually quite short, often lasting a few hours or less. But, if the air mass over the region is very dry and the wind dies down and the sky is clear (cloudless), air temperature will drop quickly after sunset, and freezing conditions can last from 9 or 10 in the evening until after sunrise the next morning.

Just as coastal areas tend to be slightly cooler than inland areas during summer days, they tend to be slightly warmer than inland areas during winter nights. The Gulf of Mexico and Atlantic Ocean have a moderating effect on air temperature. This same moderating

effect can occur on property that is on the downwind side of lakes. This is why tropical plants have a higher survival rate when grown close to these bodies of water.

Central Florida is in USDA plant hardiness zones 9a and 9b, which have an average minimum temperature range of 20-25 and 25-30 F, respectively. Land close to the coast will be in zone 9b, while inland areas of central Florida are generally in zone 9a (<http://www.usna.usda.gov/Hardzone/hz-m-se1.html>).

Many of us try to create a tropical look in our yards. We plant thryallis, cassia, allamanda, and philodendrons (native to tropical America); pygmy date palms, crotons, hibiscus, and ixora (native to tropical Asia); plumbago and pentas (native to tropical Africa); arboricolas and bottle brush (native to tropical Australia); and shell ginger (native to the south sea islands).

Unfortunately, species that are native to tropical areas (especially the lowlands) are generally susceptible to chilling

injury (which can include slow growth, lesions on the leaves, and wilting), and this injury can occur at temperatures above 32°F.

Chill-sensitive plants tend to have a high percentage of saturated fat in their cell membranes, which solidifies at a relatively high temperature, resulting in a loss of membrane function and subsequent damage. Depending on the amount of saturated fat in their membranes some species may be damaged when temperatures fall to the mid to upper 30s, while the most chill-sensitive plants, such as some orchids, may be damaged when exposed to temperatures in the 40s and 50s.

When air temperatures drop below 32, injury to plants is caused primarily by the formation of ice crystals within cells. Aqueous solutions expand as they freeze and this expansion ruptures the cells. Freeze-resistant species have mechanisms to limit the formation of ice crystals. For example, antifreeze proteins have been identified that bind to ice crystals and prevent or slow further expansion.

Soil

Most of the top soil on home sites in Central Florida consists of sand, and has very little silt, clay, or organic matter. Therefore, it has low water and nutrient holding capacity.

Typically, the soil around a house in Central Florida is well drained – unless the site was improperly graded. This could include the removal of top soil prior to construction of the house and failure to replace it after construction is

completed. Also, heavy equipment, used during construction, can compact soil to a degree that reduces the ability of water to move through the soil quickly.

For a more detailed discussion of this subject, see Preplant Soil Assessment for New Residential Landscapes in Florida (<http://edis.ifas.ufl.edu/ss534>).

Landscape design

Generally, the types and placement of plants in the home landscape can be determined by the function you want them to serve. Here are some possible functions:

- focus attention on your home's most outstanding attribute (which in most cases is the front entrance)
- shade the west, east and south windows from direct sunlight
- slow cold winter winds (which generally come from the north and northwest)
- create outdoor living and recreation areas
- block unsightly views
- provide habitat for wildlife
- provide fresh herbs, vegetables, fruits, and flowers for home use

A plant can serve more than one function. And in fact, on small residential lots plants often serve multiple functions. For example, in my home landscape, I planted a lemon tree to provide my family and friends with fresh lemons. But this tree also shades a west facing window from the afternoon sun and provides perches for small birds.

If you don't enjoy yard work and want to keep landscape establishment and maintenance costs to a minimum, strive for a simple design and choose plants

that are cold hardy, drought tolerant, and require little, if any, pruning. In central Florida, this includes trees such as winged elm, bald cypress, and crape myrtle; shrubs such as yaupon holly, walter's viburnum, and florida zamia; and ground covers such as asian jasmine and sunshine mimosa.

Include only as much lawn in your design as you need for recreation – because turfgrass requires more regular maintenance than just about any other type of plant.

Lawns continue to be the norm in America, despite the fact that large regions of the country (including Florida) have climates that are too hot, cold, or dry for turf grasses to grow naturally. Science and technology, in the form of new varieties, power mowers, string trimmers, irrigation systems, and synthetic fertilizer, weed killers, and pesticides, have made it possible for homeowners from Florida to California to grow turfgrass. Billions of dollars are spent annually on this landscape aesthetic, and yet many lawns fall short of what is considered ideal: a single type of grass, without brown patches, bare spots, or intruding weeds, kept neatly edged and mown to a uniform height.

Is a lawn – an area of seldom used space – really worth all the time, energy, and money we devote to it? In the last few decades there has been movement toward lower input landscapes. These include shade gardens and beds of low growing shrubs and herbaceous perennials separated by paths made with stepping stones or mulch. Ecologically, these alternative landscapes make more sense than a monoculture of non-native turf. And although beauty is in the eyes of the beholder, many now think they are more beautiful and interesting, as well.

Instead of scattering shrubs and trees throughout open areas, group them in mulched beds. This will make mowing easier and faster.

If you only have funds for a limited number of plants you're likely to get the most bang for the buck with a few

medium to fast growing shade trees. They can greatly reduce the heat load on your house – if planted in the proper location (see below) – and eventually will give you the opportunity to plant some interesting understory (shade-loving) plants.

By planting a tree, you can also help reduce the amount of carbon dioxide (CO₂) in the atmosphere. (CO₂ is a gas that has been linked to global warming.) Growing trees absorb CO₂ from the air and use the carbon to make wood. Trees sequester about 1.5 pounds of CO₂ for every 1 pound of new wood they produce.

Large evergreen shrubs, such as viburnum and podocarpus, can be used to block unsightly views, create privacy for outdoor living areas, and serve as windbreaks, but fencing can also accomplish these functions (often more quickly and with less regular maintenance).

A common mistake is to plant too many shrubs and trees. Give them room to reach their mature size, realizing that for plants purchased in small containers this can take three to five years for shrubs and 10 years or more for trees.

Years ago my family and I moved into a new house. There were a few medium sized oak trees in the front yard and a couple of small sabal palms in the side yard, but other than these native plants, our lot was pretty much a blank slate. My wife and I both have degrees in horticulture, so you'd think we'd know what to plant and where. But despite our training we've made plenty of mistakes over the years. One such mistake was planting a japanese privet (*Ligustrum japonicum*) a few feet in front of our house. We bought a three-gallon size privet, and our plan was to train this plant into a multi-stemmed specimen shrub. The plan worked until a few years ago, when we realized we could no longer keep this plant a reasonable size without distorting its shape and rendering it unattractive. Finally, I did the deed: I spent almost an entire day, sweating and grunting, getting rid of this plant, roots and all. The small, inexpensive privet, which we had purchased over a decade prior, had grown into a house-eating monster with a trunk circumference of two feet!

Unfortunately this scenario is all too common. I see overgrown shrubs covering up houses and partially blocking driveways and sidewalks all over my neighborhood. The most common culprits (in addition to ligustrum) are podocarpus (*Podocarpus macrophylla*), sweet viburnum (*Viburnum odoratissimum*), and Arbor-Vitae (*Thuja orientalis*).

So before you purchase a cute little plant and put it in your yard, consider its mature size and the work or expense that is involved in its removal.

A great way to add splashes of color to your landscape without using a lot of water is to grow annuals and herbaceous perennials in large sturdy pots filled with a commercial potting mix. Potting mixes, which are composed mostly of organic matter, have a higher water holding capacity than our native sandy

soils and therefore are more efficient mediums in which to grow drought sensitive plants. Usually just one to two gallons of water per pot will keep potting mixes moist for several days – or even longer if the pot is in a shady location.

Proper placement of shade trees in the home landscape

A.W. Meerow and R.J. Black have written an excellent article (<http://edis.ifas.ufl.edu/EH141>) titled *Enviroscaping to Conserve Energy: Trees for Central Florida*. Here are some of the highlights of the article:

- House walls are the most practical surface to shade because new tree plantings take many years to cast an effective shadow on the roof.
- In general, the target areas for shading are the walls facing west, east, and south –in that order. Though a south facing wall receives little direct sun on June 21st, by August the sun is low enough in the sky to increase considerably the heat load on this wall. Windows provide the most direct entry for heat into a house. Consequently, special attention may need to be given to walls containing the most windows.
- To provide effective shade within 5 years, plant the tree 7 to 20 feet from the wall. (The distance you choose should depend on the expected mature height and breadth of the tree.)
- Deciduous trees (i.e. trees that lose their leaves in the fall) are recommended for planting on the south, southeast, and southwest sides of the house. Their bare winter canopies allow the sun to warm the house during the day. Evergreen trees (i.e. trees that retain their leaves year-round) are recommended for planting at the northwest corner of the house. This type of tree, in addition to the shade it provides, can be a barrier to cold winter winds.

For more information on landscape design, see Florida-Friendly Landscaping at <http://www.floridayards.org/>.

Plant material

Trees

Mature shade trees are giant air conditioners. They not only help remove dust and other pollutants from the air, they cool the air (by dissipating heat from the surfaces of their leaves) in a process called transpiration.

Evaporative cooling takes place as a result of transpiration – as it also does when we perspire. So, by stepping under a big oak, you're, in a manner of speaking, letting the tree do some of the sweating for you!

Unfortunately, many new neighborhoods in central Florida don't have any mature

shade trees. They are on land that was formerly planted in pasture or citrus. Hopefully the developers of these neighborhoods have established trees that will someday provide homeowners and their kids, who are out mowing the lawn or playing ball, a pleasant respite on a sunny summer day. If they haven't and you live in one of these neighborhoods, or your yard, for whatever reason, is without shade, here is some information to help you decide which species of shade tree might be right for your site:

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- **Bald cypress.** Height*: 60-80 ft.; spread: 25-35 ft.; growth rate: fast. Resistant to high wind damage. Leaves turn a copper color in the fall.
 - **Callery pear.** Height: 30-40 ft.; spread: 30-40 ft.; growth rate: fast. This relatively short lived ornamental tree is native to China. The best known cultivar of the species is 'Bradford'. The fall color of callery pears, in some locations and in some years, can be spectacular, running the gamut from yellow to dark maroon.
 - **Chinese elm.** Height: 40-50 ft.; spread: 35-50 ft; growth rate: medium; Leaves turn yellow in the fall.
 - **Crape myrtle.** Height: 25-50 ft. (depending on variety); spread: 25-35 ft; growth rate: fast. This is one of our most popular landscape plants – probably because it has so much to offer: showy flowers, attractive bark, and fall color that starts off yellow before turning to a beautiful orange-red.
 - **Green ash.** Height: 50-100 ft.; spread: 30-70 ft.; growth rate: fast. The leaves of this tree turn yellow in the fall, although, in central Florida, the color is muted in most years. Female trees of this species produce seed that are food for many types of birds.
 - **Live oak.** Height: 40-80 ft; spread: 60-120 ft.; growth rate: medium. Resistant to high wind damage. This tree is essentially evergreen. It sheds its old leaves

shortly before new leaves emerge in the spring.

- **Red maple.** Height: 35-80 ft.; spread: 25-35 ft.; growth rate: fast. The most outstanding feature of this native species is its fall color, which can be yellow, orange, and red – sometimes all on the same tree. It does best when growing in moist soils.
- **Shumard oak.** Height: 55-80 ft.; spread: 40-50 ft.; growth rate: fast. Medium to high resistance to wind damage. Leaves turn shades of red and orange in the fall.
- **Southern magnolia.** Height: 40-80 ft.; spread: 15-40 ft. (size and shape vary among varieties); growth rate: medium. This is a durable, evergreen tree that holds up well to both high wind and coastal conditions.
- **Sweet-gum.** Height: 40-100 ft.; spread: 40-60 ft.; growth rate: medium. Medium to high resistance to wind damage. This native tree can produce some brilliant (orange and red) fall color. One down side of sweet-

gum: its hard spiny fruit, when on the ground, can be tough on bare feet.

- **Turkey oak.** Height: 30-50 ft.; spread: 30-50 ft.; growth rate: medium. This deciduous oak has turkey-foot-shaped leaves that turn shades of yellow, orange, and red in the fall.
- **Winged elm.** Height: 45-70 ft.; spread: 30-40 ft.; growth rate: fast. Medium to high resistance to wind damage. Leaves turn yellow in the fall.
- **Yaupon holly** (tree type). Height: 15-30 ft.; spread: 6-12 ft.; growth rate: medium. This native small tree is evergreen, but can produce an impressive display of bright red berries in the fall. Purchase a plant with berries on it (i.e. a female) if you want a berry-producing tree.

*Height and spread measurements are for mature trees.

For more details on these and other desirable trees, see the plant database at <http://floridayards.org/fyplants/index.php>.

Trees to avoid

Inherently, no tree is bad. Every plant has its place – but there are several that are not appropriate for small residential front yards.

- **Camphor.** Camphor can be a nice evergreen shade tree – in a large backyard or a park – but it's not suited for a small residential lot. It produces prolific numbers of black, pea-size fruit, which are good at staining cars, driveways, and sidewalks. Also, it's not easy to grow other plants beneath a camphor tree because of the dense shade it produces and the herbicidal effects of its leaf litter.

Despite being a non-native and somewhat invasive, camphor trees are still generally protected by local municipalities, although in Pasco County camphor trees can be removed without a permit and in the city of Temple Terrace only trees with a DBH (diameter at breast height) of 20 inches or greater are protected.

- **Cherry laurel.** This is another tree that produces lots of small black fruit. The fruit are not as messy as those of the camphor tree, but seeds from the fruit germinate readily and can result

in hundreds of seedlings coming up in the vicinity of the tree. Cherry laurel is native to Florida, but is generally not recommended for residential landscapes.

- **China-berry.** This fast growing non-native tree was planted by some of Florida's early settlers to provide quick shade. Unfortunately, it is weak limbed and breaks apart easily. Also, it produces numerous yellowish-tan fruit every fall that eventually end up on the ground. And, as with cherry laurels and camphor, the fruit gets spread around, resulting in seedlings coming up in shrubbery beds and other unwanted places.
- **Chinese tallow tree.** The leaves of this small deciduous tree can turn an attractive red in the fall. But, unfortunately, this species is invasive and considered to be a noxious weed by the Florida Department of Agriculture.
- **Silk oak** (which is not a true oak). This is another fast growing non-native. It drops leaves sporadically throughout the year, and is susceptible to high winds.

If you have any of these “trash” trees in your front yard and they are still small and not yet protected by local municipal codes, you might want to consider removing them. Several evergreen

alternatives are holly, chaste tree, bottlebrush, podocarpus, and southern red cedar. Deciduous alternatives include winged elm, chinese elm, and bald cypress.

Shrubs

There are many shrubs available for planting in central Florida. Here are some of my current favorites:

- **Beautyberry.** Native deciduous shrub that prefers shady locations, is drought tolerant, and produces attractive purple fruit in the late summer/early fall.
 - **Feijoa** (aka pineapple guava). Can be used to create sturdy, drought-tolerant hedges in sunny locations.
 - **Firebush.** Another native that grows well in semi-shaded areas. Produces orange-red flowers. Leaves and stems are killed by freezes, but the plant grows back.
 - **Florida zamia** (aka coontie). Low growing native that prefers dry conditions and thrives in either sunny or shady locations.
 - **Marlberry.** A native that is useful for creating a screen or hedge in shaded areas.
 - **Podocarpus.** Can be used to create sturdy, drought-tolerant hedges and screens in sunny or semi-shaded areas.
 - **Walter's viburnum.** Several varieties of this native shrub are available. It can be grown in sunny or shady locations and is drought tolerant.
 - **Yaupon holly.** There are several varieties of this native species that are small shrubs. It grows best in locations receiving full sun to partial shade. And like walter's viburnum, it is drought tolerant.
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Herbaceous perennials

Perennials are plants that have the potential to live for several years or more. Herbaceous perennials are perennials that are typically small in stature, have little or no woody tissue, and, in some cases, disappear (die back) for part of the year. (e.g. caladiums die back in the fall but their leaves return in the spring). Herbaceous perennials are often complimentary to larger, woody plants, and can help add diversity to the home landscape. For detailed information on this class of plant, see

Gardening with Perennials in Florida at <http://edis.ifas.ufl.edu/mg035>.

New types and varieties of herbaceous perennials, including ornamental grasses, are continually being made available through nurseries and garden centers. Before purchase, be sure to read the plant labels to determine if the plant is suitable for the situation you want to use it in.

Here are my current favorite herbaceous perennials:

- African iris
 - Bulbine
 - Liriope (especially for use along shaded paths and under a roof drip line on the north side of the house)
 - Mexican petunia ‘Purple Showers’
 - Ornamental gingers
 - Oyster plant
 - Red fountain grass
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Groundcovers

Groundcovers are low growing plants, often less than 1 ft. tall, with spreading habits. Certain groundcovers (e.g. asian jasmine, mondo grass, and english ivy) can be especially useful alternatives to turfgrass for shady locations. And

perennial peanut or sunshine mimosa can be used as a low maintenance alternative to turfgrass in sunny locations – if the area is not needed for sports activities and foot traffic is minimal.

Turfgrass

If you need a clean outdoor area for play or sports or for the pleasure of your pet dog(s), then a turfgrass lawn should be part of your home landscape. Unfortunately, as I mentioned in the section on landscape design, turf grasses have high maintenance requirements.

Even bahiagrass (which has the lowest maintenance requirements of the turf grasses adapted to central Florida) requires weekly mowing during the rainy season. Here are your choices and a link for detailed information on varieties and maintenance:

- Bahiagrass (<http://edis.ifas.ufl.edu/lh006>)
 - Bermudagrass (<http://edis.ifas.ufl.edu/lh007>)
 - St. Augustinegrass (<http://edis.ifas.ufl.edu/lh010>)
 - Zoysiagrass (<http://edis.ifas.ufl.edu/lh011>)
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Annuals

In the continental climates of the U.S., cool season flowering annuals are grown in the landscape from late spring to

midsummer, but in central Florida the time to grow these plants is generally from late fall to early spring.

Petunias and snapdragons

To me, petunias and snapdragons are tops for dependability.

Both can tolerate light frosts and neither is particularly prone to pests or diseases.

These annuals are also complimentary. Snapdragons are upright growers, while petunias like to spread. They can be planted together in a pot, planter, or in a bed that has been generously amended with organic matter.

One of my favorite combinations is pink flowered snapdragons planted with white flowered petunias. Mass plantings of yellow snaps and pink or red petunias can also be striking.

For best results, grow these annuals in full sun; fertilize lightly, but regularly;

and make sure the soil or potting mix around the plants does not get too dry. Also, be careful not to set the plants too deep or pile organic mulch up around the plants, as this can result in stem rot.

Maturing plantings of both petunias and snapdragons can be revitalized with selective pruning. Remove the spent flower spikes of snapdragons (this will stimulate additional flowering) and prune back the old and declining sections of petunias.

An added advantage of growing snapdragons in the garden is that they can be wonderfully fragrant, and are great as cut flowers for inside arrangements.

Coleus

This colorful plant used to be relegated to semi-shaded areas, but there are now varieties that do just fine in full sun -- and in late summer heat! Also, what I find advantageous about coleus, compared to many other bedding plants: the leaves are the source of color. Leaves are always there, whereas colorful flowers come and go.

Coleus work well in combination with other bedding plants. How about lime green coleus behind red or deep pink begonias? Or deep burgundy coleus behind yellow marigolds – for you FSU fans. Coleus such as ‘Rustic orange’ or ‘Defiance’ can also do a good job of filling in at the base of leggy shrubby hedges.

Coleus is mostly pest and disease free. However, they are susceptible to nematodes (microscopic worms that feed on roots). To prevent nematode damage, it is important to incorporate plenty of organic matter (e.g. compost) into the soil before planting. (Nematodes prefer to live in sandy, well drained soil.) Another control strategy, which works by excluding nematodes from the root system, is the pot-in-pot method of planting. See <http://floridafriendlyplants.com/Blog/post/2009/03/03/Pot-in-Pot.aspx> for details. Coleus can also be affected by downy mildew, although many new varieties are resistant to this disease.

Coleus is a very soft stemmed plant and is not tolerant of drought. The soil or

potting mix surrounding its roots should be kept moist (but not saturated).

Plants have a tendency to be beaten down in stormy weather if they are allowed to grow too tall, so keep them compact and well shaped by pinching back the stems often. But don't remove

more than 1/3 the length of a stem at any one time.

Coleus is relatively long-lived and a cheap source of color compared to other annuals. Plant them as soon as they become available in the spring and you will be enjoying a livened up landscape till frost.

Caladium is another plant that is grown for its leaf color (as well as shape). It is available in a wide variety of color combinations. It is low growing, with a

height of 1 to 2 feet, and is frequently used as a border plant in semi-shaded areas. Caladiums are also a popular potted plant.

Other annuals that can perform well in central Florida include

- Ageratum
- Amaranth
- Angelonia
- Black-eyed susan
- Celosia
- Coreopsis
- Gazania
- Pentas
- Marigold
- Sweet alyssum
- Wax begonia
- Zinnias

Citrus

I used to think citrus was the only type of fruit tree that could be grown successfully in central Florida without the use of pesticides – and that it would be long-lived. But now that citrus greening disease has taken hold in the state, growing citrus here has become more problematic. We can no longer plant an orange or grapefruit tree in the backyard and feel confident that it will bear reasonable crops of fruit for years to come.

Citrus greening disease can cause trees to decline rapidly, such that young trees may never produce the first fruit and mature trees become unproductive. What fruit are produced tend to remain green (thus the name greening disease). Citrus greening is an incurable bacterial disease that is spread by a tiny insect called the asian citrus psyllid. Unfortunately, no currently available varieties are resistant to greening disease.

Photos of various citrus greening symptoms can be found at <http://edis.ifas.ufl.edu/hs383>.

Another bacterial disease that has become a serious problem on citrus in Florida is citrus canker. The bacteria that cause this disease are not spread by an insect but by wind driven rain. Consequently, if a citrus tree in the home landscape is not close to other citrus trees, or if there is an effective windbreak between trees, it is less likely to become infected.

A tree that has canker disease may drop fruit prematurely, but otherwise the damage this disease causes to the fruit is only cosmetic. Scab-like or corky lesions form on the fruit surface, but the fruit is still edible and usable for juice. Sprays containing copper can be applied to the developing fruit to limit the number of lesions that develop.

Tangerines are least susceptible to canker disease, followed by ‘Valencia’ orange and tangelos. Lemons and ‘Navel’, ‘Pineapple’, and ‘Hamlin’ oranges are moderately susceptible, while grapefruit and key limes are highly susceptible to canker.

All citrus trees for sale are required to have a tag with the registration number of the propagating nursery on it. This is important because the tag lets you know that the tree has been certified free of greening and canker diseases. And, certainly, if you are going to have success with citrus you need to start off with a tree that is free of these diseases.

After planting a disease-free tree, proper irrigation, fertilization, and weed control are important. For details on these practices see the online article ‘Citrus culture in the home landscape’ <http://edis.ifas.ufl.edu/hs132>.

Other fruits

Blueberries and strawberries can be grown in central Florida, but their maintenance requirements tend to be more exacting than those for citrus. Please see <http://edis.ifas.ufl.edu/mg359>

and <http://edis.ifas.ufl.edu/hs403> for specific information on growing blueberries and strawberries, respectively.

Vegetables and herbs

March through May is a great time to grow a number of vegetable and herb crops in central Florida. This 3-month period starts after the danger of frost is over and ends before the hot, rainy weather, conducive to many plant diseases, begins.

First, decide what crops to grow and where to plant them. It’s best not to plant the same or a closely related crop repeatedly in the same area. For example, if you planted tomatoes in the northwest corner of your backyard last year, don’t plant tomatoes or peppers (which are in the same plant family as tomatoes) in that area this year.

Consider planting beans or some other unrelated crop in that area instead. This technique is known as crop rotation, and it helps minimize pests, especially soil-borne ones.

A garden journal can be used to keep track of the details of past crops. Or now, with digital photography, you may find it easier to take some pictures of your garden during each season and place these in a labeled folder on your computer.

You can grow plants directly in the soil, at ground level, or in raised beds – often made by filling lumber or block bound enclosures with a mixture of compost, peat, and weed-free top soil. Also, many types of vegetable and herb plants can be grown successfully in pots filled with a high quality potting soil. One of the advantages of planting into raised beds

or pots vs. into a soil that's mostly sand is that mixtures high in organic matter do a better job of retaining water and fertilizer. They are also less likely to contain high numbers of plant parasitic nematodes.

The pH of the soil or planting mix should be between 5.5 and 7.0. The University of Florida Soil Testing Lab will determine pH and provide recommendations for adjustment (if needed) for \$3 per sample. Call your county extension office (listed in the appendix) for details on this service.

Insect pests are likely to damage plants at some point during the season. See Insect Management in the Home Garden (<http://edis.ifas.ufl.edu/vh036>) for a description of common insect pests and information on various control measures.

Popular warm-season crops include:

- **Cucumbers.** Cucumbers can produce 2-5 pounds of fruit per plant. Consider planting the 'Spacemaster' variety if space is limited. Applications of a multi-purpose fungicide containing chlorothalonil and labeled for use on cucumber may be helpful if symptoms of powdery mildew disease are observed.
- **Peppers** (sweet and hot). Peppers are small bushes, but benefit from staking, especially if they're planted in a windy location. Expect a yield of between one half and one pound of fruit per plant.
- **Snap beans** (bush type). Make several plantings, two weeks apart (e.g. sow seeds on March 1st, 15th, and 29th). The average yield is about one pound of beans per foot of row. Water once or twice a week during dry weather.
- **Southern peas.** The 'California No. 5 Blackeye' variety is resistant to root-knot nematodes.
- **Tomatoes.** Tomatoes are vines, so they should be staked or grown in wire cages. Expect a yield of two to three pounds of ripe fruit per plant. 'Solar Fire' is a recommended large-fruited variety, and 'Sweet 100' a recommended small-fruited variety.

All of the crops mentioned above benefit from mulch, which helps to moderate soil temperature, conserve soil moisture, and control weeds.

- **Basil, chives, mint, oregano, rosemary, and thyme** are easy herbs to grow during the spring. All do well in pots in a sunny location, although mint, oregano, rosemary, and thyme can also be

grown in partial shade. Mint, especially, should be kept in a pot, as it tends to be aggressive and spread beyond its allotted space.

Popular cool-season crops include:

- **Broccoli.** Cool days and nights are important for success, so plant before the end of January. Space 12-18 inches apart in the row. Harvest small multiple side shoots that develop after the main central head is cut.
- **Cabbage.** Buy only healthy looking transplants, and plant before the end of January. Use an insecticide that contains *Bacillus Thuringiensis* (Bt) to control looper caterpillars.
- **Collards.** Collards can be planted through the end of February. Space 12-18 inches apart in the row. Watch for leaf-eating caterpillars, and if they are present spray plants with a Bt insecticide. Start picking outer leaves when plants are 1 foot tall.
- **Lettuce.** Rodale's Encyclopedia of Organic Gardening notes that

lettuce greens are so easy to grow, so nutritious, and so delicious picked fresh from the garden, that everyone should grow them. If you grow them from seed, sow the seeds very shallow as they need light for germination. Thin to 8-12 inches between plants.

- **Onions.** The recommended bulbing variety for Florida is 'Granex' (a yellow onion). Space 4-6 inches apart in the row.

As with warm-season vegetable crops cool-season crops perform best in sunny, well drained locations.

Be sure to consult the University of Florida's web link http://edis.ifas.ufl.edu/TOPIC_Vegetable_Gardening for detailed information on how to grow a successful vegetable garden in Florida.

Plant maintenance

Watering

Even during the rainy season, which averages about 2 inches of rain a week – more than enough to meet the needs of our most drought-susceptible turf and landscape planting – supplemental water is needed. This is because the rain is not

evenly distributed. Some weeks your landscape may receive several inches or more of rain and other weeks none.

So here are some tips to make the most of what nature gives you:

-
- Buy a rain gauge (they're inexpensive and available at almost any garden center or hardware store).
 - Don't water if you've received $\frac{3}{4}$ inch of rain or more within 24 hours of your designated watering day(s). (Designated watering days are restrictions put in place by water management districts and local governments.)
 - If there is a high chance for rain on your designated watering day or the day after, don't water – unless your lawn is showing symptoms of drought stress (i.e., has areas of blue-gray color and leaf blades are folding in on themselves) or some of your annuals are wilting. Then consider spot watering (instead of running your whole irrigation system).
 - At current public water supply rates, it cost over \$10 to apply an inch of water to a typical residential landscape. Save that money, if you can, and save that water for the days when you really need it!
 - Established palms and trees generally don't require supplemental irrigation, while most established shrubs can survive just fine without rain or irrigation for several weeks – and probably longer if well mulched.
 - Newly planted shrubs should receive 1-2 gallons of water (i.e. the capacity of a standard watering can) every few days for six months, after which they can be treated as established shrubs.
 - Most vegetable garden plants, annuals, and lawns require irrigation once or twice a week if rain is lacking – although bahiagrass lawns are quite drought tolerant.
 - A reasonable schedule (assuming no rainfall) would be to apply $\frac{1}{2}$ to $\frac{3}{4}$ inch of water to drought susceptible plants twice a week until mid November, and then just once a week during the latter half of November and all of December and January. (Historically, November through February in central Florida is a period of low rainfall (only about 2 inches per month, on average). But it is also a time of short day lengths and relatively low light

intensity – environmental conditions that reduce a plant’s water requirement.)

- The best time to irrigate is early morning. Irrigating at this time minimizes the amount of water lost to evaporation. The worst time to irrigate is late afternoon or early evening because this can result in leaves staying wet overnight and being more susceptible to infection by disease causing fungi and bacteria.
- To determine how long it takes your irrigation system to apply $\frac{1}{2}$ to $\frac{3}{4}$ inch of water: place several empty tuna cans (or similar straight-sided containers) in a straight line from your sprinkler to the edge of the watering pattern; turn the water on for 15

minutes; measure the depth of water in each can; calculate the average depth; and, finally, multiply this number by four to obtain the irrigation rate in inches per hour.

- Four to seven o’clock in the morning is generally considered the best time for automatic irrigation systems to run, but I’ve found it helpful to have the system running after daylight so I can make sure all the sprinkler heads are working properly. Heads can easily get clogged, totally or partially restricting water output in the area normally covered by the head. Or the head will loosen up over time and blow off, which can waste a lot of water and cause wash outs if you don’t catch the problem quickly.

Fertilization

Despite what you see on certain product labels at garden centers, fertilizer is not plant food. Foods are carbon-based substances (primarily carbohydrates, fats, and proteins) that can be broken down by living organisms to provide them with energy and the building blocks to construct and repair living tissue.

Green plants make their own food; they don’t get it from an outside source. They use energy from the sun to assemble carbohydrates, fats, and proteins from simpler components.

What plants *do* need from the outside are these simpler components: water, carbon dioxide (which they obtain from the air),

and certain nutrient elements (nitrogen, phosphorus, potassium, etc.) that occur naturally in the soil.

A deficiency of one or more of the nutrient elements can limit plant growth and development. So as good gardeners we may have to add fertilizer to the soil to prevent a deficiency from occurring.

The problem with thinking of fertilizer as food is one of scale. Food is something we need frequently and in large quantities. Fertilizer is something to be applied occasionally and in small quantities – especially if it is a high analysis fertilizer (such as 16-4-8). Excess fertilization can damage plant roots. Also, heavy or prolonged rains or

irrigation can move nutrient elements from the home landscape to nearby ponds or streams where they become pollutants.

Nutrient elements are mostly retained by soil organic matter and clay particles. Unfortunately, sandy soils in Florida have little of either. But even in our infertile soils, fertilizer is not always necessary. It depends on the situation. If plants are small and immature or if organic matter (e.g., fruits, vegetables, and clippings) is being regularly removed from the landscape (and thus breaking the natural recycling of nutrients), then the addition of synthetic fertilizer, manure, or compost is important. If, however, plants are perennial and mature in size then very little, if any, fertilizer is needed. The plant can be considered in equilibrium. Its older leaves will die and fall to the ground where they decay, releasing nitrogen, potassium, etc. into the soil. Then these nutrients can be taken up by the plant's roots and used in the creation of new leaves. The cycle is complete.

Also, plants can vary from species to species in the amount of minerals they require and the efficiency with which they can mine these minerals from the

soil. Currently, research is being conducted by University of Florida scientists to determine the amount of nitrogen fertilizer that results in optimum growth and development for some of our more common landscape plants. Interestingly, some landscape plants, such as lantana, may not benefit from any nitrogen fertilizer, while other plants, such as common periwinkle (*Vinca minor*) show benefits at rates as high as 12 lbs/1000 ft².

Palms can have particularly exacting fertilizer requirements. Please see <http://edis.ifas.ufl.edu/ep261> for detailed information on this subject.

To assess the fertility of the soil in your landscape and to receive fertilizer recommendations for certain lawn and landscape plants, consider having a sample of your soil tested. Collecting a sample is simple and the cost of analysis is only \$10/sample at the UF soil testing lab. For details on this service, read the on-line UF extension publication 'Soil sampling and testing for the home landscape or vegetable garden' <http://edis.ifas.ufl.edu/SS494> or call your county extension office. (See appendix for contact information.)

Pruning

Pruning is a technique used to control or redirect plant growth. Some pruning is useful and improves the appearance of our home landscape. For example, mowing our lawns is a form of pruning that maintains open space, creating green vistas for viewing flower beds and other taller landscape elements. But too often we are forced to prune because plants are in the wrong place.

Large shrubs close to houses, sidewalks, patios, or driveways usually require frequent pruning or hedging to keep them within bounds. In central Florida, it is common to see linear hedges of ligustrum, sweet viburnum, or pittosporum as foundation plantings. And podocarpus is often at the corners of houses, sheared into rectangular

prisms. All of these shrubs, if left unpruned, can grow to over 12 feet high and 6 feet wide.

Planting shrubs close to the house is a practice carried forward from the days when the typical house was raised off the ground and plants were used to hide the house's crawl space foundation. However, today most houses in Florida have slab foundations and there is no space to hide. Plants should be used to help integrate the house into the landscape – not to hide or block main design features, such as windows, entranceways, pillars, etc.

The problem is that the large landscape shrubs mentioned above are cheap (especially when purchased in small pots) so new home contractors and homeowners have used this material extensively to comply with codes requiring foundation plantings.

Unfortunately, many people are hesitant to dig up and replace shrubs, even if the plants are too big, detract from the beauty of the house, and require regular pruning.

Plants appropriate for foundation plantings include indian hawthorn, liriopse, 'Xanadu' philodendron, asiatic jasmine, muhly grass, and african iris – all with mature heights of a few feet or less.

Before adding a new plant to your landscape, consider its potential size at maturity. A very helpful database is located at <http://www.floridayards.org/fyplants/index.php>. It gives the mature height and spread, as well as other useful information, for hundreds of landscape plants.

There is no reason for shrubs to touch the house. They should be far enough away that there is good air circulation and room to easily access exterior walls.

There are two main types of pruning cuts: thinning cuts and heading cuts (Fig. 1). A thinning cut removes an entire stem, whereas a heading cut removes only a portion of a stem.

Thinning cuts are used to establish a desired structure in young trees and shrubs. They are also used to remove stems that cross and rub against each other.

Heading cuts are used to reduce the height and/or spread of a shrub. (Pruning has a negative effect on the overall size of shrubs, but it can be used to cause the shrub to grow taller at the expense of spread or wider at the expense of height.)

There are two types of heading cuts: selective and nonselective. Selective heading only shortens selected stems and these stems are cut just above a bud or branch that's pointing in the direction of desired growth (Fig 2).

If the cut is made just above a bud, this bud and possible other latent buds further down the stem will be stimulated to grow and become axillary stems. This tends to make the shrub more dense.

Nonselective heading shortens all stems, without regard to the position of buds or branches. This type of pruning is more commonly known as hedging or shearing.

In my opinion most landscape shrubs used in central Florida do not tolerate frequent shearing very well and would be more attractive, and probably

healthier, if they were allowed to obtain a more natural shape.

If necessary, shrub size can be reduced while preserving the plant's natural shape. This is accomplished by removing or shortening the shrub's longest stems.

Hedging is a popular method of pruning shrubs, probably because it gives a tidy appearance (at least temporarily) and can be done with power hedgers. But generally this is not the best way to control the size of ornamental shrubs (unless you have an English-style estate and want to create a very formal looking landscape).

Hedging results in a single, thin layer of foliage, which is on the outside edge of the shrub (i.e. there are essentially no leaves in the interior space), so if any of the (exterior) leaves are damaged an unsightly hole appears. Hedging is particularly ill-advised for shrubs that have large leaves, such as hibiscus and ixora, because the cut edges of the leaves become burnt and ragged. These and most other shrubs should not need frequent pruning – if they are in an appropriate location. Occasionally, however, it is advisable to cut back an errant, lanky stem – or to prune the top of a hedge so that it's narrower than the base of the hedge. (Otherwise the base of the hedge will be shaded and thin out over time.)

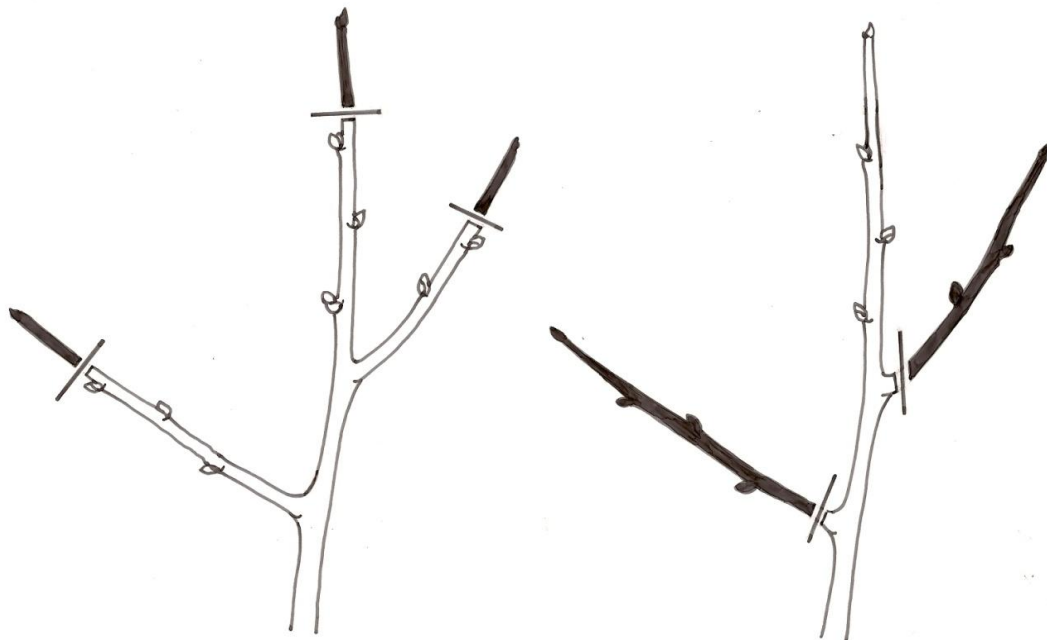


Fig. 1. Heading left; thinning right

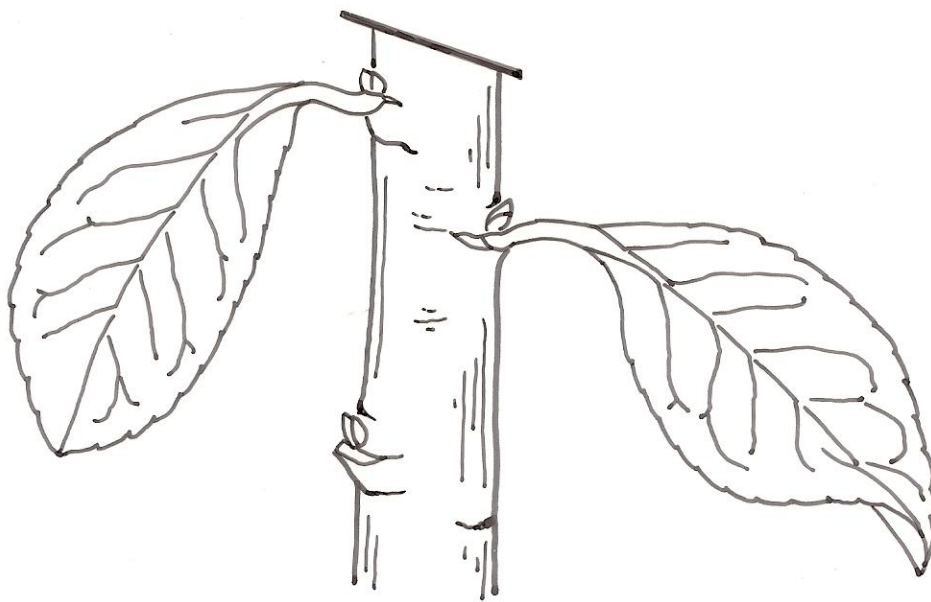


Fig. 2. Pruning to a bud

Here are some guidelines to consider before getting too excited with your loppers:

- If shrubs have been planted too close together, think about removing every other plant. This should allow the remaining plants to develop more gracefully.
- Prune branches that crowd other plants or come too close to the house or walkways. Then consider removing some of the tallest and oldest stems, but be careful not to remove more than 1/3 of the stems in any one year – unless complete rejuvenation is desired. (See the online article

Pruning Landscape trees and shrubs

<http://edis.ifas.ufl.edu/mg087> for an explanation of rejuvenation.)

- For the formal look, shear the plant six to eight inches beyond the previous cut, until the plant or hedge has reached the desired size. Angle the clippers so that the top of the hedge is narrower than the base. This will allow light to reach the lower leaves and keep them alive. Maintaining the desired shape may require several shearings per year. The exact number depends on plant vigor, which can be affected by light levels and soil moisture and fertility.

Plants that deserve special mention in regards to pruning

Crape Myrtles

Crape Myrtles have become a dominant element in the central Florida urban and suburban landscape. They are one of the few plants that produce colorful flowers during our hot summers. And once established they require very little maintenance – although many homeowners and landscapers feel the need to prune them back severely each winter. This practice is so common, in fact, that it has been termed “crape murder”. Steve Bender, senior garden writer for Southern Living magazine, wrote a great article about pruning crape myrtles. He starts the article by saying that each Saturday morning after football season ends, legions of bored men armed with saws and loppers emerge from their garages to commit “crape murder”. They needlessly reduce majestic crape myrtles to ugly stumps – in many cases, ruining them forever.

The important thing to remember about crape myrtles is that there are different varieties. Some varieties mature into medium or large shrubs, while other varieties mature into small trees – if allowed to grow naturally (Fig. 3). For example, ‘Tonto’ is a semi-dwarf variety that is less than 12 feet tall after 10 years; ‘Sioux’ is a medium sized variety that is less than 20 feet tall after 10

years; and ‘Miami’ is a tree-size variety that can be greater than 20 feet tall after 10 years.

If you have a crape myrtle that needs to be regularly pruned to keep it from getting too big for its allotted space, then you have the wrong variety. There are numerous varieties to choose from. See the online fact sheet ‘Crape Myrtle in Florida’ (<http://edis.ifas.ufl.edu/MG266>) for an extensive list of varieties, along with their mature size and other important characteristics.

According to Dr. Gary Knox, a professor of environmental horticulture with the University of Florida and a recognized authority on crape myrtles, annual or frequent hard pruning of these plants should be avoided because it can induce excess vegetative growth, basal sprouting, and fewer flower clusters. It also spoils the beautiful winter branch structure and leads to an unsightly knuckled appearance where pruning cuts are repeatedly made in the same location (Fig. 4). However, long, upright shoots (suckers) that develop along the lower portions of main stems or from roots should be removed when using crape myrtles as trees.

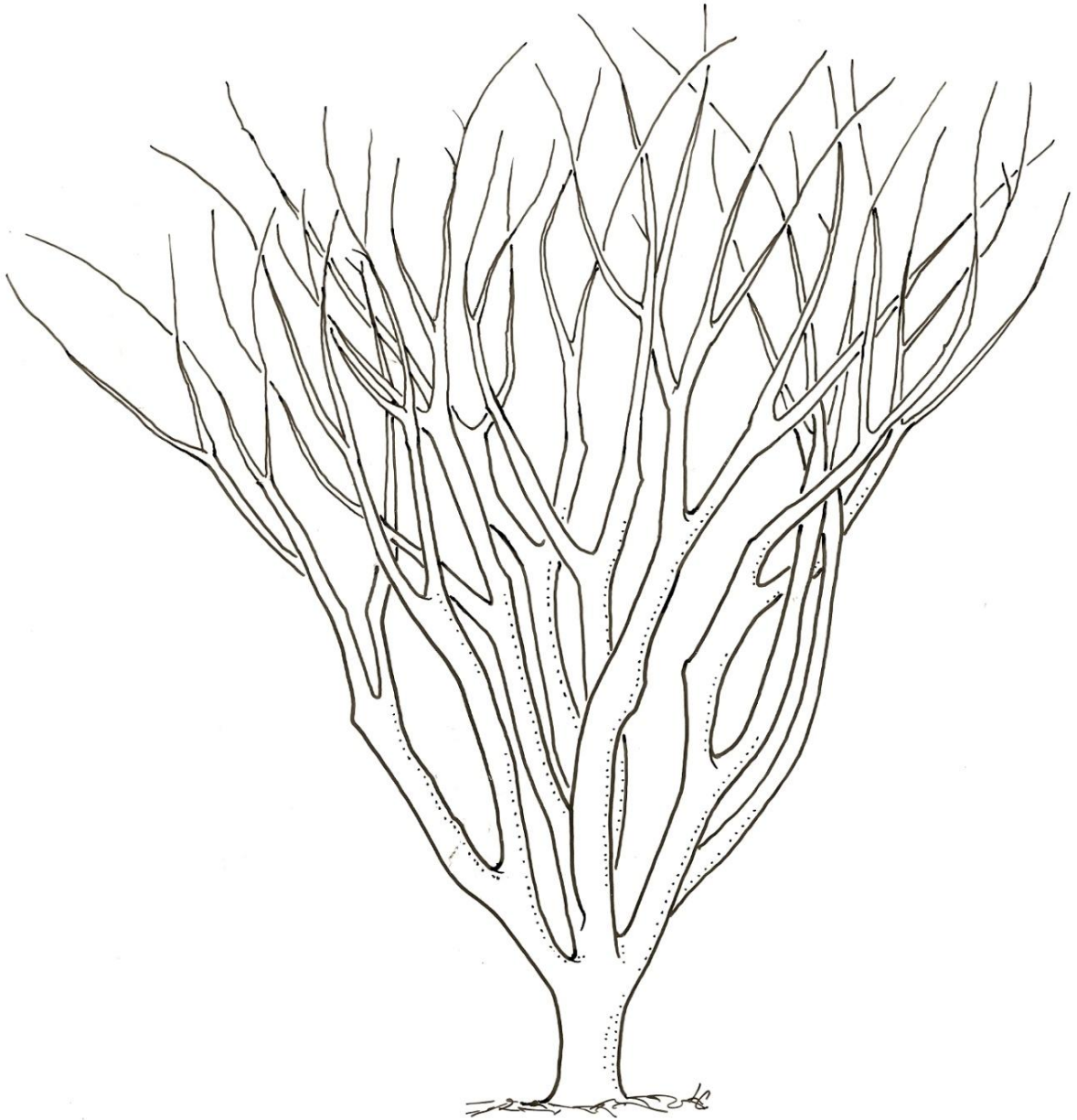


Fig. 3. A properly pruned crape myrtle tree



Fig. 4. A crape myrtle tree that has been repeatedly pruned back to the same location on the main branches. (Left – before dormant pruning; Right – after dormant pruning)

Live oak

Live Oak and other closely related oaks, usually characterized by wide-spreading horizontal branches and deeply corrugated, light gray bark, are among the most desirable shade trees in the central Florida landscape, but during Florida's long, wet summers they can produce shoots that droop toward the ground, obstructing sidewalks, driveways, and brushing up against houses and buildings. It is reasonable to remove the branches and limbs that could damage structures or are an obstruction, but too often these trees are pruned more than is necessary or desirable. Severely "limbing-up" or "lolipoping" the tree can remove all but the main branches, with just a tuft of leaves at their ends.

Healthy, green leaves use sunlight, water, and carbon dioxide to produce food (sugars) for the entire tree, so pruning a tree excessively hurts its ability to feed itself. Also, the oak canopy can provide habitat for many birds, insects, and other wildlife – if the complexity of this canopy is not destroyed. Layers of branches and shoots are needed to support a diversity of life. For example, certain birds, such as cardinals and blue jays, prefer the lower part of the canopy, while other

birds, such as hawks, may prefer to be closer to the top of the tree.

The primary reason people remove many of the interior limbs and branches of oaks are to increase the amount of light that reaches the ground under the tree. Their reasoning is that this additional light will make it possible to grow turfgrass under the trees. A better solution, however, is to leave oaks in as natural a state as possible and plant shade-loving shrubs and ground covers under the trees. Or just maintain a bed of fallen oak leaves under the canopy. Beautyberry, wild coffee, florida zamia, saw palmetto, and firebush are native shrubs that can be grown in the shade of oaks and provide additional food and shelter for wildlife.

The services of a trained professional, preferably a certified arborist, are recommended when pruning large oak trees. The International Society of Arboriculture (www.isa-arbor.com) keeps a list of certified arborists by state.

Be gentle to your oaks and they will beautify your landscape and provide wonderful shade for you and future generations.

Palms

A common practice in the landscape maintenance industry is to prune palm trees yearly -- removing all but the top tier of leaves. This is often called hurricane pruning because it is sold to customers as a way to protect palms from high winds.

In reality, palms need no protection from high winds. Their flexible leaves and slender profile make them nearly storm-proof. Instead of protecting the palm from high winds, the practice actually weakens the canopy. The reason for this is that all fronds (leaves) in the head of a palm act together, with each frond layer supporting and adding strength to the

one above. They all protect the bud and newly emerging spear leaf.

Palms manufacture food in their leaves. But palms are not as efficient as other types of trees at storing food. So they are more dependent on their leaves to provide food for growth. With relatively few leaves, compared to other trees, removing even one green frond can significantly reduce a palm's ability to feed itself.

Some palms carry no more than 30 fronds at one time. Typically, as many as 20 are removed in hurricane pruning.

That means the palm's ability to manufacture food has been reduced by two-thirds. Try to imagine if you had to survive on two-thirds less calories a day! If severe pruning is done on an annual basis, the palm's trunk can gradually decrease in diameter and becomes weak, making it more likely to break in a storm.

Palms also move nutrients from the older fronds to the new growth. When all of these older fronds are removed, so is the source of much of the nutrients that palms need. As a result, nutrient deficiencies can develop, which often take years to correct.

Ideally, only dead (completely brown) fronds should be removed when pruning a palm says University of Florida palm expert Dr. Tim Broschat. Under no circumstances should palms be severely pruned! Severe pruning is characterized by the removal of any fronds above the horizontal (i.e., between the 9 o'clock and 3 o'clock positions).

Also, in the case of the sabal palm (our state tree) care should be taken not to prematurely remove flower and fruit stalks, as the fruit of this native palm provides food for a number of bird species, including mockingbirds, woodpeckers, and robins.

Mulching

Organic mulch is certainly a helpful material in the home landscape – it suppresses weed seed germination and growth and reduces soil moisture loss – but our gain, in terms of an improved home landscape, can be a loss for the environment in which the mulch was derived.

Over half the mulch sold at home and garden centers in Florida is cypress mulch. Cypress mulch is often made from the sawmill residues generated in the manufacture of cypress lumber, but, unfortunately, it may also be produced from whole trees cut from Florida's forested wetlands. According to Douglas Carter and Eric Jokela of the

UF School of Forest Resources and Conservation, the overall abundance of cypress habitat (cypress domes), with its unique qualities, is critically important to the state. The University of Florida Extension Service does not recommend the use of cypress mulch, despite its popularity, because the origin of the mulch may be difficult to determine and its overuse can result in habitat destruction.

Pine bark mulch is the second most commonly sold mulch in Florida. This mulch is a byproduct of processing pine for lumber or paper, so in terms of environmental impact its use is relatively benign. Pine straw is also used as a

mulch. It is collected from pine plantations where the forest floor is kept essentially free of understory plants. Unfortunately this prerequisite reduces the wildlife habitat value of the plantation.

Eucalyptus and melaleuca mulches are probably the most eco-friendly choices among the commercially available mulches. Plantations of *Eucalyptus grandis* trees are grown in central and south Florida specifically for mulch and are renewable. Melaleuca mulch is made from *Melaleuca quinquenervia*, an invasive, non-native tree, so by purchasing this mulch you are helping to control a serious pest problem.

Of course, for any of these commercially available mulches, there is an

environmental cost, in terms of the energy used to harvest, package, and transport the product to its final destination. To reduce the amount of commercial mulch you need, you can take advantage of materials produced in your own yard – i.e. grass clippings and fallen leaves from deciduous trees. These materials break down quickly, compared to wood and bark based mulches, but they're nutrient-rich, renewable, and free! By recycling yard "waste" you are helping to maintain the quality of your home ecosystem while minimizing any negative impacts you might have on other ecosystems. If the appearance of leaf mulch is not to your liking you can always top it off with a thin layer of decorative mulch.

Disease and pest control

Diseases and insects

Diseases and insect pests are generally not a serious problem in the home landscape – if the landscape has been appropriately designed, established with plants known to be well adapted to central Florida, and properly maintained (in terms of water, fertilizer, pruning, and mulch). Also, most plants can tolerate a moderate amount of damage to their leaves due to insect feeding or disease. If you are concerned about a disease or insect outbreak on a favorite

plant in your yard, you may find it helpful to discuss the situation with a local expert. Often, you can talk with a certified master gardener by calling your county extension office. (See appendix for contact information.) Personally, my strategy over the years has been to remove ornamental plants from my yard that appear to be prone to disease or insect problems, and replace them with more resistant varieties or species.

Weeds

Weeds are just plants growing where they're not wanted. Actually, a corn plant is a weed, if it comes up in a soybean field. We consider a plant a

weed if it disturbs our sense of order or uniformity in the landscape – or if it competes with plants we consider more desirable. Some weeds would actually

make nice landscape plants if they stayed in one spot. For example, wild passion flower (*Passiflora incarnata*) produces beautiful purple flowers and its leaves are larval food for the Gulf fritillary butterfly, but it is a vigorous and spreading vine that can take over a fence.

There are three elements of the home landscape where weeds can be a problem: lawns, beds (either mulched or covered with a groundcover) and hard outdoor surfaces (i.e., patios, sidewalks, and driveways).

As for weeds in lawns, A.J. Koski, Cooperative Extension turfgrass specialist at Colorado State University suggests starting with a relaxed perspective. "A totally weed-free lawn is rarely attainable, even with herbicides. It is better to tolerate a few weeds than to make many applications of herbicides in an attempt to eliminate all weeds. Indiscriminate use of herbicides can cause problems for trees and other landscape plants," says Koski.

The best way to minimize weed problems in your lawn is to keep your turfgrass dense and healthy. A thorough treatment of turfgrass management is beyond the scope of this booklet, but I would like to mention several common practices that weaken turfgrass and make lawns more vulnerable to weed infestations.

- 1) **Scalping the lawn.** Most turf specialists agree that no more than 1/3 of the grass' leaf blade should be cut off at any one mowing. This may require adjusting your mower deck to its highest setting.

- 2) **Bagging the clippings.** When clippings are bagged, organic matter, nitrogen, potassium, etc. are removed from the soil. And unless supplemental fertilizer is added periodically, the soil will become progressively more infertile.

- 3) **Ineffective irrigation regime.** For established lawns, irrigate only when the turf starts showing signs of drought stress – i.e., has a blue-gray color and leaf blades are folding in on themselves – but when you do irrigate, apply enough water to wet the soil to a depth of 4 to 6 inches.

As for weed control in beds of shrubs, flowering annuals, or herbaceous perennials, a three to four inch deep layer of mulch works well, although it's not likely to be 100% effective. Hand weeding can control weedy annuals, such as sandspur and florida pusley – if they are pulled before their seeds mature. But to control perennial weeds, such as common bermudagrass and torpedograss, a systemic herbicide that kills the underground stems and roots works best.

The most commonly used herbicide for this purpose is glyphosate, the active ingredient in Roundup[®] and many other weed control products. Glyphosate is a non-selective herbicide (i.e. it can kill many different types of plants) so care must be taken to keep it off the leaves and stems of desirable plants.

Glyphosate is relatively non-toxic to humans and other animals. It kills plants by disrupting an enzymatic pathway that is important in their metabolism, but this pathway is not found in animals. Also, once applied, glyphosate does not persist

in the environment. It is rapidly inactivated by soil microbes.

Sethoxydim, the active ingredient in Vantage[®] herbicide, is another systemic herbicide that can be useful in the home landscape. It is not as widely available as glyphosate, but it can be found at certain garden centers and farm supply stores. The beauty of Sethoxydim is that it can selectively kill weedy grasses in plantings of broadleaf ornamentals. For example, I have sprayed it over a bed of asiatic jasmine groundcover to control invading bermudagrass.

Sethoxydim, like glyphosate, is relatively non-toxic to humans and other animals, but the formulated product does

contain petroleum distillates so care should be taken when handling and applying this herbicide. Of course, it is important to read and follow all label directions with any pesticide.

And finally, how to deal with those tough weeds in the expansion joints of your sidewalk and cracks in the driveway. I suggest spot spraying them with an herbicide, like glyphosate, that does not persist in the soil. Do not spray with long-lasting herbicides, such as those in certain brush, poison ivy, or total vegetation control products, as these materials could be absorbed by the roots of desirable plants that are under the hard surfaces.

Freeze protection

The most practical way to protect tender plants from a freeze event is to cover them with some type of fabric (e.g. old sheets and blankets) during the late afternoon preceding an expected freeze. The covering should be anchored to the ground on all sides to prevent wind from blowing it off the plants. Covering plants with fabric works by trapping heat as it radiates from the soil during the night. Thus the air on the inside of the covering tends to stay a few degrees warmer than the air on the outside of the covering. Moist soil absorbs more energy from the sun than dry soil, so you

can increase the amount of heat being trapped under the covering by making sure the soil under your tender plants is moist on the day prior to a freeze.

The reason freeze-susceptible plants tend to have less damage when they are under the canopy of a tree or porch is that the canopy serves the same purpose as a fabric covering; it slows the radiation of heat from the ground and keeps the air surrounding the plants a few degrees warmer than the air surrounding plants that are exposed to an open sky.

Appendix

Essential gardening tools

Most of these tools can be found at your local hardware store or in the gardening section of the big box stores. They range in price from less than \$10 for a hand trowel to around \$100 for a two-wheel garden cart.

Tools for soil preparation and planting

- Square-point shovel – for scraping up sod and weeds
- 16-tine bow rake – for removing debris from and smoothing out the soil surface
- Round-point shovel – for digging holes for shrubs and trees
- Post hole digger – for digging holes for plants that are in 1-gallon containers
- 10-gallon plastic mixing tub – (This is a good container for holding the soil from holes dug to plant small shrubs and trees.)
- Hand trowel – for digging small holes
- Kneeler – for making kneeling bearable (This device is especially helpful when kneeling to plant large numbers of annuals.)

Tools for mulching

- Two-wheel cart – for moving bagged or loose mulch
- 5-tine pitch fork – for spreading mulch
- Leaf rake – for gathering leaves and other light organic materials

Tools for pruning

- Hand pruner – for detailed pruning
- Loppers – for cutting medium diameter branches
- Double edge pruning saw – for cutting large diameter branches
- 12 foot long lightweight tree pruner – for pruning branches on mature trees and dead fronds from palm trees
- Hedge shears – for hedging certain small leafed shrubs and viney groundcovers
- Half moon edger – for edging small areas of turf
- Split cowhide leather gloves – for handling thorny branches

Tools and supplies for watering and spraying

- 32-inch long water wand – for efficient and gentle hand watering
- 1 or 2-gallon hand sprayer (Actually I recommend having two sprayers: one designated for spraying herbicides and the other for spraying insecticides and fungicides.)

- Disposable nitrile gloves – for use when handling pesticides and fertilizers and for general use to keep hands and nails clean
- Rubber boots – to keep feet dry when having to walk through wet turf or soil

Consider low-tech alternatives to the leaf blower and string trimmer

More than once I've been in my car, waiting for a traffic light to change, when a landscape maintenance worker in a parking lot next to the road is using a gas-powered leaf blower to rid the parking lot of sand and debris. The problem is that sand and debris are flying off the parking lot into my car. What is a leaf blower really accomplishing? If you ask me, I'd say this machine is often just moving unwanted material from one public space to another (i.e. from parking lot to road) or from private property to public property (i.e. from one's driveway to the street or into the air we breathe). So not only is there no net benefit gained from the leaf blower, in terms of "cleaning" up our local environment, leaf blowers are noisy, generate unwanted gases (unless they're electric and the electricity comes from a nuclear, wind, or hydroelectric power plant), and are hazardous to the health of the operators. How many operators have you seen using dust masks? Not many, I bet!

What's wrong with using a rake and broom – tools that have worked just fine for centuries? A rake moves leaves with ease, and a broom can move small materials without stirring up much dust.

Gas-powered string trimmers are noisy and polluting too. And while they may be helpful for edging turf on large commercial and public properties or for cutting back brush along rights of way, I think we can easily do without them in small residential landscapes. Their main use is for edging along driveways, curbing, and sidewalks. But what if, for example, there was no turf between the sidewalk and the curb (an area that tends to be problematic for turf anyway, because of the difficulty of getting uniform sprinkler irrigation close to the curb)? Then there would be no need to edge. Instead of turf, this area could be a place for low-growing, drought tolerant herbaceous perennials, stepping stones, and mulch. Reduce turf and you reduce edging. Small edging jobs can be handled easily with a half-moon edger – a simple cutting tool that makes no noise and generates no pollution.

Reliable sources of information

The Extension Data Information Source (EDIS) website

<http://edis.ifas.ufl.edu/>

This website is maintained by the University of Florida's Institute of Food and Agricultural Sciences (IFAS), and contains hundreds of publications on home gardening and landscaping written by University of Florida faculty. These publications can be downloaded or printed free-of-charge.

The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design

This guide is available free-of-charge through the Southwest Florida Water Management District website <http://www.swfwmd.state.fl.us/>.

Your Florida Landscape: A complete guide to planting & maintenance; edited by Robert J. Black and Kathleen C. Ruppert. This book can be purchased through the IFAS extension bookstore website <http://ifasbooks.ifas.ufl.edu/>.

The University of Florida's teaching garden in Plant City

The UF teaching garden on the campus of Hillsborough Community College – Plant City (1206 N. Park Road) is a great resource for the central Florida community.

The 1.5 acre garden (which is actually a collection of gardens) was created primarily as an educational tool for students in the Environmental

Horticultural degree program at UF's academic unit on the HCC campus, but it is open to the public, free of charge, from 8:30 a.m. to 4:30 p.m., seven days a week.

As stated in the garden's brochure, "...a visit to the garden provides ideas and inspiration for anyone interested in gardening or landscaping." Seeing a plant in a photo or in a small pot at a garden center is one thing; seeing it full size in a typical landscape setting is another.

The garden is composed of plants that are well adapted to the central Florida environment. The trees and most, if not all, of the shrubs and herbaceous perennials in the garden are "Florida-friendly plants", which means that they have relatively low maintenance requirements and often provide food and shelter to birds, butterflies, and other wildlife.

If you'd like to take a virtual tour of the garden (before you take a real tour) go to the garden's website, <http://grec.ifas.ufl.edu/pcc/teachinggarden.shtml>. A newly added feature of the website is a list of all the plants in the garden, alphabetical by common and scientific name. Also, a sheet containing photos and helpful info pops up when you click on the plant name.

Guided tours of the garden are available by appointment, and can be scheduled by call 813-757-2286.

University of Florida County Extension Offices in central Florida
(For free information, classes, workshops, and videos on home gardening and landscaping)

Brevard Co.

3695 Lake Drive, Cocoa, FL 32926
Phone: 321-633-1702
Website: brevard.ifas.ufl.edu

Citrus Co.

3650 W. Sovereign Path, Suite 1, Lecanto, FL 34461
Phone: 352-527-5700
Website: www.bocc.citrus.fl.edu

De Soto Co.

2150 NE Roan St., Arcadia, FL 34266
Phone: 863-993-4846
Website: desoto.ifas.ufl.edu

Hardee Co.

507 Civic Center Drive, Wauchula, FL 33873
Phone: 863-773-2164
Website: hardee.ifas.ufl.edu

Hernando Co.

1653 Blaise Drive, Brooksville, FL 34601
Phone: 352-754-4433
Website: extension.hernandocounty.us

Highlands Co.

4909 George Blvd., Sebring, FL 33875
Phone: 863-402-6540
Website: highlands.ifas.ufl.edu

Hillsborough Co.

5339 County Road 579, Seffner, FL 33584
Phone: 813-744-5519
Website: hillsborough.ifas.ufl.edu

Lake Co.

1951 Woodlea Road, Tavares, FL 32778
Phone: 352-343-4101
Website: lake.ifas.ufl.edu

Manatee Co.

1303 17th Street West, Palmetto, FL 34221
Phone: 941-722-4524
Website: manatee.ifas.ufl.edu

Osceola Co.

1921 Kissimmee Valley Lane, Kissimmee, FL 34744
Phone: 321-697-3000
Website: osceola.ifas.ufl.edu

Orange Co.

6021 South Conway Road, Orlando, FL 32812
Phone: 407-254-9200
Website: orange.ifas.ufl.edu

Pasco Co.

36702 State Road 52, Dade City, FL 33525
Phone: 352-518-0156
Website: pasco.ifas.ufl.edu

Pinellas Co.

12520 Ulmerton Road, Largo, FL 33774
Phone: 727-582-2100
Website: pinellas.ifas.ufl.edu

Polk Co.

1702 Highway 17 South, Bartow, FL 33830
Phone: 863-519-8677
Website: polk.ifas.ufl.edu

Sarasota Co.

6700 Clark Road, Sarasota, FL 34241
Phone: 941-861-5000
Website: sarasota.ifas.ufl.edu

Seminole Co.

250 West County Home Road, Sanford, FL 32773
Phone: 407-665-5560
Website: www.seminolecountyfl.gov/extensionservices

Sumter Co.

7620 State Road 471, Suite 2, Bushnell, FL 33513
Phone: 352-793-2728
Website: sumter.ifas.ufl.edu

Volusia Co.

3100 E. New York Ave., Deland, FL 32724
Phone: 386-822-5778
Website: volusia.org/extension



Lynda and Craig Chandler