

The Florida-Friendly Landscaping™ Home Landscape Recognition Manual



A Florida-Friendly Landscaping™ Publication

Acknowledgements

Ms. Janice Broda originally produced this guide for Indian River County Florida Yard Advisers as part of the Florida Yards & Neighborhoods Program for the Indian River Lagoon.

It was first revised by Dan Culbert and Fred Burkey, Indian River County Extension Service, and most recently at the Florida-Friendly Landscaping™ State office. Subsequent contributors and editors include:

Judy Avril, Diane Baruch, Penny Chandler, Bill Cullen, Marina D'Abreau, John Devine, Eddie Gastright, Mark Godwin, Sally Gore, Dave Griffis, Terri Jabour, Christine Kelly-Begazo, Doug Kutz, Barbra Larson, Michelina MacDonald, Ben Molis, Anita Neal, Brian Niemann, Annemarie Post, Cheri Rodolfo, Kurt Rowe, Laura Sanagorski, Sherry Shipley, Cathy Wegel, Bob Whitty, Zulema Wibmer, Martha Willoughby, Gail Hansen, Kathy Malone, Jane Tolbert, Claire Lewis, Esen Momol, Kelly Perez, Kelly Greer, Evie Pankok, Terry Delvalle, Lynn Barber, Isabel Way, Laurie Albrecht, Anne Yasalonis, Julie Franklin, Wilma Holley, Lisa Hickey, Laura Vasquez, Taryn Sudol, Tom Becker, Doris Heitzmann and Eva Pabon.

The sample Landscape Evaluation Report was provided by Evie Pankok.

Support for this program was provided by U.S.EPA Section 319 grants through a contract with the nonpoint source management section of the Florida Department of Environmental Protection, the state Water Management Districts, and county Extension offices across the state.

THE FLORIDA-FRIENDLY™ LANDSCAPE RECOGNITION CHECKLIST

Landscape recognition levels

In the spring of 2017, a revised checklist was released to match the *Florida Yards & Neighborhoods Handbook*, 5th ed. (2015). The new checklist, revised with the help of a committee of FFL agents and feedback from state Landscape Advisors, clarifies problematic items, such as issues with invasive plants, and addresses new concerns for Florida-Friendly Landscaping™, such as the aesthetics of yards.

The revised (2017) checklist asks Landscape Advisors to choose from only two recognition levels: **Silver** and **Gold**. Stickers for both levels are available with landscape signs from your county Extension office. The appropriate sticker can be placed in a designated area of the sign.

The remainder of the booklet reviews the FFL Landscape Recognition Checklist.

In addition to required practices, the landscape must meet the identified number of requirements within each of the five tiers.

For silver level recognition, a landscape must meet all required practices and achieve (2) First Tier, (3) Second Tier and (3) Third Tier practices. If the landscape has an in-ground irrigation system, (2) Irrigation practices must also be met. If the site is on a waterfront, (1) practice must be met.

For gold level recognition, a landscape must meet



Landscape recognition sign placed in the landscape

all required practices plus the additional gold level practices. The landscape must achieve (3) First Tier, (5) Second Tier and (5) Third Tier practices. If the landscape has an in-ground irrigation system, (3) Irrigation practices must also be met. If the site is on a waterfront, (2) practices must be met.

To be designated as a Florida-Friendly Landscape, the site **MUST:**

1. Comply with all existing codes, laws, ordinances, and HOA rules (if applicable).
2. Follow all required practices (listed at the beginning of the checklist).
3. Contain landscape plants. Landscapes made up of entirely rock, mulch, shell, artificial turf, or similar materials are not eligible for recognition.

The required landscape practices that differentiate the two levels are listed below:

REQUIRED PRACTICES FOR SILVER LEVEL RECOGNITION

- Clients certify that landscape complies with all codes, laws, ordinances, and HOA rules (if applicable).
- Landscape does not contain any plants found on the current UF/IFAS Assessment “**Prohibited**” List (<https://assessment.ifas.ufl.edu/?types=24208>) (p.9)
- Most plants are placed in landscape locations that match their requirements for water, light, soil condition, wind tolerance, salt tolerance, mature size, etc.
- Landscape contains at least 10 plant species.
- At least 25% of the landscape must contain planted (in ground) beds.
- Spilled fertilizer is collected and disposed of properly.
- If fertilizer is used, it is not applied when heavy rain is forecast in the next 24 hours. (p. 24)
- If fertilizer is used, it is applied to turfgrass and landscape beds at less than or equal to the UF/IFAS-recommended rate. (p. 26-28)
- A 2”-3” layer of one of the mulches recommended in the FYN Handbook, is maintained in plant beds as appropriate. (p.30)
- Volcano mulching is not practiced on site. (p. 30)
- If the property is located on a waterfront: a low-maintenance zone of at least 10 ft. has been established around the water body. No grass clippings, pesticides, fertilizer, or irrigation water is applied in this zone. (p. 46)
- If pesticides are used: Only affected plants and turf areas are treated with pesticide applications (spot treatments). (p. 34)



If an irrigation system is present:

- Irrigation system is calibrated to apply 1/2” to 3/4” of water per application. (p. 18)
- A functioning automatic rainfall shutoff device is maintained on in-ground irrigation systems. (p. 20)

If turfgrass is present:

- Turf is mowed at the UF/IFAS-recommended height for the grass species. (p. 13)
- Grass clippings are left on the lawn after mowing. (p. 24 & 39)
- Fertilizer is only applied when grass is actively growing. (p. 24)
- “Weed and Feed” products containing herbicide and fertilizer together are not used. (p. 24)

Aesthetics:

- Appropriate pruning practices are utilized.
- There are defined and maintained (routinely weeded) landscape beds.
- Landscape and household debris are properly disposed of or recycled.



The following practices are required for Silver and Gold level recognition:

Client certifies that landscape complies with all codes, laws, ordinances, and HOA rules (if applicable).



Landscape does not contain any plants found on the current UF/IFAS Assessment “Prohibited” list. (<http://assessment.ifas.ufl.edu/assessments/?types=24208>) (p. 9)



Australian pine
(*Casuarina species*)



Elephant Ear
(*Xanthosoma sagittifolium*)

Have the homeowner check with their homeowner association (HOA) before making changes to the landscape. HOAs, usually have a landscape review board and can regulate the appearance and types of plantings in your yard, as long as they do not prohibit you from installing and maintaining Florida-Friendly Landscapes. If the homeowner(s) live in a community with codes, covenants and restrictions that could be more Florida-Friendly, inform them of the model Florida-Friendly Landscaping™ restrictions, found at <http://fll.ifas.ufl.edu/>

Nonnative invasive plant species pose a significant threat to Florida’s natural areas. The UF/IFAS Assessment uses literature-based risk assessment tools to predict the invasion risk of both nonnative species that occur in the state as well as species proposed for introduction. <http://assessment.ifas.ufl.edu/>
See instructions Appendix F.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

Most plants are placed in landscape locations that match their requirements for water, light, soil condition, wind tolerance, salt tolerance, mature size, etc.



Landscape contains at least 10 plant species.



Plants well-suited to their site need less irrigation and fertilizer and are more resistant to pest infestation. Florida-Friendly Landscaping™ principles encourage the selection of the right plant for the right place, helping create a healthy, attractive landscape that works with the natural ecosystem rather than against it. Match plants with site conditions based on USDA zone, water and light requirements, soil conditions, salt and wind tolerance, and other factors. The FFL Plant List can help you make the right plant selections for your landscape.

Aim for a diversity of trees, shrubs, groundcovers, and flowers. Using a variety of plants in the landscape design will attract a diversity of wildlife.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

At least 25% of the landscape must contain planted (in ground) beds.



Spilled fertilizer is collected and disposed of properly.



Florida-Friendly does not promote a landscape of all rocks or the use of artificial turf or rubber mulch. Such materials increase heat and may result in loss of habitat, or create an environment that does not support wildlife. If an HOA review board allows any rocks, the Florida-Friendly program recommends they are used only in landscapes that have plants. Rocks can also be used for accents around heat-tolerant plants and trees, in rain gardens, or to lessen the impact of rainfall from roof overhangs.

If fertilizer is spilled on a hard surface (like a driveway), sweep it up and dispose of it. Fertilizers can wash into storm drains and then move into nearby waterways. If fertilizer is spilled on lawns, collect it however you can. It might be tempting to water extra fertilizer into the lawn, but the excess nutrients may leach into the soil and into the groundwater.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If fertilizer is used, it is not applied when heavy rain is forecasted in the next 24 hours. (p. 24)



If heavy rain is forecasted, hold off on applying fertilizer. Rain can wash fertilizer off lawns or cause it to leach into groundwater, contributing to pollution.

If fertilizer is used, it is applied to turfgrass and landscape beds at less than or equal to the UF/IFAS-recommended rate. (p. 26-28)



Fertilizer is a powerful tool that can help plants thrive—if used appropriately.

Inappropriate fertilizer application (too much, before a heavy rain, during dormancy) can harm plants, and the environment. Too much fertilizer can weaken a plant, promote disease, invite pests, waste money and harm the environment. Fertilizer can also increase plant growth rate and therefore cause excessive pruning and mowing.

Consider plants' needs carefully before applying, and always follow label directions when using fertilizer.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

A 2"-3" layer of one of the mulches recommended in the FYN Handbook (p.30), is maintained in plant beds as appropriate.



Volcano mulching is not practiced on site. (p. 30)



A layer of mulch can provide many benefits to landscaped beds.

- Mulch buffers soil temperature--It keeps soil and plant roots warmer in winter and cooler in summer.
- Helps maintain soil moisture by slowing the rate of evaporation and reducing the amount of water needed
- Mulch inhibits weed germination and growth.
- And it can protect plants. Mulch can help prevent certain plant diseases, and reduce the likelihood of damage from trimmers and mowers.

In areas that are difficult to mow, irrigate, or otherwise maintain, use mulch in place of turf or groundcovers.

Piling mulch against trees prevents water infiltration; suffocates trunks and roots; and causes fungal rot.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If the property is located on a waterfront: a low-maintenance zone of at least 10 ft. has been established around the water body. No grass clippings, pesticides, fertilizer, or irrigation water is applied in this zone. (p. 46)



If pesticides are used: Only affected plants and turf areas are treated with pesticide applications (spot treatments). (p. 34)



Whether it is a natural or man-made water body, it's important to designate a "maintenance-free zone" of at least 10 feet between your landscape and the riparian zone. This area helps to protect the water from runoff. Don't mow, fertilize, or apply pesticides in the maintenance-free zone. Select plants that will do well without fertilization or irrigation after establishment.

Integrated Pest Management (IPM) is the best strategy for pest management. Chemical are used on an "as needed" basis. Plants with aesthetic damage don't necessarily need to be treated. Consider the amount of damage you're willing to accept. Remember that there will always be insects in any healthy landscape, so don't worry about minor damage. Always try the safest alternatives first, such as handpicking insects or pruning only the affected parts of a plant. If pesticide use is necessary, choose products that are the least harmful to people, pets, and wildlife and treat only the affected areas of a plant or lawn. Never use blanket applications of pesticide.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If an irrigation system is present, it is calibrated to apply 1/2" to 3/4" of water per application.
(p. 18)



Quick Tip

Consider special conditions.

For example, clients who tell you that they apply only 1/4 inch of water per application because the water runs off otherwise should be awarded full points because they have complied with the spirit of the program, if not the "letter" of the checklist.



Calibration is critical and important. Clients cannot effectively apply the recommended amount of water per application without calibrating the system. All irrigation zones should be calibrated since significant variations can exist among zones. Ask clients how much water their irrigation system applies and how they calibrate their system. You may have to delay landscape recognition until you are certain the irrigation system has been properly calibrated.

The Florida Yards & Neighborhoods Handbook (p. 19) has instructions for calibrating an irrigation system. Share with clients that shallow, straight sided, heavy-bottomed cans, like tuna fish cans or some cat food containers, work well for calibration. If over-watering has been a problem, emphasize the need to wean a landscape from excess water by gradually reducing irrigation frequency and amount. Maintaining the irrigation system and proper positioning of sprinkler heads is part of the calibration process to ensure the system evenly delivers the correct amount of water over the irrigated area. Remind clients to run the sprinkler system and check for broken or misdirected spray heads on a regular basis. Spray heads may be broken off during mowing. Stress the need to direct heads so that water falls on lawn and shrub areas, not on paved surfaces from which it runs off.

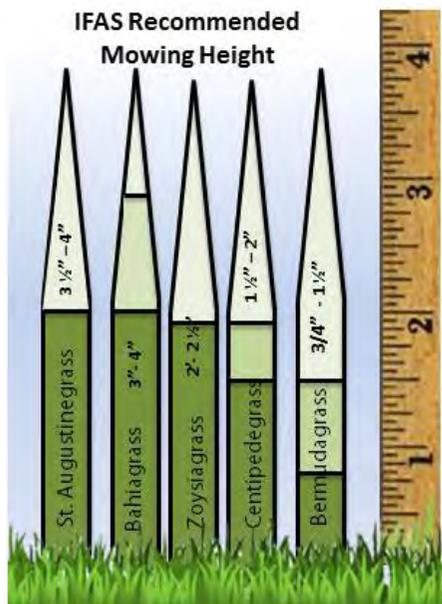
* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If an irrigation system is present, a functioning automatic rainfall shutoff device is maintained on in-ground irrigation systems. (p. 14)



If turfgrass is present, turf is mowed at the UF/IFAS-recommended height for the grass species. (p. 13)



Rain and soil moisture sensors are shut-off devices that provide a great way to save water in your landscape. These devices detect when there is adequate rainfall and shut off your irrigation system, ensuring the system doesn't run when it's not needed. Rain and soil moisture sensors can also help prevent turf disease and other problems caused by excess moisture. Make sure sensors are working properly and advise clients to replace them when necessary. Having a functioning rain sensor can save over 11 thousand gallons of water a year. Be sure to periodically check the expanding disk in your rain sensor to ensure that it is functioning properly.

Mow turf at the UF/IFAS-recommended height for each grass species to encourage deeper root systems, increase drought tolerance and pest resistance.

- St Augustinegrass 3 1/2 to 4"
- Bahiagrass 3-4"
- Zoysiagrass 2-2 1/2"
- Centipede grass 1" to 2"
- Bermudagrass 3/4" to 1 1/2"

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If turfgrass is present, grass clippings are left on the lawn after mowing. (p. 24 & 39)



If turfgrass is present, fertilizer is only applied when grass is actively growing. (p. 24)



Dormant turf

Leave clippings on the lawn—they will decompose, return nutrients to the turf and possibly reduce the number of yearly fertilizer applications. Use a mulching mower blade to cut grass into smaller pieces and speed up decomposition. You can also use clippings as mulch or compost.

Many Florida turfgrasses go dormant or decrease growth during cooler seasons. Only fertilize when the grass is actively growing. This allows turf to make the most efficient use of the fertilizer's nutrients. Fertilization during dormancy may cause turf to grow at a time when it would not naturally do so, resulting in a weakened turfgrass. Fertilization during times of dormancy may also contribute to nutrient leaching or runoff since the grass has less root system and, therefore, less ability to take up the nutrients

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

If turfgrass is present, “Weed and Feed” products containing herbicide and fertilizer together are not used. (p. 24)



“Weed and feed” products contain herbicides and fertilizer and are typically broadcast over large sections a landscape. Pesticides should be applied only to affected areas. “Weed and Feed” products can injure some trees and shrubs because their root systems often overlap with turf areas that have been treated. Preemergent herbicides are also typically applied when plants are dormant and fertilizer is not needed. Therefore, the fertilizer in these products is often wasted and can harm the environment.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

Aesthetics:
Appropriate pruning practices are utilized.



Poor pruning practice

Aesthetics:
There are defined and maintained (routinely weeded) landscape beds.



Pruning is selectively removing parts of a plant to improve plant health, control growth, or enhance fruiting, flowering, or appearance. 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 rubbing alcohol or a 10% solution of bleach and water (1 part bleach to 10 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 large, prune it to match its natural growth habit.
- never remove more than 1/3 of a tree's canopy or shrub's canes.

A Florida Friendly landscape can be designed in any style, formal or informal. However, there is no such thing as a “no maintenance” landscape. An unkempt (weedy and overgrown) landscape is not considered Florida-Friendly. Ensure that landscape beds and turf are defined and well-maintained (properly pruned and weeded).

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Silver and Gold level recognition:

Aesthetics:
Landscape and household debris are properly disposed of or recycled. (p. 24)

Landscape maintenance activities like mowing, pruning, and raking generate yard waste that you can compost or mulch, therefore recycling valuable nutrients.



* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

REQUIRED PRACTICES FOR GOLD LEVEL RECOGNITION

To be eligible for Gold level recognition, a landscape must meet all of the required practices listed for Silver level recognition (above) **AND** meet the following requirements:

- The landscape does not contain any plants found on the current UF/IFAS Assessment “**Invasive**” list. (<https://assessment.ifas.ufl.edu/types=1080,1074,24208>) (p. 9)
- The landscape contains at least 15 plant species.
- All plants are placed in landscape locations that match their requirements for water, light, soil condition, wind tolerance, salt tolerance, mature size, etc.
- 100% of roof runoff (with or without downspouts) drains onto lawn or landscaped areas, pervious surfaces drainage swale, or is harvested in rain barrels or rain garden.
- Not more than 50 percent of the irrigation system is high volume by area.
- Spray and rotor heads are installed on separate zones. This does not include retrofit.
- Low-flow irrigation is installed and maintained in plant and flower beds.



The following practices are required for
Gold level recognition:

Gold Level Prerequisites: Landscape must meet these 7 required practices in addition to all required practices for Silver to achieve Gold status.

**If the landscape has no in-ground irrigation system, credit can be given for satisfying the irrigation practices.*

Landscape does not contain any plants found on the current UF/IFAS Assessment “Invasive” list. (p. 9)

See detailed instructions on how to use the UF/IFAS assessment website on page 77 of this document.

<http://assessment.ifas.ufl.edu/assessments/?types=1080,1074,24208>



Wisteria sinensis- IFAS Assessment “Invasive” list.

Landscape contains at least 15 plant species.

Explain how plant variety attracts many different species of animals, from birds and butterflies to snakes and squirrels. Encourage clients to create a refuge for critters in need of shade, rest, food and water.



* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Gold level recognition:

Gold Level Prerequisites: Landscape must meet these 7 required practices in addition to all required practices for Silver to achieve Gold status.

**If the landscape has no in-ground irrigation system, credit can be given for satisfying the irrigation practices.*

All plants are placed in landscape locations that match their requirements for water, light, soil condition, wind tolerance, salt tolerance, mature size, etc.

Achieving a natural, healthy balance in the landscape starts with putting the right plant in the right place. Matching plants to the conditions of the landscape can help them thrive, once established, with little or no irrigation and few or no pesticides or fertilizers.



100% of roof runoff (with or without downspouts) drains onto lawn or landscaped areas, pervious surfaces drainage swale, or is harvested in rain barrels or rain garden.

Rain that falls in your yard should soak into your yard. After all, rainfall is an excellent water source for your landscape, and reducing stormwater runoff will reduce impacts on waterways.



* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for Gold level recognition:

Gold Level Prerequisites: Landscape must meet these 7 required practices in addition to everything listed above to achieve Gold level status.

**If the landscape has no in-ground irrigation system, credit can be given for satisfying the irrigation practices.*

Not more than 50 percent of the irrigation system (by area) is high-volume.



Spray and rotor heads are installed on separate zones.

***this does not include retrofit**



High-volume irrigation is any sprinkler or emitter with a flow rate of 30 gallons per hour (gph) or 0.5 gallons per minute (gpm) or greater. In most cases, high-volume irrigation devices are spray and rotor sprinklers. High-volume irrigation is used to irrigate turfgrass and other plant materials with high water needs.

The type of sprinklers used for irrigation systems affects the rate and efficiency that water is applied to the irrigated area. Application rates of rotors are typically lower than spray nozzles. When high volume irrigation is used for plants with lower water requirements, advise clients to consider retrofitting their zones for low-volume or micro-irrigation. Low volume irrigation, defined as 30 gallons per hour (gph) or less, efficiently applies water to the soil and establishing plants.

*Read: <http://ufdc.ufl.edu//IR00001528/00001> for more information on retrofitting your irrigation system.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

The following practices are required for
Gold level recognition:

Gold Level Prerequisites: Landscape must meet these 7 required practices in addition to everything listed above to achieve Gold level status.

**If the landscape has no in-ground irrigation system, credit can be given for satisfying the irrigation practices.*

Low-flow irrigation is installed and maintained in plant and flower beds.



Microirrigation systems deliver small volumes of water directly to the root zone through low-flow emitters, such as micro-spray jets, micro-bubblers, or drip tubes. Microirrigation can be a great way to water your plants more efficiently. It is commonly used for shrubs, trees, planting beds, and container gardens.



* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

CHECKLIST: FIRST TIER (2 FOR SILVER, 3 FOR GOLD)

Trees and shrubs are positioned to improve the building's heating and cooling capacity, if the space allows.



Position trees and shrubs to improve the building's heating and cooling efficiency.

Plant deciduous trees on the south, east and west sides of the house to allow shade in the summer and warmth in the winter.

Emphasize cost-savings. Research has shown that shade can dramatically reduce energy consumption and costs by as much as 50 percent.

Tree shade can reduce air conditioning costs significantly. An air conditioning system's outdoor compressor/condenser unit uses less energy when it is shaded from direct sun during the day – but be careful not to block the unit's airflow. If the warm discharge air cannot escape, the intake air temperature rises, causing the unit to operate less efficiently.

Be aware of setback recommendations for wildfire safety or potential windstorm damage from falling trees or branches.



Rain gardens, swales, and berms are used to catch and filter stormwater runoff.

Swales and berms can help capture or slow water that would otherwise runoff from your yard and allow water to soak into the ground.

For waterfront properties, use a berm-and-swale combination to filter stormwater runoff. Advise clients to always check with the Florida Department of Environmental Protection or other local government agencies before making any changes to shorelines.



Rain garden.



Grassed berm



Swale.

Quick Tip

Provide multiple alternatives.



Help clients to think through the consequences of their landscape-care decisions and lawn-care alternatives.

* Page numbers refer to *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*

Maintained (irrigated and fertilized) turfgrass is used for functional purposes (e.g., recreation, erosion control, nutrient uptake, etc.).

*Credit is given if no turfgrass is on site.

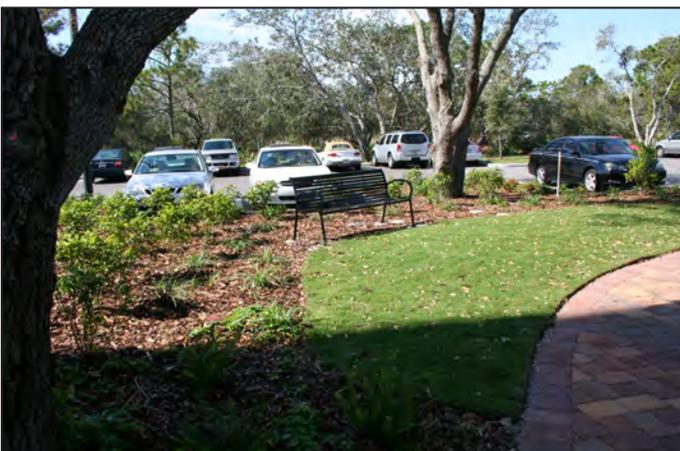


Grass is maintained for functional purposes.

Large areas of lawn grass can be expensive to maintain in terms of time, energy, money, and water. Ensure that at least 25% of the landscape contains planted (in ground) landscaped beds and encourage clients to determine how much grass is needed for children, pets, recreation, and other uses. Where possible, suggest replacing unused irrigated grassy areas with low-maintenance groundcovers or shrubs, mulched beds, or other porous surfaces.

Initially, large areas of lawn grass can be expensive to replace. Emphasize that this replacement can be a gradual process and more cost-effective over the long run. We recommend the following:

- Begin with problem areas where grass is difficult to grow. For example, in shady areas, replace sparse turf with ferns or other shade-tolerant plants.
- Expand the size of existing mulched beds as your plants grow.
- Use additional mulch to link together existing mulched plant beds to add visual appeal and better function to your landscape.



Seating area

Quick Tip

Follow up on questions.

If you are presented with a question you cannot answer, offer

to locate additional information or provide UF/IFAS references for the client to consult.



At least 25% of hardscape surfaces are made of porous materials.

If possible, use bricks, gravel, turf block, mulch, pervious concrete for walkways, driveways and patios. These materials reduce the amount of runoff from your yard by allowing rainwater to infiltrate into the ground and reduce pollutants that could infiltrate into groundwater. In some cases, these porous materials may even cost less to install than concrete or asphalt.



Permeable Paving



Close up of permeable paving



Grass Block

Main leaders of all shrubs are at least 3' away from the foundation of the house.



Over-crowded shrubs



Shrubs located too close to a building foundation may result in the following issues: the roof overhang can block plants from receiving adequate water; create damaging forces of rainfall during storms; cause improper air circulation that makes plants vulnerable to disease; and prevent access to a home for routine maintenance.

Trees are located the appropriate distance from the foundation of the house based on mature size.



Improper placement of tree

Trees need space for canopy and root growth. When certain trees are planted too close to a building, their roots can damage a building's foundation and/or canopy growth can block or crowd a building structure.

Erosion prone areas are maintained to minimize erosion.



Ensure that erosion prone areas are maintained to slow down and minimize stormwater runoff. Erosion has a serious negative effect on water quality. Increased nutrient levels, along with high sediment loads, are the leading contributors to reduced water quality. Plant material works best to control erosion as the roots penetrate and hold the soil in place.

Clients can consult the *The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design* or a similar publication for a list of suitable groundcovers for their site.



Shrubs and groundcovers are used where grass is difficult to maintain.



Most turfgrasses do not do well in shady areas, but there are many shade-loving groundcovers to choose from.

Appropriately selected groundcovers are also better alternatives to turf for steep slopes and low-traffic areas because they will require less maintenance.

CHECKLIST: SECOND TIER (5 FOR SILVER, 6 FOR GOLD)

A compost pile or worm bin is installed or community compost bin is available for use.



Finished compost

Effective composting returns valuable nutrients into the soil. Adding compost to the soil can: improve soil structure, texture and aeration; increase soil water-holding capacity; promote soil fertility and stimulate root development. Never place meat, animal fat, or dairy products in the compost pile as these attract rodents and other pests. Also do not place pet waste into the compost pile. Nitrogen and carbon are required in proper proportions for effective composting.

Proper moisture is necessary for microorganisms to decompose the compost material. Clients should not be able to squeeze water from the material produced at the bottom of the pile.



Plant material provides habitat and/or food sources for wildlife.

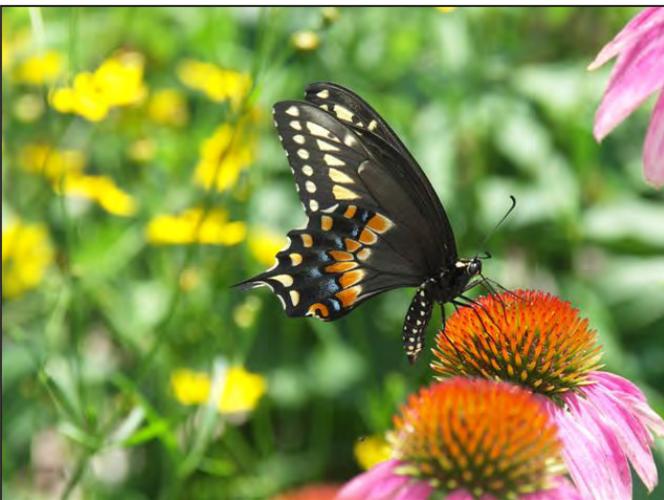


Encourage clients to select a variety of plants that provide food for birds, butterflies, and other wildlife throughout the entire year. Native plants often have the greatest wildlife value and smaller fruit that can be eaten by more creatures.

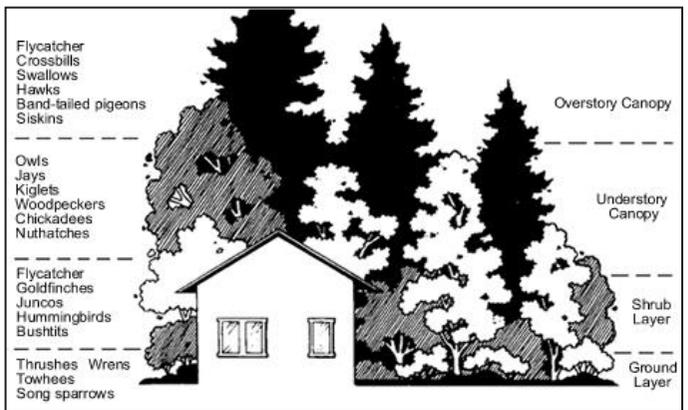
A landscape design that caters to wildlife will have a variety of layers to provide cover for animals (e.g., shade trees, understory trees, shrubs of varying height, groundcover).

Emphasize the connection between the kind of plants and the wildlife that will visit the yard. Teach clients to consider the structure of the plant as a source of cover. For instance, our Florida state tree, the cabbage palm (*Sabal palmetto*), provides cover and nesting areas for birds, small mammals, frogs, and a variety of creatures. By contrast, a Queen palm (*Syagrus romanzoffianum*) has very little value for wildlife as a source of cover.

Host and nectar plants are present for butterflies, hummingbirds and/or other pollinators



In addition to the aesthetic benefits they provide, pollinators are beneficial to neighborhood gardens and nearby farms. Every effort should be made to include plants in the landscape that will attract and provide food for pollinating insects.



Include host and nectar plants for pollinators

Plant in layers

A water source for wildlife exists in the landscape.



Wildlife shelters and water source

These can include a bird bath or a small pond. Caution clients to choose a bird bath carefully. Many commercial bird baths are too deep--the birds want to drink or bathe, not swim. A shallow bowl or the saucer for a garden pot can serve as an effective and inexpensive bird bath. Some homeowners set out garden pot saucers of different sizes to accommodate different-sized birds. Attracting bats requires a large water source like a pond.

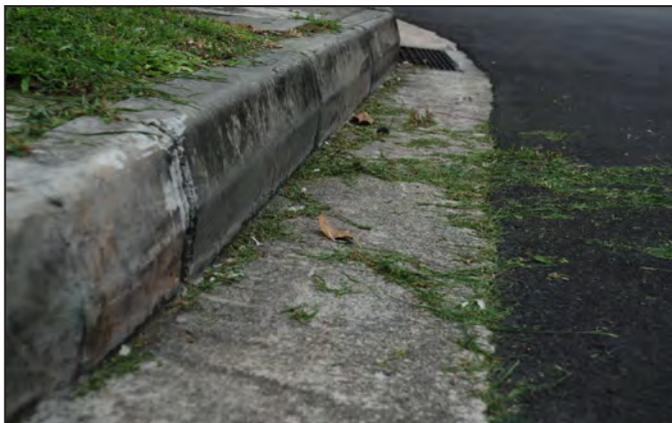


Wildlife shelters exist in the landscape (e.g., bird or bat houses, snags, brush piles).



A bird house, bat house, brush pile, or a dead tree provide shelter for wildlife. Snags (dead trees) can: attract cavity dwellers, including woodpeckers and owls; provide places for birds to perch; and offer an insect supply (bird food source). However, local codes may prohibit snags in some communities.

Landscape waste (i.e., tree trimmings, fallen leaves, pine needles) is used on site.



Sweep grass clippings up on yard

Grass clippings provide added nutrients to the lawn. University of Florida fertilization guidelines assume that grass clippings are left on the lawn. However, some treatment of lawn diseases may require clippings be bagged and disposed.

Mulching lawn mowers or mulching blades are optional. Remind homeowners never to mow more than one-third of the grass blade. This practice will ensure that the lawn is not “swamped” with grass clippings.



Natural leaf litter mulch in Pine Tree bed

If clients create self-mulching areas under shrubs and trees, leaves can remain as they fall. Falling leaves and pine needles make an attractive, natural mulch and are free. Emphasize the labor-saving and cost-saving benefits of this practice. Leaves, shrub trimmings, and other plant debris can also be collected and added to mulched beds or used in a compost pile.

A cistern, rain barrel or other water harvesting practice is used with proper mosquito prevention techniques in place.



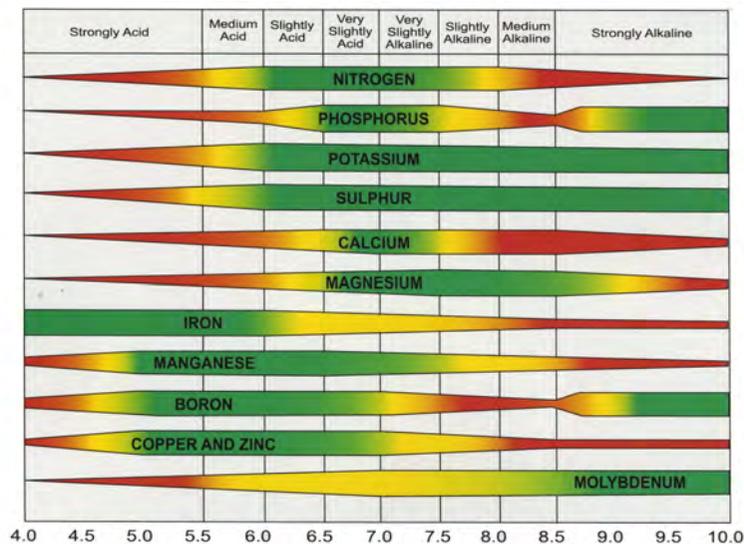
Rain Barrel

Rain barrels and cisterns can capture a significant amount of water and have a tangible effect on water bills. A rain barrel should be made mosquito-proof with a tight-fitting lid and/or mesh screen, and can be painted (if it 's not hidden by foliage or a trellis) to make it more attractive.

Cisterns also catch rain but can hold hundreds or thousands of gallons and require more engineering than rain barrels. Remind clients that their community or county may require a permit for a cistern.

A soil pH test has been performed within the last year.

A soil test can help you understand what nutrients are present in your soil. This is important when deciding what nutrients, if any, you should add. Soil pH tests are available at labs like the UF/IFAS Extension Soil Testing Laboratory (<http://soilslab.ifas.ufl.edu/>). Many counties perform soil testing for a small fee.



Cypress mulch is not used.



Cypress mulch is composed of both wood and bark. Cypress trees, which grow in Florida's forested wetlands, are often harvested for lumber and used in fencing, flooring, furniture and other wood products. Cypress mulch can be made from the waste wood generated in the manufacture of these products. It can also be made out of whole trees cut from wetlands. The Florida-Friendly Landscaping™ Program does not recommend the use of cypress mulch, as its origins are difficult to determine.

Encourage clients to use by-product and recycled mulch whenever possible. Consult *The Florida Yards & Neighborhoods Handbook* (p. 29) for a list of recommended mulches.

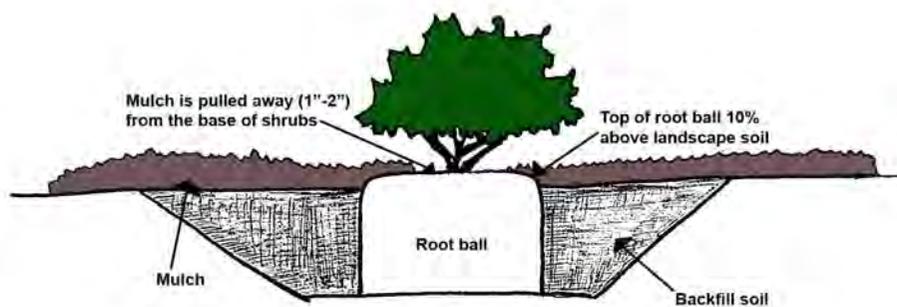
Mulch made from the invasive melaleuca tree contributes to the tree's removal in South Florida, where it is a significant problem. Be sure that the mulch has been properly processed to sterilize all seeds.



Melaleuca

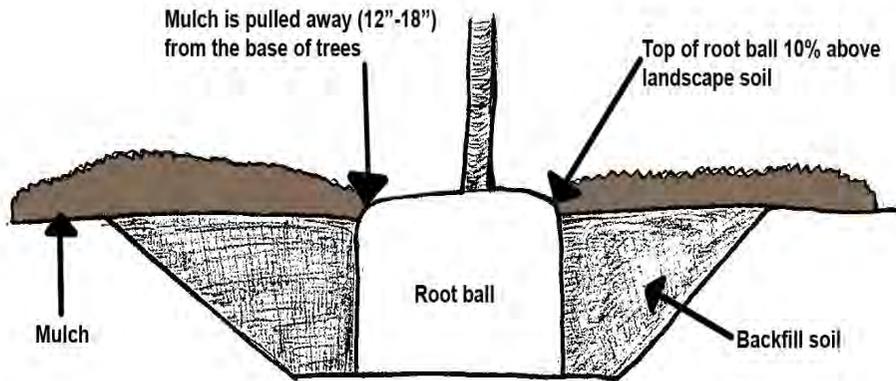
Mulch is pulled 1-2 inches away from the base of shrubs.

Ensure that mulch is pulled away 1-2" away from the base of shrubs. When mulch is in contact with the woody stems of shrubs, the moisture it creates can increase plant disease.



Mulch is pulled 12 - 18 inches away from the base of trees.

Ensure that mulch is pulled away from the base of the tree. Mulch located directly against the trunk draws moisture that in turn promotes disease.



Quick Tip

Present a united front.

Landscape advisors need to present a united position when discussing landscapes with clients. A balanced pro-and-con discussion may help them understand your position.



CHECKLIST: THIRD TIER (3 FOR SILVER, 5 FOR GOLD)

A soil nutrient test has been performed within the last year.



Find out more information at the UF/IFAS soil testing laboratory.

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

If the landscape is maintained in a natural state:

No supplemental fertilization is used in the landscape once plants are established.



Florida-Friendly Landscape

When the right plants are chosen for the appropriate locations, they may not require fertilization once established. Look carefully around town, and you will find that many of the older, well-established landscapes are maintained without irrigation and fertilization. When fertilization is needed, apply only as much as needed to keep the lawn and plants healthy. Stress that the recommended application rates are maximums. Many clients maintain healthy, high-quality landscapes with less than the recommended rate.

Emphasize the relationship between too much fertilizer and pest problems. For instance, research has shown that chinch bug problems increase with the over-application of fertilizer.

A broadcast spreader with an operational deflector shield is used to apply the fertilizer.

A drop spreader can damage the coatings on slow-release fertilizer, rendering it quick release. A deflector shield will keep fertilizer granules from being distributed to places where they aren't wanted.



Broadcast spreaders with deflector shields



Uneven fertilizer application



Improper fertilizer application can damage turfgrass

Landscape is checked every one to two weeks for signs of pest damage.



Mite damage

Encourage clients to enjoy their landscape daily and to walk around at least twice a week to examine plants for signs of damage. Help them to understand that their landscape will change with the seasons. Let them know, for instance, that many oak and cypress trees will drop their leaves during the winter, and this is not a cause for concern.

Use the clients' familiarity with ladybugs and praying mantids to stress that not all insects are bad. Emphasize the important role that beneficial insects play in the balance of nature. Encourage them to learn to identify different types of beneficial insects that provide natural control of harmful pests. Three examples of beneficials are shown here.



Assassin bug



Green lacewing



Syrphid fly

Low-impact techniques are used for insect and disease management whenever possible.



Low-impact techniques include removing pests by hand; encouraging natural predators, and the use of insecticidal soaps and oils.

Review the basics of IPM with clients, and help them identify their pest control options.

Begin with **Cultural Control** (which is usually the source of the problem). Examine irrigation and fertilization practices. Look at plant placement. Suggest that they move or remove a plant that is perpetually pest prone.

Follow up with **Mechanical Control**. Can the pest be picked off or washed away with water? Can the affected plant part be pruned?

Try **Biological Control**, if possible. Biological controls do not work as quickly as pesticides, but they are far more beneficial.

Try **insecticidal soap, horticultural oil, or Bt (Bacillus thuringiensis)**. Repeated applications or alternate applications of soap and oil may be necessary. **Caution:** Bt is a stomach poison for the larvae (caterpillars) of butterflies and moths.

Use chemical pesticides only as a last resort.

We want stakeholders to be aware of the services provided by their Extension office. Although they may not be able to properly identify what is afflicting their landscape, they should be aware of the role of the Extension office and the way in which to collect samples for diagnosis.

Broad-spectrum insecticides are not selective, meaning they also kill beneficial insects. Pest-specific products, which are designed to harm only targeted pests, should be chosen instead.

Pollutants such as pet waste and car oils are cleaned up so that they do not end up in storm drains.



Rain can wash exposed soil, plant materials, fertilizers, pesticides and pet waste from pervious areas (lawns, landscape beds) and road dust, oil and other materials from impervious areas (roads), all of which then become part of stormwater runoff. These materials are high in nutrients that can increase pollution. Pet wastes can also contain harmful bacteria. Ultimately every yard and neighborhood is connected to water bodies. This connection can be immediate and obvious, like in a waterfront community, or gradual and unnoticed, through the flow to storm drains, ditches, streams, rivers and estuaries.

50% or more of roof runoff (with or without downspouts) drains onto landscaped areas or pervious surfaces. (p. 43)



Permeable paver drive with coquina rock parking area

Whenever possible, use bricks, gravel, turf block, mulch, pervious (permeable) concrete or other pervious materials for walkways, driveways and patios. These materials allow rainwater to seep into the ground, thereby recharging groundwater, filtering pollutants, and reducing the amount of runoff from the yard. In some cases, these porous materials may even cost less to install than concrete or asphalt.



CHECKLIST: IRRIGATION TIER (2 FOR SILVER, 3 FOR GOLD)

*If the landscape has no in-ground system, credit can be given for satisfying this tier.

FOR A LANDSCAPE THAT USES AN IRRIGATION SYSTEM:

Not more than 50 percent (estimated by area) of the irrigation system is high volume.



Turfgrass and landscape plants are irrigated only as needed (in compliance with any existing watering restrictions).



Folded leaf blades

Some Landscape Advisors ask clients to operate the irrigation system while they are evaluating the yard to assess their familiarity with the system.

Large amounts of water can be wasted with the use of traditional, high-volume irrigation systems. These systems can contribute to overwatering, which leads to numerous issues such as disease, pests, and water pollution. High-volume irrigation should be limited to turf areas only.

Microirrigation in the form of micro-sprayers, micro-bubblers, drippers, and drip tubing should be installed in plant beds whenever feasible. For more information refer to the Micro Irrigation Fact Sheet 1 (http://hillsborough_fyn.ifas.ufl.edu/FYN%20PDF%20Files/Fact%20Sheets/Microirrigation.pdf).

Watering restrictions usually limit watering with a sprinkler or irrigation system to certain times on certain days of the week. Water restrictions apply to everyone and every water source in a water management district. (Requirements may be different for reclaimed/recycled water/microirrigation.)

Scheduled watering can waste money and water. Teach clients to look at their plants for telltale signs of thirst and to operate their system manually instead of allowing the automatic controller to run on a set schedule.

Signs of water stress are:

- Leaf blades are folded in half lengthwise

A smart controller (evapotranspiration, soil moisture sensor, or similar device) is

- Grass takes on a blue-gray tint (St. Augustine turf)
- Footprints or tire tracks remain on the grass long after they have been made.



Soil moisture sensor

A soil moisture sensor will shut off the irrigation system when a certain amount of rain has fallen or a

Separate irrigation zones for turf and landscape plants are maintained.

Turfgrass and landscape plants have very different watering needs, so they should be watered on separate zones of the irrigation system. Trying to water turfgrass and landscaped beds on the same zone is very inefficient and can lead to problems with the landscape in the long term.



Drip irrigation

Low-flow irrigation is installed and maintained in plant and flower beds.

Microirrigation systems deliver small volumes of water directly to the root zone. This is a great way to water plants more efficiently. Microirrigation can be installed under shrubs and trees, in planting beds, and in containers but should be avoided in lawns.

Quick Tip

Adjust frequency of irrigation when seasons change.



A good way to remember to adjust the frequency of the irrigation system is to do it when the time changes (i.e., daylight savings time). Always follow the Water Management District watering guidelines.



Microirrigation

The irrigation system is examined and maintained regularly for clogs and leaks.



Remind clients to run the sprinkler system and check for broken or misdirected spray heads, clogs and leaks on a regular basis. Spray heads may be broken off during mowing. Stress the need to direct heads so that water falls on lawn and shrub areas, not on paved surfaces from which it runs off.

WATERFRONT TIER: (1 FOR SILVER, 2 FOR GOLD)

Shoreline (riparian zone and littoral zone) is kept free of invasive exotic plant material.



Water chestnut
(*Trapa natans*)

Only native vegetation can be planted on shorelines, and a permit may be required. Encourage clients to check with their local Department of Environmental Protection (DEP) office before doing any work along a shoreline.



Brazilian pepper-tree is an invasive exotic plant
(*Schinus terebinthifolius*)

Seawalls, rip rap, or gabions are used where appropriate to control erosion.



Gabion



Sea Wall

Encourage clients to look for ways to encourage native vegetation in and along these structures, especially rip rap and gabions.



Rip rap

Plant material is located to provide at least a 10' low maintenance zone to buffer, filter and prevent erosion.



This practice is required only for landscapes on the waterfront. Encourage clients to establish a border of low-maintenance plants between the lawn and shoreline/seawall to absorb nutrients and provide wildlife habitat. Encourage clients not to sod all the way to the shoreline or the seawall. If they do sod to their shoreline or seawall, they should maintain a buffer of at least 10-30' in which no fertilizers or pesticides are applied.

Where feasible, encourage clients to plant native vegetation in front of their seawall or along their shoreline. Under Florida law, only native vegetation can be planted along a shoreline. For estuarine areas, refer clients to Sea Grant publication #SG 003, *Common Coastal Plants in Florida: A Guide to Planting and Maintenance*. This publication provides detailed information about plant characteristics and availability, as well as planting guidelines.



Low-maintenance zone

Appendix E- Soil pH sample report



UF/IFAS Analytical Services Laboratories
Extension Soil Testing Laboratory
Wallace Building 631 PO Box 110740 Gainesville, FL 32611-0740
Email: soilslab@ifas.ufl.edu Web: soilslab.ifas.ufl.edu Phone #:352-392-1950

Landscape And Vegetable Garden Test Report

Client Identification: Front Yard

Set Number: E46553

Lab Number: E118670

Report Date: 26-Jan-18

Crop: Landscape Azaleas, Camellias, Gardenias, Hibiscus or Ixora

SOIL TEST RESULTS AND THEIR INTERPRETATIONS

Target pH: 5.5 This is the pH at which the above crop will grow at its optimum
pH (1:2 Sample:Water) 8.4 This is the pH of your sample in the water medium
A-E Buffer Value: Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. However since your samples' pH is higher than the target, the AE buffer pH is not applicable.

AB-DTPA Extractable Nutrients

PHOSPHORUS (mg/Kg or ppm P)	7
POTASSIUM (mg/Kg or ppm K)	14
MAGNESIUM (mg/Kg or ppm Mg)	68
CALCIUM (mg/Kg or ppm Ca)	460

	LOW	HIGH
PHOSPHORUS (mg/Kg or ppm P)	7	

LIME AND FERTILIZER RECOMMENDATIONS

Crop: Landscape Azaleas, Camellias, Gardenias, Hibiscus or Ixora

Lime: 0.00 lbs per 1000 sq. ft.

Nitrogen: 1.10 lbs per 1000 sq. ft.

Phosphorous(P₂O₅): 0.30 lbs per 1000 sq. ft.

Potassium(K₂O): 0.70 lbs per 1000 sq. ft.

Magnesium(Mg): 0.00 lbs per 1000 sq. ft.

The above recommendations for K and Mg are provided based on the crop needs since no interpretation for these nutrients was found using AB-DTPA extraction method. Nitrogen recommendation is based on research data not on any soil test. The soil has been determined to be calcareous in nature because of its pH(>=7.4). At this pH, AB-DTPA extraction method was found suitable. However, only Phosphorus(P) was calibrated. No calibration was possible for Potassium(K) and Magnesium(Mg). Therefore, the recommendations for K and Mg are provided solely for successful crop performance and yields. Nitrogen(N) recommendations are provided based on research data and not on a soil test. Research studies are underway at different locations in the state to identify an appropriate extraction method for improved interpretations and recommendations for these soils. At that time, the recommendations will be modified, as appropriate.

For further information, please contact:

Dr. Yuncong Li, soils specialist, UF/IFAS TREC-Homestead

18905 SW 280 St, Homestead, FL 33031

Email: Yunli@ufl.edu Fax: 305-246-7003

These interpretations and recommendations are based upon soil test results and research/experience with the specified crop under Florida's growing conditions. We do not test soil for N as there is no meaningful soil test for predicting N availability. Thus, the N recommendation was developed from research that measured response of the indicated crop to applied N fertilizer. If you expect significant nutrient release from organic sources such as crop residues or organic amendments, estimate the amount mineralized and subtract that amount from the fertilizer recommendations given below to arrive at crop needs.

UF/IFAS fertilizer and lime recommendations are advisory in nature and emphasize efficient fertilizer use and environmentally sound nutrient management without losses of yield or crop quality. It is generally assumed that the nutrients will be supplied from purchased, commercial fertilizer and that expected crop yields and quality will be typical of economically viable production. Growers should consider UF/IFAS recommendations in the context of their entire management strategy, such as return on investment in fertilizer and the benefits of applying manure or biosolids (sewage sludge) to their land. There is insufficient research available at present to support the use of UF/IFAS soil test results for environmental nutrient-management purposes. Such use is discouraged until correlation is proven.

Footnotes are printed wherever applicable. These footnotes are an integral part of fertilization recommendations. Please read them carefully.

Set Footnote(s): 650, 653, 654, 819

Client Identification: Back Yard

Set Number: E46553

Lab Number: E118671

Report Date: 26-Jan-18

Crop: Landscape Azaleas, Camellias, Gardenias, Hibiscus or Ixora

SOIL TEST RESULTS AND THEIR INTERPRETATIONS

Target pH: 5.5 This is the pH at which the above crop will grow at its optimum

pH (1:2 Sample:Water) 7.5 This is the pH of your sample in the water medium

A-E Buffer Value: Buffer pH is the pH of your soil in Adams-Evans Buffer(A-E Buffer). This is done to determine the lime requirement, which will help increase the soil pH to the target pH level desired by the crop. However since your samples' pH is higher than the target, the AE buffer pH is not applicable.

AB-DTPA Extractable Nutrients

PHOSPHORUS (mg/Kg or ppm P)	6
POTASSIUM (mg/Kg or ppm K)	18
MAGNESIUM (mg/Kg or ppm Mg)	40
CALCIUM (mg/Kg or ppm Ca)	687



LIME AND FERTILIZER RECOMMENDATIONS

Crop: Landscape Azaleas, Camellias, Gardenias, Hibiscus or Ixora

Lime: 0.00 lbs per 1000 sq. ft.

Nitrogen: 1.10 lbs per 1000 sq. ft.

Phosphorous(P₂O₅): 0.30 lbs per 1000 sq. ft.

Potassium(K₂O): 0.70 lbs per 1000 sq. ft.

Magnesium(Mg): 0.00 lbs per 1000 sq. ft.

The above recommendations for K and Mg are provided based on the crop needs since no interpretation for these nutrients was found using AB-DTPA extraction method. Nitrogen recommendation is based on research data not on any soil test. The soil has been determined to be calcareous in nature because of its pH(>=7.4). At this pH, AB-DTPA extraction method was found suitable. However, only Phosphorus(P) was calibrated. No calibration was possible for Potassium(K) and Magnesium(Mg). Therefore, the recommendations for K and Mg are provided solely for successful crop performance and yields. Nitrogen(N) recommendations are provided based on research data and not on a soil test. Research studies are underway at different locations in the state to identify an appropriate extraction method for improved interpretations and recommendations for these soils. At that time, the recommendations will be modified, as appropriate.

For further information, please contact:

Dr. Yuncong Li, soils specialist, UF/IFAS TREC-Homestead

18905 SW 280 St, Homestead, FL 33031

Email: Yunli@ufl.edu Fax: 305-246-7003

INTERPRETATION OF MICRONUTRIENT SOIL TESTS

The IFAS Extension Soil Testing Laboratory currently offers a soil test for three micronutrients, copper (Cu), manganese (Mn), and zinc (Zn). Interpretations in terms of plant needs of the particular nutrients are still quite tentative. They are presented here with the understanding that other criteria such as crop production records and observation of deficiency symptoms should be used along with the test results in reaching the management decision concerning micronutrient fertilization.

Interpretation of extractable Cu, Mn, and Zn depends on the soil pH. The critical soil levels for these nutrients increase with pH for crops grown on acid sandy soils of Florida. Micronutrient availability in the alkaline pH range is better evaluated with a plant tissue test or with soil test extractants developed especially for alkaline soils.

Indiscriminate use of micronutrient soil tests should be avoided. However, if plant performance has been less than optimum in the past and the soil test levels are below those shown in the tables, fertilization with the respective micronutrients may be indicated.

COPPER

In Florida, Cu deficiencies have been generally confined to soils high in organic matter and so-called “new ground” just coming into cultivation in the flatwood areas. Known Cu phytotoxicity occurs in citrus groves and vegetable crop areas where Cu applied in fungicides and fertilizers has accumulated in the soil over the years. Liming to pH 7.0 is the simplest means of overcoming phytotoxicity.

Table 1 provides guidelines for interpreting the IFAS Micronutrient Soil Test values for extractable Cu in mineral soils. Dilute acids are poor extractants of Cu on organic soils and do not give reliable estimates of crop responses. The IFAS Soil Testing Lab does not presently provide a Cu soil test for organic soils.

Application of 3 to 5 pounds elemental Cu per acre (as copper sulfate or finely ground copper oxide) will correct Cu deficiencies in most crops growing on mineral soils. Mixing these Cu sources with macronutrient fertilizers presents no agronomic problems, provided segregation of the materials is avoided. A single Cu application may be sufficient for several years. Do not repeat this application until soil or tissue tests indicate a need for Cu. Copper added to soil is there “forever” and Florida already has too many cases of soils with phytotoxic levels of Cu. Fertilizer Cu should not be applied to mineral soils where Cu will be used as a pesticide.

Table 1. Tentative interpretation of extractable Cu in mineral soils

	Soil pH Minerals Soils Only		
	5.5-6.0	6.0-6.5	6.5-7.0
	ppm		
Level below which there may be a crop response to applied Cu	0.1-0.3	0.3-0.5	0.5*
Level above which Cu phytotoxicity may occur	2.0-3.0	3.0-5.0	5.0**

*If in doubt about copper nutrition of crop, get a tissue test

MANGANESE

There has been some success in predicting crop response to fertilizer Mn with extractable Mn. Lack of success in some cases has resulted from the complex nature of soil Mn and the many factors that affect its uptake by plants. Levels in table 2 are suggested as a guide for interpreting extractable Mn in mineral and organic soils.

Application of 8 to 10 pounds elemental Mn (as manganese sulfate or manganese oxide) per acre in banded fertilizer is recommended when the soil test levels are below those shown in Table 2. Broadcast applications are less effective and the rate should be increased to 20 or 30 pounds Mn if the fertilizer is broadcast. Uptake of Mn is generally best when Mn is banded with acid forming fertilizers. Field crops most likely to give a yield response to applied Mn in Florida are soybeans, small grains, and irrigated corn. Sugarcane grown on organic soils having pHs above 6.5 will also respond to banded Mn fertilizer.

ZINC

Table 2 presents a guide to interpretation of extractable Zn in both mineral and organic soils. Where Zn fertilization is needed, application rates may vary considerably with crop and Zn source but generally are around 5 to 10 pounds Zn per acre. For tree crops, use tissue tests to determine if Zn fertilization is needed, and it is known that no Zn is applied in the spray program.

Table 2. Interpretive guide to extractable Mn and Zn

	Soil pH Minerals Soils Only		
	5.5-6.0	6.0-6.5	6.5-7.0
	ppm		
Level below which there may be a crop response to applied Mn	3-5	5-7	7-9
Level below which there may be a crop response to applied Zn	0.5	0.5-1.0	1.0-3.0

The critical values shown in Table 2 are higher than those used in other states of the Southeastern U.S. and reflect a significant “margin of safety” in interpretation of the test results. These critical levels may be modified as results from field trials justify such changes.

Note # Recommendations

- 650 Indicated fertilizer amounts, coupled with nutrients already in the soil, will satisfy the crop-nutrient requirement for this growing season. Fertilizer and water management are linked. Maximum fertilizer efficiency is achieved only with close attention to water management. Supply only enough irrigation water to satisfy plant requirements and minimize leaching conditions.
- 653 Established trees (more than three to five years since transplanting) do not need routine fertilization.
- 654 For recently-planted trees, broadcast fertilizer within a diameter of 1.5 times the dripline diameter. Broadcast P2O5 either in one application or as half the recommended amount in each of two applications during the growing season. To minimize leaching losses, broadcast N and K2O in small increments throughout the growing season. Schedule one application every 12 weeks (three times per growing season), adding 33% of the recommended amount of N and K2O at each application. To insure equal coverage when fertilizer rates are small, blend all compatible fertilizers.
- 819 The pH of this soil is quite high. If this is a natural condition (i.e. if it is not from the over-application of lime), it is generally impractical to lower the soil pH with soil ammendments. Use plant species that are tolerant of high soil pH.

SetNum: 46553

Lab Number	Sample Identification	Copper	Manganese	Zinc	Organic Matter %	Electrical Conductivity dS/m
		mg/kg in the soil				
E118670	Front Yard	1.56	0.17	2.61		
E118671	Back Yard	2.74	0.04	5.32		

Appendix F- IFAS Assessment Instructions

Silver Level Recognition Prerequisites:

*must not contain any plants found on the current UF/IFAS Assessment “Prohibited” list.

Use the following link to get to the “Prohibited” List:

<http://assessment.ifas.ufl.edu/assessments/?types=24208>

...Or follow the directions on the next page to get there from the Assessment home pages

For Silver Level Recognition:

Step 1. Go to webpage <http://assessment.ifas.ufl.edu>

The screenshot shows the website assessment.ifas.ufl.edu in a browser. A blue arrow points to the address bar where the URL is entered. A red box highlights the address bar. Another red box highlights the 'Assessments' link in the top navigation menu, with a blue arrow pointing to it. A text box labeled 'Step 2. Select assessments' is positioned over the main content area. The main content area features a search bar with the placeholder text 'Type here to search by species name' and a magnifying glass icon. Below the search bar, there is a link that says 'NOT SURE WHERE TO START?' and a button labeled 'View All Assessments'. The background of the page shows a close-up of a plant with green leaves and orange, round fruits.

UF IFAS UNIVERSITY OF FLORIDA Assessment of Non-Native Plants in Florida's Natural Areas Home Assessments Contact Us

Filter Results Search by species name

ALL ASSESSMENTS

Step 3. Select Filter Results

- Abelia x grandiflora*
Glossy abelia, Largeflower abelia
- Abrus precatorius*
Rosary pea
- Abutilon hirtum*
Indian mallow
- Abutilon megapotamicum*
Trailing abutilon
- Acacia auriculiformis*
Earleaf acacia
- Acalypha amentacea subsp wilkesiana*
Copperleaf, Jacob's coat, Wilkes'
- Acalypha setosa*
Cuban copperleaf
- Achyranthes aspera*
Devil's horsewhip

For Silver Level Recognition:

UF IFAS UNIVERSITY OF FLORIDA Assessment of Non-Native Plants

Filter Results Search by species name

Apply Filters

ALL ASSESSMENTS

ZONES

CONCLUSION TYPE

ORIGIN

GROWTH HABIT

TOOL USED

Step 4. Select Conclusion Type

UF IFAS UNIVERSITY OF FLORIDA Assessment of Non-Native Plants

Filter Results Search by species name

Apply Filters

ALL ASSESSMENTS

ZONES

CONCLUSION TYPE 1 SELECTED

- Caution
- Evaluate Further
- Invasive
- Invasive (No Uses)
- Not a problem species (documented)
- Not a problem species (undocumented)
- Prohibited

ORIGIN

TOOL USED

Step 5. Select "Prohibited"

Step 6. Click "Apply Filters"

For Silver Level Recognition:

Apply Filters

ALL ASSESSMENTS

ZONES 1 SELECTED

- Central
- North
- South

CONCLUSION TYPE 1 SELECTED

- Caution
- Evaluate Further
- Invasive
- Invasive (No Uses)
- Not a problem species (documented)
- Not a problem species (un-documented)
- Prohibited

You can select your Zone

Gold Level Recognition Prerequisites:

* must not contain any plants found on the current UF/IFAS Assessment “**Invasive-Not Recommended**” list

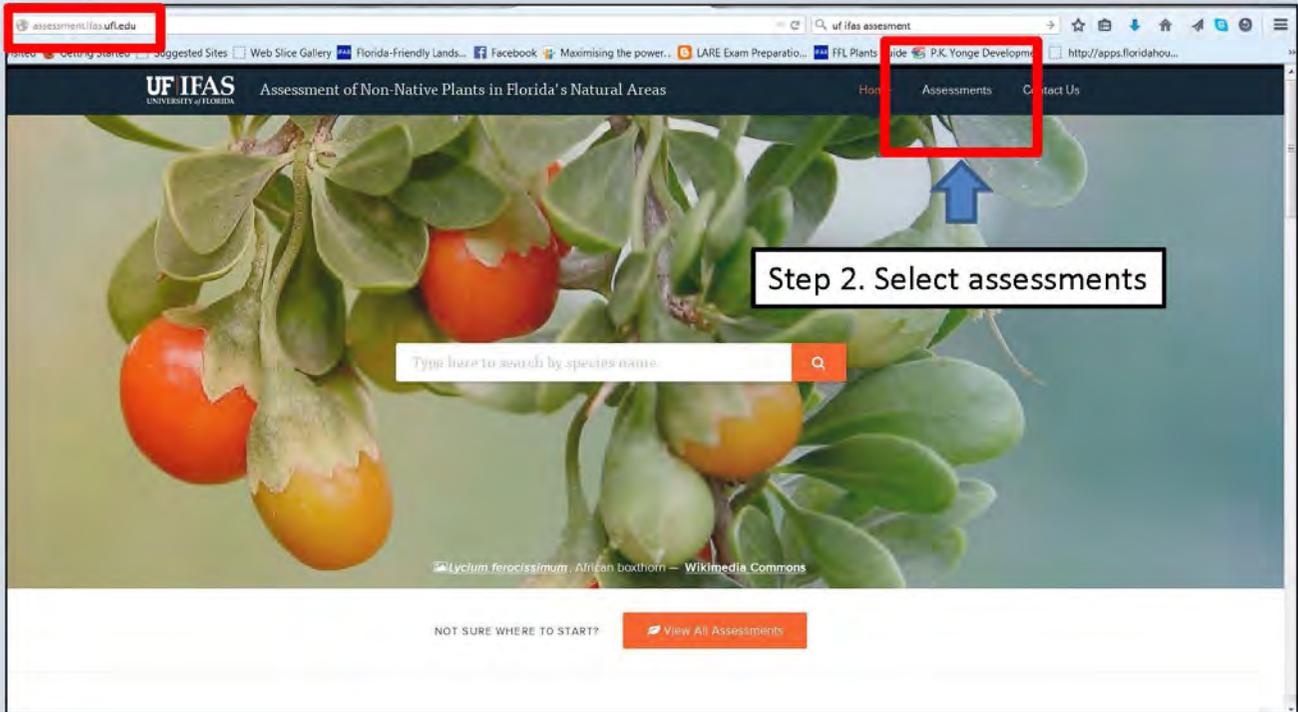
Use the following link to get to the “Invasive-Not Recommended” List:

<http://assessment.ifas.ufl.edu/assessments/?types=1080,1074,24208>

...Or follow the directions on the next pages to get there from the Assessment home page

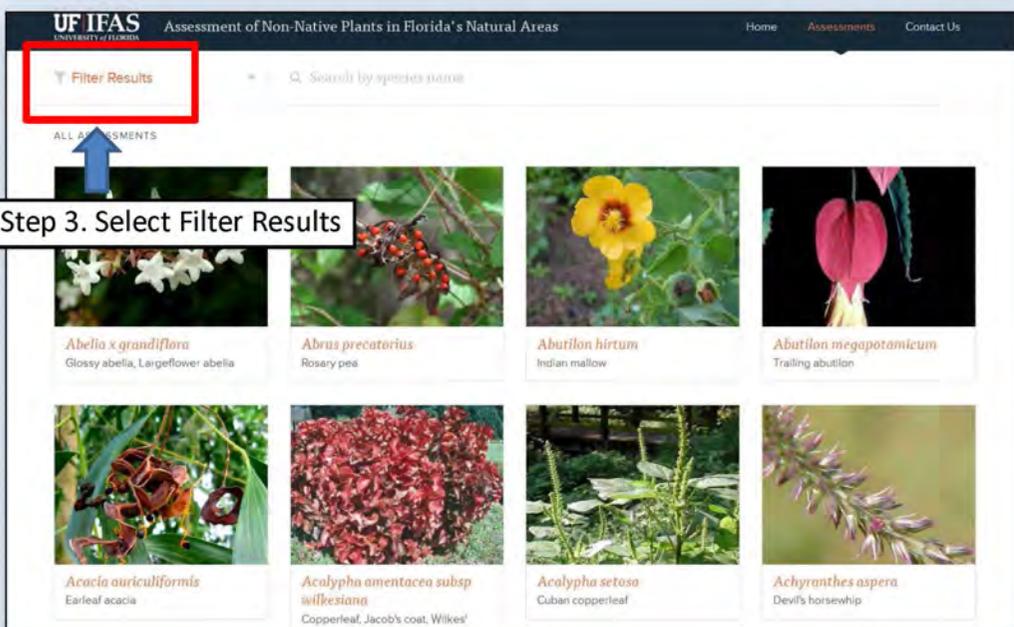
For Gold Level Recognition:

Step 1. Go to webpage <http://assessment.ifas.ufl.edu>



Step 2. Select assessments

For Gold Level Recognition (con't):



Step 3. Select Filter Results

For Gold Level Recognition (con't):

The screenshot shows the UF IFAS website interface for filtering assessment results. The left sidebar contains filter categories: ALL ASSESSMENTS, ZONES, CONCLUSION TYPE, ORIGIN, GROWTH HABIT, and TOOL USED. The 'CONCLUSION TYPE' category is highlighted with a red box and a blue arrow pointing to a callout box that says "Step 4. Select Conclusion Type". The main content area shows the expanded 'CONCLUSION TYPE' filter with three options selected: 'Invasive', 'Invasive (No Uses)', and 'Prohibited'. These three options are each enclosed in a red box, with a blue arrow pointing to a callout box that says "Step 5. Select 'Invasive', 'Invasive (No Uses)', and 'Prohibited'". At the top of the main content area, there is an orange button labeled "Apply Filters" with a circular refresh icon, which is also enclosed in a red box and has a blue arrow pointing to a callout box that says "Step 6. Click 'Apply Filters'".

The screenshot shows the final filtered results on the UF IFAS website. At the top, the "Filter Results" section is highlighted with a red box and a blue arrow pointing to a callout box that says "Note the list of filters you have used." Below this, a list of filters is shown: "INVASIVE", "INVASIVE (NO USES)", "PROHIBITED", and "CLEAR ALL". The main content area displays a grid of eight plant species, each with a photograph and its name and common name. The species listed are: *Abrus precatorius* (Rosary pea), *Ageratina adenophora* (Crofton weed), *Allanthus altissima* (Tree-of-heaven), *Albizia julibrissin* (Mimosa, silk tree), *Allamanda cathartica* (Brownbud allamanda, Golden trumpet, Yellow allamanda), *Alternanthera philoxeroides* (Alligatorweed), *Alternanthera sessilis* (Sessile joyweed), and *Ardisia crenata* (Coral ardisia).

Appendix G- Online Resources

Florida-Friendly Landscaping™ Plant Guide

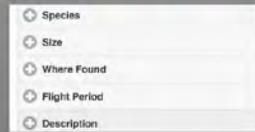
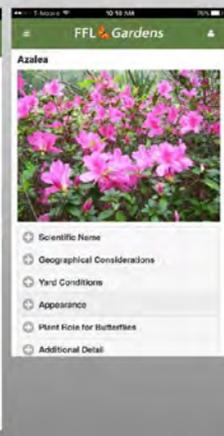
Find the Right Plant for the Right Place
Anytime, Anywhere

Mobile web
application
1⁹⁹ year



* <https://fpl.ifas.ufl.edu/plants>

Florida-Friendly Landscaping™ FFL Butterfly Gardens



References

UF/IFAS References:

- *The Florida Yards & Neighborhoods Handbook, 5th ed. (2015)*
- *The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design (2010)*
- *The Florida Lawn Handbook (2005)*
- *The Master Gardener Handbook: North and Central Florida (2008)*
- *Master Gardener Handbook: South Florida (2008)*
- Questions and Answers: 2009 Florida-Friendly Landscaping™ Legislation
- Frequently Asked Questions about Landscape Irrigation for Florida-Friendly Landscaping Ordinances
- Frequently Asked Questions about Landscape Fertilization for Florida-Friendly Landscaping Ordinances
- *Enviroscaping to Conserve Energy: a Guide to Microclimate Modification* A.W. Meerow and R.J. Black

Florida-Friendly Landscaping™

PLANT GUIDE

Find the Right Plant for the Right Place
Anytime, Anywhere

ffl.ifas.ufl.edu/plants



The Florida-Friendly Landscaping™ Program Landscape Advisor's Manual